Appendix E: Terrestrial Report



407 TRANSITWAY - KENNEDY ROAD TO BROCK ROAD

MINISTRY OF TRANSPORTATION - CENTRAL REGION

TERRESTRIAL ECOSYSTEMS REPORT

PLANNING AND PRELIMINARY DESIGN STUDY

407 TRANSITWAY

FROM EAST OF KENNEDY ROAD TO EAST OF BROCK ROAD CITY OF MARKHAM (YORK REGION) AND CITY OF PICKERING (DURHAM REGION)

G.W.P. 13-20003

prepared for:



MINISTRY OF TRANSPORTATION
CENTRAL REGION

prepared by:



OCTOBER 2015 (revised October 2016)

TERRESTRIAL ECOSYSTEMS REPORT

PLANNING AND PRELIMINARY DESIGN STUDY

407 TRANSITWAY

FROM EAST OF KENNEDY ROAD TO EAST OF BROCK ROAD CITY OF MARKHAM (YORK REGION) AND CITY OF PICKERING (DURHAM REGION)

G.W.P. 13-20003

prepared by:

Lisa Catcher, B.A.

Botanist, ISA Certified Arborist

Judson Venier, M.Sc. Biologist

Constance J. Agnew, B.Sc., rcji Senior Planning Ecologist

Constone J. Amor

reviewed by:

Grant Kauffman, M.E.S. Vice-President, Ontario Region

S. M. Kauffun

LGL Limited environmental research associates

22 Fisher Street, P.O. Box 280 King City, Ontario L7B 1A6 Telephone: 905-833-1244 Facsimile: 905-833-1255

URL: www.lgl.com

OCTOBER 2015 LGL PROJECT TA8429

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	BACKGROUND	
1.2	DATA COLLECTION AND ANALYSIS	1
1.3	RESULTS	
1.4	STUDY TEAM	2
2.0	STUDY AREA	2
3.0	EXISTING CONDITIONS	
3.1	PHYSIOGRAPHY AND SOILS	
3.1.		
3.1.	1	
3.1.		
3.2	VEGETATION COMMUNITIES	
3.2.	1 Purpose	4
3.2.	2 Data Sources	4
3.2.	3 Findings	5
3.3	WILDLIFE AND WILDLIFE HABITAT	7
3.3.	1 Purpose	7
3.3.		
3.3.	3 Findings	19
4.0	IMPACT ASSESSMENT AND MITIGATION	29
4.1	PHYSIOGRAPHY AND SOILS	29
4.2	VEGETATION COMMUNITIES	
4.2.	1 Runningway Impacts	30
4.2.	0 1 1	
4.2.	3 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities	36
4.3	WILDLIFE AND WILDLIFE HABITAT	40
4.3.	1 Runningway Impacts	40
4.3.	T	
4.3.		
4.3.	33	
4.3.	· · · · · · · · · · · · · · · · · · ·	
4.3.	, , , , , , , , , , , , , , , , , , ,	
4.3.	7 Potential Impacts to Migratory Birds	44
5.0	CONCLUSION AND RECOMMENDATIONS	45
6.0	REFERENCES	46

LIST OF FIGURES

Figure 1. Key Plan of Study Area.	2
Figure 2A. Natural Heritage	16
Figure 2B. Natural Heritage	
Figure 2C. Natural Heritage	18
LIST OF TABLES	
Table 1. Summary of Ecological Land Classification Vegetation Communities	8
Table 2. Summary of TRCA Plant Species of Concern Identified Within the Study Area	14
Table 3. Wildlife Species Documented within the Study Area	21
Table 4. Summary of Wildlife Element Occurrence Records within the Study Area	
	28
Table 5. Wildlife Species at Risk Summary	
Table 5. Wildlife Species at Risk Summary	30

APPENDICES

Appendix A.	Environmental Reference for Highway Design Checklists
Appendix B.	Ecological Land Classification Field Sheets
Appendix C.	Photographic Record
Appendix D.	Vascular Plant List
Appendix E.	Acronyms and Definitions Used in Species Lists
Appendix F.	Correspondence with Regulatory Agencies

1.0 Introduction

1.1 Background

This project involves the planning and preliminary design for the 407 Transitway from east of Kennedy Road to east of Brock Road. The Transitway will be a high-speed fully grade separated facility on a separate right-of-way running parallel, and crossing over or under 407 ETR. This 18 km section has EA approval for the 60 metre Transitway from Markham Road to beyond Brock Road (to Highway 35/115). This study will document the requirements for EA approval under TPAP for the section from Kennedy to Markham Road as well as for the stations that will be required from Kennedy Road to Brock Road. The station designs will include bus access to and egress from the stations, bus platforms, layout of access to and from the arterial road, integration with local transit (bus platforms), parking spaces, Passenger Pick Up and Drop Off (PPUDO), shelters, buildings and other amenities. The Transitway and the stations will initially be designed to support the busway service with provisions for future conversion to light rail transit technology.

This is a total project management (TPM) assignment, where the consultant delivers all aspects of the study on behalf of MTO. The TPM prime consultant is Parsons. Parsons has assembled a team of engineering and environmental specialists to provide the services required for this study. LGL Limited was retained by Parsons to conduct a natural heritage investigation in support of the environmental assessment for the 407 Transitway.

This report documents the results of the terrestrial ecosystems investigation and has been prepared as per the requirements of the Environmental Reference for Highway Design (MTO 2013). This report updates work completed by LGL Limited in 2005 for the Regional Municipality of York as part of the Highway 7 Transit Improvements Individual Environmental Assessment and in 2010 for the Ministry of Transportation as part of the 407 Transitway from East of Highway 400 to East of Kennedy Road.

1.2 Data Collection and Analysis

Data was obtained from published data sources and unpublished information made available by relevant stakeholders. This data was then reviewed to identify data gaps and deficiencies, and to scope the type, location and level of detail for field investigations. Field investigations included windshield and pedestrian surveys carried out within the study area by the study team on in April, May and June 2015.

1.3 Results

The results of the data collection and analysis are presented according to factor-specific environmental services. The purpose of the investigation, data sources, findings and environmental sensitivity / significance is presented for each environmental discipline (physiography and soils, vegetation and wildlife).

The Environmental Reference for Highway Design Checklists for Terrestrial Ecosystems are presented in **Appendix A.**

The Ecological Land Classification Field Sheets are presented in **Appendix B**.

A photographic record is presented in **Appendix C**.

Vascular plant lists are presented in **Appendix D**.

Acronyms and definitions used in the species lists are presented in **Appendix E**.

LGL Limited environmental research associates

Correspondence with regulatory agencies is presented in **Appendix F**.

1.4 Study Team

The study team members and their roles in the environmental investigation for this project are outlined below:

- Constance Agnew, LGL Limited natural sciences manager;
- Lisa Catcher, LGL Limited physiography and soils assessment, terrestrial ecosystems (vegetation) assessment; and,
- Judson Venier, LGL Limited terrestrial ecosystems (wildlife) assessment.

2.0 STUDY AREA

The study area is located in the City of Markham, Regional Municipality of York and the City of Pickering, Regional Municipality of Durham. The study area is also located in the Province's Parkway Belt West Plan, which is a multi-purpose corridor providing right-of-way for freeways, regional transit, aerial hydro transmission lines, utilities and public open space. The project limits are presented in **Figure 1**.

The study area considered for the secondary source natural heritage investigation includes a one kilometre wide corridor centred along 407 ETR from east of Kennedy Road in the City of Markham to east of Brock Road in the City of Pickering. Primary field investigations focussed on the facility footprint, including runningway, station locations and adjacent lands up to 120 m from the future infrastructure footprint. The results of the natural sciences investigation are documented in further detail in the Environmental Project Report.

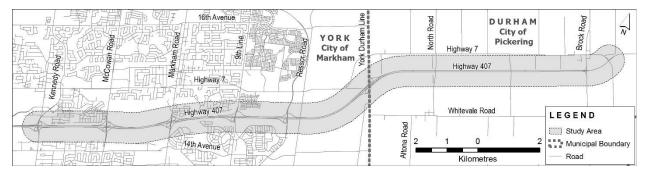


FIGURE 1. KEY PLAN OF STUDY AREA.

3.0 Existing Conditions

This section describes the existing conditions in the study area related to natural heritage, including physiography and soils, vegetation and vegetation communities, wildlife and wildlife habitat and designated natural areas.

3.1 Physiography and Soils

3.1.1 Purpose

A secondary source investigation was undertaken to identify physiographic features and soils within the study area as shown in **Figure 1**.

3.1.2 Data Sources

Information regarding physiography and soils within the study area was obtained through:

- Chapman, L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario*. Published for the Ontario Geological Survey Special Volume 2;
- Hoffman, D.W. and N.R. Richards. 1955. *Soil Survey of York County*. Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food; and,
- Olding, A.B., R.E. Wicklund, and N.R. Richards. 1956. *Soil Survey of Ontario County*. Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food.

3.1.3 Findings

The study area is located within the Peel Plain and South Slope physiographic regions, which extend through the central portions of the Regions of York and Durham. The Peel Plain is a level to undulating tract of clay soils with imperfect drainage, through which the Rouge River and its tributaries have carved deep valleys. The South Slope is an interlobate moraine characterized by scattered drumlins pointing directly up-slope, with streams, including those of the Petticoat Creek and Duffins Creek watersheds, cutting sharply sloped valleys (Chapman and Putnam, 1984).

Soils surrounding Highway 407 in the study area are classified as: Peel clay and clay loam; Berrien sandy loam; Malton clay; Milliken loam; and, Woburn loam (Olding et al., 1956 and Hoffman and Richards, 1955).

3.1.3.1 Peel clay and clay loam

Peel clay and clay loam soils are imperfectly drained and exhibit a smooth, gently sloping topography. These soil types consist of lacustrine clay over gritty clay or clay till, which can be up to one metre deep. Erosion is slight with these soil types.

3.1.3.2 Berrien sandy loam

Berrien sandy loams are imperfectly drained with a smooth, gently sloping topography. This soil type is composed of sandy outwash over calcareous clay till, which can be up to one metre deep. This soil is very friable and erosion prone though runoff is low.

3.1.3.3 Malton clay

Malton clay soils are poorly drained with a smooth, very gently sloping topography. This soil type is composed of lacustrine clay over gritty clay, which can be up to one metre deep. This soil type is friable, but poor drainage causes erosion to be slight under natural conditions.

3.1.3.4 Milliken loam

Milliken loam soils are moderately well drained to imperfectly drained with a gently to very gently sloping topography. This soil type is composed of medium textured calcareous till and is slightly stony. This soil type is friable, but imperfect drainage in some areas causes erosion to be slight under natural conditions.

3.1.3.5 Woburn loam

Woburn loam soils are well drained and occur on moderately sloping topography. This soil type is composed of loam and calcareous till with stones and boulders occurring near the surface. This soil type is very friable, and erosion is slight under natural conditions.

3.2 Vegetation Communities

3.2.1 Purpose

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and field investigations. Air photos were interpreted to determine the limits and characteristics of vegetation communities. A field investigation of the vegetation communities within the facility footprint of the 407 Transitway from Kennedy Road to east of Brock Road was conducted on April 29, May 1, May 6, June 9 and June 10, 2015.

Vegetation communities were classified according to the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee *et al.* 1998). The communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham 2009), and the Toronto and Region Conservation Authority (2009). Vascular plant nomenclature follows Newmaster *et al.* (1998) with a few exceptions that have been updated to Newmaster *et al.* (2007). Vegetation communities are presented in **Figures 2a-2c**.

3.2.2 Data Sources

The information relating to terrestrial habitat features was obtained through:

- WSP and HDR. 2004. CPDP Class EA for Region Services in The City of Pickering;
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Department and Transfer Branch. SCSS Field Guide FG-02 North Bay, Ontario. 225 pp.;
- Natural Heritage Information Centre. 2013. Biodiversity Explorer. Ontario Ministry of Natural Resources. Available online at: http://nhic.mnr.gov.on.ca/. Accessed May 2013;
- City of Markham. 2005. City of Markham Official Plan;
- York Region. 2009. York Region Official Plan;
- City of Pickering. 2010. City of Pickering Official Plan;
- Durham Region. 2013. Durham Region Official Plan;
- Ministry of Municipal Affairs and Housing. 2005. *Greenbelt Plan*; http://www.mah.gov.on.ca/Page189.aspx;
- Schollen and Company Inc. 2008. Seaton Natural Heritage System: Management Plan and Master Trails Plan;
- Toronto and Region Conservation Authority. 2009. Flora Scoring and Ranking;
- Rouge Park Alliance. 2001. Rouge North Management Plan: A Strategy to Guide the Realization of the Rouge Park from Steeles Avenue to the Oak Ridges Moraine. http://www.rougepark.com/about/plans/mgmt_plans.php;

- Steve Varga. 2015. Personal Communication May 2015. Ministry of Natural Resources and Forestry, Management Biologist;
- Ministry of Transportation. 1997. *Highway 407/Transitway Markham Road Easterly to Highway 7 East of Brock Road: Environmental Assessment Report;*
- The Sernas Group. 2013. Seaton Lands Master Environmental Servicing Plan Amendment. Prepared for the City of Pickering;
- Crins, William J., Paul A. Gray, Peter W.C. Uhlig, and Monique C. Wester. 2009. The Ecosystems of Ontario, Part I: Ecozones and Ecoregions. Ontario Ministry of Natural Resources, Peterborough Ontario, Inventory, Monitoring and Assessment, SIB TER IMA TR- 01, 71pp; and
- field investigation and mapping on April 29, May 1, May 6, June 9 and June 10, 2015.

3.2.3 Findings

3.2.3.1 Designated Natural Areas

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources and Forestry, Toronto and Region Conservation Authority and upper tier and lower tier municipalities.

Mixedwood Plains Ecozone

The Ontario portion of the Mixedwood Plains Ecozone is bounded along its southern and western edges by Lake Huron, Erie, and Ontario, and the St. Lawrence River (Crins, Grey, Uhlig, and Wester, 2009). The Mixedwood Plains Ecozone is the most densely populated area in Canada, and most of its natural areas have been converted for human uses (Crins, Grey, Uhlig, and Wester, 2009). The flora and fauna are among the most diverse in Canada, and the number of species at risk is high (Crins, Grey, Uhlig, and Wester, 2009).

Lake Erie-Lake Ontario Ecoregion

The Lake Erie-Lake Ontario Ecoregion extends from Windsor and Sarnia east to the Niagara Peninsula and Toronto, with shoreline on Lakes Huron, Erie, and Ontario (Crins, Grey, Uhlig, and Wester, 2009). This ecoregion contains the most diverse flora and fauna in Canada and is the most imperilled in Canada because of the amount of natural habitat that has been drained, curt, and converted to agricultural and suburban land uses (Crins, Grey, Uhlig, and Wester, 2009). Approximately 78% of the ecoregion has been converted to cropland and pasture, 7% is developed land (Crins, Grey, Uhlig, and Wester, 2009). Of the remaining forest remnant, dense deciduous forest covers 10.3%, sparse deciduous forest covers 1.0%, and mixed deciduous forest covers 0.8% of the ecoregion (Crins, Grey, Uhlig, and Wester, 2009).

Environmentally Significant/Sensitive Areas

A total of two Environmentally Significant/Sensitive Areas (ESA) exist within 150 m of the proposed facility footprint. Milne Woods ESA, is one of the largest natural areas in the City of Markham and contains a Class 4 wetland. It is located on the north side of 407 ETR between McCowan Road and Markham Road and is approximately 140 m north of the proposed facility footprint. In addition, the West Duffins ESA is located north and south of 407 ETR between York Durham Line and North Road. The proposed facility footprint bisects the northern portion of the West Duffins ESA.

Provincially Significant Wetlands

The Cedar Grove Provincially Significant Wetland Complex (PSW) is located within 120 of the study. Specifically, a portion of wetland complex is located on the north and south side of the 407 ETR between Ninth Line and Donald Cousens Parkway. The location of the Cedar Grove PSW is presented in **Figure**

2b. In addition, a portion of the Milne Park PSW Complex is located on the north side of the 407 ETR. The location of the Milne Park PSW is presented in **Figure 2a**.

Non-provincially Significant Wetlands

A total of four non-provincially significant wetlands are located within the study area. These include the Whitevale Wetland located south of 407 ETR and west of North Road and three wetland pockets associated with the Locust Hill Wetland Complex located south of 407 ETR between Reesor Road and York Durham Line.

Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest (ANSIs) located within 120 m of the study area.

Greenhelt

A portion of the study area between Reesor Road and North Road is a component of the Greenbelt Plan (2005) including 'Protected Countryside' and 'Natural Heritage System'.

Rouge Park North Management Plan

Lands north and south of 407 ETR between Reesor Road and York Durham Line are a component of the Rouge Park North Management Plan. Specifically, the Rouge Park North Management Plan identified the lands surrounding Milne Park and Bruce's Conservation Area as 'Special Management Zones.'

Natural Heritage System

The York Region Official Plan (2009) identifies a portion of the study area between Kennedy Road and York Durham Line as a component of the 'Regional Greenlands System', 'Woodlands', and 'Conservation Area/Regional Forest' of York Region.

The Durham Region Official Plan (2013) identifies a portion of the study area between York Durham Line and Brock Road as a component of the 'Regional Greenlands Systems' and a 'Key Natural Heritage and Hydrological Feature' of Durham Region.

The City of Markham Official Plan (2005) identifies a portion of the study area between Markham Road and York Durham Line as 'Hazard Lands' and 'Environmental Protection Area' of the City of Markham.

The City of Pickering Official Plan (2010) identifies a portion of the study area between York Durham Line and Brock Road as 'Natural Areas'.

3.2.3.2 Vegetation Communities

Vegetation communities within the study area consist of a mixture of forest, wetland and cultural communities. The majority of the vegetation within the study area has been disturbed by existing land uses including agricultural, residential, and infrastructure. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant.

Natural/semi-natural features within the study area are restricted to the valleylands associated with the watercourses in the study area. The valleyland units contain a mixture of forest and wetland communities. These areas are generally of higher quality and contain a high proportion of specialized and native plant species.

A total of twenty four ecosites were identified within the study area. These communities include: Dry-Moist Old Field Meadow (CUM1-1), Mineral Cultural Savannah (CUS1), Mineral Cultural Thicket (CUT1), Mineral Cultural Woodland (CUW1), Coniferous Forest (FOC, FOC1-2, FOC2-2, and FOC4-1), Deciduous Forest (FOD5, FOD6-5, FOD7, and FOD7-2), Mixed Forest (FOM7-1 and FOM7-2), Meadow Marsh (MAM2-2, MAM2-5, MAM2-10), Shallow Marsh (MAS2, MAS2-1), Coniferous Swamp (SWC1-1), Deciduous Swamp (SWD2-2), Swamp Thicket (SWT2 and SWT2-2), and Open Aquatic (OAO).

There are several areas that are not identified by the ELC such as areas of manicured grass (M) which include mown lawns, gardens and planted trees. All vegetation communities identified through air photo interpretation are described in **Table 1**. All of the vegetation communities identified within the study area are considered widespread and common in Ontario and are secure globally.

3.2.3.3 Vegetation

A total of 286 plant species have been recorded within the study area. Ten of these plants could only be identified to genus and are not included in the following calculations. Of the 276 plants identified to species, 183 (66%) plant species identified are native to Ontario and 93 (33%) plant species are considered introduced and non-native to Ontario. A list of vascular plant is presented in **Appendix D**.

3.2.3.4 Species at Risk

One plant species regulated under the Ontario *Endangered Species Act, 2007* was identified during LGL's botanical investigation. A total of 14 butternut (*Juglans cinerea*) were identified south of the preferred facility footprint in the valleylands associated with a tributary of Urfe Creek. The location of the butternuts is presented on **Figure 2C**. Butternut is regulated as Endangered under the Ontario *Endangered Species Act, 2007*.

In addition, a review of MNRF Natural Heritage Information Centre (2015) for plant species at risk within the study area was conducted. One butternut element occurrence was identified in the valleylands associated with West Duffins Creek. It should be noted that the presence of this tree was not confirmed during LGL's botanical investigation.

A total of 35 TRCA plant species of concern (L1 to L3) were identified within the study area. **Table 2** presents the list of those rare species and in which vegetation community each species was identified. A description of TRCA plant species rank is presented at the end of the plant species list in **Appendix E**.

3.3 Wildlife and Wildlife Habitat

3.3.1 Purpose

A review of secondary source data was undertaken in 2014 and field surveys were conducted on April 28, 29 and May 8, 13, 14 and 29, 2015 to document wildlife habitat and wildlife occupation and to characterize the nature, extent and significance of wildlife usage within the project limits. The purpose of this search was to characterize the extent and significance of natural heritage features and determine the potential for wildlife usage.

The study area investigated included all habitats along a one kilometre wide corridor centred along 407 ETR for the secondary source review from east of Kennedy Road to east of Brock Road. Field investigations of the wildlife and wildlife habitat were conducted for the facility footprint and adjacent lands up to a distance of 120 m from the infrastructure footprint for the 407 Transitway between Kennedy Road and Brock Road.

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIA	L – NATURAL/SEN	MI-NATURAL	
FOD	Deciduous Forest		
FOD5	Dry-Fresh Sugar Maple Deciduous Forest	Canopy: includes sugar maple (Acer saccharum ssp. saccharum), red ash (Fraxinus pennsylvanica), white elm (Ulmus americana), and basswood (Tilia americana). Understory: includes chokecherry (Prunus virginiana var. virginiana), alternate-leaved dogwood (Cornus alternifolia), red-berried elder (Sambucus racemosa var. racemosa), and sugar maple. Ground Cover: includes Virginia water-leaf (Hydrophyllum virginianum), zig-zag goldenrod (Solidago flexicaulis), yellow avens (Geum aleppicum), and stellate sedge (Carex rosea).	 Tree cover > 60 % (FO). Deciduous trees > 75 % of canopy cover (D). Moderately dry to fresh moisture regime, sugar maple dominant (5).
FOD6-5	Fresh-Moist Sugar Maple- Hardwood Deciduous Forest	Canopy: includes sugar maple, American beech (Fagus grandifolia), red oak (Quercus rubra), yellow birch (Betula alleghaniensis), and basswood. Understory: includes ironwood (Ostrya virginiana), chokecherry, sugar maple, and bitternut hickory (Carya cordiformis). Ground cover: includes ostrich fern (Matteuccia struthiopteris var. pensylvanica), wild lily-of-the-valley (Maianthemum canadense), purple trillium (Trillium erectum), stellate sedge, and Virginia waterleaf.	 Tree cover > 60 % (FO). Deciduous trees > 75 % of canopy cover (D). Moist to fresh moisture regime, sugar maple dominant (6). Hardwood associates (-5).
FOD7	Fresh-Moist Lowland Deciduous Forest	Canopy: includes bur oak (<i>Quercus macrocarpa</i>), trembling aspen (<i>Populus tremuloides</i>), eastern white pine (<i>Pinus strobus</i>), sugar maple, and black walnut (<i>Juglans nigra</i>) Understory: includes common buckthorn (<i>Rhamnus cathartica</i>), guelder rose (<i>Viburnum opulus</i>), and tartarian honeysuckle (<i>Lonicera tatarica</i>). Ground Cover: includes blue cohosh (<i>Caulophyllum thalictroides</i>), graceful sedge (<i>Carex gracillima</i>), bitter nightshade (<i>Solanum dulcamara</i>), moneywort (<i>Lysimachia nummularia</i>).	 Tree cover > 60 % (FO). Deciduous trees > 75 % of canopy cover (D). Middle to lower slopes, seepage areas and bottomlands topographic positions (7).
FOD7-2	Fresh-Moist Ash Lowland Deciduous Forest	Canopy: includes Manitoba maple (<i>Acer negundo</i>), red ash, sugar maple, and slippery elm (<i>Ulmus rubra</i>). Understory: includes chokecherry, common buckthorn, riverbank grape (<i>Vitis riparia</i>), American fly honeysuckle (<i>Lonicera canadensis</i>), and red ash. Ground cover: includes field horsetail (<i>Equisetum arvense</i>), yellow rocket (<i>Barbarea vulgaris</i>), and dame's rocket (<i>Hesperis matronalis</i>).	 Tree cover > 60 % (FO). Deciduous trees > 75 % of canopy cover (D). Middle to lower slopes, seepage areas and bottomlands topographic positions (7). Green ash or black ash dominant (-2).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOC	Coniferous Forest		
FOC	Coniferous Forest	Canopy: includes European larch (<i>Larix decidua</i>), white spruce (<i>Picea glauca</i>), Austrian pine (<i>Pinus nigra</i>), and Scotch pine (<i>Pinus sylvestris</i>). Understory: includes white spruce, white elm, choke cherry, and eastern white cedar (<i>Thuja occidentalis</i>). Ground cover: includes prickly gooseberry (<i>Ribes cynobati</i>), common valerian (<i>Valeriana officinalis</i>), reed canary grass (<i>Phalaris arundinacea</i>), and zig-zag goldenrod.	 Tree cover > 60 % (FO). Coniferous trees > 75 % of canopy cover (C).
FOC1-2	Dry-Fresh White Pine-Red Pine Coniferous Forest	Canopy: includes eastern white pine, eastern white cedar, and eastern hemlock (<i>Tsuga canadensis</i>). Understory: includes alternate-leaved dogwood, smooth juneberry (<i>Amelanchier laevis</i>), and paper birch (<i>Betula paprifera</i>). Ground cover: includes garlic mustard (<i>Alliaria petiolata</i>), tall meadow-rue (<i>Thalictrum pubescens</i>), and blue-stem goldenrod (<i>Solidago caesia</i>).	 Tree cover > 60 % (FO). Coniferous trees > 75 % of canopy cover (C). Dry to fresh soil moisture regime (1) White pine or red pine dominant (-2).
FOC2-2	Dry-Fresh White Cedar Coniferous Forest	Canopy: includes eastern white cedar, eastern hemlock, white elm, and red ash. Understory: includes riverbank grape, bitter nightshade, eastern white cedar, and common buckthorn, Ground cover: includes garlic mustard and swallow-wort (<i>Cynanchum rossicum</i>), and moneywort.	 Tree cover > 60 % (FO). Coniferous trees > 75 % of canopy cover (C). Dry-Fresh Cedar Forest (2). White Cedar dominates (-2).
FOC4-1	Fresh-Moist White Cedar Coniferous	Canopy: includes eastern white cedar, eastern white pine, basswood, white elm and Scotch pine. Understory: includes common buckthorn, red-osier dogwood (Cornus sericea ssp. sericea), large-fruited thorn (Crataegus punctata) black walnut, and balsam poplar (Populus balsamifera ssp. balsamifera). Ground Cover: includes downy yellow violet (Viola pubescens), bulblet bladder fern (Cystoteris bulbifera), Canada anemone (Anemone canadensis), celandine (Chelidonium majus), moneywort, and spotted touch-me-not (Impatiens capensis).	 Tree cover > 60 % (FO). Coniferous trees > 75 % of canopy cover (C). White cedar dominant (4). Dominated entirely by white cedar (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOM	Mixed Forest	<u> </u>	<u> </u>
FOM7-1	Fresh-Moist White Cedar- Sugar Maple Mixed Forest	Canopy: includes eastern white cedar, sugar maple, yellow birch, and Manitoba maple. Understory: includes alternate-leaved dogwood, tartarian honeysuckle, staghorn sumac (<i>Rhus hirta</i>), purple flowering raspberry (<i>Rubus odartus</i>), and black walnut. Ground Cover: includes tall meadow-rue, coltsfoot (<i>Tussilago farfara</i>), dame's rocket, blue cohosh, may-apple (<i>Podophyllum peltatum</i>), and downy yellow violet (<i>Viola pubescens</i>).	 Tree cover > 60 % (FO). Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). Middle to lower slopes, seepage areas and bottomlands topographic positions (7). White cedar and sugar maple dominant (-1).
FOM7-2	Fresh-Moist White Cedar- Hardwood Mixed Forest	Canopy: includes eastern white cedar, balsam poplar, trembling aspen, white elm, black maple (<i>Acer nigrum</i>), and eastern cottonwood (<i>Populus deltoides</i> ssp. <i>deltoides</i>). Understory: includes common elderberry (<i>Sambucus nigra</i> ssp. canadensis), high bush cranberry (<i>Viburnum opulus</i> var. americanum), red ash, and chokecherry. Ground Cover: includes large-leaved aster (<i>Eurybia macrophylla</i>), zigzag goldenrod, lily-of-the-valley (<i>Convallaria majalis</i>), stellate sedge, creeping Charlie (<i>Glechoma hederacea</i>), and moneywort.	 Tree cover > 60 % (FO). Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). Middle to lower slopes, seepage areas and bottomlands topographic positions (7). Hardwood associates (-2).
	AL – CULTURAL		
CUM	Cultural Meadow	T	T
CUM1-1	Dry-Moist Old Field Meadow	Emergent Trees/Shrubs: includes black walnut, hybrid willow (<i>Salix X sepulcralis</i>), red-osier dogwood (<i>Cornus sericea</i> ssp. <i>sericea</i>), common buckthorn, and red ash. Ground cover: includes curly-leaf dock (<i>Rumex crispus</i>), wild carrot (<i>Daucus carota</i>), reed canary grass, tall goldenrod (<i>Solidago canadensis</i> var. <i>scabra</i>), awnless brome (<i>Bromus inermis</i> ssp. <i>inermis</i>), and common mullein (<i>Verbascum thapsus</i>).	 Cultural communities (CU). Tree cover and shrub cover < 25 % (M). This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUS1	Cultural Savannah	-	
CUS1	Mineral Cultural Savannah	Canopy: includes trembling aspen, white willow (Salix alba), eastern white cedar, and balsam poplar. Understory: includes large-fruited hawthorn, common buckthorn, tartarian honeysuckle, and Manitoba maple. Ground cover: includes common comfrey (Symphytum officinale ssp officinale), common valerian, Canada goldenrod (Solidago canadensis), New England aster (Symphyotrichum novae-angliae), and Kentucky blue grass (Poa pretensis ssp. pratensis).	 Cultural communities (CU). Tree cover <25% shrub cover >25% (S). Mineral soil (1).

Table 1.

Summary of Ecological Land Classification Vegetation Communities

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUT1	Cultural Thicket		
CUT1	Mineral Cultural Thicket	Canopy: includes Colorado spruce (<i>Picea pungens</i>), Scotch pine, eastern white cedar, black walnut, and Norway maple (<i>Acer platanoides</i>). Understory: includes common buckthorn, tartarian honeysuckle, black walnut, Manitoba maple, and eastern white cedar. Ground cover: includes common milkweed (<i>Asclepias syriaca</i>), awnless brome, poverty oat grass (<i>Danthonia spicata</i>), ribgrass (<i>Plantago lanceolata</i>), and black medick (<i>Medicago lupulina</i>).	 Cultural community (CU). Tree cover <25 %; shrub cover >25% (T). Mineral soil (1).
CUW	Cultural Woodland		
CUW1	Mineral Cultural Woodland	Canopy: includes eastern white pine, Scotch pine, black cherry (<i>Prunus serotina</i>), English hawthorn (<i>Crataegus monogyna</i>), and black locust (<i>Robinia pseudo-acacia</i>). Understory: includes English hawthorn, common lilac (<i>Syringa vulgaris</i>), red ash, eastern white cedar, and common buckthorn. Ground cover: includes field hawkweed (<i>Hieracium caespitosum</i>), tall buttercup (<i>Ranunculus acris</i>), alleghany blackberry (<i>Rubus allegheniensis</i>), and tufted vetch (<i>Vicia cracca</i>).	 Cultural communities (CU). 25 % < tree cover < 35 % Mineral Soil (1).
WETLAND			
SWD	Deciduous Swamp		
SWD2-2	Green Ash Mineral Deciduous Swamp	Canopy: includes balsam poplar, red ash, and slippery elm (<i>Ulmus rubra</i>). Understory: includes large-fruited thorn, red-osier dogwood, common buckthorn, and red ash. Ground cover: includes lake-bank sedge (<i>Carex lacustris</i>), common comfrey, fowl meadow grass (<i>Glyceria striata</i>), bristly sedge (<i>Carex comosa</i>), and spotted touch-me-not.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Deciduous tree cover >75% of canopy cover. Ash dominant swamp (2). Green ash dominant (-2).
SWC	Coniferous Swamp		
SWC1-1	White Cedar Mineral Coniferous Swamp	Canopy: includes eastern white cedar, yellow birch and black ash (Fraxinus nigra). Understory: includes eastern white cedar, and riverbank grape. Ground cover: includes sensitive fern (Onoclea sensibilis), spotted touch-me-not and swallow-wort.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Conifer tree cover >75% of canopy cover (1). Almost entire dominated by white cedar (-1).

Table 1.

Summary of Ecological Land Classification Vegetation Communities

ELC Code	Vegetation Type	Species Association	Community Characteristics
SWT	Swamp Thicket		
SWT2	Mineral Thicket Swamp	Canopy: includes crack willow (Salix fragilis), eastern cottonwood, white willow, red ash. Understory: includes red-osier dogwood, Missouri willow (Salix eriocephala), Manitoba maple, and red ash. Ground cover: includes spotted-touch-me-not, reed canary grass, purple loosestrife (Lythrum salicaria), common reed (Phragmites australis), and broad-leaved cattail (Typha latiolia).	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Tree cover <25% hydrophytic shurbs >25% (T). Mineral soil (2).
SWT2-2	Willow Mineral Thicket Swamp	Canopy: includes red ash, Manitoba maple, and crack willow. Understory: includes Missouri willow, red-osier dogwood, and Manitoba maple. Ground cover: includes fowl meadow grass, reed canary grass, fox sedge (Carex vulpinoidea), spotted-touch-me-not, and purple loosestrife.	 Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). Tree cover <25% hydrophytic shurbs >25% (T). Mineral soil (2). Willow dominant (-2).
OAO	Open Aquatic		. ,
OAO	Open Aquatic	Not applicable.	 Water depth >2 m (O). No macrophyte vegetation, no tree or shrub cover (A). Plankton dominated (O).
MAS	Shallow Marsh		
MAS2		Emergent Trees/Shrubs: includes red-osier dogwood. Ground cover: includes common reed and broad-leaved cattail.	 Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). Water up to 2 m deep (MAS). Mineral soil (2).
MAS2-1	Cattail Mineral Shallow Marsh	Emergent Trees/Shrubs: includes corkscrew willow (Salix matsudana), Missouri willow, and silver poplar (Populus alba). Ground cover: includes narrow-leaved cattail (Typha angustifolia), broad-leaved cattail, lesser duckweed (Lemna minor), common water plantain (Alisma plantago-aquatica), and water speedwell (Veronica anagallis-aquatica).	 Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). Water up to 2 m deep (MAS). Mineral soil (2). Cattails are dominant (-1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
MAM	Meadow Marsh		
MAM2-2	Reed-canary Grass Mineral Meadow Marsh	Emergent Trees/Shrubs: includes red ash, trembling aspen, and Missouri willow. Ground cover: includes reed canary grass, spotted joe-pye weed (Eupatorium maculatum var. maculatum), fox sedge, cursed buttercup (Ranunculus sceleratus var. sceleratus), dark-green bulrush (Scirpus atrovirens), and narrow-leaved cattail.	 Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). Species less tolerant of prolonged flooding (MAM). Mineral soil (2). Reed-canary grass dominant (2).
MAM2-5	Narrow-leaved Sedge Mineral Meadow Marsh	Emergent Trees/Shrubs: includes red osier dogwood, eastern white cedar, white elm and white willow. Ground cover: includes cursed buttercup, blue vervain (Verbena hastata), perfoliate thoroughwort (Eupatorium perfoliatum), blue flag (Iris versicolor), Canada rush (Juncus canadensis), and porcupine sedge (Carex hystericina).	 Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). Species less tolerant of prolonged flooding (MAM). Mineral soil (2). Narrow-leaved sedges dominant (-5).
MAM2-10	Forb Mineral Meadow Marsh	Emergent Trees/Shrubs: includes red-osier dogwood. Ground cover: includes purple loosestrife, cut-leaved water-horehound (<i>Lycopus americanus</i>), mouse-ear scorpion-grass (<i>Myosotis scorpiodes</i>), cursed buttercup, and watercress (<i>Rorippa nasturtium-aquaticum</i>).	 Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). Species less tolerant of prolonged flooding (MAM). Mineral soil (2). Forb dominant (-10).
OTHER**	Manicured and Hed	lgerow	· ,
M and H	Manicured grasses and planted shrubs and/or trees	Areas where large expanses of grass/shrubs/trees are maintained and/or planted. Trees/shrubs: includes black walnut, white elm, red-osier dogwood, chokecherry, Manitoba maple and red ash.	

TABLE 2.

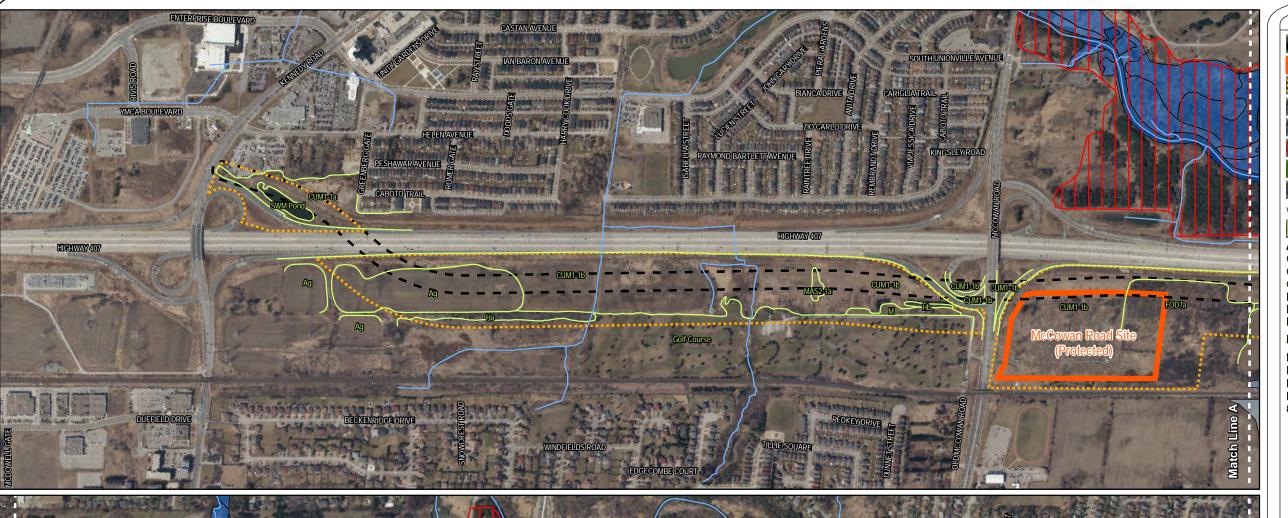
SUMMARY OF TRCA PLANT SPECIES OF CONCERN IDENTIFIED WITHIN THE STUDY AREA

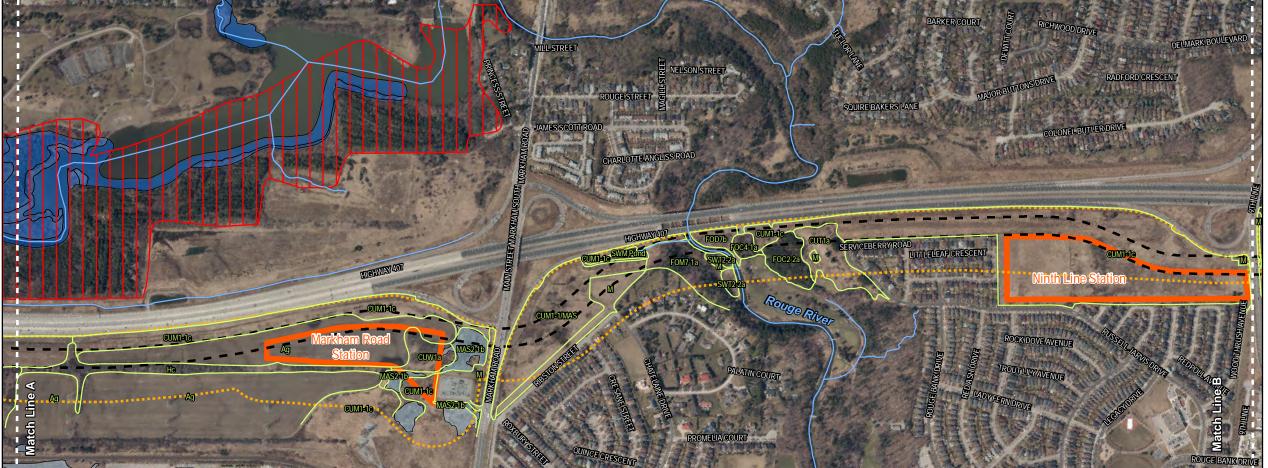
Scientific Name	Common Name	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUS1b	CUW1b	CUW1g	FOC	FOC1-2	FOC2-2b	FOC4-1b	FOC4-1c	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOM7-1a	FOM7-2	Hedgerow A	Hedgerow H	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2d	MAM2-5
Equisetum fluviatile	water horsetail	L3			X																										
Equisetum pratense	meadow horsetail	L3	X				X		X						X	X	X			X	X						X	X	X	X	X
Osmunda cinnamomea	cinnamon fern	L2																		X											
Gymnocarpium dryopteris	oak fern	L3															X														
Picea glauca	white spruce	L3						X				X													X	X					
Caulophyllum thalictroides	blue cohosh	L2																X		X		X	X								
Ulmus rubra	slippery elm	L2																X		X	X										
Juglans cinerea	butternut	L3																		X											
Polygonum amphibium	water smartweed	L3																						X							
Salix petiolaris	slender willow	L3		X																				X							
Ribes hirtellum	smooth gooseberry	L3								X					X		X	X													
Geum laciniatum	rough avens	L3																		X											
Vicia americana	purple vetch	L3									X								ĺ												X
Circaea alpina	smaller enchanter's nightshade	L3									X																				
Cornus rugosa	round-leaved dogwood	L3																		X											
Rhamnus alnifolia	alder-leaved buckthorn	L3											X																		
Aralia racemosa ssp. racemosa	spikenard	L3															X														
Hydrocotyle americana	American marsh- pennywort	L3															X														
Lobelia siphilitica	great lobelia	L3															X														
Lonicera canadensis	American fly	L3																I	T	I	X	Ī									

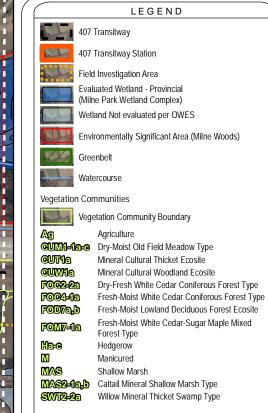
TABLE 2.

SUMMARY OF TRCA PLANT SPECIES OF CONCERN IDENTIFIED WITHIN THE STUDY AREA

Scientific Name	Common Name	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUS1b	CUW1b	CUW1g	FOC	FOC1-2	FOC2-2b	FOC4-1b	FOC4-1c	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOM7-1a	FOM7-2	Hedgerow A	Hedgerow H	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2d	MAM2-5
	honeysuckle																														
Viburnum acerifolium	maple-leaved viburnum	L3															X														
Viburnum opulus var. americanum	high bush cranberry	L2																						X							
Carex canescens ssp. canescens	silvery sedge	L3																		X											
Carex comosa	bristly sedge	L3																													
Carex plantaginea	plantain-leaved sedge	L3																	X	X											
Cladium mariscoides	water bog-rush	L1	X																												
Bromus ciliatus	fringed brome	L3																													
Elymus canadensis	nodding wild rye	L3			X																										
Sorghastrum nutans	Indian grass	L2				X																									
Lilium michiganense	Michigan lily	L3													X																
Streptopus lanceolatus var. roseus	rose twisted-stalk	L3													X																
Trillium cernuum	nodding trillium	L1												X																	
Trillium erectum	purple trillium	L3																	X	2											
Trillium grandiflorum	white trillium	L3															X		X	X											
Iris versicolor	multi-coloured blue-flag	L3																													X







Data Sources: LGL Limited field surveys, Ministry of Natural

200 100 0

200 Metres

NATURAL HERITAGE

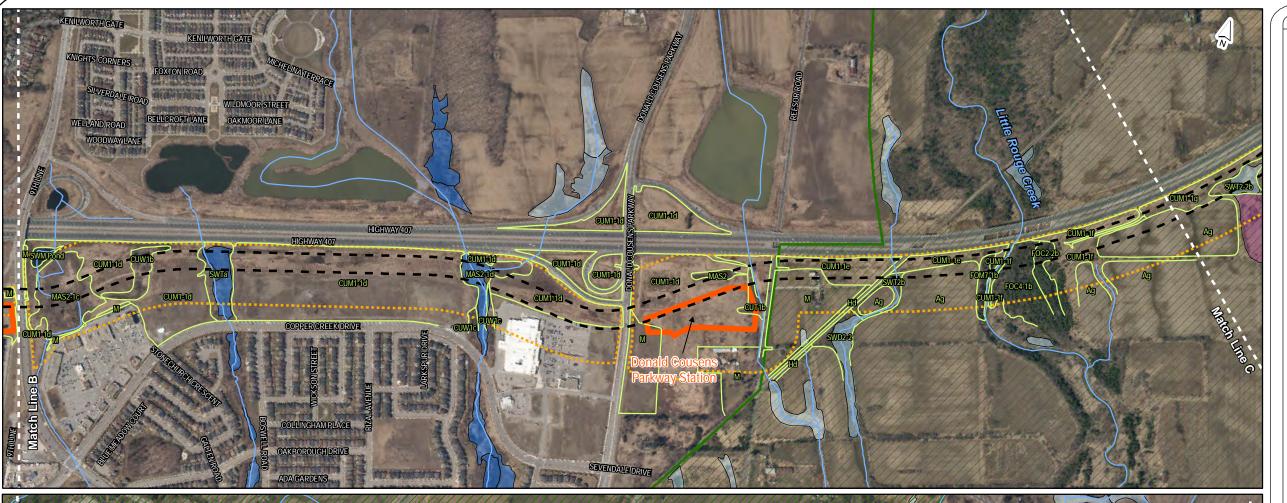


 Project: TA8429
 Figure:
 2a

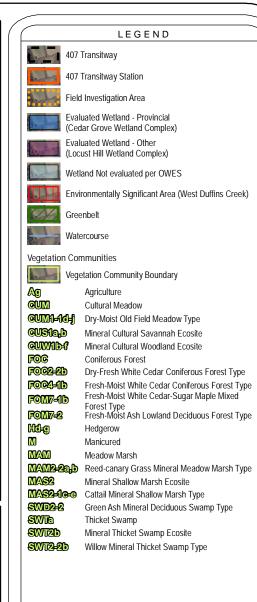
 Date:
 October, 2016
 Prepared By: MWF

 Scale:
 1:10,500
 Checked By: LMC

C:_TA\TA8429 - 407 Transitway Kennedy to Brock\Maps\Natural Heritage\NHa.mxd







Data Sources: LGL Limited field surveys, Ministry of Natural Resources (LIO).

100 0

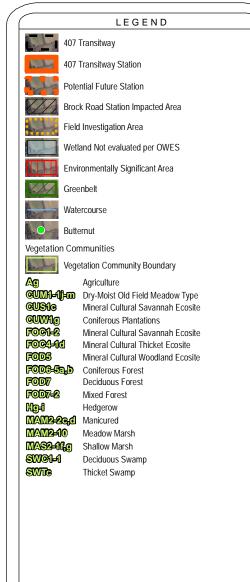
200 Metres

NATURAL HERITAGE



Project	: TA8429	Figure:	2b
Date:	October, 2016	Prepared By	: MWF
Scale:	1:10,500	Checked By	: LMC





Data Sources: LGL Limited field surveys, Ministry of Natural Resources (LIO).

200 Metres

NATURAL HERITAGE



Project: TA8429 Figure: Date: October, 2016 Prepared By: MWF Scale: 1:10,500 Checked By: LMC

C:_TA\TA8429 - 407 Transitway Kennedy to Brock\Maps\Natural Heritage\NHc.mxd

Information concerning species at risk, previously recorded within the study area limits, was obtained from the Natural Heritage Information Centre (NHIC). Data requests from MNRF Aurora District and TRCA were made and data were received from both agencies. More general information relating to wildlife and wildlife habitat was obtained following a review of published and non-published sources, including data provided by Bird Studies Canada.

3.3.2 Data Sources

The information relating to wildlife and wildlife habitat was obtained through the following published and non-published sources:

- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. *Atlas of the Breeding Birds of Ontario*, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp;
- Committee on the Status of Endangered Wildlife in Canada. 2002. Species at Risk. Ottawa;
- Couturier, A. 1999. Conservation Priorities for the Birds of Southern Ontario. Bird Studies Canada;
- Dobbyn, J.S. 1994. *Atlas of the Mammals of Ontario*. Federation of Ontario Naturalists. Toronto;
- Harding, J. H. 1997. *Amphibians and Reptiles of the Great Lakes Region*. The University of Michigan Press, Michigan. 378pp;
- Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide*. Fish and Wildlife Branch, Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources. 2001. *Index List of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario.* Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources and Forestry. 2015. *Natural Heritage Information Centre Biodiversity Explorer*. Website available online at: http://nhic.mnr.gov.on.ca/. Ministry of Natural Resources and Forestry. Peterborough, Ontario;
- Field investigations on April 28, 29, May 8, 13, 14, 29 and September 1, 2, 2015.

3.3.3 Findings

3.3.3.1 Wildlife Habitat

There are many natural heritage features located along the 407 Transitway, especially in the eastern half of the study area, where major watercourse crossings occur. The Rouge River, Little Rouge Creek, Whitevale Creek, and Urfe Creek combined with wetland complexes such as the Locust Hill Wetland Complex and Whitevale Wetlands make up the most dominant natural heritage features along the 407 Transitway, or in the immediate vicinity, that wildlife would use as potential breeding areas and travel corridors throughout the year. Numerous woodlots exist along both sides of 407 ETR, some of them considered environmentally sensitive, such as the Milne Woods ESA and West Duffins ESA. Interspaced between these natural heritage features are numerous open areas classified as cultural meadows, thickets and agricultural lands.

Evidence of wildlife use was widespread throughout the study area. Widely distributed species, based on observations during field work, include White-tailed Deer (*Odocoileus virginianus*), Coyote (*Canis latrans*), Song Sparrow (*Melospiza melodia*) and Red-winged Blackbird (*Agelaius phoeniceus*). Storm water management (SWM) ponds, wetlands associated with watercourse crossings and valleylands associated with large watercourse crossings contained the highest diversity of species. Some SWM ponds

supported breeding Green Frogs (*Lithobates clamitans*) and several with large open water components were used as foraging areas for Tree Swallow (*Tachycineta bicolor*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*) and Barn Swallow (*Hirundo rustica*). Old fields and agricultural lands contained species typically associated with these habitats. The 407 Transitway corridor crossed the larger valleys associated with the more significant watercourses with bridges. These areas provided significant corridors for wildlife movement as indicated by the high number of tracks observed. Roadkill was not observed, with the exception of a single Great Blue Heron (*Ardea herodias*) and a White-tailed Deer, indicating that the majority of corridor crossings by wildlife species occur under the larger structures. The structures also provided nesting areas for birds.

3.3.3.2 Wildlife Species

A list of wildlife recorded within habitats along the 407 Transitway corridor by LGL and others, including wildlife expected to be present based on habitat conditions observed, is presented in **Table 3**. A total of 105 wildlife species (75 observed, 30 expected) are listed in **Table 3** as occurring or expected to occur within the study area.

A total of 60 bird species were observed within the study area during field investigations. As the field surveys were conducted during the spring migration period, some of the species observed were likely migrants passing through the study area on the way to breeding areas to the north. Based on the habitat types present in the study area, additional bird species (13) that inhabit open country, thicket, forest, forest edge, wetland, aquatic and anthropogenic habitat types may be expected to breed within and immediately adjacent to the study area. Almost all species observed or expected to occur within the study area are typical of the natural, rural and urban habitats associated with the 407 Transitway corridor specifically and Southern Ontario in general.

Twenty three bird species identified during field investigations are designated as priority species for conservation by Bird Studies Canada (see **Table 3**). These species are representative of all habitat types within the study area. Nests, or potential nesting activity, of some of these species were observed under the larger watercourse crossing structures (bridges) and are discussed below.

Six herpetofauna species were observed in the study area during field investigations. Based on the habitat types present, an additional nine species may be expected to occur within or adjacent to the study area. Breeding evidence (calls and/or tadpoles) of American Toad (*Anaxyrus americanus*), Wood Frog (*Lithobates sylvatica*), Leopard Frog (*L. pipiens*) and Green Frog (*L. clamitans*) were observed in some wetland habitats, including storm water management facilities. The large pond located between Sideline 24 and Brock Road contained habitat for Painted Turtles (*Chrysemys picta*), which were observed, and likely provides habitat for Snapping Turtle (*Chelydra serpentina*), Northern Watersnake (*Nerodia sipedon*) and toads/frogs.

3.3.3.3 Wildlife Species at Risk

A review of the NHIC database for rare species records indicated four species at risk have been documented. Eastern Ribbonsnake (*Thamnophis sauritus*-SC) was documented in the eastern half of the study area where more suitable habitat for this species exists; however it has not been recorded since 1984. Snapping Turtle (*Chelydra serpentina*-SC), last recorded in 2003, was predominantly recorded in the western half (urbanized section) of the study area. Bobolink (*Dolichonyx oryzivorus*-THR), last recorded in 2003, has been documented around Reesor Road, north of 407 ETR, along North Road south of 407 ETR and along Brock Road. Eastern Meadowlark (*Sturnella magna*-THR) was last recorded in 2004 and was documented north of 407 ETR west of the York-Durham Line and around Brock Road. No Bobolink or Eastern Meadowlark were recorded during 2015 field investigations.

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC ¹	ESA ¹	Legal Status ¹	Local ²
Herpetofauna	Plethodon cinereus	Red-backed Salamander*			FWCA(P)	
_	Anaxyrus americanus	American Toad				
	Lithobates sylvatica	Wood Frog				
	Lithobates pipiens	Leopard Frog				
	Lithobates clamitans	Green Frog				
	Hyla versicolor	Gray Treefrog*			FWCA(P)	
	Pseudacris crucifer	Spring Peeper*				
	Chelydra serpentina	Snapping Turtle*	SC	SC	SARA(1)/FWCA(G)	
	Chrysemys picta	Painted Turtle			FWCA(P)	
	Thamnophis sirtalis	Eastern Gartersnake				
	Thamnophis sauritus	Eastern Ribbonsnake*	SC	SC	SARA(1)	
	Nerodia sipedon	Northern Watersnake*				
	Storeria dekayi	Dekay's Brown Snake*				
	Storeria occipitomaculata	N. Red-bellied Snake*				
	Lampropeltis triangulum	Milksnake*	SC	SC	SARA(1)/FWCA(P)	
Birds	Branta canadensis	Canada Goose			MBCA	
	Anas platyrhynchos	Mallard			MBCA	
	Anas rubripes	American Black Duck*			MBCA	BSC
	Ardea herodias	Great Blue Heron			MBCA	
	Buteo jamaicensis	Red-tailed Hawk			FWCA(P)	
	Accipiter cooperi	Cooper's Hawk*			FWCA(P)	BSC
	Falco sparverius	American Kestrel*			FWCA(P)	BSC
	Rallus limicola	Virginia Rail*			MBCA	BSC
	Porzana carolina	Sora*			MBCA	BSC
	Charadrius vociferus	Killdeer			MBCA	
	Actitis macularis	Spotted Sandpiper			MBCA	BSC

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC ¹	ESA ¹	Legal Status ¹	Local ²
	7:1	Manusina Dana			MBCA	
	Zenaida macroura	Mourning Dove			MIDCA	
	Columba livia	Rock Pigeon			ETHICA (D)	
	Megascops asio	Eastern Screech Owl*			FWCA(P)	
	Ceryle alcyon	Belted Kingfisher			FWCA(P)	
	Picoides pubescens	Downy Woodpecker			MBCA	
	Picoides villosus	Hairy Woodpecker			MBCA	
	Colaptes auratus	Northern Flicker			MBCA	
	Dryocopus pileatus	Pileated Woodpecker			MBCA	BSC
	Contopus virens	Eastern Wood Pewee	SC	SC	MBCA	
	Empidonax traillii	Willow Flycatcher			MBCA	
	Empidonax alnorum	Alder Flycatcher*			MBCA	BSC
	Empidonax minimus	Least Flycatcher*			MBCA	BSC
	Sayornis phoebe	Eastern Phoebe			MBCA	BSC
	Myiarchus crinitus	Great Crested Flycatcher*			MBCA	
	Tyrannus tyrannus	Eastern Kingbird			MBCA	BSC
	Vireo olivaceus	Red-eyed Vireo			MBCA	
	Vireo gilvus	Warbling Vireo			MBCA	
	Cyanocitta cristata	Blue Jay			FWCA(P)	
	Corvus corax	Common Raven				
	Corvus brachyhrynchos	American Crow				
	Eremophilia alpestris	Horned Lark			MBCA	BSC
	Tachycineta bicolor	Tree Swallow			MBCA	
	Stelgidopteryx serripennis	N. Rough-winged Swallow			MBCA	BSC
	Petrochelidon pyrrhonota	Cliff Swallow			MBCA	BSC
	Hirundo rustica	Barn Swallow	THR	THR	MBCA	BSC
	Poecile atricapillus	Black-capped Chickadee			MBCA	BSC
	Sitta canadensis	Red-breasted Nuthatch			MBCA	BSC

LGL Limited environmental research associates

TABLE 3.
WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC ¹	ESA ¹	Legal Status¹	Local ²
	~		1			
	Sitta carolinensis	White-breasted Nuthatch			MBCA	
	Troglodytes aedon	House Wren*			MBCA	
	Regulus calendula	Ruby-crowned Kinglet			MBCA	BSC
	Turdus migratorius	American Robin			MBCA	
	Mimus polyglottos	Northern Mockingbird			MBCA	BSC
	Dumetella carolinensis	Gray Catbird			MBCA	BSC
	Toxostoma rufum	Brown Thrasher			MBCA	BSC
	Sturnus vulgaris	European Starling				
	Bombycilla cedrorum	Cedar Waxwing			MBCA	
	Mniotilta varia	Black-and-white Warbler			MBCA	BSC
	Oreothlypis ruficapilla	Nashville Warbler			MBCA	BSC
	Geothlypis trichas	Common Yellowthroat*			MBCA	
	Dendroica petechia	Yellow Warbler			MBCA	
	Dendroica pensylvanica	Chestnut-sided Warbler*			MBCA	BSC
	Setophaga caerulescens	Black-throated Blue Warbler			MBCA	BSC
	Setophaga palmarum	Palm Warbler			MBCA	
	Spizella pusilla	Field Sparrow			MBCA	BSC
	Spizella passerina	Chipping Sparrow			MBCA	
	Pooecetes gramineus	Vesper Sparrow			MBCA	BSC
	Passerculus sandwichensis	Savannah Sparrow			MBCA	BSC
	Melospiza melodia	Song Sparrow			MBCA	
	Melospiza georgiana	Swamp Sparrow			MBCA	BSC
	Zonothrichia albicollis	White-throated Sparrow			MBCA	BSC
	Piranga olivacea	Scarlet Tanager*			MBCA	BSC
	Cardinalis cardinalis	Northern Cardinal			MBCA	
	Pheucticus ludovicianus	Rose-breasted Grosbeak			MBCA	
	Passerina cyanea	Indigo Bunting			MBCA	
	Quiscalus quiscula	Common Grackle				

LGL Limited environmental research associates

TABLE 3. WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA

Wildlife	Scientific Name	Common Name	COSEWIC ¹	ESA ¹	Legal Status ¹	Local ²
	Agelaius phoeniceus	Red-winged Blackbird				
	Quiscalus quiscula	Common Grackle				
	Molothrus ater	Brown-headed Cowbird				
	Icterus galbula	Baltimore Oriole			MBCA	
	Caprodacus mexicanus	House Finch			MBCA	
	Carduelis tristis	American Goldfinch			MBCA	BSC
	Passer domesticus	House Sparrow				
Mammals	Didelphis virginianus	Opossum*			FWCA(F)	
	Eptesicus fuscus	Big Brown Bat*			FWCA(P)	
	Sylvilagus floridanus	Eastern Cottontail*			FWCA(G)	
	Sciurus carolinensis	Gray Squirrel			FWCA(G)	
	Tamias striatus	Eastern Chipmunk			FWCA(P)	
	Marmota monax	Woodchuck*				
	Ondatra zibethicus	Muskrat			FWCA(F)	
	Castor canadensis	Beaver			FWCA(F)	
	Peromycus sp.	White-footed (Deer) Mouse*				
	Microtus pennsylvanicus	Meadow Vole				
	Erethizon dorsatum	Porcupine				
	Procyon lotor	Raccoon			FWCA(F)	
	Mustela vison	American Mink			FWCA(F)	
	Mephitis mephitis	Striped Skunk*			FWCA(F)	
	Canis latrans	Coyote			FWCA(F)	
	Vulpes vulpes	Red Fox*			FWCA(F)	
	Odocoileus virginianus	White-tailed Deer			FWCA(G)	

^{1,2} Refer to Appendix E for Acronyms and Definitions used in species lists.
*species not observed directly but expected to occur within the study area based on secondary source review and/or habitat characteristics

Four species at risk have been documented within or in proximity to the study area in the past and are presented in **Table 4**. Eastern Meadowlark and Bobolink are considered Threatened and regulated under the federal *Species at Risk Act* (SARA) and provincial *Endangered Species Act*, 2007 (ESA). Both species are also protected under the *Migratory Birds Convention Act* (MBCA). The Snapping Turtle and Eastern Ribbonsnake are both listed as Special Concern in Ontario. The *Fish and Wildlife Conservation Act* (FWCA) also protects the Snapping Turtle.

Two species at risk, Barn Swallow and Eastern Wood Pewee (*Contopus virens*) were confirmed to be present within the study area during field investigations. The Barn Swallow is regulated under the ESA and SARA and Eastern Wood Pewee is listed as Special Concern in Ontario. Forty nine (49) recorded bird species are protected under the *Migratory Birds Convention Act* (MBCA) and one reptile, three bird and six mammal species are protected under the *Fish and Wildlife Conservation Act* (FWCA).

Five additional species at risk have been identified as having potential to occur within the study area, based on NHIC data and habitats present. Three of these species are listed as Special Concern in Ontario and are not regulated under the ESA (See **Table 5**). The remaining two species, Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*), are both Threatened provincially and federally and are regulated under the ESA and SARA.

These two species, along with Barn Swallow, are discussed below.

Eastern Meadowlark

Review of the NHIC database indicated records of Eastern Meadowlark within the vicinity of the York-Durham Line and Sideline 20. The NHIC database had relatively recent (2003 and 2004) records for Eastern Meadowlark. The Eastern Meadowlark, a species with a broad distribution across southern Ontario, is regulated Threatened under the ESA and the SARA. The Eastern Meadowlark, formerly a prairie species, has adapted to agricultural practices of the European settlers (hayfields, pastures, etc.) (Cadman *et al.* 2007). As farming practices have become more efficient, Eastern Meadowlark numbers have declined. No individuals of this species were observed during the field investigations and, although they were conducted outside of the MNRF identified Eastern Meadowlark survey window, they were completed during a time (mid-spring) when this species typically returns to Southern Ontario to establish territories. However, even though this species was not observed, it is not possible to determine if Eastern Meadowlark are present / nesting within the study area. During the Spring 2015 field investigations LGL identified habitat which has the potential to be suitable to support Eastern Meadowlark. These areas are a cultural meadow north of Russel Jarvis Drive west of Ninth Line and the cultural meadows located between Donald Cousens Parkway and Reesor Road.

Bobolink

Review of the NHIC database indicated records of Bobolink as recently as 2003, within the vicinity of the North Road, Sideline 20 and Brock Road. The Bobolink, a species with a broad distribution across southern Ontario, is regulated Threatened under the ESA and the SARA. Bobolinks are typically described as residents of grassland communities with an abundance of grass species that are typical of old fields (Cadman *et al.* 2007). Bobolink are also commonly associated with agricultural lands. No individuals of this species were observed during the field investigations and, although they were conducted outside of the MNRF identified Bobolink survey window, they were completed during a time (mid-spring) when this species typically returns to Southern Ontario to establish territories. However, even though this species was not observed, it is not possible to determine if Bobolink are present / nesting within the study area. During the Spring 2015 field investigations LGL identified habitat which has the potential to be suitable to support Bobolink. These areas are a cultural meadow north of Russel Jarvis Drive west of Ninth Line and the cultural meadows located between Donald Cousens Parkway and Reesor Road.

TABLE 4.
SUMMARY OF WILDLIFE ELEMENT OCCURRENCE RECORDS WITHIN THE STUDY AREA

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ3757	Chelydra serpentina	Snapping Turtle	Quadrant northwest of 407 ETR and McCowan Road	7/14/2003
17PJ3857	Chelydra serpentina	Snapping Turtle	Quadrant along 407 ETR east of McCowan Road	7/14/2003
17PJ3958	Chelydra serpentina	Snapping Turtle	Quadrant northwest of 407 ETR and Markham Road	7/14/2003
17PJ4058	Chelydra serpentina	Snapping Turtle	Quadrant along 407 ETR east of Markham Road	7/14/2003
17PJ4058	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant along 407 ETR east of Markham Road	7/4/1984
17PJ4059	Chelydra serpentina	Snapping Turtle	Quadrant northeast of 407 ETR and Markham Road	7/14/2003
17PJ4359	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant at intersection of 407 ETR & Donald Cousens Pkwy	5/17/1968
17PJ4459	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant southeast 407 ETR and Reesor Road	5/17/1968
17PJ4460	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant northeast 407 ETR and Reesor Road	5/17/1968
17PJ4461	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant north of Highway 7 and east of Reesor Road	5/17/1968
17PJ4560	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant southwest of 407 ETR and York Durham Townline	5/17/1968
17PJ4561	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant at intersection of 407 ETR and Highway 7	5/17/1968
17PJ4561	Sturnella magna	Eastern Meadowlark	Quadrant at intersection of 407 ETR and Highway 7	29/5/2004
17PJ4661	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant south of 407 ETR east of York Durham Townline	5/17/1968
17PJ4662	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant north of 407 ETR east of Sideline 34	5/17/1968
17PJ4762	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant around intersection of 407 ETR and North Road	5/17/1968
17PJ4762	Dolichonyx oryzivorus	Bobolink	Quadrant around intersection of 407 ETR and North Road	6/8/2003
17PJ4862	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant south of 407 ETR east of North Road	5/17/1968
17PJ4962	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant south of 407 ETR west of Sideline 4	5/17/1968
17PJ4963	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant southwest of Highway 7 and Sideline 24	5/17/1968
17PJ5063	Thamnophis sauritus	Eastern Ribbonsnake	Quadrant around 407 ETR and Sideline 22	5/17/1968

TABLE 4.

SUMMARY OF WILDLIFE ELEMENT OCCURRENCE RECORDS WITHIN THE STUDY AREA

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ5163	- · · · · · · · · · · · · · · · · · · ·	Eastern Ribbonsnake	Quadrant south of 407 ETR and Country Lane intersection	5/17/1968
17PJ5164	- · · · · · · · · · · · · · · · · · · ·	Eastern Ribbonsnake	Quadrant around 407 ETR and Sideline 20 intersection	5/17/1968
17PJ5164	Dolichonyx oryzivorus	Bobolink	Quadrant around 407 ETR and Sideline 20 intersection	6/30/2003
17PJ5164	Sturnella maona	Eastern Meadowlark	Quadrant around 407 ETR and Sideline 20 intersection	6/30/2003
17PJ5263		Eastern Ribbonsnake	Quadrant south of 407 ETR around Brock Road	5/17/1968
17PJ5263	Dolichonyx oryzivorus	Bobolink	Quadrant south of 407 ETR around Brock Road	6/30/2003
17PJ5264	I	Eastern Ribbonsnake	Quadrant northeast of 407 ETR and Brock Road intersection	5/17/1968
17PJ5264	Dolichonyx oryzivorus	Bobolink	Quadrant northeast of 407 ETR and Brock Road intersection	6/30/2003
17PJ5364	- · · · · · · · · · · · · · · · · · · ·	Eastern Ribbonsnake	Quadrant south of Highway 7 and east of Sideline 16	5/17/1968

Barn Swallow

Barn Swallow is regulated as Threatened under the ESA and the SARA. The Barn Swallow generally builds mud nests on bridges, walls, ledges and barns (Cadman *et al.* 2007). The Barn Swallow typically forages in open areas such as agricultural lands, meadows or over water. During field investigations several individuals were observed foraging over agricultural fields and open water areas throughout the study area. Two potential unoccupied Barn Swallow nests were observed under the Crossing D1/D2 structure of the 407 ETR. No other Barn Swallow nests were identified within any other culverts or under/on any other structures within study area. Habitat considered suitable to support foraging Barn Swallow was identified across much of the study area, with the exception of forested habitats, and many were observed foraging over agricultural lands and open water habitats.

TABLE 5.
WILDLIFE SPECIES AT RISK SUMMARY

Scientific Name	Common Name	Location (s)	S-rank	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
Sturnella magna	Eastern Meadowlark	CUM north of Russel Jarvis Drive west of Ninth Line and CUM between Donald Cousins Parkway and Reesor Road (potential)	S4B	THR	THR	2004	Open country and agricultural	Open country and agricultural habitat types identified may provide habitat suitable to support Eastern Meadowlark.
Dolichonyx oryzivorus	Bobolink	CUM north of Russel Jarvis Drive west of Ninth Line and CUM between Donald Cousins Parkway and Reesor Road (potential)	S4B	THR	THR	2004	Open country and agricultural	Open country and agricultural habitat types identified may provide habitat suitable to support Bobolink.
Hirundo rustica	Barn Swallow	CUM north of Cresthaven Golf Club between Kenndy Road and McCowan Road; Marsh east of Markham Road; SWM pond west of Rouge River; CUM between Donald Cousens Parkway and Reesor Road; potential nests under structure D1/D2 crossings between York-Durham Line and North Road	S4B	THR	THR	2014	Open country and agricultural	Open country, agricultural and aquatic habitat types identified provide habitat suitable to support foraging Barn Swallow. Potential unoccupied nests identified under D1/D2 structure.

^{*}Preferred habitat is based on a review of secondary sources; however, these species may be found in other habitats. For definitions of the acronyms used in this table, refer to **Appendix D**.

4.0 IMPACT ASSESSMENT AND MITIGATION

4.1 Physiography and Soils

The clay and loam soils located along the Transitway facility footprint and at station locations are susceptible to erosion and will be impacted during construction of the mainline and station facilities. Consequently, soil disturbance associated with drainage improvements, grading revisions, culvert extension, etc. may result in erosion of, and sedimentation to, sensitive receiving watercourses. For this reason, standard erosion and sedimentation control measures will be followed during construction in accordance with Ontario Provincial Standard Specification (OPSS) 805 to minimize construction-related impacts on surface water quality and fish habitat. Site-specific erosion and sedimentation control measures to be implemented prior to construction will be identified during detail design following the Environmental Guide for Erosion and Sediment Control during Construction of Highway Projects (MTO 2007). Erosion and sedimentation control measures will include:

- placing straw bale flow checks at regular intervals in ditches down-gradient from areas of soil disturbance in rural sections;
- protecting inlets to catch basins and maintenance holes in urban sections;
- placing silt fence along stream margins in areas of soil disturbance;
- limiting the extent and duration that soils are exposed to the elements to the minimum area and time necessary to perform the work;
- applying seed and mulch, tackifier and/or erosion control blanket in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization; and,
- monitoring and maintenance of erosion and sedimentation control measures during construction to ensure their effectiveness.

These environmental protection measures will greatly reduce the potential for soil erosion and impairment of surface water quality and fish habitat.

4.2 Vegetation Communities

Implementation of the 407 Transitway between Kennedy Road and Brock Road has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to the construction of the Highway 407 Transitway between Kennedy Road and Brock Road and associated facilities could include:

- Displacement of and/or disturbance to vegetation and vegetation communities; and,
- Displacement of and/or disturbance to Rare, Threatened or Endangered Vegetation and Vegetation Communities.

Displacement of and/or disturbance to vegetation and vegetation communities

The loss of vegetation and vegetation communities has been broken down into two categories, the preferred runningway for the 407 Transitway, and the associated stations. Overall, there will be a loss of 110.284 ha of vegetation communities which includes a loss of 86.224 ha due to the preferred runningway, and a loss of 24.06 ha due to the stations. Collectively, this will result in impacts to both terrestrial and wetland habitats.

The following is a detailed discussion of impacts to vegetation and vegetation community discussed per the preferred runningway and each of the five Transitway stations and one temporary bus garage.

4.2.1 Runningway Impacts

Table 6 provides a summary of the vegetation removals required per segment of the preferred runningway of the 407 Transitway between Kennedy Road and Brock Road. A discussion of the impacts to each segment is provided below.

Table 6.
Summary of Vegetation Removals Within the Transitway Runningway

Transitway Segment	Total Area to Be Impacted (Ha)
Kennedy Road to West of Markham Road	/
Cultural Communities (CUM1-1a and b)	10.93
Forest Communities (FOD7a)	1.30
Wetland Communities (MAS2-1a)	0.11
Anthropogenically Influenced Lands (Agricultural, Hedgerow, and SWM Pond)	5.88
Subtotal Kennedy Road to West of Markham Road	18.22 ha
Markham Road Station to Ninth Line Station	•
Cultural Communities (CUM1-1/MAS, CUM1-1b to d, and CUT1a)	8.75
Forest Communities (FOC2-2a, FOC4-1a, FOD7b, and FOM7-1a)	1.46
Wetland Communities (MAS2-1b)	0.30
Anthropogenically Influence Lands (Agricultural, Manicured, Hedgerow, and SWM Pond)	1.47
Subtotal Markham Road Station to Ninth Line Station	11.98 ha
Ninth Line Station to Donald Cousens Parkway Potential Future Station	
Cultural Communities (CUM1-1c and CUW1c)	5.104
Wetland Communities (MAS2-1c and d and SWTa)	0.91
Anthropogenically Influence (Manicured)	0.04
Subtotal Ninth Line Station to Donald Cousens Parkway Potential Future Station	6.054 ha
Donald Cousens Parkway Potential Future Station to Whites Road Station	
Cultural Communities (CUM/MAM, CUM1-1d to k, CUS1a and b, and CUW1e and f)	18.36
Forest Communities (FOC, FOC2-2b, FOC4-1 b and c, FOM7-1b, and FOM7-2)	2.34
Wetland Communities (MAM2-2 a and b, MAM2-5, MAS2-1e and SWTb)	1.36
Anthropogenically Influence Lands (Agricultural, Manicured, Hedgerow, and SWM Pond)	8.52
Subtotal Donald Cousens Parkway Potential Future Station to Whites Road Station	30.58 ha
Whites Road Station to Rossland Road Station	
Cultural Communities (CUM1-1k and 1)	4.18
Forest Communities (FOD5 and FOD7-2)	0.97
Wetland Communities (MAM2-2c and d, MAS2-1f, and SWTc)	0.89
Anthropogenically Influence Lands (Agricultural, and Hedgerows)	3.48
Subtotal Whites Road Station to Rossland Road Station	9.52 ha
Rossland Road Station to Brock Road Station	
Cultural Communities (CUM1-11 and j, and CUW1g)	2.74
Forest Communities (FOC1-2, FOC4-1d, FOC6-5b, and FOD7)	3.70
Wetland Communities (OAO, SWC1-1, MAM2-10 and MAS2-1g)	0.97
Anthropogenically Influence Lands (Agricultural)	0.32
Subtotal Rossland Road Station to Brock Road Station	7.73 ha
Transitway East of Brock Road Station	
Cultural Communities (CUM1-1m, and CUS1c)	0.97
Forest Communities (FOC4-1d)	1.18
	i
Subtotal East of Brock Road Station	2.15 ha

4.2.1.1 Kennedy Road to West of Markham Road

A total of 18.22 ha of naturalized and/or planted area will be removed as a result of the proposed 407 Transitway runningway between Kennedy Road to west of Markham Road. The largest impact will be to cultural meadow communities (CUM1-1a and b). Overall, impacts resulting in the loss of vegetation within these cultural meadow communities is considered to be minor. It is expected that plant species displaced and/or disturbed within the cultural communities due to the proposed construction will recolonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

In addition impacts will occur to one forest (FOD7a) and one wetland (MAS2-1a) community. Edge impacts will occur to the Lowland Deciduous Forest community. New forest edges are exposed to a greater potential for non-native and invasive species infiltration further into the forest, and as such, forest edge management is recommended. Impacts to the shallow marsh community will result in the removal of the majority of the wetland. Shallow marsh communities are widespread and common throughout Ontario and as a result, impacts are considered to be minor.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerows and a SWM Pond. Impacts to these lands are considered to be minor.

4.2.1.2 Markham Road Station to Ninth Line Station

A total of seven ELC community types will be impacted as a result of the proposed Transitway runningway between the Markham Road station and Ninth Line Station including cultural meadow (CUM1-1), cultural thicket (CUT1), coniferous forest (FOC2-2a and FOC4-1a), lowland deciduous forest (FOD7b), white cedar-sugar maple deciduous forest (FOM7-1) and cattail shallow marsh (MAS2-1b), with a total of 11.98 ha of land impacted.

Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant. As a result, impacts to the cultural meadow and cultural thicket communities are considered to be minor.

Impacts to the FOC2-2a and FOM7-1 communities will result in the removal of the edge of the community adjacent to 407 ETR. Forest edge management should be implemented to protect the newly exposed forest edge. Impacts to the FOD7b and FOC4-1a will result in the removal of the majority of the community. Compensation should be provided for the removal of these two forest communities.

Impacts to the cattail shallow marsh community will result in the removal of a large portion of the community adjacent to 407 ETR. Efforts should be made to retain the remaining portion of the MAS2-1b community to the extent possible. Cattail shallow marsh communities are widespread and common in Ontario and the loss of a portion adjacent to the preferred runningway is not expected to have any negative impacts to the remaining portions of cattail shallow marsh within the study area.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerow, manicured lands and a SWM Pond. Impacts to these lands are considered to be minor.

4.2.1.3 Ninth Line Station to Donald Cousens Future Potential Station

Impacts to vegetation communities between Ninth Line and the Donald Cousens Future Potential Station will result in the removal of approximately 6.054 ha of vegetation communities including the removal of a portion of cultural meadow (CUM1-1c), cultural woodland (CUW1c), shallow marsh (MAS2-1d), swamp thicket (SWTa) and manicured lands.

Impacts to the cultural meadow (CUM1-1c) and cultural woodland (CUW1c) are considered to be minor. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species present in the cultural communities.

Impacts to the cattail shallow marsh (MAS2-1d) and swamp thicket (SWTa) will result in the removal of a small portion of the northern edge of each community. Impacts to the cattail shallow marsh (MAS2-1d) and swamp thicket (SWTa) will result in the removal of a small portion of the northern edge of each community. These wetland communities form part of the newly designated Provincially Significant Cedar Grove Wetland Complex. The runningway will cross over these areas in order to avoid and/or minimize impacts to this wetland complex.

Impacts to anthropogenically influenced lands will include the removal of a portion of manicures lands. Impact to these manicured lands are considered to be minor.

4.2.1.4 Donald Cousens Parkway Future Potential Station to Whites Road Station

Impacts to vegetation communities between the Donald Cousens Parkway Future Potential Station and the Whites Road Station will result in the removal of approximately 30.58 ha of vegetation communities including the removal of a portion of cultural meadow (CUM/MAM, CUM1-1d to k), cultural savannah (CUS1a and b), cultural woodland (CUW1e and f), coniferous forest (FOC, FOC2-2b, FOC4-1b and c), mixed forest (FOM7-1b and FOM7-2), meadow marsh (MAM2-2a and b, MAM2-5), shallow marsh (MAS2-1e) and swamp thicket (SWTb).

Impacts to the cultural meadow (CUM/MAM, CUM1-1d to k), cultural savannah (CUS1a and b), and cultural woodland (CUW1e and f) are considered to be minor. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species present in the cultural communities.

Construction of the runningway will result in the removal of the northern edge of the white cedar coniferous forest (FOC2-2b and FOC4-1b and c), ash lowland deciduous forest (FOM7-2) and white cedar-sugar maple mixed forest (FOM7-1b). Though removal of the northern portion of the communities can have a negative impact, the adjacent forest lands are large and will likely continue to persist post-construction. Forest edge management should be implemented to protect the newly expose forest edges. Impacts to the coniferous forest (FOC) community will result in the removal of a small portion of the southern edge of the community. The coniferous forest community is highly disturbed as a result of the existing Highway 407 ETR alignment and as a result, impacts to the FOC community are considered to be minor.

Impacts to the meadow marsh (MAM2-2a and b), cattail shallow marsh (MAS2-1e) and swamp thicket (SWTb) will result in the removal of a small portion of the northern edge of each community. These wetland communities are widespread and common throughout Ontario and the loss of a portion of these vegetation communities is not expected to have any negative impacts to the remaining portions within the

study area. Impacts to the narrow leaved sedge meadow marsh (MAM2-5) and green ash deciduous swamp (SWD2-2) will result in the removal of the majority of the community, it is likely this community will cease to exist to post-construction. Compensation should be provided for the impacts to these wetland communities.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, hedgerow, manicured lands and a SWM Pond. Impacts to these lands are considered to be minor.

The **Rouge National Urban Park** transverses the study area within this section. It starts east of the CP/Havelock Railway (Proposed GO Line) tracks eastward to York-Durham Line. Impacts to vegetation communities within this subsection will result in the removal of approximately 10.17 ha of vegetation communities including 1.25 ha of wetlands (SWT2b, SWT2-2b, MAM2-2a, MAS2-1e), 5.62 ha of cultural meadow (CUM1-1e, CUM1-1f, CUM1-1g, CUM1-1h), 0.14 ha of deciduous forest (FOM7-1b), 0.76 ha of coniferous forest (FOC4-1b, FOC2-2b, FOC), 2.39 ha of hedge and agricultural areas.

4.2.1.5 Whites Road Station to Rossland Road Station

Impacts to vegetation communities between Whites Road Station and Rossland Road Station will result in the removal of approximately 9.52 ha of vegetation communities including cultural meadow (CUM1-1k and I), deciduous forest (FOD5 and FOD7-2), and wetland communities (MAM2-2c and d, MAS2-1f, and SWTc).

Cultural meadow communities are typically disturbance tolerant vegetation communities dominated by non-native and invasive plants species and as such, removal of a portion of cultural meadow communities is considered to be minor.

Impacts to the sugar maple deciduous forest (FOD5) will result in the removal of the entire portion of the community with an exception of a narrow strip adjacent to the existing 407 ETR. Impacts to the lowland deciduous forest (FOD7) community will result in the removal of a small portion of the southern edge of the community and as such, these impacts are considered to be minor. Forest edge management is recommended along the new edge of the FOD7 community.

Impacts to the cattail shallow marsh (MAS2-1f), meadow marsh (MAM2-2c and d), and swamp thicket (SWTc) will result in the removal of a portion of the edge of each community. Efforts should be made to retain the remaining portion of these wetland communities to the extent possible. All of these wetland community types are widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and hedgerows. Impacts to these lands are considered to be minor.

4.2.1.6 Rossland Road Station to Brock Road Station

A total of 7.73 ha of vegetation and vegetation communities will be removed as a result of the Highway 407 Transitway preferred runningway between the Rossland Road Station and Brock Road Station. Impacts will occur to cultural meadow (CUM1-11 and j) communities, cultural woodland (CUW1g), coniferous forest (FOC1-2, FOC4-1d), deciduous forest (FOD6-5b and FOD7), and wetland communities (MAM2-10, MAS2-1g, OAO, and SWC1-1).

Impacts to the cultural meadows (CUM1-11 and j) and cultural woodland (CUW1g) are considered to be minor. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance

tolerant. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species present in the cultural communities.

Impacts to the coniferous forest (FOC1-2, FOC4-1d) and deciduous forest (FOD6-5b and FOD7) will bisect the northern portion of the communities, creating a forest fragment. Though forest fragmentation can have a negative impact, the remaining portion of these communities to the south are large and as such, it is likely they will continue to persist post-construction. Forest edge management is recommended to prevent further impacts to the coniferous and deciduous forest communities.

Construction of the 407 Transitway will result in the removal of a small portion of the open aquatic (OAO) and coniferous swamp (SWC1-1). Impacts to the meadow marsh (MAM2-10) and shallow marsh (MAS2-1g) will remove a large portion of the community and only small fragment will remain. Efforts should be made to retain the remaining portion of these wetland communities to the extent possible. All of the above mentioned wetland communities are widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands. Impacts to these lands are considered to be minor.

4.2.1.7 East of Brock Road Station

Impacts to vegetation communities east of Brock Road will result in the removal of approximately 2.15 ha of vegetation communities including the removal of a portion of a cultural meadow, cultural savannah and coniferous forest. Impacts to the cultural meadow (CUM1-1m) and cultural savannah (CUS1c) community are considered to be minor. Both cultural meadow and cultural savannah are disturbance tolerant vegetation communities dominated by non-native and invasive plant species. These communities are widespread and common throughout Ontario.

The impact to the coniferous forest communities will involve the removal of a small portion of the coniferous forest (FOC4-1d) adjacent to Highway 7. Newly exposed forest edges are exposed to a greater potential for non-native and invasive species infiltration further into the forest. Therefore forest edge management is recommended to prevent negative impacts to the remaining portions of sugar maple deciduous forest.

4.2.2 Station Impacts

Table 7 provides a summary of the vegetation removals required per station for the preferred station locations for the 407 Transitway between Kennedy Road and Brock Road. Impacts associated with storm water management ponds at the respective stations are not included in the calculations below. A discussion of the impacts to vegetation and vegetation communities per station is provided below.

Table 7.

Summary of Vegetation Removals within the Transitway Stations

Transitway Segment	Total Area to Be Impacted (Ha)
Markham Road Station	
Cultural Communities (CUM1-1c and CUW1a)	1.24
Wetland Communities (MAS2-1b)	0.13
Anthropogenically Influenced Lands (Agricultural)	3.57
Subtotal Markham Road Station	4.94 ha
Ninth Line Station	
Cultural Communities (CUM1-1c)	8.14
Subtotal Ninth Line Station	8.14 ha
Donald Cousens Parkway Future Potential Station	
Cultural Communities (CUM1-1d and CUT1b)	2.41
Anthropogenically Influence Lands (Manicured)	0.06
Subtotal Reesor Road Station	2.47 ha
Whites Road Station	
Cultural Communities (CUM1-1k)	0.07
Anthropogenically Influence Lands (Agricultural and Hedgerow)	4.26
Subtotal Whites Road Station	4.33 ha
Rossland Road Future Potential Station/Temporary Bus Garage	
Anthropogenically Influence Lands (Agricultural and Hedgerow)	3.24
Subtotal Rossland Road Future Potential Station	3.24 ha
Brock Road Station	
Anthropogenically Influence Lands (Agricultural and Hedgerow)	1.47
Subtotal East of Brock Road Station	1.47 ha
Total Impacted Area (ha) for the Stations	24.59 ha

4.2.2.1 Markham Road Station

Construction of the Markham Road Station will result in the removal of a portion of cultural meadow (CUM1-1c) and cultural woodland (CUW1a). Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. In addition, a small portion of cattail shallow marsh (MAS2-1b) will be removed as a result of the proposed construction of the Markham Road Station. Efforts should be made to retain the remaining portions of the shallow marsh community post-construction. Shallow marsh communities are widespread and common across Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and hedgerows. Impacts to these lands are considered to be minor.

4.2.2.2 Ninth Line Station (west side of Ninth Line)

Impacts associated with the construction of the Ninth Line Station will occur to a cultural meadow (CUM1-1c) community. Cultural meadow communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural meadow communities are considered to be minor. Cultural Meadows are widespread and common throughout Ontario.

During the PIC concerns were raised by local residents in regards to the location of the Ninth Line Station and as such, the study team is considering the option of the Ninth Line station being on the east side of Ninth Line. Impacts associated with the potential construction of the Ninth Line Station on the east side of Ninth Line will result in the removal of 6.38 ha of natural areas including cultural meadow (CUM1-1d), cultural woodland (CUW1b), cattail shallow marsh (MAS2-1c), and swamp thicket (SWTa). Impacts to the cultural communities are considered to be minor. Impacts to the shallow marsh (MAS2-1e) will remove the majority of the community and only a small portion will remain. It is likely the remaining portion of the shallow marsh community will persist post construction. Impacts to the swamp thicket will involve the removal of a portion of the community, only a small portion of this community will be retained. Efforts should be made to ensure the remaining portion of this swamp thicket community is retained.

4.2.2.3 Donald Cousens Parkway Future Potential Station

Impacts associated with the construction of the Donald Cousens Parkway Future Potential Station will occur to cultural meadow (CUM1-1d) and cultural thicket (CUT1b). Impacts to the cultural communities is considered to be minor. Impacts to anthropogenically influenced lands will include the removal of a portion of manicured lands. Impacts to these lands are considered to be minor.

4.2.2.4 Whites Road Station

Construction of the Whites Road Station will result in the removal of a portion of cultural meadow, agricultural lands and hedgerow. Overall, impacts to vegetation and vegetation communities are considered to be minor. It is anticipated plant species displaced and/or disturbed within the cultural meadow community will re-colonize available lands adjacent to the Whites Road Station.

4.2.2.5 Rossland Road Potential Future Station/Temporary Bus Garage

Impacts to vegetation and vegetation communities associated with the construction of the Rossland Station will result in the removal of agricultural lands and hedgerows. Overall, impacts to vegetation and vegetation communities are considered to be minor.

4.2.2.6 Brock Road Station

Impacts to vegetation and vegetation communities associated with the construction of the Brock Road Station will result in the removal of a portion of agricultural lands and hedgerow. A portion of the Brock Road Station has already been cleared for the Highway 407 East – Phase 1. Overall, impacts to vegetation and vegetation communities are considered to be minor.

4.2.3 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities

All of the vegetation communities identified within the study area are considered to be widespread and common in Ontario and secure globally. As noted in **Section 3.1.3.2** a total of 14 butternut trees were identified during LGL's botanical survey. The butternut trees are located over 25 m from the preferred runningway. Consequently, no impacts to the butternut trees identified by LGL are anticipated and as such, no requirements under the *Endangered Species Act*, 2007 are needed to address the presence of these trees. A detailed butternut survey should be conducted during the detail design phase to ensure no butternut seedlings are present within the preferred runningway and station locations.

As noted in **Section 3.1.3.2** a total of 35 TRCA plant species of concern where identified within the study area. Efforts should be made during the detail design and construction phase to locate regionally rare plants that will be impacted due to the proposed 407 Transitway and associated station. Where possible, these plant species should be transplanted into the newly created edge of those impacted communities, but outside the limit of disturbance.

Impacts to Designated Natural Areas

As noted in **Section 3.1.3.1** no ANSI's are within 120 m of the study area. A portion of the Cedar Grove Wetland Complex will be removed as a result of the proposed construction of the runningway. Approximately 0.67 ha of PSW will be removed as a result of the proposed 407 Transitway runningway impacts. Compensation for the removal of the PSW is recommended.

Environmentally Significant/Sensitive Areas

No impacts will occur to both the Milne Woods ESA. Impacts to the West Duffins ESA are anticipated as the transitway runningway will be crossing this area. Overpass structures are proposed to cross this area to minimize impacts. Further refinements will be considered during the Detail Design stage of the project.

Non-provincially Significant Wetlands

No impacts will occur to the Whitevale Wetlands. A small portion of the Locust Hill Wetland west of York Durham Line will be removed. Compensation for the removal of this wetland feature is recommended.

4.2.3.1 Compensation

Compensation for the removal of wetland and forest communities should be provided. Compensation should be provided at a rate determined with agencies during the detail design phase.

Impacts to wetland communities within the study area will primarily be to wetlands which have developed due to the presence of drainage ditches, have been created due to concentrated development which has resulted in increased runoff in localized areas, as well as wetlands along low grade areas along agricultural fields. These wetland vegetation communities include meadow and shallow marshes, swamp thickets and deciduous swamps. However, the function of these wetlands, as well as habitat qualities still provide a valuable function that includes flood mitigation, and habitat for more sensitive wildlife and plant species. It is expected that post-construction, new wetland areas will be created as a result of changes in drainage related to the construction of the Transitway and its related components, that being said, mitigation/compensation for the impacts to wetlands should be undertaken during the detail design phase.

Impacts to forest communities within the study area will primarily result in the new creation of forest edges. Forest edge management should be implemented to protect the new community edge as the majority of forest within the study area are component of larger valley systems.

"The McCowan Road, York-Durham Line and Rossland Road Protected Sites have been identified as areas for potential vegetation compensation. The type of vegetation community for compensation will be determined during Detail Design in consultation with Parks Canada and other agencies."

4.2.3.2 Forest Edge Management

The removal of forest vegetation along existing forest edges or the removal of a portion of a forested feature that results in the exposure of a new forest edge will have several negative impacts along forest

borders and within the forest interior. Some of the direct and indirect impacts as a result of newly exposed edges include:

- exposure of the retained vegetation to the effects of increased light, wind, and sun which results in decreased soil moisture;
- exposure to salt spray;
- reduced establishment of shade tolerant plant species and an overall reduction in plant species richness and abundance;
- increased invasion/spread of aggressive non-native plant species;
- loss of native seedbank;
- decreased presence of interior habitat;
- exposure of "edge" trees to windthrow;
- changes in wildlife diversity and abundances;
- destabilization of landforms composed of unconsolidated material and/or soil compaction;
- changes to hydrology; and,
- increased noise.

Forest edge management in accordance with the TRCA Forest Edge Management Plan Guidelines (2004) is recommended at the forest communities described above. Where new forest edges are exposed, forest management techniques will be implemented to mitigate the associated impacts to the forest communities. As part of the forest edge management, mitigation measures will include, but not be limited to the following:

- Planting of appropriate native trees, shrubs and ground flora which shall be undertaken as soon as possible following vegetation removals. Plantings along the disturbed forest edges will provide a protective buffer. Newly exposed forest edges become exposed to a greater potential for aggressive and invasive species infiltration further into the forest interior causing greater impacts. Micro-habitat conditions are also altered due to a greater incident of light penetrating further into the forest resulting in decreased soil moisture and increased windthrow. Plant species used within the buffer shall be somewhat similar to those in the adjacent habitat and be non-invasive in nature.
- Grading within areas where edges will be newly created shall be designed to meet existing grades a minimum of 3 m away from the tree drip-line.
- Compaction of soils on lands immediately adjacent to the newly exposed forest edge will be minimized to the extent possible. Construction activities can result in cut roots, and soil compaction due to re-grading and fill placement. Cut tree roots can reduce a tree's capacity to uptake and transfer water and nutrients, and soil compaction can result in a decrease in air spaces within the soil which can reduce the infiltration capacity of the soil, limits soil oxygen and limits root penetration. Decompaction efforts and methodology shall be site specific. Where decompaction is required, it shall extend to a minimum depth of approximately 25 cm.
- Drainage patterns adjacent to newly created edges shall be maintained to avoid changes in soil
 moisture, this is especially important around wetland areas and forest communities with
 substrates that maintain increased moisture capacity.
- A plan must be in place to immediately mitigate the spread/invasion of aggressive plant species.

• A monitoring plan must be developed to ensure that the newly planted material survives and fulfils the intended function and to ensure that the inadvertent spread of aggressive or non-native plant species is appropriately managed.

During the detail design phase a forest edge management plan should be prepared for those communities where forest edge management is recommended.

4.2.3.3 Invasive Species Management

Efforts to control non-native and invasive plant species that have become established, as well as prevent the establishment of new non-native and invasive plant species at a minimum should include the following:

- where there are dense patches of common buckthorn, swallow-wort or garlic mustard, the appropriate removal and control of these species by a qualified specialist should be undertaken;
- minimize the exposure of bare soil, where bare soil must persist over a period of time these should be planted with a non-invasive annual cover crop for an interim period; and,
- no non-native and invasive ornamentals plants should be used for landscaping (e.g., Norway maple, purple loosestrife, Japanese knotweed, Japanese honeysuckle, etc.).

4.2.3.4 Planting Plans

A detailed planting plan should be developed during the detail design phase once areas identified for restoration have been determined in consultation with the respective agencies. It is recommended that the planting of forest and wetland habitat be undertaken with the appropriate native and non-invasive plant species which will be presented on site-specific plans to be developed by an experienced landscaped architect.

At a minimum, planting plans will show the following:

- detailed maps of the planting locations along with the respective allocations of tree, shrub, herbaceous and grass species to be planted inclusive of species and ratio of plantings or abundances; and,
- a description of the best management practices that are to be followed in the planting and tending of these sites for a minimum of five years following the initial planting stage. In particular, management will need to be undertaken for those invasive/aggressive plant species.

4.2.3.5 Construction Best Management Practices

At a minimum the following mitigation measures should be implemented during construction:

- vegetation cover will be used to protect any exposed surfaces in accordance with OPSS 804 Construction Specification for Seed and Cover;
- topsoil from stockpiles to be in accordance with OPSS 802 Construction Specification for Topsoil;
- old field seed mix and mulching or erosion control blanket (in accordance with NSSP-Erosion Control Blanket) will be placed in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization; and,
- tree protection to be in accordance with OPSS 801(Construction Specification for the Protection of Trees.

4.3 Wildlife and Wildlife Habitat

Implementation of the 407 Transitway between Kennedy Road and Brock Road has the potential to result in impacts to wildlife and wildlife habitat. Effects related to the construction of the 407 Transitway between Kennedy Road and Brock Road and associated facilities could include:

- Displacement of Wildlife and Wildlife Habitat;
- Barrier Effects on Wildlife Passage;
- Wildlife/Vehicle Conflicts:
- Disturbance to Wildlife from Noise, Light and Visual Intrusion;
- Potential Impacts to Migratory Birds; and,
- Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat.

4.3.1 Runningway Impacts

A discussion of the impacts along the runningway segments is provided below. These segments correspond to those discussed in **Section 4.2.1**.

4.3.1.1 Kennedy Road to West of Markham Road

Much of the habitat within this segment consists of cultural meadow or active agricultural lands. A small deciduous forest and a small marsh are also present as well as a SWM pond. The natural heritage features potentially impacted by the 407 Transitway runningway consist entirely of disturbed low quality wildlife habitat. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Limited negative effects are anticipated as habitats identified within the study area consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential. There is also a fairly large buffer of similar habitats located between the proposed runningway and human development.

4.3.1.2 Markham Road Station to Ninth Line Station

The runningway in this section will affect cultural meadow, marsh and forest habitat. Residential development is much closer to the runningway in this section than in the previous one. However, a large valley exists in which a substantial buffer is present. The cultural meadow west of the Ninth Line Station location has the potential to contain Eastern Meadowlark and/or Bobolink habitat, although none were observed during field investigations. As such, the species in this area may be more sensitive to disturbance than the communities in other portions of this segment. However, as mentioned above, these habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Limited negative effects are anticipated as habitats identified within the study area consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential.

4.3.1.3 Ninth Line Station to Donald Cousens Parkway Future Potential Station

The majority of the lands within this segment consist of cultural meadow and marsh habitats. No significant species or habitat are located in this section and a relatively large buffer exists for much of the area south of the runningway. As with the previous sections, the wildlife assemblage encountered during field visits to this area is considered tolerant of human disturbance/anthropogenic influences. As such, limited negative effects are anticipated.

4.3.1.4 Donald Cousens Parkway Future Potential Station to Whites Road Station

The relatively long section of runningway between these two stations consists mainly of cultural vegetation communities bordering agricultural lands (see **Section 4.2.1.4**). There are two large, forested valley crossings as well, one of which is associated with the West Duffins Creek Environmentally

Significant Area. The runningway will cross this designated area but impacts will be minimized by proposing overpass structures over this area. In addition, there is a small portion of the Locust Hill Wetland Complex, a non-provincially significant wetland, that will be affected by the runningway to the west of York/Durham Line. The effects on the forested valleys and wetland habitats have previously been disturbed by the creation of the 407 ETR corridor. Effects on all other cultural and agricultural habitats are also expected to be minor as no significant wildlife species or habitats were noted during field investigations in these areas.

Wildlife impacts to the **Rouge National Urban Park** are anticipated to be minor after the implementation of mitigation measures such as forest edge management, vegetation compensation and maintaining north-south corridor passages along Petticoat Creek and Little Rouge Creek.

4.3.1. 5 Whites Road Station to Rossland Road Station

The majority of the habitat in this segment consists of cultural meadows and agricultural lands. There are two significant valley crossings as well, which are forested. With the exception of the valleys, no significant effects on wildlife and wildlife habitat are expected to occur as a relatively large buffer exists to the south between the 407 Transitway and human landscapes. With regard to the valleys, a small area of forest cover will be removed, but these removals will be along edges previously disturbed by the creation of the 407 ETR corridor. As such, limited negative effects are anticipated.

4.3.1.6 Rossland Road Station to Brock Road Station

Most of the wildlife habitat in this segment consists of agricultural lands and cultural meadows and hedgerows. A small deciduous forest and swamp habitat will also be affected. Efforts should be made to minimize impacts to these latter two habitats as they are not commonly occurring throughout the 407 Transitway corridor.

4.3.1.7 East of Brock Road Station

Much of the land within this segment is currently under construction for the Highway 407 East Phase 1 project. The eastern portion of this segment consists of a coniferous forest associated with Brougham Creek. Efforts should be made to minimize impacts to this forest habitat.

4.3.2 Station Impacts

A discussion of the impacts to along the stations is provided below. These stations correspond to those discussed in **Section 4.2.2**.

4.3.2.1 Markham Road Station

Construction of the Markham Road Station will result in the removal of a portion of an agricultural field, cultural meadow and cultural woodland habitat. It will also be constructed directly adjacent to marsh habitat. The impacts to these communities are considered to be minor. As stated in Section 4.2.2.1, efforts should be made to retain the remaining portions of the shallow marsh community post-construction.

4.3.2.2 Ninth Line Station (west side of Ninth Line)

Impacts associated with the construction of the Ninth Line Station will occur to a cultural meadow community, the western portion of which could potentially be Eastern Meadowlark and/or Bobolink habitat. Although these communities are subject to regular disturbance, especially in this urban setting, and they are widespread and common throughout Ontario, further surveys for species at risk should be conducted in the western portion of this station location to ensure that no species at risk are affected by the construction of this station.

During the PIC concerns were raised by local residents in regards to the location of the Ninth Line Station and as such, the study team is considering the option of the Ninth Line Station being on the east side of Ninth Line. Impacts associated with the construction of the Nine Ninth Line Station on the east side of Ninth Line will occur to cultural meadow, cultural woodland, marsh and swamp habitat. The impacts to the cultural communities are considered to be minor whereas the impacts to the marsh will remove the majority of the community. The wetland habitat is associated with a tributary of the Rouge River (R5), which will need to be piped or realigned to accommodate the station. Although no SAR were observed in the wetland, habitat-specific species exist there (e.g., Swamp Sparrow- *Melospiza georgiana*) and would be displaced. Efforts should be made to ensure the remaining portion of this community is retained.

4.3.2.3 Donald Cousens Parkway Future Potential Station

Impacts associated with the construction of the Donald Cousens Parkway Future Potential Station will occur to cultural meadow and cultural thicket habitats, and marsh habitat associated with an existing SWM pond. The cultural meadow/thicket communities provide potential habitat for Eastern Meadowlark and/or Bobolink in this area. In addition, Barn Swallow were observed in these habitats and could potentially be using the barn structures in the southeast portion of this area for nesting. As such future surveys are needed during the appropriate seasons to determine whether these SARs are present in this habitat or not. In addition, impacts associated with the construction of this station will occur to manicured lands with limited habitat capability. Overall, impacts resulting in the loss of these manicured lands are considered to be minor.

4.3.2.4 Rossland Road Potential Future Station/Temporary Bus Garage

The construction of the Rossland Station will result in the removal of agricultural lands and hedgerow. Overall, impacts to wildlife habitat are considered to be minor.

4.3.2.5 Whites Road Station

Construction of the Whites Road Station will result in the removal of a portion of agricultural lands and hedgerow. Overall, impacts to wildlife habitat are considered to be minor.

4.3.2.6 Brock Road Station

The construction of the Brock Road Station will result in the removal of a portion of agricultural lands and hedgerow. A portion of the Brock Road Station has already been cleared for the Highway 407 East Phase 1 extension. Overall, impacts to wildlife and wildlife habitats are considered to be minor.

4.3.3 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

Three species at risk have been identified as potentially being present within the 407 Transitway study area based on records from the NHIC or based on field surveys undertaken in 2015 by LGL Limited (see Section 3.3.3.3). The following sections provide a brief review of each species' status, the results of field surveys carried out, and the potential impacts to those three species at risk and their populations within the vicinity of the study area.

4.3.3.1 Eastern Meadowlark and Bobolink

Eastern Meadowlark and Bobolink are listed and are regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**) field investigations have concluded that Eastern Meadowlark and Bobolink have the potential to be present within the study area in two locations. Both of these locations will be affected by the construction of stations. As such, further field investigations, undertaken during the appropriate season using MNRF protocols for surveying for these species, should be conducted to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.2 Barn Swallow

Barn Swallow is listed as 'Threatened' and is provincially regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**) a number of Barn Swallow were identified foraging over terrestrial and aquatic habitats within the study area. Encroachment into these areas as a result of the 407 Transitway and station construction may occur. However, it is likely that the individual birds observed are not dependent upon these specific foraging areas as many similar habitats exist in surrounding areas. Furthermore, no structures suitable for Barn Swallow nesting will be affected by the construction of the runningway and stations. As such, impacts to this species are expected to be minimal.

4.3.4 Barrier Effects on Wildlife Passage

No new barriers to wildlife passage are expected to occur as a result of the construction of the 407 Transitway. All major corridors associated with valleylands will be maintained and new crossings will mimic the existing crossings to facilitate wildlife passage.

The bridge structures at several watercourse/valley crossings within the study area provide the only significant wildlife passage corridors as the entire 407 ETR corridor is fenced and/or the smaller culvert associated with small watercourse crossings do not accommodate wildlife passage. These crossings are (from west to east): Rouge River (R4); Little Rouge Creek (R10); West Duffins Creek and tributaries (D1, D2, D3); Urfe Creek (D15), Brougham Creek (D16) and Brougham Creek (D17). At present, these large structures provide passage to both small wildlife species (e.g., raccoons, frogs) and large species (e.g., white-tailed deer). The fencing mentioned above also functions to funnel wildlife species towards these corridors by forcing them to move laterally until they reach a suitable crossing area.

Openness ratio (OR) is a calculation which is used to determine the tunnel effect created by a structure and thus the likelihood wildlife species would utilize that structure. This evaluation is completed by analysing a structure's component measurements (i.e., height x width / structure length). Generally, a greater openness ratio value is expected to increase the likelihood of wildlife utilization of a given structure or culvert. To maximize the openness ratio, structures should be designed to have a larger opening and the shortest length as possible, since wildlife species are more likely to enter a culvert if they can see light at the other end. Minimum OR was determined by a review of secondary source data regarding wildlife passage at road crossings (Clevenger et al. 2001). The minimum OR for small animals should be 0.05 and the minimum OR for large animals should be 0.6. A minimum clearance height of 3 m for structures that will provide passage for large animals is recommended. In addition, natural substrates should be used to encourage wildlife to utilize crossing structures. Ground cover should be continuous with the substrates found outside and adjacent to the structural entrances thereby encouraging animals to pass through the structure (Yanes et al. 1995).

During detail design, or once structure sizes are determined, OR can be calculated for each of the new structures to determine whether large animals can use the structures for passage. It should be noted that structures sizes for the 407 ETR are already large enough to accommodate large wildlife species. Constructing new structures of similar size will allow for continued use of these corridors for all species of wildlife.

4.3.5 Wildlife/Vehicle Conflicts

Wildlife/vehicle conflicts appear to be very minor at present within the 407 ETR corridor as large corridors exist at the larger watercourse crossings (valleylands), which are spanned by bridges. Because these corridors will be maintained under the 407 Transitway through construction of similarly dimensioned structures, no additional conflicts are expected to occur.

4.3.6 Disturbance to Wildlife from Noise, Light and Visual Intrusion

Noise, light and visual intrusion may alter wildlife activities and patterns. In the 407 ETR setting wildlife has become acclimatized to the noise, light and visual conditions associated with the operation of the highway and only those fauna that are tolerant of human activities tend to persist. Given that wildlife found within the study area are acclimatized to the presence of road infrastructure, disturbance to wildlife from any increase in noise, light and visual intrusion potentially caused by the operation of the 407 Transitway are not expected to have any significant adverse effects.

Potential disturbance caused by light pollution from the proposed improvements to the transportation network can be mitigated by using reflectors to focus light beams onto the facility and away from natural heritage features adjacent to the 407 Transitway.

4.3.7 Potential Impacts to Migratory Birds

A number of bird species listed under the *Migratory Birds Convention Act* (MBCA) are located within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. While migratory insectivorous and non-game birds are protected year-round, migratory game birds are only protected from March 10 to September 1. To comply with the requirements of the MBCA, disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of April 1 to August 15. In the event that these activities must be undertaken from April 1 to August 15, a nest survey will be conducted by a qualified avian biologist to identify and locate active nests of species covered by the MBCA. If an active nest is located, a mitigation plan shall be developed and provided to Environment Canada – Ontario Region for review prior to implementation.

5.0 CONCLUSION AND RECOMMENDATIONS

The following environmental protection measures should be included in the detail design package:

- Vegetation cover will be used to protect any exposed surfaces in accordance with OPSS 804 (Construction Specification for Seed and Cover);
- Seed mix, mulch or an erosion control blanket will be placed in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization;
- Tree protection fencing should be placed 1 m outside of the dripline of trees to minimize impacts and no construction activity shall occur within the tree protection zone;
- NSSP (Operation Constraint Migratory Bird Protection General) to ensure the contractor is in compliance with the MBCA.
- All clearing shall occur outside of the migratory bird nesting timing window (typically running from April 1 to August 15 to avoid the breeding season for the majority of the bird species, unless a pre-clearing nest search is undertaken to confirm the absence of bird nests);
- Wildlife salvage shall occur prior to clearing and grubbing activities where possible, particularly in wetland habitats, to preserve vulnerable wildlife species (e.g., herpetofauna). All applicable permits will be obtained prior to any salvage activities; and,
- Further correspondence shall take place with MNRF to discuss the wildlife species at risk that have been identified or have the potential to be located in the vicinity of the study area, in particular Bobolink, Eastern Meadowlark and Barn Swallow, any potential impacts of the bridge rehabilitation work on these species, and any requirements under the Ontario ESA.
- Further field investigations, should be undertaken during the appropriate season using MNRF protocols for Bobolink, Eastern Meadowlark and Barn Swallow. Surveying for these species, should be conducted to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

6.0 REFERENCES

- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. *Atlas of the Breeding Birds of Ontario*, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp.
- Chapman. L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario*, 3rd Edition. Ontario Geological Survey Special Volume 2.
- City of Markham. 2013. City of Markham Official Plan Office Consolidation.
- City of Pickering. 2010. City of Pickering Official Plan Office Consolidation.
- Clevenger, A. P., B. Chruszcz, and K. E. Gunson. 2001. Highway mitigation fencing reduces wildlifevehicle collisions. Wildlife Society Bulletin 29:646-653.
- Committee on the Status of Endangered Wildlife in Canada. 2002. Species at Risk. Ottawa.
- Couturier, A. 1999. Conservation Priorities for the Birds of Southern Ontario. Bird Studies Canada.
- DFO/OMNR/TRCA. 2014. Distribution of Species At Risk Mapping; Toronto and Region Conservation Authority (Map 1). April 2011.
- Dobbyn, J.S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. Toronto.
- Durham Region. 2013. Durham Region Official Plan Office Consolidation.
- Harding, J. H. 1997. *Amphibians and Reptiles of the Great Lakes Region*. The University of Michigan Press, Michigan. 378pp.
- Hoffman, D.W. and N.R. Richards. 1955. *Soil Survey of York County*. Prepared for Agriculture Canada and the Ontario Ministry of Agriculture and Food.
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Department and Transfer Branch. SCSS Field Guide FG-02 North Bay, Ontario. 225 pp.
- LGL Limited. 2010. Natural Heritage Report, 407 Transitway from East of Highway 400 to Kennedy Road (W.P. 252-96-00) Planning and Preliminary Design Study. Prepared for the Ontario Ministry of Transportation, Central Region. King City, Ontario.
- LGL Limited. 2005. Highway 7 Corridor and Vaughan North-South Link Public Transit Improvements Individual Environmental Assessment. Prepared for the Regional Municipality of York. King City, Ontario.
- LGL Limited. 2003. Natural Heritage Report, Highway 7 Corridor and Vaughan North-South Link Public Transit Improvements Individual Environmental Assessment. Prepared for the Regional Municipality of York. King City, Ontario.
- Natural Resources, Ministry of Natural Heritage Information Centre website (http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm). Ministry of Natural Resources. Peterborough, Ontario.
- Newcomb, L. 1977. Newcomb's Wildflower Guide. Little, Brown and Company. Toronto, Ontario.

- Newmaster, S.G., A. Lehela, P.W.C. Uhlig, S. McMurray and M.J. Oldham. 1998. Ontario Plant List. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, Ontario, Forest Research Information Paper No. 123, 550 pp. + appendices.
- Newmaster, S.G. and S. Ragupathy. 2005. Flora Ontario Integrated Botanical Information System (FOIBIS) 2007 species scientific names obtained March 2007 from the University of Guelph.
- Oldham, M.J. and S.R. Brinker. 2009. Rare Vascular Plants of Ontario. Fourth Edition. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. Peterborough, Ontario. 188 pp.
- Ontario Ministry of Municipal Affairs and Housing. 2005. *Greenbelt Plan*. http://www.mah.gov.on.ca/Page189.aspx.
- Ontario Ministry of Natural Resources and Toronto and Region Conservation Authority. 2010. *Draft Rouge River Fisheries Management Plan*. Published by the Ontario Ministry of Natural Resources and the Toronto and Region Conservation Authority. Queens Printer for Ontario.
- Ontario Ministry of Transportation. 1997. Highway 407/Transitway Markham Road Easterly to Highway 7 East of Brock Road: Environmental Assessment Report.
- Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section, Peterborough.
- Ontario Ministry of Natural Resources. 2001. *Index List of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario.* Wildlife Section, Peterborough.
- Riley, J.L., W.D. Backowksy, P.W. Ball, D.M. Britton, P.M. Catling, C.A. Campbell, W.J. Crins, K.L. McIntosh, S.M. Mckay-Kuja, M.J. Oldham, A.A. Reznicek, D.A. Sutherland, and S. Varga. 1989. *Niagara-Haldimand. Distribution and Status of the Vascular Plants of Central Region*, Ontario Ministry of Natural Resources, Parks and Recreational Areas Section. Central Region. Richmond Hill, Ontario 100pp.
- Rouge Park Alliance. 2001. Rouge North Management Plan: A Strategy to Guide the Realization of the Rouge Park from Steeles Avenue to the Oak Ridges Moraine. http://www.rougepark.com/about/plans/mgmt_plans.php.
- Toronto and Region Conservation Authority. 2002. A Watershed Plan for Duffins Creek and Carruthers Creek. Published by the Toronto and Region Conservation Authority.
- Toronto and Region Conservation Authroity and Rouge Park. 2012. *Petticoat Creek Watershed Action Plan*. Published by TRCA and Rouge Park.
- WSP Canada Inc. and HDR Inc. 2004. *Central Pickering Development Plan Class EA for Region Services*. Prepared for the City of Pickering.
- Yanes, M., J.M. Valesco and F. Suarez. 1995. *Permeability of roads and railways to vertebrates*: the importance of culverts. Biological Conservation 71:217-222.
- York Region. 2010. York Region Official Plan Office Consolidation.

APPENDIX A ENVIRONMENTAL REFERENCE FOR HIGHWAY DESIGN CHECKLISTS



MINISTRY OF TRANSPORTATION

APPENDIX 3.A Checklist for Wetlands

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

Section 3: Wetlands Appendix 3.A: Checklist

Dec-06 Page 2 of 6

Section 3: Wetlands Appendix 3.A: Checklist

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference* for *Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example *VEG-2*, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance.* Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

- 1. Review the project activity or compliance requirement.
- 2. Determine if it applies to the project (yes or no) and complete the "applies" column.
- 3. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
- 4. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Dec-06 Page 3 of 6

				Doc	umente	d in:		ť
Proje	ect Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	Future Commitment ¹
PROJECT SCOP								
	1. Was the Terrestrial Ecosystems (and/or wetlands in particular) Speciality identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	2. Were wetlands identified during the course of the project?		N/A	N/A	N/A	N/A	N/A	N/A
GENERAL PROJ	ECT ACTIVITIES							
Assessment								
Background Data and Field Investigations	Have wetland resources been determined and mapped?	Y		Y				
Determination of Significance	4. For the wetland(s), has the habitat function, significance and sensitivity to disturbance been determined?	Υ		Υ				
	5. Has encroachment upon wetlands been considered?	Y		Y				
	6. Has changing the surface water balance of wetlands been considered?	Y						Υ
Assessment of	7. Has changing the groundwater balance of wetlands been considered?	Υ						Υ
Impacts	Has discharging impacted water (sediment and other contaminants) directly or indirectly into wetlands been considered?	Y						Υ
	Have the potential permanent and temporary impacts to wetlands (listed above) been assessed in terms of:							

¹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

² Transportation Environmental Study Report including amendments

³ Design Construction Report including amendments

				Doc	umente	d in:		ť
Proj	ject Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR3	Contract	Future Commitment ¹
	(a) Highway design alternatives?	Υ		Υ				
	(b) Alternative methods of construction?	Υ						Υ
	(c) Highway operation/maintenance?	Υ						Υ
	10. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	Υ		Y				
Environmental I	Protection / Mitigation							
	11. Has a preliminary mitigation strategy been completed?	Υ		Υ				
	12. Has a detailed mitigation strategy been completed?	Υ						Υ
COMPLIANCE								
Environmental I	Protection Requirements ⁴							
WET-2	13. Avoid the loss of wetland features and functions.							
	Protection Requirements for projects on federal lands and/or with federated Protection Requirements apply to projects involving federal land of					to the ab	ove, the	
WET-1	14. Achieve no net loss of wetland function for wetlands where loss has reached critical levels, and the wetland is located on federal lands or the transportation initiative requires federal approvals or is receiving federal funding.							
Environmental I	Protection Requirements for projects in Designated Areas:							

⁴ Unless otherwise stated (e.g., by terms such as "shall" and "is not permitted"), the Environmental Protection Requirements (EPRs) are "as feasible" or "unless approved through the Environmental Assessment process". This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Dec-06 Page 5 of 6

		0	Documented in:						
Proj	ject Activity or Compliance Requirement	Applies (Y/N	Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	Future Commitment	
Various	15. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13: Designated Areas of this User Guide).								

Page 6 of 6 Dec-06



MINISTRY OF TRANSPORTATION

APPENDIX 4.A Checklist for Woodlands and Other Vegetated Areas

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION#	DATE	DESCRIPTION OF MAJOR CHANGE

Page 2 of 6 Dec-06

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference* for *Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example *VEG-2*, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance.* Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

- 5. Review the project activity or compliance requirement.
- 6. Determine if it applies to the project (yes or no) and complete the "applies" column.
- 7. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
- 8. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Dec-06 Page 3 of 6

			S		Docu	mented	l in:		16
Pro	oje	ct Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosyste ms Report	TESR ⁶ DCR ⁷ Contract		Future Commitment ⁵	
PROJECT SCO	PE								
	1.	Was the Terrestrial Ecosystems (and/or woodlands in particular) Speciality identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	2.	Were woodlands identified during the course of the project?		N/A	N/A	N/A	N/A	N/A	N/A
GENERAL PRO	JE	CT ACTIVITIES							
Assessment									
Background Data and Field Investigations	3.	Has the vegetation / forest information including plant species / vegetation communities been determined and mapped?	Y		Υ				
Determination of Significance	4.	For the vegetation communities, has the significance and the sensitivity to disturbance been determined?	Υ		Υ				
	5.	Has encroaching into woodlands or other vegetation communities been considered?	Υ		Υ				
	6.	Has the impact of road salt/spray been considered?	Υ		Υ				
Assessment of Impacts	7.	Have the potential permanent and temporary impacts to woodlands and other vegetated areas (listed above) been assessed in terms of:	Y						
1		(d) Highway design alternatives?			Υ				
		(e) Alternative methods of construction?							Υ
		(f) Highway operation/maintenance?							Υ

⁵ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

⁶ Transportation Environmental Study Report including amendments

⁷ Design Construction Report including amendments

		2		Docu	ımented	in:		nt ⁵
Pro	oject Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosyste ms Report	TESR ⁶	DCR7	Contract	Future Commitment ⁵
	8. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	Y		Υ				
Environmental	Protection / Mitigation							
	9. Has a preliminary mitigation strategy been completed?	Y		Υ				
	10. Has a detailed mitigation strategy been completed?							Υ
COMPLIANCE								
Environmental	Protection Requirements ⁸							
VEG-2	 Habitat for designated vegetation species protected under the Ontario Endangered Species Act shall be avoided. 							
VEG-3	12. Maintain the diversity of native vegetation in an area and natural connections between them.							
VEG-4	13. Avoid significant woodlands and significant valleylands, including woodlands providing habitat for sensitive species.							
VEG-5	14. Consider municipal objectives for woodland forestry management.							
VEG-6	15. Have regard for policies, plans, strategies and programs at the local/regional level dealing with vegetation resources of local or regional significance as may be identified by a local planning body such as a municipality, conservation authority, or other resource agency. For such resources the descending order of priority will be: 1) avoidance; 2) minimizing impact; and 3) mitigation / restoration.							

⁸ Unless otherwise stated (e.g., by the term "shall" and "is not permitted"), the Environmental Protection Requirements (EPRs) are "as feasible" or "unless approved through the Environmental Assessment process". This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Dec-06 Page 5 of 6

		ŝ		Docu	mented	in:		nt ⁵		
Pro	oject Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosyste ms Report	TESR ⁶ DCR ⁷ Contract		Future Commitment ⁵			
VEG-7	16. Protect the features and functions of retained vegetation areas.									
VEG-8	17. Use ecological restoration principles to restore terrestrial ecological features where the right-of-way crosses or is adjacent to significant wildlife habitats, woodlots, woodlands and /or valley lands.									
	Protection Requirements for projects on federal lands and/or with federal following Environmental Protection Requirements apply to projects invol							5		
VEG-1	 Avoid impacts on federal lands that provide critical habitat for listed species under the federal Species at Risk Act. 									
Environmental	Environmental Protection Requirements for projects in Designated Areas:									
Various	19. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13 Designated Areas of this User Guide)									

Dec-06 Page 6 of 6



MINISTRY OF TRANSPORTATION

APPENDIX 5.A Checklist for Wildlife Habitats and Movements

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

Page 2 of 7 Dec-06

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference* for *Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example *VEG-2*, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance.* Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

- 9. Review the project activity or compliance requirement.
- 10. Determine if it applies to the project (yes or no) and complete the "applies" column.
- 11. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
- 12. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Dec-06 Page 3 of 7

)		Doc	umente	d in:		Q.
Project	Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁰	DCR ¹¹	Contract	Future Commitment [®]
PROJECT SCOPE								
	Was the Terrestrial Ecosystems (and/or wildlife in particular) Speciality identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was wildlife identified during the course of the project?	Y	N/A	N/A	N/A	N/A	N/A	N/A
GENERAL PROJECT	ACTIVITIES							
Assessment								
	3. Have the following been determined and mapped:	Υ		Υ				
Background Data	16. Wildlife habitat including significant wildlife habitat areas?	Υ		Υ				
and Field Investigations	17. Wildlife species including species of conservation concern?	Υ		Y				
	18. Wildlife species and use of the area including migratory, over-wintering and nesting species?	Y		Υ				
Determination of	4. Has the significance and the sensitivity to disturbance of the following been determined:	Υ		Υ				
Determination of Significance	(a) Wildlife and natural corridors?	Υ		Υ				
	(b) Significant wildlife habitat?	Υ		Υ				
Assessment of	5. Has loss of wildlife habitat been considered?	Υ		Υ				
Impacts	6. Has obstructing wildlife movement been considered?	Υ		Υ				

⁹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

10 Transportation Environmental Study Report including amendments

11 Design Construction Report including amendments

				Doc	umente	d in:		Q .
Project	Activity or Compliance Requirement	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁰	DCR ¹¹	Contract	Future Commitment
	7. Has wildlife mortality and/or interference during transportation project construction and operation been considered?	Υ		Υ				
	8. Have noteworthy species and habitats (including Species at Risk) been considered?	Υ		Υ				
	Have the potential permanent and temporary impacts been assessed in terms of:	Υ		Υ				
	(a) Highway design alternatives?	N/ A		N/A				
	(b) Alternative methods of construction?	N/ A		N/A				
	(c) Highway operation/maintenance?	N/ A		N/A				
	13. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	Y		Υ				
Environmental Protect	ction / Mitigation							
	14. Has a preliminary mitigation strategy been completed?	Υ		Υ				
	15. Has a detailed mitigation strategy been completed?	Y						Υ

Dec-06 Page 5 of 7

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					જુ.
			Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁰	DCR ¹¹	Contract	Future Commitment ⁹
COMPLIANCE								
Environmental Prote	ection Requirements ¹²							
WLD-2	16. The destruction of migratory birds, their eggs or their nests is not permitted.							
WLD-2	17. Minimize the release of oil, oil wastes or any other substance harmful to migratory birds to any waters or any area frequented by migratory birds.							
WLD-3	18. Impacts on lands that provide critical habitat for listed migratory and aquatic species under the federal Species At Risk Act shall be avoided.							
WLD-4	19. Avoid habitat for species designated by regulation under the Ontario Endangered Species Act.							
WLD-5	20. Avoid, or if avoidance is not possible, minimize encroachment on significant portions of the habitat of threatened and endangered species.							
WLD-6	21. Protect other wildlife species identified in the schedules in the Fish and Wildlife Conservation Act.							
WLD-7	22. Avoid, or if avoidance is not possible, have no negative impacts on significant wildlife habitat, as defined in the Significant Wildlife Habitat Technical Guide.							
WLD-8	23. Maintain the diversity of wildlife habitat in an area and natural connections between them.							

¹² Unless otherwise stated (e.g., by terms such as "shall", "is not permitted"), the Environmental Protection Requirements (EPRs) are "as feasible" or "unless approved through the Environmental Assessment process". This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Dec-06 Page 6 of 7

				Doc	umente	d in:		Q .
Project	t Activity or Compliance Requirement		Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁰	DCR ¹¹	Contract	Future Commitment [®]
WLD-9	24. Regard the policies, plans, strategies and programs at the local/regional level dealing with other wildlife species of local or regional significance and, in descending order of priority: 1) avoid; 2) minimize impact; and 3) mitigate/restore.							
	Environmental Protection Requirements for projects on federal lands and/or with federal involvement. In addition to the requirements outlined above, the following Environmental Protection Requirements apply to projects involving federal land or receiving federal funding:						S	
WLD-1	25. Migratory Bird Sanctuaries and National Wildlife Areas in Ontario as listed by Environment Canada shall be avoided.							
WLD-1	26. Consider the conservation of wildlife on federal public lands that are administered by the Federal Minister of the Environment, and in any protected marine areas.							
WLD-3	27. Impacts on federal lands that provide critical habitat for listed wildlife species, and on other lands that provide critical habitat for listed migratory and aquatic species under the federal Species At Risk Act shall be avoided.							
Environmental Protect	ction Requirements for projects in Designated Areas:							
Various	28. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13: Designated Areas of this User Guide).	Y		Y	,			

Dec-06 Page 7 of 7



MINISTRY OF TRANSPORTATION

APPENDIX 14.A Checklist for Designated Areas

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION#	DATE	DESCRIPTION OF MAJOR CHANGE

Dec-06 Page 2 of 116

TABLE OF CONTENTS

1	INTRODUCTION	4
	CHECKLIST FOR WOODLANDS AND OTHER VEGETATED AREAS	
_		
3	CHECKLIST FOR WILDLIFE HABITAT AND MOVEMENTS	10

Dec-06 Page 3 of 116

1 Introduction

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

In addition to the other Environmental Protection Requirements (see the checklists in other sections of the User Guide), transportation facilities located in Designated Areas shall, comply with the Environmental Protection Requirements for Designated Areas.

The following checklists include summaries of the applicable Environmental Protection Requirements. The letters and number, for example *ORM-2*, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance*. Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

Checklists for Designated areas have been provided by environmental factor. Each factor-specific checklist includes the compliance requirements for:

- Oak Ridges Moraine
- Niagara Escarpment
- Greenbelt Plan Area
- Others areas

To complete the checklist:

- 13. Review compliance requirement.
- 14. Determine, if it applies to the project (yes or no), and complete the "applies" column.
- 15. If it applies, then check the document(s) in which the project activity or compliance requirement has been documented.
- 16. If the compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Dec-06 Page 4 of 116

2 CHECKLIST FOR WOODLANDS AND OTHER VEGETATED AREAS

)		Doc	umente	d in:		t 13
Compl	Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁴	DCR ¹⁵	Contract	Future Commitment ¹³
OAK RIDG	ES MORAINE: COMPLIANCE							
General								
	Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was the need to assess Oak Ridges Moraine EPRs identified during the course of the project?	7	N/A	N/A	N/A	N/A	N/A	N/A
Environme	ntal Protection Requirements ¹⁶							
	3. Determine key Natural Heritage Features (including the following):							
ORM-	(a) Significant valleylands.							
1,2,3, 12,	(b) Significant woodlands.							
19 & 20	(c) Areas of natural and scientific interest (life science).							
	(d) Vegetation Protection Zones.							

¹³ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

Dec-06 Page 5 of 13

¹⁴ Transportation Environmental Study Report including amendments

¹⁵ Design Construction Report including amendments

¹⁶ Unless otherwise stated (e.g., by terms such as "shall", "is not permitted"), the Environmental Protection Requirements (EPRs) are "as feasible" or "unless approved through the Environmental Assessment process". This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

				Doc	umente	ed in:		13
Compli	ance Requirement for Woodlands and Other Vegetated Areas within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁴	DCR ¹⁵	Contract	Future Commitment ¹³
ORM-20	4. Minimize the removal of vegetation, grading and soil compaction.							
ORM-1	5. Maintain and, where possible, improve or restore the health, diversity, size and connectivity for the feature and the related ecological functions.							
ORM-1	6. In Natural Core Areas and Countryside Areas: maintain or restore natural self-sustaining vegetation and wildlife habitat.							
ORM-2	7. In Natural Linkage Areas: maintain, and where possible improve or restore natural self-sustaining vegetation over large parts of the area to facilitate movement of plants and animals.							
NIAGARA I	ESCARPMENT: COMPLIANCE							
General								
	8. Was the need to assess Niagara Escarpment EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A
	9. Was the need to assess Niagara Escarpment EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environme	ntal Protection Requirements							
	10. Determine the location and significance of and assess the impacts to Key Natural Heritage Features:							
NE-2,4,27	(a) Significant valleylands.							
to 29	(b) Significant woodlands.							
	(c) Significant portions of the habitat of endangered, rare and threatened species.							
NE-2	All new and expanded transportation facilities must be located and designed to minimize the impact on the Escarpment environment.							
NE-27	12. Minimize disturbance of wooded areas.							

Page 6 of 13 Dec-06

				Doc	umente	ed in:		13
Compl	iance Requirement for Woodlands and Other Vegetated Areas within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁴	DCR ¹⁵	Contract	Future Commitment ¹³
NE-30	13. New highways are not permitted in identified habitat of endangered (regulated) plant species.							
NE-28	14. Protect retained trees during construction (e.g. with snow fencing, wrapping or other acceptable means).							
NE-29	15. Maintain existing tree cover or other stabilizing vegetation on slopes in excess of 25 per cent (1 in 4 slope).							
NE-30	16. New highways are not permitted in identified habitat of endangered (regulated) plant species.							
GREENBE	LT: COMPLIANCE							
General								
	17. Was the need to assess Greenbelt EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A
	18. Was the need to assess Greenbelt EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environme	ntal Protection Requirements							
	19. In the Protected Countryside Areas, identify, determine significance, and assess impacts key to key natural heritage features including:							
	(a) Significant habitat of endangered species, threatened species and special concern species.							
GB-5 to 8	(b) Significant valleylands.							
	(c) Significant woodlands.							
	(d) Sand barrens, savannahs and tallgrass prairies.							
	(e) Alvars.							
GB-5	20. Include illumination in the assessment of impacts.							

Page 7 of 13 Dec-06

)		Doc	umente	ed in:		Future Commitment ¹³
Comp	liance Requirement for Woodlands and Other Vegetated Areas within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁴	DCR ¹⁵	Contract	
GB-5	21. Include road salt in the assessment of impacts.							
GB-2	22. Maintain the network of countryside and open space areas that supports the Oak Ridges Moraine and the Niagara Escarpment							
GB-2	23. Maintain the connections between lakes and the Oak Ridges Moraine and Niagara Escarpment.							
GB-2	24. Maintain the linkages between ecosystems and provincial parks or public lands.							
GB-6	25. Within the Natural Heritage System, maintain a minimum vegetation protection zone for significant woodlands of 30 metres wide measured from the outside boundary of the feature.							
GB-6	26. Provide a vegetation protection zone within 120 m of a key natural heritage features in the Natural Heritage System of the Protected Countryside.							
OTHER DI	ESIGNATED AREA: COMPLIANCE							
General								
	27. Was the need to assess EPRs for other designated areas identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	28. Was the need to assess EPRs for other designated identified during the course of the project?		N/A	N/A	N/A	N/A	N/A	N/A
Environme	ental Protection Requirements							
DA-2	29. Identify and integrate information on designated areas as a key factor.							
DA-3	30. Consider the specific features and functions of designated areas that make them unique.							
DA-4	31. Comply with the relevant policy requirements of the approved management plans.							
DA-5	32. Avoid Designated Areas.							

Dec-06 Page 8 of 13

)	Documented in:							
Comp	liance Requirement for Woodlands and Other Vegetated Areas within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁴	DCR ¹⁵	Contract	Future Commitment ¹³		
	33. Where avoidance was not possible:									
	(a) Minimize the extent of intrusion.									
DA-5	(b) Minimize visual impacts.									
	(c) Maintain access to Designated Areas (i.e. trail or roadway access).									
	(d) Provide buffers adjacent Designated Areas.									

Dec-06 Page 9 of 13

3 CHECKLIST FOR WILDLIFE HABITAT AND MOVEMENTS

			5		Doc	Documented in:				
•		nce Requirement for Wildlife Habitat and Movements within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁸	DCR ¹⁹	Contract	Future Commitment ¹⁷	
OAK RIDG	ES I	MORAINE: COMPLIANCE								
General										
	1.	Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A	
	2.	Was the need to assess Oak Ridges Moraine EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A	
Environme	ntal	Protection Requirements ²⁰								
ORM- 1,2,3, 12,	3.	Protect significant portions of the habitat of endangered, rare and threatened species.								
ORM-11	4.	Facilitate wildlife movement.								
ORM-1	5.	Maintain and, where possible, improve or restore the health, diversity, size and connectivity for the feature and the related ecological functions.								
	6.	In Natural Core Areas:								
ORM-9		(a) Maintain or restore natural self-sustaining vegetation and wildlife habitat.								
		(b) Design lighting to minimize intrusion into Natural Core Areas.								

¹⁷ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

Dec-06 Page 10 of 13

¹⁸ Transportation Environmental Study Report including amendments

¹⁹ Design Construction Report including amendments

²⁰ Unless otherwise stated (e.g., by terms such as "shall", "is not permitted"), the Environmental Protection Requirements (EPRs) are "as feasible" or "unless approved through the Environmental Assessment process". This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

		0		Doc	umente	ed in:		47
Comp	liance Requirement for Wildlife Habitat and Movements within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁸	DCR ¹⁹	Contract	Future Commitment ¹⁷
	7. In Natural Linkage Areas:							
ORM-2	(a) Maintain, and where possible improve or restore natural self- sustaining vegetation over large parts of the area to facilitate movement of plants and animals.							
	(b) Maintain a natural continuous east-west connection and additional connections to river valleys and streams north and south of the Plan Area.							
ORM-9	In Countryside Areas: Maintain or restore natural self-sustaining vegetation and wildlife habitat.							
NIAGARA E	ESCARPMENT: COMPLIANCE							
General								
	9. Was the need to assess Niagara Escarpment EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A
	10. Was the need to assess Niagara Escarpment EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environme	ntal Protection Requirements							
	11. Determine the location and significance of and assess the impacts to the following Key Natural Heritage Features:							
NE-2, 29 & 30	 (a) Significant portions of the habitat of endangered, rare and threatened species. 							
	(b) Significant valleylands.							
	(c) Significant wildlife habitat.							
NE-30	 New highways are not permitted in identified habitat of endangered (regulated) animal species. 							
NE-31	13. Minimize the impacts upon wildlife habitat, in particular, habitats of endangered (not regulated), rare, special concern, and threatened plant or animal species, as identified by on-site evaluation.							
NE-31	14. Maintain wildlife corridors and linkages with adjacent areas.							

Page 11 of 13 Dec-06

		0		Docu	umente	d in:		47
Comp	oliance Requirement for Wildlife Habitat and Movements within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁸	DCR19 N/A N/A N/A N/A N/A	Future Commitment ¹⁷	
NE-14	15. Time construction in or across a watercourse or wetland to minimize impacts on fish and wildlife habitat.							
GREENBE	LT: COMPLIANCE							
General								
	16. Was the need to assess Greenbelt EPRs identified in the Request for Proposals?	N	N/A	N/A	N/A	N/A	N/A	N/A
	17. Was the need to assess Greenbelt EPRs during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environme	ntal Protection Requirements							
	18. In the Protected Countryside Areas, identify, determine significance, and assess impacts to Key Natural Heritage Features including:							
GB-2	(a) The network of countryside and open space areas that supports the Oak Ridges Moraine and the Niagara Escarpment						A N/A	
GB-2	(b) The connections between lakes and the Oak Ridges Moraine and Niagara Escarpment.							
	(c) The linkages between ecosystems and provincial parks or public lands.							
	19. In the Protected Countryside Areas, identify, determine significance, and assess impacts to key natural heritage features including:							
GB-5 to 8	(a) Significant habitat of endangered species, threatened species and special concern species.							
	(b) Significant valleylands.							
	(c) Significant woodlands.							
	(d) Significant wildlife habitat.							
GB-5	20. Include illumination in the assessment of impacts.							
GB-5	21. Include road salt in the assessment of impacts.							

Dec-06 Page 12 of 13

		<i>(</i>)		Docu	ımente	d in:		1417
Com	pliance Requirement for Wildlife Habitat and Movements within Designated Areas	Applies (Y/N)	Planning Documents	Terrestrial Ecosystems Report	TESR ¹⁸	DCR ¹⁹	Contract	Future Commitment ¹⁷
OTHER D	ESIGNATED AREA: COMPLIANCE							
General								
	22. Was need to assess Greenbelt EPRs other designated areas identified in the Request for Proposals?		N/A	N/A	N/A	N/A	N/A	N/A
	23. Was the need to assess Greenbelt EPRs other designated areas identified during the course of the project?		N/A	N/A	N/A	N/A	N/A	N/A
Environm	ental Protection Requirements							
DA-2	24. Identify and integrate information on designated areas as a key factor.							
DA-3	25. Consider the specific features and functions of designated areas that make them unique.							
DA-4	26. Comply with the relevant policy requirements of the approved management plans.							
DA-5	27. Avoid Designated Areas.							
	28. Where avoidance was not possible:							
	(a) Minimize the extent of intrusion.							
DA-5	(b) Minimize visual impacts.							
	(c) Maintain access to Designated Areas (i.e. trail or roadway access).							
	(d) Provide buffers adjacent Designated Areas.							

Page 13 of 13 Dec-06

APPENDIX B ECOLOGICAL LAND CLASSIFICATION FIELD SHEETS

STIE: 407 TRANSITUM DATE: JUNE 10/15 POLYGON: HAHA-SURVEYOR(S): NMF PLANT SPECIES LIST

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ABUNDANT O = OFCASIONAL R = RAPE

\dagger		Σ		8	SPECIES CODE LAYER COLL. SPECIES CODE	LAYE	<u> </u>
	1 2	m	4 4			2 3	4 (
Apple CANID	\dashv	\dashv	≰		[PCLVE'RS		<u> </u>
	-		\vee		EUTHACU	_	<u> </u>
		Q	<u> </u>		FLIPPERF	3	0
	_		⋖		SALIX ALG		F
			0		P. MATOR		
SYTHOWANG			P		SAMOOR		
			0		STORE UNI	_	
					BIDENTRON	3	م
ULMAMER	2	0)		RANKECUR		3
۷	۸ ۲	0			SCIRMICE	~	
•	_		C		,		_
			1				-
			O				
HIRCORES			C				
	_		O				
JUNCUS CANA	O	0	A	K			
JUNCUSEFU			0				
	_		b				
SHIMM S			,				
CORPES		5	a	Z			
SCIMICE	_			3			
THAL DIOC	6		2				
MENTARVE			4				
		٨	6				
		_					
		_	0				
		_	Ø				

	SITE:		POLYGON:
POLYGON	POLYGON SURVEYOR(S):		DATE:
	UTMZ:	ОТМЕ :	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMUNITY
D TERRESTRIAL D AQUATIC	D ORGANIC D PARENT MATERIAL D PARENT MATERIAL D RASIC BEDROCK D CARB. BEDROCK D CALEY SLOPE D CAL	(' 9	D CULTURAL	B SUBMERGED I SUBMERGED I CASATINOLIO I CRAMINOLIO I LOCASI I LOCASI I CONIFEROUS I CONIFEROUS I MIXED	D LAKE D POND STREAM STREAM D STREAM D MARSH D FEN D BOG D BARKEN D BARKEN D PRAIRIE D PRAIRIE D SAVANNAH
		C BLUFF			O WOODLAND D FOREST D PLANTATION
STIE			COVER	COMM. TYPE	OTHER
D OPEN WATER D SHALLOW WAT. STANFICIAL DEP. D BEDROCK			O OPEN O SHRUB O TREED	EI INCLUSION EI COMPLEX	□ HEDGEROW

STAND DESCRIPTION:

3	LAYER	Ħ	S	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT			
2	CANOPY	7	_	ULHEURE
3	3 SUB-CANOPY	7	7	LUNGARP STHUOCU
4	4 UNDERSTORY	Ţ	_	LOUTATA * THUCKE!
2	5 GROUND LAYER	1/9	5	

HT CODES: 1 => 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 =<0.2m CMR CODES: 0 = NONE 1 = 1-10% 2 => 10-25% 3 => 25-35% 4 => 35-60% 5 => 60%

SIZE CLASS ANALYSIS:

		ŀ		ŀ					
	TREES	<	TREES A < 10cm	~	10-24cm	1	7-50cm	Z	> 50cm
STANDIN	STANDING SNAGS - < 10cm	1	< 10cm	1	10-24cm	Z	-25-50cm	1	> 50cm
DEADFALL/LOGS.	FIRM	V	< 10cm	1	10-24cm	1	25-50cm	7	v 50gm
	DECAYED	7	< 10cm	1	10-24cm	1	25-50cm	1	5 5 5
ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE	ES: A = A	BUNDA	INT 0 = OCCAS	TONAL	R = RARE N =	No.			

□ OLD-GROWTH ☐ MID-AGE ☐ MATURE COMMUNITY MATURITY:

- Grogenosted second

SITE: 407 TRANSITUAL SURVEYOR(S): LTC / NMF DATE: JUNE 10/15 POLYGON: FOTS PLANT SPECIES LIST

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER VALUE CODES: D = DOMINANT A = ARINDANT O = OCCASIONAL R = RARE

SPECIES CODE	L		į			<u></u> ξL	VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE	l				
יייייייייייייייייייייייייייייייייייייי		Ź	LAYER		Ē	7	SPECTES CODE		Ź	LAYER		Ę
	1	2	3	4	}	<u> </u>	LOS COOL	1	2	3	4	W.
TILAMER	۵	\simeq				4	DRCLAPP				8	
RENEGU	-	٧				G	GENALL É				$\overline{\Delta}$	
UTRIPD				O		٩	AR MRI.				~	
DCE SSO SP	6	4	Ō			ندر	ECHLORA				V	
VIRWATE				Q								
し上るのつつり				C								
KUB 10AU			0	•								
CIRLUTE				\bigcirc								
RHACATH			0	۷								
SAT RACE			P									
CARROSA				В								
PAR INSE				0								
CARVALIP				_				. !				
ULTIRURE			0									
RURODOR			0					ł				
CORALT			Q									
CARCORD				QΖ								
PRUVIEC			0	d								
SOLALTI				0								
SOLFLEX				Ø]						
BLU COND				0								
FRA PE. NN			٦	8								
TAROFFI				۵								
RIBCHUO (SHOOT	1		0	_		لـــا						
TRIL'SP.				ď								
ULMPHER			W			l		ŀ				
BETALLE				2							\neg	

POLYGON: FLOOS	
POSTATION CONTRACTOR	

POLYGON	SITE: POLYGON SURVEYOR(S):		POLYGON: FOODS DATE:
	UIMZ:	UIME:	- MS

D PLANKTON

I SUBMERGED

I GRAMINOD

I GRAMINOD

I CORB

I LICHEN

I BRYOPHYTE

I SOPCEDUOUS

I CONTEROUS

II CONTEROUS

II MXED PLANT FORM COMM. TYPE II INCLUSION DE CULTURAL HISTORY COVER OPEN COPEN SHRUB STREED I LACUSTRENE
I RIVERENE
I BOTTOMILAND
I TERRACE
I STABLET SLOPE
I STABLET SLOPE
I STABLET SLOPE
I THE
I CHARLES
I CALLING
I TALLIS
I CREVICE/CAVE
I CALLING
I ROCKLAND
I RECKLAND
I RECKLAND
I RECKLAND
I SERCH/CAR
I SAND DUNE
I SAND DUNE TOPO. FEATURE O ORGANIC
SPAINERAL SOIL
D PARENT MATERIAL
O ACIDIC BEDROCK
D BASIC BEDROCK
C CARB. BEDROCK SUBSTRATE POLYGON DESCRIPTION: CI OPEN WATER
CI SHALLOW WAT.
CZ SURFICIAL DEP.
CI BEDROCK TERRESTRIAL

WETLAND

D AQUATIC SYSTEM STTE

LAKE

D ROND

RIVER

STREAM

STREAM

D SWANP

FEN

D RARSE

D RARSE

D RADOW

D RADOW

D INICCET

SAVANNAH

D ROODLAND

M CORDLAND

☐ HEDGEROW OTHER

COMMUNITY

STAND DESCRIPTION:

_ 3	LAYER	Ħ	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
н	1 EMERGENT			
7	2 CANOPY	V	7	A D RESASA
m	3 SUB-CANOPY	σ	ſΩ	ACESASA
4	4 UNDERSTORY	DY.	ے،	34 T ACESASA = JUMRURY - RHACATH
2	GROUND LAYER	7	V	5 GROUND LAYER KY A RADCISTED > RESOLOTED BLUE BASA-BIPULTE
둗	CODES: 1 = > 25n	₹ 7 7 U	10-25m	HT CODES: $1 = 25m$ $\frac{7}{2} \leftarrow \frac{5}{10}$ -25m $3 = 2$ -10m $4 = 1$ -2m $5 = 0.5$ -1m $6 = 0.2$ -0.5m $7 = <0.2$ m

CVR CODES: $0 = NONE \ 1 = 1-10\% \ 2 = >10-25\% \ 3 = >25-35\% \ 4 = >35-60\% \ 5 = >60\%$

SIZE CLASS ANALYSIS:

0cm	> 50cm	> 50cm	, 50cm	
-> 50cm	2	\ \ \ \ \	7	
	-	_	/-	
25-50cm	. 25-50am	25-50cm	25-50cm	l.
~	1	R	\mathbb{Z}	3
₹ 10-24cm	10-24cm	10-24cm	/ 10-24cm	. M BASE M.
1)	,	-
f			1	A NOT
	/	¥		ALT O - OCCASTONIA
	< 10cm	¥	< 10cm	DIRIDANT OF CASTONS
TREES A < 10cm	/	FIRM A < 10cm		ABILIDANCE CODEC. A - ABILIDANT O - OCCACIONAL B - BABE N - NOW

IBUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY: ☐ PIONEER

OLD-GROWT

8 00 0 LAYERS: 1 = CANOPY TREES > 10m 2 = \$18-CANOPY 3 = \$APLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = \$0-75% 5 = 75-100% LAYER . ന Δ 0 ~ RAPEND P PMASSON 0 DIGHT BARCIE O O STORE 2017/201 CAR PACE THE SERVICE STATES 1980 TOPENSTORES 3014 SPECIES CODE が上て 8 7 ā Ō LAYER m 0 SITE: AT SURVEYOR(S): 4 **a** () \overline{O} ~ POLYGON: --0 DATE: ON TOTAL HAR WAY KARAX THE BAN CANDEL! 11000 のみれる MYSTRO FE PAINES J. Supple OT 550 いなられ 17K 18B SPECTES CODE Sun SPECIES PLANT LIST

O LAKE
O POND
O STREAM
O WASSH
O SWAMP
O FEN
O BOG
O BARREN
O THOOGH
O SWAWNH
O THOOGH
O SWAWNH
O THOOGH
O SWAWNH
O THOOGH
O SWAWNH
O THOOGH
O PANTATION COMMUNITY POLYGON D PLANKTON
O SUBHERGED
O FLOATING LVD.
O GRAVENOD
O GRAVENOD
O BLOHEN
O BRYOMYTE
S DECENDOUS
O ONUFROUS PLANT FORM SWE5 DATE: PANCETURES. O NATURAL OCULTURAL HISTORY COVER O SHRUB JAKE 1 O LACLSTRINE
O BOTTONIANO
O TERRACE
D VALLEY SLOPE
D VALLEY SLOPE
D VALLEY SLOPE
O CLING UPLANO
O CLIPE
O CLIPE
O CALINE
O CALVA
O SAND DUNE
O SEUCHORARA
O SAND DUNE TOPO. FEATURE CHARACTERISTICS SURVEYOR(S): SIRE A CAL O ORGANIC
O NUMERAL SOIL
SEÇARENT MATERIAL
O ACIDIC REDROCK
O BASIC REDROCK
C GASIC REDROCK
C O CARB. BEDROCK CTMZ: SUBSTRATE POLYGON DESCRIPTION DYERRESTRUAL ET WETLAND DAQUATIC O OPEN WATER
O SHALLOW WAT.
EX SURFICIAL DEP.
O BEDROCK SYSTEM STAND

νĮ	STAND DESCRIPTION	NO.		
3	LAYER	, HT	ğ	(U. MXS IN AN INTERPOLATION STORES (COM <) Devention of philography and an army arches
	EMERGENT			
7	CANOPY	0	O	O DETERMENT PORTINE
<u>e</u>	SUB-CANOPY			
4	UNDERSTORY	M	M	これの人工生まれることのもの
S	GROUND LAYER	56	a	GROUND LIVER 156 O (V N DOCKS) (FIND TO
도	CODES: 1 = > 25m	7=7	0-25m 3	HT COOES: 1 => 25m 2 =>10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
3	A COCKES: D = NOWE		(CYR CLOCKS: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS	WLYSIS								
	· TREES < 10cm	П		0	O 10-24cm	2	125-50 cm	7	- S0cm
STANDIN	STANDING SHAGS 2 < 10cm	V	< 10cm	Ź	10-24cm	Ω	25-50cm		> 50cm
DEADFALL/LOGS	FIRM	-	< 10cm		10-24cm		25-50cm		- Soca
	DECAYED		< 10cm		10-24cm		25-50cm	1	- S03 ~
COMMUNITY MATURITY DIONEER SEYOUNG	MTURITY		D MID-AGE		O MID-AGE O MATURE		□ OLD-GROWTH	E	

	-	7	•	
TEXTURE				
DEPTH TO MOTTLES 9	-0	.0	.0	- 0
DEPTH TO CLEY G =	6=			•
DEPTH OF ORGANICS				
регти то вермоск				
HOISTURE REGIME				

SOIL PROFILE

PIC 134 13%

형 4 O 0 3 = SAPLINGS & SHRUBS 4 = GROUND LIYER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% Ō KARA. 2 3 \bigcirc $\underline{\circ}$ ablaSUCANA MARKED TRANSITMAN THE CASE POSTER これで下れ 1PC OLD DEMACK 2 CE RO 山本山 HADDO THADDO LIBHILT AME ARY CO 25 SPECIES CODE SLICER ICT ANDIGHAR TOTAL TOTAL 01-400 = CANOPY TREES > 10m 2 = SUB-CANOPY MQUET: + PRESENT 1 = < 1-5% 2 = 8 ٤ 4 0 404 DATE: PLOC 1 2 3 Ō 200 SURVEYOR(S): ব্যাত POLYGON: PR SHE KINKED はよりつ ACT TRIB ACK SACK PICAR AN CAR TALACO NAHAT MARIONA ARCMINN BREED A CANA 江と山とれ 8881E ITRIPA SPECIES CODE STANCE RAMICIR JRL JAK といると CRSION 000 SPECIES PLANT 123

POLYGONA-12

CTMR:

E STATE

SURVEYOR(S):

CHARACTERISTICS |

STAND

SE

ZM5

SPECIES IN CRIDE CO-COCCESSING SOCIETARIOS (S) 5 GROUND LATER 15-3 | EURWING 2-10-10 | FURNING BKANF PCSASA XCREATE-HINEIPE ACESASA-ACEPURA 139CER 14 XXX X ξ Ē 1 STAND DESCRIPTION 1 4 UNDERSTORY SUB-CANOPY EMERCENT CMOPY KIE

V 500m ¥ SOCH * 50g 585 A 25-50cm 25-50 mp (25-50 mp (25-50) mp (25-50 mp (25-50 mp (25-50 mp (25-50) mp (25-50 mp (25-50) mp (25 Z 25.50cm 10-24cm Q 10-24cm 10-24cm 10-X-01 × 10cm 4 10cm . TREES (< 10cm < 10cm STANDING SHAGS F DECEMBED SIZE CLASS ANULYSIS DEADFALL/LOGS

COMMUNITY MATURITY

CI PIONEER CI YOUNG CI MID-AGE CI MATURE

SOIL ASSESSMENT

DOLD-GROWTH

		1	Blick Company
TECHNE			
DEPTH TO MOTTLES 9 ==	-6	- 6	
DEFTH TO GLEY G.	•	. 5	
DEPTH OF ONGAUES			
DEPTH TO BEDROCK			
MOISTURE RECOME			

0

CARRO

AY ODAMER

DCPCFR R

NERROR

DD

OVINCE OVER

COUPSE!

SUBRYE

			_		_		
	1						_
-	;				-	•	
	}						
	}						
9	1			•			
į	i . i						•
- 1)	-					
_ {							
					-		

SOIL PROFILE

4.27

DEPTH (E 30 8 944 0 4 LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% 0 0 0 00 LAYER 2 00 $\overline{0}$ DON 10 SOL SELICIONES. 一个一 TACOPIN No Page KTRIBE VIODIPE JANKAG ALECCIAL DE Per Mes SUCANCY OF LANGE STREET JOLINE SCOOL STAIRC CHURRY MINIES +4000 SPECIES CODE NOFIEX STEAM HAROSE. STEADY TRANSTAUR POLYGON: FOLD 5 CA 8 DATE: MOU 1 2 3 4 0 0 <u> 400a</u> a 0 لَّه 4 LAYER SURVEYOR(S): 4 2 20 4 4 4 0 Ō d DO 4 PETTER D PRY AVER TRICIAM RESAGA **PCCRPPN** J. K. C. B.R. NOSTON A PRC PRO STATES HODO-THE ROSE THE PARER 日日日 2145TR PER PAC PERFON IS CANA ANSTRO BETTOLE TEDAL SPECTES CODE HOLOSE HOLOSE SCOOLAN. CHRCHIEF RUBBLE TRIPA 1797 (SSS) SPECIES PLANT LIST

STAND		STTE: 4	7 6	13	POUT SARA	150	POLYGON	N. T.	ıξ
CHARACTERISTICS		SURVEYOR(S):	_	4			DATE:		1
		UIMZ:		5	UTME:		CTMN:		1
POLYGON DESCRIPTION	SCRIPTION								1
SYSTEM	SUBSTRATE	<u> </u>	TOPO. FEATURE	Jee.	HISTORY	-	PLANT FORM	COMMENSATION	13
SATERRESTRUM. O WETLAND O AQUATIC	D ORGANIC D MINERAL SOIL DEARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK O RASIC BERROCK	₹×	D LACLSTRINE D RIVERINE D BOTTOMLAND D TERRACE D VALLEY SLOPE	\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-	R NATURAL O CULTURAL	O PLAN O SUBIN O GRAN	D PLANKTON D SUBMERGED D FLOATING LVD. G GRAMENOID D FORB	O STREAM	:
돐		+-	D ROLLING UPLAND			O LOSEN	EN SER	SWAMP	
O OPEN WATER O SHALLOW WAT. SQURFICIAL DEP. O REDROCK		0000000	O TALLS O TALLS O CREVICE/CAVE D ALVAR O ROCALAND O BEACH/BAR O SAND DUNE		O SHRUB O SHRUB DATREED	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Brous	0 BOS 0 BARREN 0 HEADOW 0 PRAIRIE 0 SAVANIKAH 0 WOODLAND EGOREST	- 2
STAND DESCRIPTION	NOLLAI]		רַ
LAYER	-	¥ (SPCIES IN ONDER OF DESCRISHED DOWNARCE (>> MICHIGAN TO SETTE THE SETTE OF THE SETTE	ER OF C	ECREASIN COEFTER	G DOMEN	1		But F
1 EMERGENT		-					2		an I
2 CANOPY	0	1	State of the	C	ACTION	H			
3 SUB-CANOPY 4 UNDERSTORY	0 0 0				E 27758	1141		2	
6 GROUND LAYER 5 10-25m 3 = 2-10m CNR CODES: 0 = NOHE 1 = 1-10% 2 = 2-10-25m	Zśm 2* >10-Zśm		10% 2 = 10.25% 3 = 25.35%		5=0.51m 6=0.20.5m 7=	45	18 1 1 1 E	94	
SIZE CLASS ANALYSIS	ALYSIS					2			
	TREES	× 10g	1	10-24cm	4	25-50cm	3	E 05 ^	_
STANDING SHAGS	۵	< 10cm	2	10-24cm	۵	25-50cm	20	- 50g	
DEADFALL/LOGS	FIRM	< 10cm	<u>a</u>	10-24cm	12	25-50cm	Ê	> S0cm	
	DECAYED N	× 10cm	N N	10-24cm	2	25-50cm	Ź	- S0G	_
COMMUNITY MATURITY D PIONEER D YOUNG	ATURITY II YOUNG	D MID-AGE	/	AMATURE		C OLD-GROWTH	WTH		_
SOIL ASSESSMENT	ENT		`			L			_
	-	7							
						_		-	

SMENT	The state of the s	CURE	TRES 0 = 0 = 0 =	GLEY G = G = G =	MICS	NOOK	346	
ASSESSMENT		TEXTURE	H TO MOTTLES 9 =	EPTH TO CLEY G -	OF ORGANICS	TO BEDROCK	TURE RECOME	

27 W.J.

SOIL PROFILE

STZE CLASS ANALYSIS 8 LAYER 2 3 4 3 = SAPLINGS & SHRURS 4 = GROUND LAYER \$525% 3 = 2550% 4 = 5075% 5 = 75100 是四日出版 SPECIES CODE LAYENS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY BRAINN BLANQUET: + PRESENT 1 = < 1.5% 2 = 1 8 1 | 2 | 3 | 4 0 I DATE: TYCEL 20 LYTER D SURVEYOR(S): a **GP** POLYGON: STE: A とかなり FRACTION KELL RAPORK S. K. B. N N N N N STORE OF THE PERSON OF THE PER となったの SONICE FOR BLOCK KEN AND SPECIES CODE SAIN CHEO SER TOWN PHARCON STORE PRINIEG PANACE DIVIVIA BESCULT Bedry PLANT SPECIES

SCRUPTION SUBSTITE: ACT TO PRICE IN THE DATE: UTMZ: UTME: UTME: UTMIN: SCRUPTION SUBSTITUTE: UTMIN: UTMIN: UTMIN: O ONGANIC O ONGANIC O ONGANIC O ONGANIC O ONGANIC O ONGANIC O ONGENT SOIL O ONGANIC O ONGANIC	118 100 (5)		COMMUNICA	D LAKE O POND O STREAM O STREAM	O SWAMP	D BARBEN D MEADOW	O TRACET O SAVARKAH O WOODLAND O POREST O PLARITATION
SQUIPTION SUBSTITUTE SQUIPTION SUBSTITUTE SAME SUBSTITUTE ONGANIC ONG		UTMN:	PLANT PORM	CAN CEED MG LVD.			100000
SCRUPTION SUBSTRATE ORGANIC ORGANIC ORGANIC ORGANIC ORGANIC ORGANIC ORGENIC OR	HO H	i Mic	HESTORY	D NATURAL D CULTURAL	agves		
SCRUPTION SCRUPTION SCRUPTION SURVE O ONGANIC O MUNERAL SOIL O ACDIC BEDROOX O ACDIC BEDROOX O CARB. BEDROOX O CARB. BEDROOX			TOPO, PEATURE	O LACLISTIQUE O ROTTOMANO O TERRACE O TERRACE	C ROLLING UPLAND	O CLIFF O TALLS O CREVICE/CAVE	ROCKLAND DEACH/BAR SAND DUNE DELIFF
STAND CHARACTE SOLYGON DES STREET OF	SITE: RISTICS SURVE		SUBSTRATE	O ORGANIC O MINERAL SOIL O PARENT MATERIAL O ACIDIC BEDROCK O BASIC BEDROCK O CARR BEDROCK			
-L1000 100pn	STAND	POLYGON DE	System	O TERRESTRUL O WETLAND O AQUATIC	STITE	O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP.	

AND DEX	<u></u>		
LATER	Ē	8	A CHINIDO PAISY LO DE SAGONE SON
EMERGENT		Γ	
CWOPT	7	4	THE CHURCH ADMINON
SUB-CANOPY	V	_	THE STANFORM
UNDERSTORY			
GROUND LAYER	Ž	9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
IT COOES: 1 = > 25m XR COOES: 0 = NONE	2 × 50	25m 3	24 >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.51m 6 = 0.2-0.5m 7 = -0.2m 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%
	FIRE CHOCKENT CANOPT CANOPT CANOPT UNDERSTORY GROUND LATER FOOES: 0 = NONE COOES: 0 = NONE	GENT FOR STORY NO LAYER F S. 1 => 25m	### ### ### ### ### ### #### #########

	Τ	T	T	7
100 A	88.	15 A	E S	
2	12	1		7
X-50cm	25-50-m	25-50cm	Z5-50gm	
α	7	1	Y	
10-24GH	10-24cm	10-24cm	10-24Cm	
Δ	V			Ì
< 10cm	< 10cm	wor >	< 10cm	
d	0			
· Trees	STANDING SHAGS	FIRM	DECAYED	
	STANDIN	DEADFALL/LOGS		

- Kara	D OLD GROWTH					-		•	
TO SACT	O MATURE	•	10 × 10 × 10		-0				T
	O MID-AGE C		2		.0	19			
Mary .	NG NG	ENT	1	Ę.	= 6 · · · · · · · · · · · · · ·	r G=	46	_	
	COMMUNITY MATURITY IN PROUNCE IN YOUNG	SOIL ASSESSMENT		TEXTURE	DEPTH TO MOTILES 9 =	DEPTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE RECOME
			•			1			۰

SOIL PROFILE

HAMMAN.

SOIL ASSESSMENT 8 2 3 4 0 1 0 LAYBES: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SULINGS & SHRUES 4 = GOLIND LAYER BRAIN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100° LYTER. 0TPANS/1NA VERTARP OF PIPER STATA CRASE SPECIES CODE 8 227 12 1 2 3 4 Or 4 0 E Q W () 0 KYER STIE: ACK SURVEYOR(S): 20 POLYGON: 2 DATE: CHEEN SACKER! XXXXXX KIOBIET NO SERVE MUNCHE ANA PER MIN RSAPRAT 1430 B J-KARE JE JON TSC SVD LIPIEUC THE TOTAL TEL 19. 95 ALVA GAR SPECIES CODE BIENCE COPPERT. YNBORS. CHILIN CEST COCEA PP24 DUMAN PIPRAT FICTES SPECIES PLANT List

POLYGON: () MILINA	DATE) UNOV/5	UTMN:
STE: 404 TRANSTINIA	SURVEYOR(S): \ \(\subseteq \lambda \)	JTMZ: UTME:
STAND	CHARACTERISTICS 5	2

POLYGON DESCRIPTION

_						: '						_
DIME			DIMESH	O SWAMP	9080	O BARREN	DPRAIRIE	OTHICKET	DSAVABRAH	D WOODCAND	Drokest	
DPLANKTON	C SUBMERCED	O FLOATING LVD.	O FORB	C BRYOPHYTE	O DECIDIOUS	CONTEROUS						
DNATURAL	DOLLINA			SOVER	1000	10 C	OTREED					
DIACUSTRINE	-	-	O VALLEY SLOPE	D ROLLING UPLAND		D CREVICE/CAVE	DALVAR	D ROCKLAND	L SENCYISME		± 1	
DORGANIC	D PARENT MATERIAL	O ACIDIC BEDROCK	D SASTC BEDROOK									
O TERRESTRUAL	D AQUATIC			STIE	OPEN WATER	D SHALLOW WAT.	SURFICIAL DEP.	-				
	DORGANIC DIACISTRINE DIATURAL DIPLANCTON I	DORGANIC DIACESTRINE DIAGNUSAL DELANGTON O MUNICAL SOIL DEVANCTONE DICALITURAL DISURGED DIAGNUSTRIAN DI	O ORGANIC O LACLISTRINE O NATURAL O PLANKTON O NUMBRAL SOIL O ROTTOMAND O CALTURAL O SLONEBGED O ACIDIC REDROCK O TERRALE	O ORGANIC O LACLSTRINE O NATURAL O PLANKTON O NOINEAL SOIL O SVENENGED O OLITINAL O SOITOMLAND O CALITINAL O SOITOMLAND O ACIDIC REDROCK O TERRACE O GRANTHOLD O GRANTHOLD O CALITINAL O GRANTHOLD O CALITINAL O GRANTHOLD O CALITINAL O CALITINAL O GRANTHOLD O CALITINAL O C	DORGANIC DEJOCISTRINE DIAGNERAL DIAGNERORE ONNERT MATERIAL DISTRIBULE DIAGNERALE DIAGNER REDIGORIO DI PROSENCE DIAGNER REDIGORIO DIAGNERALE D	O ONGANIC O MUNERAL SOIL O MUNERAL O MULIBIG UPLAND O OLIFE O OLIFE	O ORGANIC O LACLSTRUNE O NATURAL D PLAUKTON O MOREAL SOIL OFFERNE O CALTURAL O'S LIBREBGED O MAREAT MATERIAL O BOTTOMAND O ACTION CONTROL OFFERNE O CALTURAL O'S LIBREBGED O CARB. BEDROCK O'TRIBLELAND O CALING UPLAND O ROLLING UPLAND O ROLLING UPLAND O CALING O ORGINEROUS	TUAL O ORGANIC O LACISTRINE O NATURAL O PLANKTON O PLANKTO	O ONGANIC O LACLISTRINE O NATURAL O PLANKTON O NINERAL SOIL O STRENGE O CULTURAL O SUTTON O STRENGE O CULTURAL O SUBREGGED O CADIC REDROCK O VALLEY SLOPE O CAVIBOR UNC. D CARS. BEDROCK O VALLEY SLOPE O COVIER O O COORD O	O ORGANIC O LACLISTRINE O NATURAL O PLANKTON O PRIERLA SOIL O STVERDIE O CLATURAL O SUBRENGED O CAUCHORAL O SOITONALAND O CLATURAL O SOITONALAND O CLATURAL O SOITONALAND O CLATURAL O SOITONALAND O CLATURAL O CLATURAL O CLATURAL O CLATURAL O CLATURAL O CLATURAL O CONTREROUD O COLUMB O CONTRESOUS O CONTRE	ORGANIC O LACLSTRUNE O NATURAL O PLANKTON ONNERAL SOIL OFFICENCE O ADDIC REDENCY O TERRES O SASC REDROCK O TRALEY SLOPE O CARB. BEDROCK O TRALES O TRALES O TRALES O TRALES O CONTIFBOLIS O ROCKLAND O BECKNOWN O BENCORAND O STRUB O BENCORAND O STRUB O ST	O ORGANIC O LACLESTRUNE O NATURAL O PLANKTON

STAND DESCRIPTION

_ 3	LAYER	E	S.	SPECIES IN COURSE OF DESCRIPTIONS COUNTRIES.
	1 EMERGENT	γ		TO PROMINED CHANGE OF THE BLAND
7	CANOPY			
3	3 SUB-CANOPY			
4	UNDERSTORY			
5	GROUND LAYER	30	40	S GROUND IN THE PARTY PONTE DISTANCE S
₹₹	CODES: 1 = > 25:	1 2 = >±	7. 2 m 3	HT CODES: 1=> 25th 2=>10-25th 3= 2-10th 4= 1-2th 5= 0.5-1th 6= 0.2-0.5th 7=<0.2th

STZE CLASS ANUYSIS

> 50cm		25-50cm	10-24cm		< 10m	~	DECAYED	
> 50cm	1	25-50cm	10-24cm	1	< 10cm	7	E	DEADFALL/LOGS
* 50cm		25-50cm	10-24cm	1	< 10cm		TANDING SKAGS	STANDI
> 50cm	-	25-50cm	10-24cm	Ω	TREES Q < 10cm	ď	· TREES	,

DOLD-GROWTH D MATURE O MID-AGE COMMUNITY MATURITY IN PIONEER IN YOUNG

	-	. 2	14.7	_
TEXTURE				
DEPTH TO MOTTLES 9 **	6	-6	-6	9
DEPTH TO GLEY 6	•	6.		<u> </u>
DEFTH OF ORGANIES				<u> </u>
хоомазе от нтява				
				L

-						

į						
). - -	•	•			
			·		·	
				•		

SOIL PROFILE

8 0 400 00 O LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-1009 MC-CMAMA 2 3 LAYER يو 口面生 TREIDE HORSON JOHNOOL JRC 1 1990 N NPCS SAN AND 子の子 まったいまると ONLE ARORFI PANCAPI SCR A THE CARL DE SEC SPECIES CODE JA COZ ΩL. DATE: JUN 10 2 3 4 0 4 C C 4 000 4 O 0 LAYER SIE: BY da ۵ d 9 SURVEYOR(S): POLYGON: لى Δ KANKEN トシエフチン A CHO 1730CC) HECKLININ PARAGO N AR ALL VCC PAPC FRANCE SUNDE X 520 A ANASO KASSING! SPECIES CODE R. Dost SOCINED STATE OF THE STATE DKIKDI JAMES Y 3000 SAMMO SEVER SPECIES PLANT LIST

MAY POLYGON (UNL-) K	DATE UNIO/IS	UTMN:
SITE: 407 TRANSTILLIAN	- LVC	UTME:
SITE: 404	RISTICS SURVEYOR(S)	UTMZ:
STAND	CHARACTERISTICS	

POLYGON DESCRIPTION

SYSTEM	SURSTRATE	TOPO. FEATURE	HESTORY	PLANT FORM	COMMUNITY
SATERRESTRIAL	D ORGANIC	D LAGISTRINE	D NATURAL	O PLANKTON	GIAKE
12 WETLAND	DAMINERAL SOIL	O RIVERINE	COULTURAL	O SUBMERGED	ONCA
D AQUATIC	D PARENT MATERIAL	D BOTTOMLAND		D FLOATING LVD. O RIVER	O RIVER
	D ACIDIC BEDROCK	D TERRACE		C GRAMINOID	OSTREAM
	O BASIC BEDROCK	D VALLEY SLOPE		DE FORB	D MARCH
	D CARB. BEDROCK	DYNBLELAND		DUCHEN	C) SWAMP
STE		D ROLLING UPLAND	COVER	CI BRYOPHYTE	O FEW
				CONCENSION	0.800
OFEN WATER		OTALLIS	TO (2)	D CONTIFEROUS	O BARREN
D SHALLOW WAT.		D CREVICE/CAVE	D SHRUB	O MOKED	SMEADOW
DESURFICIAL DEP.		DALVAR	DTREED		O PRATRIE
D BEDROCK		D ROCKLAND			O THEORET
		O BEACH/BAR			D SAVANNAH
		CI SAND DUNE			CI WOODLAND
		O BLUNT			D FOREST
					PLANTATION

STAND DESCRIPTION

3	LAYER	#1	Ş	SPECIES IN ONDER OF DECEMBER DOWNING. (>> MUCH GREATER THAN: GREATER THAN: - APAIN: EQUAL: TO).
	1 EMERGENT	4,7		RECEDE PROPERTY PHILIP
7	CANOPY			
3	3 SUB-CANOPY			
*	UNDERSTORY			
s	GROUND LAYER	974	9	S GROWN WITH THE PLEASE AND STATES
중퀻	000ES: 1 = > 25m 3 000ES: 0 = NONE	2 × > 1(1 = 1-10	7-25m 3	HT CODES: 1 = > 25m 2' > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m C/R CODES: 0 = WOME 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS

	TREES	_	C < 10cm	Д	10-24cm	25-50cm	=	> S0cm
STANDING SHAGS	S SHAGS		- 10cm	. /	10-24cm	25-50cm		> 50cm
DEADEALL /LOGS	FIRM		< 10cm		10-24cm	75-50cm		> 50cm
	DECAYED		< 10cm		10-24cm	W2-50cm		-> S0GH

COLD-GROWTH O MATURE □ MID-AGE COMMUNITY MATURITY IN PIONEER IN YOUNG

SOIL ASSESSMENT

Œ

2000

RAPAK

<u>a</u>aa

TO STATE

SONO SAN SEN

SACON S

	1	. 7		
TEXTURE				
DEPTH TO MOTTLES 9 •	-0	= 6	= 0	= 0
DEPTH TO CLEY G	:	5	6.	G.
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE RECIME				

SOIL PROFILE

25/42

STAND CHARACTERISTIC	POLYGON DESCRIPTION OF SUBSTANCE O PRIMERA O WETLAND O MUNERAL O PRIMERA O P	STTE O OPEN WATER O SYMLOW WAT. SYMETOL DEP. D BEDROCK	STAND DESCRIPTION LAYER HT	2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER 5 C	CHE 1 = 1 (ALYSIS TREES	COMMUNITY MATURITY	SOIL ASSESSMENT TECTURE DEPTH TO MOTTLES 0 = DEPTH OF ORGANICS DEPTH OF ORGANICS DEPTH TO BEDROCK MOUSTURE REGIME
TEANETWAY A-1 d SO, JUNI OF TE	1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRUBS 4 = GROUND LAYER LAYOUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% LAYER CODE 1 2 3 4 COLL SPECIES CODE 1 2 3 4 COLL	CLEHIER O O O O O O O O O O O O O O O O O O O	20	0			
SPECIES POLYGON: TOTAL TE SPECIES DATE: HOC 201 SURVEYOR(S): LAC	SPECIES CODE LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 - LAYER COLL.	PRINCE DO PRINCE	Therese RC Presented	Puberer 600 Cleustrand	0	HYDENER OD C	Account Posses Record R

STAND	STTE	SITE: A DA TO PICTURE TO THE TOTAL TOTAL TO THE TOTAL TOTAL TO THE TOTAL TOTAL TO THE TOTAL TOTAL TOTAL TO THE TOTAL TOTAL TOTAL TOTAL TO THE TOTAL TOTA	A FEW		POLYGON -	
CHARACTE	CHARACTERISTICS SURVEYOR(S):	EYOR(S):		T	70,77	
	UTIMZ	1	TWE.			
			11.4	OTMN:		
POLYGON DESCRIPTION	CRIPTION					_
SYSTEM	SUBSTRATE	TOPO, FEATURE	Memory			
IX TERRESTRUA	DORGANIC		5	PLANT FORM	COMMENSTRY	
G WETLAND	D MINERAL SOIL	O RIVERINE	DANTURAL	D PLANKTON	DIAKE	
D AQUATIC	SPARENT MATERIAL		TO CONTROL	D SUBMERGED	ONO4D	
	D ACIDIC BEDROCK	O TERRACE		O PLOATING LVD.	_	
	D BASIC BEDROCK	D VALLEY SLOPE		CIOMINACID CEOPE	O STREAM	
	D CARB. BEDROCK	CATABLELAND		10 C	D MARCH	
STE.		D ROLLING UPLAND	assico	D BRYOPHYTE	SWAMP	
O OPEN WATER		100		DECIDION		
D SHALLOW WAT.			`	CONTIFEROUS	RABBER	
CASURFICIAL DEP.		D CAEVICE/CAVE	STARTE OF THE PERSON OF THE PE	O MOXED	O MENDOW	
D BEDROCK		CM			O PRAIRIE	
		O BEACH/BAR		<u> </u>	OPHICAET	
		D SAND DUNE		<u> </u>	O SAVANINAH	
		O BLUFF			OWOODLAWD	
				4	N TOREST	
				7	10 PLANTATION	

L				
3	LAYER	Ē	ž	SPECIES IN ORDER OF INCREASING DOMINANCE (>> MICH GREATING THAN STEET THE THINK
	EMERGENT			
7	CANOPY	2	9	The same of the sa
	SUB-CANOPY	(C)		~ こうしょう こうしょうしょう こうしょう
	UNDERSTORY	V	-	-1
16	GROUND LAYER	9	-	THE STATE OF THE S
Ĕξ	000ES: 1 = > 25m 000ES: 0 = NONE	2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	125 × 2 × 3	HT COCES: 1 = > 12m Z = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.0-5m 7 = < 0.2m CAR COCES: 0 = NOHE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 3-5-0.5m c = 0.0-2m
				KIDS = S RODON - S STATE - S

44 LASS	222								
	TREES	α	TREES R < 10cm		10-24cm	6	- X		
STANDING SHAGS	G SHAGS	0	< 10cm	0	10.24cm		-	V.	ES A
		1	ł	4		2	E SACIII	2	E00.
DEADFALL/LOGS		1	*110M 2 < 10cm	Ú	10249	۵	C 25.50m		- CO-
	DECAYED		100,	ŀ		4.		7	
		2	1 × 10Cm	2	10-24Cm	\geq	X-50cm	2	55.

D OLD-GROWTH							-	-
MATURE				.0				
D MID-AGE XZ MATURE		m		= 0	5			
O MID-		7			.			
YOUNG	MT	1		-0				
D PIONEER D YOUNG	SOIL ASSESSMENT		TEXTURE	DEPTH TO MOTTLES 0 =	DEPTH TO CLEY G.	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE REGIME

ar which

8 4 LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHEUES 4 = GROUND LAYER BRAIN BLANGUET: + PRESBIT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% 1 2 3 LAYER PANTICALIA ST ROPEL SPECIES CODE 1 2 3 4 00L dolada 40 四 0 la la 440 0 ZYZZ Q SURVEYOR(S): POLYGON: DATE: STE SECURE OF CHILLES FETTABLE JPC NITUR FE LIETE ESTRO ESTRO TXAB 1880 V WI DOCK Salver UNCRIS THE PARTY TARK HIS YNOCK! 1 X 5 4 1 DICTOR. COLLEGE. (J) X (S) PLAN PAIN SPECIES CODE HESSY. Sales S SUCKAL A JUNE Char THO ST H TYNC'S 95 05 A COSTO SPECIES PLANT

	STEX	STIEL OF TREE TRUE POLYGON CALL	ろして	XX POLYGON	(A-1)-(A)
CHAPATED	STAND CHAPACTEDISTICS SURVEYOR(S): \	YOR(S):		DATE: MAU	1/1 WD1
3	UTMZ:	٠.	UTME:	CTMIN:)
POLYGON DESCRIPTION	CRIPTION				
SYSTEM	SUBSTRATE	TOPO, PEATURE	HESTORY	PLANT PORM	COMMUNICA
GAERRESTRUA. O WETLAND D AQUATIC	O ORGANIC O MINERAL SOIL SE-PARENT MATERIAL O ACIDIC BEDROCK O BASIC BEDROCK	DIACISTRUNE DIAVERUNE O BOTTOMIAND O TERRACE O WALLEY SLOPE DYARRELAND	DINATURAL	D PLANKTON O SJANGSED O FLOKTING LVD. O GRANINOID SG FORB O LICHEN	D LAKE D POND D RIVER D STREAM D HARSH D SWAMP
SITE		D ROLLING UPLAND	COVER	D BRYOPHYTE	NO. 0
O OPEN WATER O SHALLOW WAT. SASURFICIAL DEP.		AVE	DE OPEN O SHRUB O TREED	O CONUMEROUS	O BARREN TO PRAIRUE
CI BEDROCK		O ROCIGAND O BEACHVIBAR O SAND DUNE O BLUFF			D SAVANIWH D WOODLAND D FOREST D PLANTATION

うごうかつつるろ	5		東京の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の
LAYER	. MT	CAR	AND MAINTENANCE OF DESCRIPTION OF THE WAY AND THE STATE OF THE STATE O
1 EMERGENT	$\langle \gamma \rangle$		POPUSED - WERIBE-KORDSED
2 CANOPY			
3 SUB-CAHOPY			
4 UNDERSTORY			
S GROUND LAYER	5,0	1	5 GROUND WIRE DE CONTRACTOR OF THE STATE OF
HT CODES: 1 = > 25h	1 = 1-1	0-25m 3	HT CODES; 1 = > 25m 2 × >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.5-2m 4 = 0.5 CVR CODES; 0 = NOME 1 = 1-10% 2 × >10-25% 3 = >-25-35% 4 = >-35-60% 5 = >-60%

				I		ľ	_	۰	-	
	7 0	0	100	<u>_</u>	- EX-91		X-50cm		- 20G	
		1		1		Ī			1	
	1	Г	, 10m	_	19-24Cm	_	25.50			
STANOIR	TAMOUNT STATES			Ŧ		ł		F		
	71015	-	100	_	10-24cm		25-50cm	7		
200		1		1		ľ		۲	2	
DEADFALL/LUGS	CEVAPO	1	100m	7	10-24cm		25-50cm	٦	- >CO	
		4		1		١				

D. OLD-GROWTH			1					
O MATURE				5	- 6			
D MID-AGE		2			9 -9			
COMMUNITY MATURITY DIONEER SYOUNG	SOTI ASSESSMENT	1	TECTURE	DEPTH TO MOTTLES 9 =	DEFTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE RECIPIE
COMMUNICATION PROVIDE	SOIL AS			DEPTH T	06	DEPTHOF	T HT 450	USION

	•	•		SOIL PROFILE
				•

DIC AD-191

្រុក	8	00	9		0	28.00				STAN	Z Z		8	8 E	5	2 E	CAR 500	SIZEC		2000		OMMC	NOI4 []	SOIL A		ļ		OFFTH	ниа	HOIST
										••												٠			•		•			
		.8			Τ	Γ		T .		Γ	Γ	Τ	Τ	Τ	Τ	Τ	T	Γ	Τ	Τ	Γ	-	Γ	 	_	Τ	<u> </u>	[]		
	8		Ŧ	十	十	一	一	-			┢	┝	╀	╀	├	-	╁	-	╂-	<u> </u>	_	L	_							
	A ER	LAYER	.6						4.	-	┢	\vdash	┢	╁	┝	╁	╀╌	-	╀	-		<u> </u>		_	L	_				
	1 g	S	7								Г	一	\vdash	╁	\vdash	十	╁	┝	┝	┝	_	-	-		_	_	_		_	
	85	$\vdash \vdash$	= -	╀-	-	L	_									T	T	厂	一	T	_	-			_	-	-		\dashv	
	1 5 4 4 5 4 5 4 5 4 5 5 4 5 5 5 5 5 5 5		-													Γ									-	-		-	\dashv	_
Pennstruden 2-10 1/15	25.00 A 20.00	SPECIES CODE		1						٠.																				
17	MCS.) E																												
779	3.6	SPEC									.						ŀ												ĺ	
1111	m 3			<u> </u>	·			<u> </u>	l			<u> </u>		<u> </u>	<u>L</u>										$oldsymbol{\perp}$					
STTE: 407 18.40. POLYGON: 17.40.20.1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.0	8 E																·										\neg		$\overline{}$
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$ 3	Ť	- 0	4	2		-					_		_		<u> </u>	_										ı			
4777	~-	LY CAN	m			P	2	9	7	_	_	-		-		-	· _	-	<u> </u>		_	_							1	
H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Š	3	2				·									-	-				\dashv		\dashv	-	_	_	_	4	\perp	\Box
STTE: 4074 POLYGON: 74 DATE: 74 SURVEYOR(S):	88		-	┼	_				\bot												\dashv	\dashv	\dashv	\dashv	\dashv	\dashv	-	4	\dashv	4
SITE: POLYG(DATE: SURVEY	£ 7			0	11		0	1														\dashv	\dashv	-	-	\dashv	\dashv	\dashv	+	\dashv
	35	岌	ΙĒ	19		Ó	Q	d															ı				1			
T T	- 3	g	4	1 3	2	6	4	4	1									,			-			l			l			
PLANT SPECIES LIST	LAYPERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUKS 4 = GROUND LAYER BRAINN BLANGUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	SPECIES CODE	1710 277	USCACOLY	240ATS	CICIC	CHOCK LAND	45 A B.	1																					
<u> </u>	3 8	8	1	此	9	Ü	V	<u>(l)</u>		_1																				
										-			-					i									\perp	\perp	\perp	

						i I	4683	5 3	NOW.	D PRAIRDE D THOCKET D SAVANIMEH D WOODLAND D POREST	5		(7	T	T	9					_	Π		Γ				···-,		-	
	Ë						O PONIO O STREAM	SWA	O BOG O BVBGN O BVBGN	D PRATICE D THEORET D SAVANIMAH D WOODLANG			2				PHEAT			¥ 50cm	× 50cm	M-502 V	505 ^		1		1					
	POLYGON:	DATE	¥¥5		PLANT POPE	O Pi AMECTINA	D SUBMERGED O FLOATING LVD. O GRANGHOID	DUCHEN			. ·	SPECIES IN ORDER OF DESCREAME, COMPANY.		7/				7 = <0.2m .0%					7	E OLD-GROWTH					•	•		٠
					-	+5		T	T		-	00	V				6	2205m 5 = >6		25-50 cm	25-50cm	25-50cm	25-50cm	9	L.,							•
					HISTORY	MILEA	DOULTURAL		O OPEN			5730	9				中でいっている。	4=1-2m 5=0.5-1m 6=0.2-0.5m 7= 3=>25-35% 4=>35-60% 5=>60%	ŀ	=						T.	Γ	Γ		П		
			EME S		H	ā	ŏ	4)		9 2	1	1				4		5	Ę	5	5	O MATURE	•			. 8	-5			
			-		TOPO, PEATURE	E E	S H Z A S S S S S S S S S S S S S S S S S S	\$ 50 E	YCAVE	5 2 2		N S	1				Ź	25.52 25.33 26.33	-	5,5	10-24cm	10-24cm	10-24Cm	2		TO MAN			Ť			
		SURVEYOR(S):			9	D LACUSTRUME	O RIVERDNE O BOTTOMLAND O TERRACE O VALLEY SLOPE	CI TABLELAND CI ROLLING UPLAND	O CLIFF O TALUS O CREVICE/CAVE	D ROCKLAND D BEACKYBAR D SAND DUNE D BLUFF		N S		}					F	4	4	\exists	\dashv	Ş.				- 6	-5			
li	2 2	R R R	CIMS:				<u>aaaa</u> ×ŏ€.		0000	0000						L	5.4	3 = 2-10 21-01 ×		€ 10g	< 10cm	< 10cm	< 10cm	D MID-AGE	•	~						
1			뒤	N	EURSTRATE	Ę	T MATE BEDROC	BEDROC		•		£					∇	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		ť	Y	۲	ᅱ	U		\vdash		8	5	-	\dashv	4
		STESTS.		RIPTI	ā	DORGA	D PARENT MATERIAL D ACIDIC BEDROCK D MASIC BEDROCK	J. CAKB. BEDROOK		i	¥O <u>L</u>	Ē	1					7=	SIS	TREES.	MAGS	Ē	DECATED	MATURITY XQ YOUNG	Þ	-		- 0	:			
	STAND	CHARACTERISTICS		POLYGON DESCRIPTION	- 1	O TERRESTICAL		E E	O OPEN WATER O SYALLOW WAT. O SURFICIAL DEP.	DROCK	STAND DESCRIPTION	ĸ	EMERGENT	CANOPY	SUB-CAHOPY	UNDERSTORY	GROUND LAYER	nt words: 1 = 2 cm z = 210-25m 3 = 2-10m CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25%	SIZE CLASS ANALYSIS		STANDING SHAGS	DEADFALL/LOGS		COMMUNITY MATURITY OF PIONEER X YOUNG	SOIL ASSESSMENT		TECTURE	DEPTH TO MOTTLES	-	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE REGIME
L	S	<u> </u>	لــا	ध		56			000	<u> </u>	STA	LYTER	7	7	3	7	5 6	88				DEAD		8 8 8 8	SOIL			200		E	E	Š.
																								•								

AT ALL TOP

STAND DESCRIPTION ROUGECEK OF REESOR RE ROUSE VALLE 8 1 RO LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANGUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% \$ = 75-100% 1 2 3 XASTRI (clb mo SPECIES CODE RYCANA DIAARME GERRORE VITRIPA CHEMATU PP APP HAPURE JIOSORO NOVIRG DOPELT -ILMICA CONTON SOL 616A RHURADI MSCILI (EAST STTE: 407 TRANSITYAN SURVEYOR(S): LMC/NMF DATE: JUNE QUIS 8 POLYGON: FOCA-10 \overline{C} É KAR 1 2 3 0 0 0 0 0 SPECIES CODE LMAMER THUOCE! FRAPENN CORPUTE ACE SASA SPECIES MONIGR ACENE GU CRD PUINC ACTRUBE RUKATE PRUVIRG PLANT POPRALS MPGLAN ARCHINU RTDIOI 10 SP.

	_	T	ר	_																
ÿ					COMMENTAL	DIVICE			OSTREAM	O FACE			200	O MEADOW	O PRAIRTE	THICKET	DSAVANNAH	D WOODLAND	D POREST	
POLYGON:	DATE	UTMN:			PLANET PORCH	D PLANKTON	O SUBMERCED	O FLOATING EVO.	Common		DENDMATE	O DECIDENCE	CONTREDUK	M MDCED		-=,	==		<u></u>	
		UTME:		HETETINEN	1	MATURA					SOVE		DOPEN		EN INCEED					-
, CONCON				TOPO, FEATURE		D CACLES INCINE	S BOTTOM AND	O TERRACE	D VALLEY SLOPE	O TABLELAND	D ROLLING UPLAND		o TALLES	O CREMICE/CAVE	D ALVAR	O REACHING	CAND DAMP	DBUNE		
STTE:	CHARACI EKISTICS CONTCION(S):	UIMZ:	CRIPTION	SUBSTRATE	COCCANTE	B MINERAL SOIL	D PARENT MATERIAL	D ACIDIC BEDROCK	O BASIC BEDROCK	D CARB. BEDROCK				=	Z-1					
STAND	CTARACIE:		POLYGON DESCRIPTION	SYSTEM	O TERRESTRIA	SE WETLAND	D AQUATIC			T	Ħ	O OPEN WATER	D SHALLOW WAT	EXSURFICIAL DEP.	D BEDROCK					
	~									_		_		_	_		_		_	ľ

ł		5		•
3	LYER	토	Š	SPECIES IN CREDIES OF DECRESSING CONTINUES.
-	EMERGENT			ではつうとうが、これには、これには、これには、これには、これには、これには、これには、これには
~	CANOPY	2	2	2 2 THUOCKIETHGNIGHT FONDERING
~	SUB-CANOPY	3	<u>-</u> †-	TRUCCO SY THEM P
7	UNDERSTORY		7	ACENE GUND & PRINTIPG
2	GROUND LAYER	7-5	N	S GROUND LAYER 15-7 15 CHSRUI (3 > 14-07-00)
₹8	CODES: 1 = > 25m CODES: 0 = NOME	2=>1	2.5m 3	HT CODES: 1=> Zm 2=>10-Z5m 3=2-10m 4= 1-2m 5= 0.5-1m 6= 0.2-0.5m 7= <0.2m
			•	COAMO COCO E ROPOLLI COLLEGE

200

STZE CLASS ANALYSIS

 ϵ \bigcirc \propto

ERYAMER

LESM PTR

ARTAID YNROSS

ECHLOBA

NECANA

_	T	T	
> 50cm	E58 ^	× 55GH	> 50 GB
۲.	/	1	
25-50cm	25-50cm	25-50cm	₹50cm
_	 	αz.	4
10-24cm	10-24cm	10-24cm	10-24cm
\forall	R	0	04
< 100m	< 10cm	10cm () < 10cm	< 10cm
	q	ା	2
2	IS SHARS	¥.	DECKNED
	STANDING SHAGS	DEADFALL/LOGS	

CI MID-AGE COMMUNITY MATURITY CI PIONEER CI YOUNG

Ō

TR POSE

MATSTRU

LANNST

VI UPURE

SUSBURS L

RIGHIRT

SNASONO

DOLD-GROWTH **EXMATURE** SOIL ASSESSMENT

が 一大 という				Γ	Τ	Τ	
		3	Ġ				
					Γ	Γ	
å		5				ĺ	
•				Г	Γ	T	
_			5				I
							I
		:	9				
	TEXTURE	DEPTH TO MOTTLES 9	DEFTH TO GLEY 6	MINIS	XOX	SIME	
	×	10 ₹	F	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE REGIME	
l			8	E	Ē	tors	
•		-					

SOIL PROFILE

77 7000

GEUMCANA ALLPET

IRLUTE OL DULC

ER SANNU

TUSFARF

 $\alpha ai\alpha$

d

GERMACU TCN_39.

EOCARD

SARDIPL

00

1475 COR

ATPALL SYMOFFI

O

ECUPRA

PLAMAJO

Took Jobs 32

41742AVA

4	SITE	-		POLYGON:	
CHAPACTER	CHAPACTERICTICS SURVEYOR(S):	EYOR(S):		DATE:	
	UTMZ:	•	UTME:	UTMN:	*.
POLYGON DESCRIPTION	CRIPTION				
SYSTEM	SUBSTRATE	TOPO, PEATURE	HESTORY	PLAIGT FORM	COMMITTAL
O TERRESTRUA. D WETLAND D AQUATIC	D ORGANIC O MINERAL SOIL O PARENT MATERIAL O ACIDIC BEDROCK D EASTE BEDROCK O CARR. REDROCK	D LACISTRUNE D REVERDNE D ROTTOMLAND O DTRUKACE D WALLEY SLOPE D TABLEJAND	D NATURAL D'OLLTURAL	D PLANKTON O SUBMENCED O FLOKTING LVD. O GRANDNOID O FORB	D LAKE D POND D ROYER D STREAM D HARSH D SWAMP
SITE		D ROLLING UPLAND	COVER	O BRYOPHITE	NE CO
O OPEN WATER O SWALLOW WAT. O SURFICIAL DEP. O BEDROCK		D TALLS D CREATOR/CAVE D ALVAR D ROCICAND D BEACH/BAR D SEND DUNE	O OPEN O SHRUB O TREED	D MDGD	D BARREN D PRAINCE D THICKET D SAVARIAH D WOODSLAND
					D PLANTATION

5	STAND CHARTE	5		克德特的 地名 化二进程 人名 计记录 计记录 计记录 计记录 计记录 计记录 计记录 计记录 计记录 计记录
13	AYER	. אנו	CAR	SPECIES TREORDER OF DECREASING DOMINANCE. (>> MICH GREATHRAINES, GREATHRAIN N. NOVINGEROW, TO DECREASING
-	EMERGENT			
N	CANOPY	B	D	FORGERIN / REMUCH HARMAN
m	SUB-CANOPY		\dashv	TO GO OF THE PARTY
•	UNIDERSTORY	4	a	3/
'n	GROUND LATER 500 S	50	8	これが、一つでは、これのでは、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ
뒫	CODES: 1 = > 25/ R CODES: 0 = NOME	1=1-1	0-25m	HT CODES: 1 = 7 25m 2 = 7,10-75m 3 = 2,10m 4 = 1-4m 5 = 0,74m 5 = 0,000.

	- > SOOM	1 > 50cm	N > 50cm	> 50cm	
	X5-50cm	ZS-50cm	25-50cm	N 25-50cm	
	10-24cm	(10-24cm	D 10-24cm	10-24cm	
•	TREES A < 100m	N < 10cm	T		1
STZF CLASS ANALYSIS	A SEEN	100m	1. PROLET IN THE PROPERTY OF T	DEADFALL/1065	Maria

CLOLD-GROWTH								
MATURE					.5			_
AMID-AGE DAMATURE	·				. 5			
	,	2		8	5			
YOUNG	Ž	-		:	9			
COMMUNITY MATURITY D PIONEER D YOUNG	SOIL ASSESSMENT		TECTURE	DEPTH TO MOTILES 9	DEFTH TO GLEY G =	DEPTH OF ORGANICS	DEPTH TO BEDROCK	

	•	•	

STREACT TRANS SURVEYOR(S): DATE: PLANT SPECIES LIST

LAYERS: 1 = CANOPY TREES > 10m 2 BRAINE BLANQUET: + PRESENT 1	ES > 1	g		2 = SUB-CUNOPT 1 = < 1-5% 2 -		3 = SAPLINCS & SHRURS 4 = GROUND LAYER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	- 3	3×	2.3	헕	£		
3000	7	LAYER	Æ	Ē	<u>_</u>	SPECIES CODE			KER	8		8.	
	=	2	3	4	•				7	·m	4		
2017C141		 	_	2		THE THE				Ø			
	Ĕ	7	X	2		TOGETHON!					Q	·	
CAL TO		1	1		I	FRIMA					0		
001-01/2			72		<u> </u>	Poper					Ø		
		tr	+	<u> </u>	11-	TAPOST!					Ø		
100/10U		1-	╁	-		(RAMONO				5	П		
188		┼	╁			XASTR				4.	d		
44400		┼─	 -	12	 	CORRIGIO				\overline{c}			
The Carro		14		10	<u> </u>	DINISTRO		J					
(100) Gay		+-	0	2	<u> </u>	HOOT ?	-			Ť	0		
Oct Ker		٦		_	12	TO THE					Ø		
1 1 JULY	1	1-	-	_	1	STATES 1		_		7			
O MANAGE !		┞	0	_	<u> </u>	ALALAN A	1	7		\mathbf{C}^{\prime}			
SINCIPIN)		}-	=	3	\simeq	用いるこ					Q		
9/4/04		├-		۵	14	481TRIP		-		7	$\overline{\Lambda}$		
Q PART O		╂	\vdash	_	<u> </u>	A TO CHAR		-			a		
421		╂	┯	ō	\subseteq	A THALL				3	7		
		N	1			Proce par	X	9			a		
714900	-	14	a		ميدا	201/1RG				귕			
SNOW!	-	-	4	0		HAPORE				干	\overline{A}	\exists	•
N. F. B. C.	-	7	-		Q	STVIBL	\dashv	\exists	괴	1	\dashv	\exists	
	\vdash	14	1.5		<u> </u>	SOCIAME		_	_	4	a		
VICT OBC	-	├	$H_{\mathcal{M}}$		ملي	JAR MISH		-	_	コ	괴		÷
718100	-	├	134	1		TREASE				퀴	ᅯ	٦	
T.W.Y.	-	14	-			ARFANIA	\exists	\neg	\dashv	ᄏ	둽		
しまごまし		-	3		1	CHELL	-	\dashv	-	커	ਹ	П	
PASSES A			2		91	KTYZUBE	+	\dashv	\dashv	干	귑	T	
	-	-	$\frac{\partial}{\partial x}$		1	CAN ST				Ž	J		

FYOR(S): DATE: UTIME: UTIMIN: TOPIC, FEATURE HISTORY PLANTRORN DIAGLISTIQUE DIAGLISTIQUE DIAGLISTIQUE DIAGLISTORE DIAGRISTORE DI		Ė			Service .	-
RISTICS SURVEYOR(S): IUTME: UTIMIS: UT	CNATA				יישביישהיי	
UTM2;	CHARACTER	SURVE SURVE	YOR(S):		DATE	
COLIFICAN CONGANIC CONGENIC CONGE		UTMZ:	·	IME:	CTMR:	
SUBSTRATE TOPOL, PEATURE HISTORY PLANT FORBER	POLYGON DES	CKIPTION				
DONGANIC DIAGLISTRURE DIAGNUAL DISLAMENTORI DIAGNUSTRURAL DISLAMENTORI DIAGNUSTRURAL DISLAMENCED DIAGNUSTRURAL DISLAMENCED DIAGNUSTRUAL DISLAMENCED DIAGNUSTRUAL DISLAMENCED DIAGNUSTRUAL DISLAMENCED DIAGNUSTRUAL DISLAMENCED DIAGNUSTRUAL DISLAMENCED DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISCUSSIONE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DISLAMENCE DIAGNUSTRUAL DIAGNU	SYSTEM	SURSTRATE	TOPO, FEATURE	HESTORY	PLANT FORM	ALTHRIBIOS
C TOUTH C UPLAND COVER C BRYOPHYTE C OPEN C DECIDIOUS C OPEN C OP	O TERRESTRUA D WETLAND D AQUATIC	D ORGANIC D MUNERAL SOIL D MUNERAL SOIL D MUNERAL MITERIAL D ACIDIC BEDROCK D MASIC BEDROCK D CARB. BEDROCK	D LACISTRUNE D KRYEKONE D BOTTOMAND D TERRACE D VALLEY SLOPE D TABLELAND	D'AKTURAL D'CAKTURAL	950	DIAKE DIOND O'STREAM DIAMESH
O CHAIS O C	STEE		C) ROLLING UPLAND	COVER		NO.
DAVAR OTREED OROCIOAND OBSACYGAR OBSACYGAR OBSACYGAR	C OPEN WATER		E/CAVE	C OPEN	CONTINUE	DEVERSEN
YBAR	D SURFICIAL DEP.			OTREED		O PRANTE
			D BEACKIAR D SAND DUNE D BLUFF			D SAVABLARE D WOODCAND D PLANTATIOR

S	STAND DESCRIPTION	5		
13	LYTE	. HT	CVR	SPECIES IN CHIEF CONFINENCIAL CONTINUES (SPECIES IN CONTINUES (SPECIES IN CONTINUES CONTINUES (SPECIES IN CONTINUES
-	EMERGENT			
N	CAHOPY	\mathcal{C}_{0}	V)	HESTER
m	SUB-CANOPY	3	8	ASSERTITION OF THE PARTY OF THE
1	UNDERSTORY	t	${\mathscr V}$	のようなないとなるなどであるというとなっている
10	GROUND LAYER	S	ી	DOREN HOUSE
멸	HT COOES: 1=> 25	2= >	0-25m	# \ Vin \

		55 85 A
**************************************		7. 25.50cm
*** **********************************		10×301
1-10% 2 = >10-25%		TREES < 10cm
CAR COCESS 0 # NONE 1 # 1-10% 2 # > 10-25% 3/# > 75-155% 4 # > 35-40% 5 # > 400%	SIZE CLASS AWALYSIS	START.

		_				1		I	
STANDIN	STANDING SHAGS > 10cm	0	< 10cm	U	A 10-24cm	ز ا	25-50cm		> 50cm
	E	(0)	A STORY	b	J0-24cm		25-50cm		> 50cm
DEADFALL/LOGS	18		A 10cm		10-24cm	7	M205-52		> 50cm
		1				1			
WITH A VALUE OF THE PARTY OF TH	71011								

IZMID-AGE II MATURE II OLD-GROWTH	[]	
O MATURE		
DAMID-AGE	2	
D PIONEER DYOUNG	SOIL ASSESSMENT	

ころうない					•	
	1	. 7	7.7			
TECHNE						
DEPTH TO MOTTLES 9		. 6			-	
DEPTH TO GLEY G =	6.	6=	- 5	.5		
DEPTH OF ORGANICS					 	•
DEPTH TO BEDROCK						
MOISTURE REGIME					· .	
					100	5

SOIL PROFILE

DISTURBANCE POLYGON: and STAND CHARACTERISTICS SURVEYOR(S): AMMARMAN DESTINATION AND AND AND AND AND AND AND AND AND AN	SUCH BUSH OPERATIONS GAVE BY THE CANOPY LIVESTICS (GAATING)	TRACS AND TRAIS TRACS AND TRAIS TRACS AND TRAIS TRACE (PLANTATION)	DISSISE / PESTS / DESTH WINDTHROW (BLOWDOWN) BROWSE (e.g., DEST) BRAWER ACTIVITY LEVEL 0 = NONE 1 = LYGHT EXTENTS 0 = NONE 1 = LYGHT	TREE TALLY BY SPECIES SPECIES COOE THULY INLY 2	TOTAL BASAL AVEA (BA) DIELD	
					•	
2	3 = S.V.LINGS & SHRUBS 4 = GROUND LAYER - 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% SPECIES CODE LAYER COLL					
PLANT STE: POLYGON: TOO 6-50 LIST SURVEYOR(S):	SPECIES CODE 1 2 3 4 COLL		ACTUADO RRE			

MANAGENERY / DISTURBANCE	LEWEL /	HANAGENERT / DISTURBANCE	LEVEL /
SUGAR BLESS OFFICERS		DUNCTURE (TREATMENT)	- Transition
GUSTRITHE CHOPT		EARTH DISPLACEMENT	V
LIVESTOCK (GAZZING)		RECENTIONAL LESS	V
есметне (Реметатон)		ALIBI SPECIES	V
TRACIS AND TRAILS		NOISE	V
HATURAL DISTURBANCES	LENEL / EXTENT	MATURAL DISTURBANCES	LEVEL /
DESERSE / PESTS / DEATH		PLOCODING (POCKS & PLOCUNG)	
. МЕНОМНОМ (ВГОМООМИ)	1	FIRE	N
BROWSE (e.g., DESK)	1	SOIL BROSTOM	1
BEAVER ACTIVITY	Ĭ	отнек	1
LEVEL 6 = HONE 1 = LICHT EXTENT: 0 = NONE 1 = LOCUL 2	1=1004 2	LEMEJO = NONE 1 = LIGHT 2 = MOCENTE 3 = HENVY SHT: 0 = NONE 1 = LOCAL 2 = WIDESPRED 3 = EXTRICA	

						STATE OF THE PARTY	TOPE
SPECIES CODE	THEFT	TALLY TALLY 2 TALLY 3 TALLY 4 TALLYS	TALLYS	TALLY	TALLYS	TOTAL	TEE.A.
			_				
TOTAL	-				-		
BASAL APEA (BA)		·	-		-		POEAN
DEAD					-		

COMMUNITY MATURITY DI PIONEER DI YOUNG 2 3 4 0 2 LAYERS: 1 = CANOPT TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUKS 4 = GROUND LAYER BRAUN BLANQUET: + PRESBIT 1 = < $\frac{1}{2}$ 5%, 2 = $\frac{5}{2}$ 5%, 3 = $\frac{25}{2}$ 5%, 4 = $\frac{5}{2}$ 5%, 5 = $\frac{7}{2}$ -100) **XXX** 0 D HEARCHE 4 48 4 5 TRANSTILLE SARA CA HEALE ラマナス 2000 THO DE TRIPA STATE OF SPECIES CODE といろ dlaco 8 2 74/ 404 4 1 2 3 4 DA 4 K KER 0 4 SURVEYOR(S): C 0 0 9 POLYGON: (d 4 DATE STE CONCK STATE OF 2000 SPECTAL STATES PARCE TO 2 BOX NO SACTE OF A STANCE TKUPP TO THE STATE OF SON AND J. A. P. P. L. PINNICA THE FILE 名のなどと SC FRE DESIGNATION OF THE PARTY OF THE THE CONTINUE OF THE PARTY OF TH SPECIES CODE Region SPECIES PLANT

CHADACTEDIC		ANEQUEN TO	1		POLYGON (JULY)
	CHARACTERISTICS SURVEYOR(S):	ror(s): \ \	. \	DATE	
	CTMZ:	•	UTME:	:WE5	
POLYGON DESCRIPTION	NOTTAI				
SYSTEM	SURSTRATE	TOPO, PEATURE	MISTORY	PLANT FORM	COFFIGURETY
O WETLAND D AQUATIC D A	D ORGANIC MAINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK	D LACLSTRUNE D ROVERDNE D BOTTOMLAND D THREACE	D MATURAL ACULTURAL	D PLANKTON O SUBMENGED O FLOATING LVD.	
öö	D SASIC BEDROCK D CARS. BEDROCK	D VALLEY SLOPE		D FORB	D HARSH
E ST		CHOLLING UPLAND	COVER	C) BRYOPHYTE	OFF
O OPEN WATER O SHALLOW WAT.		TAUS TAUS	O OPEN	CONTIFEROUS	D BARBEN
SSURFICIAL DEP.			ATREED.	X	D PRAIRUE
		D BEACH/BAR	-		D THEORET
		D BLUFF			Q WOODLAND C) FOREST

7	STAND DESCRIPTION	NO.		•
5	LAYER	H	ž	701 hobbungo - hviusilisto sanytusinjas join «) sanytuog eusemajo to angio tu sanas
-	EMERGENT			
7	CANOPY	V	4	CONTRACTOR - POEMES
m	SUB-CANOPY	V	J	FORMACK TILMARP LOOPER
4	UNDERSTORY	4	V	PHACKETHY COMULT-RIBOND
s	GROUND LAYER	50	0	POADERT - GOLDAR - HOUR
= 8	ODES: 1 = > 25m	72. 71	0-25m 3	5-1m 6

SIZE CLASS ANALYSIS	M.YSIS		-						
	. TREES	Ą	TREES < 10cm	IJ	A 10-24cm	2	12 25-50cm	2	> 50cm
STANDIN	STANDING SHAGS	0	< 10cm	5	10-24cm	2	25-50cm	2	> 50cm
Dei Dei	ASE.	2	< 10cm	N	10-24cm	2	25-50cm	Ž	> SOOM
Constant Cons	DECAYED	v	100m × 100m	2	30-24cm	2	25-50cm	2	> 50cm

D.OLD-GROWTH

O MATURE

O MID-AGE

		٠			L	١
SOIL ASSESSMENT	¢				·,	
	1	, 7			·	
TECTURE						İ
BEPTH TO MOTILES 9	. = 6	10	6			
DEFTH TO GLEY G =	-9		6.	-5		
DEPTH OF ORGANICS					-	
DEPTH TO BEDROCK					-	
MOISTURE RECOVE					-	

A TANK

SOIL PROFILE

DEC 140

DIC H3-14

THE PEST WITH SITE: 4074 SURVEYOR(S): POLYGON: (DATE: PLANT SPECIES LIST

IS: 1 = CANOPY TREES > 10m 2 = 518-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

BRAUN BLANQUET: + PRESENT	8	۲	7	~	-5% 2	1 = <1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	Š	
specific cons		3	LAYER	~	2	COPETIES CODE	3	
	-	2	3	3 4	_	1 2 3	4	
CARX PC				Q		DYOF G	đ	
150000				4				
はまずる		<u> </u>	2					
140 OF				0				
18177		·		0	,			
(10000)			9					
TROTTED				4				•
	α							•
J. C.			Ø					
PRINKS CX				4				
はまない				0				
		ſ	L				_	

BRAUN BLANQUET: + PR		+ MESBIT 1.	* ×	1=<1-5% 2= TR	3	<u> </u>	LYER LYER	1 6	
14.4	-	7	3 4	SEL.	SPECIES CODE	1	7	<u> </u>	4
Carrie		-	Q		五十四十五				đ
THE SAC		_	4						
はまれる	-	R						ᅥ	
1740 OF			0					7	_
1817			0				\dashv	ᅱ	_
(15)8081		a						ᅱ	-
College	-	-	7						
	Q.							\dashv	
PROMY	-	d						-	_
THE CO	1	-	4						
John J.	\vdash	-	0		•				
2338×4K	-		4				\dashv		_
10 Kg			d				ᅥ	\dashv	_
TO THE SHE		_	2				\dashv	\dashv	
401217			7				ᅱ	\dashv	_
OR NOTED			Q				\dashv	\dashv	1
CINTY	-		O				\dashv	┪	
THO OF			O				7	\dashv	
\$882VX			0				\dashv	-	
2000		O					\dashv	\dashv	_
SOUNES	-		4				\dashv	-	
VOR SPC.		-	4			\dashv	\dashv	\dashv	
P. S. C. C.	-		ما			7	+	\dashv	
7240015			Ω				+	\dashv	
JEST PARTY	-		0			\dashv	\dashv	\dashv	
18704			0			\dashv	\dashv	-	
OKNORKY)	H		0			寸	\dashv		
ACCION			ब्र			ㅓ	\dashv	\dashv	

POLYGON: CUPY HIM	DATE:	UTMN:	
STE: 404 TRYMETHURY	SURVEYOR(S): _\	итмг: итме:	
STAND	CHARACTERISTICS		

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO, PEATURE	HISTORY	PLANT PORM	COMMUNICAL
O TERRESTRUAL	D ORGANIC	DIACUSTRINE	DINATURAL	DPLANKTON	DIAKE
D WETLAND	C) MINERAL SOIL	D RIVERINE	DOLLTURAL	DSUBMERGED	O PONO
D AQUATIC	D PARENT MATERIAL	D BOTTOMICAND		O PLOATING LVD.	O ROYER
	O ACIDIC BEDROCK	O TERRACE		D GRAMBINOTO	OSTREAM
	D BASIC BEDROCK	D VALLEY SLOPE		O FORB	DHARSH
	D CARB. BEDROCK	C TABLELAND		DLOUGN	DSWAMP
탮		D ROLLING UPLAND	COVER	C) BRYOPHYTE	N. P.
C CAREN WATER		100	1000	DECIDIONS	908
COLUMN AND CA		DTALUS	5	CONTEROUS	O BARREN
D SHALLOW WAT.		D CREVICE/CAVE		O MIXED	C) MEADOW
O SURFICIAL DEP.		DALVAR			C) PRAIRIE
O BEDROCK		CI ROCKLAND			THICKET
		O BEACH/BAR			D SAVANIVAH
		O SAND DUNE		-	D WOODCAND
		D SELUFF			O FOREST
					D PLANTATION

TAND DESCRIPTION

[3	LAYER	Ē	ğ	SPECIES IN ORDER OF DECREASING DOWNWAY: (>> MICH GREATERTHAN) GRATER THAN (" JOYNEOOOR TO)
<u>_</u>	EMERGENT	N	_	しないなっていまっていまっているというと
~	CANOPY			
m	SUB-CAHOPY			
4	UNDERSTORY			
S	S GROUND LAYER	力力	10	14.6 51 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0
토	. CODES: 1 = > 25A R CODES: 0 = NONE	n 2 k > 1 : 1 = 1-1(0-25m 3	HT CODES: 1=> Z6m 2 x >10-Z5m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CMR CODES: 0 = NOME 1 = 1-10% 2 = >10-25% 3 = > 25-35% 4 = >35-60% 5 = >60%

IZE CLASS ANALYSIS

	THEES	< 10cm		10-24cm	Z5-50cm	> 50cm
STANDING SHAGS	20	< 10cm	Ë	10-24cm	25-50cm	> 50cm
FIRM	I	< 10cm		10-24cm	25-50cm	> 50cm
DEADTAILL	0	< 10cm	٦	10-24cm	25-50cm	> 50cm

DMMUNITY MATURITY

AGE DI MATURE DOLD-GROWTH		· · · · · · · · · · · · · · · · · · ·			- U			-
CI MID-AGE	-	2			9			L
D YOUNG	FN	-		-0	9			
	SSFE		TECTURE	SE S	DOCE	CAMICS	EDROCK	
C PIONEER C YOUNG	SOIL ASSESSMENT			DEPTH TO MOTILES 9	DEPTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	

SOIL PROFILE

THE STATE OF

PCIE

TRANSTANAY POLYGON: MARSOLL ONT M STTE: COST SURVEYOR(S): DATE: PLANT SPECIES LIST

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = CROUND LAYER

BRAUM BLANGUET: + P	깕	+ PRESENT			1=<15% 2	7	_	5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%		-
SPECIES CODE	1	_	Ž	ĸ l	f	8		SPECIES CODE	<u>ء</u> َ ع .	
			2	3	4			1 2 3 4	} }	
THARBOU			_	=						
LATSAL		_		777	d					
CARSTAD	_	 	-	U						
CAP PERS			-	4	1					
PHEADST		-	\vdash	4						
CARVID	_		-	-			·			
LEMMIND	_		-	Ш				77		
FOURENT				0						
SP FRY			2				<u> </u>			
MISCHALL		<u> </u>	-	\mathcal{I}					Γ	
ALI DAPPED		<u> </u>		يا.	_					
SE FEE		8					<u> </u>			
11/01/47			_	¥						
STAN AND	a		_	_						
Paper AU	B									
まるか				\mathcal{Q}		·				
VERBURG							لـــا			
							L			
							L			
									,	
							<u> </u>			
							<u> </u>		Γ	
						-				

POLYGON: NAPALL	DATE:	UTIMN:
SITE: ACT TRANSATURY	SURVEYOR(S): L. N.K.	JTMZ: UTME:
STAND	CHARACTERISTICS SURVEYOR(S):	

POLYGON DESCRIPTION

				•		
Charles	D LACE D POND D RIVER O STREAM EMARSH	O PEN	O BARREN O BARREN O MEADOW	O PRAIRIE	D WOODLAND	D FOREST
PLANT FORM	D PLANKTON D SUBMENCED O FLOATING LVD. D GAANTHODD SKFORB	D BRYOPHYTE	O CONTIFEROUS			
HISTORY	B NATURAL O'CULTURAL	COVER	BEOPEN O SHRUB	O TREED		
TOPO, FEATURE	D LACUSTRINE O ROVERONE O BOTTOMLAND O TERRACE O VALLEY SLOPE NATAN ET AMO	D ROLLING UPLAND	D TAULS D OVENTGE/CAVE	D ALVAR D ROCKLAND	O SAND DUNE	
SUBSTRATE	D ORGANIC O MINERAL SOIL PARAMENT MATERIAL O ACIDIC BEDROCK D SASIC BEDROCK CORB. BEDROCK					
SYSTEM	O TERRESTRUA SOWETLAND D AQUATIC	STITE	CI OPEN WATER CI SHALLOW WAT.	D BEDROCK		

STAND DESCRIPTION

L		Ŀ		
3	IYER	Ē	Ĕ	(>> MUCH GREATHRAN > CREATER THAN : * ABYA'T BOTAL TO, THE
1	EMERGENT		O	CONTRACTOR BOOK OF THE PARTY OF THE
2	CANOPY			
3	SUB-CANOPY			
T	UNDERSTORY			
25	GROUND LAYER		500	こうままないとなるとうとうようこと
토통	HTCODES: 1 = > 25 CVR CODES: 0 = NONE	n 2=>1 : 1= 1-1	0-25m 3	ff CODES: 1 => 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m 2/R CODES: 0 = NONE 1 = 1-10% 2 => 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANULYSIS

	· TREES	TREES (2 < 10cm	a	10-24cm	Ø	25-50cm	> 50cm
STANDIN	STANDING SHAGS	< 10cm		10-24cm		25-50cm	₩205 <
DEADEALL (1000	HAILS	< 10cm		10-24cm		25-50cm	> 50cm
	GECAYED	< 10cm		10-24cm		WD05-57	> 50cm

COMMUNITY MATURITY IN PIONEER IN YOUNG

DOLD-GROWTH O MID-AGE COMMATURE 1 I DEPTH TO MOTTLES 9 = DEPTH TO GLEY 6 -SOIL ASSESSMENT DEPTH OF ORGANICS
DEPTH TO BEDROCK
MOISTURE REGIME TECTURE

SOIL PROFILE

77 786-29

SITE: ACT TRANSSTUBY POLYGON: +KACKYOUC DATE: (4) PLANT SPECIES LIST

LAYERS: 1 = CANOY TREES > 10m 2 = SUB-CANOPY 3 = SUBJINGS & SHRUES 4 = GROUND LAYER BEALTH OF A MANNET. LINGUISH 1 = 1 CH. 1 = C. 10m 2 = 10 ch.

BRAUN BLANGUET: + P	+ PRESENT	Ę	1=<15%	∜	2 2=	5-25% 3 = 25-50% 4 = 50-75%	K		5=75-100%	*
SPECIES CODE		3	3		Ē	SPECIES CODE		LYER	跃	<u>3</u> .
	-	2	3	4			1	2	3	} •
VICEPAC				10		The manual	4	₫	d	
PANARE!				0		THE THE			\vdash	0
DHI DOMET				0		PARING				5
BENNER				d		VIRODU			7	
PATI PK		•		đ						
POTENTO!	1	R						-	_	
HASA SAID			4						.7	_
RAPORT			-	₫						
HE-PANGIR				4						
GRITTER #				7						
VITRIPO		B	7			•		-	-	
CHINASSE			Ŧ	7			-			
A:CONEY		Н	\vdash	Ю						
CHARTE			\mathcal{L}	0				-		
CONTHITTED		3	a	\dashv			,			
ECHIOPO			R		·					
Daves 24			QĮ				\dashv			
くるまけら	_		0	$\overline{}$						
- AVAPACO	-	\dashv	0					-		
CACANA			0				-	\dashv	_	
1819849	-		\mathcal{Q}	\exists				_	_	
Delore	\dashv	-	₫	_				4	_	
170000			4	_						
ACCESSION)	-		R							
LINCKS	-	Н	싵							
2005/201	\dashv	<u>.O</u>		_			_	_		
IN LAKER		_	0	_			_	_		
CHCLEIC			0	_						

i	LYGY POLYGON: HC	DATE	UTMN:
	STEACH TRANSTURY	JRVEYOR(S): \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	JTMZ: UTME:
	STAND	CHARACTERISTICS SURVEYOR(S):	2

POLYGON DESCRIPTION

System	STANDARD STA				
		OF C. PEATURE	HISTORY	PLANT FORM	COMMUNICAL
O TERRESTRIAL	D ORGANIC	DUACUSTRANE	DHATURAL	D PLANKTON	DIACE
	D MINERAL SOIL	O KIVERINE	DOLLINA	C SUBMERGED	0,000
T MCM IC	D PAKEN MATERIAL	D BOTTOMCAND		O FLOATING LVD.	
	O MAION DECONOCA	U IERWO		CI GRAMINOTO	O STREAM
	CARR REPORT	O Table 19 Ann		0.008	DHARSH
		C POLITICAL DE CONTROL			CI SWAMP
ZIZ.		CACLIMS UPCAND	COVER	D BRYOPHYTE	A 100
OPEN WATER			1000	DECEDENCES	0 800
TAN WOLLAND		MILE	5 6	COMPERCIS	O BARREN
		D CREVICE/CAVE	STATE OF		D MENDOW
SERVICE OFF.		DALVAR		-	O PRAIRE
Y 1		O ROCKLAND			DTHEORET
		D BEACH/BAR			DSAVANNAH
	=	D SAND DUNKE			D WOODCAND
	-		-		D FOREST
				<u></u>	D PLANTATION

STAND DESCRIPTION

LAYER		O	SPECIES IN COLDER OF DESTREASING COMMINGER (>) WITH GROWING TO SERVICE THAT IS NOT SERVICE SERVICE THAT I
EMERGENT			
2 CANOPY	\Im	B	2 2 Prevent Propering
3 SUB-CANOPY	3	_	FOR PRINCIPLE STATE OF THE PERSON OF THE PER
UNDERSTORY	4	9	100
GROUND LAYER	200	7	PATHERAPINA ORDER HERMAN
0065: 1=>25	n 2=>1	0-25m 3	HT CODES: 1=> 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = -0.2m OR CODES: 0 = white 1 = 1-10% 2 = > 10-20% 2 => > 5-35% 4 = > 3-2-0.5
	ENERGENT CANOPY CANOPY SUB-CANOPY MUDERSTORY PROUD LAYER PRODES 1 = N 25	LAYER HIT	1 ENERGENT 2 CANOPT 3 SUB-CANOPT 4 UNDESCROY 5 GROUND LAVE 5 GROUND LAVE 6 GROUND LAVE 6 GROUND LAVE 7 CANOPT 6 GROUND LAVE 7 CANOPT 7 LAVE 7 CANOPT 7 CANOPT 8 GROUND LAVE 8 GROUND LAVE 9 CANOPT 9 CANOPT 1 LAVE 1

SIZE CLASS ANALYSIS

	· TREES	Ţ	TREES (-> < 10cm	₫	10-24cm	2	25-50cm	2	> 50cm
STANDIN	STANDING SNAGS	0	C < 10cm	کے	10-24cm	2	25-50cm	2	> 50cm
DEADEALL /LOGS	FIRM		N < 10cm		10-24cm	2	25-50cm	M	> 50cm
	DECAYED	2	< 10am		10-24cm	2	Z5-50cm	2	> 50cm
						ŀ			

SOIL ASSESSMENT

D. OLD-GROWTH O MATURE O MID-AGE COMMUNITY MATURITY ID PIONEER ID YOUNG

	TECTURE	DEPTH TO MOTTLES 9 =	DEFTH TO GLEY G =	DEPTH OF ORGANICS	БЕРТИ ТО ВЕОВОСК	HOISTURE RECENE
•						
7		= 6	-9			
			G.			
		-6	. 5			

SOIL PROFILE

STAND STAN	WSTT(E a	O ORGA O PAREN	O EASIC O EASIC					NOIT	Ē	L	ŋ		ST St	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	i v	TREES	HAGS	PIRM	URITY	D YOUNG	¥		١				
STIE: ACH TRANSITURY POLYGON: Hardward (S. Surveyor) - Surveyor (S. Surveyor) Surveyor(S): Lack Company (S. Surveyor) To a surveyor (S. Surveyor) To a survey	STAND CHARACTERISTIC	POLYGON DESCRIPTION	,			D SHALLOW WAT.	пиериод		STAND DESCRIP	LAYER	1 EMERGENT	2 CUNOPY		5 GROUND LAYER	HT CODES: 1 = > 25	WAY 334 D 323	איי ככירה דיוני	STANDING SHAGS	DEADFALL/LOGS	COMMUNITY MAT	O PIONEER O	SOIL ASSESSMENT		EXIONAL OF METHOD	DEPTH TO GLEY 6 -	DEFTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE RECOME
SITE: ACT TRANSITUARY POLYGON: ACACOMU C STANSITUARY SURVEYORGS: LACKOW 3 - SULMOR & SHALK 4 - SOLMOLINER II 2 3 4		7		T					 -T			·			ŗ	· · · · · ·				•			•					
PLANT PLANT PLANT PLANT POLYGON: HEAD CITLURY SPECIES ONE LIST SURVEYOR(S): LAN LANE BRAIN BLANCER: NO. 1-38-CHOFT 3-560 M 1-59/3N 1-5				$\bot \downarrow$	_ .			1																				
PLANT SPECIES SPECIES LIST SURVEYOR(S): LAN LIST SURVEYOR(S): LAN LIST SURVEYOR(S): LAN SPECIES CODE 11 2 3 4 CAUCHALLY SPECIES CODE 11 2 3 4 CAUC		15 T	K 0	╂┼	+	-		- -	+	igl +	 _	_	_															\dashv
PLANT STE: COT TRANSTTUREY SPECIES LIST SURVEYOR(S): LNC LINTER: 1-CMONTREES 100 2-SURVEYOR 3-SULING A SHURK 4-800M MARKET BLOOK TREES 100 2-SURVEYOR 3-SULING A SHURK 4-800M MARKET BLOOK TREES 100 2-SURVEYOR 3-SULING A SHURK 4-800M SPECIES CODE 1 2 13 4 COLL CANCELLY C		5.0	3 ~		+	+	H		╁	╁	┝	┞	├	-	\vdash		\dashv	\dashv		igapha	_							
PLANT SPECIES SPECIES SPECIES ON THE ACCOUNT OF SPECIES AS SPECIES OF STANDARD OF SPECIES OF SPECIE		8 4	-										 				十	十	\dashv	╫	┝	Н	-		-	\dashv	\dashv	4
PLANT SPECIES	72	1 58 ±															7	1	\top	†					\dashv	ᅥ	ᅱ	\dashv
PLANT SPECIES LIST SPECIES LAVERS: 1-CAVOT TREE: TO ALL LAVERS: 1-CAVOT TREE: TO ALL LAVERS: 1-CAVOT TREE: TO ALL SPECIES CODE LAVERS: 1-CAVOT TREE: TO ALL SPECIES CODE TO ALL SPECIES CODE TO ALL SPECIES SPE	15	868	8														1	١										
PLANT SPECIES SPECIES SPECIES LIST SIRRYETOR(S): LAVER LAVER LAVER SPECIES DATE:	Bold	S X	Ä					ı								l	1											
PLANT STE: 407 TRAN SPECIES LIST SURVEYOR(S): LNC LAYERS 1 - CAUCHY 3 BARAN BLANCOUT. + PRESENT SPECIES CODE 11 2 3 4 CALICONS	1927	3,5	SPEC							ŀ																		
PLANT SPECIES SPECIES LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR(S): LANGE TRANSMENT OF SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 1 - CHOCK TREES - 10h 2 - SURVEYOR SPECIES CODE LAYERS 2 - SURVEYOR SPECIES CODE LAYERS 1 - SURVEYOR SPECIES CODE LAYERS 2 - SURVEYOR SPECIES CODE LAYERS 2 - SURVEYOR SPECIES CODE LAYERS 2 - SURVEYOR SPECIES CODE LAYERS 3 - SURVEYOR SPECIES CODE LAYERS 2 - SURVEYOR SPECIES CODE LAYERS 3 - SURVEYOR SPECIES CODE LAYERS 4 - SURVEYOR SPECIES CODE LAYERS 4 - SU	148-16	24.	4		Т				T	T	<u> </u>		_	 			L		<u> </u>					_	ᆜ			_
PLANT STRE: CACH SPECIES LAYERS: 1 - CANCAY TREES - 10m 2 - 50m BRAUN BLANCORET PRESON SPECIES CODE LAYERS: 1 - CANCAY TREES - 10m 2 - 50m BRAUN BLANCORET PRESON SPECIES CODE LAYERS: 1 - CANCAY TREES - 10m 2 - 50m BRAUN BLANCORET PRESON SPECIES CODE LAYERS: 1 - CANCAY TREES - 10m 2 - 50m BRAUN BLANCORET PRESON SPECIES CODE LAYERS: 1 - CANCAY TREES - 10m 2 - 50m BRAUN BLANCORET PRESON SPECIES SPECIES OA URCAY	1A8014	34	8															1	.					ĺ				
PLANT SPECIES LIST SPECIES LANTERS: 1 - CANCAN: THE S - 10m 2 BRAUN BLANCHORY; SPECIES CODE 1 2 3 SPECIES CODE AND SPECIES CODE 1 2 3 SPECIES CODE AND SPECIES CODE 1 2 3 SPECIES CODE AND SPECIES CO	1433-	12.	4			4		#(+	+	┪	-			-	\dashv	\dashv	+	\dashv	\dashv
PLANT STE: A SPECIES DATE: SURVEYOR SPECIES COOP 1 LANTERS: 1 - CANCAT TREES > BRAUN BLANCUER: + PRESENT OF THE CHART C		10m 2	LAYE	4	4	+-	Q		┿				_													\dashv	\dashv	\dashv
PLANT STIE SPECIES LIST SURV LIST SURV LIST SURV SPECIES CODE PATOR CETT POLY SURV SURV PLANT SPECIES CODE CAUCANIO CAUCAN		\$3. \$3.	1		4	1		_	+	╁╌			-	H	-		┽	-	- -	╀-	_					\Box		
PLANT SPECIES LIST SPECIES CLANGE SPECIES CODE SPECIES CO	STE OCY URV	Y +								1			_			1	\dashv	\dashv	+	╀	-	-		\dashv	4	4	_	4
PLANT SPECIES LIST LIST LANTERS: 1-6 SPECIES CON SPE	STET DIN	Ž ji	씱	3	3	34	I	9	4																			
PLAN SPECIAL S	T Si	1 2 2	8	19	用台		4	# 3	3								,							ı				ļ
	N E E	E SE	ECE.	H	\$		1	ď.	4																			
	<u> </u>		R G	19	I C	47	1	SC	1	L							l							l				

ž Ž				Section 1	D LAKE CI POND CI ROYER CI STREAM CI MARSH	O PEN	D BARBEN D BARBEN D MEADOW	D THICKET D SAVARIVAH D WOODLAND O FOREST D FLANTATION
POLYGON:	DATE	NWE5		PLANT FORM	D PLANKTON D SUBMENCED D FLOATING LVD. D GRAMINOID	D BRYOPHYTE	O PECIDIOUS O CONIFEROUS O MOCED	
KANTICAP!		UTME:		MISTORY	D NATURAL STORETURAL	SOVER.	O OPEN O SHRUB D TREED	
1	YOR(S): LYC			TOPO, PEATURE	D LACISTRINE D RIVERDIE O BOTTOMANO D TENRACE D VALLEY SLOPE	D ROLLING UPLAND	O CHEVICANE	WD BAR GRE
ZIE.	CHARACTERISTICS SURVEYOR(S):	UTMZ:	CRIPTION	SUBSTRATE	O ORGANIC Demineral Soll O PARENT MATERIAL O ACIDIC BEDROCK O BASIC BEDROCK O CARB. BEDROCK			
STAND	CHARACTE		POLYGON DESCRIPTION	SYSTEM	STERRESTICAL O WETLAND O AQUATIC	STTE	O OPEN WATER O SHULLOW WAT. BESURFICIAL DEP.	BEDROCK

3	LAYER	臣	ğ	S C C		SPECIES IN ORDER OF DECREASING DOME (>> MUCH GREATER THAN > CREATER THAN >		DOMENTARIO THANK NAME	9	
-	EMERGENT									200 P
7	CANOPY	η	∞	W T	D	III S	\$	AND MARCH TO AND MAN AND THE	K	SOL VE
٣	SUB-CANOPY				·				1	
4	UNDERSTORY	4,3	g	せませる	$\hat{\varphi}$	大工	E	TO THE	19	A CORA
ın	GROUND LAYER	S	Ø	4	\$	1000	17	1	12	NR KA
75	H7 CODES: 1 => 25m 2 =>10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = CVR CODES: 0 = NOME 1 = 1-10% 2 => 10-25% 3 => 25-35% 4 = > 35-60% 5 => 60%	12 t Z	0% 2 *:	= 2-10m 4	12.7. 1.7.7.	n 5 = 0.5-1m 35% 4 = >35	3	5 = >60%	5	
찡	SIZE CLASS ANALYSIS	SIS		,						
		TREES (F)	< 10cm		₹	10-24cm	Ų	/25-50cm	2	> 50ch
L					ŀ		l			

	· TREES [P.	a	< 10cm	₹	(2, 10-24cm	Ŋ	Z 25-50cm	2	N > 500m
STANDI	STANDING SNAGS 12 < 10cm	یا	< 10cm	K	₹ 10-24cm	()	25-50cm		> 50cm
DEADFALL /LOGS	FIRM		< 10cm		10-24cm		25-50cm		> 50cm
	DECAYED		< 10cm		10-24cm		Z5-50cm	1	> 50cm
COMMUNITY MATURITY II PIONEER II YOUNG	MATURITY II YOUNG	10	D MID-AGE		O MATURE	Ċ	D.OLD-GROWTH	E	•

WOLL ACCOUNTING					
	ı	7		建筑地	
SANDAL					
DEPTH TO MOTILES 9	- 6	= 6	* 6	- 6	
DEPTH TO GLEY G	9				·
DEFTH OF ORGANICS					
хоомозе от нтяза					
MOISTURE REGIME					
					_

	•	•	

PLANT
SITE: 40# Transitudou

SPECIES

LIST
SURVEYOR(S): LAC

LAYER

SALING & SHRUES 4 - COUND LAYER

SALING & SHRUES 4 - COUND LAYER

SALING & SHRUES 4 - COUND LAYER

SALING & SHRUES 4 - COUND LAYER

SALING & SHRUES 4 - COUND LAYER

SPECIES CODE

LAYER

SPECIES CODE

LAYER

CHECKLOST

PROCEDELLA

SPECIES CODE

LAYER

SPECIES CODE

LAYER

CHECKLOST

PROCEDELLA

SPECIES CODE

LAYER

CHECKLOST

SPECIES CODE

LAYER

LAYER

CHECKLOST

SPECIES CODE

LAYER

LAYER

CHECKLOST

SPECIES CODE

LAYER

LAYER

LAYER

LAYER

SPECIES CODE

LAYER

LAYER

SPECIES CODE

LAYER

LAYE

1 2 3 4	4		\C	0	0	0	Ø			یه			İ		Γ								7			
1 2 3			1	0	0	0	O			ا م	 	ـــ					1									,
1 2						$\frac{d}{dt}$)	9										\vdash		\dashv	\dashv		
目		1	士	†	-		1		9		_												\exists			
,					1			7			-		_	_	_	\vdash							\Box			
\$	(,)	7	2 -	1	3	7	t:	i,		4,			_		_							\neg	\dashv	\dashv		
<i>\</i>	3	A	科技	t	7	y	Ø.	T	P	4	<u>₩</u>															
	7	A		0/2	C	9	#	Q	(3)	2									.							
	<u>U</u>	Q.	#U		ð	7	P	8	9	4	d.															
\prod	T	T					٦		٦						•		7		 T			7	<u> </u>	\ 		
	a	ماد	<u>†</u>	0					7	1						60										
2			2	Ĭ	ď	4	\mathcal{L}		4	4	V	U	R	,QZ	2	O.	9	4	띡	9	괵	의	_		의	0
1 2	\dashv	+		-	2)	_	\neg	_														1	-	7	\dashv	
+	7	+	+		9	\dashv	\dashv	\dashv	+	-							-	-	\dashv		-		1	\Box		
		1	d_{λ}			H	Q	Seg		0			, y	1	1		낼				14	7	H	ر		
	出		Ø Š	3	Á	Ä	山	3	8	3	7	力	4	ð	7	3	Á	Z	X	A	2	明	#	XIII	냈	4
	Y	Ý	AE	7	Á	1	A		H	J	8	X	F	Ž	4	H	3	7		Ž	9	1	A	3	H	HEAR VE
		<u>a-11</u>	12	14	4	且	Ü	Й	7	2	9	当	Ź	B		d		<u>J</u>	3	8	日	#	#		7	THEADONE
	1 2 3 4	1234	1 3 4	7	101 040 1 101 040 1 101 040 1	10 40 1 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7 4 2 4 0 4 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	* 4 2 4 0 4 0 * 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7 Q 2 4 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7	* 4 2 4 0 4 0 0 4 4 * 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7 9 2 0 4 0 0 4 4 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	* 4 2 4 0 4 0 0 4 4 0 0 * 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	* 4 2 4 0 4 0 0 4 0 0 2 * 2 2 2 2 3 3 3 3 3	* 4 2 4 0 40 0 4 4 0 0 2 2 2 2 2 2 2 2 2	* 4 2 4 0 4 0 0 4 4 0 0 2 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	* 4 2 4 0 40 0 4 4 0 0 2 2 2 2 2 2 2 2 2	* 4 2 4 0 40 0 4 4 0 0 2 2 0 0 0 0 0 0 0	* 4 2 4 0 0 4 4 0 0 0 2 0 0 0 0 0 0 0 0 0	* 4 2 4 0 40 0 4 4 0 0 2 2 0 0 0 0 0 0 0	* 4 2 4 0 40 0 4 4 0 0 2 2 0 0 0 0 0 0 0	* 4 2 4 0 0 4 4 0 0 2 2 2 2 2 2 2 2 2 2 2	* 4 2 4 0 40 0 4 4 0 0 2 2 0 0 0 0 0 0 2 2 2 3 2 3 2 3 2 3	* 4 2 4 0 0 4 4 0 0 2 2 0 0 0 0 0 2 2 2 2	* 4 2 4 0 0 4 4 0 0 2 2 0 0 0 0 0 2 2 2 2	* 4 2 4 0 40 0 4 4 0 0 2 2 0 0 0 0 0 0 2 2 2 2

STAND CHARACTERISTICS SURVEYOR(S): LANC DATE: JUNE: UTMN:	H SUBSTRATE TOPO, FEATURE HISTORY PLANTFORM COMMUNITY	DAGMIC DIACISTRINE DIATIRAL DIALITORI DI PLANITORI DI CALITURAL DI SUBBERGED DI CONTROL CEDROCK DI TERRACE DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURAL DI CALITURA DI CALITU	O ROLLING UPLAND OQUEN O
STAND CHARACTERISTICS DO YOUNG DESCRIPTION	3-1	3	STE OPEN WATER D'SMETCHA DEP. D'REDROCK

νĮ	STAND DESCRIPTION	NOTION								. ^		1 '
	AYER :	Ŧ		Š	SIDM <<)	10 M	CONTRACTOR SELECTION (<)		RTHUR TON	95		THE PARTY
	EMERGENT	4	·		CANA THE	Ś	1200X	1/2		1		70 L
7	CAHOPY					1.	¥	1		1	, 1	
m	SUB-CANOPY		-	Γ								_
4	UNDERSTORY	_	_									~
S	GROUND LAYER	* B.	(X)		STATE OF THE PARTY	8	12	14	عدا- مدل		CONTRICTOR ID	_
ΞQ	HT CODES: 1 * >	25m Z=	×10-7	% A	2-10m -	77	1 5 = 0.5 35% 4=	18	205m 7=<0 5=>60%	Ā		-
S	SIZE CLASS ANALYSIS	WYSIS								-		
		· TREES	2	< 10cm	E C	d	10-24cm	2	25-50cm	Z	- 50GB	-
	STANDIR	STANDING SNAGS		< 10cm	E5		10-24cm		25-50cm		> 50cm	_
- 5	DEADFALL/LOGS	FIRM		< 10cm	e de		10-24cm		25-50cm		* S0cm	,
		DECAYED		< 10cm	5		10-24cm		Z5-50cm		> 50cm	

STANDIR	STANDING SHAGS		< 10cm		10-2	10-24cm	25-50cm	e	_	V
DEADFALL/LOGS	FIRM		< 10cm		10-24cm	form	25-50cm	·E		N SS
	DECAYED		< 10cm		10-24cm	f Cm	\ 25-50cm	u		8
COMMUNITY MATURITY I PIONEER I YOUNG	MTURITY TOUN	<u>_</u> (9	O MID-AGE	끯	Ž	O MATURE	D OLD GROWTH	SROW	E	-
SOIL ASSESSMENT	MENT					٠	<u>L</u>			
			. 7							
TEXTURE	ЖE						<u>'</u>	į	:	i
DEPTH TO MOTTLES 9 =	= 6 531	Ī	. 6			* 5				
DEPTH TO GLEY 6 =	EY 6					.5			•	
DEPTH OF ORGANICS	ย								•	
DEPTH TO BEDROCK	ď									
MOISTURE RECOME	¥									
				I		-				

SOIL PROFILE

41 "Astron

STAN	POLYG STEWE DWEILL DAGUMI	D OPEN V D SHALLO	STAND 1 BMS 2 CANOR 3 SUB-C 4 UNDESS 6 GROUN HT CODESS CAN CODESS CAN CODESS CAN CODESS CAN CODESS CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	SIZE CLA SIZE CLA SOMMUN COMMUN COMMUN SOIL ASS	DEPTH TO PERTH OF C
	8 T				
	- GROUND LAYER 1 2 3				
TEANSTWAY POLG VICTORY	3 = SAPENICS & SHRURS 4 = GROUND LAYER 5-25% 3 = 25-30% 4 = 59-75% 5 = 75-100% SPECIES CODE LAYER 1 2 3 4				
1 4 3 7	2 = SUB-CUMOPY 1 = < 1-5% 2 = YER 7ER	0000		Ma a	
SITE: COT POLYGON: TO DATE: MCU SURVEYOR(S): \	WOPTREES - 10-			I FS	
PLANT SPECIES LIST	SPECIES CODE	TOPPEN FIRETO FORTER VINESSS	THE CHASS THE CHASS	ATTO CENN	

				ļ					
STAND		STE				8	8	POLYGON:	1.3
CHARACTERISTICS	RISTIC		SURVEYOR(S):	3	NWE	ă	DATE	7000	\mathcal{O}
		ZWE5		5	UTME:	5	SIME?		1
POLYGON DESCRIPTION	XXIPTI	ج							1
SYSTEM	3	DIESTRATE	Toro. FE	PEATURE	HOSERORY			ŀ	г
D WETLAND D AQUATIC	DORGA DAMER DAMER DEASIC	D ORGANIC D MINERAL SOIL SPARENT MATERUL D ACIDIC BEDROCK D BASIC REDROCK D CARB. BEDROCK	D MOUS D RIVER O BOTTO D VALLEY	# 8 #	1	D PLANKTON D SUBMENGED O FLOATING LAD. D GRANGHOID D FRANCHOID		DIAKE DIONE DIONER DSTREAM DIAMEN	
E			D ROLLING UPCAND	3	Sover a	O LICHEN		CI SWAMP	_
DOPEN WATER DEPALLOW WAT.			D CHEVICE/CAVE		C OPEN C SHRUB	O PECIDIOUS EXCONITEROUS O MEXED		O BOG O EMBER O MENDOW	-
C AEDROCK			D ALVAR D ROCKLAND D BEACHEAR D SAND DUNE D RUFF	_	THEED TO SEE		<u>uuuu</u> g(D PRAIRCE O THOCKE O SAMMAN O WOODLAND	
STAND DESCRIPTION	₹ŏE						۳.	M7777	
LATER	<u> </u>	É	PECTES IN OR WING GREAK		SPECIES JN. ORDER OF DECENSION OF WAYNEST OF THE PROPERTY OF T	Carry SAN			
1 EMERGENT	L				V/I	200			
2 CANOPY	J	J	JOH F	6			ŀ		
3 SUB-CWOPY	3	0	141						
4 UNDERSTORY	14	-		レージ	J. PARTI				
5 GROUND LAYER	方言:	25. 24. 35. 35. 35. 35. 35. 35. 35. 35. 35. 35	2-10m 4 = 1-2 0-25% 3 = >2	25.8	2 = 51026 3 = 526 4 = 152 5 5 4 5 5 5 6 5 5 7 = 625 1 1 = 1510% 2 = 526 3 4 = 525 5 4 = 525 63 5 5 = 525 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	世 第 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	S		
SIZE CLASS AWALYSIS	CYSTS		•						
•	TREES	A Sign	1	10-24Cm	d	25-50cm		> 50GB	
STANDING SHAGS	SHAGS	No 150	<u>~</u>	10-24cm	9	25-50cm	Ê	850S A	
DESCRIPTION OF STREET	Malie	A	d	10-24Gm	7	25-50cm	户	× 500s	
	DECAMED	Not of	4	10-X-01	/	25-50cm	ŕ	> 50cm	•
COMMUNITY MATURITY	ATURITY O YOUNG	Ö	D MID-AGE	O MATURE		D-OLD-GROWTH	E	•	
SOIL ASSESSMENT	K	٠		,					
	_	L	200 Kathy 2		10 m			·	
TECTURE		_		-					
DEPTH TO MOTTLES	:	8		8					
DEPTH TO GLEY	5	5	5	6				-	

D BEDROCK RE REGINE

POLYGON: CUMH! D LAKE
O POND
O STREM
O STREM
O WCSH
O FEN
O BOG
O BARBER
O PRAREE
O THICKET
O SWAMMAH
O SWAMMAH
O SWAMMAH
O SWAMMAH
O PLANTATION 6 GROUND LATER 5/67 | 5 | OAL Y CHOOLNEY ALL BALLONDER | HT CODES: 1 => 520 - 250 - (>) with cream of deceasing to him. Not well and the contraction of th × 50cm × 50cm #585 A **\$505 ^** D PLANKTON

O SUBMERGED

O FLOATING LIAD.

O GRANGMOID

O GRANGMOID

O DONB

O BRYOPHYTE

O DECIDIOUS

O ONNIFEROUS

O MIDGED PLANT PORM DATE ÿ E D OLD GROWTH 15-50 an X-50cm 25-50cm FRAMM=HENEN 25-50cm PPARSITIVA D NATURAL O'CULTURAL HISTORY SOVE S O OPEN O SHRUB O TREED 3 O MATURE 10-24cm # # G () 10-24cm 10-24cm D LACISTRINE
D RYGERNE
D TO TOTAL AND
D WALLEY SLOPE
D WALLELAND
D ROALLING UPLAND
D CLIFF 10-24cm TOPO, PEATURE O TALLIS
O CHEVICE/CAVE
D ALVAR
O ROCAND
O BEACH/BAR
O SAND DUME d CHARACTERISTICS SURVEYOR(S): . . O MID-AGE STE-A D ORGANIC
D MINERAL SOIL
D MAENT MYTERAL
D ADDIC BEDROCK
D SASIC BEDROCK
D CARB. BEDROCK < 10cm < 10cm × 10cm × 1001 ~ CTMZ: . . SUBSTRATE క POLYGON DESCRIPTION COMMUNITY MATURITY D PIONEER D YOUNG GROUND LAYER 5/0,7 토 TREES STANDING SHAGS FIE DECATED SIZE CLASS ANALYSIS STAND DESCRIPTION = 6 SZITTOM OT HITPS | 9 = DEFTH TO GLEY G .. SOIL ASSESSMENT TECTURE DEPTH TO BEDROCK DEPTH OF ORGANICS MOISTURE REGIME O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP. O BEDROCK O TERRESTRUA D WETLAND D AQUATIC UNDERSTORY DEADFALL/LOGS SUB-CANOPY SYSTEM I EMERGENT STAND E CEROPY LAYER 生る 8 LAYERS: 1 = CANOPY TREES > 10m. 2 = SUB-CANOPY 3 = SUPLINGS B. SHRUES 4 = GROUND LAYER. BRAUN BLANCUET: + PRESENT. 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100° KARA KARA 2 3 PANSITURY. SPECIES CODE 5 8 SURVEYOR(S): 1 M DATE: TRY 4 刘女 1 4 Q 0 له 1 4 1 00 0 万分 ۵ d LAYER 2 3 POLYGON:(H SACCIPICO SACCIPICO THE PRO ASTROPHED IN CARANO. STATE OF PRINCE MEL PLAN THE CAR POPPORTI LP FR X STATE OF SEN PORTEN RIPRATI PALAL AS STORW THE OF DXXX P. KELOLYA HELEUC HAT 10/1077 JONE BY A COUNTY SPECIES CODE PA PP FA PLABANC SPECIES PLANT

41 WAR

8 2 T d LAYERS: 1 = CANOPT TREES > 10m 2 = SUB-CANOPT 3 = SUPLINGS & SHRIBG 4 = GROUND LAYER BRAINN BLANGUET: + PRESENT 1 = < 1.5% 2 = 5.2% 3 = 25.50% 4 = 50.75% 5 = 75.100KAR 2 3 PAP AST CHACK PANTERI PARTE とましまり THE CO HATER H VPWTIZMAY SPECIES CODE SAMP ! TOP 8 DATE: JUN CA) F 1-1/15 SURVEYOR(S): \ W.C 44 d 200 a a Q 4 <u>a 0</u> a C S S SITE: 404 1 2 3 ad POLYGON: Ø TIVE CO ESPLIPE. CHART C CARLES IN JOY TONY QY APPRO SYCONO は出めら SOCIETA MICHOLIN CENTECA FASO FIG PIPEDE TCORD HOUNT THE SOUR K HACKET JUN-VIC STATA 18 19 CA V APPAT HR150)C HACES ANGORA V SPECIES CODE V LOFEST STCORN YOU CHEL MO 80 SPECIES PLANT

<u> </u>			
STAND	STTE: 407 TV ANSITMAY POLYGON:	VI WITTE	POLYGON: (1811-1)
TERISTIC	SURVEYOR(S): \ \C		DATE: \(\) \(\) \(\)
	UTMZ: UTME:		UTMN:

POLYGON DESCRIPTION

System	SUBSTRATE	TOPO. FEATURE	MOSTORY	A AMERICAN	
O TENEDONE				San San San San San San San San San San	A C Transaction
ANICONS O	COMPANIC	DAGSTRINE	D NATIFIEM	I D PI ANITOTIVA	2000
D WETLAND	O MINERAL SOIL	O RIVERING	1000	1	3
D AOUATIC	O PARENT MATERIAL		3	Caspanas	0 000
				D FLOATING LVD.	a Parago
	DALLE SEDECT	O TERRACE		CONTRACTOR OF CO.	
	ID BASIC BEDROCK	O VALLEY GODE		1000	
	CARR REDOCK			9	
	Committee of the commit			מנוסיים	D SWAMP
Ë		D ROLLING UPLAND	8	DERYOPHYTE	200
				The state of the s	
DOTEN WATER		O TANISE	NOOCO		3
TAW WAT		2		O CHIEFTONS	DEVEREN
					D MEADOW
		DALVAR	DIREED		
DEPROCE		411.0000			
		CHARANIC			THEORET
		C) BEACHURAR			
		-	•	2.	
				-	DWOODCARG
				_==	D 70,0057
					CO OR AATTATAD
		_			

STAND DESCRIPTION

3	LAYER	E	K.	SPECIES IN OBJER OF DECREASING DOMINING: (>> MICH GREATER THAN CHEATER THAN TOWN REQUITION TO THE CONTROL OF T
	EMERGENT	M		Preveni
ایما	CANOPY			
ا ـــ ا	SUB-CANOPY			
_	UNDERSTORY			
	GROUND LAYER	50	4)	GROUND WIRE 15/05 HES CURP - SOLD TITLES CAND
IE >	CODES: 1 = > 25a	7	0-25m 3	TC0053: 1 => 25m Z => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m

STZE CLASS ANALYSIS
TREES | P | < 10cm

> 50cm		25-50cm 25-50cm 25-50cm		10-24cm	1+1	< 10cm		STANDING SWAGS < 10cm 1/10GS FTRM < 10cm	STANDIN DEADFALL/LOGS
> 50cm		75-50cm		10-24cm	-	< 10cm			
× 50cm		25-50cm		10-24cm	\dashv	< 10cm			DEADEALL/LOGS
> 50cm		25-50cm		10-24cm		< 10cm		IS SHAGS	STANDIN
- Sec.	-	(2.30ml)	4	IN-E-MILI	K	- 100m	ᅬ		

COMMUNITY MATURITY

INDIPAGE

IND-AGE

DOLD-GROWTH

O MATURE

SOIL ASSESSMENT

1 2 (1) 2 (1) 2 (1) 2 (1) 3 (1) 4 (1)

		,	
	•	•	
} }			
i 			

SOIL PROFILE

41743/big

정 ddo 1 2 3 4 LAYENS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS B.SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% KYEK KR Q ۵ व्यव Old STE: ACT TV BUSH WAY ON THAT PAR PAR PRCP-INE KERRINE. Frenk W 176199 DHORIST SALERO SVENING AED IN TACOST Corper SPECIES CODE SELENCE. Seconto THICK HADDR COSTOL LOS SUNCE Sp 71-11 DATE: MAY SA, 8 SURVEYOR(S): | WC 0 a σ C \overline{O} ۵ 00 4 4 Dalo SYES SYES 1 2 3 200 POLYGON: (A CHANGE N N P C S A COURT SACRET と出り出げ R PACINIX FA KEC APR SI DAMMO KARA KON SPECIES CODE ZIECONY CANDEN THE STATE OF 40127 SALESTO. みないたい JES SE 2000 13/628H Capper SCHOOL 1018 HE PORT Hada ACHAILL. SPECIES 200 T-85-10 PLANT

	CHARD		STRE	SITE: A 24 - 10.	10 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	THOUSAND TO A		[
<u>इ</u>	CHARACTERISTICS	RISTICS		1_4		1	7 7 7	ے آج
_]			ZWE5		UTME:	SWE5	1	1
इ	POLYGON DESCRIPTION	COLIPTION	_					7
1	1	2002	EURSTRATE	TOPO, FEATURE	HISTORY	PLANT FORM		Γ
O O O O	O TERRESTRUA O WETLAND O AQUATIC	O ORGANIC O MINERAL SOIL O PARENT MATERIAL O ACIDIC BEDROCK O MASIC BEDROCK	SOIL HATERIAL EDROCK DROCK	D LACLSTRINE D RIVERINE O BOTTOMLAND D TENSACE O VALLEY SLOPE	D NATURAL D'CULTURAL	D PLANKTON D SUBNERGED D FLOATING LVD. D GRANDNOID D FORB	D LACE O POND O STREET	
	STTE			D ROLLING UPLAND	anno.	D LICHEN	SWAMP	
0000 3880	O OPEN WATER O SHULLOW WAT. O SURFICIAL DEP.			O CLIFF O TALLS O CREVICE/CAVE	000	D DECIDIOUS O CONTIFEROUS D MIXED	D BOG D BARREN D MEADOW	
0300 0	XOOX			D ROCKLAND D BEACH/BAR D SAND DUNE D BULLFF			D PRAIRGE O THOCKET D SAVANIMAH O WOODLAND O FOREST	
STAN	STAND DESCRIPTION	No.E-				. *	Creministra	7
LAYER		Ē	<u>\$</u>	SPECIES IN ONDER OF DESERVING CONTINUES:	P DECREASING	SOMETIME AND THE		
-	EMERGENT	7	1					
8	CANOPY		1	7-70-1	x - x > x \ x \ x \ x \ x \ x \ x \ x \ x \	7	7	
3.50	SUB-CANOPY		-					
4 CRD	UNDERSTORY		_					
2 (360	GROUND LAYER	50	5	ANTHON-	Sedar	3 60 13	j	
88 88 88 88	15: 1 × 25: 0	in 2 = >10- E 1 = 1-109	25m 3 = 2 2 = >10-	HT CODES: 1 => Zm 2'=>10-Z5m 3 = 2-10m 4 = 1-2m 5 = 0,5-1m 6 = 0,2-0,5m 7 CM CODES: 0 = NOME 1 = 1-10M 2 =>10-25W 3 =>25-35M 4 =>35-60M 5 =>60M	0.5-1m 6 = 0.2-0.5m 7 + = >35-60% 5 = >60%	Sn: 7 = <0.2m : >60%		
SIZEC	SIZE CLASS ANALYSIS	rsis		٠				
		. TREES (2	< 10cm	X 10-24cm		25-50cm	> 50cm	
	STANDING SNAGS	FRAGS	< 10cm	10-24cm		25-50cm	> 50cm	
DEADFA	DEADFALL/LOGS	Faller	× 10cm	10-24cm		25-50cmi	- Stem	_
	8	DECAYED	₩ TOOM	10-24cm		25-50cm	> 50cm	
COMMUNIT CI PIONEER	>	MATURITY C) YOUNG	D MI	O MID-AGE O MA	O MATURE DO	D OLD GROWTH		
SOIL A	SOIL ASSESSMENT	Ę		·				
		-	7					
	TECTURE							
TEMPS &	DEPTH TO MOTILES		8.					
\$	Ser III so de Ci	,	3			•		
Demi	DEPTH OF ORGANICS					•	•	
DEFIN	DEFINITION DEDICAL			1			,	
MOISI	MOISTURE RECENE							

DIC 151-158

150-160

HT Parties

8 LAYERS: 1 = CUNOPY TREES > 10m 2 = SUB-CUNOPY 3 = SAULINGS & SHRURS 4 = GROUND LAYER BRAIN BLANGUET: + PPESRT 1 = 1-5% 2 = 5-55% 3 = 25-50% 4 = 50-75% 5 = 75-100) 1 2 3 TRANSTURE SPECIES CODE POLYGON: FOOTO 8 SURVEYOR(S): L.M. 4 4 0 Ō. Ō 0 404 ZYER 1 2 3 ۵ Ω ۵ ۵ 0 Ø a DATE: \overline{o} STIE 22/4/2 RANJOR. PHOHOT STANK E A BUCK Y COOK Y SAUVAN ACLAT! ON HOUSE SYPERE 204450 INSTRO HI WILL MYSENS H JOSCO 33301 FOOTO DE TOWN SE PROPE SPECIES CODE JUG OX MC TTC 1D PAPINTE CHURPO) Had Ta BBBIT 814 SPECIES PLANT

SOIL PROFILE

ar while

														••												•							L	
					. . <u>.</u>	₹	Γ	Γ	Γ		Γ-	Γ	Γ	Γ-	Ι	Γ	<u> </u>	Γ-	Γ	Γ	γ-	Γ	Γ-					 -	г	г	1	 1		
				و.	_	3	<u> </u>	_	-	_			_	Ļ		_	_	_	_	L	Ŀ													
	1 1			F. C.	K	m	1		₫	0	-	Ø	1	C	C	_	_	_			_											П	\sqcap	
				5-2 2-2	LAYER	7	-	-		7		_	_	-	H	<u> </u>				_														
		.		380		77					N		-	-		\vdash		_	\vdash	-		_	-					<u> </u>						
wows the boun	MAS			3 = SAPLINGS & SHRUES 4 = GROUND LAYER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	SPECIES CORE		OLAMING TO	14847	THOUTH	SALVETI	PASSELL	DAYARE UN	MONO	CARSTID	CHARLES OF																			
30/1	7	2/12	MC	CWOPY 3	Ē																	•												لـ 7
404	1177		-1	1 2 = 518	LAYER	3.4	0	0	Δ J	₫	Ŋ	0	4	0	Ø	0		Ø	σZ	2	Ŕ	V	0	2	2	ď	2	$\overline{\mathcal{Q}}$	Ω	0	ر ا	2	4	Ω
1	ٌا≍	1	ğ	S > 20	7	1 2	\dashv	_		\dashv					_																-	\dashv	\dashv	ᅱ
DI ANT	HES	LIST	SURVEYOR(S):	AAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 =	SPECIES CODE		CANCACO	TOPPE	PHYALDI	IND ATI	しまのトノー	SOCOLD A	MELPERSON	THE STATE	THEOFF!	VICERE	ZANDONT.	KA BIEN	(ID) HERE	LA TROPE	RIGHILL	FC VRI	Jan Sal	CANTIPO	ONDER	MULTER	SACGLOW!	TRUE K	JR VUI O	, IT BO	PENFLUY !	HECHES	MED COC)	FRAVIEZ
											,l	2//				1	4		И		<u> </u>	7	4	≤ 1	<u> </u>	4	1-1	U	U	(//	7	<u> </u>	1	工

STATES SUBSTICATE TOPOL PECCHIPAL DIAGE DIAG	HISTORY PLANT FOUN SUATURAL D PLANTON SCOLTIRAL D SCHOOLS D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID GRAMMOID D GRAMMOID GRAMMOID D GRAMMOID GRAMMOID D GRAMMOID D GRAMMOID D GRAMMOID D MIXED D MIXED	000000000000000000000000000000000000000
WIGHT CAR IT CAR	\$ 23 L	
Weeker water with the control of the	43 4	000000000000000000000000000000000000000
N		Ó SWAMP O FEN O BOG O BOG O BAGEEN D FRAIRCE O THÍCKET O WOODCLAID O FRAIRCE O
2		D BOG D BANDEN D PRAIRDE D THUCKET D SAVANHAM D WOODLAND
1		
NG		DPLANTATION
1		
NG C 100 C 1	REASTING DOMINANCE	
	SAVING IN THE	() () ()
ES C < 10cm 10-24cm 10		
10-20 10-20	6=0205m7=42m	THE CANAL
65 < 10cm 10c2 10c2		
C C C C C C C C C C	Z SPGM	> 50cm
10-2- 11	25-50cm	> 50cm
TTY JNG CI MID-AGE CI MU 1 2 公司等院 1 3 公司等院 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	\ 25-50cm \	> SOcm
ING OMID-AGE OM	75-50cm	> 50cm
1 2 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	D.OLD-GROWTH	
2 2 2		
1 0		
D =0 =0 =0		
DEFTH TO GET G. G.		•
DEPTH OF ORGANICS	·	
ретти то вервоск		
MOISTURE REGINE		

a realist

STAL	POLYC D TERME D ACUM	D SWALL D SWAL	STAND LAYER 1 EMERG	2 CANOP 3 SUB-CA 4 UNDER 5 GROUM HT CODES: CAR CODES	SIZE CLA	COMMUN D PIONEE SOIL ASS	DETTH OF CETTH
						•	•
	8		T				
	S-75:00% LAYER 2 3 4						
<u> </u>	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		+++-				
TEANSITWA NG 20	3 = SPRINGS ASHRUES 1 = GROUND LAYER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% SPECIES CODE LAYER 1 2 3 4						
TRANS SOLO SOLO SOLO SOLO SOLO SOLO SOLO SO	2011 SP	<u> </u>					
AOT TR. MY: MANA JUNIO/ ORISS: MC	10m 2=5maC 1 1= < 15% LAYER Q	1 4	100ª	0222	# 0 0 O	R 40 R	
STTE: AC) POLYGON: C DATE: SURVEYOR(S):	+ PRESENT 1 1 2				M G		
PLANT SPECIES PLIST SI	SPECIES CODE LAYER LAYER LAYER LAYER LAYER LAYER COL LAYER LAYER COL PANCEL PA	14 オハ	SUCTON SUCTOR	CHOCANN CHOCAN	POSPORIUM SHAMEUM SCANCE		
PLANT SPECIE LIST	SPECIE	020005	1483	9779		POPPER DAMPE	

			f							. ,	. •		
	STAND						2	RANDITUR	3	П	8	POLYGON! AMA	13
	CHARACTERISTICS	ERIST.		ŽKV Ž	SURVEYOR(S):		갂			DATE	ŭ		
			4	ZV.5			5	UTME:		₩E5	z		
_	POLYGON DESCRIPTION	SQUE	NOL										
£	System	-	PURSTRATE	ST.	of of	TOPO. FEATURE	W	METORY	12	PLANET ROSE			ſ
-77-	O TERRESTICAL SEWETLAND D AQUATIC	200000 200000	O ORGANIC SAUNERAL SOIL D'EAREAT MATRIAL O ACIDIC BEDROCK O BASIC BEDROCK O CARB. BEDROCK	Z X X X X	D LACISTRANE D RIVERINE D BOTTOMAND D TRRACE D WLLEY SLOPE D TAN BI AND	STRUCE CONC.		S NATURAL O'CULTURAL		D PLANCTON D SUBMENCED D FLOATING LVD. E GRAMMOID	3	81 E.	
	alus		,		D ROLLING UPLAND	¥ 5	¥6 ¥	8	7		`		
0000	D OPEN WATER D SHALLOW WAT. D SURFICIAL DEP. D SERVICIAL DEP.	· · · · · · · · · · · · · · · · · · ·			O CLIF O TALLS O ALYAR O ROCCIAND O BEACYBAR O CHID IN THE	GE/CAVI	,	A OPEN D SHRUB D TREED	000	D PECIDIOUS D CONTIENOUS D MDGD		D POG D INVIDEN D PRATRIE D THEICET	
			ļ		# Things	y .			· - · · · · · · · · · · · · · · · · · ·		000	D WOODLAND D FOREST D PLANTATION	
V	STAND DESCRIPTION	MOLL		-						ľ	١.		7
3	LYTER	. HT	8		SPECIES IN CORDER OF DE	5	0.2	COREAST COREAST	8	SPECIES IN CRIDE OF INCESSING CONTRIBUTE.			
	EMERGENT	m		片	5	2	SELLI	244	W	レルラ	Ĵ	Ø ,	
N	CANOFY	-			٠						1		
-	SUB-CAHOPY		_	L									·
-	UNDERSTORY		L	-									
2	S GROUND LAYER HT CODES: 1=> 25m		361210		1 (11 ,	4	14	MADCAR	ğ	AL DANGEMICA	B	ANC	
8	CVR CDDES: 0 = NONE 1 = 1-10% 2 = >10-25%	ME 1= 1	10% 2	\$ × 10	25% 3	X	*	#59×=5 #6958×=# #5657×=#	À	1 59	2	•	
K	SIZE CLASS ANALYSIS	UNSIS	ļ										
		. TREES	2	61 A		\ <u>3</u>	10-24Cm	F	25-50 cm	6	^	#585	
	STANDING SHAGS	SHAGS	Ė	× 10gm	F	12	10-24cm		25-50cm	 	Ê	20cm	·
្នេ	DEADFALL/LOGS	E	Ż	< 10cm		ST.	10-24cm		25-50gm	F		250 V	
		DECAYED		< 10cm	-	707	10-24cm	_	25-50G-32	F	^	- 58G	
1											ł		÷

	· TREES	Y	< 10cm	8	10-24cm		25-50cm	6	
STANDIN	STANDING SHAGS		< 10cm		10-24cm		25-50cm	Ä	1
DEADFALL /LOGS	FIRM		< 10cm		10-24cm		25-50am	F	
	DECAYED		< 10cm		10-24cm		E-50G-52	E	
COMMUNITY MATURITY OF PIONEER DYOUNG	MATURITY O YOUNG	~ (g	D MID-AGE		O MATURE		900	D-OLD-GROWTH	E
SOIL ASSESSMENT	MENT	i			•		L .,.		1.
			7	7					
SAUTAGE .	RE				_	Γ	•	į	į
DEPTH TO MOTTLES 9 *	E 0 =		. 0	- 5	8	Γ			
DEPTH TO GLEY G	EY 6 -		5		5				•
DEPTH OF CREMBES	ย				-	Т			
DEPTH TO BEDROCK	x					Т			
MOISTURE RECIPIE	Æ				_	Т	•		
		1			_	-	-		

[אס]	8[_	6	00	<u>·</u>		000	8 8	<u>}</u>	 .	J	K	2		2	<u>س</u> .	- 5	B C	\$ {	<u> </u>		DEAD		8	D PTC	SOIL		2	-	0673	69	¥
,			•																				٠			٠		•			
		3	 } }		·										<u> </u>	Γ	Γ	<u> </u>		Π			; 	Γ-	Ţ <u> </u>		_	Γ		Γ	Γ
	, §	_	•	0	0		Ø			₫	a	0	q	Ø	-	-		-		Н	_	_			_		_				_
	15 K	LAYER	3			₫			, '											Н	\neg			-	-	-	-	_	\vdash		-
	SCE	12	1 2						٦						-														H		
	28		_	2				4	7	. 1					2	-	_		_	-		_		_		1					
4	HRUBS	٤	4	CHAPPELA	8	STATE OF	H	SA.	TEST TO	Ø	3	a	4	Di	80																
13	SA 50	7	3	F	9	Ä	TO THE	9	4	VNROSS	ACCION	ANDER!	AS A BY	JRWIG	10																
3	3 = SAPLINGS & SHRURS 4 = GROUND LAYER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	SPECIFIC CODE		2	7	q	1	7	9	5	A	E	길	7.0	BUSECO																
18 9 1							4	7	<u> </u>	\subseteq		뾛	4	\subseteq	الم			Ш													
STTE: 4 T REPUBLITION: POLYGON: HECKOS MAND & DATE: JUNION 15 SURVEYOR(S): LINC	= CANOPY TREES > 10m 2 = SUB-CANOPY NQUET: + PRESSMT 1 = < 1-5% 2 =	2																	•												
	908		4									4			0	σ	0	.0	0	0	2	9	0			0					
STTE: ACH POLYGON: HED DATE: JCJN CO. SURVEYOR(S): L'	2 ×	SYER	2 3	g	Ω	4	Q	인	0	0	₫		W	۵2						Ĭ			Ч	0	D	4		R	य	a	OR
STTE: ACT POLYGON: HADATE: ACT ACT ACT ACT ACT ACT ACT ACT ACT ACT	55 × 1		-	쉼	7	┈╢	괴	$\frac{1}{2}$	\dashv	d	\dashv	\dashv	0	9					_	_										9	व्रव
STTE: POLYC DATE: SURVE	F 7							~1		〕	\dashv	\dashv		\dashv					\dashv	-	_	\dashv		Q	d	_	Q				Q
NEDR	NET:	ļ,	.	TI BINE	State of the state	1	A	JENNE V	H	3	গ্ল	H	H			ĸ			0	ă	BASUMAUK R	الم	, ,		×	H			لير		4
ES	LAYERS: 1 = CANO BRAUN BLANQUET:	SPECIES CODE		茅	A	PHRYEIT	SENSE.	3	がまれ	S ASSIN	PLYIPC	NO CHE	五年了	1	F	NA HO	81/4	mfrey	BCYNÓ	PAINONE	र्घ	STR 188	FROSE	V.K.	DONNAZ	8	(۲	NO FOR	1	3	9
PLANT SPECIES LIST	LAYERS: BRAUN B	Š		7	H	#	5	7	7	4	3	ğ	3	A	4	以	À	y		9	9	H	3	6	đ	d	9	Á	2	9	72
_ K	3 2	Š		力	1	4	4	0	ف	田	9	성	Ź	(J	(I)	(\check{N})	M	B	J	当	R	A	A	255 WRG	A	RAPORT	PACED IS	[2]	A CHATA	Person	VITRIOD

STAND	<u>0, 1</u>	STE	DAY ALTON	METAL	POLYGON:	ż
CHARACTERISTICS SURVEYOR(S):	SISTICE	URVE	ror(s): MC		DATE	DATE: 1.1. O. I.
]	:ZWE5		LTIME		7777
					- All Lall A	
POLYGON DESCRIPTION	CRIPTION					
System	SUBSTRATE	3	TOPO, PEATURE	HUSTORY	THE PASSES	
D TERRESTRUAL D WETLAND D AQUATIC	CORGANIC O MUNEAL SOIL O MUNEAL SOIL O MUSIC REDROCK O BASIC BEDROCK O CARB. BEDROCK O CARB. BEDROCK	Z X X X	D LACISTRUKE D RIVERINE D BOTTOMLAND O TERRACE O WILLEY SLOPE O TAMER AND	D NATURAL D CONTURAL	D PLANKTON D SUBMERGED D FLOATBNG LVD. D GRANTINGID	DIAKE DIOND DIOND DIONDR OSTREAM DIVARSH
SITE			D ROLLING UPLAND	COVER		O FEN
O SHALLOW WAT. O SHALLOW WAT. O SURFICIAL DEP.			CE/CAVE	O SHRUB	O DECIDIOUS O CONTIFEROUS O MEXED	O BOG O RARBEN O MEADOW
D BEDROCK			WD			O PRAIRIE O THOXET O SAVANIMH O WOODLAND O FOREST
		1				DPLANTATION

٩l	AND DESCRIPTION	5		•
3	AYER	Ē	£	SPECIES IN CHEEKS OF DESPESSING CONTINUES.
-	EMERGENT			
7	CANOPY	O	η	のまるが、これなりと
m	SUB-CANOPY	\mathcal{O}		MINDION NOODEN AND IN
4	UNDERSTORY	4	9	のは、日本に入りのいいのは、日本は、日本の
S	GROUND LAYER	77 S	0	いいいいとかられていいいい
5₹	HT CODES: 1 = > 25m CVR CODES: 0 = NONE	1=1-1	0-25m 3	=>25m 2 × >10-25m 3 = 2-10m 4 = 1-2m 5 = 0,5-1m 6 = 0,2-0,5m 7 = <0,2m = NOME 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS	WLYSIS				
	TREES	< 10cm	10-24cm	Z5-53Gm	> 50cm
STANDIN	STANDING SHAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	Z-50cm	> 50cm

D OLD-GROWTH								
O MATURE	•			= 6				
		7 K. W.			i			
O MID-AGE		7		- 6				
JRITY	Þ	1		-				_
£,	E SAFE		TECTURE	STUES	acr	S	OCK	¥
COMMUNITY MATURITY COUNG	SOIL ASSESSMENT		er.	BEPTH TO MOTTLES 9 =	DEPTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE RECOVE

.

A TOMOR

<u> </u>	8[_	200		L	00	3 2 0 0		_]	STA	TY TY	-	2	K .	, s] <u>=</u> 8				DEAD		8		SOIL	L	8		6	3	
			1	T -	 	·		·		·		· · · · · ·				~~~					•			٠					
		-8					.																					\exists	
	, X		+=		\Box		I									-		\exists	-	1	\dashv	+	\dashv			\dashv	\vdash	\dashv	
1	LAYE	LAYER	-			_ _	1													7	寸	7	ᅦ	\dashv				\dashv	
	5 %	֓֡֡֓֞֜֓֓֓֓֓֓֓֓֡֡֡֡֓֓֓֡֡֡֡֡֡֡֡֡֡֡֡֡֡֡֡֡֡	+	\vdash		+	╀	-	-	_		Ш																\exists	
	2 S		10			╁	+	-	-	-	_						-	\dashv	-	4	\dashv	-	_	_				\Box	
3	HRUBS	ğ	13																									ı	
13 7	88.53	ΣS	12																										
1-15 41-15 36/15	= CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUKS 4 = GROUND LAYER NQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% \$ = 75-100%	SPECIES CODE	COMPT STAN																	l								l	
19780	7 3 = 5.2		<u> </u>			 		<u> </u>							لـــا														
4 Trong	260	TIOO																										\Box	_
17357	85.	~ 4	+=	J			a	⊄	0		4		0	۵	O	Ç	4	4		1	a	d	7	d	J	d		\rightarrow	\overline{C}
17028	£ 77	LAYER 2 3	-			4.							Ω							7		Ť	\dashv	씍	٣	9	ℐ	4	V
18 8	S V 1	7		H		2	+	-		J)		۵					_				\Box								
STTE: POLYG DATE: SURVE	F +			17	7	╁	7		(\ \ \		<u>U</u>		\dashv			-		-	\dashv	\dashv	\dashv		_				_	
NITIOIR	VET:	Ä	F	SHP ALTS	SCANICL R	d	19	JUNER	NROSE	Ö	6	\$	Y	1	151 AL BID	30397	1	á	TEOS HELL	H	싷	出	*KCF-VINIE	2			A	7	
L S	LAYERS: 1 = CAVO BRAUN BLANQUET:	SPECIES CODE	14/4/	2	2	2012 S	12 X Z	1	Ø	NEG	JSCS/P1	SUNC.	SKIGES	TEST	4	14	F A C	ST. 86.	A	म्बर्यस्ट	PARTICION DE LA CONTRACTION DE	18 ARVE	7	KU CH	PROSE.	SUVSI	MYPARLIN	PANCADI	艾
PLANT SPECIES LIST	LAYERS: BRAUN BI	Ä	19	田	ğ	N s	2 E	3	3	ű	Ÿ	0	7	H		X	7	H	9	H	3	2	1	1	9		3	2	4
PLAN SPEC LIST	3 2	SPE		0		<u>J</u> C	1		Ú	ä	ď	X	J	1	7	1	A	ä	当		Ä	7	X	判	A	,	F	A	THELOTE
•																	المحد		7	الميميا ا		_1	A	<u> </u>		$\mathbf{\mathcal{L}}$	4	4	_

	<u></u>	5	1			
STAND	<u> </u>		AND BUILDING	STATE OF	POLYGON	MILL CALLED
CHARACTERISTICS		JRVEY.	SURVEYOR(S): / LLC	,		DATE: DA JE
		CTMZ:	<u>.</u>	UTIME:	NME5	4
POLYGON DESCRIPTION	SCRIPTION					
SYSTEM	SUBSTRATE	W	TOPO, FEATURE	HISTORY	PLANT PORM	- Constitution
A AGUATIC	D ORGANIC SAFENTEAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK D CARB. BEDROCK	₹ ×	D LACLISTRUME D REVERDME D BOTTOMLAND D TERRACE D VALLEY SLOPE D TABLEAND	D NATURAL SKCH.TURAL	D PLANKTON O SUBMERCED O FLOATING LVD. O GRANDNOID O FLOATING	D LACE D POND D RIVER O STREAM D PAGES
STEE STEE		u	D ROLLING UPLAND	COVER	D BRYOPHYTE	O FEN
O OPEN WATER O SHALLOW WAT.	·	000	D TAUS D CHEVICE/CAVE	SHRUB	CONTIFEROUS MOGE	O BAREN
D BEDROOK	-	000	D ALVAR D ROCKLAND	O TREED		O PRAIRIE O THEOXET
		000	D SAND DUNE	***************************************		D SAVANNAH D WOODLAND D FOREST
						- Charles in the

S	STAND DESCRIPTION	3		•
3	LYTER	H	8	Common survey survey of the su
-	1 EMERGENT	3		いいのこの・ハングルのこのことが、
7	2 CANOPY			
8	3 SUB-CANOPY			
4	UNDERSTORY	4	_	Son MC/Coeston
2	GROUND LAYER	5	9	5 GROUND WIRE (S) (O) BROWER SO BY - HARRYEL
ξċ	CODES: 1=> 25n	2=>1	0-25m 3	= 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m
5		7-16	-7 E	CVR CUCKS: 0 = NORE 1 = 1-10% 2 = >10-25% 31 = >25-25% 4 = >35-60% 51 = >60%

| TREES < 10cm < 10-24cm SPAGE 10-24cm SIZE CLASS ANALYSIS TREES STANDING SHAGS DEADFALL/LOGS DECAYED |
--	--

STANDING BRUNGS		•	< 10cm		10-2-0m	Ę	<u>z</u>	E 25.50	_
DEADEALL /LOGS	FIRM	/	< 10cm		10-24cm	Ç	~	25-50cm	
	DECAYED		< 10cm		10-24cm	ic.	2	25-50cm	
COMMUNITY MATURITY	WATURITY IN YOUNG	وح	D MID-AGE	띯	Z 0	O MATURE	90	D-GROWTH	Ε
SOIL ASSESSMENT	MENT					•			
	L	_	2			ので	1/2		
TEXTURE	22							-	-
DEPTH TO MOTTLES 9	* 6 ST		- 6	-6		= 0	r		
DEPTH TO GLEY G	Er G			9		. 5			•
DEPTH OF ORGANICS	2						_		•
DEPTH TO BEDROCK	8								
MOISTURE REGIME	*						· 		

, i	,	

71 "MARKE

COMMUNITY MATURITY II PIONEER II YOUNG STAND DESCRIPTION SOIL ASSESSMENT LAYTERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS SHRIBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% LAYER 1 2 3 TRANSTURY SPECIES CODE 11234 OLL DATE: 1-1 PAY 60, SURVEYOR(S): \ \ \/\(\) त्वव SIE A ZI LYTER POLYGON: 🤇 0 Species cone KCLINN) 1700 A HENEROLD STATES H H ままりの TO THE COLEX SPECIES PLANT

	POLYGON: SUTTO	DATE A. C. 1.5	2			DIAKE G POND G POND G STREAM G STREAM	O SWAMP	D BOG D MEADOW D PRAIRIE D TRICKET	D WOODLAND O FOREST D PLANTATION
			CTMN.		Pr Abor Brown	DN FGED MG LVD.		D PECIPUOUS D WD/ED D MD/ED	000
	HUSSTUR		UTME:		MASTORY	1	COVER		
, ,	すったのかますけってい	ror(s): LAN			TOPO, PEATURE	D LACISTRINE D RIVERINE D ROTTOMIAND D TERRACE D WALLEY SLOPE D TAMEN AND	D ROLLING UPLAND	O TALLS O CREVICE/CAVE D ALYAR D ROCICAND	D SUNT
CHEC	316	CHARACTERISTICS SURVEYOR(S): LAND	UTMZ:	CRIPTION	SUBSTRATE	O ORGANIC O MERCAL SOIL O PARENT MATERIAL O ACIDIC BEDROCK C SASIC BEDROCK O CARE, BEDROCK			
	STAND	CHARACTER		POLYGON DESCRIPTION	SYSTEM	O TERRESTIVAL D WETLAND D AQUATIC	E E	D OPEN WATER O SKALLOW WAT. O SURFICIAL DEP. D BEDROCK	
٠	<u></u>	<u> </u>	J				l	0000	

L				
5	LAYER	Ē	ğ	SPECIES IN ORDER OF DECREASING DOCUMENCE. (>> MICH. GREATER THAN 1. CREATER THAN 1. CARD IT RETAIN THE
	EMERGENT			
7	CANOPY	n)	0	こうながないしてのでい
3	SUB-CANOPY	M		となるとはいる。
4	UNDERSTORY	4	E	
5	SECURIO LAYER	N	()	となっていまっていまっていると
ŠŦ	DOES: COOES:		0-25m 3	1=> 25m 2=>10-25m 3= 2-10m 4= 1-2m 5= 0.5-1m 6= 0.2-0.5m 7=<0.2m 0=MOME 1= 1-10% 2=>10-25% 3=>25-35% 4=>35-60% 5=>60%

	- Soon	- 50cm	> 50cm	> 50cm
	25-50cm	25-50cm	25-50cm	75-50cm
	Z	2	4	
	10-24cm	10-24cm	10-24cm	10-24cm
	0	Ω	Q	
	< 10cm	< 10cm	< 10cm	< 10cm
	Ω	\simeq		
M TSIS	· TREES	STANDING SHAGS	FIRM	DECAMED
SIZE CLASS AWLYSI		STANDIN	EADFALL/LOGS	

D.OLD-GROWTH

D MATURE

DK/MID-AGE

	1	. 7			·	
TECTURE					1	•
DEPTH TO MOTTLES 9 =	= 6	- 6	= 6	* 6		
DEFTH TO GLEY G	. 9		*			
DEPTH OF ORGANICS						
DEPTH TO BEDROCK						
MOISTURE REGIME						
					•	

SOIL PROFILE

A TRANSPORT

	STAND CHARACTERIST	POLYGON DESCRIPT	O TERVESTICAL DORG	,		D SHALLOW WAT.	J BEDROCK		DESCRIPTION OF THE PERSON OF T		EMERGENT (UNDERSTORY	HT CODES: 1=> 25m 2=>	CVR COORS: 0 = NONE 1 = 1- CTTE CT ACC ANALYSIS	TREES.	STANDING SHAGS	DEADFALL/LOGS FIRM	COMMUNITY MATURITY	CI PIONEER CI YOUNG	SOIL ASSESSMENT	TECTIBE	DEPTH TO MOTTLES 9 =	סביוא זס פובין פ=	DEPTH OF ORGANICS	DEPTH TO BEDROCK	MOISTURE RECOVE
						<u></u>	J	-	 ν [_	3]	<u> `</u>	ı m	7 0)E	8 8	ĭ <u>_</u>	<u> </u>	30	8 	Ö	ios		٦		8	*]
	1000 C	= SMLINGS & SHRURS 4 = GROUND LAYER 25% 3 = 25-50% 4 = 50-75% 5 = 75-100.	SPECIES CODE LAYER COLL																								
SITE: ACT TO STATE		LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRUKS 4 = GROUND LAYER BRAUND BLANQUET: + PRESBY 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	SPECIES CODE	2	00 - FA 40 CV	DHEAST D	OHAROIM		M																		

	TOWN POLYGON:	DATE: MAY (0/)	SMML		1:	D PLANKTON D SUBMENCED D FLOATBNG LVO. D GRAMMOND D FORB	CONTRACT CONTRACT CONTRACT		BOTTONIA	SPECIES IN ORDER CO. C.				11) X L T M T T L D H T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T L D H T T L D H T T L D H T T L D H T T L D H T T L D H T T L D		25-50cm > 50cm	25-50cm > 50cm	25-50cm > 50cm	25-50cm > 50cm	E DOLD-GROWTH		
-	STEELY OF TRANSTINA	SURVEYOR(S): NY	UTME		TOPO. PEATURE	D LACUSTRONE D RIVERONE O BOTTOMLAND O TRINACE D VALLEY SLOPE	ONCURS UPLAND			PECIES IN ORDER OF D.	SPIEPIO		٠	4= 1-2m 5 3= > 25-35		n P 10-24cm	10-24cm	n 10-24cm	1 10-24cm	D MID-AGE D MATURE		
	<u> </u>		UIMZ:	SCRIPTION	FURSTRATE	D ORGANIC D MINERAL SOIL SCHARENT MATERIAL D ACIDIC REDROCK D BASIC REDROCK D CARB. REDROCK			NOTE	ह	υ - Μ			5 GROUND LAYER C-7 C C C C C C C C C	LYSIS	. TREES < 10cm	SHAGS < 10cm	FIRM < 10cm	DECAYED \ < 10cm	. 10	ENT	1 2
	STAND	CHARACTERISTICS		POLYGON DESCRIPTION	System	O TERRESTIGA SAMETLAND O AQUATIC	STEE STEE	O OPEN WATER O SHULLOW WAT. VESNETCAL DE. O BEDROCK	STAND DESCRIPTION	LAYER	1 EMENGENT	2 CMOPY	3 SUB-CUMOPY	 H CODES: 1=>2 CVR CODES: 0 = NO	SIZE CLASS AWALYSIS		STANDING SHAGS	DEADFALL/LOGS		COMMUNITY MATURITY OF TOUNCE	SOIL ASSESSMENT	

. .

. .

ᅜᆜ 8 LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESBIT 1 = < 1.5% 2 = 5.5% 3 = 25.50% 4 = 50-75% 5 = 75-100% 2 3 LAYER. TRANSTURY SPECIES CODE POLYGON: TAPANAS-LO 8 SURVEYOR(S): DATE: 100 O/ 20 0 0 0 0 40 SITE: A ST LEYER LEYER 1 2 3 MANNE SORANGE STATE OF PROPLES EKANAG PLP AN THRUNK CARAM ANSOE! FORBE PHORPON SUSTRON 2014780 TARRE CHARACT 1 CSS 217572 SPECIES CODE CASSO CCPS PLANT SPECIES LIST

CHARACTERISTICS SURVEYOR(S):		STAND		STE			POLYGO	POLYGON: MAM JY	
UTME: UTME: UTME: UTME: UTMIN:	<u> </u>	CHARACTE	USTIC	SUR	الر		DATEL	UNO/16	
STSTEM SUBSCRIPTION STSTEM SUBSCRIPTION STSTEM SUBSCRIPTION TREADSTRUCT O MOTION DESCRIPTION STTE O AQUATIC O MOTION DESCRIPTION STTE O CARB. BEDROCK O TREADSTRUCT O TREADSTRUCT O MOTION WATER STREE O CARB. BEDROCK O TREADSTRUCT O				5		TME			
SYSTEM SUBSTRATE TOPO, FEATURE HISTORY PLANT FORM	[POLYGON DES	CRIPTIC	Z					
DEPRESTRUM O ORGANIC DE LACUSTRUME DE LANTURAL DE PLANTONN DE CONTROL LOS SUB-BRIGGED DE AQUATIC DE LACUSTRUME DE LACUSTRUME DE AQUATIC DE BASIC BEDROCK DE VALLEY SLOPE DE CANDIDIO DE CONTROL LAND DE CANDIDIO D		SYSTEM	25.00	STRATE	TOPO, FEATURE	HISTORY	PLANT FORM	COMMETTY	
STE ORCLING UPLAND OCHEN OC	ח אל ח	D TERRESTRIAL WETLAND D AQUATIC	D ORGAN D MINER B-PAREN D ACIDIC D BASIC E D CARE. E	IC L SOIL F MATERIA BEDROCK SEDROCK SEDROCK		DOUTURAL	D PLANKTON D SUBHEBIGED O FLOATBIG LVD. D GRANTINOTD O FORB	D LACE O POND O STREAM O PANESH	
DEPTH WATER DESTRUCTOR DE		STITE			D ROLLING UPLAND	COVER	D BRYOPHYTE	N SEN	
DEDROCK O DAVIAND O HEED OF SHIP OF SH	0.0%	OPEN WATER SHALLOW WAT.			D TALUS D CREVICE/CAVE	O SHRUB	O DECIDIOUS O CONTIFEROUS O MDXED	O BARREN O MEADOW	
AYER HT CVR BHERGENT CANON CANON SUB-CANON UNDERSTORY GROUND LAYER 5, 6		ВЕРКОСК			D ALVAN D BOCCHUB D BEAND DUNE D BLUFF			D PRAIRIE D THICKET D SAVANNAH D WOODLAND D FOREST D PLANTATION	
SUB-CANOPT SUB-CANOPT SUB-CANOPT SUB-CANOPT SUB-CANOPT GROUND LAYER GROUND LAYER GROUND LAYER GROUND LAYER	S	TAND DESCRIF	NOIT						
EMERCENT CANOPY CANOPY SUB-CANOPY GROUND LAYER 5,6	5	IYER	<u>.</u>	_	SPECIES IN ONDER OF	F DECREASING WK > CREATER	DOMINIANCE THAN: - ABOVITED		
SUB-CANOPY SUB-CANOPY UNDERSTORY GROUND LAYER 5, 6 4 MYOSC REPORTS	_	EMERGENT	7		SPSTOL				
SUB-CANOR UNDERSTORY GROUND LATER S. W.Y.O.S.C. M.Z. C. P.Y.O.S.C. M.Z. C. P.Z. C. P.Y.O.S.C. M.Z. C. P.Z. P.Z. C. P.Z. P.Z	ایما	CANOPY							
GROWN G. U.S. NOSC NZ-RIPANS	ا ۔۔ ا	SUB-CANOPY			٠				
GROUND LATER 15, 6 4 MYOSC MISPANSI	I _	UNDERSTORY			,				
	i]	GROUND LAYER	5,6	7	NOSC CAL	11/	LI-ROSN	ryx	
	ŀ	TARE OF ACT							

STANDIN	STANDING SHAGS	< 10cm	_	10-24cm	_	25-50cm		^
DEADEALL / LOGS	HAILS	< 10cm		10-24cm		25-50cm		ا لم
	DECAMED	< 10cm		10-24cm		25-50cm	ì	-^
COMMUNITY MATURITY	ATURITY O YOUNG	O MID-AGE		O MATURE		D OLD GROWTH	Ξ	
SOIL ASSESSMENT	MENT			٠				
	_	2	•			····		
TECTURE	WE.					-		
DEPTH TO MOTILES 9 =	500	- 6	= 6	- 6				
DEPTH TO GLEY G -	Er G.	6.		e 9				
DEPTH OF ORGANICS	2						•	
рерти то вервоск	ಕ							
MOISTURE REGIME	¥					•		
					l			

M WAR

STA	PAST D D WEIT D A A A A A A A A A A A A A A A A A A	O SHALL O SHALL O SHREE O BEDRO	STAND	1 ENEW 2 CANO 3 SUB-C 4 UNDER	AT COOKS CAR COOKS SIZE CL	DEADFALL	COMMUN D PIONEI SOIL AS	DEPTH TO FETTH OF OFFTH TO MOISTUR
							•	
OUND LAYER	1 2 3 4 COL		4					
TRANSTIMAY UC CALLUNISTIMA COMOPY 3 - SUNDING & SHRUKE 1 - CA	SPECIES CODE							
14387	1 2 3 4 00L S	Q	0 & J		4 d c	- Φ - Φ - ΟΦ		
ES POLYGON: C DATE: AC SURVEYOR(S):	PECIES CODE 1	0 5	YDVIROS YNROSS FREKV PR	Ž	出名	288		
PLANT SPECIES LIST	SPECIES CODE	ALPANT HESPANT	12/4 12/4 14/4 14/4 14/4 14/4 14/4 14/4	VITE PAR VITE PAR PURCETH COLDIFIC	CLELING	NITH LAKE CEMMAN Sachwar		

STAND		S	Ė	1901			
UTME: UTME	2	<u> </u>		要 5	ANT SO		MIC CUITO
UTME: UTME: UTME: UTME: UTMN: UTMN		SISTIST	X I	4		DATE	þ
NO DESCRIPTION TOTAL FEATURE NISTERNY PLANT FORM TOTAL DORGANIC DIAGOSTRINE DIAGNATURAL DIAGOSTORIA O MANERAL SOIL DIAGOSTRINE DIAGOSTRIALA O MANERAL SOIL DIAGOSTRINE DIAGOSTORIA O MANERAL SOIL DIAGOSTRINE DIAGOSTORIA O MANERAL SOIL DIAGOSTRIALA O MANERAL SOIL DIAGOSTRIALA O MANERAL SOIL O MANERAL O M		5	Ä		TME:	CTMR	
TOWAL DORGANIC DUAGESTRINE DIANTERN FLANT FORCE POLICE DIANTERN DI	GON DES	CRIPTION					
TRUL DORGANIC DE LACISTRONE DI MATURAL DI PLANKTONI DI CONTENAL SOIL DI STVERINE DI COLL'TURAL DI SUBBERGERO DI COLL'TURAL DI SUBBERGERO DI COLL'TURAL DI SUBBERGERO DI COLL'TURAL DI SUBBERGERO DI COLL'EN SUDICI GENOCI DI SULLEY SLOPE DI COLL'EN SUDICI COLL'EN S	rate	FURSTRAI	19	TOPO, PEATURE	MOSTORY	1	
CONTENT CONT	ਤ ਤ	D ORGANIC D MINERAL SOI D PARENT MATE D ACIDIC BEDRO D BASIC BEDRO CABE BEDRO	3'×	D LACISTRONE D AVERDNE D BOTTOMAND D TERRACE TO WALLEY SLOPE	D NATURAL D'OULTURAL	D PLANKTON D SUBMENCED D FLOKTING LVD. D GRAHMOID D FORB	DUME DIVINE DIRING DIRING DIVINE
CONTRESS CONTRESS				PROLING UPLAND	1	OLIGIEN	DSWAMP
LOEP. D CHEVICACNE D SHUB D MOCED D ALVAR D PROCED D TREED D PROCED D ROCICAND D BEACHYBAR D SAND DAME D BLUFF	WATER	•	<u> </u>	TAUR	10000	DOECIDIOUS	000
D ROCILAND D BEACYBAR D SAND DURE D BLIFF	CAL DEP.			ZYCAVE	O SHRUE	O CONTIFEROUS O MOXED	D EVEREN D MENDOW
	 {	٠	00	PROCIDAND BEACH/BAR			O THOUSE
			00	SAND DUNE BLUFF			D WOODCAND D POREST D PLANTATION

ł				
3	LAYER	E	£	A STANDARD OF STREET, SAME STREET, STANDARD STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STREET, STANDARD STAND
-	EMERGENT			
7	CANOPT	2	0	PCFING IV BOTSBOOD
2	3 SUB-CANOPY	cy		TREATHER TOTAL LINES
+	UNDERSTORY	4	0	4
2	S GROUND LAYER	37.30	3	100 100 100 100 100 100 100 100 100 100
토	H CODES: 1 = > 25n	2 2 2	0-25m 3	1=> 2m 2=>10-25m 3= 2-10m 4= 1-2m 5= 0.5-1m 6= 0.2-0.5m 7= <0.2m
ξ			7 2	VK WORST DIR HOME THE 1-10% ON VIOLOGIC ANN

S	25 (2) < 10cm (2) 10-24cm (2) 25-30cm (1) > 50cm	2 < 10cm 10-24cm 25-50cm	M \ < 10cm \ 10-24cm 25-50cm > 50cm	D < 10cm
	< 10cm	< 10cm	< 10cm	F 10 ×
ALYSIS	TREES (STANDING SHAGS	No.	DECATED
SIZE CLASS AWLYSE		STANDIM	EADFALL/LOGS	

D. OLD-GROWTH			-					
O MATURE	•			. 8				
		7		. 0				
D MID-AGE		2						
YOUNG	Ę	1		. 6				
COMMUNITY MATURITY II PIONEER II YOUNG	SOIL ASSESSMENT		SAUTAGE .	PEPTH TO MOTTLES 9	DETH TO GLEY G	DEPTH OF CAGANGES	DEFTH TO BEDROCK	MOISTURE RECOVE

A STA	YJO E	D AQU		D SEALE			JAND	LYTE	-	2 (240	288	S GROS	H 300				DEADFALL		SOM WILL	D PIONE	SOIL AS		DEPTH T	8	DEPTHOS	DEPTH TO	MOISTUR
																						•		•	•		
	1 1	8 8					$\overline{\parallel}$	lacksquare								B		_	·		\exists	_		_			
	GOUND LIVER B-75% S = 75-10 LAYER	1 2 3		-												*	D	9		2	4 			2	9	Q _	2
TEAUSIANTY LAC 2/15	3 = SAPETINGS & SHRUBG 4 - 55% 3 = 25-50% 4 = 5	SPECIES CODE								•						CIRCE	HPIFIK	SOCHWA	STATE OF	125 FEST	N INCK	ROMER	一世代	TO SUBS	NI-VSTP1	HAARUN	SHRAID!
4322	CANOPY TREES > 10m 2 = 518-CUNOPY 3 = SAPLINGS & SHRURS 4 = GROUND LAYER QUETA + PRESENT 1 = < 1-5% 2 = 5-5% 3 = 25-5% 4 = 50-75% 5 = 75-100% LAYER	2348	00	A	0	00	20	0	0	0	A	1	0	0		4	1	0	4	0		2 4	# (Z	7	0	0	
PLANT STTE: CX. SPECIES POLYGON: (C. I.IST SURVEYOR(S):	BRAIN BLANGUET: + PRE	FOUPPHT 1	SMESSIO	RANACID	PANSCEL	THADIO	Doore	BARNING	TRINKAR	ROBNEST	XUNCHIA	ANDORA	EL DP INT		HCENEOU IS	12.00 E	MADOLAN	HECONS	KNDCOSS	2000 M	7777	2474	277	##T55		LIR FIRE	UPMACU

	7-121):NG	10	3		r		O FEW	O BOG O EMBER	O PRANTOE O THOOMET	D WOODLAND D FOREST D FLANTATION
	POLYGON:	DATE	CTAN			D PLANCTON D SUBNESCED D FLOATBRELVO. D GRAMINOID D FORB	D BRYOMMTE	O DECIDIOUS O CONTIFEROUS D MOXED		
		ن	UTME		HOSTORY	00	COVER	O OPEN O SHRUB	O TREED	
		YOR(S): \ M	•		TOPO, PEATURE	DIACISTRINE DIACIS	D ROLLING UPLAND	O CHEVICE/CAVE	DALYAR DROCKLAND DBEACHYBAR	O SAND DUNE
· Alle	<u>i</u>	CHARACTERISTICS SURVEYOR(S):	:ZM5	CKIPTION	SURSTRATE	D ORGANIC D MUNERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D BASIC BEDROCK D CARB. BEDROCK				
	STAND	CHARACTE		POLYGON DESCRIPTION	SYSTEM	O TENESTRUA D WETLAND D AQUATIC	STITE	O SHALLOW WAT.	O BEDROCK	

٩	SIAND DESCRIPTION	₹ 01:		•
3	LAYER	Į.	8	A CONTROL OF STATE OF
-	EMERGENT	0	-	PENTS.
и	CAHOPY			
m	3 SUB-CANOPY			
7	UNDERSTORY			
8	GROUND LAYER	ナソ	9	5 GROUND WIND TO COMPOSITE IND A DELL'END A
5 5	CODES: 1 = > 256 R CODES: 0 = NOME	1 = 1-10	P-25m 3	HT CODES: 1=> 25m 2=>10-25m 3=>20m 4=1-2m 5=0.51m 6=0.2-0.5m 7=<0.2m

SIZE CLASS AWALYSIS	WLYSTS						
	. TREES < 10cm	R	< 10cm	d	2 10-24cm	25-50cm	1 > 50C#
STANDIR	STANDING SHAGS		< 10cm		10-24cm	25-50 cm	> 50cm
DEADFALL/LOGS	FIRM		< 10cm		10-24cm	25-50cm	2005 A
	DECAYED	7	< 10cm		10-24cm	Z-50cm	#505 △
,							

D-OLD-GROWTH		· · · ·						
O MATURE		があるが		* 6	5			
D MID-AGE		Z		-0 -10	- 5			
D YOUNG	MT	1						
D PIONEER D YOUNG	SOIL ASSESSMENT		TEKTURE	DEPTH TO MOTTLES 9	DEPTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	HOISTURE RECOME

्रिस् इ	<u>S</u>	D WE	-		000		2			STANC	LYER	1	2	3 28	7 0	F 1300	CAR (300	SIEG		DEADEAL		OMMO	D PION	SOIL AS			THE SECOND	DEFTHO	T HL	HOISTU
	. ר																										٠			
		-8-											T	T	Γ	Τ			Γ						Γ	Γ	Τ	Ī	Γ	П
	AYER 75-100%	LAYER	上					-	-	-	F		F	F		F														
	GOUND 73% Se	3 7				·					F	F	F	F			-		_											
IM BY	3=2550% 4=50	SPECIES CODE											-												•					
407 TRANSITM AV. TEXES - 30. 15. 10. 10/15. 1. MC.	2 2 5 25K	SOLL SPE										L T																		
10 10 10 10 10 10 10 10 10 10 10 10 10 1	10m 2 = 5UB- T 1 = < 1-5	2 3 4	28	0	0	4																								
STTE: ACPOLYGON: DATE: SURVEYOR(S):	+ PRESSY	-				2														\dashv	$\frac{1}{1}$	$\frac{1}{1}$								1
PLANT ST SPECIES PA LIST DA	AAYERS: 1 = CANOPY TREES - 10m 2 = SUB-CANOPY 3 = SUMJINGS A SHRUBS 4 = GROUND LAYER BRAINN BLANGUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	SPECIES CODE	THUSEC	THOMIS	MITICIPA	(YNROS!		2	·	7								•												

POI Yesw.		ä						D WOODLAND D FOREST D FLANTATOR		Section 14 Other Opposition of Market 15 (1)	Prest City						> 50cm	× 50cm	× 50cm	× 500s							•		DFILE
8	PAT.	1 N		PLANTERS	D PLANKTON D SUBMERGED D FLOATING LVD. D GRAMENOID D FORB		O DÉCIDIOUS O CONTITIONS D MIXED			Socillated			92		Sm 7 = <0.2m	1	Z-50cm	25-50cm	25-50cm	25-50cm	D OLD GROWTH								SOIL PROFILE
		UTME:		HESTORY	DIATURAL	3000				OEXEASTICAL PROPERTY.			adiar!		5-1m 6=02-0 *>35-60% 5=		X			×				T					
	(S):	5		TOPO, PEATURE	O LACUSTRUME O REVERBNE O BOTTOHILAND O TERRACE O WILLEY SLOPE	D ROLLING UPLAND	S/CAVE			IN ORDER OF		1 22214	12	40121	4 = 1-2m S = 0,5-1m S = 0,2-0,5m 7 = -0,2m 3 = >25-35% 4 = >3,60% 5 = >60%		16-24cm	10-24cm	10-24cm	10-24cm	E O MATURE		100 miles						
STTE:	SURVEYOR(S):	UTMZ:			SOIL DEA WIERLA DEG DROCK DIE	0	DOUNT DAVAR DROCOL	200		CVR SPECIES		1	AT S	7	Sm 3 = 2-10m 2 = >10-25%	٠	< 10cm	< 10cm	< 10cm	< 10cm	O MID-AGE		7	0					
	RISTICS		SCRIPTION	SURSTRATE	D ONGANIC D MINERAL SOIL D PARENT MATERIAL D ACIDIC BEDROCK D ACIDIC BEDROCK D CARR PERFORM				NOTE	-		V V	n	4	1 2 1 10%	LYSIS	TREES	SHAGS	ž	DECAYED	MTURITY O YOUNG	. 1		.0					
STAND	CHARACTERISTICS		POLYGON DESCRIPTION	System	O TERRESTRUA. D WETLAND D AQUATIC	STITE	D OFEN WATER D SKULLOW WAT. D SURFICUL DEP D BEDROCK		STAND DESCRIPTION	LYTH	1 EMERGENT	2 CANOPY	3 SUB-CANOPY	4 UNDERSTORY	5 GROUND LAYER C.4	SIZE CLASS ANALYSIS		STANDING SHAGS	DEADFALL/LOGS		COMMUNITY MATURITY C PIONEER C YOUNG	SOIL ASSESSMENT	TEXTIRE	SETTING OT HITS	DEPTH TO GLEY	DEPTH OF ORGANICS	DEPTH TO REDROCK	MOISTURE RECIPIE	•
•												•												<u> </u>	L		_==	J	

 	M/ (0/16	
TEANSTLUA	342	
75	100 X	i LWC
SITE: 404	DATE:	SURVEYOR(S)
PLANT	SPECIES	

	<u> </u>	1	Τ	T	Г	-	Т	Τ	· -	ı	_		_	_	,				, -		·	٠							
	. 2	_	L					Ŀ																					
100	K	3	4	0	0	a	1		0		Ø	0	0	4	0		0	0	9	D	0	0	2	6	0	2	0		H
5 = 75-100%	LAYER	7			-		-	-		_	-			-		d			_	Ľ	_	_							
		77								Z				_	-		, —			-	-		-	_	_	_			
1		<u>,</u> \leq	3	67)	١	, 1	Į.		H	0	-	0	-	9		>		- 1	1	7		4			-		-		
3=25-50% 4=50-75%	Š	$\dot{\zeta}$	t	Ž	A	4	生		Š	S	3	2	1	4	3	ŏ	3	77		2	1	2	1	R) ว	8	3		
3.2	SPECIES	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	くついませれる	SPACE	HOLEN	A SO	上のよう	くいろ	C) D Oct	KEN ECL	Mark AL	ST. C.	かける		A ANYE	PIECO	SINE	HIMH JE	3	STANKS A	6	AND GO	PALITY	SIGTEC	JATA	4000	A PRESE		
şl	Ů,	2	Δ	Ö	Ú	7	d	ر د	F	A		d	1		3	9	5	A	なななれ	. .	PAD CHY	B	9	ĺΩ.	3	(2)	4		
<u>*</u>	H										32			LSZ_						אָנו			\Box	V		Ш			
Š.	8							ii											1 1										
4																					-								
1 = < 1-5%	es l	7	Ŏ		_		4	4			0		له		12	2	O	ņ	0			4	0	\sim	C			2	
4	KYEK		0	O	40		4	4	ဝ	1	0	Ω	۵		6	2	<u>0</u>		Ω	₫	d	4	0	Q	00		0	R	
4	LAYER	3 4	() A d	0	-	đ	4	4	<u>ဂ</u> ဝ	4	0	Ω	ل ه	2 2		2	<u>O</u>	7	Ω	₫	CJ.	4	0	0	QC	16	0	1 R	
+ PRESENT 1 =	LYTER E	2 3 4	() 2 1	0	-		4	4	<u>ဂ</u> ဝ ဝ	क क	0	Ω	۵	2 2	13	3	0	Ĵ	0	4	-	4	0	Q 	Q C	Pel	0	R R	
+ PRESENT 1 =	_[E 1 2 3 4	िय व वर	O 群	Ø		4		<u>ට</u> ට	4	Ω 	Ω		2 /			0) C	Q 		× 102)		Q	000	0	0 5	1	
+ PRESENT 1=	_[E 1 2 3 4	Q2 व 35W	D HEAR	Ø		PAC P		100 100	4	0	Ω		2 /			N.20 D	() () () (b)	0 33		1 Re)		C 93	CC 48	0	0 0	1	
4	SPECIES CODE LAYER	E 1 2 3 4	CHA A JAMENTO	D HEADER	-		ICCVAC P	SACRET B	100 para4		ACCION O	O DAING	ACOUNT P	-			F 10 1 0	2,can90 1 1	C Software		जिल	2		4-lovies	CC SECTION	0	0 4440		

STAND CHARACTE	STAND CHARACTERISTICS SURVEYOR(S):	SYOR(S):		POLYGON: DATE:	ä
- }	UTMZ:		UTME:	UTMIN:	
S	POLYGON DESCRIPTION				
SYSTEM	SUBSTRAITE	TOPO, PEATURE	HISTORY	PLANT FORM	COMMENSATIVE
D TERRESTRAL D WETLAND D AQUATIC	O ORGANIC O HONERAL SOIL O PARENT HATERAL O ACIDIC BEDROCK O BASIC BEDROCK O CARB. BEDROCK	D LACLSTRUKE D RIVERDNE D BOTTOMLAND D TERRACE D WALLEY SLOPE D TABLELAND	D NATURAL D'OULTURAL	D PLANKTON D SUBNERGED O FLOATING LVD. O GRANGHOOD O FRANCHOOD	100000
\neg		O ROLLING UPLAND	COVER	O BRYOPHYTE	NOTO
O OPEN WATER O SHALLOW WAT. O SURFICIAL DEP.		GECAVE	O SHRUB	O DECIDIOUS O CONTIFEROUS O MOXED	O BARBEN O BARBEN O MEADOW
		28.85			O THICKET
		D BLUFF	***********		O FOREST O PLANTATION

STAND DESCRIPTION

ł				
3	LAYER	. HT	34	(*) MILITARIA (MILITARIA (MILITAR
1	EMERGENT			
7	CANOPY			
m	SUB-CANOPY			
4	UNDERSTORY			
s	S GROUND LAYER			
左	CODES: 1 = > 25m	7= 77	0-25m 3	HT CODES: 1 => 25m 2 => 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m

OR COOKS: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS

	TREES		< 10cm		10-24cm	25-50cm	-> 50cm
STANDIN	STANDING SHAGS	÷	< 10cm		10-24cm	25-50cm	> 50cm
DEADFALL/LOCK	FIRM		< 10cm		10-24cm	Z5-50cm	× 50cm
	DECAYED		< 10m		10-24cm	Z-50cm	- S003
				ĺ			

I MATURE I OLD-GROWTH O MID-AGE COMMUNITY MATURITY II PIONEER II YOUNG

SOIL ASSESSMENT

7		. 7	7	
TECTURE				
DEPTH TO MOTILES 9 *	Ť		- 6	. 0
DEPTH TO GLEY G =	٠	4		
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE RECOME	H			

HTWOM:

PA PA YOU	D WERE	D OPEN D SUNCT D SUNCT D SEDRE	STAND	1 EMER 2 CANO 3 SUB-C 4 UNDE 5 GROU	HT CODES CAR CODE SIZE CL	DEADFALL	COMMUN D PIONE SOIL AS	T KILLER	DEPTH OF DEPTH TO HOUSTON
									
Goduno Layer	1 2 3 4 WILL								
TEANSTUBER 7-16 OVE NOT 3-504 3-5004 600	SPECIES CODE								
ON: +O+ ON: +ON OR(S): N	1 2 3 4 COLL	00004	<u>ا</u>	2000 4		V 4	y 0		
PLANT SITE: SPECIES DATE: LIST SURVE	SPECIES CODE	PORPERUIN PORPERUIN TESPURE TE		7 1 1	100	47214	172.0A		

TRANSTIMM POLYGONALINY		LTMIN			D PLANCTON D SUBMENCED D FLOATBACLAN D GRAMMOND D FORB	COVER D'EXPONITE D'EN	D SYRUNG CONTESPOUS CONVERNOR CONVER		TSDOTO
		UTME		TOPO, PEATURE	D LACISTRUNE D KIVERONE D BOTTOMAND D TERRACE D VALLEY SLOPE	D ROLLING UPCAND	Z/CAVE	D ROCKLAND D ROCKLAND D SEAD PUNE	
STE	CHARACTERISTICS SURVEYOR(S):	UTMZ:	SCRIPTION	FURSTRATE	D ONGANIC O MINERAL SOIL O PARENT MATERIAL O ACIDIC BEDROCK O BASIC BEDROCK CARR REPROCK				
STAND	CHARACTE		POLYGON DESCRIPTION	SYSTEM	O TENESTICAL O WETLAND O AQUATIC	Ę	O SKALLOW WAT. O SKALLOW WAT. O SURFICIAL DEP.	O BEDROCK	

'L	のではないのから	5		
	LYTER	Ŧ	K.	AND THE PROPERTY OF THE PROPER
	EMERGENT			
<u>~</u>	CANOPY	B	3	CONTRACTOR OF CO
m	SUB-CANOPY	3	0	からいからのこのとうとかんと
7	UNDERSTORY	4		POPO NY VIII PARENTALIA
2	GROUND LAYER	次		かられていています。
Ξí	CODES: 1=>25m	2= 72	P.Z.Sm 3	=> Zm 2=>10-Zm 3=2-10m 4=1-2m 5=0.5-1m 6=0.2-0.5m 7=<0.2m
Q	A CHOCKS: 0 = #ORE	1 = 1-10	あいま	CVR COCES: 0 # MORE 1 # 1-10% 2 # VIO-25% 3 # VIO-35% 4 # VIO-60% 5 # VIO-6

SIZE CLASS ANALYSIS	WYSIS								
•	. TREES	A	. TREES C < 10cm	Ч	10-24cm	a.	R 25-50cm	Z	N > 505#
STANDIN	STANDING SHAGS () < 10cm	0	< 10cm	આ	20-24cm	Z	25-50cm	7	1505 ×
DEADFALL/LOGS	FIRM	,	< 10cm		10-24cm	/	25-50cm		× 550.4
	DECAYED		< 10cm	1	10-24cm	r	25-50cm	1	× 505m
COMMUNITY MATURITY	ATURITY								

D MATURE DOLD-GROWTH								•
MATURE	٠			-8				
		No.			5			
D MID-AGE		2		å	•	L		
D YOUNG	ENT	1		- 8	9			
D PIONEER D YOUNG	SOIL ASSESSMENT		TECTURE	DEPTH TO MOTTLES 9	DEPTH TO GLEY G	DEPTH OF ORGANICS	DEPTH TO BEDROCK	HOISTURE REGINE

STAND CHARA(POLYGON POLYGON	D AQUATIC	STTE C OPEN WATE C SWALLOW V C SWREICH, C BEDROCK		STAND DES	1 EMENGENT 2 CANOPY	3 SUB-CANOP 4 UNDERSTOR	HT CODES: 1	SIZE CLASS,	STAND DEADFALL/LOG	COMMUNITY II PIONEER	SOIL ASSES	DEPTH TO MOTE	DEPTH OF ONCH DEPTH TO BEDY HOISTURE REC
				 .	•							<u></u>	
	4												
4 = GOUND LAYER 5975% 5 = 75-10 LAYER	1 2 3												
SITE: 4 TO THE STATE TO THE TOTAL TO THE TOTAL TO THE STATE TO THE STA					•								
12 10 10 10 10 10 10 10 10 10 10 10 10 10		4400	40	0	0	A 0		· d	0	0			
STTE:	1 2	H20	1 2 3				0 A 2			Q H	9 0 4 0 4 6 P		Ö
SPECIES E LIST S SPECIES SPECIES SPECIES SPECIES CODE	RIPSEU	PHARDUM BRANKED THRYFL	ASTRUMENT SUC FRUE	MANOSE (ATTACK TACKET	THE WAY	PARP NIP	A CALL	14 A B B B B B B B B B B B B B B B B B B	CRRC	CPRAPS	F. A. BA	SMUTT
		<u></u>	17/	<u> </u>		1/1	<u> </u>	1 - 1 9	4	470	70,	4	4

M		ㅓ				L L		·				DPOREST
Cor	STAND DES	8	¥OI.				·					
	LIVER		Ē	ğ		ON DO			2015	DOMESTICAL TAMESTICAL		3377
	1 EMERGENT						7					200
			9	0	F	12 T	(y	T T		Ó	
	3 SUB-CANOP	2	3		y	2) I (₹				
1 2 10.5 Cm 10.24cm 15.50cm 15	4 UNDERSTOR	,	A		5				I E		41	
1	_	X	7	3	b		1	K		7/3	H	
155 C 10cm D 10c3 ccm R 25-50cm C 25-50cm D 25-50cm	HT CODES: 1: CVR CODES: 0:	NA SE	7.5	0-25m 3			S. S. S.	19.4 19.4 19.4 19.4 19.4	13.8	21 L _		A LIKE
10-24cm C 25-50cm C 25-50c	SIZE CLASS	A SE	YSTS									
Com 10-24cm 12-50cm 10-24cm		[TREES!	1	Ę	1	200	E	X 22	15 S	F	#205 ^
10-24cm 10-24cm 25-50cm 10-24cm 25-50cm 10-24cm 25-50cm 10-24cm 25-50cm 10-24cm 10-24c	STAND.	S SMIX	HAGS	1	Ę	Ľ	20.02	E	<u>^~</u> -	58	Ł	1000 A
TTY ING	DEADFALL/LOG	- 4	F F	1 < 11	£		10.24	E	P	1505.	L	15 SS V
ING D MID-AGE D MATURE 1 2 从第代的 影响器 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6			ZYKED) < X	Ę		10-24	E	\ <u>\rac{n}{2}</u>	E 04	1_	858 ^
9	COMMUNITY I PIONEER	¥ o	JRITY OUNG	0	MID-A		D MA	URE	8	LD GROV	Ę	
1 5 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	SOIL ASSES	æ	Þ		٠			•		_		
1 1 0 U		_		L	~				T.#			
1 5 9	ख	TURE		-			┝		T-	-		1 1 1 1 1 1 1
10	DEPTH TO MOT	3		8			0		_			
DETTH OF ORGANICK	OCPTH TO	, Language		6			U				•	
DETIN TO BEDROCK	DEPTH OF CRIGH	SOO		_	Γ		H		т-		•	
	DEPTH TO BEOM	ğ					F		T-			•
MOISTURE RECENT	MOISTURE RECOME	¥			Γ		-		· T-			

F44 10	SITE: A ST	TRE	RANSITARY				Γ	
· ·	POLYGON: FOR	' /	7		l		T	
	DATE: JUN	(S)					T	
	SURVEYOR(S): _\\		#N2				T	
LAYERS: 1 = CANO BRAUN BLANQUET:	= CANOPY TREES > 10m 2 = SUB-CANOPY NQUET: + PRESENT 1 = < 1-5% 2 =		3 = SAPLINGS & SHRIRS 4 = GROUND LAYER 5-25% 3 = 25-20%, 4 = 50-70%, 5 = 76-100%	800.00	3	3 2 2	7	
SPECIES CODE	LAYER		SPECIFIC CODE		LYER	_	Γ-	
	1234			1 2	3	3		
HONTER	<u>а</u>		PROVINGG.		4			
MATERIA	0000		TATISTED			⊄	<u> </u>	
LECTED S	0		CAPLINE.		b	<u>.</u>	1	
Sape	Ω		FRANKAR	9				
Survey	4		LYSANDAM			4		
THE REAL PROPERTY.	0		Toda		Q		Γ	
Trans	<i>₹</i>		FIDVIP.			0	T	
NOT D	<u>a</u>		100 A			0	 	
PINSTRO	0		- PHANTE			O	-	
1700 H	<u>a</u>	<i>-1</i> 9	4-1-1-1			d	.	
CLINEOSS	0	V1	SO FEE			0		
CRASE	d.	V 1	CHANCHAID			d		
PHEADE	d	7	THE STATE OF	RR	4	6		
KON ALUT	0	7	Che Tale 10			Z	·	_
CHANGE	O	Д Т	TON THE			0		
S-1820 C	₫	<u> 벨</u> :]	I CAMPED			7		_
मुख्या कर	0	<u> </u>	STATE OF		7			اــــــــــــــــــــــــــــــــــ
SET OFT	0	<u>a</u> T	18TELL	\exists	al	_		
HADOOL	0	<u> </u>	C. C. S. T.	1	7	0		
7		7 7	CANATA	1	ᅱ	Z/	·	
POE SA	0	Y T	BKROKE	1	┧	0		w
地方	4	<u>У</u>	LAISTA X		4	7		ν,
(STAGEN)	ď	4	SACROCK).		$\overset{\sim}{\dashv}$	(2	•	L
11 PANER	/ B	<u>(1</u>	VACIONAL VACIONAL		4			
	0	<u>4</u> T	CHAND	1	귀	a		
STATE OF	7	ËL T	THOUSE THE	7	4			Ш
LEALTH I	⊈	4	7447		<u>₩</u>			
4000 SH	4	I T	CTAIRA		M			J

	UTMN:		T PLANT FORMS COMMANDER	D PLANKTON O SUBHERGED O FLOATING LVD. (CONTROL LVD. (CO	T	O DECIDIOUS O BOG O CONSTEROUS O BARREN O MEXED	D PRAIRGE O THOCKET D SAVANIKH
	UIME		TOPO, PEATURE HISTORY	D JACUSTRINE D MATURAL D RIVERBINE D COLLTURAL D ROTTOHAND D TREMACE D WALLEY SLOPE	D ROLLING UPLAND COVER	Z/CAVE	D ROCIGAND D BEACH/BAR D SAND DUNE
STAND STE: CONTROL CHARACTERISTICS SURVEYOR(S): N	OHEK.	SCRIPTION	FURSTRATE	D ORGANIC D MINERAL SOIL D PARENT MATERIAL D AGDIC BEDROCK D AGDIC BEDROCK D AGDIC BEDROCK			
STAND		POLYGON DESCRIPTION	System	O TERRESTRUL O WETLAND O AQUATIC	E	O SHALLOW WAT. O SHALLOW WAT. O SURFICIAL DEP.	O REDROCK

۷	TAND DESCRIPTION	₩.		
5	AYER	Ē	8	SPECIES IN ORDER OF DECENSING COUNTAINS (>> MICH GREATER THANKS, GENTRE THAN 12, JOHN FOYTON THE
~	EMERGENT			
~	CANOPY	0	V	TO GOENNY THINK THE CONTROL
6	SUB-CANOPY	M	n	2000
4	UNDERSTORY	1	8	'nγ
S	GROUND LAYER	77	n	VSN INTERNATIONAL DEST
₹₹	CODES: 1 = > 25m 3 CODES: 0 = NOME	1 2 = 7.10 1 = 1-10	7. 2 ×	HT CODES: 1 => 25m 2 = >10-25m 3 = >20m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m CAR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

STZE CLASS ANALYSIS	WYSTS								
	TREES	4	< 10cm	1	J0-24cm	0	(25-50cm	Q	- 50cm
STANDIN	STANDING SWAGS C < 10cm	d	< 10cm	Q		(3)	(2 25-50cm	12	(2 > 50cm
EADFALL/LOGS	- 1	0	FIRM O < 10cm	Q	2 10-24cm		25-50cm		> S0cm
	DECAYED		< 10cm	Ì	10-24cm	1	25-50cm	7	> 50cm
				ŀ					

D MID-AGE X MATURE D OLD-GROWTH COMMUNITY MATURITY II PIONEER II YOUNG DEPTH TO GLEY G = DEPTH OF ORCANECS
DEPTH TO BEDROCK
MOISTURE REGIME DEPTH TO MOTTLES 9 .. SOIL ASSESSMENT TECTURE

 1 2 4 4 4 4 4	•	•	•	
			•	•

SOIL PROFILE

50001C

ar reading

STAND DESCRIPTION STZE CLASS ANALYSTS MOISTURE RECEIVE 8 000 1000 9 4 <u> 1</u>40 do 000 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER \$525% 3 = 25-50% 4 = 50-75% \$ = 75-100 2 3 Z MA An 0 0 0 1-1-1-2 UTA 10 TRACE AND AST CCOME THE PROPERTY SK132 R. P. P. P. L. S. RODDORY SPECIES CODE VIDES SOVIE TOTAL TOTAL NO CO BILFPON 401277 ATT. ST. CORP. VCC CAR THOME 317838 TAPOST. はは るようなく RATES S 4000 REPEN 200 PRISCU 9 9 06 PUE LAYENS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY
BRAIN BLANQUET: + PRESENT 1 = < 1-5% 2 = 100x 8 20 9 00 .0 SYTER 1 2 3 SURVEYOR(S): \ 040 POLYGON: 1 SHE DATE 2 SCHOLDING SPECIES CODE FC/#507 CAPPENN 1 SPARC THE CALL MY CHECKY J.C. O.T. Print Par NOSCO PAGG UC ARCHA! TRIPO RAPARE THISCF YNROS OF LY HO 9 4000 JUNE OF THO 0 JESSE) SPECIES PLANT

8	È	•	- A
	COMMENS	O LACE O POND O PONER O STREAM	A SWAMP O PEN O PEN O BARREN O PRATRIE O PRATRIE O SWAMMAN O WOODLAND O POREST
EANTESTILUIGY POLYGONES DATE: UTMIN:	PLANT FORM	D PLANKTON D SUBINGED D FLOKTONG LVD. D GRANGNOED D FORB	U UCARN C DECIDIONATE C CONTINUED D MDGD
CANDITU.	HISTORY	DOLLINA	COVER O OPEN D SHREED
1751	TOPO, PEATURE	D LACUSTRUME D REVERBNE D ROTTOMLAND D TERRACE D VALLEY SLOPE D TABLELAND	D ROLLING UPLAND D CLIFF O TALLIS O AVIAR O ROCICAND O REACYBAR O SAND DUNE
STAND CHARACTERISTICS SURVEYOR(S): OTHER:	SUBSTRATE	D ONGSANIC O MINERAL SOIL DAGRENT MATERIAL O ACIDIC BEDROCK D BASIC BEDROCK D CARB. BEDROCK	
STAND CHARACTE	SYSTEM SUBST	S WETLAND C AQUATIC	STTE O OPEN WATER O SPALLOW WAT. SESURFICUL DEP. O BEDROCK

l				•
3	LAYER	E	200	SONTIMO CONTRACTO DO NOTACO NECES
-	EMERGENT			
7	CANOPY	0	M	20 3 FORDERIN
m	SUB-CANOPY			
7	UNDERSTORY	V	F	TO DE SOUTH OF THE PROPERTY OF A SOUTH OF THE PROPERTY OF THE
v	S GROUND LAYER	V	500	TOTAL DESCRIPTION OF THE PROPERTY OF THE PROPE
Ξδ	CODES: 1 = > 250	7=7	0.25m 3	HT COCE: 1=> Zm 2=>10-Zm 3=>10m 4=1-Zm 5=0.5-1m 6=0.2-0.5m 7=<0.2m
,				

]
	* C	5	Į,	5 6	
	\mathcal{C}	1		F	Ŧ
	F	1-	1	1_	1
	25-50 C	25-50cm	25-50cm	K-502-X	
	Ω	4	F	1	1
	D 10-24cm	10-24cm	10-24cm	10-24 CH	
ĺ	₫	_			
	TREES C < 10cm	< 10cm	< 10cm	< 10cm	
	0				
	THEES	SERVES B	FIRM	DECAYED	
		STANDING SHAGS	DEADFALL/LOGS		

COMMUNITY MATURITY

C) PIONEER C) YOUNG C) MID-AGE C) MATURE C) OLD-GROWTH

SOIL ASSESSMENT

1 2 (2) 3

SOIL PROFILE

HI WOOM

1 2 3 4 LAYBES 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLING & SHRUBS 4 = GROUND LAYER
BRAIN BLANDUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-55% 4 = 50-75% 5 = 75-100 TICAN DITMARY SPECIES CODE POLYGON: SI UTO 18 DATE: OUN SURVEYOR(S): | PU 1 2 3 4 0 đ O d SITE MANAGA RAPPOR PACK PACK JOCAR THE COURT HAR SAIL A TOTAL JYSTR LA SAFE IN PASOLG. San Jan Charle (Thousand) STEUCHARD JOHN OF SPECIES CODE NAME OF THE STO HELL Philosoft **EUNULC** IN FROM MIRRES A CHURCH CANIBO NO STANK 130PU PLANT SPECIES

- 1	- 1	T		_	_	_	-								
				LEVEL /	EXIGHT.	1		1	1	LEVEL!		V	1	V	
				MANAGEMENT / DISTURBANCE	DUNETRIG (PLENTSO	EARTH DIGH A PRACTICE	RECEATIONAL LIPS	AUBISPECIES	WOISE	NATURAL DISTURBANCES	PLOCODING (POOLS & PUDDLING)	FIRE	SOIL EROSIOM	ОТНЕЯ	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY BIT: 0 = NONE 1 = LIGCAL 2 = WIDESPERO 3 = EXTENSIVE
	;		08(5):	LEVEL /	\backslash	N				LEVEL / EXTENT		Ī	Ĭ	Š	1 - UOA 2
OTCT IDBANCE STIE:	and STAND	CHARACTERISTICS DATE:	SURVEYOR(S);	MANAGEMENT / DISTURBANCE	SUGAR BUSH OPERATIONS	GUS IN THE CANOPY	LIVESTOCK (GRAZING)	PLANTING (PLANTATION)	TRACIS AND TRAILS	HATURAL DISTURBANCES	DISEASE / PESTS / DEATH	минотумом (вгомооми)	BROWSE (e.g., DEBI)	BEAVER ACTIVITY	LEVEL 0 = NONE 1 = LIGHT 2 = MODESATE EATENTS 0 = NONE 1 = LOCAL 2 = WIDESPREJO
					-										

TREE TALLY BY SPECIES	33		••	.; :		PRINCIPAL FACTORIA	ě
SPECIES CODE	TALLYI	TMLYS TMLY 2 TMLY 3 TMLY 4 TMLY 5	TALLYS	TALLYA		TOTAL	TE AV
						j~	
	·						
TOTAL					-		
ENSAL AREA (BA)							MEAN
DEAD					<u> </u>		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRUBS 4 = GROUND LAYER BRAIN PLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100% SPECIES CODE SITE 407 TRANSTIVA 1 2 3 4 00L POLYGON: (US)CO DATE: JUNE 9115 SURVEYOR(S): NMI-SYER 0 SPECIES CODE NAONHYS HAARUN RAPENN FOUARVE EQUPRAT POTFUNC RHACFIFF SOLCAND POPRALS AL BOPUL NICCRAC BROINER AUCARO RISPSEL THUOCCI ACE NEGU TAROFFI POAPRAT POPTREM OSMULT PLANT SPECIES LIST DCANA. ALOFE

	SIE:		
<u>ਤ</u>	POLYGON:		
CHARACTERISTICS DATE:	Œ		
18	SURVEYOR(S):		
HALLEBRENT / DISTURBANCE	TENET /	HAUGENERT / DISTURBANCE	LEVEL / Extrant
SUCAR BUSH OPERATIONS		Ossena). Svalena	
GAS IN THE CANOPY		ENTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLAKTING (PLAKTATION)		VIDS SECIES	
TRACIS AND TRAILS		NOISE	
HATTURAL DISTURBANCES	LEVEL / ECTENT	NATURAL DISTURBANCES	LEVEL / Extent
DISEASE / PESTS / DEATH		PLOODING (POOLS & PUDOLING)	
(имодиота) монфакти		FIRE	
BROWSE (e.g., DEER)		SOIL BROSTON	\setminus
BEAVER ACTIVITY		ОТНЕК	
- O COURTING	0 = NONE 1 = LÜGH NONE 1 = LOCH 2	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HENY EXTERT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENSIVE	

TREE TALLY BY SPECIES			•			PRISH FACTOR:	TOR
SPECIES CODE	TALLY	TALLY ALLY 2 TALLY 5 TALLY 4 TALLY 5	TALLYS	TALLY 4	TALLYS	TOTAL	RELAY.
						٠	
TOTAL							
ASAL AREA (BA)							MEAN
DEAD					-		

ATATINO.

MEL PURA

SYMOFE

	Γ	T-	T
) (E	
743(7)	<u>.</u>	0/200	,
RANKET	P CLOSE	1700	ر ک
なみ also	POLYGON: TAPTA	27	JRVEYOR(S):
SITE		DATE:	SUR
Z A	מעניי	15	

DISTURBANCE POLYGON:
and STAND
CHARACTERISTICS DATE:
SURVEYOR(S):

- 1	
- 1	
- 1	
•	
- 1	
	3
- 1	3
- 1	× .
- 1	ن س
- 1	₹.
- 1	ر ب
- 1	₽.;
- 1	4
- 1	Zя
- 1	2 t
	G V
	* 5
- 1	* .
	vo.
	84
, I	夏.
- 1	王》
	O S
- 1	₩ .7
- 1	υX
1	9.
- 1	A
	Z.
- 1	3.
- 1	
- 1	
- 1	m sh
1	K .:
1	ים
(L)	Z.
Zl	2.5
וכ	ΥĢ
7	
- 1	av
-1	
ī	# *
<u>ن</u> ا بند	U m
SURVEYOR(S)	£
اب	ð.
Œ	7 -
PI	- 人面
<u> 1</u>	U 0
וש	H 19
? I	2 2
K	FI
⊃ i	* نز
めし	A
	2 6
- 1	2 2
- 1	QR
ı	: 2
•	
. [~ 3
- 1	LAYBRS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SURTINGS & SHRUNGS 4 = GROUND LAYER BRAIN BRAIN BRANDIFF: 4 PRECENT 1 = < 1-5% 2 = 5-70% 3 = 7-47% 4 = 50-77% 5 = 7-417%
- 1	20 >
- 1	五条
4	5 2
- 1	5 2
1	35

SRAUN BLANGUET: + PA	PRESENT			\$	2	5-29% 3 = 25-50% 4 = 50-75% S	5-75-100%		
SPECIES CODE		3[2	٦	8	SPECIES CODE	LAYER	3.	
	1	2	3	+		1 2	3 4	}	•
PART ATT			A	_		PODGET	싮		
ACESPED	Ó	0				APPROP	0		
ULNYANEZ.		RR	B						
YNK GO				đ					•
FEACKIN	4	·							
THUSEC	Ō	0							
SAPCATT			4	_					
いまだれる	_	_	4				E		
HESMATTE			4						
	Q		-						
MARIPA	×	ŏ	0			•			
TILPHER (C	-							
SAGIOM	Н		₫						
2 MANIEG	-		Ω						
PELINE		8							
LICCRAC	-	-	₫	_	·		_	İ	
JOCO COR	-	\vdash	Q					Γ	
A CHILL	-		Þ					Γ	
STAIRG	7		_	·				Ī	:
ATHER OF		4						Γ	
ACCIENT R									
CH 009		D	d					Γ	
-P POSE			Q			,		Τ	
CERRICE			P					Τ	
2) YAPVE			٦				_	Γ	
PPATE		d			_			i T	
SEPEN -	(0			<u> </u>			Γ	٠
RUNNEG		O	_		 		\downarrow	Τ	

MANAGEMENT / DISTURBANCE	LEVEL / ECTENT	MANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BLEH OPERATIONS		(Manage (Manages)	1
GAPS IN THE CANOPY		EARTH DESPLACEMENT	1
LIVESTOCK (GRAZING)		RECREATIONAL USE	1
PLANTING (PLANTATION)		ALIBN SPECIES	1
TRACIS AND TRAILS		NOISSE	1
HATLIBALL DISTURBANCES	LEVEL / ECTENT	NATURAL DISTURBANCES	LENEL /
DISEASE / PRESTS / DEATH		PLOODING (POOLS & PUDOLING)	1
		FIRE	1
BROWSE (e.g., DEBI)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	1
LEVEL: 0 = NONE 1 = LIGHT EXTERT) 0 = NONE 1 = LOCUL 2	1=130H 1=100H 2	LEVEL: 0 = NOWE 1 = LUGHT 2 = MODERATE 3 = HEAVY BHT: 0 = NOWE 1 = LUGAL 2 = WIDESPREAD 3 = BITHISTYE	

TREE TALLY BY SPECIES	2					PRISH FACTOR	TOR
SPECIES CODE	TALLYI	TALLY I TALLY 2 TALLY 3 TALLY 4 TALLY S	TALLYS	*XTTYS	SATIVA		PIEL AV.
	·						
TOTAL							
DASAL AREA (BA)							MEAN
DEAD							

DISTURBANCE AOLYGON: and STAND CHARACTERISTICS SURVEYOR(S):	MANAGEMENT / DISTURBANCE LENEL / EXTENT SUGAR BLEST OFFENTINE	GAVE BY THE CAVOYY	PLANTING (PLANTATION)	TRACS AND TRAILS	HATURAL DISTURBANCES LEVEL /	DISEASE / PRESTS / DEATH	макоряюм (всоможня)	BROWSE (e.g., DER)		ECTENTY 0 - NOVE 1 = LOCAL 2	TREE TALLY BY SPECTES	SPECIES CODE TALLY I TALLY 2							TOTAL	DEAD	•							
TRANSTANA.	- N	SPECIES CODE																										
SPECIES POLYGON: CONTENTS OF C	OPY TREES > 10m 2 = 518 ft + PRESBIT 1 = < 1-	SPECIES CODE 1 2 3 4 COL	ONDERNS O	PINSTED GIO	0000 1200AL	CINTERIO DI	OUEMINCE AR	BETALF A P	TILEMED OF P	SALSO, 12	PLOST) A	HESMATO O	TYSNUMBY 1	TOVERED P	ARTTRID 0	0 445	O TANAS OS	7	RORR	0	1 CT 1203 TH	OXEYOR	0	NITICIPAL R	POCUTA O	~ B ·	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

MANAGEMENT / DISTURBANCE	TURE!	HANAGEMENT / DESTURBANCE	/TEVET
SUGAR BLEST OPERATIONS		Designation of the second	
GASTAT THE CANOPY		EATH DISPLACEMENT	1
LIVESTOCK (GRAZING)		RECREATIONAL (FEE	$\sqrt{}$
PLANTING (PLANTATION)		AUDI SPECIES	1
TRACS AND TRAIS		WOISE	$\sqrt{}$
HATTURAL DISTURBANCES	LENEL / ECTBAT	NATURAL DISTURBANCES	E CENT
DESEASE / PESTS / DEATH	1	PLOCODING (POCKS & PUDOLING)	
		FIRE	
BROWSE (e.g., DEBI)	1	SOIL BROSTOM	
BEAVER ACTIVITY	Ĭ	OTHER	1
LEVEL 0 = NONE 1 = LIGHT ECTHITS 0 = NONE 1 = LIGHT 2.	1=1004 2=	LEMBLO = NOWE 1 = DIGHT 2 = HOOSEATE 3 = HEAVY BHT 0 = NOWE 1 = LIGOU, 2 = WIDISPASIU 3 = ECHRISME	
			•

TREE TALLY BY SPECIES	S		• .			PRESM FACTOR	Des
SPECIES CODE	TALLYI	THILL	TALLY ALLY S TALLY S TALLY 4 TALLY S	TALLY	SATINA	TOTAL	RE. AV.
		•					
,							
•							
TOTAL					-		
SASUL AREA (BA)		·					POEAM
CYTAC							

and STAND
CHARACTERISTICS DATE: 8 1 2 3 4 LAYERS 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRIBS 4 = GROUND LYTER BRAINN BLANDUET: + PRESENT 1 = <1.5% 2 = 5.25% 3 = 25.5% 4 = 59.75% 5 = 75.100%SPECIES CODE SITE: ACT TRANSTARY POLYGON: HECKORYTHUS 8 DATE: JUN OF B SURVEYOR(S): LNC ROP 1 2 3 4 0 \$ B SYEK SYEK 490 a 1 40 PARTITION OF CHILD JOHN FOL DAMEN SPREENLILY THE C YNDON 1100 SPECIES CODE 800 PL PASSAGE PROPER SPECIES LIST PLANT 7

		-	
MANAGEMENT / DISTURBANCE	LEVEL / ECTEM	MANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BLISH OPERATIONS		(hespend) (hespend)	
GUS BITHE CAIOPY		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECIENTIONAL USE	1
PLANTING (PLANTATION)		ALIBN SPECIES	1
TRACIS AND TRAILS		NOISE	1
NATURAL DISTURBANCES	TRACE /	NATURAL DISTURBANCES	LEVEL / ECTENT
DISEASE / PESTS / DEATH		PLOCODING (POCKS & PUDDLING)	1
. (имосмота) монскоми		FIRE	1
BROWSE (e.g., DEER)		SOIL EROSION	1
BEAVER ACTIVITY	1	CT-CO	1

SURVEYOR(S):

STE

LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = MEAN ECTENT; 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = ECTENTIVE

TREE TALLY BY SPECIES	S					PRISH FACTOR:	10 R
SPECIES CODE	TREEYI	TREET TREET TREETS TREETS	TALLYS	TALLY 4	SATING	TOTAL	RE.AV.
-							
•							
							K.
	·						
TOTAL							
פירכאד יציפי (פיץ)							PERM
CYPO							

DISTURBANCE 8 PREPARE LE 1 2 3 4 00L POLYGON: MARNO DATE: COL 200000 404 SITE: RUPRA MARRIM LOPPOR LATRO OL BUR PANKE ! JONAS U ARVULP PREVULP JAN DOLL VIVOSOOR 90 F PLANT SPECIES LIST

- [T	Τ]		7	T	1	7	T-	T	_	_			·
					/ TEAST /		1	1	$\sqrt{}$	$\sqrt{}$	LEVEL /	\setminus	N	N	N	
					MANAGEMENT / DISTURBANCE	CHARGE (PLUS CONTROL OF CONTROL O	EARTH DESPLACEMENT	RECYENTIONAL USE	ALIEN SPECIES	MOISE	NATURAL DISTURBANCES	PLOCOTING (POOLS & PUDOLING)	FIRE	SOIL ENOSION	ОТНЕК	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY SHT: 0 = NONE 1 = LIGHL 2 = WIDESPREAD 3 = EXTRESIVE
	¥		OR(S):		EXTENT	\setminus	\setminus	\setminus	\setminus	\setminus	LEVEL /	\setminus	\setminus	\setminus		1=1004 2
SITE:	and STAND	CHARACTERISTICS DATE:	SURVEYOR(S):	·	MANAGEMENT / DISTURBANCE	SUGAR BUSH OPERATIONS	GAS IN THE CANOPY	LIVESTOCK (GRAZING)	PLANTING (PLANTATION)	TRACIS AND TRAILS	KATURAL DESTURBANCES	DISEASE / PESTS / DEATH	МИКОТНЯСИИ (ВЕСИКООМИ)	BROWSE (e.g., DEER)	BEAWER ACTIVITY	LEVEL 0 = NONE 1 = LIGHT 2 = MODESATE ECTENT: 0 = NONE 1 = LIGHL 2 = WIDESPREAD

TREE TALLY BY SPECIES	S		٠.,	·:		PRUSM FACTOR	
SPECIES CODE	TALLYI	TALLY I TALLY 2 TALLY S TALLY 4 TALLY S	S ATTYL	TALLY	TALLYS	TOTAL	RE.AV.
-							
						٠	
	·						
TOTAL			_				
BASAL AREA (BA)					-		HEAL
DEAD					-		

8 LAYBES: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAFLINGS & SHRIBS 4 = GROUND LAYER BRAIN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-2% 3 = 25-50% 4 = 50-75% 5 = 75-1009 LAYER. PANTIONS SI SPECIES CODE 48 \hat{e} 1 2 3 4 DATE: MALL 40 K SITE: 407 Q SURVEYOR(S): POLYGON: 0 □ □ □ 0 SECONTED DECIPIED VARIO O HAT NEW 70000 MOVIE -KIRNE THE PLY 2 PAGENIN ZANIBO SEFOR F POPPER! Seuvires A COLUM 128214 SPECIES CODE 1000 PLANT LIST

STTE:	POLYGON:	DATE:	SURVEYOR(S):
	DISTOKBANCE Pad STAND	CHARACTERISTICS DATE:	

MANAGEMENT / DISTURBANCE	LEVEL /	MANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS	\setminus	Orsaena), Secuency	1
GAPS IN THE CANOPY		EARTH DISPLACEMENT	\backslash
LIVESTOCK (GRAZING)		RECREATIONAL USE	\backslash
PLANTING (PLANTATION)		ALIBN SPECIES	1
TRACIS AND TRAILS	\setminus	NOISE	
NATURAL DISTURBANCES	LEVEL / ECTENT	NATURAL DISTURBANCES	LEWEL /
DISEASE / PESTS / DEATH		PLOODING (POOLS & PLOOLING)	1
		FIRE	1
BROWSE (e.g., DER)		SOIL EROSION	1
BEAVER ACTIVITY		ОТНЕК	1
LEVEL 0 = NONE 1 = LIGHT 2 = WIDESYSEU EXTERTS 0 = NONE 1 = LICHL 2 = WIDESYSEU	1=1004 2	LEVELO = NONE 1 = LIGHT 2 = MODERATE 3 = MEAVY SHT: 0 = NONE 1 = LIGHL 2 = WIDESPIELD 3 = EXTENSIVE	

TREE TALLY BY SPECIES	S		•••	·:		PRESM FACTORS	106
SPECIES CODE	TREEYS	TALLY 2	TALLY TALLY 2 TALLY 3 TALLY 4 TALLY 5	TALLYA	TALLYS		RE.AV.
•							
						·	
TOTAL							
BASAL AREA (BA)							PEELM
DEAD		-	-				

PLANT
SPECIES

SPECIES

LATE: TO LOGAL PLANS THUMAN

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SERVER 8 SECUENCES

LATER 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SERVER 8 SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 1 - CONCONTRES 1 DE 2 SEQUES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SEQUES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SEQUES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES SECUENCES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SEQUES SECUENCES SECUENCES SECUENCES SECUENCES

LATERS 2 - CONCONTRES 1 DE 2 SECUENCES SECUENCES SECUENCES SECUENCES SECUENCES

LATERS 3 - CONCONTRES 1 DE 2 SECUENCES SECUEN

SITE:	POLYGON:	DATE:	SURVEYOR(S):
	UIS I UKBANCE	CHARACTERISTICS DATE:	

HANLAGENERT / DISTURBANCE	LEVEL / EXTENT	HANAGEMENT / DISTURBANCE	LEVEL / EXTERT
SUGAR BUSH OPERATIONS		(ISSNOTE). SHEARING	\setminus
GAVE IN THE CANOPY		EARTH DISPLACEMENT	\backslash
LIVESTOCK (GRAZDNG)		RECREATIONAL USE	\backslash
PLANTING (PLANTATION)		ALIBN SPECIES	\backslash
TRACIS AND TRAILS		HOISE	$\sqrt{}$
NATURAL DISTURBANCES	LEVEL / ECTENT	NATURAL DISTURBANCES	LEVEL / EXTENT
DISEASE / PESTS / DEATH		PLOODING (POCKS & PUDOLING)	1
		FIRE	
BROWSE (4.0., DEER)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	1
TEVELS $\alpha = 0$ - NOWE $\alpha = 0$ - LACK $\alpha = 0$ - EVELDE α	1=1004 2-	LEME: 0 = NOWE 1 = LIGHT 2 = MODERATE 3 = HEAVY BHT: 0 = NOWE 1 = LOCAL 2 = WIDESPREAD 3 = EXTRISTVE	

TREE TALLY BY SPECIES	S		• .	• • •		PRESH FACTOR	TOR
SPECIES CODE	THEY	THIYE THIYE THIYS THEY STAINS	TALLY 3	TALLY 4	TALLYS	TOTAL	RE. AV.
	•						
TOTAL							
BASAL AVEA (BA)							MEAN
CASA	_						

LYNER LAYBES 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS 8, SHRUBS 4 = GROUND LAYER BRAUN BLANGUET: + PRESENT 1 = < 1.5%, 2 = 5.2%, 3 = 25.5%, 4 = 50.75%, 5 = 75-1009 1 2 3 VALUET WAY SPECIES CODE 8 DATE: NAPY (0/ SURVEYOR(S): NAC 1 2 3 4 O 0 ۵ KYER STE: A CL <u>ဂ</u> POLYGON: / 03600 9 RESIGNATION SPECIES CODE ZNOSON CHECKLYPU) HECT THE A BOO CAMS Post ON STREET THO H HESMATE DOC H PONCADI 30000 A STOCK CAMP O COLYFP SALCERCO 1980AF 西西山山 SAR AC FIVIE STAR STAR Jakor SPECIES LIST PLANT

_				
	STTE:	POLYGON:	DATE	SURVEYOR(S):
		DISTUKBANCE 224 CTANO	CHARACTERISTICS DATE:	

MANAGEMENT / DISTURBANCE	EVEL/ ECTENT	MANAGENERT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS	\	(HSSBBFRIL) SHILAHING	
GAS IN THE CANOPY		EARTH DESPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	\backslash
PLANTING (PLANTATION)		ALIBH SPECIES	Λ
TRACIS AND TRAILS		NOISE	\backslash
KATUMAL DISTURBANCES	LEVEL / ECTENT	HATURAL DISTURBANCES	LEVEL / ECTENT
DISEASE / PESTS / DEATH		PLOODING (POOLS & PUDOLING)	1
		FIRE	
BROWSE (e.g., DEBI)		SOIL EROSION	
BEAVER ACTIVITY		отнек	1
EXEMPLE 0 STREAM	1=1004 2:	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY EATERT: 0 = NONE 1 = LOCAL 2 = WEDESPREAD 3 = EATERSTYE	
المستنان فالمستنان والمستنان والمستان والمستنان والمستنان والمستنا			

TREE TALLY BY SPECIES	S					PRESH FACTOR	TOR
SPECIES CODE	TALLY 1	TALLY 2	TALLY TALLY 2 TALLY 3 TALLY 4 TALLY 5	ATTYL	TALLYS		RELAW.
			7.				
-							
TOTAL							
BASAL AREA (BA)							MEAN
DEAD				-			

LAYER 1 2 3 4 LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRIBS 4 = GROUND LYTER BRAUM BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-2% 3 = 25-50% 4 = 50-75% \$ = 75-100% SITE: ACT TO ANGHUBY SPECIES CODE 8 POLYGON: MAE LAYER 1 2 3 4 9 DATE: CASURVEYOR(S): NPLATI DESERVED SPECIES CODE PLANT SPECIES LIST

STTE:	POLYGON:	DATE:	SURVEYOR(S):
	DISTORBANCE PRO CTANO	CHARACTERISTICS DATE:	

MANAGEMENT / DISTURBANCE	LEVEL /	MANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS		(HSSBarna) SNOWING	1
GAPS IN THE CANOPY		EARTH DISPLACEMENT	$\sqrt{}$
LIVESTOCK (GRAZING)		RECREATIONAL USE	$\sqrt{}$
PLANTING (PLANTATION)		AUBI SPECIES	\backslash
TRACIS AND TRAILS		NOISE	
HATTHRAL DISTURBANCES	LEYEL / ECTENT	NATURAL DISTURBANCES	LEVEL /
DESEASE / PESTS / DEATH		PLOCODING (POOLS & PLEOLING)	1
макописом (впомомии)		FIRE	1
BROWSE (e.g., DEER)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	1
LEVEL: 6 = ACH EXTENT: 0 = VICENCE	E 1-139ff 1-1004, 2-	LEVEL 0 = NONE 1 = LIGHT 2 = MODBATE 3 = HEAVY EATHAN 0 = NONE 1 = LOCAL 2 = WIDESYREAD 3 = EATHEAVE	

TREE TALLY BY SPECIES	S				PRESH FACTOR	TOPE
SPECIES CODE	TALLYI	TALLY TALLY 2 TALLY 3 TALLY 5	EXTIVL	PATTVL	TOTAL	PELAN.
,						
-						
	•					
			-			
TOTAL					7.7	
פעבעו מאבע (פע)						MEAN
DEAD			-			

DISTURBANCE FOLY and STAND CHARACTERISTICS DATE: SURV	MANAGEMENT / DISTURBANCE	SUGAR BUBH OPERATIONS	LAVESTOCK (CRAZING)	PLANTING (PLANTATION)	TRACIS AND TRAILS	MATURAL DISTURBANCES	DISEASE / PESTS / DEATH	МИЮТИКОМ (ВЕОМООМЯ)	MCWSE (e.g., DEBt)		ECTERTS 0 - NON	TREE TALLY BY SPECIES	TMIT 3000 SEIDERS							TOTAL	DEAD		٠.	•		-		
	-																								٠.			
EAMSITUMAY JAK	NOWE - CONTINUES & CONTINUES	III + PRESENT 1=<15% 2=5.25% 3=25.55% 4=50.75% 3=25.10%	SPECIES CODE 1 2 3 4 COL																									
SPECIES DATE: ACT POLYGON: FCC DATE: UN IO	ANYMOR 1 - CHOPY TREES > 10m 2 - SINCANDY	STALING STANGUET: + PRESENT 1 = < 1.5% 2 = 1 AVER	SPECIES CODE 1 2 3 4		1)	<u>a</u>	ACTION	TENCHAR R	THUCCLIPRI	Secretary	ACTRUPO 10	FUDDING I R	THAID BE	QUED MAR 101	138 NOPOLINE	(KD80K) P	OFERENCE D	ACESSED C	SHEOTH S	1日の 片まる	ANKLARY P	O MACTO						

		(S):
STTE: POLYGON:	DATE	SURVEYOR(S):
DISTURBANCE	CHARACTERISTICS DATE:	

EXTERIT	T. C.
DUNETHS (PLANTED)	
EARTH DESPLACEMENT	$\sqrt{}$
RECREATIONAL USE	$\sqrt{}$
ALISN SPECIES	$\sqrt{}$
WOISE	$\sqrt{}$
NATURAL DISTURBANCES	LEVEL /
PLOODING (POOLS & PUDOLING)	1
FIRE	1
SOIL EROSTON	1
OTHER	
LEMES 0 = NOME 1 = LIGHT 2 = HOCERATE 3 = HEAVY EATERTS 0 = NOME 1 = LOCIV, 2 = WINGSPREAD 3 = EXTRESIVE	
	NOUSE NOUSE FIRE SOIL B SOIL B

TREE TALLY BY SPECIES	S		•		,	PRESME FACTOR) Port
SPECIES CODE	TMEYS	THEY I THEY 2 THEY S THEY A THEY S	TALLYS	TALLY	_	TOTAL	PER. AV.
					_		
TOTAL				1	-		
Bacal Aper (BA)		·			-		HOEVE
DEAD		-	_		_	-	

SURVEYOR(S): 1 XX SITE PLANT SPECIES LIST

DISTURBANCE POLYGON:
and STAND
CHARACTERISTICS
DATE:

SURVEYOR(S):

DRY TREES > 10m 2 = SUB-CANORY 3 = SARINGS & SHRIBS 4 = GROUND LAYER

LAYERS: 1 = CANOPY TREES > 10m REALING BLANCUET: + PRESENT			-	Į Ţ	<1.5% 2=	5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%	Į.	
		3	LAYER		1100	SPECIES CODE	8	
	1	2	3	4		C 1 2 3 4		
O. T. C. S.				2		PSADERY A		
	۵	۵	۵			Clopot		
1			1			Congest		
1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a		10			O Book		
TANKE Y	4			a				
		\prod		dc			·	
			I	1		A CON TO C		
		٥	Q	0		O DECEMBLE		
		a				9 B		
7	0	ہہ	له			O A A A JOS		
				Δ		PADDAT A		
,			Ī	10		VETCH		
			1	4		Dugge Call		
			T	N		NOTHER E		
107024				0		PUDITION R		•
0 10 10 10 10 10 10 10 10 10 10 10 10 10			Τ	0		CHATAMETE O		
			Γ	0		OHOREST P		
	Z	7	1			AST AR		
	1	1	1	1		Thomas		
	T		T	 		DHI DEKTT R		•
	T	1	T	T		Toppost I		
	1	\vdash		1		VOLPTION IR		
T	T	1	1	十				
	1	1-	1-			CHOIELE 10		
	1	T	 	1		4		
	T	<u> </u>	一	-		O NOW		
_	-	-	-			O COUNTY		
<u> </u>	-	┝	-	-		Q Valant		

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / DISTURBANCE	LEVEL / EXTENT
SUGAR BUSH OPERATIONS		(bissens).segment	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	
LINESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		AUDI SPECIES	
TRACS AND TRAILS		NOISE	
NATURAL DISTURBANCES	ECTENT!	HATURAL DISTURBANCES	LEVEL / EXTENT
DISSEASE / PRESTS / DEATH		PLOCODING (POOLS & PUDOLING)	\bigvee
		FIRE	
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		отнек	
LEVEL: 0 = MONE	1=100K 2	LEVEL 0 = NONE 1 = LIGHT 2 = MODENATE 3 = HEAVY EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPARAD 3 = EXTENSIVE	

		-					
SPECIES CODE	TALLY1	TALLY I TALLY 2 TALLY 3 TALLY 4 TALLY S	TALLYS	TALLY 4	TALLYS	TOTAL	RELAY.
TOTAL							
BASUL AREA (BA)							HEAN
DEAD							

DISTURBANCE POLYGON:
and STAND
CHARACTERISTICS
SURVEYOR(S):

LEVEL /				1	1	LEVEL /	1		1	1]
MANAGEMENT / DISTURBANCE	DUMPING (RUBBISH)	EARTH DESPLACEMENT	RECREATIONAL USE	AUBI SPECIES	MOISE	NATURAL DISTURBANCES	PLOCODING (POOLS & PUDOLING)	FIRE	SOIL EROSION	OTHER	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = MEANT EXTENTS 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTRESIVE	
LENEL/ EXTENT	\setminus	\setminus	\setminus	\setminus	\setminus	LEVEL / EXTENT					E 1 = UGIT 1 = LOCIL 2	
HANGENERT / DISTURBUNCE	SUGAR BUSH OPERATIONS	GAPS IN THE CANDPY	LIVESTOCK (GRAZING)	PLANTING (PLANTATION)	TRACIS AND TRAILS	NATURAL DISTURBANCES	DESEASE / PESTS / DEATH	манатичем (възможни)	BROWSE (e.g., DEER)	BEAVER ACTIVITY	LEVEL 0 = NONE EXTENTS 0 = NONE	

INCE INLLI BY SPECIES	2					PICESH FACTOR:	TOR
SPECIES CODE	TMEYS	THEY THEY I THEY S THEY 4 THEYS	TALLYS	TALLY 4	SATING	TOTAL	RE. AV.
						**	
							. *
					-		
TOTAL							
BASAL AREA (BA)			-				HEAN
0770				-	-		
* *							

	سم ا																				•							*.		
		8 8		T		T							Γ	Γ		Γ	_		Γ		Γ	Γ	Γ	Ţ-	T	T	_	_		
	*		¥ /	46	 	†	-	-	_	-	-		-	_	_	_			L		L									
	A S	R I	m	1	1	1		-	Н	-	-		_		_		_		_		_									\exists
1 2	5 ∾ 5.1	3	7		1	1		-		-	-			-				_	_	\vdash	_		_	L	L					٦
	88	\int	-			1									-		-		_	Н		-	<u> </u>	_	_	_	Ц			
370	38		0	2	\int	T				-			-					Н	-	\vdash	-	H	_	<u> </u>			Ц			
A 200	\$ X	岌	3		147																									
100	28.2	X A			7 1	1																								١
1273 1	\$~	SPECIES CODE	4	1		1																								- [
TEANSITURY SCOUP OF BYTHE	3 = SPPLINGS & SHRIBS 4 = GROUND LYTER 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-1009	<u>B</u>	210	71																								ı		
12934		F	T	T	T	Γ													i						L		Ш			_
11 218 2	38_	8			$oldsymbol{ol}}}}}}}}}}}}}}}}}$																								T	٦
対 g J -	a Si		*	_	0	-	\mathcal{I}			0			0		0	4	Œ	0	ᅴ	I		-	<u>I</u>				_	4	_	4
37 48	e e	<u>~ -</u>	2	1		Q	<u>.</u>		Q		\mathcal{I}	Ð						O	له		0	\dashv	4	5		\mathcal{Q}	\dashv	4	-	4
	₹S		1/2			6	_	4	0					_					9			V		17			\dashv	\dashv		\dashv
SITE: A POLYGON: + DATE: A SURVEYOR(S)	E E		丁	1	+	17		4	Y		-	-		0	-	_	_	\dashv				꼬			N			7	\dashv	ᅱ
श्रष्ट । इ	ě ;	•	AND A	<u>]</u> '.	٦٤	لو ا	V	t		لہ	1	1							1					/				7	十	\dashv
₁₀	3	Ř	g	A 1		3	V	9		5	F.	4	1	T	Á	1	8	Q	Ω	9		Ĭ	A	1	2	4	l			
5円	7.5	8		7	A LICE	JCN NCNE	R	5	K	2550	8	- 11	1	- 11	y	Á	4	S	A	4		JANE H		7	7487	\delta \d		1		ı
PLANT SPECIES LIST	AYBES: 1 = CANON TREES > 10m 2 = SUB-CANON HAUN BLANQUET: + PRESENT 1 = < 1-5% 2	SPECIES CODE	ST I		ST ALSO	18	YNDOS	b	4		77454	H	4	Ø	9	7734	AXXX	7	1	A STATE	才	4	4300	1	5	A	-	1	-	
T R N J	22	55	41	H (HO		Q	1	0	7	V	Ш	ڵ	ď		3			A	K,	2	ß	A	g		Z		-		
7	1 1 1													-, -,			I.	··	1-1		لبد	{ 	<u> </u>	٣		7				

8 LAYBES: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SUPLINGS & SHRIBS 4 = GROUND LAYER

BRADIN BLANQUET: + PRESBIT 1 = < 1-5% 2 = 5-25% 3 = 25-55% 4 = 50-75% 5 = 75-100%

LAYER. JOSE COLORED SPECIES CODE POLYGON: FONZ-102 18 DATE ADOLOGY SURVEYOR(S): ___(00 4 \simeq 4 0 00 06 404 1 2 3 4 0 4 SITE: DEFNER TER ROSE 公山 英州 THE STATE N THEOR R. W. C. るとままり PARTERIAL PARA L INPOS HIXOUR DAMMINA THE THE CIC (TRE ID ALL TO CARRIVER HYSTON THE JYSOVI A A DOC POCOO! A CHILL JAKYDY 2000 PATTE LA SPECIES CODE SPECIES PLANT ISI

SITE:	POLYGON:	DATE:	SURVEYOR(S):
	DISTURBANCE	CHARACTERISTICS DATE:	

HANGEMENT / DISTURBANCE	LEVEL / EXTENT	HUNGEHERT / DISTURBANCE	LEVEL /
SUGAR RUSH OPERATIONS		0-езията). энцэнта	
GAS IN THE CANOPY		EARTH DESPLACEMENT	\setminus
LIVESTOCK (GRAZING)		RECREATIONAL USE	\setminus
PLAKTING (PLAKTATIOH)		AUBI SPECIES	\setminus
TRACS AND TRAILS		HOISE	\setminus
NATURAL DESTURBANCES	ECTBAT	RATURAL DISTURBANCES	LEVEL /
DISEASE / PESTS / DEATH		PLOODING (POOLS & PUDDLING)	
		FIRE	
BROWSE (4.0., DEER)		SOIL BROSTON	
BEAVER ACTIVITY		отнея	
LEVEL: 6 = MONE	1=100K 2	LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY EXTERN: 0 = NONE 1 = LIGHL 2 = WIDESPREAD 3 = EXTERNE	

TREE TALLY BY SPECIES	· (5)		•		-	PRISM FACTOR	OR
SPECIES CODE	TATEL	TALLY TALLY TALLY S TALLY & TALLY S	TALLYS	TALLY	TALLYS	TOTAL	RÉL. AV.
					,		
TOTAL							
EASH, AREA (BA)		·					MEAN
DELD							

TRANTITURY POLYGON: MARCH 04 404 DATE: DATE: SURVEYOR(S): SITE TYPO BY SPECIES 153

STTE:	POLYGON:	DATE:	GIBVENDE/CI-
	DISTORBANCE TANO	CHARACTERISTICS DATE:	

HAMAGEMENT / DISTURBANCE	LEVEL /	HANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS	\setminus	Curerand (numeran)	1
GAPS IN THE CANOPY		EACTH DISPLACEMENT	Λ
LIVESTOCK (GRAZING)	\setminus	RECREATIONAL USE	N
PLANTING (PLANTATION)	\setminus	ALIEN SPECIES	Λ
TRACIS AND TRAILS		NOISE	$\sqrt{}$
HATURAL DISTURBANCES	LEVEL / ECTENT	KATURAL DISTURBANCES	LENEL / Extent
DESEASE / PESTS / DEATH		PLOCODING (POCKS & PLDDLING)	1
млюфисм (вгомроми)		FIRE	1
BROWSE (e.g., DEER)		SOIL EROSTON	1
BEAVER ACTIVITY		OTHER	1
THEIR I SHOW IN O TENED.	# 1-DOM 2-	LEVEL 6 = NONE 1 = LIGHT 2 = MODESATE 3 = HEAVY BIT: 0 = NONE 1 = LIGHL 2 = WIDESPREAD 3 = EXTRISIVE	
			_

TREE TALLY BY SPECIES	S		•••	•	. !	PRESH FACTOR	TOR
SPECIES CODE	TALLYI	TMLY 2	TMEYS THEY STAINS TALEYS	TALLY		TOTAL	RELAY.
			_				
TOTAL							
easal anea (ba)		·					PEEAN
Orac							

DISTURBANCE POLYGON:
and STAND
CHARACTERISTICS DATE:
SURVEYOR(S): DISTURBANCE and STAND 8 LAYERS: 1 = CAVOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = <1.5% 2 = 5.25% 3 = 25.50% 4 = 5.075% 5 = 75.100% 1 2 3 /CCK AC SPECIES CODE JOHN BELLA HIG POLYGON: TROCOPICADU 8 SURVEYOR(S): LMC 40 2 3 4 OP 00 4 0<u>0</u> 400 LAYER LAYER B SITE: CA Q. DATE: 40 1350 BT THE CHARLE VIVAGE O HIST TRIPO PHEROLUM CANACE! SOTO SEN かんなり SPECIES CODE H4001 THE WAR SOINER JY BYCK 57/20 SOANY SISTERN THE Hoya ACTE X COEST PLANT SPECIES LIST

MANAGEMENT / DISTURBANCE	ECTENT	HANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS		OKSTRATE (DETRIBUTE)	
GAPS IN THE CANOPY		EARTH DISPLACEMENT	\setminus
LIVESTOCK (GRAZING)		RECREATIONAL USE	\setminus
PLANTING (PLANTATION)		ALIBN SPECIES	
TRACKS AND TRAILS		MOISE	\setminus
HATURAL DISTURBANCES	PAGE /	NATURAL DISTURBANCES	LEVEL / ECTENT
DISSEASE / PESTS / DEATH		PLOCOING (POCKS & PUDOLING)	1
млиртунком (вкомооми)		FIRE	1
BROWSE (e.g., DEBI)		SOIL BROSTON	1
BEAVER ACTIVITY	Ì	отнея	\setminus
LEVEL: 0 = NOME 1 · ECTENT: 0 = NOME 1 ·	NE 1 = LIGHT . 1 = LOCAL 2 =	LEVEL 0 = NONE 1 = LIGHT 2 = HODERATE 3 = HEAVT SHT: 0 = NONE 1 = LOCAL 2 = WEDESPREAD 3 = EATBEIVE	
		•	

STE

### TALLY 1 TALLY 2 TALLY 6 TALLY 6 TOTAL RELATED TOTAL RE	INCE IALLI BI SPELLES	2					PRISH FACTOR:	TORC
AMEA (BA)	SPECIES CODE	TALLY 1	TALLYZ	TALLY 3	TALLY	TALLYS		RE.AV.
ANEA (BA)								
ANDA (BA)	,							
ANEA (SA)								
ANDA (EA.)								
ANDA (EA.)								
ANEA (EA.)		•						
ANEA (24.)								
ANEA (34)	TOTAL							
ORIO	BASAL AREA (BA)							HEE
	DEAD					H		

STATE OF THE

YMO HX

URMACK

RIBCAN D

KONIKU

ACCOLORY

SRAVICA

۲								-		-								•			·		·			•		٠.					,	
					3														\top					T		T		٦				T	٦	٦
				. \$		7	d	Q	Ø	0	Ŋ	0	0		0		0	0		7		7	7	7	7	\dashv	7	\neg	ᅱ	\dashv	-	\dashv	┥	\dashv
			1		LAYER	3.	_									থ								\exists			\exists	ᅦ		\neg	ᅥ	+	┪	\dashv
				25	5	2	_	_	_	_				R													一		٦			7	7	\dashv
	-		•	8		-	-	-		_	_		_	R			_		4		\dashv	_										1	7	\exists
18 14 F 10 1 M C	\C	(5·	*	3 = SUPLINGS & SHRUBS 4 = GROUND LAYER 5-254 3 = 25-504 4 = 50-734 5 = 75-1004	CONTRACTOR		THEFTERS	F POPEN	FUPWACU	CIRVUICA	LYC PAMER	MENAPAR	OF PAMPED	MARCHAR	GALPALU	CONTAIN	PESTOUNI	BIDFON																
7	1	101 XY	MC			+	O	Ω				0	0	0			O		0	đ	O						O	Æ	0	R	0			
1		2	35	~ ~	S	3			N														0	Z	Q	0		Ŧ	×	9	\vee	1/	4	4
1	Ä		g	4 V	2	1 2			Q O	元	90	_	-	_	7	P		_				R	O	R										\exists
ŭ.	ğ	μį	9	SE SE	-			_	Υ.	O	-	-		-	b	<u>v</u>	_	1				X									·			
STIFE	PLANT POLYGON:	DATE	SURVEYOR(S):	LAYERS 1 = CMOPY TREES > 10m 2 = SUB-CMOPY MEASURE AND ADDRESS 1 1 = < 15% 2 =		Statio was	FB 10897	101.98K		ONSYLY	1787/HT	RAMP P	RANPEN	CCAH	CHATALO	OF FREE	子のアプラ	西班面	VICC RSE	CYNPOSS	CARONEC.	TOPOTO T		PARVITA	PHACKETH	-01530-	South	SYMPETI	VERTHAST	JUNIORAH	TUSFIRE	HSTNOPAKA	S 5104	S CRIMA

14001	STE			
UISTORBANCE 22d STAND	POLYGON:	X:		
CHARACTE	CHARACTERISTICS DATE:			
	SURVEYOR(S):	ÒR(S):		
MANAGENE	MANAGEMENT / DISTURBANICE	LEVEL /	HANGENER / DISTUREANCE	Levrit./
SUGAR BUSH OPERATIONS	итоме		Descend Comments	\setminus
GUIS BY THE CANOPY	7.		EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)) HKG)		RECREATIONAL USE	
PLANTING (PLANTATION)	(HOLL)		SILBAS NITW	
TRACKS AND TRAILS	S		MOIS€	
KATURAL S	HATLINALL DISTURBANCES	TENET!	SECHTRUCTED TRUCKS	UEVEL / EXTENT
DISEASE / PESTS / DEATH	ректн		PLOCODING (POOLS & PUDPLING)	
WINDOWSOM (BLOWDOWN)	WDOWN)		FIRE	
MOWSE (e.g., DEEK)	₩		SOIL EROSTOM	
BEAVER ACTIVITY			отиея	
	ECTENT: 6 = NONE 1 = LIGHT ECTENT: 0 = NONE 1 = LOCAL 2	1=100K 2	LEVEL 0 = NOWE 1 = LOGIT 2 = MOCEANTE 3 = MEANY BITLO = NOWE 1 = LOGIL 2 = WIDESPREAD 3 = EXTENSIVE	
	-			,

TREE TALLY BY SPECIES	6		••			PRESN FACTOR	TOR
SPECIES CODE		THEY THEY STAINS THEY STAINS	TALLYS	PATIES	TMEYS	TOTAL	RE.AV.
						•	·
TOTAL							
BASAL AREA (BA)		·					MEN
Orac							

C LAYTHES 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAFINGS & SHRUBS 4 = GROUND LAYER

BRADIN BLANCOLET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

LAYER. TPANSTNAY UPNACE PAPOSE STIEX SPECIES CODE THE T 222 8 1 2 3 4 7 00 POLYGON: 4 1 4 9 0 SURVEYOR(S): 000 Ō RR 4 Q 4 α A A N 4 4 DATE SITE COSTRAIN TLC FLA D'SKIMK! 4 PAPPUN PINNOR BCVIVO A COLAN PINSYLY (100) A 15 MANTER 7251VVBG ANSTRO 州东西 VIBRAK. SPECIES CODE ACVITA SARAS. 1000 A THE STATE TRYPO VNRSS はまって YOUNGY SPECIES FST

	STE
DISTORBANCE and STANO	POLYGON:
CHARACTERISTICS DATE:	DATE:
	SURVEYOR(S):

MANAGEMENT / DISTURBANCE	EXTENT	HANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS		Odzawania) Brownia	1
GUSBITHE CHOP!		EARTH DISPLACEMENT	1
LIVESTOCK (GRAZING)		RECENTIONAL USE	1
PLANTING (PLANTATION)		ALIN SPECIES	1
TRACIS AND TRAILS		NOISE	1
HATURAL DESTURBANCES	LEVEL / ECTBAT	KATURAL DISTURBANCES	CENEL /
DISEASE / PIESTS / DEATH		PLOCODING (POOLS & PUDDIDIG)	1
манрином (вкомроми)		FIRE	1
BROWSE (e.g., DEER)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	1
LEVEL: 6 = KOY ECTERT: 0 = NOKE	E 1=139ff.	LEMBJ 6 = NOME 1 = LIGHT 2 = MODERATE 3 = HEAVY EXTENT: 0 = NOME 1 = LOCHL 2 = WIDEPREAD 3 = EXTENSIVE	

TREE TALLY BY SPECIES	S		•	:		PICSA FACTOR	TOPE
SPECTES CODE	TALLY	TALLYS TALLYS TALLYS TALLYS	TALLYS	TALLY		TOTAL	FEE. AV.
						٠	
		-			_		
TOTAL		-		-			
BASUL AREA (BA)				-	-	·	PREAM
0730					-	-	

DISTURBANCE POLYGON:
and STAND
CHARACTERISTICS DATE:
SURVEYOR(S): STE 8 LAYBES 1 = CANODY TREES > 10m 2 = SUB-CANOPY 3 = SALINGS & SHRINS4 = GROUND LAYER BRAINN BLANDVETT. + PRESENT 1 = < 1.5% 2 = 5.2% 3 = 25.5% 4 = 50.7% 5 = 75-100% LAYER 1 2 3 SITE ACH TEANSTIME SPECIES CODE DATE CUN OF 18 1 2 3 4 0 40 CATER SURVEYOR(S): DR POLYGON: (SOPRIT U CANCOR DE PARTY THE FO とな PARY INC JARRELIN AP DENK UBIORE RLUK STA UC SPECIES CODE 00/21 ACCION 8 778 10 4000 JACC (FROSE り出する YNP CO MARK IRCVIP. PLANT 15

MANAGEMENT / DISTURBANCE	Extract.	MANAGEMENT / DISTURBANCE	/ TEVET
SUGAR BUSH OPERATIONS		December (Museum)	
GUSTR THE CHOPY		EARTH DISPLACEMENT	1
LIVESTOCK (GRAZING)		RECREATIONING USE	1
PLANTING (PLANTATION)		ALIBN SPECIES	1
TRACIS AND TRAILS		NOISE	
HATTHAL DISTURBANCES	LEVEL / ECTBAT	NATURAL DISTUMBANCES	CENEL /
DESEASE / PESTS / DEATH		PLOCODING (POOLS & PLOCALING)	1
. Измосиств) жовность		FIRE	
BROWSE (e.g., DEB!)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	1
LEVEL: 6 = 400	K 1-UGHT	LEVEL: 6 = NONE 1 = DGAT 2 = MODERATE 3 = HEAVY	
STRICE OF STRICE	1=1000 7	With Democrat # symmetric	***

SPECIES CODE TALLY 1 TALLY 2 TALLY 3 TALLY 4 TALLY 2 TALLY 4 TALLY 4 TALLY 4 TALLY 5 T	TREE TALLY BY SPECIES	S		•			PRESH FACTOR	305
DENO	SPECIES CODE	TMIXI	TALLYZ	TALLYS	TALLY	SATRE	TOTAL	ME.AV.
DEAD (EAL)								
TOTAL BASAL AVEA (BA) DEAD								
TOTAL BASAL AVEA (BA.) DEAD							·	
OPEG LOTAL AREA (EA.) TOTAL								
OPEC (BA) TYTHE (BA)								
707AL 245AL ANEA (2A.) DEAD								
107A.					-			
מזמר יאבע (פיי)	TOTAL				-			
0720	BASAL APEA (BA)				-	*		MEAN
	DEAD					-		

ម្ច	and STAND POLICE ON THE COLUMN TO THE COLUMN	CINCIPLE COLUMNIA COL	SURVETOR(S);		MANAGEMENT / DISTURBANCE EXTENT	SUCK RUSH OPERATIONS	GAS IN THE CANOPY	LIVESTOCK (GAZZING)	PLANTING (PLANTATION)	TRACS AND TRUES	MATURAL DISTURBANCES LEVEL /	DISEASE / PESTS / DEATH	маютичем (всоможи)	BROWSE (e.g., DEEK)	BEAVER ACTIVITY	LEVEL 0 = NONE 1 = LIGHT ECTERT: 0 = NONE 1 = LIGHT 2	TREE TALLY BY SOFCIES	SPECIES CODE TRUY 1 TRUY 2			·	TOTAL	DEAD	:				
A LILLY BO		ひ /	1		Y 3 = SULTHES & SHRUKS 4 = GROUND LIYER		SPECIES CODE	1 2 3 4																				
 PIANT SITE: ACH TO	TES POLYGON: POCA	DATE: TYON	SURVEYOR(S): \		EAVERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY BRAINE BLANCHTS: 4 POSCHIT 1 = 7 LEV 1	1 AVED		1 2 3 4	1 0 C 100 H	Cynpecs	R R	DILOKT! DET																

MANAGEMENT / DISTURBANCE	LEVEL / ECTEAT	MANAGENERIT / DISTURBANCE	LEVEL /
SUCAR BUSH OPERATIONS		Oscinenti (Brancis)	
GUS IN THE CAIDPT		EATH DEPLACEMENT	1
LIVESTOCK (GRAZDNG)		RECREATIONAL USE	1
PLANTING (PLANTATION)		AUBISPECIES	1
TRACIS AND TRAILS		NOISE	1
NATURAL DISTURBANCES	LEVEL /	NATURAL DISTURBANCES	LEVEL /
DISEASE / PESTS / DEATH		PLOCODING (POCKS & PLOCUING)	1
маютином (ясомоми)		FIRE	1
BROWSE (e.g., DEBR)		SOIL BROSTON	1
BEAVER ACTIVITY		OTHER	\int
LEVEL 6 = NONE EXTERT 6 = NONE	E 1-136/1 1=100/L 2	LEVE: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY EXTENT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTENTY	

TREE TALLY BY SPECTES	S		•••			PRUSH FACTOR	7062
SPECIES CODE	TREET	THEY THEY 2 THEY S THEY & THEY'S	TALLYS	TALLY		TOTAL	RE.AW.
	·				-		
TOTAL			-		r		
BASAL AREA (BA)			-				HEAN
DEAD			-		<u> </u>		

통. 1 2 3 4 EXAMPLE: 1 = CANONY TREES > 10m 2 = SUB-CANONY 3 = SUPLINGS & SHRUBS 4 = GROUND LAYER

EXAMPLE: + PRESENT 1 = < 1-6% 2 = 5-25% 3 = 25-57% 4 = 50-75% 5 = 75-100%

LAYER

LAYER TRANSTINA SPECIES CODE 0000 8 すって O 1 2 3 4 0 STEE Q no 4 DATE: SURVEYOR(S): 70 POLYGON: (4 1 0 SITE MANAG JUNY JOS Sperio ACCION. DANA. THE THE 大は出って THO BY PERCEN INSTRO JANA JA 10/01 madie SAPPER Monday MUSSC SPECIES CODE 8 40700 PLANT

		Ė			
		1			
	UISI UKBANG	POLYGON:	ä		
	CHARACTERISTICS DATE:	DATE			
		SURVEYOR(S):	OR(S):		
	NAMAGEMENT / DISTURBANCE	MACE	LEVEL / ECTEMT	MANAGEMENT / DISTURBANCE	LEVEL /
	SUGAR BUSH OPERATIONS		\setminus	Designation (Manager)	
	GUSTATHECHOPY		\	EARTH DESPLACEMENT	
	LIVESTOCK (GRAZDIG)		\setminus	BECEVERAL USE	\setminus
	PLUKTING (PLANTATION)		\setminus	SIDAS HILY	
	TRACKS AND TRAILS			NOISE	\setminus
	NATURAL DISTURBANCES	и	LEVEL / ECTENT	SECONTRACTS TOTALLYN	LEVEL /
	DISEASE / PESTS / DEATH		\setminus	PLOCODING (POOLS & PUDDUMG)	
	(имофион (вгомрони)	·		FIRE	
	BRONSE (e.g., DEBI)			SOIL BROSTOM	
	BEAVER ACTIVITY		1	OTHER	
_					

TREE TALLY BY SPECIES	· ·		•			PICTOR FACTOR	TOR
SPECIES CODE		TALY TALY TALY TALY TALY TALYS	TALLYS	TALLY	TALLYS	TOTAL	NE. AV.
							·
						·	
TOTAL							
BASH AVER (BA)							REW
OTPO							

LEVEL: 0 = NONE 1 = LIGHT 2 = NOOGNATE 3 = NEWY EATERTH 0 = NONE 1 = LOCAL 2 = WIDGERREAD 3 = EATERINE

EXAMPLE: 1 = CHIOPYTREES - 10m 2 = SUB-CHIOPY 3 = SUFLINGS & SIRUES 4 = GROUND LAYER

REALINGS AMOUNTS: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-1009

LAYER 407 TRANSTINA SPECIES CODE MAY 6/15 4/-/12 18 SURVEYOR(S): N 1 2 3 4 Q 040 0 Q X. 0 POLYGON: DATE SITE POBOPA-SONITA NO TO THE (FOUG) PHPANS 10137 V NAME OF THE PERSON OF THE PERS PLAPA 7416 REPURK SPANCO U THO FF to the state of KNOKE BOANER 1000 SPECIES CODE COPAC STOCK OF VNROS TOTAL PO V10018 NATURE STATES Sec Part 5 4534 PARCE SPECIES PLANT

GHF.	POLYGON:	TIC DATE:	SURVEYORISH
	DISTORBANCE OF STAND	CHARACTERISTICS DATE:	

MANAGEMENT / DISTURBANCE	ECTERT:	HANAGENERT / DISTURBANCE	LEVEL /
SUGAR BURN OPERATIONS		Comments (Incomerce)	\setminus
GAPS IN THE CANOPY		EARTH DISPLACEMENT	$\sqrt{}$
LIVESTOCK (GRAZING)		RECREATIONAL USE	N
PLANTING (PLANTATION)		ALIBN SPECIES	\backslash
TRACS AND TRAILS		NOISE	\backslash
KATURAL DISTURBANCES	LEVEL / ECTENT	KATURAL DISTURBUNCES	LENEL / EXTENT
DESEASE / PESTS / DEATH		PLOCODING (POOLS & PUDDLING)	\setminus
. (имодмотя) жовидания		FIRE	1
BROWSE (4.0.4 DEBI)		SOIL EROSION	1
BEAVER ACTIVITY		OTHER	
LEVEL 6 = NOWE 1 = LIGHT 2 = MOME 1 = LIGHT 2	€ 1=UGAT 1=UGC4 2	LEVELO = NONE 1 = LIGHT 2 = MODERATE 3 = MEANY BHT: 0 = NONE 1 = LIGGL, 2 = WIDESPREAD 3 = EXTENSIVE	

TREE TALLY BY SPECIES	۲۵.		•	÷		PKESH FACTOR	106
SPECIES CODE	TAILYS	TMIX 2	TALLY I TALLY 2 TALLY 5 TALLY 4 TALLY 5	TALLY	TREETS	TOTAL	PER.AN.
,							
	·					·	·
TOTAL	-	-					
BASAL AREA (BA)				-	-		PERM
CYRC		-	-	-	-		

1 2 3 4 LAYBRS: 1 = CANOPY TREES > 10m 2 = SJB-CANOPY 3 = SARINGS & SHRIBS 4 = GROUND LAYER BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-2% 3 = 25-5% 4 = 50-75% 5 = 75-1009 SPECIES CODE 18 1 2 3 4 00 RORR LAYER Ø SURVEYOR(S): POLYGON: DATE SITE: まましま RESEAN ACKINELL POPPANS ROENICAR PRPERB ACROSE THE DAY SCURTRO ZHOH Z ROSE PRSTID NYOVUS NVSTR SPECIES CODE SPACE PLANT SPECIES

	STTE:		
DISTURBANCE	POLYGON:		
CHARACTERISTICS DATE:	ATE		
5	SURVEYOR(S):		T
MANAGEMENT / DISTURBANCE	HCE LEVEL /	MANAGEMENT / DUSTUREANCE	LEVEL /
SUGAR BUSH OPERATIONS		DUMPING (PLUBESSIC)	1
GAPS BY THE CANOPY	\	EARTH DISPLACEMENT	1
LIVESTOCK (GRAZING)		RECREATIONAL LISE	1
PLANTING (PLANTATION)		ALTSH SPECIES	1
TRACIS AND TRAILS		NOISE	Λ
HATURAL DISTURBANCES	LEVEL /	NATURAL DISTURBANCES	LEVEL / EXTENT
DESEASE / PESTS / DEATH		PLOCODING (POCKS & PLEOLING)	
МИКОТНЯКОМ (ВЕСОМОСИИИ)		FIRE	1
BROWSE (e.g., DEBR)		SOIL ENCSION	1
BEAVER ACTIVITY		OTHER	$\overline{\Lambda}$
TEMET	0 = NOW 1 = LIG	LEVEL: 0 = NOWE 1 = LIGHT 2 = MODERATE 3 = HEAVY	Γ

TREE TALLY BY SPECIES	' 6		• ••	·:		PRESH FACTOR:	706
SPECIES CODE	TATIVA	TALLY TALLY 2 TALLY 3 TALLY 4 TALLY 5	TALLY 3	TALLY 4		TOTAL	RE. AV.
•							
	•						
TOTAL							
EASUL AVEA (BA)							MEAN
DEAD			-		_		

8 1 2 3 4 LAYBRS: 1 = CHOPY TREES > 10m 2 = SUB-CHOPY 3 = SUPLINGS & SHRIBS 4 = GROUND LAYER BRAZIN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-2% 3 = 25-50% 4 = 50-75% 5 = 75-100% SITE ACT TRCANSITUDBY SPECIES CODE POLYGON: SUSTAINS 8 DATE: MOUSURVEYOR(S): | M 1 2 3 4 Q KYER 4 (Q) (1) 100 A 17000H DA 57 P SICFRON PACTUR NCOSK N A A A ON THE 1559 CCENE De SO SPECIES CODE SACRO I XSTE 2000 THE CHIEF SPECIES LIST PLANT

SITE:	POLYGON:	DATE	SURVEYOR(S):
1010 a ca 1110 a ca	UIS UKBANCE	CHARACTERISTICS DATE:	

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANAGEMENT / BISTUREALNCE	LEVEL /
SUGAR BUSH OPERATIONS		(Inches of the second	\setminus
GAS IN THE CANOPY		EARTH DISPLACEMENT	$\sqrt{}$
LIVESTOCK (GRAZING)		RECREATIONAL USE	$\sqrt{}$
PLANTING (PLANTATION)		ALIBN SPECIES	Λ
TRACIS AND TRAILS		MOISE	Λ
HATURAL DISTURBANCES	LEYEL / EXTENT	NATURAL DISTURBANCES	Care /
DISEASE / PESTS / DEATH		PLOCODING (POCKS & PUDOLING)	\setminus
микописм (вкомоми)		FIRE	Λ
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY	Ĭ	OTHER	1
SHOW = 0 (TRET)	1-1004 2-	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY EXTERTS 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = EXTRISTRE	

TREE TALLY BY SPECIES							257
SPECIES CODE	TALLYI	TALLY 2	TALLY I TALLY 2 TALLY 3 TALLY 4 TALLY 5	TALLY 4	TALLYS	TOTAL	RELAW.
						٠	
					•		
-							
TOTAL							
BASUL AREA (BA)							PREAM
DEAD							

						LEVEL / EXTENT	\setminus	\setminus	\setminus	\setminus	\setminus	UEVEL/ COTENT	\setminus	\setminus	\setminus	\setminus		ě									E		1							42
						MANAGEMENT / DOSTURBANCE				* * * * * * * * * * * * * * * * * * * *		TUREANCES	UDDODNO)				GWY CIBICIVE	- Control of the cont	THINE TOTAL			·											•			
						WCENERY /	DOMESTIC (RUBBIESIO)	EARTH DESPLACEMENT	RECREATIONAL USE	ALIEN SPECIES		NATURAL DISTURBANCES	PLOODING (POOLS & PUDDUING)		NOISO		LEVEL: 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HERVY ECTRIC 9 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = ECTRICIVE		Syllad Lynna Tally a Tally a														•			•
ł			. 1				DOMES	ENCUH	RECREA	NETTA	MOESE		PLOODE	FIRE	SOIL EROSTON	OTHER	2ff 2= MOC		2 2111					-	-	L			,,						•	**
		<u>ه</u> :	,	SURVEYOR(S):		LEWEL /						LEYEL / EXTENT					DE 1-16		1				+	-	+	lacksquare					٠					
	ES	POLYGON:	SOATE	SURVE		DREAMCE						SECON					LEVEL: 0 = N	4		-				+	-	+	-	_								
		DISTORBANCE TANIO	CHARACTERISTICS DATE:			MANAGEMENT / DISTURBANCE	SUCAR BUSH OPERATIONS	GAPS IN THE CANOPY	LIVESTOCK (GRAZING)	PLAKTING (PLAKTATION)	TRACIS AND TRAILS	MATURAL DISTURBANCES	DISEASE / PESTS / DEATH	илистриком (весикомии)	MOWSE (e.g., DEEK)	DEAVER ACTIVITY			TREE TALLY BY SPECIES	Acres con						TOTAL	PASH AREA (BA)	DEAD								
					, .		-	L- <u></u>	L =	1.=	1	•	7.5	15	1.=	<u> </u>	<u> </u>	.) '	~L	21_			l	1	i_	_ <u>l.</u> E		10							÷	
		<u> </u>	Τ	T	Τ	7		Γ.	 -	T			Т	- -	-1				_		- 1							·			 - 1	1			₁	
							*600 *	_	B	_1						•																				
							CUMO LAYER K. S = 75-100%	LYER	15 12 14							•																				
							A # 50-75% S = 75-100%	LYER	1 2 2 4																					•						
	-	KATI YAY		V - C			3 = SAPLINGS & SHRUBS 4 = GROUND LAYER C-704: 3 = 25-504: 4 = 50-75%: 5 = 75-100%	LYER	15 12 14																											
		TODAKITATION	2-10	V - 60 %	13		-CANOPY 3 = SAMINGS & SHRIBS 4 = GROUND LAYER LOW 2 = C.70K 3 = 25-50K 4 = 50-75K 5 = 75-100K	LYER	COLL SPECIES CODE																											
		7	4,6	بال		7	m 2 = SUB-CANOPY 3 = SUPLINGS & SPRUBS 4 = GROUND LAYER v = v + car, 2 = c.29c, 3 = 25.50c, 4 = 50-75c, 5 = 75-1006.	LYER	COLL SPECIES CODE	3 4																										
	•	がくく	Sign A		(3)600	VEION(3). LIVIL	TEES > 10m 2 = 518-CANOPY 3 = SAPLINGS & SHRIBS 4 = GROUND LAYER A = 2.10k, 3 = 6.70k, 3 = 75.50k, 4 = 50.75%, 5 = 75.100%	LYER	COLL SPECIES CODE	7																										
		7	Sign A		(3)600	SURVETURIE). LIVI	ANORY TREES > 10m 2 = 518-CANORY 3 = 5141/AG R. SHRIES 4 = GROUND LYTER	LYER	SPECIES CODE	2 3 4	0																									
		がくく	POLYGON: 7	SI	(3)600	SURVETURIS). LY	LAYERS: 1 = CLNOPY TREES > 10m 2 = SIB-CANOPY 3 = SUPLINGS & SHRIBS 4 = GROUND LAYER 1 = 7 + 1.0% 3 = 7.5% 4 = 5.5% 5 = 75.10%	LYER	COLL SPECIES CODE	2 3 4	THE CO CONTRACTOR	2	CANPOSK C	Pupped I I I I I I I I I I I I I I I I I I I																						

DISTIDBANCE STEE	POLYGON:	CHARACTERISTICS DATE:	SURVEYOR(S):		HANAGEMENT / DISTURBANCE EXTERT	SUCH BUSH OPERATIONS	GUS IN THE CANOPY	LIVESTOCK (GAZZING)	PLANTING (PLANTATION)	TRACS AND TRAILS	NATURAL DISTURBANCES LEVEL / EXTERT	DISEASE / PESTS / DEATH	маналимом (втомоми)	BROWSE (e.g., DEER)	BEAVER ACTIVITY	LEVEL: 0 = NOWE 1 = LUCAL 2 EXTENT: 0 = NOWE 1 = LUCAL 2		SPECIES CODE TALLY ALLY 2				•		TOTAL	OTAG		•					
	PANSTWAY	- 07/1/28/08/	2/15] "	5-25% 3=25-50% 4=50-75% S=75-100%	SPECIFIC CANE	1 2 3 4																								
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		SPECTES POLYGON: CANANA	I IST DATE: OUN IC	SURVEYOR(S):		< 1.5% 2 s	SPECIES MOF	1 2 3 4	a difficulty	4500000))				2/2084		HE CAPTO	FCARENI R P	GEUPIEP O	Ponyte R	b	O PRICES O	DEFERENCE DE	ECYCOINED O	FAX HALT	DEPART OF THE PARTY OF THE PART	Synore, R			

MANAGEMENT / DISTURBANCE	LEVEL / EXTENT	MANACEMENT / DISTURBANCE	LEVEL /
SUGAR BLSH OPERATIONS		Ossiaana) sydaang	
GAPS IN THE CANOPY		EACH DISPLACEMENT	
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLAKTING (PLAKTATION)		SECURE SHELLES	
TRACIS AND TRAILS		NOISE	
NATURAL DISTURBANCES	EXTENT!	NATURAL DESTURBANCES	LEVEL / ECTENT
DISEASE / PESTS / DEATH		PLOCODING (POOLS & PUDOLING)	$\overline{\mathbb{N}}$
МИОТНЯОМ (ВЕСМООМП)		FIRE	
PROWSE (e.g., DEER)		SOIL EROSTON	\setminus
BEAVER ACTIVITY		отнек	
LEVEL: 0 = NONE 1 = LIGHT ECTENT: 0 = NONE 1 = LOCAL 2	1=1004.2	LEVEL 0 = NONE 1 = LIGHT 2 = MODERATE 3 = HEAVY BRT: 0 = NONE 1 = LOCAL 2 = WIDESPREAD 3 = ECTRISINE	

TREE TALLY BY SPECIES	S				-	PRESH FACTOR	200
SPECIES CODE	TRLEYI	TRIFT TRIFZ TRIFS TRIFF TRIFF	TALLYS	PATTYL	TALLYS	TOTAL	RELAY.
•							
	·						
TOTAL							
BASAL AREA (BA)		·			-		TEST
grad							

0	ל מ	JL	3	3	<u> </u>	2 				2 2	Ž			E	8		\perp	L		\bot			3									
			•				•																		•						•	
																								!								
				. 8																	_	_		7					·			
			•	<u>٠</u> ٢		_	_	-				_																				
			× 5		*		_	_				_			Ц		Ш													┪	寸	
			34	LY TER	2 3	-		\dashv			-				_		Ш														寸	
			28		7	-	-	-							-	_					_			\dashv	_	 						
			5		뉘		-	-			-	-		-	\vdash		Н					_	_	-	_	 						
4	且		SE .	ų	,																											
-	\$		25.2	8																										١		
	7 14		3-2	SPECIES CLOF							ı																					
			3 8	ð	,																				- 1							
4	7/1/-	1.1	m ih		. 1	_														L						 L		Ш				
11-	-1 / WI Y	12	3.6	2																	·									\Box	\Box	
	14/5		2 1		4	Ø	4	4	O		7		_	-			-	-	-			-				 -	-			_	4	_
T,	77 %		7.7	LAYER	3					Q.									-					\dashv	-	 _		-		-	-	
5	I z	OR (S)	V 10	5	7					<u> </u>																 -	-				-	\dashv
	برا کا ان	SURVEYOR(S):	RES		믜			_	<u> </u>				_	_	_															1	\dashv	-
	POLYG	8 8	1 AC				17	B	\$,													>								寸	
	•		38	<u>بر</u>	2	á	1	9	4	9	3			4						11			1									
	⊢ ₹		-3		3	V)	1	14	12	U	K		1				ļ															
	PLANT SPECIES	LIST	LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER BRAINK BLANQUET: + PRESENT 1 = $<1.5\%$ 2 = 5.25% 3 = 25.5% 4 = 50.75% 5 = 75.100%	SPECTES CODE		MOSD	五十二	Moderat	6	4	SPAPE	((ا دار استان دران مسر	13						./		1									
L	<u> </u>	<u> </u>	58	<u> </u>	7	L	0	0	4		Ш				1		. ,		i je i													
٠.																	<u></u>	L	<u> </u>							 L	L	لـــا				

STIE	POLYGON:	DATE:	SURVEYOR(S):
	DISTURBANCE	CHARACTERISTICS DATE:	

HANAGENENT / DISTURBANCE	LEVEL /	MANAGEMENT / DISTURBANCE	LEVEL /
SUGAR BUSH OPERATIONS	\setminus	(незвета). эминта	\setminus
GAPS IN THE CANOPY		EARTH DESPLACEMENT	\mathbb{N}
LIVESTOCK (GRAZING)		RECREATIONAL USE	
PLANTING (PLANTATION)		ALIBN SPECIES	\setminus
TRACIS AND TRAILS		NOISE	\setminus
HATURAL DISTURBANCES	LEVEL / EXTERT	NATURAL DISTURBANCES	LEVEL / EXTERT
DISEASE / PESTS / DEATH		PLOODING (POOLS & PUDOLING)	\setminus
маналимом (вгомомии)		FIRE	\setminus
BROWSE (e.g., DEER)		SOIL EROSION	
BEAVER ACTIVITY		отнек	
ON = 0 TEVET)	1=10CA 2	LEVEL: 0 = NONE 1 = LIGHT 2 = HODERATE 3 = HEAVY EXTERT; 0 = NONE 1 = LIGHZ 2 = WIDESPREAD 3 = EXTRESTE	

NOTAL ANEA (AA) DEAD DEAD NOTAL N		TALLY 1	TALLY TALLY 2 TALLY 3 TALLY 4 TALLY 5	TALLY 3	TALLY 4	TALLYS	TOTAL	RB. AV.
(va) vaev								
AEA (EA.)								
ANEA (EA.)								
AVEA (EA.)								
. AVEA (BA.)								
. AFA (BA)	TOTAL							
OFFIC	BASAL AREA (BA)							MEAN
	orac							

имосмота) можносми BROWSE (e.g., DEER) BEAVER ACTIVITY 8 ENABLE: 1 = CMOPT TREES - 10m 2 = SUB-CMOPT 3 = SUBTINGS & SHRIBS 4 = GROUND LAYER BRAINN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% S = 75-100% SITE ACH TRANSITWAY SPECIES CODE 220 POLYGON: SUC / - / 18 0 1 2 3 4 0 KYER SURVEYOR(S): DATE N ESSENS TOOK Y PRICE PERMICE. PET SOF THARACT YNROSS SPECIES CODE PLANT

			,	
	STE			
<u>y</u>	POLYGON:	÷.		
CHARACTERISTICS DATE:	DATE:			
	SURVEYOR(S):	OR(S):		
,				
HANAGENERY / DISTURBANCE	ANCE	LEVEL /	HANAGEMENT / ENSTREAMOR	LEVEL / EXTENT
SUGAR BUSH OPERATIONS			Ossseni) siguina	
GUS IN THE CANOPY			EARTH DISPLACEMENT	
LIVESTOCK (GRAZING)			RECREATIONAL USE	\setminus
PLANTING (PLANTATION)			ALIBH SPECIES	
TRACIS AND TRAILS			HOISE	
HATURAL DISTURBANCES	ES	LEVEL / ECTENT	NATURAL DISTURBANCES	LEVEL / EXTENT
HLY90 / SLESSE / JESYSESIO			PLOCOTING (POOLS & PUDDLING)	
		1		

TREE TALLY BY SPECIES		•			PRISH FACTOR	TOR
SPECIES CODE	TALLY TALLY 2 TALLY 3 TALLY 4 TALLY 5	SATIVA	PATTYL	TALLYS	TOTAL	RE. AV.
TOTAL						
BASAL APEA (BA)						HEAM
990						*

LEVEL 0 = NOVE 1 = 13GH 2 = MODERATE 3 = HEAVY EATERTS 0 = NOVE 1 = LOCAL 2 = WIDESPREAD 3 = EATERSIVE

SOIL BROSTON OTHER

APPENDIX C PHOTOGRAPHIC RECORD

PROJECT #TA8429 June 2015





View to the west looking at a Sugar Maple Deciduous Forest (FOD5) community.



View to the east looking at a Cultural Meadow (CUM1-1) in the foreground and a White Cedar Coniferous (FOC4-1) in the background.



View to the south looking at a Cultural Savannah (CUS1) community.



View to the west looking at a Cultural Thicket (CUT1) community.



View to the east looking at a Shallow Marsh (MAS2) community.



View to the west looking at a White Cedar – Hardwood Mixed Forest (FOM7-2) community.





View to the west looking at a Cultural Woodland (CUW1).



View to the east looking at a Cultural Meadow (CUM1-1) in the foreground and a Coniferous Forest (FOC) in the background.



View to the north looking at an Open Aquatic (OAO) community.



View to the west in a White Cedar Coniferous Swamp (SWC1-1).



View to the north looking at a Green Ash Deciduous Swamp (SWD2-2).



View to the west in a Sugar Maple – Hardwood Deciduous Forest (FOD6-5).

PROJECT #TA8429 June 2015





View to the north looking at a White Cedar Coniferous Forest (FOC2-2).



View to the east inside a Lowland Deciduous Forest (FOD7).



View to the north inside a Ash Lowland Deciduous Forest (FOD7-2) community.



View to the west looking at a White Cedar – Sugar Maple Mixed Forest (FOM7-1) community.



View to the west looking at a Cultural Meadow (CUM1-1) in the foreground and Swamp Thicket (SWT) in the background.



View to the west looking at a Reed Canary Grass Meadow Marsh (MAM2-2).

PROJECT #TA8429 June 2015





View to the north looking at a Cattail Shallow Marsh (MAS2-1) community.



View to the west looking at a Forb Meadow Marsh (MAM2-10).



View to the east looking at a Willow Swamp Thicket (SWT2-2) and a Sugar Maple Deciduous Forest (FOD6-5) in the background.



View to the west looking at a White Cedar – Sugar Maple Mixed Forest (FOM7-1) community.

APPENDIX D VASCULAR PLANT LIST

APPENDIX D1 FOREST COMMUNITIES VASCULAR PLANT LIST

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	EQUISETACEAE	HORSETAIL FAMILY																							
	Equisetum arvense	field horsetail	G5	S5			L5							X		X				X					
	Equisetum pratense	meadow horsetail	G5	S5			L3						X	X		X			X	X					
	OSMUNDACEAE	ROYAL FERN FAMILY																							
	Osmunda cinnamomea	cinnamon fern	G5	S5			L2												X						
	THELYPTERIDACEAE	MARSH FERN																							
	Thelypteris palustris var. pubescens	marsh fern	G5T?	S5			L4								X			X							
	DRYOPTERIDACEAE	WOOD FERN FAMILY																							
	Athyrium filix-femina var. angustum	northern lady fern	G5T5	S5			L5				X								X		X				X
	Cystopteris bulbifera	bulbet bladder fern	G5	S5			L4						X												
	Dryopteris carthusiana	spinulose wood fern	G5	S5			L5		X																
	Dryopteris marginalis	marginal wood fern	G5	S5			L4																X		
	Gymnocarpium dryopteris	oak fern	G5	S5			L3									X									
	Matteuccia struthiopteris var. pensylvanica	ostrich fern	G5	S5			L5				X		X		X			X	X				X		X
	Onoclea sensibilis	sensitive fern	G5	S5			L5					X	X		X			X	X		X	X			
	PINACEAE	PINE FAMILY																							
*	Larix decidua	European larch	G?	SE2			L+	X																	
	Picea glauca	white spruce	G5	S5			L3	X																	
*	Pinus nigra	Austrian pine	G?	SE2			L+	X													X				
	Pinus strobus	eastern white pine	G5	S5			L4	X	X					X				X	X		X	X			X
*	Pinus sylvestris	scotch pine	G?	SE5			L+	X						X									X		
	Tsuga canadensis	eastern hemlock	G5	S5			L4		X		X					X		X	X		X				
	CUPRESSACEAE	CEDAR FAMILY																							
	Thuja occidentalis	eastern white cedar	G5	S5			L4	X	X	X	X	X	X	X	X	X						X	X	X	X
	ARISTOLOCHIACEAE	DUCHMAN'S-PIPE FAMILY																							
	Asarum canadense	wild ginger	G5	S5			L4																		X
	RANUNCULACEAE	BUTTERCUP FAMILY																							
	Actaea pachypoda	white baneberry	G5	S5			L4												X						X
	Actaea rubra	red baneberry	G5	S5			L5		X				X					X	X		X				
	Anemone canadensis	Canada anemone	G5	S5			L5						X												X
	Caltha palustris	marsh-marigold	G5	S5			L4						X												X
*	Ranunculus acris	tall buttercup	G5	SE5			L+							X							X				
	Ranunculus recurvatus var. recurvatus	hooked buttercup	G5	S5			L5							X											
	Thalictrum dioicum	early meadow-rue	G5	S5			L5							X		X									X

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MINR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-16	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
Thalictrum pubescens	tall meadow-rue	G5	S5					X				X				X	X					X	
BERBERIDACEAE	BARBERRY FAMILY																						
Caulophyllum thalictroides	blue cohosh	G	S5			L2									X		X		X		X		
Podophyllum peltatum	may-apple	G5	S5			L4						X		X		X	X		X		X		
PAPAVERACEAE	POPPY FAMILY																						
* Chelidonium majus	celandine	G?	SE5			L+						X											X
ULMACEAE	ELM FAMILY																						
Ulmus americana	white elm	G5?	S5			L5	X			X		X Z	X	X	X	X	X			X	X	X	X
Ulmus rubra	slippery elm	G5	S5			L2									X		X	X					
URTICACEAE	NETTLE FAMILY																						
Boehmeria cylindrica	false nettle	G5	S5			L4													X				X
Laportea canadensis	wood nettle	G5	S5			L5												X					X
* Urtica dioica ssp. dioica	European stinging nettle	G5T?	SE2			L+						X											
JUGLANDACEAE	WALNUT FAMILY																						
Carya cordiformis	bitternut hickory	G5	S5			L4									X	X	X						
Juglans cinerea	butternut	G3G4	S3?	END	END	L3											X						
Juglans nigra	black walnut	G5	S4			L5						X				X	X		X			X	
FAGACEAE	BEECH FAMILY																						
Fagus grandifolia	American beech	G5	S5			L4										X	X		X				
Quercus macrocarpa	bur oak	G5	S5			L4	X							X					X	X			X
Quercus rubra	red oak	G5	S5			L4	X	X								X	X						
BETULACEAE	BIRCH FAMILY																						
Betula alleghaniensis	yellow birch	G5	S5			L4							X	X	X	X	X			X	X		
Betula papyrifera	white birch	G5	S5			L4		X															
Ostrya virginiana	ironwood	G5	S5			L5				X						X	X		X				
CARYOPHYLLACEAE	PINK FAMILY																						
* Dianthus armeria	deptford pink	G?	SE5			L+						X											
POLYGONACEAE	SMARTWEED FAMILY																						
Polygonum amphibium	water smartweed	G5	S5			L3																	X
TILIACEAE	LINDEN FAMILY																						
Tilia americana	basswood	G5	S5			L5						2	X	X	X	X	X		X	X		X	X
VIOLACEAE	VIOLET FAMILY																						
Viola pubescens	downy yellow violet	G5	S5			L5						X				X	X				X		
Viola sororia	woolly blue violet	G5	S5			L5						X				X	X						

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-10	FOC4-16	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
Viola sp.	violet						X										X		X			X	
CUCURBITACEAE	GOURD FAMILY																						
Echinocystis lobata	prickly cucumber	G5	S5			L5					, ,	$\mathbf{X} \mid \mathbf{Z}$	X		X								X
SALICACEAE	WILLOW FAMILY																						
Populus balsamifera ssp. balsamifera	balsam poplar	G5T?	S5			L5					, ,	X					X		X				X
Populus deltoides ssp. deltoides	eastern cottonwood	G5T?	SU			L5																	X
Populus tremuloides	trembling aspen	G5	S5			L5	X							X					X				X
* Salix alba	white willow	G5	SE4			L+						2	X										X
Salix petiolaris	slender willow	G4	S5			L3																	X
Salix sp.	willow		?									X								X			
BRASSICACEAE	MUSTARD FAMILY																						
* Alliaria petiolata	garlic mustard	G5	SE5			L+		X	X			X			X	X	X			X	X		X
* Barbarea vulgaris	yellow rocket	G?	SE5			L+												X					
Cardamine diphylla	two-leaved toothwort	G5	S5			L4						X					X						X
* Hesperis matronalis	dame's rocket	G4G5	SE5			L+						X				X	X	X		X	X	X	
PRIMULACEAE	PRIMROSE FAMILY																						
Lysimachia ciliata	fringed loosestrife	G5	S5			L5						X											
* Lysimachia nummularia	moneywort	G?	SE5			L+				X		X							X	X			X
GROSSULARIACEAE	GOOSEBERRY FAMILY																						
Ribes americanum	wild black currant	G5	S5			L5											X						
Ribes cynosbati	prickly gooseberry	G5	S5			L5	X																
Ribes hirtellum	smooth gooseberry	G5	S5			L3						X		X	X								
SAXIFRAGACEAE	SAXIFRAGE FAMILY																						
Tiarella cordifolia	false mitrewort	G5	S5			L4								X									
ROSACEAE	ROSE FAMILY																						
Amelanchier laevis	smooth juneberry	G4G5Q	S5			L4		X						X									
* Crataegus monogyna	English hawthorn	G5	SE5			L+											X						
Crataegus punctata	large-fruited thorn	G5	S5			L5						X										X	
Crataegus sp.	hawthorn																	X					X
Fragaria virginiana ssp. virginiana	scarlet strawberry	G5T?	SU			L5											X	X	X				X
Geum aleppicum	yellow avens	G5	S5			L5									X			X	X	X	X		
Geum canadense	white avens	G5	S5			L5	X					X				X	X	X	X				
Geum laciniatum	rough avens	G5	S4			L3											X						
* Malus baccata	Siberian crabapple	G?	SE1			L+											X						

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
Prunus serotina	black cherry	G5	S5			L5									X			X		X				
Prunus virginiana var. virginiana	choke cherry	G5T?	S5			L5	X					X				X	X	X	X	X				X
* Rosa multiflora	multiflora rose	G?	SE4			L+												X						X
Rubus allegheniensis	alleghany blackberry	G5	S5			L5	X										X	X						
* Rubus idaeus ssp. idaeus	red raspberry	G5T5	SE1				X									X				X				
Rubus occidentalis	thimble-berry	G5	S5			L5												X						
Rubus odoratus	purple flowering raspberry	G5	S5			L5										X							X	
Rubus pubescens	dwarf raspberry	G5	S5			L4									X									
FABACEAE	PEA FAMILY																							
Amphicarpaea bracteata	hog peanut	G5	S5			L5									X									
* Vicia cracca	tufted vetch	G?	SE5			L+							X					X						
ONAGRACEAE	EVENING-PRIMROSE FAMILY																							
Circaea lutetiana ssp. canadensis	yellowish enchanter's nightshade	G5T5	S5			L5						X			X	X	X	X		X		X		
CORNACEAE	DOGWOOD FAMILY																							
Cornus alternifolia	alternate-leaved dogwood	G5	S5			L5		X				X			X	X	X	X		X	X	X		X
Cornus rugose	round-leaved dogwood	G5	S5			L3												X						
Cornus sericea ssp. sericea	red-osier dogwood	G5	S5			L5							X					X						
RHAMNACEAE	BUCKTHORN FAMILY																							
* Rhamnus cathartica	common buckthorn	G?	SE5			L+	X	X		X		X	X	X		X	X	X	X	X		X		X
VITACEAE	GRAPE FAMILY																							
Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			L5	X						X			X		X		X	X			X
Vitis riparia	riverbank grape	G5	S5			L5	X		X	X		X	X		X	X	X	X	X	X	X	X	X	X
ACERACEAE	MAPLE FAMILY																							
Acer negundo	Manitoba maple	G5	S5			L+?	X					X	X			X		X	X	X		X		X
Acer nigrum	black maple	G5Q	S4?			L4																		X
Acer rubrum	red maple	G5	S5			L4									X									
Acer saccharinum	silver maple	G5	S5			L4																		X
Acer saccharum var. saccharum	sugar maple	G5T?	S5			L5		X				X		X	X	X	X	X	X	X		X	X	X
Acer X freemanii	freeman's maple					LH	X																	
ANACARDIACEAE	SUMAC FAMILY																							
Rhus hirta	staghorn sumac	G5	S5			L5	X											X			X		X	
Toxicodendron radicans ssp. negundo	poison-ivy	G5T	S5			L4						X			X		X	X						
Toxicodendron rydbergii	western poison-ivy	G5T	S5			L5															X	X		

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
OXALIDACEAE	WOOD SORREL FAMILY																						
Oxalis stricta	upright yellow wood-sorrel	G5	S5			L+?					X						X	X					X
GERANIACEAE	GERANIUM FAMILY																						
Geranium maculatum	spotted crane's-bill	G5	S5			L4					X												X
* Geranium robertianum	herb-robert	G5	SE5			L+?		X			X			X			X			X	X		X
BALSAMINACEAE	TOUCH-ME-NOT FAMILY																						
Impatiens capensis	spotted touch-me-not	G5	S5			L5					X		X			X	X	X					
* Impatiens glandulifera	glandular touch-me-not	G?	SE4			L+					X												
ARALIACEAE	GINSENG FAMILY																						
Aralia racemosa ssp. racemosa	spikenard	G5T?	S5			L3								X									
APIACEAE	PARSLEY FAMILY																						
* Aegopodium podagraria	goutweed	G?	SE5			L+																	X
Cryptotaenia canadensis	honewort	G5	S5			L5					X												
* Daucus carota	wild carrot	G?	SE5			L+						X											
Hydrocotyle americana	American marsh-pennywort	G5	S5			L3								X									
ASCLEPIADACEAE	MILKWEED FAMILY																						
* Cynanchum rossicum	swallow-wort	G?	SE5			L+	X	X	X	X	X X	X	X			X	X			X	X	X	X
SOLANACEAE	POTATO FAMILY																						
* Solanum dulcamara	bitter nightshade	G?	SE5			L+				X	X	X		X		X	X		X	X			X
HYDROPHYLLACEAE	WATER-LEAF FAMILY																						
Hydrophyllum virginianum	Virginia water-leaf	G5	S5			L5	X				X				X	X	X		X				X
BORAGINACEAE	BORAGE FAMILY																						
Hackelia virginiana	Virginia stickweed	G5	S5			L5													X				
* Myosotis scorpioides	mouse-ear scorpion-grass	G5	SE5			L+					X												X
* Symphytum officinale ssp. officinale	common comfrey		SE5			L+					X	X											X
VERBENACEAE	VERVAIN FAMILY																						
Verbena hastate	blue vervain	G5	S5			L5						X											
LAMIACEAE	MINT FAMILY																						
* Glechoma hederacea	creeping Charlie	G?	SE5			L+															X		X
* Leonurus cardiaca ssp. cardiaca	common motherwort	G?T?	SE5			L+					X												
Lycopus americanus	cut-leaved water-horehound	G5	S5			L4						X											
Mentha arvensis	American wild mint	G5T5	S5			L5						X		X									
PLANTAGINACEAE	PLANTAIN FAMILY																						
* Plantago major	common plantain	G5	SE5			L+					X	X					X	X					

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
	OLEACEAE	OLIVE FAMILY																							
	Fraxinus americana	white ash	G5	S5			L5													X			X		
	Fraxinus nigra	black ash	G5	S5			L4									X						X			X
	Fraxinus pennsylvanica	red ash	G5	S5			L5	X			X		X	X	X	X	X	X	X	X	X	X	X	X	X
*	Syringa vulgaris	common lilac	G?	SE5			L+																		X
	CAMPANULACEAE	BLUEBELL FAMILY																							
	Lobelia siphilitica	great lobelia	G5	S5			L3									X									
	RUBIACEAE	MADDER FAMILY																							
*	Galium mollugo	white bedstraw	G?	SE5			L+														X				
	Galium palustre	marsh bedstraw	G5	S5			L4							X											
	CAPRIFOLIACEAE	HONEYSUCKLE FAMILY																							
	Lonicera canadensis	american fly honeysuckle	G5	S5			L3													X					
*	Lonicera tatarica	tartarian honeysuckle	G?	SE5			L+	X						X							X		X		
	Sambucus nigra ssp. canadensis	common elderberry	G5	S5			L5									X			X						X
	Sambucus racemosa var. racemosa	red-berried elderberry	G5T4T5	S5			L5										X								
	Viburnum acerifolium	maple-leaved viburnum	G5	S5			L3									X									
*	Viburnum opulus	guelder rose	G5	SE4			L+														X				
	Viburnum opulus var. americanum	high bush cranberry	G5T5	S5			L2																		X
	VALERIANACEAE	VALERIAN FAMILY																							
*	Valeriana officinalis	common valerian	G?	SE3			L+	X																	
	ASTERACEAE	ASTER FAMILY																							
	Ageratina altissima var. altissima	white snakeroot	G5	S5			L5									X									
*	Arctium lappa	great burdock	G?	SE5			L+										X		X						
*	Arctium minus	common burdock	G?T?	SE5			L+						X			X									
	Aster lateriflorus var. lateriflorus	calico aster	G5T5	S5																	X				X
	Aster puniceus var. puniceus	purple-stemmed aster	G5T?	S5			L5							X											
	Bidens frondosa	devil's beggar-ticks	G5	S5			L5						X	X						X					
*	Cirsium arvense	Canada thistle	G?	SE5			L+																	X	
*	Cirsium vulgare	bull thistle	G5	SE5			L+							X						X					
	Erigeron annuus	daisy fleabane	G5	S5			L5						X						X		X				
	Erigeron philadelphicus var. philadelphicus	Philadelphia fleabane	G5T?	S5			L5													X					
	Eupatorium maculatum var. maculatum	spotted joe-pye-weed	G5T5	S5			L5							X											X
	Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4							X											
	Eurybia macrophylla	large-leaved aster	G5	S5			L5	X	X							X									X

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
* Hieracium caespitosum	field hawkweed		SE5			L+				X			X							X				
Solidago caesia	blue-stem goldenrod	G5	S5			L5		X							X					X				
Solidago canadensis	canada goldenrod	G5	S5			L5							X					X		X	X			
Solidago canadensis var. scabra	tall goldenrod		S5			L5										X			X					X
Solidago flexicaulis	zig-zag goldenrod	G5	S5			L5	X									X	X	X						X
Solidago gigantean	giant goldenrod	G5	S5			L5						X	X						X					
Symphyotrichum novae-angliae	New England aster	G5	S5			L5							X					X						
* Taraxacum officinale	common dandelion	G5	SE5			L+	X									X		X		X				X
* Tussilago farfara	coltsfoot	G?	SE5			L+						X	X		X			X			X	X	X	X
ALISMATACEAE	WATER-PLANTAIN FAMILY																							
Alisma plantago-aquatica	common water-plantain	G5	S5			L4													X					
ARACEAE	ARUM FAMILY																							
Arisaema triphyllum ssp. triphyllum	small jack-in-the-pulpit	G5T5	S5			L4		X		X		X		X	X	X	X	X		X	X	X		X
JUNCACEAE	RUSH FAMILY																							
Juncus canadensis	Canada rush	G5	S5			LX							X											
Juncus dudleyi	Dudley's rush	G5	S5			L5																		X
Juncus effusus ssp. solutus	soft rush	G5T?	S5			L4							X											
CYPERACEAE	SEDGE FAMILY																							
Carex bebbii	Bebb's sedge	G5	S5			L5																		X
Carex canescens ssp. canescens	silvery sedge	G5T?	S5			L3												X						
Carex gracillima	graceful sedge	G5	S5			L4												X		X				
Carex hystericina	porcupine sedge	G5	S5			L4							X											
Carex lacustris	lake-bank sedge	G5	S5			L4									X									
Carex pedunculata	long-stalked sedge	G5	S5			L4				X														
Carex pensylvanica	Pennsylvania sedge	G5	S5			L4												X		X				
Carex plantaginea	plantain-leaved sedge	G5	S5			L3											X	X						
Carex rosea	stellate sedge	G5	S5			L5		X					X	X		X	X	X		X				X
Carex sp.	sedge																			X				
Carex stipata	awl-fruited sedge	G5	S5			L5												X						X
Carex vulpinoidea	fox sedge	G5	S5		-	L5										X				X				
Scirpus atrovirens	dark-green bulrush	G5?	S5			L5							X											X
Scirpus microcarpus	small-fruited bulrush	G5	S5			L4							X											
POACEAE	GRASS FAMILY																							
* Agrostis stolonifera	redtop	G5	S5			L+?							X											

APPENDIX D1.
FOREST COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	FOC	FOC1-2	FOC2-2a	FOC2-2b	FOC4-1a	FOC4-1b	FOC4-1c	FOC4-1d	FOC4-1e	FOD5	FOD6-5a	FOD6-5b	FOD7-2	FOD7a	FOD7b	FOM7-1a	FOM7-1b	FOM7-2
* Bromus inermis ssp. inermis	awnless brome	G4G5T?	SE5			L+																	X	
* Dactylis glomerata	orchard grass	G?	SE5			L+	X												X	X				X
* Elymus repens	quack grass	G?	SE5			L+																	X	
Festuca rubra ssp. rubra	red fescue	G5T4	S5			L+																	X	
Glyceria striata	fowl meadow grass	G5	S5			L5											X	X						X
Phalaris arundinacea	reed canary grass	G5	S5			L+?	X				X												X	X
Phragmites australis	common reed	G5	S5			L+?																		X
Poa palustris	fowl meadow grass	G5	S5			L5																		X
Poa pratensis ssp. pratensis	Kentucky bluegrass	G5T	S5			L+							X					X		X			X	
ТҮРНАСЕАЕ	CATTAIL FAMILY																							
Typha angustifolia	narrow-leaved cattail	G5	S5			L+																		X
Typha sp.	cattail												X											
LILIACEAE	LILY FAMILY																							
* Convallaria majalis	lily-of-the-valley	G5	SE5			L+																		X
Erythronium americanum ssp. americanum	yellow dog's-tooth violet	G5T5	S5			L5						X						X			X	X		
* Hemerocallis fulva	orange day-lily	G?	SE5			L+																		X
Lilium michiganense	Michigan lily	G5	S5			L3						X												
Maianthemum canadense	wild lily-of-the-valley	G5	S5			L4				X							X	X						
Maianthemum racemosum ssp. racemosum	false Solomon's seal	G5T	S5			L5											X	X						
Streptopus lanceolatus var. roseus	rose twisted-stalk	G5	S5			L3						X												
Trillium cernuum	nodding trillium	G5	S5			L1				X														
Trillium erectum	purple trillium	G5	S5			L3											X	X						
Trillium grandiflorum	white trillium	G5	S5			L3									X		X	X						
Trillium sp.	trillium											X				X								
IRIDACEAE	IRIS FAMILY																							
Iris versicolor	multi-coloured blue-flag	G5	S5			L3							X											
SMILACACEAE	CATBRIER FAMILY																							
Smilax herbacea	herbaceous carrion flower	G5	S4			L5														X				
ORCHIDACEAE	ORCHID FAMILY			-	,																			
* Epipactis helleborine	common helleborine	G?	SE5			L+												X						

APPENDIX D2 WETLANDS COMMUNITIES VASCULAR PLANT LIST

APPENDIX D2. WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
EQUISETACEAE	HORSETAIL FAMILY				İ																						
Equisetum arvense	field horsetail	G5	S5		L	L5									X												
Equisetum fluviatile	water horsetail	G5	S5		L	L3											X										
Equisetum pratense	meadow horsetail	G5	S5		L	L3	X	X	X		X	X									X					X	X
DRYOPTERIDACEAE	WOOD FERN FAMILY																										
Onoclea sensibilis	sensitive fern	G5	S5		L	L5					X										X						
CUPRESSACEAE	CEDAR FAMILY																										
Thuja occidentalis	eastern white cedar	G5	S5		L	<u>L</u> 4						X									X						
RANUNCULACEAE	BUTTERCUP FAMILY																										
Anemone canadensis	Canada anemone	G5	S5		L	<u>L</u> 5						X															
* Ranunculus acris	tall buttercup	G5	SE5		L	_+						X															
Ranunculus recurvatus var. recurvatus	hooked buttercup	G5	S5		L	<u>L</u> 5						X															
Ranunculus sceleratus var. sceleratus	cursed buttercup	G5T5	S5				X	X			X	X												X		X	X
Thalictrum dioicum	early meadow-rue	G5	S5		L	<u>L</u> 5						X															
ULMACEAE	ELM FAMILY																										
Ulmus americana	white elm	G5?	S5		L	<u>L</u> 5						X															
Ulmus rubra	slippery elm	G5	S5		L	L2																X					
BETULACEAE	BIRCH FAMILY																										
Betula alleghaniensis	yellow birch	G5	S5		L	<u></u>															X						
CUCURBITACEAE	GOURD FAMILY																										
Echinocystis lobate	prickly cucumber	G5	S5		L	<u>L</u> 5																X					
SALICACEAE	WILLOW FAMILY																										
* Populus alba	silver poplar	G5	SE5		L	_+									X												
Populus balsamifera ssp. balsamifera	balsam poplar	G5T?	S5		L	L5																X					
Populus deltoides ssp. deltoides	eastern cottonwood	G5T?	SU		L	<u>L</u> 5																			X		
Populus tremuloides	trembling aspen	G5	S5		L	<u>L</u> 5					X																
* Salix alba	white willow	G5	SE4		L	_+			X			X			X	X									X	X	
Salix eriocephala	Missouri willow	G5	S5		L	<u>L</u> 5				X					X	X	X							X	X		
* Salix fragilis	crack willow	G?	SE5		L	_+																		X	X		
Salix matsudana	corkscrew willow	G?	SR		L	Ĺ+									X												
Salix sp.	willow		?					X			X									X			X				
BRASSICACEAE	MUSTARD FAMILY																										
* Rorippa nasturtium-aquaticum	water-cress	G?	SE?				X																				
ROSACEAE	ROSE FAMILY																										

APPENDIX D2. WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
Crataegus punctata	large-fruited thorn	G5	S5			L5																X				X	
Fragaria virginiana ssp. virginiana	scarlet strawberry	G5T?	SU			L5																X					X
Geum canadense	white avens	G5	S5			L5																					X
* Malus pumila	common apple	G5	SE5			L+																				X	
Prunus virginiana var. virginiana	choke cherry	G5T?	S5			L5																X					
* Rubus idaeus ssp. idaeus	red raspberry	G5T5	SE1																								X
FABACEAE	PEA FAMILY																										
* Vicia cracca	tufted vetch	G?	SE5			L+	X					X										X		X			
ELAEAGNACEAE	OLEASTER FAMILY																										
* Elaeagnus angustifolia	Russian olive	G?	SE3			L+									X												
LYTHRACEAE	LOOSESTRIFE FAMILY																										
* Lythrum salicaria	purple loosestrife	G5	SE5			L+	X								X		X						X	X		X	
CORNACEAE	DOGWOOD FAMILY																										
Cornus rugosa	round-leaved dogwood	G5	S5			L3																					X
Cornus sericea ssp. sericea	red-osier dogwood	G5	S5			L5	X				X	X	X	X		X	X					X	X	X	X		X
RHAMNACEAE	BUCKTHORN FAMILY																										
* Rhamnus cathartica	common buckthorn	G?	SE5			L+																X		X		X	X
VITACEAE	GRAPE FAMILY																										
Vitis riparia	riverbank grape	G5	S5			L5					X											X			X	X	
ACERACEAE	MAPLE FAMILY																										
Acer negundo	manitoba maple	G5	S5			L+?																	X	X	X		
Acer rubrum	red maple	G5	S5			L4																					X
GERANIACEAE	GERANIUM FAMILY																										
Geranium maculatum	spotted crane's-bill	G5	S5			L4																					X
BALSAMINACEAE	TOUCH-ME-NOT FAMILY																										
Impatiens capensis	spotted touch-me-not	G5	S5			L5			X		X										X	X	X	X		X	X
APIACEAE	PARSLEY FAMILY																										
Cicuta maculata	spotted water-hemlock	G5	S5			L5																				X	
* Daucus carota	wild carrot	G?	SE5			L+						X															
ASCLEPIADACEAE	MILKWEED FAMILY																										
* Cynanchum rossicum	swallow-wort	G?	SE5			L+						X									X	X		X		X	X
SOLANACEAE	POTATO FAMILY																										
* Solanum dulcamara	bitter nightshade	G?	SE5			L+					X											X	X				
BORAGINACEAE	BORAGE FAMILY																										

APPENDIX D2. WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
* Myosotis scorpioides	mouse-ear scorpion-grass	G5	SE5			L+	X	X																		X	
* Symphytum officinale ssp. officinale	common comfrey		SE5			L+									X							X		X			
VERBENACEAE	VERVAIN FAMILY																										
Verbena hastata	blue vervain	G5	S5			L5					X	X														X	
LAMIACEAE	MINT FAMILY																										
Lycopus americanus	cut-leaved water-horehound	G5	S5			L4	X				X	X												X			X
Lycopus uniflorus	northern water-horehound	G5	S5			L4					X																
Mentha arvensis	American wild mint	G5T5	S5			L5						X															
* Prunella vulgaris ssp. vulgaris	common heal-all	G5T?	SE3			L+?																					X
PLANTAGINACEAE	PLANTAIN FAMILY																										
* Plantago major	common plantain	G5	SE5			L+					X	X															
OLEACEAE	OLIVE FAMILY																										
Fraxinus nigra	black ash	G5	S5			L4															X						
Fraxinus pennsylvanica	red ash	G5	S5			L5					X						X					X		X		X	X
SCROPHULARIACEAE	FIGWORT FAMILY																										
* Veronica anagallis-aquatica	water speedwell	G5	SE5			L+	X								X												
RUBIACEAE	MADDER FAMILY																										
Galium palustre	marsh bedstraw	G5	S5			L4		X			X	X															
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY																										
Lonicera canadensis	american fly honeysuckle	G5	S5			L3																					X
* Lonicera tatarica	tartarian honeysuckle	G?	SE5			L+						X															
* Viburnum opulus	guelder rose	G5	SE4			L+			X								X									X	X
ASTERACEAE	ASTER FAMILY																										
* Arctium minus	common burdock	G?T?	SE5			L+																	X				
Aster lanceolatus ssp. lanceolatus	tall white aster	G5T?	S5			L5			X		X																X
Aster puniceus var. puniceus	purple-stemmed aster	G5T?	S5			L5			X			X														X	
Bidens frondosa	devil's beggar-ticks	G5	S5			L5	X				X	X										X		X		X	X
* Cirsium arvense	Canada thistle	G?	SE5			L+																				X	
Erigeron annuus	daisy fleabane	G5	S5			L5																					X
Eupatorium maculatum var. maculatum	spotted joe-pye-weed	G5T5	S5			L5		X			X	X								X						X	X
Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4					X	X															X
* Hieracium caespitosum	field hawkweed		SE5			L+						X															
Solidago canadensis	canada goldenrod	G5	S5			L5		X		X		X								X		X	X				
Solidago canadensis var. scabra	tall goldenrod		S5			L5																		X		X	

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
Solidago gigantea	giant goldenrod	G5	S5			L5			X																		
Symphyotrichum novae-angliae	New England aster	G5	S5			L5						X															
* Taraxacum officinale	common dandelion	G5	SE5			L+																X					
* Tussilago farfara	coltsfoot	G?	SE5			L+																	X	X			X
ALISMATACEAE	WATER-PLANTAIN FAMILY																										
Alisma plantago-aquatica	common water-plantain	G5	S5			L4	X								X												
LEMNACEAE	DUCKWEED FAMILY																										
Lemna minor	lesser duckweed	G5	S5			L5	X								X			X									
JUNCACEAE	RUSH FAMILY																										
Juncus canadensis	Canada rush	G5	S5			LX						X															
Juncus effusus ssp. solutus	soft rush	G5T?	S5			L4	X					X															
Juncus tenuis	path rush	G5	S5			L5			X																		
CYPERACEAE	SEDGE FAMILY																										
Carex bebbii	Bebb's sedge	G5	S5			L5									X												
Carex comosa	bristly sedge	G5	S5			L3																X					
Carex hystericina	porcupine sedge	G5	S5			L4						X															
Carex lacustris	lake-bank sedge	G5	S5			L4																X					
Carex pensylvanica	Pennsylvania sedge	G5	S5			L4																X					
Carex rosea	stellate sedge	G5	S5			L5															X						
Carex stipata	awl-fruited sedge	G5	S5			L5			X						X							X					
Carex vulpinoidea	fox sedge	G5	S5			L5		X							X									X			
Schoenoplectus pungens var. pungens	common three-square	G5	S5			L4	X																				
Scirpus atrovirens	dark-green bulrush	G5?	S5			L5	X	X																X			
Scirpus microcarpus	small-fruited bulrush	G5	S5			L4					X	X															
POACEAE	GRASS FAMILY																										
* Agrostis stolonifera	redtop	G5	S5			L+?			X		X	X															
* Bromus inermis ssp. inermis	awnless brome	G4G5T?	SE5			L+																	X				
* Elymus repens	quack grass	G?	SE5			L+																		X			
Festuca rubra ssp. rubra	red fescue	G5T4	S5			L+																X					
Glyceria striata	fowl meadow grass	G5	S5			L5	X															X		X			X
Phalaris arundinacea	reed canary grass	G5	S5			L+?	X	X	X	X	X			X	X			X		X			X	X	X	X	X
Phragmites australis	common reed	G5	S5			L+?			X	X			X		X	X	X	X	X						X		
Poa palustris	fowl meadow grass	G5	S5			L5					X											X					X
Poa pratensis ssp. pratensis	Kentucky bluegrass	G5T	S5			L+						X										X					

APPENDIX D2.
WETLAND COMMUNITIES VASCULAR PLANT LIST

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	MAM2-10	MAM2-2a	MAM2-2b	MAM2-2c	MAM2-2d	MAM2-5	MAS2	MAS2-1a	MAS2-1b	MAS2-1c	MAS2-1d	MAS2-1e	MAS2-1f	MAS2-1g	SWC1-1	SWD2-2	SWT2-2a	SWT2-2b	SWT2a	SWT2b	SWT2c
ТҮРНАСЕАЕ	CATTAIL FAMILY																										
Typha angustifolia	narrow-leaved cattail	G5	S5			L+		X	X		X				X	X	X	X									
Typha latifolia	broad-leaved cattail	G5	S5			L4				X			X	X		X	X		X						X	X	
Typha sp.	Cattail						X					X								X							
IRIDACEAE	IRIS FAMILY											·															
Iris versicolor	multi-coloured blue-flag	G5	S5			L3					-	X															

APPENDIX D3 CULTURAL COMMUNITIES VASCULAR PLANT LIST

APPENDIX D3. CULTURAL COMMUNITIES VASCULAR PLANT LIST

	_		1			ı				-		, VA.	1 1	-	1		-				-		ı	1			1								
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUMI-1K	CUM1-1m	CUS1a	CUS1b	CUS1c	CUT1a	CUT1b	CUW1b	CUW1c	CUW1d	CUW1e	CUWIF	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G	Hedgerow H Hedgerow I
EQUISETACEAE	HORSETAIL FAMILY																																		
Equisetum arvense	field horsetail	G5	S5			L5														X	X	X													XX
Equisetum fluviatile	water horsetail	G5	S5			L3				2	X																								
Equisetum pratense	meadow horsetail	G5	S5			L3	X						X								X														
DRYOPTERIDACEAE	WOOD FERN FAMILY																																		
Onoclea sensibilis	sensitive fern	G5	S5			L5							X																						
PINACEAE	PINE FAMILY																																		
Picea glauca	white spruce	G5	S5			L3								X								X								X					X
* Picea pungens	Colorado spruce	G5	SE1			L+			y	X	X												X			X									
* Pinus nigra	Austrian pine	G?	SE2			L+																			X										
Pinus strobus	eastern white pine	G5	S5			L4																			X	X		У	ζ .						
* Pinus sylvestris	scotch pine	G?	SE5			L+			Σ	X	X												X					Σ	ζ .	X	X				
CUPRESSACEAE	CEDAR FAMILY																																		
Juniperus virginiana	eastern red cedar	G5	S5			L5		X	X	2	X						X		X																X
Thuja occidentalis	eastern white cedar	G5	S5			L4				2	X									X	X	X :	X				X	Х	ζ.	X					X
RANUNCULACEAE	BUTTERCUP FAMILY																																		
Actaea rubra	red baneberry	G5	S5			L5																										X	X		
Anemone canadensis	Canada anemone	G5	S5			L5							X									X													
* Ranunculus acris	tall buttercup	G5	SE5			L+							X					X										Σ	ζ .			X X	X		X
Ranunculus sceleratus var. sceleratus	cursed buttercup	G5T5	S5										X																						
Thalictrum dioicum	early meadow-rue	G5	S5			L5							X																						
BERBERIDACEAE	BARBERRY FAMILY																																		
Podophyllum peltatum	may-apple	G5	S5			L4								X															X			X	X		X
ULMACEAE	ELM FAMILY																																		
Ulmus americana	white elm	G5?	S5			L5																						Σ	ζ .			X X	X		X X
URTICACEAE	NETTLE FAMILY																																		
* Urtica dioica ssp. dioica	European stinging nettle	G5T?	SE2			L+				2	X		X	X																					
JUGLANDACEAE	WALNUT FAMILY																																		
Juglans nigra	black walnut	G5	S4			L5			ХУ	X 2	X X			X					X				X	X	X					X		X X	X		
FAGACEAE	BEECH FAMILY																																		
Quercus macrocarpa	bur oak	G5	S5			L4																						X				X	X		X
Quercus rubra	red oak	G5	S5			L4									X																	X	X		
BETULACEAE	BIRCH FAMILY																																		

APPENDIX D3. CULTURAL COMMUNITIES VASCULAR PLANT LIST

				1 1					1		1 1		1	1		_										-		1 1		1				
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CIMI-16	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1j	CUM1-1k	CUM1-11	CUM1-1m	CUS1a	CUS1c	CUT1a	CUT1b	CUW1b	CUW1c	CUW1d	CUW1e	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C Hedgerow D	Hedgerow F	Hedgerow H	Hedgerow I
Ostrya virginiana	ironwood	G5	S5			L5																								3	X	X	X	
CHENOPODIACEAE	GOOSEFOOT FAMILY																																	
* Chenopodium album var. album	lamb's quarters	G5T5	SE5			L+				X]	X						X													
CARYOPHYLLACEAE	PINK FAMILY																																	
* Dianthus armeria	deptford pink	G?	SE5			L+							X																					
* Saponaria officinalis	bouncing-bet	G?	SE5			L+									X																			
* Silene vulgaris	catchfly	G?	SE5			L+												X			X													
POLYGONACEAE	SMARTWEED FAMILY																																	
* Rumex crispus	curly-leaf dock	G?	SE5			L+		2	X					7	X X				X									X						
TILIACEAE	LINDEN FAMILY																																	
Tilia americana	basswood	G5	S5			L5																		X			X	X	X	2	X X	X	X	
CUCURBITACEAE	GOURD FAMILY																																	
Echinocystis lobata	prickly cucumber	G5	S5			L5															X								X	X			X	
SALICACEAE	WILLOW FAMILY																																	
Populus balsamifera ssp. balsamifera	balsam poplar	G5T?	S5			L5														X						X	Х							
Populus deltoides ssp. deltoides	eastern cottonwood	G5T?	SU			L5	2	X		X							X																!	
Populus tremuloides	trembling aspen	G5	S5			L5													X	X	X			X		X			X					X
* Salix alba	white willow	G5	SE4			L+				X									X	-			X											
Salix eriocephala	Missouri willow	G5	S5			L5	X	X		X							X		X	-														
* Salix fragilis	crack willow	G?	SE5			L+													X															
Salix petiolaris	slender willow	G4	S5			L3	2	X																										
* Salix X sepulcralis	hybrid willow	HYB	SE2			L+		2	X										X															
BRASSICACEAE	MUSTARD FAMILY																																	
* Alliaria petiolata	garlic mustard	G5	SE5			L+				X											X							X		X	X	X		
* Barbarea vulgaris	yellow rocket	G?	SE5			L+							X								X										X			
* Hesperis matronalis	dame's rocket	G4G5	SE5			L+	2	X		X			X	X	X						X	X	X	X			X	X	X	2	X	X	X	
* Rorippa nasturtium-aquaticum	water-cress	G?	SE?										X																					
* Thlaspi arvense	field penny-cress	G?	SE5			L+											X																	
PRIMULACEAE	PRIMROSE FAMILY																																	
* Lysimachia nummularia	moneywort	G?	SE5			L+							X																					
GROSSULARIACEAE	GOOSEBERRY FAMILY																																1	
Ribes cynosbati	prickly gooseberry	G5	S5			L5				X														X	X		X		X	2	X	X		X
Ribes hirtellum	smooth gooseberry	G5	S5			L3																		X										

				1		1						1	1	1		_	1	1					1 1					1	$\overline{}$	$\overline{}$	$\overline{}$		$\overline{}$	$\overline{}$	$\overline{}$
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUMI-1b	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-11	CUMI-1J	CUM1-11	CUM1-1m	CUS1a	CUSIB	CUT1a	CUT1b	CUW1a	CUW1b	CUW1c	CUW1d	CUW16	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G	Hedgerow H Hedgerow I
ROSACEAE	ROSE FAMILY																																		
* Crataegus monogyna	English hawthorn	G5	SE5			L+												X						X					X	1					
Crataegus punctata	large-fruited thorn	G5	S5			L5				X	ζ .	X		X						Σ	ζ .					X		X				X			X
Crataegus sp.	hawthorn																										X								
Fragaria virginiana ssp. virginiana	scarlet strawberry	G5T?	SU			L5		X	X										X							X	X			X		X	X]	X
Geum aleppicum	yellow avens	G5	S5			L5								X										X	X	X :	X								
Geum canadense	white avens	G5	S5			L5																								i					X
* Malus baccata	Siberian crabapple	G?	SE1			L+																							X	1					
* Malus pumila	common apple	G5	SE5			L+				X	ζ.							X								X									
Malus sp.	apple								X										X											X					
* Potentilla argentea	silvery cinquefoil	G?	SE5			L+																						X		1					
* Potentilla recta	rough-fruited cinquefoil	G?	SE5			L+										X	:													1					
* Prunus avium	sweet cherry	G?	SE4			L+																								1		X	X		
Prunus serotina	black cherry	G5	S5			L5																					X	X		1		X	X		
Prunus virginiana var. virginiana	choke cherry	G5T?	S5			L5																					X	X				X X	X		X
* Pyrus communis	common pear	G5	SE4			L+				X	ζ.																								
* Rosa multiflora	multiflora rose	G?	SE4			L+														Σ	X				X				X	X					
Rubus allegheniensis	alleghany blackberry	G5	S5			L5																						X		1					
* Rubus idaeus ssp. idaeus	red raspberry	G5T5	SE1											X										X				X		1					
Rubus occidentalis	thimble-berry	G5	S5			L5								X																1					
FABACEAE	PEA FAMILY																													1					
Amphicarpaea bracteata	hog peanut	G5	S5			L5							X																	1					
* Coronilla varia	variable crown-vetch	G?	SE5			L+											X	X												1					
* Lotus corniculatus	bird's-foot trefoil	G?	SE5			L+									X	X		X			X	X								1					
* Medicago lupulina	black medick	G?	SE5			L+			X	X	XX	X			X X	X		X				X													X
* Medicago sativa ssp. sativa	alfalfa	G?T?	SE5			L+	X		X	ζ .	X						X	X																	
* Melilotus alba	white sweet-clover	G?	SE5			L+		X	X	ζ .	X					X	X			7	ζ .	X										X	X		
* Melilotus officinalis	yellow sweet-clover	G?	SE5			L+			X	ζ .	X						X																		
* Robinia pseudo-acacia	black locust	G5	SE5			L+				X	ζ .													X											
* Trifolium pratense	red clover	G?	SE5			L+	X		X			X	X		X	X	X	X	X		X	X													
* Trifolium repens	white clover	G?	SE5			L+								X				X																	
Vicia americana	purple vetch	G5	S5			L3																							X						

		1	1	_								1			1														1 1						
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUMI-1b	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUMI-11	CUM1-1k	CUM1-11	CUM1-1m	CUS1a	CUS1b	CUSIC CUT1a	CUTIB	CUW1a	CUW1b	CUW1c	CUW1d	CUW16	CUW1g	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G Hedgerow H	Hedgerow I
* Vicia cracca	tufted vetch	G?	SE5			L+	X	X				X	X			X	X			2	X			X			3	X X	X					X	X
ELAEAGNACEAE	OLEASTER FAMILY																																		
* Elaeagnus angustifolia	Russian olive	G?	SE3			L+		X				X																							
LYTHRACEAE	LOOSESTRIFE FAMILY																																		
* Lythrum salicaria	purple loosestrife	G5	SE5			L+		X	X	X	X							X																	X
ONAGRACEAE	EVENING-PRIMROSE FAMILY																																		
Circaea alpina	smaller enchanter's nightshade	G5	S5			L3																							X						
Circaea lutetiana ssp. canadensis	yellowish enchanter's nightshade	G5T5	S5			L5								X																X					
Oenothera biennis	common evening-primrose	G5	S5			L5		X				X			X	X	X																		
CORNACEAE	DOGWOOD FAMILY																																		
Cornus alternifolia	alternate-leaved dogwood	G5	S5			L5																						X	X					X	
Cornus racemosa	red panicled dogwood	G5?	S5			L4																				Σ	X					X		X	
Cornus sericea ssp. sericea	red-osier dogwood	G5	S5			L5		,	X X	X	X						X		X	X					2	X		X				X			
RHAMNACEAE	BUCKTHORN FAMILY																																		
* Rhamnus cathartica	common buckthorn	G?	SE5			L+		,	X										X	2	X	X			X	Х	X Z	X X	X	X	X I	X	X	XX	X
VITACEAE	GRAPE FAMILY																																		
Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			L5															X			X		Σ	X [X				X	X	X	X
Vitis riparia	riverbank grape	G5	S5			L5	X		X	X		X		X			X		X	X	X			X	X	X	7	X X	X		X .	X X	X	XX	X
ACERACEAE	MAPLE FAMILY																																		
Acer negundo	Manitoba maple	G5	S5			L+?	X		X	X	X	X	X			X	X	X		X	X	X		X	X	ХУ	X Z	X	X	X	X I	X X	X	ζ	X
* Acer platanoides	Norway maple	G?	SE5			L+																X										X	X		
Acer saccharinum	silver maple	G5	S5			L4																			X							X	X		
Acer saccharum var. saccharum	sugar maple	G5T?	S5			L5																							X	X	X :	X	X	X	
ANACARDIACEAE	SUMAC FAMILY																																		
Rhus hirta	staghorn sumac	G5	S5			L5			X	X		X			X	X	X	X	X	X	X											X	X		
GERANIACEAE	GERANIUM FAMILY																																		
* Geranium robertianum	herb-robert	G5	SE5			L+?				X																								X	
BALSAMINACEAE	TOUCH-ME-NOT FAMILY																																		
Impatiens capensis	spotted touch-me-not	G5	S5			L5							X	X						X															X
* Impatiens glandulifera	glandular touch-me-not	G?	SE4			L+							X																						
APIACEAE	PARSLEY FAMILY																																		
* Aegopodium podagraria	goutweed	G?	SE5			L+																									X				

	_	T	1												1	1							1	_					-					
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-16	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h CUM1-1i	CUM1-1j	CUM1-1k	CUM1-11	CUM1-1m	CUSIB	CUS1c	CUT1a	CUT1b	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G	Hedgerow I
* Daucus carota	wild carrot	G?	SE5			L+	X	X	X X	X	ζ .	X			X X	X	X	X	X	X	X	X							X		X			
ASCLEPIADACEAE	MILKWEED FAMILY																																	
Asclepias syriaca	common milkweed	G5	S5			L5		X	Х	X	XX		X		X X	X	X	X	X		X	X	X				X							
* Cynanchum rossicum	swallow-wort	G?	SE5			L+			Σ	X	XX	X	X	X	X		X		X					X	X	X		ХУ	XX	X	X X	X	X X	X
SOLANACEAE	POTATO FAMILY																																	
* Solanum dulcamara	bitter nightshade	G?	SE5			L+			Σ	K	X	X									X								X					
HYDROPHYLLACEAE	WATER-LEAF FAMILY																																	
Hydrophyllum virginianum	Virginia water-leaf	G5	S5			L5																				X		Σ	ζ .		X	X		X
BORAGINACEAE	BORAGE FAMILY																																	
Hackelia virginiana	Virginia stickweed	G5	S5			L5			У	K				X																				
* Lithospermum officinale	common gromwell	G?	SE5			L+			Σ	K																								
* Myosotis scorpioides	mouse-ear scorpion-grass	G5	SE5			L+		X					X																					
* Symphytum officinale ssp. officinale	common comfrey		SE5			L+									X					X			X				X	X			X X	X		
LAMIACEAE	MINT FAMILY																																	
* Glechoma hederacea	creeping Charlie	G?	SE5			L+								X																				
* Leonurus cardiaca ssp. cardiaca	common motherwort	G?T?	SE5			L+									X																X			
PLANTAGINACEAE	PLANTAIN FAMILY																																	
* Plantago lanceolata	ribgrass	G5	SE5			L+		3	X				X		X	X			X			X				X								
* Plantago major	common plantain	G5	SE5			L+	X	X	X				X		X X		X	X	X	X		X											X	X
OLEACEAE	OLIVE FAMILY																																	
Fraxinus americana	white ash	G5	S5			L5																		X										
Fraxinus pennsylvanica	red ash	G5	S5			L5		2	X	Х	ζ .					X			X	X			X X	X	X	X	X	ХУ	XX		X X	X	ζ X	X
* Syringa vulgaris	common lilac	G?	SE5			L+				Х	ζ .						X						X											
SCROPHULARIACEAE	FIGWORT FAMILY																																	
* Verbascum thapsus	common mullein	G?	SE5			L+		2	X X	K	X	X			X		X	X	X			X									X			
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY																																	
* Lonicera tatarica	tartarian honeysuckle	G?	SE5			L+				Х	ζ									X		X	X	X				X		X	X	X	X	
* Viburnum opulus	guelder rose	G5	SE4			L+	1							1						X						X		X						
VALERIANACEAE	VALERIAN FAMILY																																	
* Valeriana officinalis	common valerian	G?	SE3			L+								1	X					X												† †		
DIPSACACEAE	TEASEL FAMILY																																	
* Dipsacus fullonum ssp. sylvestris	wild teasel	G?T?	SE5			L+	1			X	ζ					1		X																
ASTERACEAE	ASTER FAMILY															1																	+	$\dagger \dagger$
<u> </u>		<u> </u>	1		<u> </u>							1			Ĺ	1					1				1				I	1				

				_									,					_											,					
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUMI-Li	CUMI-1j CUM1-1k	CUM1-11	CUM1-1m	CUS1a	CUSIB	CUT1a	CUT1b	CUW1a	CUWIB	CUW1d	CUW1e	CUW1f	Hedgerow A	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G	neugerow n Hedgerow I
* Achillea millefolium var. millefolium	common yarrow	G5T?	SE?			L+	X				X																							
* Arctium lappa	great burdock	G?	SE5			L+							X				X																	
* Arctium minus	common burdock	G?T?	SE5			L+				X	X X				X		X			X							X							
Aster lateriflorus var. lateriflorus	calico aster	G5T5	S5								X		X		У	ζ .		X					X	X										
Aster sp.	aster								\mathbf{X}	X	X X				X		X		X			X		Σ										
Bidens frondosa	devil's beggar-ticks	G5	S5			L5							X																					X
* Cichorium intybus	chicory	G?	SE5			L+	X		X			X			X X	X	ζ .	X	X															
* Cirsium arvense	Canada thistle	G?	SE5			L+	X	X	X	X		X	X		Х	X	X	X	X					X							X	X		
* Cirsium vulgare	bull thistle	G5	SE5			L+		X		X	X				X		X														X	X		X
Conyza canadensis	horseweed	G5	S5			L5											X	X																
Erigeron annuus	daisy fleabane	G5	S5			L5														X						X								
Erigeron philadelphicus var. philadelphicus	Philadelphia fleabane	G5T?	S5			L5		X																X										
Eupatorium maculatum var. maculatum	spotted joe-pye-weed	G5T5	S5			L5	X						X																					
Eupatorium perfoliatum	perfoliate thoroughwort	G5	S5			L4	X																											
Eurybia macrophylla	large-leaved aster	G5	S5			L5																												X
* Hieracium caespitosum	field hawkweed		SE5			L+		X												X								X						
* Inula helenium	elecampane	G?	SE5			L+									X X	ζ .																		
* Leucanthemum vulgare	ox-eye daisy	G?	SE5			L+	X	X	X				X		Х	X	ζ.	X	X	X							1	X						X
* Matricaria maritima ssp. maritima	seaside camomile	G5T?	SE?									X			Х	ζ.																		
Rudbeckia hirta	black-eyed Susan	G5	S5			L4									X	ζ .																		
Solidago caesia	blue-stem goldenrod	G5	S5			L5																											X	
Solidago canadensis	canada goldenrod	G5	S5			L5	X	X			X	X	X	X	Х	ζ .		X			K	X	X	Σ				X					X	
Solidago canadensis var. scabra	tall goldenrod		S5			L5		X	X	X	X X					X	X	X	X				X				X	X			X	X	X	
Solidago flexicaulis	zig-zag goldenrod	G5	S5			L5																									X	X		
Solidago gigantea	giant goldenrod	G5	S5			L5]	X						
Solidago rugosa ssp. rugosa	rough goldenrod	G5T?	S5			L5																					X							
Solidago sp.	goldenrod														X																			
* Sonchus arvensis ssp. arvensis	field sow-thistle	G?T?	SE5			L+											X																	
Symphyotrichum novae-angliae	New England aster	G5	S5			L5										Х	ζ .			2	K													
* Tanacetum vulgare	common tansy	G?	SE5			L+																									X			

	T			1					1				1	1 1	-		1				1			-			1	-					
Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUMI-I/MAS CUMI-1a	CUM1-1b	CUM1-1c	CIMI-1a	CUM1-16	CUM1-1g	CUMI-1h	CUM1-1i	CUM1-1j	CUM1-11	CUM1-1m	CUS1a	CUSIC	CUT1a	CUTIB	CUWIa	CUWIB	CUW1d	CUW1e	CUW1f	CUW1g	Hedgerow B	Hedgerow C	Hedgerow F	Hedgerow G	Hedgerow I
* Taraxacum officinale	common dandelion	G5	SE5			L+ 2	XX	X	X	X X	X		X	XX	X 2	XX	X	X	X	·	X						X			X	X		X
* Tussilago farfara	coltsfoot	G?	SE5			L+	X	X		X	X	X		Σ	ζ Σ	X X	X	X			X												
ALISMATACEAE	WATER-PLANTAIN FAMILY																																
Sagittaria latifolia	broad-leaved arrowhead	G5	S5			L4						X																		1			
ARACEAE	ARUM FAMILY																																
Arisaema triphyllum ssp. triphyllum	small jack-in-the-pulpit	G5T5	S5			L4							X																			X	
JUNCACEAE	RUSH FAMILY																																
Juncus sp.	rush									X																							
Juncus tenuis	path rush	G5	S5			L5 Z	XX																										
CYPERACEAE	SEDGE FAMILY																																
Carex albursina	white bear sedge	G5	S5			L4																										X	
Carex bebbii	Bebb's sedge	G5	S5			L5 2	X																										
Carex pensylvanica	Pennsylvania sedge	G5	S5			L4							X																				
Carex rosea	stellate sedge	G5	S5			L5																								X	X		
Carex stipata	awl-fruited sedge	G5	S5			L5	X																										
Cladium mariscoides	water bog-rush	G5	S5			L1 Z	X																										
Scirpus atrovirens	dark-green bulrush	G5?	S5			L5 2	X											2	X														
Scirpus microcarpus	small-fruited bulrush	G5	S5			L4						X																					
POACEAE	GRASS FAMILY																																
Bromus ciliatus	fringed brome	G5	S5			L3																								X			
* Bromus inermis ssp. inermis	awnless brome	G4G5 T?	SE5			L+ 2	X	X	X	X	X	X		X		X		X	X		X								X	X			X
* Dactylis glomerata	orchard grass	G?	SE5			L+	X			X	X	:	X		Σ	X	X	2	X								X	X		X	X	X	X
Danthonia spicata	poverty oat grass	G5	S5			L4	X		X	X				Σ	K	X					X	Σ	ζ .										
Elymus canadensis	nodding wild rye	G5	S4S5			L3				X																							
* Elymus repens	quack grass	G?	SE5			L+			X	X		X																					
Festuca rubra ssp. rubra	red fescue	G5T4	S5			L+						X		Х	K		X																
Glyceria striata	fowl meadow grass	G5	S5			L5						X																					
* Hordeum jubatum ssp. jubatum	squirrel-tail grass	G5T?	SE5			L+										X																	
Panicum capillare	witch grass	G5	S5			L5			X	X						X					X												
Phalaris arundinacea	reed canary grass	G5	S5			L+? 2	X X	X	X	X X	X	X	X	XX	K	X	X	X	X			ХУ	ζ .			X		X		X X	X X	X	X
* Phleum pratense	timothy	G?	SE5			L+		X						Х	Χ Σ	X	X	X				2	ζ .										
Phragmites australis	common reed	G5	S5			L+? 2	XX	X	X	X X	X	X		Х	K		X	X	X														

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	TRCA	CUM/MAM	CUM1-1/MAS CUM1-1a	CUM1-1b	CUM1-1c	CUMI-1a	CUM1-16	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUM1-11	CUS1a	CUS1b	CUS1c	CUT1a	CUTIB	CUWIB	CIW12	CUW1d	CUW1e	CUW1f	CUW1g		Hedgerow B	Hedgerow F	Hedgerow G	Hedgerow H Hedgerow I
Poa compressa	Canada blue grass	G?	S5		L-	+		X										X																
Poa pratensis ssp. pratensis	Kentucky bluegrass	G5T	S5		L	- :	Х	ζ .	X	XX	X		X		X	X	X Z	K	X	X		X	X	X			X	X		Х	X	X		X
* Setaria viridis	green foxtail	G?	SE5		L	+		X			X			X				X				X												
Sorghastrum nutans	Indian grass	G5	S4		L2	2					X																							
ТҮРНАСЕАЕ	CATTAIL FAMILY																																	
Typha angustifolia	narrow-leaved cattail	G5	S5		L-	+									X																			
Typha latifolia	broad-leaved cattail	G5	S5		L	ļ.	Σ	XX	X	X X	X				2	X		X																
LILIACEAE	LILY FAMILY																																	
* Allium schoenoprasum var. schoenoprasum	chives	G5T5	SE2		L	+	Σ	ζ.																										
* Hemerocallis fulva	orange day-lily	G?	SE5		L	+	Σ	ζ .																						Σ				
Maianthemum racemosum ssp. racemosum	false Solomon's seal	G5T	S5		L5	5																									X	X		
IRIDACEAE	IRIS FAMILY																																	
* Iris pseudacorus	yellow iris	G?	SE3		L	+						X								X														

APPENDIX E ACRONYMS AND DEFINITIONS USED IN SPECIES LISTS

ACRONYMS AND DEFINITIONS USED IN SPECIES LISTS

G-Rank Global Rank

Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and the Nature Conservatory to designate a rarity rank based on the range-wide status of a species, subspecies or variety.

The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.

G1=	Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2 =	Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3 =	Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
0.4	Common; usually more than 100 occurrences; usually not susceptible to immediate
G4 =	threats.
G5 =	Very common; demonstrably secure under present conditions.
GH =	Historic, no records in the past 20 years.
GU =	Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
GX =	Globally extinct. No recent records despite specific searches.
? =	Denotes inexact numeric rank (i.e. G4?).
G" " =	A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
G? =	Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?). Denotes that the taxonomic status of the species, subspecies, or variety is
Q =	questionable.
T =	Denotes that the rank applies to a subspecies or variety.

S-Rank **Provincial Rank**

Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for the global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated list at least annually.

S1 =	Critically imperiled in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor (s) such as very steep declines making it especially vulnerable to extirpation.
S2 =	Imperiled in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.
S3 =	Vulnerable in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation. Apparently secure - uncommon but not rare; some cause for long-term concern due
S4 =	to declines or other factors.
S5 =	Secure - common, widespread, and abundant in Ontario. Presumed Extirpated - specie or community is believed to be extirpated from
SX =	Ontario. Unranked - conservation status in Ontario not yet
SNR =	assessed
SU =	Unrankable - currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA =	Not applicable - a conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S# =	Range rank - a numeric range rank (e.g. S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g. SU is used rather that S1S4).

Committee On The Status Of Endangered Wildlife in Canada **COSEWIC**

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species that are considered to be at risk in Canada.

Extinct (X) A wildlife species that no longer exists.

Extirpated (XT) A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.

A wildlife species facing imminent extirpation or extinction. Endangered (E)

Threatened (T) A wildlife species likely to become endangered if limiting factors are not reversed. A wildlife species that may become a threatened or an endangered species Special Concern

because of a combination of biological characteristics and identified threats. (SC)

A wildlife species that has been evaluated and found to be not at risk of extinction Not at Risk (NAR)

given the current circumstances.

A category that applies when the available information is insufficient (a) to resolve a Data Deficient (DD)

wildlife species' eligibility for assessment or (b) to permit an assessment of the

wildlife species' risk of extinction.

COSSARO/OMNR Committee On The Status Of Species At Risk In Ontario/Ontario Ministry Of Natural Resources

The Committee on the Status of Species at Risk in Ontario (COSSARO)/Ontario Ministry of Natural Resources (OMNR) assess the provincial status of wild species that are considered to be at risk in Ontario.

Extinct (EXT) A species that no longer exists anywhere.

Extirpated (EXP) A species that no longer exist in the wild in Ontario but still occurs elsewhere.

Endangered

(Regulated) (END- A species facing imminent extinction or extirpation in Ontario which has been

R) regulated under Ontario's Endangered Species Act.

A species facing imminent extinction or extirpation in Ontario which is a candidate

Endangered (END) for regulation under Ontario's Endangered Species Act.

A species that is at risk of becoming endangered in Ontario if limiting factors are not

Threatened (THR) reversed.

Special Concern A species with characteristics that make it sensitive to human activities or natural

(SC) events.

Not at Risk (NAR) A species that has been evaluated and found to be not at risk.

Data Deficient (DD) A species for which there is insufficient information for a provincial status

recommendations.

Local Status Niagara Haldimand (Riley 1989)

Species status within the Durham Region was used to determine local vascular plant status for the study area.

R-# = R- Native species present and rare; # - number of stations at which the species has been identified.

U = Uncommon

X = Not classified as rare or uncommon within Niagara Haldimand

APPENDIX F CORRESPONDENCE

Southern Region Aurora District Office 50 Bloomington Road West Aurora, ON L4G 0L8



Ministry of Natural Resources and Forestry Ministere des Richesses Naturelles et des Forêts

May 19, 2015

Judson Venier LGL Limited 22 Fisher Street, P.O. Box 280 King City, ON L7B 1A6 Phone: (905) 833-1244 Email: jvenier@lgl.com

Re: MTO Highway 407 Transitway

Dear Mr. Venier,

In your email dated August 5, 2014 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location. There are a number of Species at Risk recorded from your study area and the immediate vicinity. As of the date of this letter, we have records of:

Bobolink	THR	Eastern Meadowlark	THR
Barn Swallow	THR	Chimney Swift	THR
Milksnake	SC	Eastern Ribbonsnake	SC
Snapping Turtle	SC	Eastern Wood-pewee	SC
Wood Thrush	SC	Butternut	END
Redside Dace	END		

Please note regulated habitat for Redside Dace is present within your study area and the immediate vicinity:

- Rouge River north of the study area is recovery habitat for Redside Dace
- Robinson Creek north of the study area is occupied Redside Dace habitat
- Ganatsekiagon Creek south of the study area is occupied Redside Dace habitat
- Urfe Creek, within the study area, is recovery habitat for Redside Dace
- Sections of Ganatsekiagon Creek, Brougham Creek and Spring Creek within the study area are considered contributing habitat for Redside Dace.

These species may receive protection under the *Endangered Species Act* 2007 and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitat. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the *ESA* 2007 or the status and protection levels of currently listed species may change.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7369 or ESA.Aurora@ontario.ca (Attention: Megan Eplett).

Sincerely,

Megan Eplett
A\ Management Biologist

Ontario Ministry of Natural Resources and Forestry, Aurora District