Appendix F

Vascular Plant List

Stantec

NAPIER WIND PROJECT

Plant List

Project: 160960697

LATIN NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	GLOBAL STATUS	LOCAL STATUS MIDD
	LOCAL STATUS SOURCE LAST UPDATE/ INITIALS									OLDHAM 1993
PTERIDOPHYTES		**FERNS & ALLIES**								
GYMNOSPERMS		**CONIFERS**								
Cupressaceae		**Cedar Family**								
Thuja	*occidentalis*	Eastern White Cedar	4	-3		S5			G5	X
Pinaceae		**Pine Family**								
Picea	*abies*	Norway Spruce		5	-1	SE3			G?	I
DICOTYLEDONS		**DICOTS**								
Aceraceae		**Maple Family**								
Acer	*saccharum* ssp. *saccharum*	Sugar Maple	4	3		S5			G5T?	C
Acer X	*freemanii*	Freeman's Maple								
Apiaceae		**Carrot or Parsley Family**								
Daucus	*carota*	Wild Carrot		5	-2	SE5			G?	IC
Apocynaceae		**Dogbane Family**								
Apocynum	*androsaemifolium* ssp. *androsaemifolium*	Spreading Dogbane	3	5		S5			G5T?	C
Asclepiadaceae		**Milkweed Family**								
Asclepias	*syriaca*	Common Milkweed	0	5		S5			G5	C
Asteraceae		**Composite or Aster Family**								
Achillea	*millefolium* ssp. *millefolium*	Common Yarrow		3	-1	SE?			G5T?	
Arctium	*minus*	Common Burdock		5	-2	SE5			G?T?	IC
Centaurea	*biebersteinii*	Spotted Knapweed		5	-3	SE5			G?	I
Cichorium	*intybus*	Chicory		5	-1	SE5			G?	IC
Cirsium	*vulgare*	Bull Thistle		4	-1	SE5			G5	I
Hieracium	*aurantiacum*	Devil's Paintbrush		5	-2	SE5			G?	I
Solidago	*altissima* var. *altissima*	Tall Goldenrod	1	3		S5				U
Solidago	*canadensis*	Canada Goldenrod	1	3		S5			G5	X
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			G5	C
Cornaceae		**Dogwood Family**								
Cornus	*foemina* ssp. *racemosa*	Red Panicled Dogwood	2	-2		S5			G5?	X
Dipsacaceae		**Teasel Family**								

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Dipsacus	*fullonum* ssp. *sylvestris*	Wild Teasel		5	-1	SE5			G?T?	IC
Fabaceae		**Pea Family**								
Vicia	*cracca*	Tufted Vetch		5	-1	SE5			G?	I
Fagaceae		**Beech Family**								
Fagus	*grandifolia*	American Beech	6	3		S5			G5	C
Quercus	*macrocarpa*	Bur Oak	5	1		S5			G5	C
Guttiferae		**St. John's-wort Family**								
Hypericum	*perforatum*	Common St. John's-wort		5	-3	SE5			G?	IC
Lamiaceae		**Mint Family**								
Prunella	*vulgaris* ssp. *lanceolata*	Heal-all	5	5		S5			G5T?	C
Oleaceae		**Olive Family**								
Fraxinus	*pennsylvanica*	Red Ash	3	-3		S5			G5	C
Rhamnaceae		**Buckthorn Family**								
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5			G?	IC
Rosaceae		**Rose Family**								
Crataegus	*species*	Hawthorn species								
Fragaria	*virginiana* ssp. *virginiana*	Scarlet Strawberry	2	1		SU			G5T?	C
Geum	*aleppicum*	Yellow Avens	2	-1		S5			G5	X
Malus	*species*	Apple species								
Potentilla	*recta*	Rough-fruited Cinquefoil		5	-2	SE5			G?	I
Rubus	*idaeus* ssp. *idaeus*	Red Raspberry				SE1			G5T5	
Tiliaceae		**Linden Family**								
Tilia	*americana*	American Basswood	4	3		S5			G5	C
Ulmaceae		**Elm Family**								
Ulmus	*americana*	White Elm	3	-2		S5			G5?	X
Vitaceae		**Grape Family**								
Parthenocissus	*inserta*	Inserted Virginia-creeper	3	3		S5			G5	X
MONOCOTYLEDONS		**MONOCOTS**								
Poaceae		**Grass Family**								
Bromus	*inermis* ssp. *inermis*	Awnless Brome		5	-3	SE5			G4G5T?	IC

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Elymus	*repens*	Quack Grass		3	-3	SE5			G?	IC
Phleum	*pratense*	Timothy		3	-1	SE5			G?	IC
FLORISTIC SUMMARY & ASSESSMENT										
Species Diversity										
Total Species:		**34**								
Native Species:		**17**	50%							
Exotic Species		**17**	50%							
Regionally Significant Species		enter manually								
Locally Significant Species		enter manually								
S1-S3 Species		0	0%							
S4 Species		0	0%							
S5 Species		16	100%							
Co-efficient of Conservatism and Floristic Quality Index										
Co-efficient of Conservatism (CC) (average)		**2.9**								
CC 0 to 3	*lowest sensitivity*	11	65%							
CC 4 to 6	*moderate sensitivity*	6	35%							
CC 7 to 8	*high sensitivity*	0	0%							
CC 9 to 10	*highest sensitivity*	0	0%							
Floristic Quality Index (FQI)		**12**								
Presence of Weedy & Invasive Species										
mean weediness		**-1.9**								
weediness = -1	*low potential invasiveness*	7	44%							
weediness = -2	*moderate potential invasiveness*	4	25%							
weediness = -3	*high potential invasiveness*	5	31%							
Presence of Wetland Species										
average wetness value		**2.8**								
upland		14	42%							
facultative upland		11	33%							
facultative		3	9%							
facultative wetland		5	15%							
obligate wetland		0	0%							

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EXPLANATION OF TERMINOLOGY *(See the following pages for addition detailed information on terms.)*

Botanical and Common Name: From Newmaster et. al, 1998. Species requiring confirmation noted (cf).

Co-efficient of Conservatism: This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat integrity.

Wetness Index: This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats.

Weediness Index: This value, ranging from -1 (low) to -3 (high) quantifies the potential invasiveness of non-native plants. In combination with the percentage of non-native plants, it can be used as an indicator of disturbance.

Provincial Status: Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These ranks are not legal designations. S4 and S5 species are generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario.

Local Status:

X: native species present (collection-based) and all exotic species

R: native species locally rare (number of sites): Hamilton-Wentworth (<6 sites), Durham (<10 sites), GTA (<40 sites), Site District 6E7 (<20 sites), Oak Ridges Moraine (20 or fewer sites), Halton (<5 sites); Peterborough (suspected of being rare, 5 or fewer occurrences); CVC/Peel Region (<11 sites)

U: native species locally uncommon Hamilton-Wentworth (6-10 sites), Durham (11-20 sites), GTA (41-80 sites), Site District 6E7 (21-40 sites), Halton (5-15 sites).

E: Presumed Extirpated

?: More work required to determine status

H: historic record

O: only old (>20 years) records known (Peterborough)

Record Type

SR - sight record

SRP - sight record with photograph

TRCA Rankings:

L5: able to withstand high levels of disturbance; generally secure throughout the jurisdiction, including the urban matrix. May be of very localized concern in highly degraded areas

L4: able to withstand some disturbance; generally secure in rural matrix; of concern in urban matrix

L3: able to withstand minor disturbance; generally secure in natural matrix; considered to be of regional concern.

L2: unable to withstand disturbance; some criteria are very limiting factors; generally occur in high-quality natural areas, in natural matrix; probably rare in the TRCA jurisdiction; of concern regionally

L1: unable to withstand disturbance; many criteria are limiting factors; generally occur in high-quality natural areas in natural matrix; almost certainly rare in the TRCA jurisdiction; of concern regionally

LX: extirpated from our region with remote chance of rediscovery. Presumably highly sensitive

LH: hybrid between two native species. Usually not scored unless highly stable and behaves like a species (e.g. *Equisetum x nelsonii*)

L+: exotic. Not native to TRCA jurisdiction. Includes hybrids between a native species and an exotic

L+?: origin uncertain or disputed, i.e. may or may not be native

pL : found in natural cover, but only as planted, not regenerating

The sensitivity of natural areas can be assessed through application of the Weediness Index. The Weediness Index quantifies the potential invasiveness of non-native plants, and, in combination with the percentage of non-native plants can be used as an indicator of disturbance. Values (ranging from 1- to -3) have been assigned to most non-native species based on the potential impact each species can have in natural areas:

-1: little or no impact on natural areas (most non-native plants are in this category)

-2: occasional impacts on natural areas, generally infrequent or localized

-3: major potential impacts on natural areas

Wetness Index

All plants in southern Ontario have been assigned a wetland category, based on the designations developed for use by the United States Fish & Wildlife Service. Plants are designated into the following categories:

OBL (Obligate Wetland): occurs almost always in wetlands under natural conditions (estimated >99% probability)

FACW (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability)

FAC (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability)

FACU (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability)

UPL (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)

Further refinement of the Facultative categories are denoted by a “+” or “-” to express exaggerated tendencies for those species. The “+” denotes a greater estimated probability occurring in wetlands than species in the general indicator category, but a lesser probability than species occurring in the next higher category. The "-" denotes a lesser estimated probability of occurring in wetlands than species in the general indicator category, but a greater probability than species occurring in the next lower general category.

Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:

OBL : -5
FACW+: -4
FACW: -3
FACW-: -2
FAC+: -1
FAC: 0
FAC-: 1
FACU+: 2
FACU: 3
FACU-: 4
UPL: 5

Provincial Status

Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These rankings are based on the total number of extant Ontario populations and the degree to which they are potentially or actively threatened with destruction. The ranks are:

S1: Critically Imperiled - Critically imperiled in the nation or state/province 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 from the state/province.

S2: Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3: Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4: Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5: Secure - Common, widespread, and abundant in the nation or state/province.

SH: Possibly Extirpated (Historical)—Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.

SR: Reported in Ontario, but without persuasive documentation.

SX: Presumed Extirpated—Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

SE: Exotic; not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above for native species.

SU: Unranked — Nation or state/province conservation status not yet assessed.

Rank ranges, e.g. S2S3, indicate that the rank is either S2 or S3, but that current information is insufficient to differentiate.

"**?**" following a rank indicates uncertainty about the assigned rank.

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