Table 4.3. Land and water area for the study areas.

Area (ha)	Tramway and Proposed Road Area	Habitat Study Area[1]	Surrounding Region[2]	All Areas
Land	280	4,797	193,933	199,009
Water	1	1,253	16,289	17,543
Total	281	6,050	210,222	216,553
Water as a % of total area	<1	21	8	8

[1] Does not include the tramway and proposed road area.
[2] Does not include the tramway and proposed road area and the habitat study area.
Source: FLI.

4.2.2.5 Surface Materials, Soils, and Groundwater

Exposed bedrock and organic material are the dominant surface material textures for over 80% of the land area in the surrounding region (Table 4.4). It should be noted that the ELC percentages reported here are biased upward because they only reflect the dominant texture in the soil polygon[2]. Virtually all of the bedrock on commercial forest land is igneous (Table 4.5).

Table 4.4. Surface Material Texture in the Study Areas

	Percentage of Area		
Surface Material Texture	Tramway and Proposed Road Area	Habitat Study Area[1]	Surrounding Region
Exposed Bedrock	81	58	50
Sands- Coarse			1
Sands			3
Loamy- Coarse			1
Loamy			5
Clayey	18	28	8
Organic	0	14	33
Unclassified	0	0	1
Human			0

[1] Does not include tramway and proposed road area.
Source: ELC.

[2] Many polygons are a mosaic of several different types due to the small scale of reconnaissance soil survey maps.

Table 4.5: Landform in Commercial Forest Lands

Landform	Percentage of Area		
	Tramway and Proposed Road Area	Habitat Study Area[1]	Surrounding Region
Limestone Outcrop			0
Igneous Outcrop	62	64	44
Elevated Sand or Gravel Flats			0
Outwash Plains, Sand Flats	8	19	28
Steep Slopes, Boulder Pavement	1	0	0
Lower Slopes	25	12	9
Well Drained Flats		0	1
Low Depressions, poorly drained	4	5	19

Source: FLI.

Clayey material is the second most abundant surface material texture in the study area and in the tramway and proposed road area. Exposed bedrock and clayey material are the dominant surface material textures in more than 98% of the tramway and proposed road area. Other dominant surface material textures do not occur in the habitat study area and the tramway and proposed road area at the map scale of the ELC.

A range of habitat types was sampled in the tramway and proposed road area with particular focus on the uncommon habitat types. Soils in the 18 habitat plots included luvisols, gleysols, peaty phase brunisols, organics and non-soils (Table 4.6). The non-soils occurred on bedrock outcrops. Depth to bedrock and surface organic layer thickness varied widely (Table 4.7). Parent material soil textures were generally clays or silty clays. The water table was encountered within 5 cm of the surface in three of the four organic soils and not at all in the remaining plots.

Table 4.6. Number of Soil Pits from each Soil Order

Soil Order	Plots
Non-Soil	2
Brunisolic	6
Luvisolic	4
Gleysolic	2
Organic	4
All	18

Source: ECOSTEM soil data.

Table 4.7. Number of Soil Pits by Thickness of Surface Organic Matter and Depth to Bedrock

Cm	Thickness of Surface Organic Layer	Depth to Bedrock
0 – 10	9	2
11 – 20	3	1
21- 50	1	1
51 – 100	1	1
> 100	3	13
All	18	18

Source: ECOSTEM soil data.

4.2.2.6 Vegetation

Land cover in the tramway and proposed road area, the habitat study area and the surrounding region is primarily a mixture of needle forest, broadleaf forest, sparsely treed vegetation on wet sites and broadleaf mixedwood forest.

Needle forest is the most abundant land cover in the surrounding region and tramway and proposed road area (Table 4.8). Broadleaf forest coverage is slightly higher than needle forest in the habitat study area probably due to the relatively higher proportion of clayey surface materials in this area. Sparsely treed vegetation on dry sites covers a small proportion of all three nested areas despite the high amount of exposed bedrock. This is the case for two reasons. First, shallow deposits of mineral material adequate for jack pine growth are generally found in the surface depressions, gullies and cracks of the exposed bedrock. Second, many of the ELC polygons contain mineral soil as the sub-dominant type.

Broadleaf forest is more prevalent in the habitat study area and the tramway and proposed road area than in the surrounding region. Broadleaf forest in the habitat study area is concentrated in a band along the Winnipeg River. The tramway and proposed road area pass through this broadleaf band at several locations. Land cover in the tramway and proposed road area is primarily a mixture of human features (i.e., the existing tramway, Slave Falls Generating Station and access points at Pointe du Bois), needle forest, broadleaf forest and broadleaf mixed forest.

Table 4.8. Land Cover in the Study Areas

Land Cover	Percentage of Area		
	Tramway and Proposed Road Area	Habitat Study Area[1]	Surrounding Region
Sparsely treed vegetation on dry sites	7	6	5
Needle forest	22	24	34
Needle mixedwood forest	5	7	7
Broadleaf mixedwood forest	11	11	10
Broadleaf forest	21	25	13
Sparsely treed vegetation on wet sites	4	14	16
Wetlands- untreed	5	9	13
Small Islands	<1	<1	<1
Human	26	4	2

[1] Does not include the tramway and proposed road area.
Source: FLI.

Jack pine comprises the highest proportion of the needle forest whether or not it is mixedwood (Table 4.9). Aspen comprises the highest proportion of the broadleaf forest. The area is a mixture of sparse black spruce on outcrop, jack pine mixedwood forest, aspen/jack pine mixedwood forest, marsh, tamarack forest, black spruce forest, willow shrubland, balsam fir/ spruce mixedwood forest, wet meadow, tamarack/ black spruce forest, graminoid fen, black spruce/ jack pine mixedwood forest, ericaceous low shrub/ Sphagnum bog, tamarack sparsely treed fen, aspen/ black spruce mixedwood forest, balsam fir mixedwood forest, barren outcrop and ash forest.

4.2.2.7 Habitat Variations with Site Conditions and Disturbance

Mature post-fire plant communities on shallow mineral soils are characterized by a jack pine, black spruce overstorey, sparse shrub and herb layers and a forest floor covered with mosses and reindeer lichens (Ehnes, 1998). The abundances of jack pine, reindeer lichens and haircap mosses are highest on the driest sites while black spruce and feather moss abundances increase as soils become moister. Aspen tree cover increases with mineral soil thickness and proportion of clay. Aspen forest is generally more common near large rivers and lakes. Species rich broadleaf and mixedwood forests were found on wet mineral soils during field studies.

Table 4.9. Broad Vegetation Type in the Study Areas

Land Cover	Broad Vegetation Type	Percentage of Area		
		Tramway and Proposed Road Area	Habitat Study Area[1]	Surrounding Region
Sparsely treed vegetation on dry sites		7	6	5
Needle forest	Balsam fir		0	1
	Black spruce	2	3	10
	Jack pine	17	20	18
	Tamarack	3	1	4
	White spruce		0	1
	Red pine			0
	Cedar			0
Needle mixedwood forest	Balsam fir	1	2	2
	Black spruce	0	1	1
	Jack pine	3	3	3
	White spruce		1	1
	Tamarack			0
	Cedar			0
Broadleaf mixedwood forest	Aspen	11	10	9
	Balsam poplar		0	0
	White birch			0
Broadleaf forest	Ash	0	3	1
	Aspen	21	21	11
	Balsam poplar		0	0
	White birch		0	0
	Oak			0
Sparsely treed vegetation on wet sites		4	14	16
Wetlands- untreed	Tall shrub	1	1	4
	Low shrub, graminoid and/ or emergent	4	8	10
Small Islands		0	0	0
Human	Other	26	4	2
	Agriculture			0

[1] Does not include the tramway and proposed road area.
Source: FLI.

Mature post-fire plant communities on bogs are characterized by a black spruce overstorey, a low shrub layer dominated by Labrador tea and a ground cover of Sphagnum mosses. Most bogs in this region have developed from fens (Manitoba Conservation, 2002). Tamarack and often black spruce are generally found on treed fens.

Large fires are the dominant natural disturbance type in the project study area and surrounding region. Most of the species present in mature plant communities regenerate quickly after fire. Tree species that are exceptions to this generalization include balsam fir, white spruce and tamarack. Detailed descriptions of post-fire successional pathways for the common site types and of plant community composition variation by site type can be found in Manitoba Conservation (2002) and Ehnes (1998).

4.2.2.8 Habitat Diversity

The tramway and proposed road area passes through an area of high habitat diversity even for the surrounding region (Figure 4.4). The median number of FLI vegetation types per 25 km^2 in the surrounding region is 28 compared with 22 for the southern third of Ecoregion 90. Local habitat diversity is also relatively high. There are 34 FLI vegetation types in the 25 km^2 tile that generally coincides with the southern half of the 5 km band used for the habitat study area. This is above the 75th percentile number of FLI vegetation types per 25 km^2 in the surrounding region and four below the region maximum of 38. The 25 km^2 tile that generally coincides with the northern half of the 5 km band used for the habitat study area contains 28 FLI vegetation types, the median for the region. This number is somewhat misleading because, of the 128 tiles in the region, this tile has the 11th highest percentage of human area. Diversity outside of the human areas is closer to the 75th percentile for the region.

4.2.3 Priority Habitats and Plant Species

A priority habitat or priority plant species is one that is protected, ecologically sensitive in some way, especially important to people or critical for the survival and/or reproduction of another species. Ecologically sensitive habitats or species are those that are rare, dependent on uncommon environmental conditions, dependent on the existing disturbance regime, near a range limit, relict or highly sensitive to disturbance.

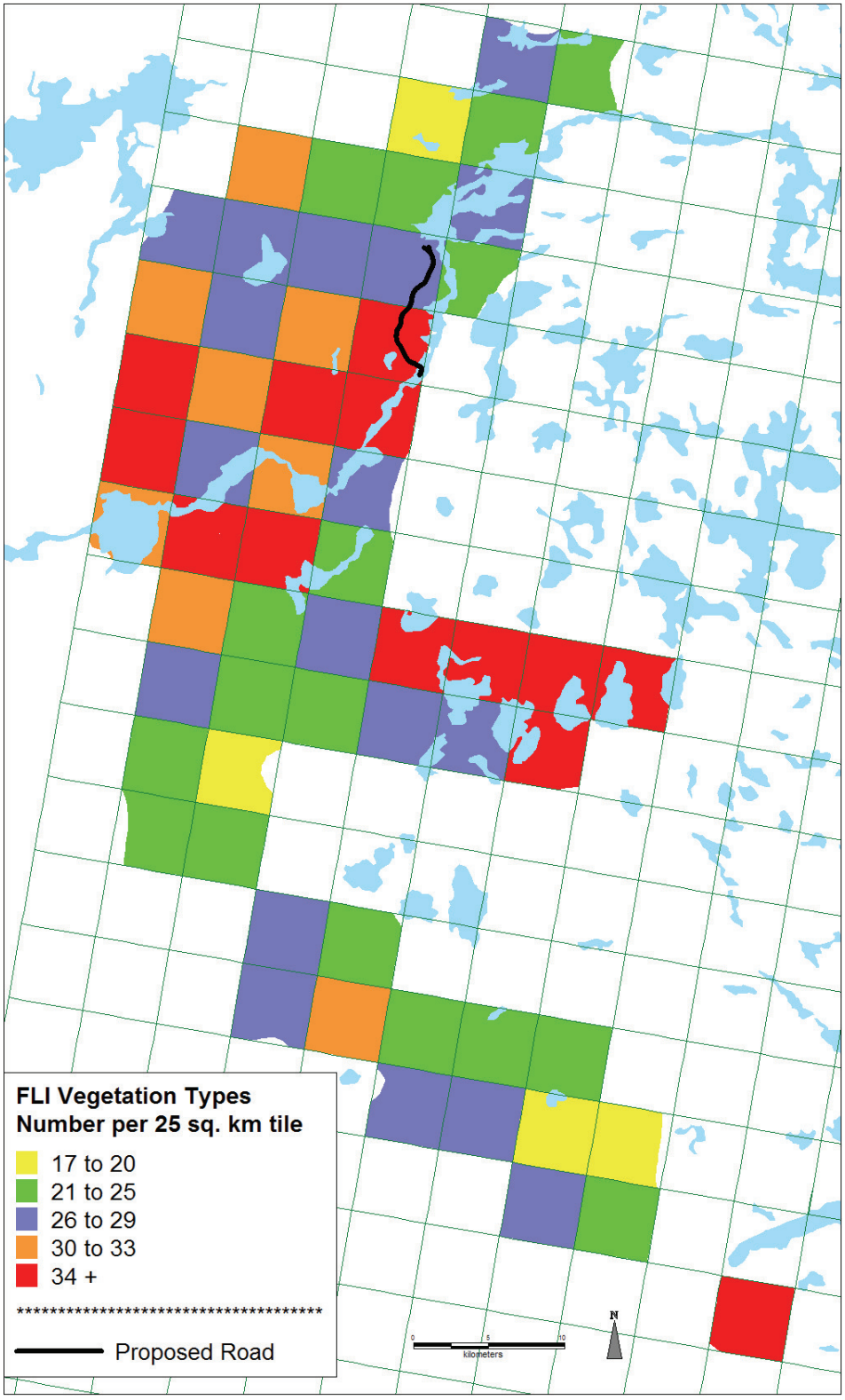


Figure 4.4: Habitat Diversity Measured as the Number of FLI Vegetation Types per 25 km^2 Tile

4.2.3.1 Rare Habitats

Based on canopy presence in the FLI, rare or uncommon vegetation types (i.e., percentage of land area < 2.1%) in the surrounding region include:

- **Balsam fir forest and mixedwood forest;**
- **White spruce forest and mixedwood forest**;
- Red pine forest;
- Cedar forest and mixedwood forest;
- Tamarack mixedwood forest;
- **Balsam poplar forest and mixedwood forest;**
- **White birch forest and mixedwood forest;**
- **Ash forest;** and,
- Oak forest.

Vegetation types listed in bold type above occur in the habitat study area. Of these types, only ash forest occurs within the tramway and proposed road area.

Some of the tree species are more common in the habitat study area and surrounding region than indicated by their status as a rare FLI vegetation type. This means that they usually are not the leading species in the stand mixture. This is the case for balsam fir, white spruce, birch and tamarack.

Ash is the only regionally rare tree species that occurs in the habitat study area and the tramway and proposed road area. It is found throughout the southeast half of the local and tramway and proposed road area. Black ash was the only ash species encountered during field studies.

4.2.3.2 Rare Plants

Approximately 370 plant species were found during habitat and rare plant field studies (see Appendix D for complete report). The Manitoba Conservation Data Centre (CDC) assigns

conservation status ranks to species as an indication of their degree of provincial conservation concern. Species with ranks ranging from S1 to S3? are rare or uncommon species of potential conservation concern.

A total of 17 species ranked as S1 to S3? by the CDC (Table 4.10) were found in the surveyed portions of the tramway and proposed road area. Locations for each of the S1 to S3? species are shown in Figure 4.5 and Figure 4.6. It should be noted that a "location" refers to an individual plant or patch and not a population.

Table 4.10. Species Found in the Search Areas that are Ranked S1 to S3? by the CDC

Rank	Common Name	Species	Number of Locations
S1	Fernald's sedge	*Carex merritt-fernaldii*	4
S1	Rattlesnake grass	*Glyceria canadensis*	4
S1	Bigleaf aster	*Eurybia macrophylla*	5
S2	Dwarf bilberry	*Vaccinium caespitosum*	1
S2	Three-way sedge	*Dulichium arundinaceum*	1
S2	Sessile-fruited Arrowhead	*Sagittaria rigida*	5
S2	Hop-hornbeam/ Ironwood	*Ostrya virginiana*	14
S3	Leathery grapefern	*Botrychium multifidum*	1
S3	Slender sedge	*Carex gracillima*	1
S3	Water-marigold	*Bidens beckii*	1
S3	Bog goldenrod	*Solidago uliginosa*	2
S3	Arrow-leaved tearthumb	*Persicaria sagitata*	3
S3	Black ash	*Fraxinus nigra*	12
S3?	Marsh St. John's-wort	*Triadenum fraseri*	1
S3?	Long-stalked sedge	*Carex pedunculata*	3
S3?	Swollen sedge	*Carex intumescens*	5
S3?	Wild ginger	*Asarum canadense*	8

Source: Crescent Botanical Services and ECOSTEM field data.

For S1 CDC Ranked Species:

- One rattlesnake grass location is not in the road RoW
- Two of the bigleaf aster locations are not in the RoW

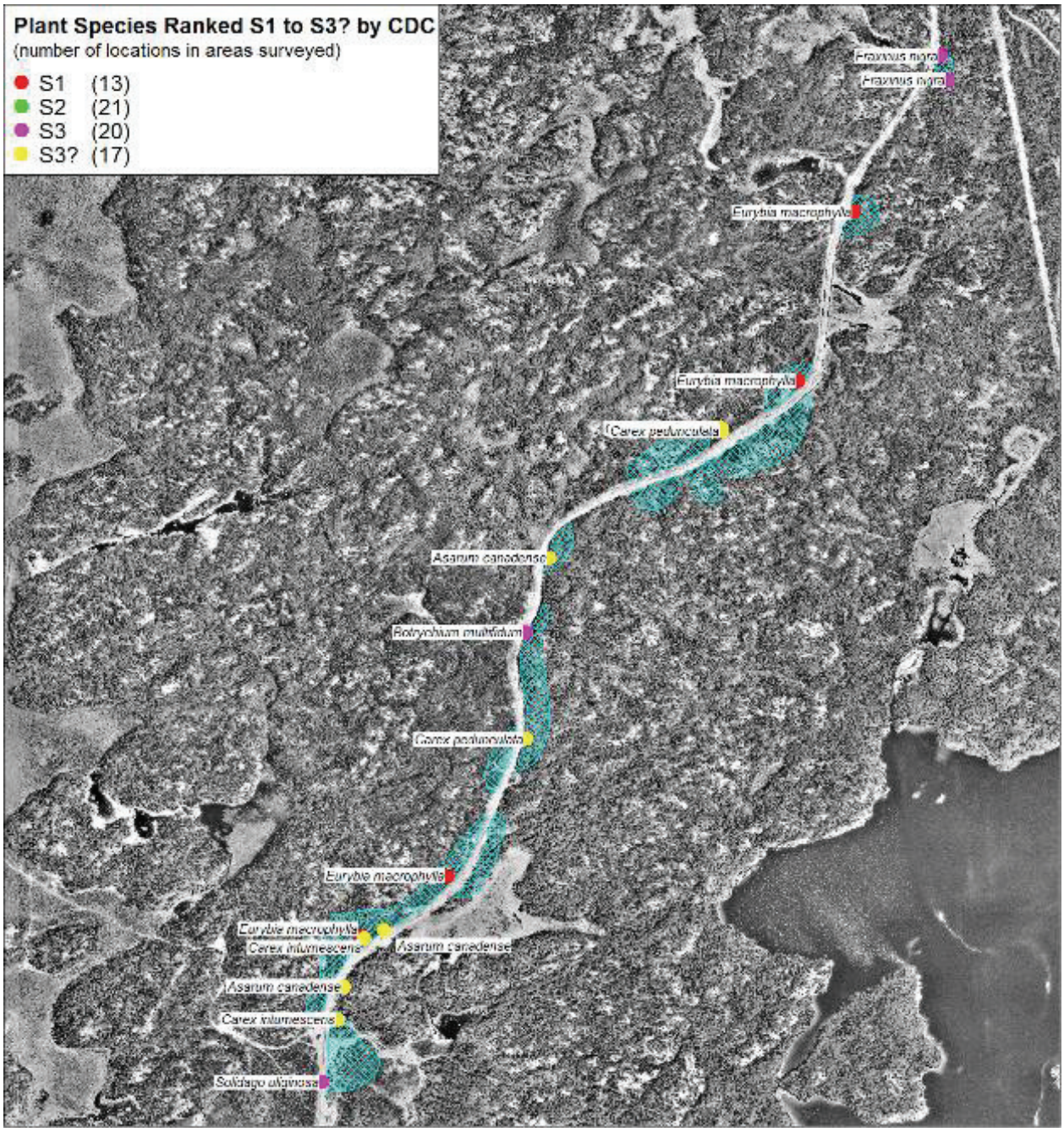


Figure 4.5: Rare Plants Locations Along North Half of Tramway

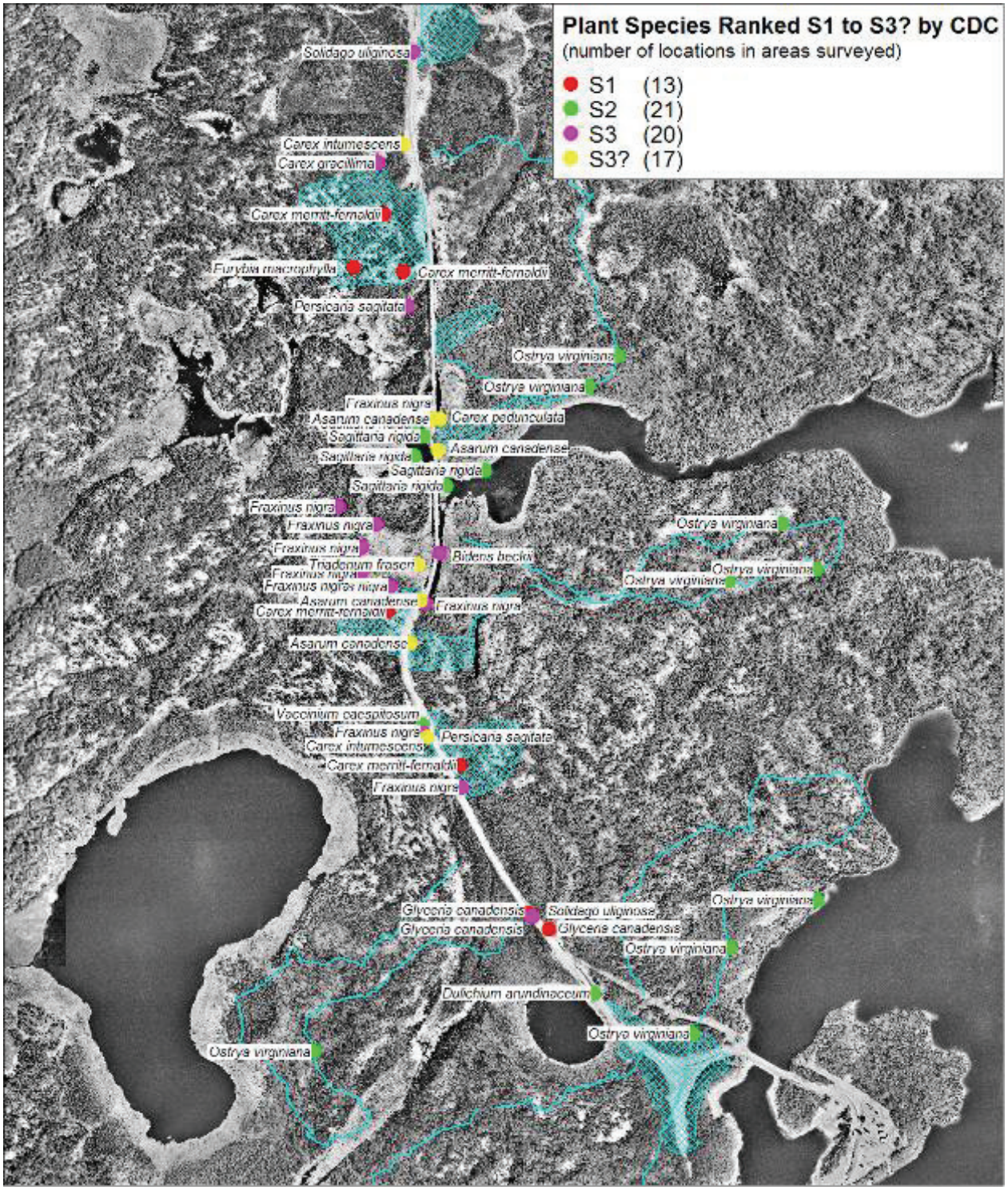


Figure 4.6: Rare Plants Locations Along South Half of Tramway

For S2 CDC Ranked Species:

- Three-way sedge and sessile fruited arrowhead were not found in the RoW and borrow areas
- A small and depauperate patch of dwarf bilberry occurs in the tramway RoW, but not in the road RoW
- The fourteen hop-hornbeam locations recorded during the field surveys includes several health populations

4.2.4 Wetlands

Wetland types intersected by the tramway and proposed road area include shallow open water, marshes, meadows, swamps, fens and bogs (Figure 4.7). Fens generally support sedges, marsh reed grass, willows, speckled alder and swamp birch. Tall shrub cover is higher than graminoid cover in areas where the water table is further from the surface. Tamarack or tamarack and black spruce treed fens occur where the water table is even further below the surface.

The largest wetland complex intersected by the tramway and proposed road area is located at Moose Creek. This wetland complex includes most of the wetland types that occur along the existing tramway and proposed road (Figure 4.8). Photos showing four portions of this complex are provided in Figure 4.9. The second largest wetland complex intersected by the tramway and proposed road area is located northwest of the south wye (Figure 4.10 photos). The majority of the forested peatlands occur in this complex.

4.2.5 Mammals

Mammals and habitat in the study area are typical of those found throughout the Boreal Shield Ecozone in Manitoba. Common mammal species found in the area include white-tailed deer, beaver, grey wolf, marten, fisher, red fox, otter, and snowshoe hare. There is little specific information on mammal abundance, distribution or diversity in the project study area and surrounding region. Manitoba Conservation has conducted periodic aerial surveys for ungulates in the Whiteshell Provincial Park or Game Hunting Area (GHA) 36 and GHA 26 since the 1970's (Manitoba Conservation unpublished data 1999 – 2006, Schindler, 1993, 1991, 1986a, 1986b, 1985). The results of these surveys indicate that white-tailed deer are the predominant ungulate in the study area and that moose have been in decline in the last decade (Barker pers com).

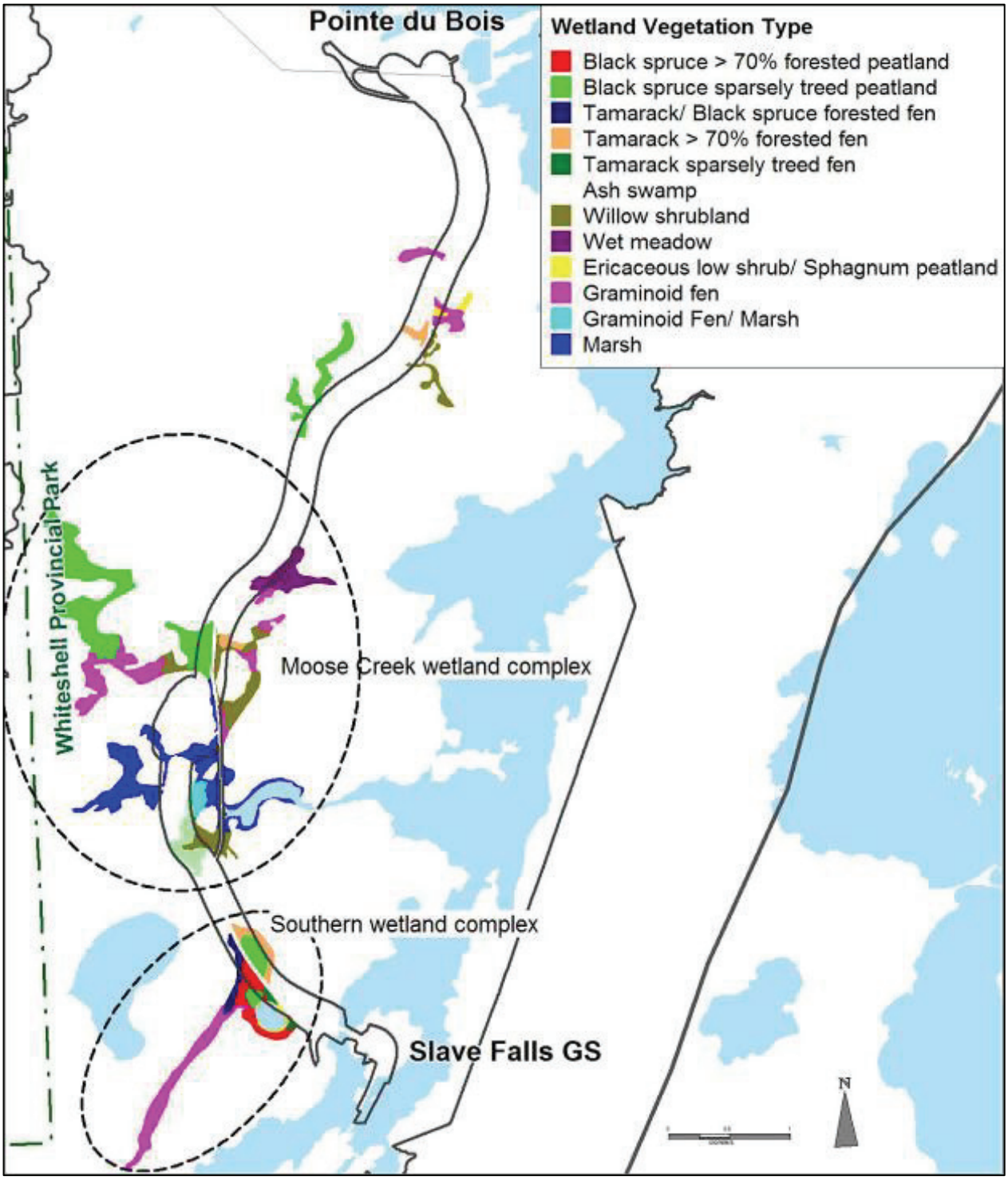


Figure 4.7: Wetlands Intersected by the Tramway and Proposed Road Area

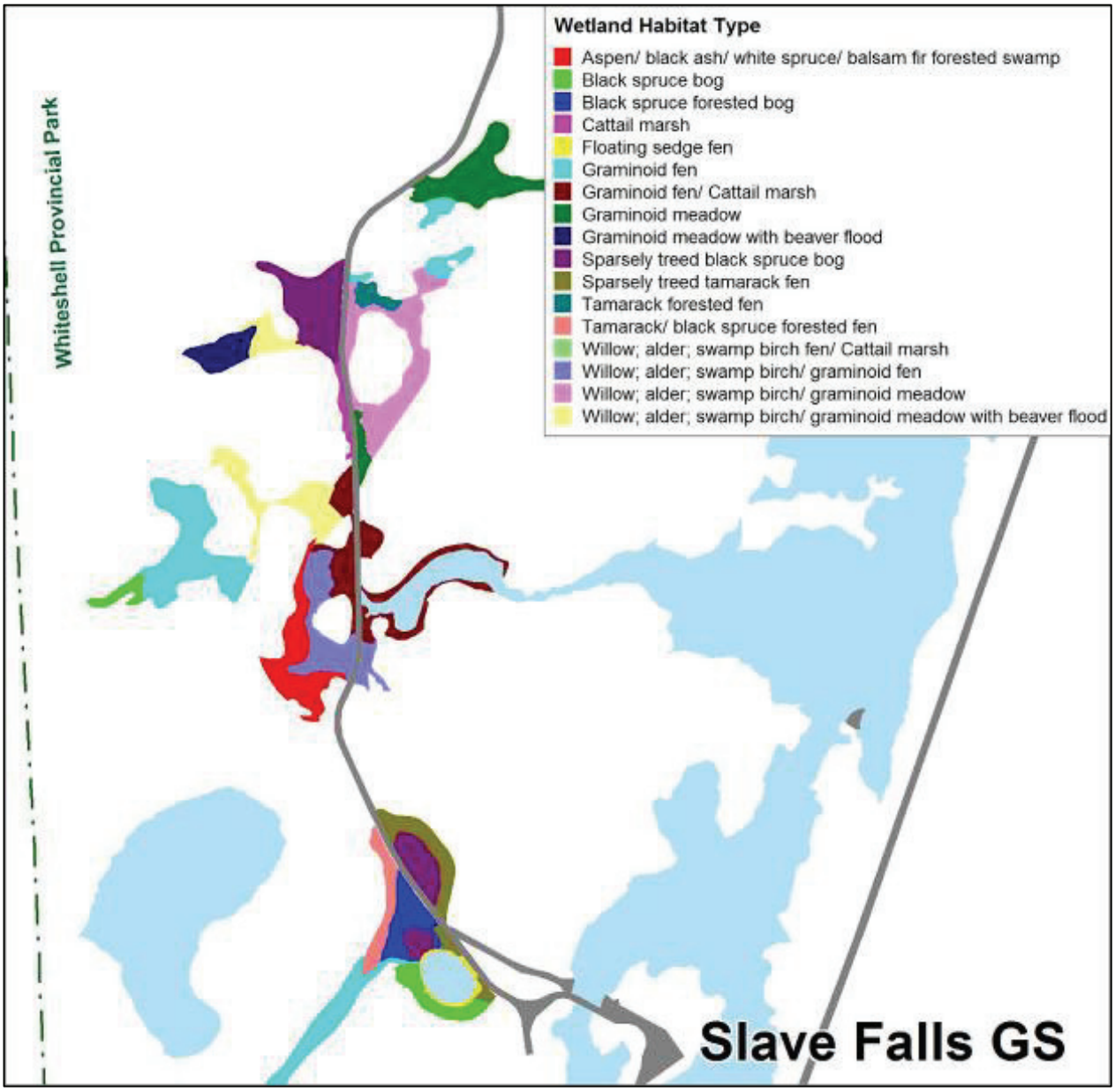
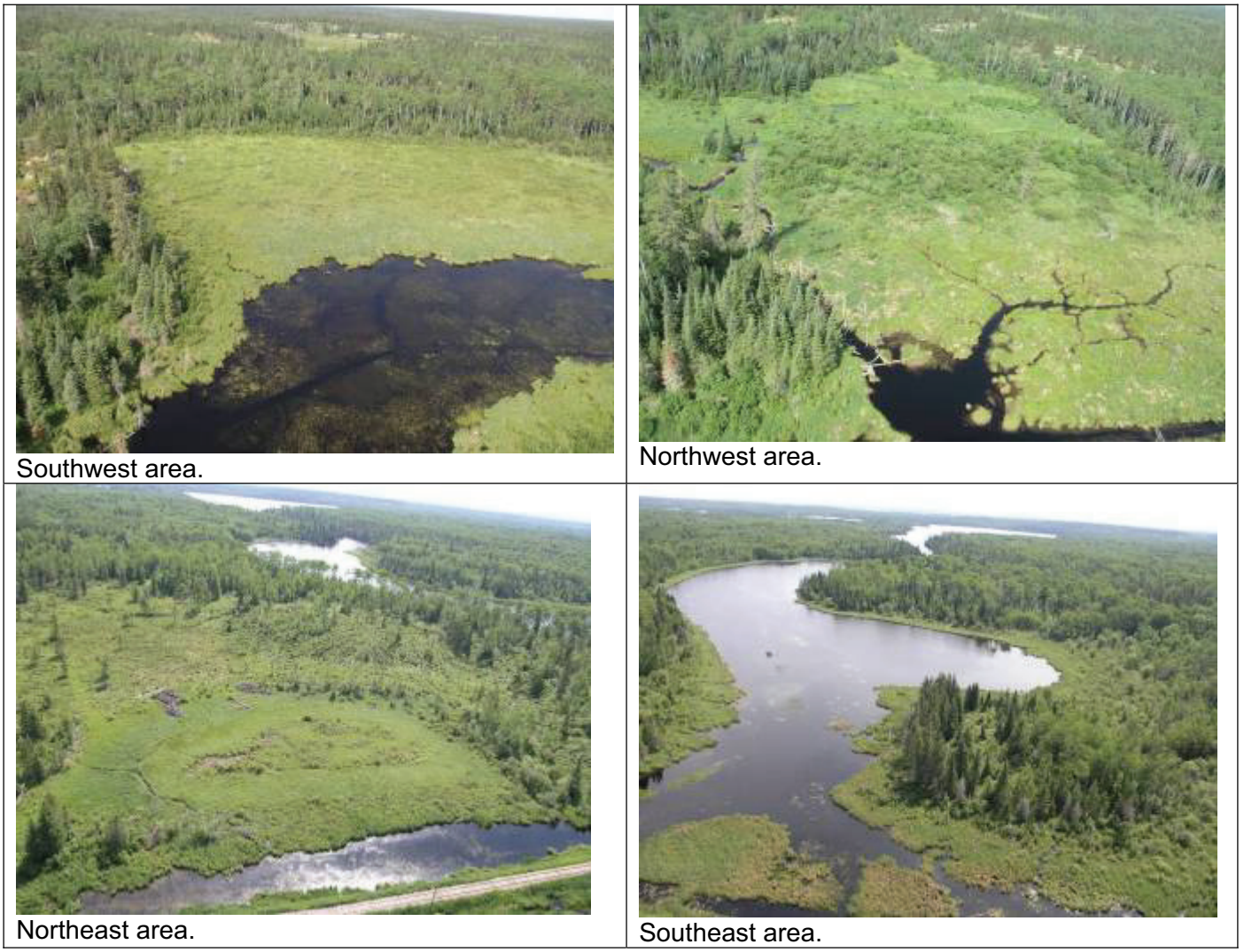


Figure 4.8: Habitat Composition of Moose Creek and Southern Wetland Complex



Southwest area.

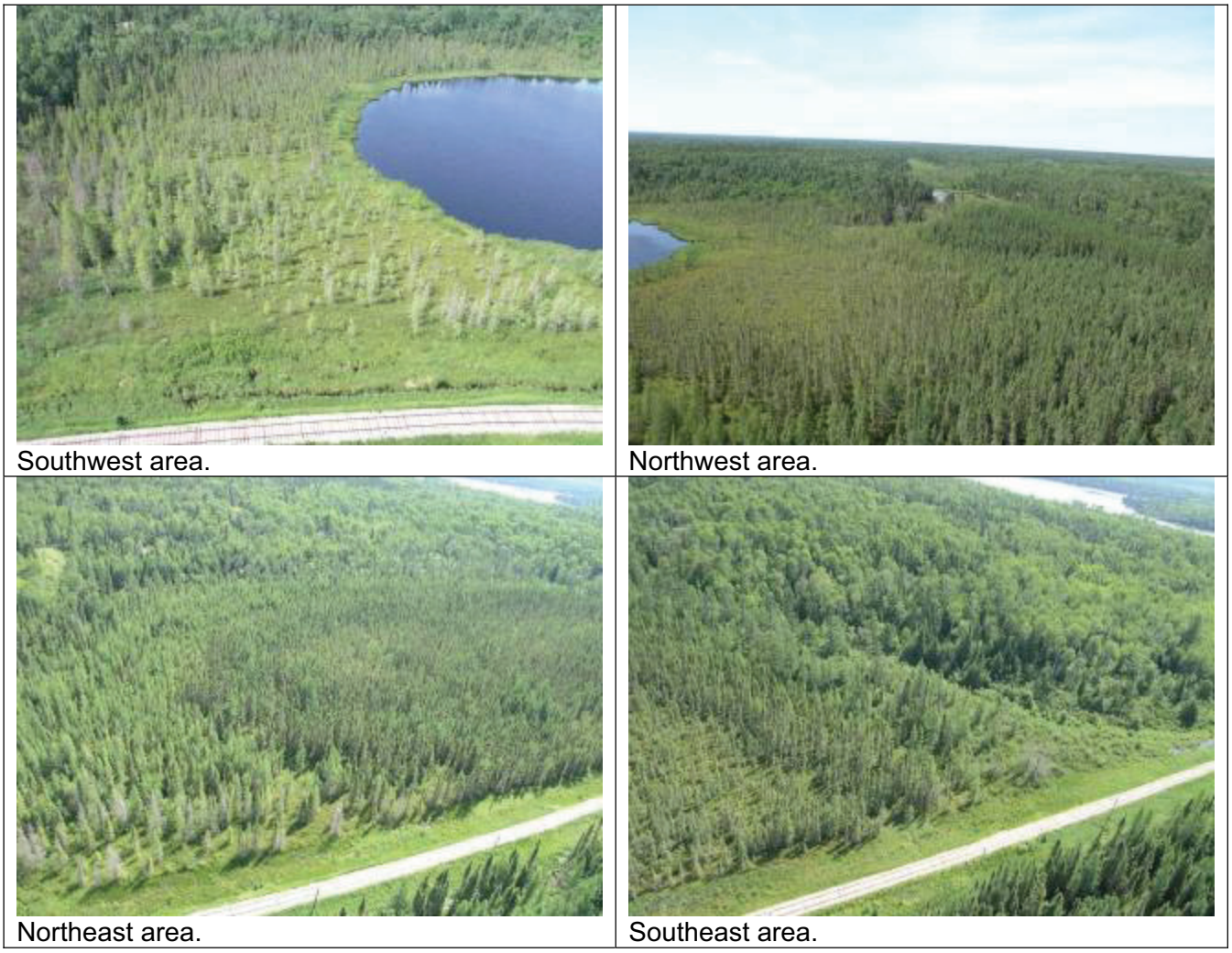
Northwest area.

Northeast area.

Southeast area.

Figure 4.9: Moose Creek Wetland Complex

See Figure 4.7 for location of the wetland complex.



Southwest area. Northwest area.

Northeast area. Southeast area.

Figure 4.10: Southern Wetland Complex

See Figure 4.7 for location of the wetland complex.

Boreal woodland caribou are a threatened species and were historically known to occur in the area. The decline of boreal woodland caribou and moose in southeast Manitoba and the Whiteshell region is thought to be a factor of the northward range extension of white-tailed deer and the pathogenic relationship of parasites and disease as well as increased wolf predation (EMWCAC 2006). The current range of the Owl Lake boreal woodland caribou population is well defined (Schindler et al, 2007, Schindler, 2006) and is well north of the project study area.

Specific mammal surveys were conducted during the winter and summer of 2007 to assess mammal abundance, diversity and distribution in the project study area. Surveys were designed to identify any concentrations or assemblages of ungulates or furbearers that could be considered locally or regionally important. Field surveys and the associated sampling designs were based on FLI habitat interpretations and mapping conducted by ECOSTEM (2007). Habitat maps were utilized to stratify sampling to provide representative assessment of various habitat types in the study area. An aerial winter ungulate and furbearer track survey was conducted in February 2007 using a helicopter. Transects were flown at 250 metre intervals resulting in 100 percent survey coverage of the area between the Winnipeg River (east of Tramway) and approximately 2 kilometres west of the Tramway. All ungulate observations and furbearer tracks were recorded and documented using a hand held GPS. Only white-tailed deer were observed and there were no visual observations or tracks of moose or woodland caribou in the study area. Furbearer tracks were abundant in the area and included timber wolf, coyote, fox, river otter, marten, fisher, lynx and snow shoe hare. Summer pedestrian surveys were conducted along the entire existing tramway route to document any mammal observations or sign. Pedestrian surveys conducted in June, July and August 2007 resulted in observations of deer and scats from wolf, marten and black bear. All observations were documented and recorded using a hand held GPS (Table 4.11).

Table 4.11: Tramway Mammal Species Observations

Species Code	Common Name	Scientific Name	Count
MINK	American Mink	*Mustela vison*	1
BEVR	Beaver	*Castor canadensis*	13
BEAR	Black Bear	*Ursus americanus*	9
LYNX	Canada Lynx	*Lynx canadensis*	2
FSHR	Fisher	*Martes pennanti*	1
WOLF	Gray Wolf	*Canis lupus*	6
MRTN	Pine Marten	*Martes martes*	4
FOX	Red Fox	*Vulpes vulpes*	2
OTTR	River Otter	*Lutra canadensis*	1
HARE	Snowshoe Hare	*Lepus americanus*	2
DEER	White-tailed Deer	*Odocoileus virginianus*	7
Total			**48**
Total Species			**11**

Humane, live trapping of small mammals was conducted in three habitat types for a one-night period at each site. Habitat types trapped included wetlands adjacent to the tramway, upland mixed forest on well-drained soil, and hardwood dominated forest on well-drained soils. Species captured, in order of magnitude included red-backed vole, deer mouse, meadow vole, meadow jumping mouse, and masked shrew. A summer aerial survey was also conducted in August 2007 to locate any existing ungulate mineral licks, aquatic feeding areas or major wildlife trails. No observations were made during the aerial survey.

Figure 4.11 illustrates the location and distribution of all mammal observations for all surveys. No species at risk or species of special concern, significant assemblages or unique sites were documented or observed as part of the information review or during field surveys.

4.2.6 Birds

There are in excess of 200 species of birds known or expected to occur within the project study area as year round residents, breeding populations or as temporary residents during bi-annual migration and staging. Birds are an important component of the functioning ecosystem within the region and occupy existing upland, riparian and aquatic habitats in the study area. Functioning habitat in these areas contribute to life requisites that facilitate reproduction (breeding and brood rearing), foraging, security and thermal regulation. Habitats providing for

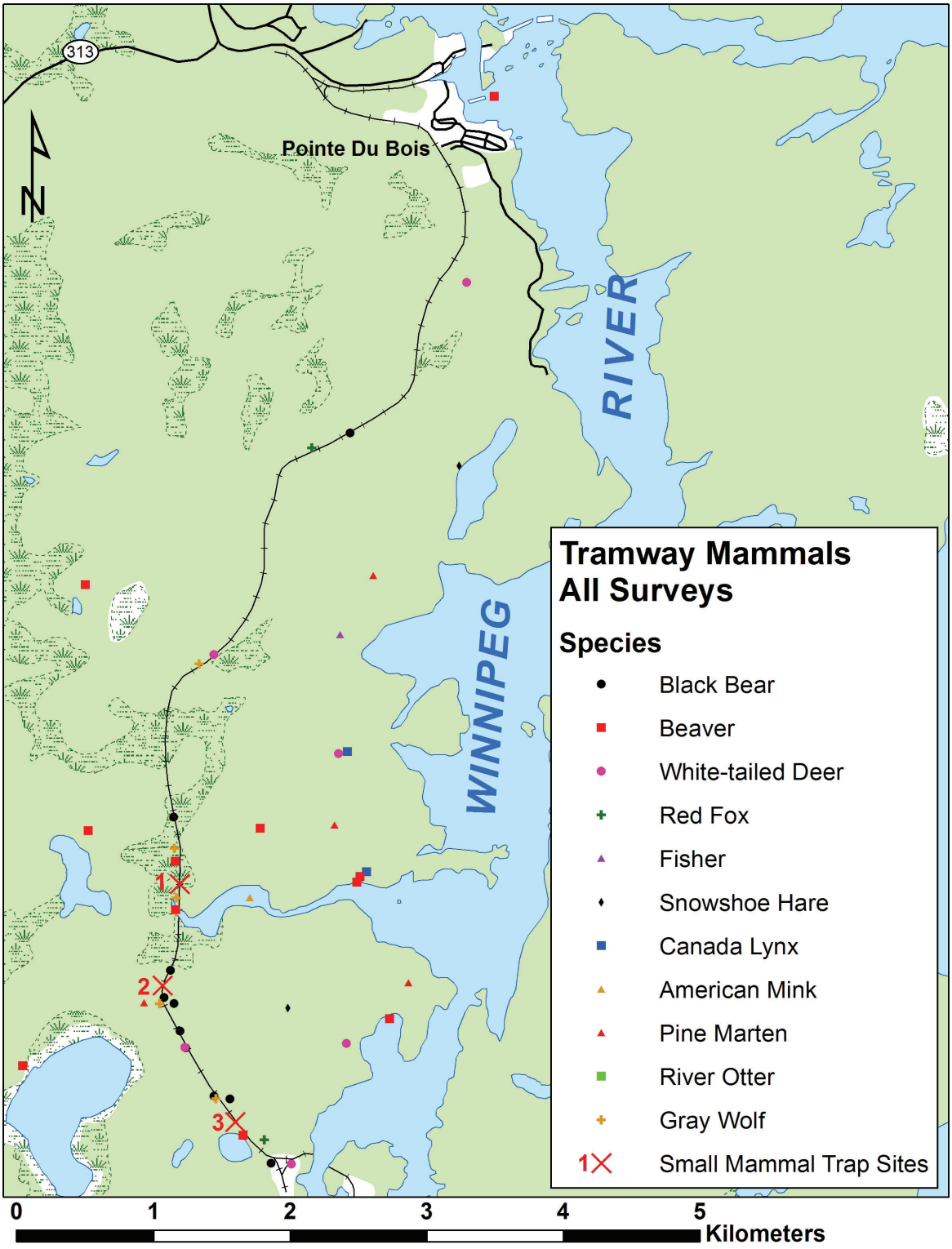


Figure 4.11: Mammal Locations From All Surveys

these life requisites vary among species or species groups and the existing bird assemblages are generally dependent upon the spatial arrangement and size of habitat types found throughout the general area. Birds potentially found in the project study area can be generally grouped into the following categories, and can be differentiated by unique habitat niches occupied during different times of the year that provide essential elements for survival, reproduction and staging:

- Wading birds (herons and bitterns)
- Gulls, shorebirds and terns
- Waterfowl
- Raptors (eagles, hawks, owls and ospreys)
- Songbirds (neotropical migrants and passerines)
- Diving birds (loons and grebes)
- Game birds (grouse)

Birds and their habitat currently receive various levels of protection under the provincial Wildlife Act and the federal Migratory Birds Convention Act. Rare species may be protected under the Manitoba Endangered Species Act (MESA, 2007), and/or under the Canada Species at Risk Act (SARA, 2007). Rare species can also be listed as a special concern or threatened by the Committee on the Status of Wildlife in Canada (COSEWIC, 2007). The Manitoba Conservation Data Centre (CDC) provides a conservation status rank based on how rare the species is and has identified several species that could potentially occur in the study area. Listed COSEWIC species or species of concern that could be found in the project study area as migrants or breeding populations are as follows (Source: Manitoba Avian Research Committee, 2003, Godfrey, 1986):

- Yellow rail (COSEWIC) – Special Concern
- Redheaded woodpecker (COSEWIC) – Threatened
- Golden-winged warbler (COSEWIC) - Threatened (Note: SE Manitoba northern extent of breeding range)
- Least bittern (COSEWIC) - Threatened. (Note: Study area is in eastern periphery of known range)
- Rusty blackbird – Special Concern

Other bird species or bird assemblages ranked as special concern by CDC that could potentially be found in the potential effects zone include (Manitoba Avian Research Committee, 2003, Godfrey, 1986):

- Coopers hawk
- Barred owl
- Great grey owl

Various field studies were conducted in the spring, summer and fall of 2007 to determine the presence/absence of bird species considered to be rare, endangered, threatened or of special concern to SARA, MESA or CDC. Field surveys also provided data to validate and characterize bird species occurrence and distribution as well as to locate and document nesting areas or sites. Surveys included winter and summer aerial surveys to locate active bald eagle and osprey nests as well as great blue heron nesting colonies in the project study area. Breeding bird surveys were conducted in various habitats during June and July 2007. Breeding bird surveys involved identification of passerines (song birds) and other birds through vocalization and visual observation at approximately 200 metre intervals along the entire length of the tramway. All observations were recorded and documented with a hand held GPS. Additional bird observations during other fieldwork were recorded and documented. Spring and summer broadcast surveys using an electronic call to detect for presence/absence of water birds were conducted at all wetland habitats found along the tramway. Broadcast surveys targeted yellow rail and least bittern. A night broadcast survey was also conducted to detect presence/absence of owls with an emphasis on barred and great grey owls.

Table 4.12 provides a summary of bird species observed during surveys. Based on the results of all the surveys, 4 Barred Owl calls were recorded, and it is suspected that this may have been the response from one or two individual owls (Figure 4.12). No other listed species or species of concern or important sites were documented during the information search or field surveys.

Table 4.12: Tramway Bird Species Observations

Species Code	Common Name	Scientific Name	Count
AMCR	American Crow	*Corvus brachyhynchos*	1
AMGO	American Goldfinch	*Carduelis tristis*	3
AMRE	American Redstart	*Setophaga ruticilla*	2
AMRO	American Robin	*Turdus migratorius*	3
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	2
BAOW	Barred Owl	*Strix varia*	4
BBWA	Bay Breasted Warbler	*Dendroica castanea*	1
BEKI	Belted Kingfisher	*Ceryle alcyon*	1
BWWA	Black and White Warbler	*Mniotilta varia*	1
BBMA	Black Billed Magpie	*Pica pica*	1
BLWA	Blackburnian Warbler	*Dendroica fusca*	4
BLJA	Blue Jay	*Cyanocitta cristata*	2
CAGO	Canada Goose	*Branta canadensis*	1
CAWA	Canada Warbler	*Wilsonia canadensis*	1
CMWA	Cape May Warbler	*Dendroica tigrina*	3
CEWA	Cedar Waxwing	*Bombycilla cedrorum*	4
CSWA	Chestnut sided Warbler	*Dendroica pensylvanica*	2
CHSP	Chipping Sparrow	*Spizella passerina*	11
CLSW	Cliff Swallow	*Hirundo pyrrhonota*	1
COGO	Common Goldeneye	*Bucephala clangula*	1
COGR	Common Grackle	*Quiscalus quiscula*	1
COLO	Common Loon	*Gavia immer*	2
COME	Common Merganser	*Mergus merganser*	1
CONI	Common Nighthawk	*Chordeiles minor*	1
CORA	Common Raven	*Corvus corax*	4
COTE	Common Tern	*Sterna hirundo*	1
COYE	Common Yellowthroat	*Geothlypis trichas*	4
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	2
EAPH	Eastern Phoebe	*Sayornis phoebe*	4
EWPE	Eastern Wood Peewee	*Contopus virens*	1
EUST	European Starling	*Sturnus vulgaris*	1
GCKI	Golden-Crowned Kinglet	*Regulus satrapa*	2
GRCA	Gray Catbird	*Dumetella carolinensis*	2
GRJA	Gray Jay	*Perisoreus canadensis*	1
HETH	Hernit Thrush	*Catharus guttatus*	6
HEGU	Herring Gull	*Larus argentatus*	4
HOWR	House Wren	*Thyrothorus aedon*	1
LEFL	Least Flycatcher	*Empidonax minimus*	1
MALL	Mallard	*Anas platyrhynchos*	4

Table 4.12: Tramway Bird Species Observations (cont'd)

Species Code	Common Name	Scientific Name	Count
MOWA	Mourning Warbler	*Oporonis philadelphia*	1
NAWA	Nashville Warbler	*Vermivora ruficapilla*	7
NOFL	Northern Flicker	*Colaptes auratus*	2
NOGO	Northern Goshawk	*Accipiter gentilis*	1
NOOR	Northern Oriole	*Icterus galbula*	2
OSFL	Olive-Sided Flycatcher	*Contopus borealis*	1
OVEN	Ovenbird	*Seirus aurocapillus*	3
PHVI	Philadephia Vireo	*Vireo philadelphicus*	4
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	1
PISI	Pine Siskin	*Carduelis pinus*	2
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	3
REVI	Red-Eyed Vireo	*Vireo olivaceus*	10
RWBL	Red-Winged Blackbird	*Agelaius phoeniceus*	8
RBGU	Ring-Billed Gull	*Larus delawarensis*	2
RNDU	Ring-necked Duck	*Aythya collaris*	1
RBGR	Rose Breasted Grosbeak	*Pheucticus ludovicianus*	3
RUGR	Ruffed Grouse	*Bonasa umbellus*	6
SOSP	Song Sparrow	*Melospiza melodia*	10
SPSA	Spotted Sandpiper	*Actitis macularia*	3
SWTH	Swainson's Thrush	*Catharus ustulatus*	2
SWSP	Swamp Sparrow	*Melospiza georgiana*	3
TEWA	Tennessee Warbler	*Vermivora peregrina*	2
TRSW	Tree Swallow	*Tachycineta bicolor*	3
VEER	Veery	*Catharus fuscescens*	13
WTSP	White-Throated Sparrow	*Zonotrichia albicollis*	26
WISN	Wilson's Snipe	*Gallinago delicata*	5
WODU	Wood Duck	*Aix sponsa*	1
YEWA	Yellow Warbler	*Dendroica petechia*	9
YTVI	Yellow-Throated Vireo	*Vireo Flavifrons*	2
		Total Observations	**228**
		Total Species	**67**