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**GRAND RENEWABLE ENERGY PARK**

**NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY**

# **Appendix B**

## **Tables**

**Table 3.1: Records Review – Known Rare Vegetation Communities**

Common Name	Provincial Status (SRANK)	Global Status (GRANK)	Source	Community Description/Limiting Factors	Potential to exist within the study area
Sea Rocket Sand Beach Type	S2S3	G2G4	MNR	Less than 25% of community is covered by trees or shrubs with a patchy to barren vegetation distribution dominated by sea rocket. Mineral sandy soils subjected to extreme moistures and temperatures (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Juniper Dune Shrubland Type	S2	G?	MNR	Juniper species, shrub-dominated community varying from barren to patchy to thicket. Subjected to shoreline and wind processes resulting in rolling sand dunes with little organic material. Subjected to drought and temperature extremes (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Cottonwood Dune Savannah Type	S1	G1G2	MNR	Treed sand dune dominated by cottonwood although cover is moderate (25-60%). Substrate consists of relatively stable sand and understorey dominated by graminoids (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Dry Tallgrass Prairie Type	S1	G3	MNR	Open habitat dominated by prairie graminoids (e.g., bluestem, Indian grass, cylindric anemone, pinweed, bluets). Well-drained sands and loams subjected to spring flooding and summer drought (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Dry Black Oak – Pine Tallgrass Savannah Type	S1	G?	MNR	Moderate tree cover (25-35%) dominated by black oak and pine that are widely spaced with an understorey of prairie graminoids (e.g., bluestem and Indian grass). Well-drained sands and loams subjected to spring flooding and prolonged summer drought (Lee et al., 1998). (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Dry Black Oak Deciduous Forest Type	S3	G4?	MNR	Moderately dry to fresh deciduous forest dominated by black oak in the canopy with bracken fern in the ground layer. Shallow soils over bedrock consisting of sands and coarse loams that are subject to drought (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.

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Common Name	Provincial Status (SRANK)	Global Status (GRANK)	Source	Community Description/Limiting Factors	Potential to exist within the study area
Dry-Fresh Mixed Oak Deciduous Forest Type	S3S4	G?	MNR	Moderately dry to fresh deciduous forest dominated by more than two oak species, typically red oak with white and black oak associates. Bracken fern present in the ground layer. Shallow soils over bedrock consisting of sands and coarse loams that are subject to drought (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Buttonbush Organic Thicket Swamp Type	S3	G4	MNR	Standing water and pooling present over organic soils. Dominated by buttonbush (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Poison Sumac Organic Thicket Swamp Type	S3	G4?	MNR	Standing water and pooling present over organic soils. Dominated by poison sumac (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Graminoid Coastal Meadow Marsh Type	S2	G2?	MNR, NHIC	Restricted to Great Lakes shorelines, coarse or shallow substrates over limestone bedrock. Vegetation is short and sparse and dominated by reeds and rushes (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.
Leatherleaf Shrub Kettle Peatland Type	S3	G3G4	MNR	Leatherleaf shrub dominated bog with low tree cover and continuous <i>Sphagnum</i> moss cover. Substrates are organic and moderately to highly acidic (Lee et al., 1998).	<b>Community considered absent from study area.</b> Not observed within 120m Zone of Investigation.

SOURCE: MNR. 2000. *Significant Wildlife Habitat Technical Guide*. Fish and Wildlife Branch. Queen's Printer for Ontario. October 2000.

**S1** – Critically Imperiled  
**S2** – Imperiled  
**S3** – Vulnerable  
**S4** – Apparently Secure  
**S#S#** Indicates a rank range

**G2** – Very Rare  
**G3** – Rare to Uncommon  
**G4** – Common  
**G#G#** Indicates a rank range  
**G#?** Indicates uncertainty in the assigned rank  
**G?** Rank not assigned due to uncertainty

**Table 3.2: Records Review – Potential Wildlife Species of Conservation Concern**

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
<b>Plants</b>							
Black Cohosh	<i>Actaea racemosa</i>	S2			NHIC	Flowering summer (Jun-Sep). Moist, mixed deciduous forests, wooded slopes, ravines, creek margins, thickets, moist meadowlands and forest margins (Flora of North America, 2008).	<b>Potential habitat within the study area</b> occurring in fresh-moist forest community.
Green Dragon	<i>Arisaema dracontium</i>	S3	SC	SC	NHIC, MNR	Flowering late spring. Mesic to wet deciduous woods, thickets, and bottomlands (Flora of North America, 2008).	<b>Potential habitat within the study area</b> occurring in fresh-moist forest community.
Cooper's Milk-vetch	<i>Astragalus neglectus</i>	S3			NHIC	Flowering late spring - early summer (Gleason and Cronquist 1991). Marshy to dry open, sometimes rocky, clearings, shores, thickets, and river banks; often in calcareous sites (Voss, 1985).	<b>Potential habitat within the study area</b> occurring in naturalized meadow marsh communities (i.e.MAM2-10 and 2-11).
Blue Sedge	<i>Carex glaucoidea</i>	S1			NHIC	Fruiting spring–early summer. Mesic to wet-mesic deciduous forests or seasonally moist prairies, usually in clays or loams (Flora of North America, 2008).	<b>Potential habitat within the study area</b> occurring in fresh-moist forest community.
Hairy Green Sedge	<i>Carex hirsutella</i>	S3			NHIC	Fruiting late spring–early summer. Meadows, dry to mesic woods, neutral to basic soils (Flora of North America, 2008). More frequent in open, non-forested habitats.	<b>Potential habitat within the study area</b> occurring in open, non-forested habitat.
Weak Stellate Sedge	<i>Carex seorsa</i>	S2			NHIC	Fruiting late spring–early summer. Acidic, sandy,	<b>Species likely absent from study area.</b> Suitable soils not

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						peaty hardwood or thickets swamps. Very rarely hybridizes with <i>C. atlantica</i> (Flora of North America, 2008).	present.
Willdenow's Sedge	<i>Carex willdenowii</i>	S1			NHIC	Fruiting spring–summer (late Apr–late Jul). Acidic, dry mesic, open, oak-dominated woodlands, often on ridges and slopes (Flora of North America, 2008).	<b>Potential habitat within the study area</b> occurring in oak dominated communities (FOD1, FOD2 and FOD9).
Pignut Hickory	<i>Carya glabra</i>	S3			NHIC	Flowering spring. Well-drained sandy soils, rolling hills and slopes, dry rocky soils, or thin soils on edge of granite outcrops (Flora of North America, 2008).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Shellbark Hickory	<i>Carya laciniosa</i>	S3			NHIC	Flowering spring. Rich bottomlands, along creeks, and in open cedar glades; 20-300 m (Flora of North America, 2008).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Buttonbush Dodder	<i>Cuscuta cephalanthi</i>	S2			NHIC	Flowering summer. Parasitic vine, occurring on shrubs and tall herbs (Britton and Brown, 1970), such as <i>Cephalanthus</i> , <i>ambucus</i> , <i>Amphicarpaea</i> , <i>Spiraea</i> , <i>Salix</i> , <i>Equisetum</i> , <i>Bohmeria</i> , <i>Populus</i> , <i>Lycopus</i> , <i>Lythrum</i> , <i>Stachys</i> , and a number of <i>Compositae</i> (Michigan Flora).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Prostrate Tick-trefoil	<i>Desmodium rotundifolium</i>	S2			NHIC	Flowering July - Sept. Dry woods (Gleason and	<b>Species considered absent from study area.</b> Not observed

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						Cronquist 1991), dry thickets and openings (Voss, 1985).	within 120 Zone of Investigation.
Coast Barnyard Grass	<i>Echinochloa walteri</i>	S3			NHIC	Fruiting Aug – Oct (Britton and Brown, 1970). Wet habitat, often in shallow water.. Found in both disturbed and undisturbed sites (Voss, 1972).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Schreber's Wood Aster	<i>Eurybia schreberi</i>	S2S3			NHIC	Flowering late summer–early fall. Damp to mesic deciduous (maple, elm, oak), mixed woods, thickets, shaded road banks (Flora of North America, 2008).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Hairy Bedstraw	<i>Galium pilosum</i>	S3			NHIC	Flowering June – Aug (Britton and Brown, 1970). Dry, sandy woodland (often oak or jack pine), thriving in clearings; fields, grasslands (Voss, 1996).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Swamp Rose Mallow	<i>Hibiscus moscheutos</i>	S3	SC	SC	MNR	Lakeshores (Britton and Brown, 1970), coastal marshes of Lake Erie (ROM, 2005).	<b>Species considered absent from study area.</b> Suitable habitat not present within 120m Zone of Investigation.
Hairy Pinweed	<i>Lechea mucronata</i>	S3			NHIC	Flowering summer (Britton and Brown, 1970). Fields and open woods in dry or sandy soil (Gleason and Cronquist 1991). A species with prairie affinities.	<b>Species considered absent from study area.</b> Suitable prairie habitat not present within 120m Zone of Investigation.
Woodland Flax	<i>Linum virginianum</i>	S2			NHIC	Flowering late spring - early summer (Gleason and Cronquist 1991). Dry woods, hillsides, and sandy banks; also moist shaded ground, shores, and river	<b>Potential habitat within the study area</b> occurring in dry woodlands (i.e. FOD1, FOD2, FOD4 and FOD5).

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						banks (Voss, 1985).	
Many-fruit Primrose-willow	<i>Ludwigia polycarpa</i>	S2S3			NHIC	Flowering July - Sept. Swamps, marshes, and wet prairies (Gleason and Cronquist 1991).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Taper-leaved Bugleweed	<i>Lycopus rubellus</i>	S3			NHIC	Flowering July – Oct (Britton and Brown, 1970). Swampy woods, and floodplains, less often in open moist ground (Voss, 1996). More common on or near the coastal plain (Gleason and Cronquist 1991).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Virginia Lungwort	<i>Mertensia virginica</i>	S3			NHIC	Flowering April – May (Gleason and Cronquist 1991). Rich woods and floodplain forests (Voss, 1996).	<b>Potential habitat within the study area</b> occurring in mature woodland communities.
Sharp-winged Monkeyflower	<i>Mimulus alatus</i>	S2			NHIC	Flowering summer. Wet woods and shady streambanks. Known to hybridize with <i>M. ringens</i> L. (Gleason and Cronquist 1991)	<b>Potential habitat within the study area</b> occurring in fresh to moist woodland communities.
Scarlet Beebalm	<i>Monarda didyma</i>	S3			NHIC	Flowering July – Sept (Gleason and Cronquist 1991). Rich woods on banks and floodplains (Voss, 1996), or moist thickets. Known to hybridize with <i>M. clinopodia</i> L. (Gleason and Cronquist 1991).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Pillose Evening Primrose	<i>Oenothera pilosella</i>	S2			NHIC	Flowering May - July. Moist soil, wet meadows, fields, and open woods (Gleason and Cronquist 1991).	<b>Potential habitat within the study area</b> occurring in naturalized meadow marsh communities (i.e.MAM2-10 and 2-

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
							11).
Soft-hairy False Gromwell	<i>Onosmodium molle</i> ssp. <i>hispidissimum</i>	S2			NHIC	Flowering June - July. Open, moderately dry places (Gleason and Cronquist 1991). A species with prairie affinities.	<b>Species considered absent from study area.</b> Suitable prairie habitat not present within 120m Zone of Investigation.
Cluster-stemmed Nailwort	<i>Paronychia fastigiata</i>	S1			NHIC	Flowering spring-fall. Woodlands, fields, clearings, rocky areas, roadsides, waste places (Flora of North America, 2008).	<b>Potential habitat within the study area</b> occurring in woodland and open habitats.
Halberd-leaved Tearthumb	<i>Persicaria arifolia</i>	S3			NHIC	Flowering Jul-Oct. Shaded swamps, ponds, tidal marshes along rivers, wet ravines in forests (Flora of North America, 2008).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	S3	SC	SC	MNR	Woodland soils that are moist and rich and alkaline to slightly acidic (Cobb et al., 2005).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Moss Phlox	<i>Phlox subulata</i>	S1?			NHIC	Flowering April - May. Sandy or gravelly soil and rock ledges (Gleason and Cronquist 1991).	<b>Species considered absent from study area.</b> Suitable prairie habitat not present within 120m Zone of Investigation.
Climbing Prairie Rose	<i>Rosa setigera</i>	S3	SC	SC	MNR	Thickets, fencerows (Gleason and Cronquist 1991), and prairies (Britton and Brown, 1970).	<b>Species considered absent from study area.</b> Not observed within 120 Zone of Investigation.
Branching Burreed	<i>Sparganium androcladum</i>	SH			NHIC	Flowering late spring--summer (Apr--Jul). Shores and shallow, quiet, circumneutral waters (Flora of North America, 2008).	<b>Species considered absent from study area.</b> Historical record, has not been observed in southern Ontario in twenty years.
Carolina Vetch	<i>Vicia caroliniana</i>	S2			NHIC	Flowering May – June	<b>Potential habitat within the</b>



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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						(Gleason and Cronquist 1991). Oak and oak-hickory woods, borders of woods, dry open ground and clearings; less often in moist places, banks of streams and lakes (Voss, 1985).	<b>study area</b> occurring in oak dominated communities (FOD1, FOD2 and FOD9).
Palmate-leaved Violet	<i>Viola palmata</i>	S2S3			NHIC	Flowering April – May (Gleason and Cronquist 1991) Dry woods (e.g. oak, oak-hickory, beech-maple), prairies, and thickets between woods and prairies (Voss, 1985).	<b>Potential habitat within the study area</b> occurring in oak dominated communities (FOD1, FOD2 and FOD9).
<b>Odonata and Butterflies</b>							
Azure Bluet	<i>Enallagma aspersum</i>	S3			NHIC	Adapted to man-made ponds and is typically found in shallow, often temporary and fishless, pools and ponds that entirely freeze in the winter (Catling and Brownell, 2000).	<b>Potentially within the study area.</b> Habitat supports the presence of this species.
Variegated Meadowhawk	<i>Sympetrum corruptum</i>	S3			NHIC	Generally associated with a variety of aquatic habitats, occurring in lakes, ponds and slow streams (Catling and Brownell, 2000).	<b>Potentially within the study area.</b> Habitat supports the presence of this species.
Monarch	<i>Danus plexippus</i>	S4	SC	SC	MNR	Much of the concern regarding the status of the eastern populations of monarchs is a result of the loss of habitat in their Mexican wintering grounds. In southern Ontario the Monarch is considered common and exists primarily wherever	<b>Present within the study area</b> and zone of investigation. However, significant concentrations of the host plant milkweed were not observed within zone of investigation. Therefore, no candidate SWH was identified for the Monarch.

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						milkweed and wildflowers exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow.	
<b>Amphibians and Reptiles</b>							
Jefferson X Blue-spotted Salamander, Jefferson genome dominates	Ambystoma hybrid pop. 1	S2			NHIC	Terrestrial during the adult stage, living in leaf litter or burrowing in the soil. Moves to vernal pools associated with upland deciduous forest in the spring for breeding. For juvenile survival, ponds should not contain fish.	<b>Potential habitat within the study area.</b> Confirmation pending spring trapping surveys and DNA analysis.
Snapping Turtle	<i>Chelydra serpentina</i>	S3	SC	SC	MNR	Inhabits ponds, sloughs, streams, rivers, and shallow bays that are characterized by slow moving water, aquatic vegetation, and soft bottoms. Females nest in sand or gravel banks at waterway edges in late May or early June (COSEWIC, 2008).	<b>Present within the study area.</b> Records exist of snapping turtles within Evans Creek, Wardell's Creek, Dry Lake, and Taquanyah wetlands. Landowner observations also indicated the presence of snapping turtle(s) within Feature 34.
Northern Map Turtle	<i>Graptemys geographica</i>	S3	SC	SC	NHIC, MNR	Slow moving, large rivers and lakes with high water quality and soft bottoms (Toronto Zoo, No date), often congregating at favoured basking (e.g., rocks and logs at water edges) and overwintering (e.g., bottom of lakes and rivers) sites (MacCulloch, 2002). Typically nest within 100 m of the shoreline	<b>Species considered absent from study area.</b> Presence confirmed and restricted to the Grand River, north of the study area. Sightings along Lake Erie are typically restricted to areas west of the study area such as Long Point and Big Creek Marsh (COSEWIC 2002).

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						(Toronto Zoo, No date).	
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	S3	SC	SC	NHIC, MNR	Usually found close to water (e.g., ponds, streams, marshes, swamps or bogs) and is particularly characteristic of wetlands that are associated with large wooded areas (Lamond, 1994). Areas of shallow water surrounded by dense and low vegetation (COSEWIC 2002A).	<b>Species considered absent from study area.</b> Habitat is not ideal for this species, which has not been reported in Haldimand-Norfolk county since 1990 (COSEWIC, 2002A).
Milksnake	<i>Lampropeltis triangulum</i>	S3	SC	SC	NHIC, MNR	In Ontario, Eastern Milksnake is more common in heavily forested areas (COSEWIC, 2002b). Utilize a variety of habitats, including fields, woodlands, rocky hillsides, and valley bottoms (Conant and Collins, 1998). This species is known to utilize human-made structures for hibernation and hiding, and also hibernates underground or in rock crevices. The milksnake lays eggs in abandoned mammal burrows or rotting logs, or sand.	<b>Present within study area.</b> Confirmed case of road mortality along Wilson Road. Hibernacula or oviposition sites not present within the 120m zone of investigation.
<b>Birds</b>							
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S2N,S4 B	SC	NAR	NHIC, MNR	Almost always nests near water, usually on large lakes, placed in trees located within mature woodlots. Usually requires 250 ha of mature forest for	<b>Present but not breeding within the study area.</b> Observed within the study area overwintering but not identified during breeding bird surveys. Potential nesting location

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						breeding, however, along Lake Erie, where the lake provides a valuable food source, the eagles will nest in smaller woodlots or even single trees (Sandilands, 2005). The Lake Erie shoreline is the predominant area for breeding Bald Eagles in southwestern Ontario (Ontario Breeding Bird Atlas, 2005).	identified along the Grand River, outside the study area.
Black Tern	<i>Chlidonias niger</i>	S3B	SC	NAR	NHIC	Nests semi-colonially in freshwater marshes with emergent vegetation. This species prefers marshes or marsh complexes of more than 20 ha in size for breeding (Dunn and Agro, 1995).	<b>Species considered absent from study area.</b> Not detected during breeding bird surveys.
Short-eared Owl	<i>Asio flammeus</i>	S2N,S4 B	SC	SC	NHIC	Open habitats such as agricultural lands, wetlands, and grasslands. This area sensitive species nests on the ground usually in tall vegetation and typically requires 75 hectares of suitable habitat in order for nesting to occur. Breeding area on any given year is strongly correlated to small rodent abundances (Clark, 1975).	<b>Present but not breeding within the study area.</b> Observed within the study area overwintering but not identified during breeding bird surveys.
Cerulean Warbler	<i>Dendroica cerulea</i>	S3	SC	SC	NHIC, MNR	Breeds mainly in mature deciduous or swamp forest. Generally prefers tracts over 100 ha in size but it has been found to breed in	<b>Species considered absent from study area.</b> Not detected during breeding bird surveys.

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						woodlots as small as 10 ha (Hamel, 2000). In Ontario, associated with large oak or bitternut hickory trees (Cadman et al., 2007).	
Hooded Warbler	<i>Wilsonia citrina</i>	S3B	SC	THR	NHIC, MNR	Found in mature, upland deciduous or mixed forest, with an area of more than 15 hectares, where clearings have been created naturally or by logging (Evans Ogden and Stutchbury, 1994). It prefers clearings with low, dense, shrubby vegetation less than two meters in height.	<b>Species considered absent from study area.</b> Not detected during breeding bird surveys.
Yellow-breasted Chat	<i>Icteria virens</i>	S2B	SC	SC	NHIC, MNR	Prefers early second-growth forest and shrubs in abandoned agricultural fields, fencerows, forest edges and openings, and near streams (Eckerle and Thompson, 2001). In Ontario, usually found in shrubby tangles and deciduous thickets (Eagles, 1987).	<b>Species considered absent from study area.</b> Not detected during breeding bird surveys.
<b>Mammals</b>							
Woodland Vole	<i>Microtus pinetorum</i>	S3?	SC	SC	NHIC, MNR	Mature deciduous forests along Lake Erie, loose sandy soil and deep hummus (Dobbyn, 1994). Woodland or orchard grassy patches and areas of dense brush. Primarily subterranean (Reid, 2006).	<b>Potentially within the study area.</b> Study area within primary Ontario range, however soils are compacted and predominantly clay.
Small-footed Bat	<i>Myotis leibii</i>	S2S3			NHIC	Inhabits deciduous and coniferous forests, roosts in	<b>Potentially within the study area but not overwintering.</b>

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Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Species Requirements/Limiting Factors	Potential to exist within the study area
						crevices or under bark, and hibernates in caves and mines (Reid, 2006).	Hibernacula and maternity roosts not identified during wildlife habitat surveys.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	S3			NHIC	Resident bat of upland forests, typically foraging for aerial insects in the forest understory. Maternity roosts are located under bark or in buildings while hibernating colonies typically reside in cave crevices (Reid, 2006).	<b>Potentially within the study area but not overwintering.</b> Hibernacula and maternity roosts not identified during wildlife habitat surveys.

**S2** – Imperiled  
**S3** – Vulnerable  
**S4** – Apparently Secure  
**S#B** – Breeding Status  
**S#N** – Non-breeding Status



**Table 4.1: Natural Feature Site Investigations, GREP**

Survey Date / Time	Purpose of Site Investigation	Field Personnel	Duration (Person-Hours)	Weather Conditions*			
				Air (°C)*	Cloud (%)	Precip.	Wind**
June 17, 2010 / 5:20-10:30 AM	Breeding bird surveys and point counts (W1-17; G1-7)	Jim Heslop, Melissa Straus, Valerie Wyatt	14	14-16	1-30	0	1-3
June 18, 2010 / 5:30-11:00 AM	Breeding bird surveys and point counts (W18-19, 22-28, 35-36; G8-13)	Jim Heslop, Valerie Wyatt	10	15-18	0-10	0	0-1
June 22, 2010 / 5:45-10:45 AM	Breeding bird surveys and point counts (W21, 29-33)	Jim Heslop	5	19-21	50-100	Light rain	0-2
June 28, 2010 / 6:00-9:50 AM	Breeding bird surveys and point counts (W8-11; G3-8)	Brandon Holden	4	14-19	60-80	0	2-3
June 29, 2010 / 5:20-10:30 AM	Breeding bird surveys and point counts (W1-7, 12-21; G1-2)	Jim Heslop, Brandon Holden	9	15-19	0-80	0	1-5
June 30, 2010 / 5:50-9:45 AM	Breeding bird surveys and point counts (W29-34)	Brandon Holden	4	16-20	20-70	0	2-3
July 1, 2010 / 5:45-11:00 AM	Breeding bird surveys and point counts (W22-28; G8-10)	Jim Heslop	5	10-20	0	0	2
July 2, 2010 / 5:50-9:45 AM	Breeding bird surveys and point counts (W35-37; G11-13)	Valerie Wyatt	4	10	0	0	0
September 21-24, 29, 30, 2010	Wind Farm: ELC, Wildlife Habitat Assessment, Wetlands	Gwendolyn Weeks	45	See Appendix E	See Appendix E	See Appendix E	See Appendix E
October 13-14, 2010	Solar Lands: ELC, Wildlife Habitat Assessment, Wetlands	Gwendolyn Weeks	15	See Appendix E	See Appendix E	See Appendix E	See Appendix E
November 4, 2010	Transmission Line: ELC, Wildlife Habitat Assessment, Wetlands	Gwendolyn Weeks	6	See Appendix E	See Appendix E	See Appendix E	See Appendix E
September 17, 2010	Queensnake Habitat Assessment of Transmission Line	Andrew Taylor	2	18	40%	0	1
September 28, 30, 2010	Wind Farm: ELC, Wildlife Habitat Assessment, Wetlands	Andrew Taylor	15	See Appendix E	See Appendix E	See Appendix E	See Appendix E
September 17, 24, 2010	Solar Lands: ELC, Wildlife Habitat Assessment, Wetlands	Andrew Taylor	13	See Appendix E	See Appendix E	See Appendix E	See Appendix E
September 29-30, October 5, 11-14, 20, 25, 28, December 2, 17, 21 2010 April 6-7, 2011	Wind Farm: ELC, Wildlife Habitat Assessment	Melissa Straus	100	See Appendix E	See Appendix E	See Appendix E	See Appendix E
October 19,	Solar Lands: ELC, Wildlife	Melissa Straus	20	See Appendix	See Appendix	See Appendix	See Appendix



**Table 4.1: Natural Feature Site Investigations, GREP**

Survey Date / Time	Purpose of Site Investigation	Field Personnel	Duration (Person-Hours)	Weather Conditions*			
				Air (°C)*	Cloud (%)	Precip.	Wind**
December 2-3	Habitat Assessment			E	E	E	E
December 17, 21, 2010	Solar Lands: Short-eared Owl Survey	Melissa Straus	1.5	See Appendix E	See Appendix E	See Appendix E	See Appendix E
January 14, 28, February 9, March 7, 2011	Wind Farm and Solar Lands: Winter Raptor Surveys	Melissa Straus, Brandon Holden, Shannon Catton, Bob Stamp, James Leslie	25	See Appendix E	See Appendix E	See Appendix E	See Appendix E
January 14, 28, February 9, March 7, 2011	Wind Farm and Solar Lands : Short-eared Owl Surveys	Melissa Straus, Brandon Holden, Shannon Catton, Bob Stamp, James Leslie	4.5	See Appendix E	See Appendix E	See Appendix E	See Appendix E
March 15, 2011	Site meeting with MNR staff to review Feature 66 and Feature 68	James Leslie Chris Powell Ed Mozuraitis	4	3	-	-	-
March 24-25, 2011	Wind Farm: Soil Surveys	Ed Mozuraitis	12	-1	25	0-snow	1-3
April 7-8, 14, 2011	Wind Farm: ELC, Wildlife Habitat Assessment	Don Graham	11	See Appendix E	See Appendix E	See Appendix E	See Appendix E
April 23, 2011	Wind Farm: ELC, Wildlife Habitat Assessment in James N. Allen Provincial Park	James Leslie	1	12	60	0	3
May 3, 2011	Wind Farm: Migratory Bird Surveys in Features 42 and 66	Bob Stamp Melissa Straus	?	See Appendix E	See Appendix E	See Appendix E	See Appendix E

\* Weather conditions during each of the field investigations are recorded on field sheets presented in **Appendix E**.

0 – calm (wind <2km/hr)

1 – light (2-6 km/hr)

2 – light (7-12 km/ hr)

3 – moderate (13-19 km/ hr)

4 – moderate (20-30 km/ hr)

5 – fresh (31-40 km/ hr)

6 – strong (41-51 km/ hr)

\* Wind conditions expressed using Beaufort Scale:

**Table 4.2: Diurnal Winter Raptor Survey Results (Stantec, 2011)**

Species	Date				Total
	14-Jan-11	28-Jan-11	9-Feb-11	7-Mar-11	
Northern Harrier	5	5	1	3	14
Red-tailed Hawk	83	43	25	50	201
American Kestrel	8	2	1	4	15
Rough-legged Hawk	15	16	5	16	52
Turkey Vulture	1	0	5	0	6
Sharp Shinned Hawk	1	1	1	1	4
Cooper's Hawk	0	0	0	1	1
Bald Eagle	2	0	1	0	3
Short-eared Owl	10	0	0	0	10
<b>Total</b>	<b>125</b>	<b>67</b>	<b>39</b>	<b>75</b>	<b>306</b>
<b>Km Driven</b>	153	139.7	181	185	658.7
<b>Raptors per km</b>	<b>0.82</b>	<b>0.48</b>	<b>0.22</b>	<b>0.41</b>	<b>0.46</b>



**Table 4.3: Summary of Corrections to Records Review Findings**

<b>Features within 120m of the Project Location</b>	<b>Records Review Results</b>	<b>Correction made as a result of site investigation</b>	<b>Report Section Providing Criteria Used in Determination of Correction</b>
ANSIs	No ANSIs occur within 120 m of Project Location	No additional ANSIs identified.	3.2.3.1 / 3.2.3.2 / 4.3.1
Provincially Significant Wetlands	Dunnville Marshes Provincially Significant Wetland	Wetland community confirmed in Natural Feature 87 (Figure 10-17)	3.2.4.1 / 4.3.2
	Fradenburg Tract Provincially Significant Wetland	Wetland community confirmed in Natural Feature 32, with additional small pockets were identified (Figure 10-7)	3.2.4.1 / 4.3.2
	Grand River Marshes (Cayuga-Dunnville Dam) Provincially Significant Wetland	Wetland community confirmed in Natural Feature 65 (Figure 10-7)	3.2.4.1 / 4.3.2
Locally Significant Wetlands	Evans Creek (LET3) Locally Significant Wetland	Wetland community confirmed in Natural Feature 66 (Figure 10-10)	3.2.4.2
Unevaluated Wetlands	Several unevaluated wetlands identified by GRCA	149 wetlands within 63 features were identified through ELC and air photo interpretation, as identified on Figures 6-1 to 8-6 and Figures 10-1 to 12-6 Four additional wetlands were identified in Features 8, 32, 51, 74	3.2.4.3 / 4.1.3
Coastal Wetlands	Dunnville Marshes Provincially Significant Wetland	Wetland community confirmed in Natural Feature 87 (Figure 10-7)	3.2.4.1 / 4.3.2
	Evans Creek Locally Significant Wetland	Wetland community confirmed in Natural Feature 66 (Figure 10-10)	3.2.4.4
	Several unevaluated wetlands identified by GRCA	149 wetlands identified through ELC and air photo interpretation, as identified on Figures 6-1 to 8-6 and Figures 10-1 to 12-6	3.2.4.3 / 4.1.3 Wind: 4.3.2 (Figure 6-1 to 6-17) Solar: 4.4.2 (Figure 7-1 to 7-2) Transmission Line: 4.5.2 (Figure 8-1 to 8-6)
Valleylands	Several valleylands and slopes associated with the various tributaries of the Grand River and Lake Erie	GRCA: Only the Grand River was identified as a valleyland, while other GRCA mapped slopes generally represented watercourse banks. LPRCA: Only Evans Creek mouth represents a valleyland (regulation limit used as proxy)	3.2.5 Wind: 4.3.3 Solar: 4.3.4 Transmission Line: 4.5.3
Wildlife Habitat: Seasonal Concentration Areas	MNR identified Winter Deer Yards as significant in Niagara District	No corrections.	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Nesting Colonial Waterbirds identified by MNR (wetland evaluations)	No suitable habitat features observed during vegetation and wildlife surveys to support	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1

**Table 4.3: Summary of Corrections to Records Review Findings**

Features within 120m of the Project Location	Records Review Results	Correction made as a result of site investigation	Report Section Providing Criteria Used in Determination of Correction
		this function	Transmission Line: 4.5.4.1
	Staging and stopover areas for Merganser, Greater Scaup, swans, gulls and other waterfowl (ducks, geese) identified by MNR (wetland evaluations)	No concentration areas identified by Hatch. Suitable habitat identified within Features 65, 66 and 87.	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Records of Winter raptors (Short-eared Owl, Bald Eagle, Red-tailed Hawk, Rough-legged Hawk and Northern Harrier) feeding and roosting areas	Winter raptor surveys identified concentration area for raptors, with Short-eared Owls observed in suitable habitat near solar lands (Figure 9.0 and 11.1)	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Wild turkey winter range	No suitable habitat features observed during vegetation and wildlife surveys to support this function	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Potential for reptile hibernacula	No suitable habitat features observed during vegetation and wildlife surveys to support this function	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Potential bat hibernacula identified by MNR	No suitable habitat features observed during vegetation and wildlife surveys to support this function. Suitable feature occurs 700 m from Project Location.	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Bullfrog concentration areas identified by MNR (wetland evaluations)	No suitable habitat features observed during vegetation and wildlife surveys to support this function	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
	Migratory butterfly stopover areas	Species and some milkweed present but no suitable habitat features observed during vegetation and wildlife surveys to support this function. Species observed in low numbers	3.2.6.1 Wind: 4.3.4.1 Solar: 4.4.4.1 Transmission Line: 4.5.4.1
Animal Movement Corridors	Grand River valley identified by GRCA as wildlife corridor	Additional animal movement corridors identified through air photo interpretation (Figures 10-1 to 12-6)	3.2.6.2 Wind: 4.3.4.2 Solar: 4.4.4.2 Transmission Line: 4.5.4.2
Wildlife Habitat: Rare Habitat	Records of 1 rare community near Lake Erie (NHIC) and 12 rare community types observed within Haldimand County (MNR, 2000)	Provincially rare SWT2-4 and SWT2-14 thicket swamp communities observed	3.2.6.3 / 4.3.2 Wind: 4.3.4.3 Solar: 4.4.4.3 Transmission Line: 4.5.4.3

**Table 4.3: Summary of Corrections to Records Review Findings**

<b>Features within 120m of the Project Location</b>	<b>Records Review Results</b>	<b>Correction made as a result of site investigation</b>	<b>Report Section Providing Criteria Used in Determination of Correction</b>
Wildlife Habitat: Specialized Habitats	Potential for habitat supporting area-sensitive species (marsh, forest/woodland >10 ha, grasslands)	Boundaries refined through ELC surveys and air photo interpretation Breeding bird surveys undertaken identified area sensitive species (Figures 10-1 to 12-6)	3.2.6.3 / 4.2.4 Wind:4.3.4.3 Solar: 4.4.4.3 Transmission Line: 4.5.4.3
	Potential specialized raptor nesting habitat (Records of Bald Eagle and Osprey nesting)	No suitable habitat features (stick nests) observed during vegetation and wildlife surveys to support this function	3.2.6.3
	Potential amphibian woodland breeding ponds	Vernal pools observed within 19 Natural Features during ELC surveys Individual pools identified on Figures 10-1 to 12-6; Occurrences of multiple vernal pools discussed in text	3.2.6.3 Wind: 4.2.4.3 Solar: 4.4.4.3 Transmission Line: 4.5.4.3
	Potential turtle nesting areas identified by MNR (wetland evaluations)	No suitable habitat or soils observed during the site investigations.	3.2.6.3 Wind: 4.3.4.4 Solar: 4.4.4.4 Transmission Line: 4.5.4.4
Wildlife Habitat: Species of Conservation Concern	Records of Snapping Turtle	Snapping turtle identified in Feature 34 (landowner) and suitable habitat observed within Evans Creek Wetland (Feature 66) (Figures 8-7 and 8-10)	3.2.6.4 / 4.2.5 Wind: 4.3.4.4 Solar: 4.4.4.4 Transmission Line: 4.5.4.4
	Records of PIF priority grassland, shrubland and forest breeding bird species	19 PIF species observed (Appendix G)	3.2.6.4 / 4.2.4 Wind: 4.3.4.4 Solar: 4.4.4.4 Transmission Line: 4.5.4.4
Woodlands	MNR woodland layer identified many woodlands	90 woodlands identified Boundaries revised through air photo interpretation and ELC surveys as identified on Figures 6-1 to 8-6 and Figures 10-1 to 12-6	3.2.7 / 4.1.2 Wind: 4.3.5 Solar: 4.4.5 Transmission Line: 4.5.5
Provincial Parks or Conservation Reserves	James N. Allen Provincial Park boundaries identified by Ontario Parks (LIO)	No additional Provincial Parks identified.	3.2.8 Wind: 6.1.46



**Table 4.4: Candidate Valleylands**

Tributary	Watershed	Valleyland Present *	Candidate Significant Valleyland
		(Y/N)	(Y/N)
Mill Creek	Grand River (GRCA)	No	No
Holmes Creek / Sulphur Creek	Grand River (GRCA)	No	No
Grand 1	Grand River (GRCA)	No	No
Grand 2	Grand River (GRCA)	No	No
Grand 3	Grand River (GRCA)	No	No
Grand 4	Grand River (GRCA)	No	No
Grand 5	Grand River (GRCA)	No	No
Mezi Drain	Grand River (GRCA)	No	No
Lake 1	Lake Erie (GRCA)	No	No
Lake 2	Lake Erie (GRCA)	No	No
Hemlock Creek	Lake Erie (LPRCA)	No	No
Stoney Creek	Lake Erie (LPRCA)	No	No
Wardell's Creek	Lake Erie (LPRCA)	No	No
Evan's Creek	Lake Erie (LPRCA)	Yes	Yes
Grand River	Grand River (GRCA)	Yes	Yes
Total Candidate Significant Valleylands:			2

\* Presence of valleyland feature within 120m of Project Location





**Table 4.5: Candidate Migratory Landbird Stover Areas**

Natural Feature #	Feature Size (ha)	Feature >10ha	Within 5 km of Lake Erie	Candidate Migratory Bird Stopover Habitat
		Y/N	Y/N	Y/N
1	9.9	N	N	N
2	6.2	N	N	N
3	8.7	N	N	N
4	10.4	Y	N	N
5	63.5	Y	N	N
6	13.9	Y	N	N
7	114.7	Y	N	N
8	51.5	Y	N	N
9	72.1	Y	N	N
10	19.6	Y	N	N
11	7.4	N	N	N
12	2.3	N	N	N
13	24.5	Y	N	N
14	14.4	Y	N	N
15	12.5	Y	N	N
16	12.1	Y	N	N
17	131.1	Y	N	N
18	0.2	N	N	N
19	96.7	Y	N	N
20	6.2	N	N	N
21	1.2	N	N	N
22	31.2	Y	N	N
23	3.3	N	N	N
24	2.2	N	N	N
25	2.0	N	N	N
26	4.3	N	N	N
27	13.2	Y	N	N
28	9.9	N	N	N
29	54.4	Y	N	N
30	12.9	Y	N	N
31	57.1	Y	N	N
32	108.4	Y	N	N
33	8.3	N	N	N
34	78.2	Y	N	N
35	5.8	N	N	N
36	44.0	Y	Y	Y
37	3.9	N	Y	N
38	7.2	N	Y	N
39a	6.2	N	Y	N
39b	5.6	N	Y	N

**Table 4.5: Candidate Migratory Landbird Stover Areas**

Natural Feature #	Feature Size (ha)	Feature >10ha	Within 5 km of Lake Erie	Candidate Migratory Bird Stopover Habitat
		Y/N	Y/N	Y/N
40	13.3	Y	Y	Y
42a	139.1	Y	Y	Y
42b	65.3	Y	Y	Y
42c	3.0	N	Y	N
42d	2.9	N	Y	N
43	3.5	N	N	N
44	16.3	Y	Y	Y
45a	2.6	N	N	N
45b	11.6	Y	Y	Y
46	116.8	Y	N	N
47	135.9	Y	Y	Y
48	54.2	Y	N	N
49	67.9	Y	Y	Y
51	65.1	Y	Y	Y
53	10.0	Y	Y	Y
54	37.5	Y	Y	Y
55	39.4	Y	Y	Y
56	6.6	N	Y	N
57	9.9	N	Y	N
58	162.1	Y	Y	Y
60	0.6	N	Y	N
62a	0.3	N	Y	N
62b	0.1	N	Y	N
63	2.5	N	Y	N
64	0.7	N	Y	N
66a	184.5	Y	Y	Y
67	7.1	N	Y	N
68	139.3	Y	Y	Y
69	79.0	Y	Y	Y
70	1.5	N	Y	N
71	3.4	N	Y	N
72	0.9	N	Y	N
73	50.4	Y	Y	Y
74	18.4	Y	Y	Y
75	29.0	Y	Y	Y
76	47.1	Y	Y	Y
77	40.9	Y	Y	Y
79	27.1	Y	N	N
80	1.7	N	N	N
81	63.2	Y	Y	Y

**Table 4.5: Candidate Migratory Landbird Stover Areas**

Natural Feature #	Feature Size (ha)	Feature >10ha	Within 5 km of Lake Erie	Candidate Migratory Bird Stopover Habitat
		Y/N	Y/N	Y/N
82	6.7	N	Y	N
83	7.6	N	Y	N
84	10.2	Y	Y	Y
85	6.3	N	Y	N
86	14.9	Y	Y	Y
87a	9.5	N	Y	N
87b	17.4	Y	Y	Y
88	0.2	N	Y	N
89	2.6	N	Y	N



**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
1	T5, T6	This feature was dominated by deciduous swamp, consisting of green ash with some scattered oaks. A narrow fringe of sugar maple and American beech trees was present along the road.			-Mature -Close proximity to other woodlot
2	T5, T6	This feature appeared to be dominated by deciduous swamp, consisting of green ash with scattered white elms.			-Mid-age
3	T5	The portion of this feature adjacent to Haldimand Road 20 was dominated by a green ash deciduous swamp, with scattered white elms observed.			-Mid-age -Isolated
4	T4	This feature was dominated by a deciduous forest, consisting of sugar maple with red oak and American beech. A small pocket of deciduous swamp, dominated by green ash, was present at the south edge.	PIF: Northern Flicker, Wood Thrush, Rose-breasted Grosbeak, Baltimore Oriole AS: White-breasted Nuthatch		-Isolated -Mid-age to Mature
5	W2	The portion of this feature adjacent to the project was dominated by both swamp maple and green ash deciduous swamps. Adjacent to these swamps was a section of deciduous forest dominated by sugar maple with green ash and shagbark hickory.			-Young to mid-age -Linked to other woodlots -Two watercourse features
6	T3, T4, W2	This feature consisted of a coniferous plantation, dominated by white spruce.		-Winter deer yard	-Young -Somewhat isolated
7	W1, W2	The northwestern portion of this feature adjacent to the project was dominated by red and swamp maple swamps with small pockets of silky dogwood thicket swamps. Adjacent to Irish Line, there was a deciduous forest dominated by sugar maple with oak, hickory, and ash, a green ash swamp, and a dogwood cultural thicket.	PIF: Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Northern Flicker AS: White-breasted Nuthatch		-Mid-age to mature -Linked to other woodlots
8	W1	The eastern portion of this woodlot consisted primarily of a rolling upland forest dominated		-Three vernal pools (#1-3) were present within the assessed	-Young to mature -Waterbody and

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		by sugar maple with wet lowland pockets of buttonbush swamp. To the north, and west, sugar maple was joined by other hardwoods such as white oak, shagbark hickory, and green ash. North of highway 3, an outcropping of limestone bedrock existed which was vegetated by a patchy forest consisting of maple, oak, and dogwoods.		woodlot (FOD5-1 and FOD6-5); 8m, 4m, and 4m in diameter; water depths of 0, <5 cm, and <5cm; with a few ash present at the edge, no vegetation, and no vegetation, respectively. -Buttonbush swamps (SWT2-4) had standing water, 0.5-1m in depth.	non-provincially significant wetland to the northwest -Isolated to the south
9	W1	The southwestern edge of this feature was assessed at a distance and by air photo. The forested portion was deciduous while the more open areas were dominated by swamp thickets.			-Close proximity to Feature 8
10	T2,T3, W3,W4	The treed portions of this feature along Haldimand Road 20 were dominated by sugar maple. Also present were areas of meadow marsh, dominated by reed canary grass. The southwestern portion of this feature was dominated by a shagbark hickory deciduous forest.	AS: Cooper's Hawk, White-breasted Nuthatch PIF: Baltimore Oriole, Wood Thrush, Eastern Wood-Pewee, Northern Flicker	-One vernal pool (#10) present within FOD9-4; dimensions of 10x25m with no standing water during assessment; dogwood emergent vegetation.	-Mid-age to mature -Close proximity to other woodlot
11	T2, T3, W3, W4	This feature was dominated by a sugar maple with American beech forest.			-Mature -Close proximity to other woodlot
12	T2, T3, W4	This small feature was consisted of a deciduous forest, dominated by sugar maple with American beech and some red oak associates.			-Mature -Close proximity to other woodlots
13	T3, W3	The majority of this feature was characterized by deciduous forest, dominated by: sugar maple with red oak and American beech; or sugar maple with red oak and shagbark hickory. At the west end, a small patch of deciduous swamp, dominated by green ash with some white elm, was present.			-Mature -Close proximity to other woodlots
14	W2, W3	The southeastern corner of this feature consisted of a deciduous forest that was	PIF: Rose-breasted Grosbeak, Eastern		-Mid-age -Close proximity to

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		dominated by shagbark hickory with red oak, basswood, and sugar maple.	Wood-Pewee, Northern Flicker		other woodlots -Watercourse
15	W2, W3	The portions of the feature adjacent to the project were dominated by two types of deciduous forest; sugar maple dominated with basswood and red oak, and a section of red oak co-dominating with shagbark hickory. Along the northern edge of this feature a watercourse meanders through an open meadow marsh.		-Series of small vernal pools (#32-34) scattered throughout FOD 9-6*; no water at time of assessment.	-Mid-age to mature -Watercourse -Close proximity to other woodlots
16	W2, W3	The portions of the feature adjacent to the project were dominated by a shagbark hickory forest dissected by a meadow marsh and a residence. East of the road, the forested portion consisted of a white elm lowland forest surrounding a watercourse.		-Dug pond	-Mid-age -Watercourse dominated feature
17	W2, W3, W5	This forested portion of this feature consisted of a shagbark hickory forest and a green ash swamp. The more open portions of the swamp were dominated by reed-canary grass.			-Mid-age -Watercourse dominated feature
18	T2	This small feature was dominated by a deciduous swamp, consisting of green ash with some white elm associates. The patch was located along a drainage feature.			-Mid-age -Close proximity to larger woodlot
19	W4, T2	The portions of this feature that were adjacent to project components were comprised mainly of deciduous forest and swamp communities. Forested portions were dominated by shagbark hickory; poplars; sugar maple with hickory and American beech associates; or sugar maple with white ash. The swamp areas were treed (silver maple or green ash) or dominated by gray dogwood shrubs. A small area of meadow marsh and one area of open water were also observed.	AS: Ovenbird, White-breasted Nuthatch PIF: Wood Thrush, Eastern Wood-Pewee	-Dug pond -Two vernal pools (#4, 36); first at eastern edge within the FOD5-12*A; 5x10m in size with no standing water; graminoid emergent vegetation; the second is within the FOD5-12*B; 2m in diameter with less than 5 cm standing water.	-Young to mature -Close proximity to other woodlots -Several habitat types



**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
20	W4, T2	This small feature was comprised of a deciduous forest that was bisected by a small, linear, meadow marsh. The forested portion was dominated by shagbark hickory with green ash and bur oak, and a dense American beech understory.			-Mid-age -Separated by Haldimand Road 20 from feature 19 -Watercourse
21	T1, T2, W6	This small feature consisted of a deciduous forest, dominated by sugar maple with red oak, and a small area of mowed vegetation and cultural meadow.			-Mature
22	W5	This feature consisted of forest communities, dominated by sugar maple with American beech; red oak with bitternut and shagbark hickory; sugar maple with red oak; or shagbark hickory. An area of cultural meadow was also present at the south edge.	Monarch (special concern) AS: Cooper's Hawk, Veery, White-breasted Nuthatch PIF: American Kestrel , Rose-breasted Grosbeak, Willow Flycatcher, Eastern Wood-Pewee, Northern Flicker, Black-billed Cuckoo	-One dug pond evident from air photo at west edge -Two vernal pools throughout FOD5-2 (#37, 38); generally small in size (1m diameter) and very shallow; no standing water. Also present at northeastern edge (outside surveyed area).	-Mature -Isolated
23	W2, W3	This small feature consisted of a green ash swamp with more open areas dominated by reed canary grass.			-Mid-age -Close proximity to other woodlots
24	W3,W5	This small woodlot consisted of a forest dominated by shagbark hickory with green ash, a deciduous swamp, and a dogwood swamp thicket.			-Mid-age -Isolated
25	W5	This small woodlot is dominated by red oak and shagbark hickory with green ash as an associate. Cattle grazing has led to little or no understory and a trampled ground layer.			-Mature -In close proximity to other woodlots
26	W5	This small woodlot consisted entirely of a sugar maple – beech forest.			-Mature -Isolated
27	W5	The assessed portion of this medium-sized			-Mature

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		feature consisted of forest communities dominated by red oak with shagbark hickory or sugar maple with beech. A green ash swamp surrounding a watercourse was also present.			-Tributary to the Grand River -Isolated
28	W6	This feature is primarily forested, but contains a small opening along the western edge that is evident from the aerial photo. The forested portion was dominated by shagbark hickory with bur oak, green ash, and regenerating sugar maple.			-Mid-age -Isolated
29	T1, S2, W6	Much of this feature consisted of open woodland, cultural meadow and swamp thicket. Meadow areas along the eastern portion of the feature occurred over shallow soils. The thicket areas along the southern boundary were dominated by red osier dogwood with a sparse canopy of green ash. A small open woodland occurred at the northern tip of the feature. In the western portions, the feature was dominated by a deciduous forest consisting of sugar maple with shagbark hickory and red oak. A small area of reed canary grass meadow marsh was observed at the far west end of the feature.		-One large area of open water, likely resulting from an abandoned quarry.	-Several habitat types -Young to Mature
30	S1, W5, W6	Deciduous woodland comprised of both upland forest and swamp. The upland forest was represented by: shagbark hickory; oak - sugar maple; or sugar maple with shagbark hickory and red oak dominated communities. The swamp areas were dominated by: swamp maple, with black ash, red ash, red maple and American beech; or green ash with red maple. Meadow marsh occurred around the periphery of the community. A dug pond supporting shallow marsh community occurred in the southeast corner of the woodlot.	large-leaved avens (CC=9) PIF: Baltimore Oriole, Rose-breasted Grosbeak, Eastern Wood-Pewee, Northern Flicker, Wood Thrush AS: Ovenbird, Scarlet Tanager	- Dug pond - Five vernal pools (#5-9) along ATV ruts in FOD9-1 and SWD3-3; measuring 1x3m up to 3x25m in size; 5 to 10 cm deep; supported leopard frog tadpoles.	- Isolated woodlot - Mature

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
31	S1, W5, W6, W7, W8	The treed portions of this feature consisted of swamp and forest. Forested portions were dominated by: American beech; sugar maple with beech; sugar maple with red oak; red oak with sugar maple; red oak with shagbark hickory; shagbark hickory; shagbark hickory with green ash; or shagbark hickory with red maple. Swamp communities were dominated by swamp maple with green ash or shagbark with red maple. Areas of meadow marsh were present within the feature, and areas of cultural meadow were present at the edges. A cultural woodland, dominated by ash and staghorn sumac, was present at the western edge of the feature. East of Sutor Road there was a deciduous forest dominated by oak and sugar maple, a young white pine plantation, and a small maple swamp.	sweet cicely (CC=9) large-leaved avens (CC=9) AS: Pileated Woodpecker, Ovenbird, Veery, White-breasted Nuthatch PIF: Northern Flicker, Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Willow Flycatcher, Eastern Wood-Pewee	- One dug pond was observed measuring 10m in diameter without any water at the time of survey, and had dogwood shrubs along the edges -Vernal pools were abundant (#39-45) : 1-2m in diameter; no standing water. - Winter deer yard	-Young to mature -Close proximity to other woodlot (connected by short hedgerow)
32	W7	This large feature consisted of forest communities with thicket swamps throughout. The forested areas observed were dominated by sugar maple with American beech; sugar maple with red oak; red oak with shagbark hickory; sugar maple with red oak and American beech; or sugar maple with white ash. The swamp thickets were dominated by buttonbush, or winterberry with buttonbush associates. A single, small area of cattail marsh was present at the far eastern edge of the feature.	sweet cicely (CC=9) clasping-leaved twisted-stalk (CC=10) Monarch (special concern) AS: Cooper's Hawk, Ovenbird, Scarlet Tanager, Veery PIF: Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Eastern Kingbird, Willow Flycatcher, Eastern Wood-Pewee, Northern Flicker	-Vernal pools were observed occasionally (#46-48), mainly in the western portion of the feature. Sizes were large (10-15m diameter) with no standing water. One notable, deep pool was present in the FOD5-3 community at the western edge of the feature. No standing water was present. -Winter deer yard	-Mature -Close proximity, or connected to, several other woodlots. -Provincially Significant Wetland
33	W7	This feature consisted of forest communities with pockets of thicket swamp. The forested areas were dominated by sugar maple with red oak, while the thicket swamps were dominated by willow with gray and red-osier	Monarch (special concern)	-Some large snags (>35cm DBH) in FOD 5-3, one very large hollow beech with peeling bark, did not meet criteria for potential bat maternity roost as they were	-Mature -Close proximity to several other woodlots.

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		dogwood; or winterberry. A single area of cattail marsh was present at the southern edge.		shorter than surrounding vegetation.	
34	W7	In the vicinity of the project components, this forested feature contained a watercourse along the north edge, and sloped up from there toward the south. The forest was dominated by sugar maple with red oak.	Sweet Cicely (CC = 9) Snapping Turtle (special concern) – <i>landowner observation</i> AS: Sharp-shinned Hawk, American Redstart, Ovenbird, Veery, American Redstart, White-breasted Nuthatch PIF: American Kestrel , Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Eastern Kingbird, Willow Flycatcher, Eastern Wood-Pewee, Northern Flicker	-One area of open water observed at south edge of feature.	-Mature -Close proximity to other woodlots -Provincially Significant Wetland
35	W6	This small woodlot was dominated by shagbark hickory with green ash and red oak as associates.			-Mature -Close proximity to other woodlots
36	W6	The small portion of this feature adjacent to the project was dominated by sugar maple, sugar maple with green ash and white oak, or shagbark hickory forest. A swamp maple swamp was present along the southeastern edge of the feature along Bains Road.			-Mature -Close proximity to other woodlots
37	T1, S2, W6	This feature consisted of both meadow marsh, dominated by reed canary grass, and deciduous swamp, dominated by bur oak with balsam poplar and white elm.			-Mid-age
38	S2, T1, W6	This medium-sized woodlot consists of various swamps, dominated by green ash		-Dug pond within SWD3-3 (#10); 8m diameter; approximately 20	-Young to mature -Close proximity to

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		with swamp maple, red maple with bur oak, or swamp maple with bur oak.		cm deep; no vegetation.	other woodlots
39	S2, W6, W8, W9	This feature consists of two woodlots joined by a watercourse with a long riparian section. The upland portions of the woodlots were sugar maple dominated with American beech or white ash, while the areas associated with the watercourse were dominated by green ash swamps. A small section of cultural dogwood thicket was found along the western edge of the northern woodlot. The riparian areas were mostly dominated by reed canary grass meadow marsh with pockets of crack willow and green ash swamps.	Eastern Milksnake (special concern) Clasping-leaved Twisted-stalk (CC = 10) PIF: Northern Flicker, Eastern Wood-Pewee, Wood Thrush, Rose-breasted Grosbeak, Baltimore Oriole AS: White-breasted Nuthatch	-Landowner indicated that there is a spring within cattail marsh near the residence -large hollow beech snag was located along the western edge of the northern FOD5-2, however, this tree had a broken top (10m tall) and was shorter than the surrounding vegetation, thus not meeting the criteria for a bat maternity roost. -Vernal pool (#11) present in SWD2-2B measuring 5x30m; no standing water; reed-canary grass and blue flag emergent vegetation with buttonbush along the edge.	- Young to mature -Two small woodlots joined by a linear riparian feature
40	S1, S2, W8	The upland portions of this feature adjacent to the project were dominated by red oak with sugar maple and shagbark hickory, or with bur oak and sugar maple. The lowland portions were dominated by a maple swamp.			-Mid-age to mature
41	S1	This small feature, located in an agricultural field, was represented by a reed canary grass meadow marsh along a small drainage feature.			-Isolated
42	W8, W9, W10	This large feature is predominantly forested, divided between natural forested areas and plantations. The natural forests were dominated by beech; sugar maple and beech; sugar maple with other hardwoods such as shagbark hickory and red maple; shagbark hickory and red oak; or shagbark hickory with red and swamp maples and green ash. The plantation north of and	AS: Ovenbird, Scarlet Tanager PIF: Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Eastern Wood-Pewee, Northern Flicker	-One vernal pool (#12) was present in the FOD6-5; measuring 3x5m in size with a water depth of less than 5 cm	-Young plantations -Mid-age to mature natural forests -Large feature -Close proximity to other woodlots -Watercourse through southern portion

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		adjacent to Bains Road was very young and consisted primarily of planted white pine and spruce with some ashes. A seasonal road divides this feature to the west which is dominated by a shagbark hickory deciduous forest with small swamp thickets and maple swamp pockets. The northern portion of this feature, along Haldimand Road 20, consisted of a poplar plantation. South of Bains Road (Tile 9), a watercourse runs through this section which consists of the above mentioned forests as well as planted white pine and spruce.			
43	W7, W8, W11	This small woodlot consisted of a sugar maple – beech forest with a swamp surrounding the watercourse.			-Mid-age to mature -In close proximity to other woodlots
44	W7, W11	This medium-sized feature consists of a wet and culturally influenced area to the north, and a small woodlot to the south. The wet area was dominated by a reed canary grass meadow marsh surrounded by a red cedar cultural woodlot with scattered poplars.		-Dug pond adjacent to Haldimand Road 20	-Young adjacent to Haldimand Road 20 -Attached to other woodlots via hedgerows and riparian hedgerows
45	W11, W13	This linear feature was dominated by cultural influences, including the presence of an abandoned quarry. Cultural thickets consisted of sumac or dogwood while woodlands were dominated by green ash or white pine.		-Water pooling where quarry was dug, approximate dimensions of 40m x 20m. -Limestone bedrock outcropping present at abandoned quarry, but crevasses were largely horizontal; despite detailed search, did not find any cracks in the bedrock that went below the frost line. Does not support potential snake hibernaculum.	-Young -Culturally influenced -Close proximities to other woodlots
46	W13	This forested feature was dominated by shagbark hickory and green ash with white oak as an associate. The understorey was dominated by American beech.			-Mid-age -Close proximity to other woodlots

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
47	W13	The upland portion of this feature adjacent to the project was dominated by sugar maple with white ash and American beech. A watercourse runs through the forested portion of this feature as well as through the agricultural field, buffered by a green ash swamp and a small dogwood swamp thicket. Two small pockets of reed canary grass meadow marsh exist in the feature as well as a linear maple swamp.		-Four vernal pools (#13-16) were observed within the FOD6-5; 2m, 8m, 10m, 20m diameter; <5cm, <5cm, 10-15cm, 15-25cm water depth; none, elderberry, meadowsweet and dogwood, and dogwood emergent vegetation, all respectively. - Winter deer yard	-Mature -Watercourse runs through the feature and proposed access road -Close proximity to other woodlots
48	W13	This feature is bisected by Old Hines Road and contains a large tributary of the Grand River. The southwest corner of this feature consists of a mature red oak – shagbark hickory forest.			-Mature -Connected to other woodlots -Influenced by a large tributary of the Grand River
49	W13, W14	This feature contained forest and treed swamp communities. Forests were dominated by sugar maple with either: red oak, white ash, American beech, or shagbark hickory. Swamp communities consisted of green ash with swamp maple; white elm; or swamp maple. A watercourse runs through the northern portion of this feature, surrounded by a white elm lowland forest. Also, small pockets of dogwood thicket swamp and willow swamp exist along Aikens Road.	Sweet Cicely (CC = 9)	-Dug pond on southwestern edge -Two vernal pools (#17-18) were present in the FOD5-2; 10m to 25m diameter; 5 to 10 cm water depth; with logs present at edges.	-Mature -Close proximity to other woodlots
50	W14	This small feature, located within an agricultural field, was dominated by a reed canary grass meadow marsh.			-Within close proximity to large woodlot.
51	W13, W14	This large treed feature is a mix of upland forests dominated by sugar maple with various hardwoods such as shagbark hickory, beech, oak, or white pine and swamps dominated by green ash. Along forest edges and throughout the woodlot, there were open pockets of thicket swamps (buttonbush,	Sweet Cicely (CC = 9) PIF: Rose-breasted Grosbeak, Wood Thrush, Eastern Wood-Pewee, Northern Flicker AS: White-breasted	-Three dug ponds associated with this feature -Pond, 15m in diameter, with a water depth of 10-20 cm and sparse dogwood along the edges was present within the FOM2-2	-Mid-age to mature -Connected to another woodlot -Watercourse -Two additional ponds

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		dogwood, or winterberry), meadow marshes, and shallow marshes. A watercourse traverses through the middle portion of this feature, as well as along the northeastern boundary, where it is surrounded by an elm lowland forest.	Nuthatch		
52	W13	This small feature consists of a small pond surrounded by a reed-canary grass meadow marsh intermixed with cultural meadow ground cover.		-Dug pond	-Pioneer community -Isolated
53	W13	The northern portion of this feature was dominated by a deciduous forest, comprised of sugar maple with shagbark hickory.			-Mature -Isolated
54	W11, W13	This feature was represented by a mixture of community types. Forested portions were dominated by sugar maple with shagbark hickory; or shagbark hickory. Coniferous plantations of white spruce, and white pine with Norway spruce were present. Cultural woodlands dominated by white ash and staghorn sumac were present, as were areas of cultural meadow.	AS: Scarlet Tanager, Veery PIF: Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Eastern Kingbird, Willow Flycatcher, Eastern Wood-Pewee, Northern Flicker	-Vernal pools (#49-55) were observed throughout the deciduous forest portions of the feature: diameters were variable (from 1 to 10m). No standing water was observed.	-Mature -In close proximity to other woodlots
55	W11	This feature was comprised of treed and thicket swamps. Treed swamps were dominated by red maples, while the thicket swamps were dominated by silky dogwood or young red maples.	AS: Ovenbird, White-breasted Nuthatch PIF: Northern Flicker, Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Willow Flycatcher, Eastern Wood-Pewee, Brown Thrasher	-A single dug pool was observed at the northeastern edge of the feature: Diameter was 5x5m, water depth was greater than 50cm.	-Mature -In close proximity to other woodlots
56	W11	This feature consisted of forest in the central portions, and swamp at the north and south edges. The forested community was dominated by red maple with American beech and red oak, while the swamp community consisted of red maples.	Sweet Cicely (CC = 9)	-Two vernal pools (#56, 57) were observed in the forest community, and all were shallow with no standing water. - Several large beech snags in FOD2-1, some with loose bark, were shorter than surrounding	-Mature -In close proximity to other woodlots.



**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
				vegetation (mainly broken off halfway up trunk or lower), and did not meet the criteria for potential bat maternity roost.	
57	W9	This feature surrounds a creek and consists of a cultural woodland and deciduous forest.			-Young to mature -Close proximity to other woodlots
58	W8, W9, W11, W12	At the eastern end of the feature, deciduous forest and swamp communities were present. The forest was dominated by red oak with sugar maple, while the swamp was dominated by green ash with red maple. Along Bains Road, forested portions were dominated by shagbark hickory with green ash; shagbark hickory with red oak; sugar maple with other hardwoods such as basswood or green ash; sugar maple with oak; or poplar. Swamps were dominated by green ash or swamp maple. A cattail shallow marsh and green ash cultural woodland were observed along Haldimand Road 50. Reed canary grass meadow marshes were present east of South Cayuga Road, at the western end of the feature, and along Bains Road.	AS: Ovenbird, Cooper's Hawk, Veery, White-breasted Nuthatch PIF: Rose-breasted Grosbeak, Wood Thrush, Willow Flycatcher, Eastern Wood-Pewee, Northern Flicker, Black-billed Cuckoo, Baltimore Oriole	-A single dug pond was observed at the south edge of the feature.	-Mature, continuous woodlot -In close proximity to other woodlots
59	W9, W12	This feature represented the riparian area of a small drainage feature within an agricultural field, and was dominated by reed canary grass.		-One area of open water, associated with an abandoned quarry, was present.	-In close proximity to woodlot
60	W11, 13	This tiny feature consists of a red pine plantation to the north, sloping into a green ash swamp to the south.			-Mid-age -Isolated -Very small
62	W14	This feature consists of two very small cultural components: woodland dominated by white ash, and a cultural thicket dominated by European buckthorn and sweet cherry.			-Pioneer -Isolated
63	W14	This small feature consisted of a open canopy cultural woodland dominated by Norway maple with a variety of associates			-Young -Isolated

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		such as apple, basswood, hickory, elm, oak, and black cherry.			
64	W13, W14	This small woodlot consisted entirely of a bur oak swamp, with green ash as an associate. The understory consisted of hop hornbeam and dogwoods.			-Mid-age -Isolated
65	W7	This southern portion of this feature, adjacent to the project along River Road, consisted of a deciduous swamp border with a swamp thicket interior. This feature is part of a designated Provincially Significant Wetland (PSW).		-Several areas of open water visible on aerial photo	-Close proximity to other woodlots -Provincially Significant Wetland
66	W10	This large feature is predominantly forested with linear wetlands occurring in association with watercourses in the center and along the western edge. The natural forest was dominated by shagbark hickory with red oak, green ash, sugar and red maple, and American beech. The conifer plantations were dominated by white pine, with Norway spruce in some areas. Swamps were dominated by green ash while swamp thickets were dominated by dogwood or meadowsweet. An area of meadow marsh also existed along lakeshore road.	Chimney Swift (threatened) PIF: Rose-breasted Grosbeak, Baltimore Oriole, Eastern Wood-Pewee, Northern Flicker AS: Hairy Woodpecker	- Migratory bird habitat in 66a	-Mid-age natural forest -Young to mid-age plantations -In close proximity to other woodlots -Non-provincially and provincially significant wetlands -Sewage lagoons
67	W10	This small feature consisted of a young pine-spruce plantation.			
68	W10, W12	At the western end of this feature, the vegetation communities consisted of deciduous forest and swamps. Forests present were dominated by sugar maple with shagbark hickory; or sugar maple with red oak. Swamp communities were dominated by green ash; or green ash with red maple, red oak, sugar maple and shagbark hickory. An area of cultural woodland, dominated by green ash, was present at the south edge. At the eastern end of the feature, forest	PIF: Northern Flicker, Rose-breasted Grosbeak, Baltimore Oriole, Wood Thrush, Eastern Wood-Pewee AS: Pileated Woodpecker, Veery, White-breasted Nuthatch	-One area of open water was observed at the eastern end, north edge. -Vernal pools (#20,21, 58-61) present throughout the forest communities: of variable sizes; no standing water present. Concentrated and most extensive in the FOD9-1 and FOD7-2 communities. -Several large (>50cm), tall snags	-Mature -In close proximity to other woodlots.

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		communities were comprised of red oak with sugar maple; or green ash with sugar maple, red maple, basswood and shagbark hickory. Two areas of reed canary grass meadow marsh were present.		with loose bark within the FOD5-3 community. Other canopy trees present, no open surroundings and thus does not meet criteria for bat maternity roost -migratory bird habitat	
69	W15	The large feature is a complex mix of a series of upland forests, swamps, thicket swamps, meadow marshes, and dug ponds. Forests were dominated by either sugar maple with oak, white ash, red maple, basswood, or beech; or shagbark hickory with red oak, green ash, and/or white ash. Swamps were dominated by green ash or swamp maple while thicket swamps were dogwood dominated. A series of meadow marshes, dominated by reed-canary grass, jewelweed, or forbs, were concentrated along the western edge of the feature.		-Four dug ponds; one in cattle pasture to the north, and three along the south western edge. -Various vernal pools (#22-28, 62-67) scattered throughout the deciduous forest (FOD5-2, 5-3); 2-20m in diameter; <5cm water depth; lacking emergent vegetation. -Redtail hawk stick nest found	-Mid-age to mature -Close proximity to other woodlots -Existing roadway through woodlot
70	W15	This small linear feature occurs along a watercourse and is dominated by red oak with white ash.			-Close proximity to other woodlots -Watercourse
71	W14, W15	Small woodlot comprised of deciduous sugar maple – ash forest. Small reed-canary grass meadow marsh occurred at the periphery.		- One vernal pool (#29); 5x22 m in size; no standing water; dominated by jewelweed	- Within proximity to larger woodlot - Mature
72	W14, W15	Small woodlot comprised of deciduous shagbark hickory forest.		- One vernal pool (#30); 10x10m in size; no standing water; dominated by reed-canary grass with white elder shrubs.	- Within proximity to larger woodlot - Mature
73	W14, W15	The portions of this primarily forested feature adjacent to project components consist of a deciduous forest dominated by shagbark hickory with red oak and white ash; shagbark hickory with green ash and basswood; sugar maple with white ash; or sugar maple with oak. A maple swamp with a small pocket of	PIF: Baltimore Oriole, Wood Thrush		-Within proximity to other woodlot

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		winterberry thicket swamp occurs along the northwestern edge while a green ash swamp occurs along the western edge. A small area of cultural meadow occurs at the southwestern edge of the feature. Two roads, Ramsey Road and Haldimand Road 49, dissect the southern portion of this feature.			
74	W16	The portions of this small forested feature adjacent to the project consist of a deciduous forest dominated by shagbark hickory and green ash, a red maple swamp, and a buttonbush thicket swamp along the eastern edge.			-Young -Connected via hedgerow to feature 75
75	W16	The western portion of this medium-sized feature consisted primarily of swamps dominated by green ash or red maple, with open pockets of dogwood thicket swamps. A small section of upland deciduous forest, dominated by oaks and ashes, occurred between the two ash swamps. A cultural meadow existed along the northern edge of the woodlot with a small dug pond.		-Dug pond within feature	-Young to mature -Connected via hedgerow to feature 74 -Second dug pond in farm field
76	W17	This feature is located south of the Dunnville Airport and the northern forest portion was shagbark hickory and/or red oak dominated. This forest was bisected by a watercourse that supports meadow marshes along the bank. An open dogwood thicket swamp exists along the northeastern edge of the feature.			-Pioneer to mid-age -Watercourse -Connected to feature 77 via hedgerow
77	W17	This feature is located north of the Dunnville Airport and consisted of a young shagbark hickory forest along the southeastern edge of the feature with a green ash swamp, green ash cultural woodland, and a swamp white oak swamp. A small pocket of cultural meadow and cultural thicket also existed along the agricultural edge.		-Two vernal pools (#68, 69) were located within the FOD9-4; 3-5m diameter; no standing water; gray dogwood emergent vegetation. -Standing water in SWD1-1	-Pioneer to Mid-age -Connected to feature 76 via hedgerow
78	W7	This feature was associated with a drainage			-Isolated

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		feature, and consisted of a meadow marsh dominated by reed canary grass, cattails, asters and goldenrods.			
79	S1	The forested portion of this feature was dominated by sugar maple with some red oak and shagbark hickory associates. The subcanopy and understory appeared to be dominated by sugar maple with American beech, while the ground layer contained early meadow-rue, bristly sarsaparilla, asters and wild strawberry. A valley feature appeared to be present running perpendicular to the road.	PIF: Eastern Wood-Pewee		-Mature -Close proximity to other woodlots
80	T3,W3	This small feature was consisted of a deciduous forest, dominated by sugar maple with red oak and American beech. An area of open water was observed at the eastern edge of the feature.			-Mature -Close proximity to other woodlots
81	W16	This feature is predominantly forested, natural forest to the west, culturally dominated to the east, and bisected by agriculture. The natural forests occur in a gradient from north to south as co-dominated by shagbark hickory with red oak, to solely dominated by shagbark hickory, to co-dominated by shagbark hickory with green ash, to a green ash swamp. South of the green ash swamp was an open area consisting of a dogwood swamp thicket or meadow marsh. The assessed cultural woodlands were dominated by green ash.		- Winter deer yard - Migratory bird habitat	-Mid-age -Isolated
82	W16	This moist feature consisted of a cultural woodland dominated by swamp maple and green ash. A small cultural meadow existed along the eastern edge.			-Young to Mid-age -Isolated
83	W16, W17	This "L" shaped feature consisted of a young poplar forest and cultural thicket surrounded by residences and agriculture.			-Young -Close proximity to other woodlots
84	W16, W17	This rectangular feature consisted primarily of			-Unknown age

**Table 4.6: Characteristics of Natural Features**

Feature #	Tile #*	Description	Characteristics and Function		
			Species of Note	Habitat Features	Other characteristics
		a mature oak-hickory forest with a young green ash swamp.			-Close proximity to other woodlots
85	W17	This treed feature consisted primarily of a shagbark hickory forest, with potentially some swamp areas to the north and east.			-Unknown age -Connected to other woodlots via hedgerows
86	W17	This rectangular feature consisted primarily of a coniferous plantation, with a swamp maple swamp adjacent to the road.			-Unknown age -Isolated
87	W17	This complex feature consisted of a shagbark hickory forest with areas of deciduous swamp; some green ash dominated, and is part of a provincially significant wetland. This feature is interrupted by residences and Port Maitland Road.		-Migratory bird habitat in 87b	-Unknown age -Provincially Significant Wetland
88	W11, W13	This miniscule feature consists of a bur oak swamp with a small creek.			-Unknown age -Close proximity to Feature 60, otherwise isolated
89	W16	This small woodlot was dominated by green ash, with shagbark hickory and oak (bur or swamp white) as associates. There were also rare occurrences of white elm and American beech and the understorey consisted of dogwoods.			-Mid-age -Isolated
90	W4	Narrow wetland community / riparian hedgerow along tributary upstream of Natural Feature 19. Existing farm access with culvert conveys flows.			- marsh community downstream of crossing; agricultural to edges

\* See Figures 5.1 to 5.3 for map index with S referring to maps within solar set, W for wind, and T for the transmission line.



Table 4.7 - Candidate Migratory Butterfly Stover Areas				
Natural Feature #	Feature Size (ha)	Feature >20ha	Within 5 km of Lake Erie	Candidate Butterfly Stopover Habitat
		Y/N	Y/N	Y/N
1	13.9	N	N	N
2	6.2	N	N	N
3	8.7	N	N	N
4	10.4	N	N	N
5	63.5	Y	N	N
6	15.2	N	N	N
7	117.6	Y	N	N
8	194.0	Y	N	N
9	72.3	Y	N	N
10	20.9	Y	N	N
11	7.4	N	N	N
12	2.3	N	N	N
13	24.5	Y	N	N
14	14.4	N	N	N
15	12.7	N	N	N
16	13.3	N	N	N
17	131.6	Y	N	N
18	0.2	N	N	N
19	96.7	Y	N	N
20	6.2	N	N	N
21	1.2	N	N	N
22	32.0	Y	N	N
23	3.6	N	N	N
24	2.2	N	N	N
25	2.0	N	N	N
26	4.3	N	N	N
27	13.4	N	N	N
28	9.9	N	N	N
29	55.6	Y	N	N
30	13.0	N	N	N
31	57.2	Y	N	N
32	108.4	Y	N	N
33	8.3	N	N	N
34	92.6	Y	N	N
35	5.8	N	N	N
36	44.1	Y	Y	Y
37	4.5	N	Y	N
38	7.7	N	Y	N
39	23.1	Y	Y	Y
40	13.5	N	Y	N
41	1.5	N	N	N
42	216.5	Y	Y	Y



**Table 4.7 - Candidate Migratory Butterfly Stover Areas**

Natural Feature #	Feature Size (ha)	Feature >20ha	Within 5 km of Lake Erie	Candidate Butterfly Stopover Habitat
		Y/N	Y/N	Y/N
43	4.6	N	N	N
44	18.5	N	Y	N
45	23.8	Y	Y	Y
46	116.8	Y	N	N
47	200.4	Y	Y	Y
48	64.5	Y	N	N
49	68.3	Y	Y	Y
50	1.6	N	Y	N
51	65.1	Y	Y	Y
52	0.4	N	Y	N
53	10.0	N	Y	N
54	38.2	Y	Y	Y
55	39.4	Y	Y	Y
56	6.7	N	Y	N
57	18.3	N	Y	N
58	172.2	Y	Y	Y
59	4.1	N	Y	N
60	0.6	N	Y	N
62	0.4	N	Y	N
63	2.5	N	Y	N
64	0.7	N	Y	N
65	45.3	Y	N	N
66	207.6	Y	Y	Y
67	7.4	N	Y	N
68	145.6	Y	Y	Y
69	80.4	Y	Y	Y
70	1.5	N	Y	N
71	3.5	N	Y	N
72	0.9	N	Y	N
73	50.4	Y	Y	Y
74	18.4	N	Y	N
75	32.2	Y	Y	Y
76	47.1	Y	Y	Y
77	40.9	Y	Y	Y
78	1.3	N	N	N
79	27.1	Y	N	N
80	1.7	N	N	N
81	66.1	Y	Y	Y
82	7.1	N	Y	N
83	7.6	N	Y	N
84	10.2	N	Y	N
85	6.3	N	Y	N

<b>Table 4.7 - Candidate Migratory Butterfly Stover Areas</b>				
<b>Natural Feature #</b>	<b>Feature Size (ha)</b>	<b>Feature &gt;20ha</b>	<b>Within 5 km of Lake Erie</b>	<b>Candidate Butterfly Stopover Habitat</b>
		<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>
86	14.9	N	Y	N
87	37.5	Y	Y	Y
88	0.2	N	Y	N
89	2.6	N	Y	N
90	6.4	N	N	N
Total Candidate Butterfly Stover Areas:				19



**Table 4.8 - Candidate Area Sensitive and Declining Species Habitat – Woodlands**

Woodland #	Size (ha)	Woodland > 10 ha	Presence of Area Sensitive Species	Presence of Declining (PIF) Species	Candidate Area Sensitive Woodland Species Habitat	Candidate Declining Woodland Species Habitat
		Y/N	Y/N	Y/N	Y/N	Y/N
1	9.8	N	N	N	N	N
2	6.6	N	N	N	N	N
3	8.7	N	N	N	N	N
4	10.4	Y	N	Y	Y	Y
5	63.9	Y	N	N	Y	Y
6	13.9	Y	N	N	Y	Y
7	117.6	Y	N	Y	Y	Y
8	51.5	Y	N	N	Y	Y
9	72.1	Y	N	N	Y	Y
10	19.7	Y	Y	Y	Y	Y
11	7.7	N	N	N	N	N
12	2.3	N	N	N	N	N
13	24.5	Y	N	N	Y	Y
14	14.4	Y	N	Y	Y	Y
15	12.5	Y	N	N	Y	Y
16	12.1	Y	N	N	Y	Y
17	137.4	Y	N	N	Y	Y
18	0.3	N	N	N	N	N
19	97.2	Y	Y	Y	Y	Y
20	6.2	N	N	N	N	N
21	1.2	N	N	N	N	N
22	31.2	Y	Y	Y	Y	Y
23	3.5	N	N	N	N	N
24	2.4	N	N	N	N	N
25	2.0	N	N	N	N	N
26	4.3	N	N	N	N	N
27	13.4	Y	N	N	Y	Y
28	9.9	N	N	N	N	N
29	55.7	Y	N	N	Y	Y
30	13.1	Y	Y	Y	Y	Y
31	57.1	Y	Y	Y	Y	Y
32	108.4	Y	Y	Y	Y	Y
33	8.3	N	N	N	N	N
34	78.2	Y	Y	Y	Y	Y
35	5.8	N	N	N	N	N

**Table 4.8 - Candidate Area Sensitive and Declining Species Habitat – Woodlands**

Woodland #	Size (ha)	Woodland > 10 ha	Presence of Area Sensitive Species	Presence of Declining (PIF) Species	Candidate Area Sensitive Woodland Species Habitat	Candidate Declining Woodland Species Habitat
		Y/N	Y/N	Y/N	Y/N	Y/N
36	44.1	Y	N	N	Y	Y
37	4.0	N	N	N	N	N
38	7.3	N	N	N	N	N
39a	6.2	N	N	Y	N	N
39b	5.6	N	N	Y	N	N
40	13.2	Y	N	N	Y	Y
42a	139.1	Y	Y	Y	Y	Y
42b	65.3	Y	Y	Y	Y	Y
42c	3.0	N	N	Y	N	N
42d	2.9	N	N	Y	N	N
43	3.4	N	N	N	N	N
44	17.4	Y	N	N	Y	Y
45a	2.7	N	N	N	N	N
45b	11.6	Y	N	N	Y	Y
46	116.8	Y	N	N	Y	Y
47	135.9	Y	N	N	Y	Y
48	54.2	Y	N	N	Y	Y
49	68.3	Y	N	N	Y	Y
51	65.1	Y	Y	Y	Y	Y
53	10.0	Y	N	N	Y	Y
54	37.5	Y	Y	Y	Y	Y
55	39.8	Y	Y	Y	Y	Y
56	6.5	N	N	N	N	N
57	10.0	Y	N	N	Y	Y
58	162.1	Y	Y	Y	Y	Y
60	0.6	N	N	N	N	N
62a	0.3	N	N	N	N	N
62b	0.1	N	N	N	N	N
63	2.5	N	N	N	N	N
64	0.8	N	N	N	N	N
66	215.9	Y	Y	N	Y	Y
66a	166.9	Y	Y	Y	Y	Y
66b	17.6	Y	N	Y	Y	Y
67	7.4	N	N	N	N	N
68a	139.4	Y	Y	Y	Y	Y

<b>Table 4.8 - Candidate Area Sensitive and Declining Species Habitat – Woodlands</b>						
<b>Woodland #</b>	<b>Size (ha)</b>	<b>Woodland &gt; 10 ha</b>	<b>Presence of Area Sensitive Species</b>	<b>Presence of Declining (PIF) Species</b>	<b>Candidate Area Sensitive Woodland Species Habitat</b>	<b>Candidate Declining Woodland Species Habitat</b>
		<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>	<b>Y/N</b>
68b	3.4	N	N	N	N	N
69	80.7	Y	N	N	Y	Y
70	1.5	N	N	N	N	N
71	3.4	N	N	N	N	N
72	0.9	N	N	N	N	N
73	50.4	Y	N	Y	Y	Y
74	19.1	Y	N	N	Y	Y
75	30.2	Y	N	N	Y	Y
76	47.3	Y	N	N	Y	Y
77	42.2	Y	N	N	Y	Y
79	14.9	Y	N	Y	Y	Y
80	1.7	N	N	N	N	N
81	64.2	Y	N	N	Y	Y
82	7.1	N	N	N	N	N
83	7.6	N	N	N	N	N
84	11.3	Y	N	N	Y	Y
85	6.3	N	N	N	N	N
86	14.8	Y	N	N	Y	Y
87a	9.5	N	N	N	N	N
87b	17.4	Y	N	N	Y	Y
88	0.2	N	N	N	N	N
89	2.6	N	N	N	N	N
Total Candidate Significant Area Sensitive Woodland Species Habitat Features:					51	
Total Candidate Significant Declining Woodland Species Habitat Features:						51

\* Note: Species Information included for information purposes only



Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
1	13.9	Swamp	Palustrine	h, ts, ls, gc	150m	73	Headwater; 28 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
2	5.7	Swamp	Palustrine	h, ts, gc	150m	40	Headwater; 289 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
3	8.6	Swamp	Palustrine	h, ts, gc	450m	44	Mid-reach; 518 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Present
4	0.1	Swamp	Palustrine	h, ts,ls, gc	550m	50	Headwater; 2 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
5	22.5	Swamp	Palustrine	h, ts, gc, m	975 m	82	Headwater; 244 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
7-a	51.4	Swamp	Palustrine	h, ts, gc, m	200 m	84	Headwater; 236 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
7-b	1.2	Swamp	Palustrine	h, ts, gc, m	200 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent



Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
8-a	0.01	Marsh	Palustrine	gc	80 m	28	Headwater; 81 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-b	0.1	Swamp	Palustrine	ts, gc	70 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-c	0.1	Swamp	Palustrine	ts, gc	70 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-d	0.3	Swamp	Palustrine	ts, gc	30 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-e	1.1	Swamp	Palustrine	h, ts, gc, m	160 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-f	0.4	Swamp	Palustrine	h, gc, m	160 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
8-g	0.6	Swamp	Palustrine	ts, gc	30 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
9-a	0.2	Swamp	Palustrine	ts, gc	110 m	51	Headwater; 178 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
9-b	1.4	Swamp	Palustrine	ts, gc, ne	10 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
9-c	2.1	Swamp	Palustrine	h, ts, gc, ne, m	10 m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
10	3.3	Swamp	Palustrine	h, ts, gc, ne, m	1km	32	Headwater; 73 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
13	0.3	Swamp	Palustrine	h	1.2km	37	Headwater; 2 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on clay soil with intermittent inflow situated in a predominantly agricultural watershed. Minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
14	4.2	Swamp	Palustrine	h, gc, m	700 m	41	Headwater; 75 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
15-a	2.2	Swamp	Palustrine	h, ts, gc	95 m	21	Mid-reach; 216 hectare	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
15-b	0.8	Swamp	Palustrine	h, ts, gc	95 m	21	310 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed with minimal evidence of groundwater discharge. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
16	0.6	Marsh	Palustrine	gc	270 m	39	Mid-reach; 238 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
17	4.9	Swamp	Palustrine	h, ts, gc	270 m	39	Mid-reach; 283 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content with surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard - Potential pike spawning habitat	Present; permanent flow
18	0.2	Swamp	Palustrine	h, ts, ls, gc	20m	37	Headwater; 93 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present
19-a	0.8	Swamp	Palustrine	h, ts, gc	20 m	76	Mid-reach; 1226 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and evidence of surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential pike spawning habitat	Present; intermittent flow
19-b	45.4	Swamp	Palustrine	h, ts, gc, m	20m			Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and evidence of surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
19-c	0.4	Swamp	Palustrine	h, ts, gc, m	20m			Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and evidence of surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
20	0.6	Marsh	Palustrine	ts, gc, ne, m	30m	27	Mid-reach; 47 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Swamp with <50% coverage of organic soil	No evidence of discharge observed	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
23	3.4	Swamp	Palustrine	h, ts, gc, ne	400m	53	Mid-reach; 330 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. A smaller reach is influenced by permanent stream flow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Present; in reach with permanent stream flow
24-a	0.2	Swamp	Palustrine	h, gc	30m	65	Headwater; 44 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
24-b	0.3	Swamp	Palustrine	h, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
26	0.3	Swamp	Palustrine	h, ts, gc, m	600m	20	Mid-reach; 14 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
27-a	0.7	Swamp	Riverine	h, ts, gc	20m	49	Mid-reach; 982 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine wetland on soils with high clay content and permanent surface water inflow and outflow, with lesser influence of an intermittent stream. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard - Potential pike spawning habitat	Present; permanent flow
27-b	0.2	Marsh	Riverine	gc, ne	20m			Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine wetland on soils with high clay content and permanent surface water inflow and outflow, with lesser influence of an intermittent stream. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential pike spawning habitat	Present; permanent flow

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
29-a	2.3	Swamp	Palustrine	ts, ls, gc, m	400m	40	Headwater; 35 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
29-b	9.7	Swamp	Palustrine	ts, ls, gc, m	400m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
30-a	5.7	Swamp	Palustrine	h, gc, ff	50m	90	Headwater; 17 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
30-b	0.5	Swamp	Palustrine	h, ts, gc	50m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
31-a	13	Swamp	Palustrine	h, ts, gc, m	80m	80	Headwater; 437 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Present
31-b	7.5	Swamp	Palustrine	h, ts, gc, m	80m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
31-c	4	Swamp	Palustrine	h, ts, gc	20m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and surface water inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
32-a	22	Swamp	Palustrine	h,ts, gc, ne, m	100m			Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
32-b	0.5	Swamp	Palustrine	h, ts, gc	240m	95	Mid-reach; 242 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
32-c	0.4	Swamp	Palustrine	ts, gc	100m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
32-d	0.3	Swamp	Palustrine	h, ts, gc	150m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
32-e	0.2	Swamp	Palustrine	ts, gc	150m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
33-a	3.1	Swamp	Palustrine	h,ts, gc, m	15m	89	Mid-reach; 435 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering habitat	Absent
33-b	0.5	Swamp	Palustrine	h, ts, gc	15m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
34	14.6	Swamp	Riverine	h, ts, gc, m	20m	70	River mouth; 1296 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Palustrine feature with predominantly clay soil	Riverine wetland on soils with high clay content and permanent inflow and outflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
35	0.5	Swamp	Palustrine	h, ts, gc	400m	46	Headwater; 4 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
36-a	2.7	Swamp	Palustrine	h, ls, gc	110m	70	Headwater; 119 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
36-b	0.5	Swamp	Palustrine	h, ts, gc	110m			Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
37	2.7	Swamp	Palustrine	h, ts, ls, gc, ne	180m	60	Headwater; 130 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
38-a	0.5	Marsh	Palustrine	gc, ne, m	15m	24	Headwater; 82 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
38-b	6.9	Swamp	Palustrine	h, ts, gc, m	15m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
39	12	Marsh	Palustrine	h, ts, ls, gc, ne, m	250m	51	Mid-reach; 582 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
40	3.6	Swamp	Palustrine	h, ts, gc	600m	75	Headwater; 152 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
41	0.7	Marsh	Palustrine	ts, gc, ne	440m	30	Headwater; 171 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
42-a (north of Bains)	27.5	Swamp	Palustrine	h, ts, gc, m	140m	110	Broken into two catchment areas (east and west) due to area and drainage pattern.  Headwater; 74 hectare catchment (west - a,b,c,d)  Headwater; 110 hectare catchment (east - a only)	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Present; Potential Pike Spawning Habitat Only
42-b (north of Bains)	0.4	Swamp	Palustrine	h, ts, gc, m	115m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
42-c (north of Bains)	0.2	Swamp	Palustrine	h, gc	120m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
42-d (north of Bains)	0.2	Swamp	Palustrine	ts, gc, m	115m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
42 (south of Bains)	4.4	Marsh	Palustrine	ts, ls, gc, ne, m	800m	50	Mid-reach; 394 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present
43-a	2.4	Marsh	Palustrine	h, ts, gc, ne	90m	68	Mid-reach; 266 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
43-b	0.04	Marsh	Palustrine	gc	90m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
44	2.2	Marsh	Palustrine	ts, gc	115m	49	Mid-reach; 334 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil	None known to be present	None known to be present	Present; Potential Pike Spawning Habitat



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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
45	0.7	Marsh	Palustrine	gc	1km	45	Headwater; 24 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil	None known to be present	None known to be present	Absent
47-a	7.6	Swamp	Palustrine	h, ts, gc, m	130m	110	Mid-reach; 1238 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
47-b	0.6	Swamp	Palustrine	h, ts, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
47-c	1.1	Swamp	Palustrine	h, ts, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
47-d	8.9	Swamp	Riverine	h, ts, gc	190m			Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent flow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present
49-a	6.4	Swamp	Riverine	h,ts,gc, ne	20m			Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent flow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present; Potential Pike Spawning Habitat
49-b	0.5	Swamp	Palustrine	h, gc	120m	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent		
49-c	0.5	Swamp	Palustrine	h, gc	60m	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent		

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
49-d	1.5	Swamp	Palustrine	h, gc	60m	102	Headwater; 547 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
49-e	3.3	Swamp	Palustrine	h, ts, gc, ne	60m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
49-f	0.6	Swamp	Palustrine	h, ts, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
49-g	1.5	Swamp	Palustrine	h, ts, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
50	1.3	Marsh	Palustrine	ts, gc, ne, be	200m	37	Headwater; 44 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live marsh.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-a	11	Swamp	Palustrine	h, ts, ls, gc, m	60m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-b	0.6	Swamp	Palustrine	h, ts, gc	140m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-c	2.1	Swamp	Riverine	h,ts,gc, ne	20m			Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent flow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present; Potential Pike Spawning Habitat

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
51-d	2.9	Swamp	Palustrine	h, ts, gc	60m	100	Mid-reach; 875 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-e	1.3	Swamp	Palustrine	h, gc	140m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-f	1.1	Swamp	Palustrine	h, gc	140m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
51-g	1.4	Marsh	Palustrine	gc	140m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil	None known to be present	None known to be present	Absent
51-h	0.3	Marsh	Palustrine	gc	70m			Type 2	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil	None known to be present	None known to be present	Absent
52	0.4	Marsh	Palustrine	gc	160m	44	Headwater; 5 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine mineral marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil	None known to be present	None known to be present	Absent
55	39.7	Swamp	Palustrine	h, ts, gc, m	60m	48	Headwater; 61 hectare (east) & 64 hectare (west) catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
56	2.2	Swamp	Palustrine	h, gc	60m	40	Headwater; 6 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
58-a	2.9	Swamp	Palustrine	h, gc, m	150m	110	Mid-reach; 747 hectare catchment	Type 1	Intermittent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
58-b	13	Swamp	Palustrine	h, ts, gc, m	20m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
58-c	5.6	Swamp	Palustrine	h, gc, m	20m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
58-d	10.4	Swamp	Palustrine	h, gc, m	150m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
58-e	2.7	Swamp	Palustrine	h, ts, gc	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
58-f	9.7	Swamp	Palustrine	h, ts, gc, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
59-a	1.3	Marsh	Palustrine	gc	20m	70	Mid-reach; 419 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
59-b	1.9	Marsh	Palustrine	gc	20m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
59-c	0.3	Marsh	Palustrine	ts, gc	125m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
60	0.6	Swamp	Riverine	h, ts, gc, m	70m	35	Mid-reach; 476 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent inflow and outflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present: Potential Pike Spawning Habitat
64	0.7	Swamp	Palustrine	h, ts, gc	450m	39	Headwater; 27 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
65	45.3	Marsh	Riverine	ts, ne, re, ff,	600m	39	River mouth; 83 hectare catchment	Type 3	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with >50% coverage of organic soil	No evidence of discharge	Vegetation dominated by emergent species	Riverine feature with predominantly organic soil, underlain by clay	Riverine shallow marsh on organic soil over clay and permanent inflow and outflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- nesting colonial waterbirds - regionally significant staging habitat for waterfowl and fish spawning/rearing	Present
66-a	0.4	Swamp	Palustrine	ts, gc, ne, m	80m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-b	0.4	Swamp		ts, ne, m	80m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-c	0.5	Swamp	Palustrine	ts, gc, ne, m	35m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-c	0.3	Swamp	Palustrine	ts, gc, ne, m	40m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
66-d	0.4	Swamp	Palustrine	ts, gc, ne, m	70m	120	River mouth; 1842 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-e	1.4	Swamp	Palustrine	ts, gc, ne, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-f	0.9	Swamp	Palustrine	ts, gc, ne, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-g	0.2	Swamp	Palustrine	ts, gc, ne, m	90m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-h	1.4	Swamp	Palustrine	ts, gc, ne, m	75m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-i	0.3	Swamp	Palustrine	ts, gc, ne, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-j	1.1	Swamp	Palustrine	ts, gc, ne, m	15m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-k	1.8	Swamp	Palustrine	ts, gc, ne, m	15m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
66-l	2.5	Marsh	Palustrine	gc, ne, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-n	2.5	Marsh	Palustrine	gc, ne, m	70m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-m	2.6	Swamp	Riverine	h, ts, gc, ne, m	310m	20	River mouth; 772 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with >50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present
66-o	1.1	Swamp	Palustrine	h, ts, gc, m	135m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-p	11.6	Swamp	Palustrine	h, gc, m	135m	50	Mid-reach; 48 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
66-q	0.4	Swamp	Palustrine	h, ts, gc, m	165m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
68-a	2.4	Marsh	Palustrine	ts, gc	320m	20	A, b, and c treated as individual units due to proximity: Headwater; 9 hectare catchment	Type 1	No apparent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and no inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
68-b	0.2	Marsh	Palustrine	gc	320m	15	A, b, and c treated as individual units due to proximity: Headwater; 6 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine marsh on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
68-c	18.6	Swamp	Palustrine	h, ts, gc, m	100m	70	A, b, and c treated as individual units due to proximity: Headwater; 200 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
69-a	1.7	Swamp	Riverine	h, ts, gc, ne	30m	80	Headwater; 400 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on clay soil with permanent inflow and outflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present
69-b	15.5	Swamp	Palustrine	h, ts, gc, m	30m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
69-c	0.7	Swamp	Palustrine	ts, ls, gc, m	260m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live shrubs.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
69-d	5	Swamp	Palustrine	h, gc, m	140m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
71	0.7	Swamp	Palustrine	h, gc, m	170m			19	Headwater; 6 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present
72	0.9	Swamp	Palustrine	h, ts, gc, m	80m	20	Headwater; 27 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
73-a	20.5	Swamp	Palustrine	h, ts, ls, gc, m	80m	80	Headwater; 228 hectare	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent



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Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
73-b	5.7	Swamp	Palustrine	h, ts, ls, gc, m	150m	80	258 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
74-a	0.6	Swamp	Palustrine	h, ts, gc	70m	60	Headwater; 8 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
74-b	6.6	Swamp	Palustrine	h, ts, gc, m	70m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
75	20.3	Swamp	Palustrine	h, ts, gc	300m	85	Headwater; 49 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
76	31.9	Swamp	Palustrine	h, ts, gc, ne	100m	90	Mid-reach; 626 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine (with riverine components) swamp on soils with high clay content and intermittent inflow (section of permanent flow). Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Present
77-a	2.4	Swamp	Palustrine	h, ls, gc	600m	55	Mid-reach: 121 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	- Potential deer wintering yard	Absent
77-b	3.8	Swamp	Palustrine	h, ts, gc, m	600m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
78	1.3	Marsh	Riverine	gc, ne	20m	41	Mid-reach; 81 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by live herbs	Riverine feature with predominantly clay soil	Riverine marsh on soils with high clay content and permanent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present. Potential Pike Spawning Habitat

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
81	1.5	Marsh	Palustrine	h, ts, gc	500m	39	Mid-reach; 258 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by live herbs	Riverine feature with predominantly clay soil	Riverine marsh on soils with high clay content and permanent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
82	7.1	Swamp	Palustrine	h, ts, ls, gc, m	1km	98	Headwater; 137 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
84	8.9	Swamp	Palustrine	h, ts, ls, gc, m	400m	60	Headwater; 124 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
85	2.7	Swamp	Palustrine	h, ls, gc, m	170m	40	Headwater; 20 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
86	3.9	Swamp	Palustrine	h, ts, gc	400m	65	Headwater; 15 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
87-a	17.2	Marsh	Riverine	re, ff	20m	60	River-mouth; 132 hectare catchment	Type 2	Permanent inflow; over 50% agricultural landscape; high proportion of herbs.	Swamp with >50% coverage of organic soil	No evidence of discharge	Vegetation dominated by emergent species	Riverine feature with predominantly organic soil, underlain by clay	Riverine marsh on soils with organic soil over clay and permanent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	- Snapping turtle	- nesting colonial waterbirds - Great Blue Heron feeding area - locally significant winter cover for wildlife and fish spawning and	Present
87-b	14.7	Swamp	Palustrine	h, ts, ls, gc, m, ne	20m			Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	- Snapping turtle	None known to be present	Absent
88	0.2	Swamp	Palustrine	h, ts, ls, gc	70m	40	Mid-reach; 394 hectare catchment	Type 1	Permanent inflow and outflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Vegetation dominated by trees	Riverine feature with predominantly clay soil	Riverine swamp on soils with high clay content and permanent inflow and outflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Present: Potential Pike Spawning Habitat

Table 5.1 Wetland Characteristics and Ecological Functions Assessment, GREP

Feature #	Size (ha)	Wetland Type	Site Type	Vegetation Communities	Proximity to other wetlands (approximate)	Interspersion	Flood Attenuation	Open Water Types	Water Quality Improvement (short term)	Water Quality Improvement (long term nutrient trap)	Water Quality Improvement (groundwater discharge)	Shoreline Erosion	Groundwater Recharge	Summary of Hydrology	Rare Species	Significant Features	Fish Habitat
89	2.6	Swamp	Palustrine	h, ls, gc	600m	43	Headwater; 5 hectare catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live trees.	Swamp with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine swamp on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent
90 (19d)	6.4	Marsh	Palustrine	gc	400m	45	Headwater; catchment	Type 1	Intermittent inflow; over 50% agricultural landscape; high proportion of live herbs.	Marsh with <50% coverage of organic soil	No evidence of discharge	Not applicable	Palustrine feature with predominantly clay soil	Palustrine wetland on soils with high clay content and intermittent inflow. Situated in a predominantly agricultural watershed. Data based on surveys, air photo interpretation, and soil mapping*.	None known to be present	None known to be present	Absent

**Table 5.10 - Evaluation of Significance – Declining Species Woodland Habitat**

Woodland #	Size (ha)	Woodland > 10 ha	Presence of Declining (PIF) Species	3 or more PIF Species Observed	Significant Declining Woodland Species Habitat
		Y/N	Y/N	Y/N	Y/N
4	10.4	Y	Y	Y	Y
5	63.9	Y	N	N	N
6	13.9	Y	N	N	N
7	117.6	Y	Y	Y	Y
8	51.5	Y	N	N	N
9	72.1	Y	N	N	N
10	19.7	Y	Y	Y	Y
13	24.5	Y	N	N	N
14	14.4	Y	Y	Y	Y
15	12.5	Y	N	N	N
16	12.1	Y	N	N	N
17	137.4	Y	N	N	N
19	97.2	Y	Y	N	N
22	31.2	Y	Y	Y	Y
27	13.4	Y	N	N	N
29	55.7	Y	N	N	N
30	13.1	Y	Y	Y	Y
31	57.1	Y	Y	Y	Y
32	108.4	Y	Y	Y	Y
34	78.2	Y	Y	Y	Y
36	44.1	Y	N	N	N
40	13.2	Y	N	N	N
42a	139.1	Y	Y	Y	Y
42b	65.3	Y	Y	Y	Y
44	17.4	Y	N	N	N
45b	11.6	Y	N	N	N
46	116.8	Y	N	N	N
47	135.9	Y	N	N	N
48	54.2	Y	N	N	N
49	68.3	Y	N	N	N
51	65.1	Y	Y	Y	Y
53	10.0	Y	N	N	N
54	37.5	Y	Y	Y	Y
55	39.8	Y	Y	Y	Y
57	10.0	Y	N	N	N
58	162.1	Y	Y	Y	Y
66	215.9	Y	N	N	N
66a	166.9	Y	Y	Y	Y
66b	17.6	Y	Y	Y	Y
68a	139.4	Y	Y	Y	Y
69	80.7	Y	N	N	N
73	50.4	Y	Y	N	N
74	19.1	Y	N	N	N
75	30.2	Y	N	N	N
76	47.3	Y	N	N	N
77	42.2	Y	N	N	N
79	14.9	Y	Y	N	N
81	64.2	Y	N	N	N
84	11.3	Y	N	N	N
86	14.8	Y	N	N	N
87b	17.4	Y	N	N	N

Total Candidate Significant Declining Woodland Species Habitat Features:

18



Table 5.11: Summary of Evaluation of Significance

Feature No.	Adjacent Project Component	Size (ha)	Significant Woodland	Significant Wetland	Significant Valleyland	Significant Wildlife Habitat						
						Winter Deer Yard	Rare Vegetation Community	Area-Sensitive Species Woodland Habitat	Amphibian Breeding Pools	Habitat for Declining Woodland Species	Migratory Bird Stopover Habitat	Waterfowl Stopover and Staging Habitat
1	T	13.9	Y	Y								
2	T	6.2	Y	Y								
3	T	8.7	Y	Y								
4	T	10.4	Y	Y						Y		
5	W	63.5	Y	Y								
6	T, W	15.2	Y									
7	W	117.6	Y	Y		Y		Y		Y		
8	W	193.5	Y	Y			Y		Y			
9	W	72.3	Y	Y								
10	T,W	20.9	Y	Y					Y	Y		
11	T,W	7.4	Y									
12	T,W	2.3										
13	T,W	24.5	Y	Y								
14	W	14.4	Y							Y		
15	W	12.7	Y	Y					Y			
16	W	13.3	Y	Y								
17	W	131.6	Y	Y				Y				
18	T	0.2		Y								
19	T,W	96.7	Y	Y				Y	Y	Y		
20	T,W	6.2	Y	Y								
21	T,W	1.2										
22	W	32.0	Y					Y	Y	Y		
23	W	3.6	Y	Y								
24	W	2.2	Y	Y								
25	W	2.0										
26	W	4.3										
27	W	13.4	Y	Y								
28	W	9.9	Y									
29	T	55.6	Y	Y								
30	S,T	13.0	Y	Y					Y	Y		
31	S,W	57.2	Y	Y		Y		Y	Y	Y		
32	W	108.6	Y	Y		Y	Y	Y	Y	Y		
33	W	8.3	Y	Y								
34	W	92.6	Y					Y		Y		
35	W	5.8	Y									

Table 5.11: Summary of Evaluation of Significance

Feature No.	Adjacent Project Component	Size (ha)	Significant Woodland	Significant Wetland	Significant Valleyland	Significant Wildlife Habitat						
						Winter Deer Yard	Rare Vegetation Community	Area-Sensitive Species Woodland Habitat	Amphibian Breeding Pools	Habitat for Declining Woodland Species	Migratory Bird Stopover Habitat	Waterfowl Stopover and Staging Habitat
36	W,T	44.1	Y	Y								
37	S,T	4.5		Y								
38	S,T	7.7	Y	Y					Y			
39	S	23.1	Y	Y					Y	Y		
40	S	13.5	Y	Y								
41	S	1.5		Y								
42	W	216.5	Y	Y					Y	Y	Y (42b)	
43	W	4.6	Y	Y								
44	W	18.5	Y	Y								
45	W	23.8	Y									
46	W	116.8	Y					Y				
47	W	200.4	Y	Y		Y		Y	Y			
48	W	64.5	Y									
49	W	68.3	Y	Y				Y	Y			
50	W	1.6		Y								
51	W	65.1	Y	Y			Y			Y		
52	W	0.4		Y								
53	W	10.0	Y									
54	W	38.2	Y						Y	Y		
55	W	39.4	Y	Y						Y		
56	W	6.7	Y	Y					Y			
57	W	18.3	Y									
58	W	172.2	Y	Y				Y		Y		
59	W	3.8		Y								
60	W	0.6	Y	Y								
62	W	0.4										
63	W	2.5										
64	W	0.7	Y	Y								
65	W	45.3		Y	Y							Y
66	W	207.6	Y	Y	Y			Y		Y	Y (66a)	Y
67	W	7.4	Y									
68	W	145.6	Y	Y				Y	Y	Y	Y (68a)	
69	W	80.4	Y	Y				Y	Y		Y	
70	W	1.5	Y									
71	W	3.5		Y					Y			

**Table 5.11: Summary of Evaluation of Significance**

Feature No.	Adjacent Project Component	Size (ha)	Significant Woodland	Significant Wetland	Significant Valleyland	Significant Wildlife Habitat						
						Winter Deer Yard	Rare Vegetation Community	Area-Sensitive Species Woodland Habitat	Amphibian Breeding Pools	Habitat for Declining Woodland Species	Migratory Bird Stopover Habitat	Waterfowl Stopover and Staging Habitat
72	W	0.9		Y					Y			
73	W	50.4	Y	Y						Y		
74	W	18.4	Y	Y			Y					
75	W	32.2	Y	Y								
76	W	47.1	Y	Y				Y				
77	W	40.9	Y	Y					Y			
78	W	1.3		Y								
79	W	27.1	Y							Y		
80	T	1.7										
81	W	66.1	Y	Y		Y					Y	
82	W	7.1	Y	Y								
83	W	7.6	Y									
84	W	10.2	Y	Y								
85	W	6.3	Y									
86	W	14.9	Y									
87	W	37.5	Y	Y							Y (87b)	Y
88	W	0.2	Y	Y								
89	W	2.6		Y								
90	W	6.4		Y								
<b>Total # of Significant Features:</b>			<b>70</b>	<b>63</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>14</b>	<b>19</b>	<b>20</b>	<b>5</b>	<b>3</b>





Table 5.2 - Evaluation of Significance – Valleylands

Valleyland #	Watershed	Landform-Related Functions and Attributes				Ecological Functions						Restored Ecological Functions	Significant Valleyland	Discussion
		Criteria	Surface Water Functions <sup>1</sup>	Groundwater Functions <sup>2</sup>	Landform Prominence <sup>3</sup>	Distinctive Geographic Landforms <sup>4</sup>	Degree of Naturalness <sup>5</sup>	Community / Species Diversity <sup>6</sup>	Unique Communities and Species <sup>7</sup>	Habitat Value <sup>8</sup>	Linkage Function <sup>9</sup>	Restoration Potential and Value <sup>10</sup>		
		Standard												
Wardell's Creek	Lake Erie (LPRCA)		Y	N	Valleyland present within heavily disturbed agricultural land.	No	Agricultural land north of Rainham Rd. To the south, increasing amounts of natural areas.	Limited observed	No rare species present.	Limited due to agricultural impacts	No, heavily disturbed by agricultural land.	Some potential but limited due to active agriculture	N	Significance is limited by agricultural impacts on relatively small valley landform with limited riparian vegetation and
Evan's Creek	Lake Erie (LPRCA)		Y	N	Meandering stream through large woodland. Wetland north of Lakeshore Rd.	No	Headwater tributaries, predominantly agricultural with large woodland. Valleyland present near mouth at Lake Erie.	Limited observed	No rare species present.	Large contiguous woodland / wetland supporting bird species at various lifecycle periods	Potential, lots of residential and agricultural land.	Some potential to enhance the connectivity between Lake Erie and adjacent woodlands. Headwaters heavily disturbed by agriculture.	Y	The valleyland is considered significant only in the reach downstream of Rainham Road where steep valley slopes develop through the woodland to the confluence of Lake Erie. (Feature 66)
Grand River	Grand River (GRCA)		Y	N	Steep valley banks adjacent to river flats along Grand River.	Yes	Large, wide natural valley with vegetated valley slopes, riparian wetlands open water supporting wildlife habitat	Limited observed	No rare species present.	Riparian wetland supporting bird species at various lifecycle periods	Yes, known corridor and linkage in the watershed.	Some potential to enhance the connectivity between the Grand River and adjacent woodlands.	Y	The Grand River is a 300km long distinctive landform feature draining 7000km <sup>2</sup> of land. (Feature 65)
Total Number of Significant Valleylands												2		

- 1 Presence of a watercourse (intermittent or permanent flow) within the valleyland
- 2 Presence of groundwater recharge or discharge areas (i.e. seeps)
- 3 Large, well-defined valleyland with well-defined valley morphology (i.e. meandering watercourse, defined valley slopes)
- 4 Valleyland is a distinct landform feature within the landscape
- 5 Presence of undisturbed valleyland with natural riparian vegetation cover (i.e. minimum of 30 m width on each side of the watercourse)
- 6 High community or species diversity
- 7 High proportion of provincially significant or rare species or communities
- 8 Presence of significant wildlife habitat within the valleyland (per Table 5.4)
- 9 Valleyland provides a functional linkage between two or more large natural features (i.e. animal movement corridor)
- 10 Restoration of a natural valleyland feature based on current land use (i.e. agricultural activities assumed to continue)



Table 5.3 - Evaluation of Significance - Woodlands

Woodland #	Size (ha)	Township	Criteria	Woodland Size <sup>1</sup>			Connectivity <sup>2</sup>	Proximity to Water <sup>3</sup>	Uncommon Characteristics	Woodland Diversity <sup>5</sup>	Woodland Shape <sup>6</sup>	Managed Woodlands <sup>7</sup>	# of Criteria Satisfied	Significant Woodland*
			Standard	>2 ha (Walpole)	>4 ha (Dunn, Oneida, Rainham)	>10 ha (North Cayuga, South Cayuga)	<50 metres from Nat. Env. Area (OP)	<30 m from Water Feature	Presence of SAR	> 2 ELC Communities	Interior Forest Habitat	Forest Management Agreement		
				Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N	Y/N		
1	9.9	Walpole		Y			N	Y	N	N	Y	-	3	Y
2	6.2	Oneida			Y		N	Y	N	N	N	-	2	Y
3	8.7	N. Cayuga				N	N	Y	N	N	Y	-	2	Y
4	10.4	N. Cayuga				Y	Y	N	N	N	Y	-	3	Y
5	63.5	N. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
6	13.9	Rainham			Y		N	Y	N	N	N	-	2	Y
7	114.7	N. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
8	51.5	N. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
9	72.1	N. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
10	19.6	Rainham			Y		N	Y	N	Y	Y	-	4	Y
11	7.4	N. Cayuga				N	N	Y	N	N	Y	-	2	Y
12	2.3	N. Cayuga				N	N	Y	N	N	N	-	1	N
13	24.5	N. Cayuga				Y	N	N	N	Y	Y	-	3	Y
14	14.4	N. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
15	12.5	N. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
16	12.1	N. Cayuga				Y	Y	Y	N	Y	N	-	4	Y
17	131.1	N. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
18	0.2	N. Cayuga				N	N	Y	N	N	N	-	1	N
19	96.7	Rainham			Y		N	Y	N	Y	Y	-	4	Y
20	6.2	N. Cayuga				N	N	Y	N	N	Y	-	2	Y
21	1.2	Rainham			N		N	N	N	N	N	-	0	N
22	31.2	N. Cayuga				Y	Y	Y	Y	Y	Y	-	6	Y
23	3.3	N. Cayuga				N	Y	Y	N	N	N	-	2	Y
24	2.2	N. Cayuga				N	N	Y	N	Y	N	-	2	Y
25	2.0	N. Cayuga				N	N	N	N	N	N	-	0	N
26	4.3	N. Cayuga				N	Y	N	N	N	N	-	1	N
27	13.2	N. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
28	9.9	Rainham			Y		N	Y	N	N	Y	-	3	Y
29	54.4	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
30	12.9	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
31	57.1	S. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y

Table 5.3 - Evaluation of Significance - Woodlands

Woodland #	Size (ha)	Township	Criteria	Woodland Size <sup>1</sup>			Connectivity <sup>2</sup>	Proximity to Water <sup>3</sup>	Uncommon Characteristics	Woodland Diversity <sup>5</sup>	Woodland Shape <sup>6</sup>	Managed Woodlands <sup>7</sup>	# of Criteria Satisfied	Significant Woodland*
			Standard	>2 ha (Walpole)	>4 ha (Dunn, Oneida, Rainham)	>10 ha (North Cayuga, South Cayuga)	<50 metres from Nat. Env. Area (OP)	<30 m from Water Feature	Presence of SAR	> 2 ELC Communities	Interior Forest Habitat	Forest Management Agreement		
				Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N	Y/N		
32	108.4	S. Cayuga				Y	Y	Y	Y	Y	Y	-	6	Y
33	8.3	S. Cayuga				N	Y	Y	Y	Y	Y	-	5	Y
34	78.2	S. Cayuga				Y	Y	Y	Y	Y	Y	-	6	Y
35	5.8	Rainham			Y		N	N	N	N	Y	-	2	Y
36	44.0	Rainham			Y		N	Y	N	Y	Y	-	4	Y
37	3.9	S. Cayuga				N	N	Y	N	N	N	-	1	N
38	7.2	S. Cayuga				N	N	Y	N	Y	Y	-	3	Y
39a	6.2	S. Cayuga				N	N	Y	Y	N	Y	-	3	Y
39b	5.6	S. Cayuga				N	N	Y	Y	N	N	-	2	Y
40	13.3	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
42a	139.1	S. Cayuga				Y	N		N	Y	Y	-	3	Y
42b	65.3	S. Cayuga				Y	N		N	Y	Y	-	3	Y
42c	3.0	S. Cayuga				N	N		N	N	N	-	0	N
42d	2.9	S. Cayuga				N	N		N	N	N	-	0	N
43	3.5	S. Cayuga				N	Y	Y	N	N	N	-	2	Y
44	16.3	S. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
45a	2.6	S. Cayuga				N	Y	N	N	Y	N	-	2	Y
45b	11.6	S. Cayuga				Y	N	N	N	N	Y	-	2	Y
46	116.8	S. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
47	135.9	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
48	54.2	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
49	67.9	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
51	65.1	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
53	10.0	S. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
54	37.5	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
55	39.4	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
56	6.6	S. Cayuga				N	N	Y	N	Y	N	-	2	Y
57	10.0	S. Cayuga				Y	N	Y	N	Y	Y	-	4	Y
58	162.1	S. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
60	0.6	Dunn			N		Y	Y	N	N	N	-	2	Y
62a	0.3	Dunn			N		N	Y	N	N	N	-	1	N

Table 5.3 - Evaluation of Significance - Woodlands

Woodland #	Size (ha)	Township	Criteria	Woodland Size <sup>1</sup>			Connectivity <sup>2</sup>	Proximity to Water <sup>3</sup>	Uncommon Characteristics	Woodland Diversity <sup>5</sup>	Woodland Shape <sup>6</sup>	Managed Woodlands <sup>7</sup>	# of Criteria Satisfied	Significant Woodland*
			Standard	>2 ha (Walpole)	>4 ha (Dunn, Oneida, Rainham)	>10 ha (North Cayuga, South Cayuga)	<50 metres from Nat. Env. Area (OP)	<30 m from Water Feature	Presence of SAR	> 2 ELC Communities	Interior Forest Habitat	Forest Management Agreement		
				Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N	Y/N		
62b	0.1	Dunn			N		N	Y	N	N	N	-	1	N
63	2.5	Dunn			N		N	Y	N	N	N	-	1	N
64	0.7	S. Cayuga				N	Y	Y	N	N	N	-	2	Y
66a	166.9	S. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
66b	17.6	S. Cayuga				Y	Y	Y	N	Y	Y	-	5	Y
67	7.1	S. Cayuga				N	Y	Y	N	N	N	-	2	Y
68	139.3	S. Cayuga				Y	Y	Y	N	N	Y	-	4	Y
69	79.0	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
70	1.5	Dunn			N		Y	Y	N	N	N	-	2	Y
71	3.4	Dunn			N		N	N	N	N	N	-	0	N
72	0.9	Dunn			N		N	N	N	N	N	-	0	N
73	50.4	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
74	18.4	Dunn			Y		N	Y	N	Y	Y	-	4	Y
75	29.0	Dunn			Y		N	Y	N	Y	Y	-	4	Y
76	47.1	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
77	40.9	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
79	27.1	S. Cayuga				Y	N	N	N	N	Y	-	2	Y
80	1.7	Rainham			N		N	Y	N	N	N	-	1	N
81	63.2	Dunn			Y		Y	Y	N	Y	Y	-	5	Y
82	6.7	Dunn			Y		N	Y	N	N	Y	-	3	Y
83	7.6	Dunn			Y		Y	N	N	N	N	-	2	Y
84	10.2	Dunn			Y		N	Y	N	N	Y	-	3	Y
85	6.3	Dunn			Y		N	N	N	N	Y	-	2	Y
86	14.9	Dunn			Y		N	N	N	Y	N	-	2	Y
87a	9.5	Dunn			Y		Y	Y	N	N	N	-	3	Y
87b	17.4	Dunn			Y		Y	Y	N	N	Y	-	4	Y
88	0.2	S. Cayuga				N	Y	Y	N	N	N	-	2	Y
89	2.6	Dunn			N		N	Y	N	N	N	-	1	N

\* Woodlands meeting two or more criteria will be considered significant (per Schedule H, County of Haldimand Official Plan, 2006)

Total Significant Woodlands: 71

Notes (based on County of Haldimand OP Significant Woodland criteria):

Total Woodlands Evaluated: 93

1 - Woodlands considered contiguous even if bisected by standard roads; size criterion based on Township forest cover (per County of Haldimand OP)

**Table 5.3 - Evaluation of Significance - Woodlands**

Woodland #	Size (ha)	Township	Criteria	Woodland Size <sup>1</sup>			Connectivity <sup>2</sup>	Proximity to Water <sup>3</sup>	Uncommon Characteristics	Woodland Diversity <sup>5</sup>	Woodland Shape <sup>6</sup>	Managed Woodlands <sup>7</sup>	# of Criteria Satisfied	Significant Woodland*
			Standard	>2 ha (Walpole)	>4 ha (Dunn, Oneida, Rainham)	>10 ha (North Cayuga, South Cayuga)	<50 metres from Nat. Env. Area (OP)	<30 m from Water Feature	Presence of SAR	> 2 ELC Communities	Interior Forest Habitat	Forest Management Agreement		
				Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N	Y/N		

2 - Proximity to Natural Environment Area identified on Schedule E1 to E3 (or Schedule D where appropriate)

3 - Water features include any hydrological feature, including all creeks (i.e. REA waterbody), streams, rivers, wetlands (>0.5ha) and lakes

4 - SAR includes threatened, endangered, special concern, provincially or locally uncommon plant or wildlife species

5 - Woodland complexes that contain 'several' vegetation community types and compositions (based on ELC)

6 - Interior forest habitat occurs more than 100 metres from the woodland edge

7 - Woodlands that are subject to forest management agreement with MNR, OFA or Haldimand Woodlot Association

Woodland #	Size (ha)	Township	Diversity of habitat types	Description	Within 2 km of Lake Erie	>30 ha in size	# of Criteria Satisfied	Significant Migratory Landbird Habitat	Discussion
			Y/N		Y/N	Y/N	#	Y/N	
36	44.0	Rainham	N	Forested area surrounded by crops; CUM1 surrounding open water in the south (small)	N	Y	1	N	Habitat is not diverse and not within 2 km of the lake
40	13.3	S. Cayuga	Y	Two separate fields of grassland habitat adjacent to deciduous woodland	N	N	1	N	Small size and not within 2 km of the lake
42a	139.1	S. Cayuga	Y	Large deciduous forest adjacent to an open canopy tree farm and meandering creek	N	Y	2	N	Diverse habitat but beyond 2 km from the lake
42b	65.3	S. Cayuga	Y	Deciduous forest adjacent to coniferous plantation and grassland habitat	Y	Y	3	Y	Diversity of habitat (forested and grassland), size, and proximity to lake make this feature significant
44	16.3	S. Cayuga	Y	Diverse habitat of open cultural woodland, meadow marsh and mature forest	N	N	1	N	Small size and not within 2 km of the lake
45b	11.6	S. Cayuga	Y	Cultural woodlands, plantation, quarry, open thicket and deciduous forest	N	N	1	N	Small size and not within 2 km of the lake
47	135.9	Dunn	Y	Large, diverse habitat of open forested swamp, mature deciduous forest, open areas of cultural thickets, cultural meadows, cultural woodlands and riparian communities	N	Y	2	N	Majority of feature occurs >5 km from Lake Erie
49	67.9	Dunn	Y	Mature deciduous forest with pockets of swamp, swamp thickets, open aquatic and meadow marsh communities	N	Y	2	N	Not within 2 km of the lake



Woodland #	Size (ha)	Township	Diversity of habitat types	Description	Within 2 km of Lake Erie	>30 ha in size	# of Criteria Satisfied	Significant Migratory Landbird Habitat	Discussion
			Y/N		Y/N	Y/N	#	Y/N	
51	65.1	Dunn	Y	Forested area with pockets of shallow marsh, numerous ponds, swales, open grassland (hay), connected to cultural woodlot (woodland 63)	N	Y	2	N	Not within 2 km of the lake
53	10.0	S. Cayuga	N	Deciduous forest adjacent to creek (no open grasslands)	N	N	0	N	Habitat not diverse, small size, and not within 2 km of the lake
54	37.5	S. Cayuga	Y	Deciduous woodland, with cultural meadow, plantation and adjacent hay fields	N	Y	2	N	Not within 2 km of the lake
55	39.4	S. Cayuga	Y	Mature deciduous forest, adjacent to hay field, open aquatic and swamp thickets	N	Y	2	N	Not within 2 km of the lake
57	10.0	S. Cayuga	Y	Cultural woodland and deciduous forest and open meadow along a creek	N	N	2	N	Not within 2km of the lake
58	162.1	S. Cayuga	Y	Mature forest with open water, cultural meadow and fallow fields	N	Y	2	N	Not within 2 km of the lake
66	166.9	S. Cayuga	Y	Variety of habitats, including mature forest, plantations, grasslands, open riparian habitat, valleyland; close proximity to Lake Erie	Y	Y	3	Y	Diversity of habitat (forested and grassland), size, and proximity to lake make this feature significant
68	139.4	S. Cayuga	Y	Variety of habitats, including meadow marsh, forest, open aquatic, fallow/grassland adjacent; close proximity to Lake Erie	Y	Y	3	Y	Diversity of habitat (forested and grassland), size, and proximity to lake make this feature significant
69	79.0	Dunn	Y	Variety of habitats, including cultural meadow, meadow marsh, mature forest, open aquatic, swamp thicket; close proximity to	Y	Y	3	Y	Diversity of habitat (forested and grassland), size, and proximity to lake make this feature significant

**Table 5.4: Evaluation of Significance – Migratory Landbird Stopover Areas**

Woodland #	Size (ha)	Township	Diversity of habitat types	Description	Within 2 km of Lake Erie	>30 ha in size	# of Criteria Satisfied	Significant Migratory Landbird Habitat	Discussion
			Y/N		Y/N	Y/N	#	Y/N	
				Lake Erie					
73	50.4	Dunn	N	Mature deciduous forest, 2 very small CUM1 pockets, surrounded primarily by active cropland	Y	Y	2	N	Surrounding habitat not diverse, half of feature > 2 km from the lake
74	18.4	Dunn	N	Deciduous forest with a small SWT / meadow; surrounded by cropland	N	N	0	N	Habitat not diverse, small size, and not within 2 km of the lake
75	29.0	Dunn	Y	Deciduous forest with cultural meadow, SWT and open aquatic areas	N	N	1	N	Not within 2 km of the lake
76	47.1	Dunn	N	Mature forest, swamp and riparian community; surrounded by cropland	Y	Y	2	N	Surrounding habitat not diverse
77	40.9	Dunn	N	Mature forest with only small open thickets (no grassland habitat)	N	Y	1	N	Surrounding habitat not diverse, not within 2 km of the lake
81	63.2	Dunn	Y	Wide variety of habitat types, including open cultural woodlands, forested areas, meadows and plantation, adjacent to Lake Erie	Y	Y	3	Y	Diversity of habitat (forested and grassland), size, and proximity to lake make this feature significant
84	10.2	Dunn	N	Mature forest with small open area to south; surrounded by cropland	Y	N	1	N	Habitat not diverse and small size
86	14.9	Dunn	N	Plantation and woodlot with slight variability in habitat, but surrounded by cropland (no grassland)	Y	N	1	N	Habitat not diverse and small size
87b	17.4	Dunn	Y	Deciduous forest with open marsh habitat and riparian communities; close proximity to Lake	Y	N	2	Y	Small size of forested portion of feature, but proximity to lake and extent of marsh habitat available make this

Woodland #	Size (ha)	Township	Diversity of habitat types	Description	Within 2 km of Lake Erie	>30 ha in size	# of Criteria Satisfied	Significant Migratory Landbird Habitat	Discussion
			Y/N		Y/N	Y/N	#	Y/N	
									feature significant
Total Number of Significant Areas:								5	

**Table 5.5 - Evaluation of Significance – Winter Raptor Roosting and Feeding Areas**

Feature #	Size	Habitat Description	Historical Use*	Species Observed (#)	Species of Conservation Concern	Species Diversity	Species Abundance	Large Site (>20 ha)	Degree of Disturbance	Significant Winter Raptor Roosting and Feeding Area
	ha		Y/N			#	Y/N	Y/N		Y/N
1	79.7	Fallow fields, pasture and cultural meadow with adjacent deciduous woodlands; hedgerows limited	N	RTHA	-	1	1	Y	some disturbed areas adjacent to race track (drag strip); agriculture	N
2	93.2	Pasture and hayfields adjacent to several small deciduous woodlands and hedgerows; Roosting observed in coniferous hedgerow	Y	SEOW (12), RTHA (4), RLHA (8), NOHA (1)	SEOW	4	25	Y	active agricultural with lightly pastured fields	Y
3	56.0	large fallow field and cultural meadow with scattered trees, adjacent to several deciduous woodlands; hedgerows limited	N	RTHA	-	1	1	Y	active agriculture	N

Total Significant Winter Raptor Roosting and Feeding Areas: 1

**Notes:**

\*Historical use based on Miles (1996)



**Table 5.6 - Evaluation of Significance - Migratory Butterfly Stover Areas**

Natural Feature #	Feature Size (ha)	Within 5 km of Lake Erie	Foraging and Nesting Habitat	High Species Diversity*	Large Numbers of Individuals*	Significant Butterfly Stopover Habitat
		Y/N	Y/N	Y/N	Y/N	Y/N
36	44.1	Y	N	N	N	N
39	23.1	Y	N	N	N	N
42	216.5	Y	Y	N	N	N
45	23.8	Y	N	N	N	N
47	200.4	Y	N	N	N	N
49	68.3	Y	N	N	N	N
51	65.1	Y	N	N	N	N
54	38.2	Y	Y	N	N	N
55	39.4	Y	N	N	N	N
58	172.2	Y	Y	N	N	N
66	207.6	Y	Y	N	N	N
68	145.6	Y	Y	N	N	N
69	80.4	Y	Y	N	N	N
73	50.4	Y	N	N	N	N
75	32.2	Y	N	N	N	N
76	47.1	Y	N	N	N	N
77	40.9	Y	N	N	N	N
81	66.1	Y	Y	N	N	N
87	37.5	Y	N	N	N	N

Total Significant Butterfly Stover Areas: 0

\* Species Diversity / Numbers based on observations of butterfly species during fall investigations



Table 5.7 - Evaluation of Significance – Area Sensitive Species Woodland Habitat

Woodland #	Size (ha)	Area of Interior Habitat (200m from edge)	Woodland > 30 ha	Presence of Rare, Uncommon or PIF Species	Mature Woodland	Vertical Stratification	Artificial Gaps Present	Degree of Disturbance	Specialized Habitat Present	Other Confirmed Significant Wildlife Habitat	Area Sensitive Species Present	Significant Area Sensitive Woodland Habitat
	ha	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N
4	10.4	0	N	Y	Y	Y	N	Minimal	N	PIF species	Y (1)	N
5	63.5	0	Y	N	Y	Y/N (localized)	N	Heavy (localized)	N		N	N
6	13.9	0	N	N	N	N	N	Minimal	N		N	N
7	114.7	13.6	Y	Y	Y	Y	N	Minimal	N	Winter deer yard; PIF species	Y (1)	Y
8	51.5	0	Y	N	Y	Y	N	Minimal	N	Rare vegetation community; amphibian pond	N	N
9	72.1	0	Y	N	Y	Y	N	Minimal	N	PIF species; amphibian pond	N	N
10	19.6	0	N	Y	Y	Y	N	Minimal	N		Y (2)	N
13	24.5	0	N	N	Y	Y	N	Minimal	N		N	N
14	14.4	0	N	Y	Y	Y	N	Minimal	N	PIF species	N	N
15	12.5	0	N	N	Y	Y	N	Minimal	N	Amphibian pond	N	N
16	12.1	0	N	N	Y	Y	N	Minimal	N		N	N
17	131.1	0.2	Y	N	Y	Y	N	Minimal	N		N	Y
19	96.7	9.2	Y	Y	Y	Y	N	Minimal	Y	PIF species; amphibian pond	Y (2)	Y
22	31.2	0	Y	Y	Y	Y	N	Minimal	N	PIF species; amphibian pond	Y (3)	Y
27	13.2	0	N	N	Y	Y	N	Minimal	N		N	N
29	54.4	0	Y	N	N	Y	N	Minimal	N		N	N
30	12.9	0	N	Y	Y	Y	N	Minimal	Y	PIF species; amphibian pond	Y (2)	N
31	57.1	0	Y	Y	Y	Y	N	Minimal	N	Winter deer yard; PIF species; amphibian pond	Y (4)	Y
32	108.2	10.3	Y	Y	Y	Y	N	Minimal	N	Winter deer yard; PIF species; amphibian pond; rare vegetation community	Y (5)	Y
34	78.2	0.5	Y	Y	Y	Y	N	Minimal	N	PIF species	Y (5)	Y
36	44.0	0	Y	N	Y	Y	N	Minimal	N		N	N
40	13.3	0	N	N	Y	Y	N	Minimal	N		N	N
42a	139.1	0	Y	Y	N	Y	N	Minimal	N	PIF species; amphibian pond	Y (2)	N
42b	65.3	0	Y	Y	N	Y	N	Minimal	N	PIF species; migratory birds	N	N
44	16.3	0	N	N	N	Y	N	Minimal	N		N	N
45b	11.6	0	N	N	N	Y	N	Minimal	N		N	N
46	116.8	0	Y	N	N	Y	N	Minimal	N		N	N
47	135.9	6.5	Y	N	Y	Y	N	Minimal	N	Winter deer yard	N	Y
48	54.2	0	Y	N	Y	Y	N	Minimal	N		N	N
49	67.9	1.6	Y	N	Y	Y	N	Minimal	Y	Amphibian pond	N	Y
51	65.1	0	Y	Y	Y	Y	N	Minimal	N	Rare vegetation community; PIF species	Y (2)	N
53	10.0	0	N	N	Y	Y	N	Minimal	N		N	N



**Table 5.7 - Evaluation of Significance – Area Sensitive Species Woodland Habitat**

Woodland #	Size (ha)	Area of Interior Habitat (200m from edge)	Woodland > 30 ha	Presence of Rare, Uncommon or PIF Species	Mature Woodland	Vertical Stratification	Artificial Gaps Present	Degree of Disturbance	Specialized Habitat Present	Other Confirmed Significant Wildlife Habitat	Area Sensitive Species Present	Significant Area Sensitive Woodland Habitat
	ha	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	List	Y/N	Y/N
54	37.5	0	Y	Y	Y	Y	N	Minimal	N	PIF species	Y (2)	N
55	39.4	0	Y	Y	Y	Y	N	Minimal	N	PIF species	Y (2)	N
57	10.0	0	N	N	N	Y	N	Minimal	N		N	N
58	162.1	0	Y	Y	Y	Y	N	Minimal	N	PIF species	Y (5)	Y
66a	166.9	19.2	Y	Y	Y	Y	N	Minimal	N	PIF species; migratory birds	Y (1)	Y
66b	17.6	0	N	Y	N	N	N	Minimal	N	PIF species	N	N
68a	139.4	1.7	Y	Y	Y	Y	N	Minimal	N	PIF species; migratory birds; amphibian pond	Y (3)	Y
69	80.7	3.9	Y	N	Y	Y	N	Minimal	Y	Amphibian pond; migratory birds	N	Y
73	50.4	0	Y	N	N	Y	N	Minimal	N	PIF species	N	N
74	18.4	0	N	N	N	Y	N	Minimal	N	Rare vegetation community	N	N
75	29.0	0	N	N	N	Y	N	Minimal	N		N	N
76	47.1	0.1	Y	N	Y	Y	N	Minimal	N		N	Y
77	40.9	0	N	N	Y	Y	N	Minimal	N	Amphibian pond	N	N
79	27.1	0	N	N	Y	Y	N	Minimal	N	PIF species	N	N
81	63.2	1.8	Y	N	Y	Y	N	Minimal	N	Winter deer yard; migratory birds	N	Y
84	10.2	0	N	N	Y	Y	N	Minimal	N		N	N
86	14.9	0	N	N	N	Y	N	Minimal	N		N	N
87b	17.4	0	N	N	N	Y	N	Minimal	N	Migratory birds	N	N

Total Significant Area Sensitive Woodlands:

14

**Notes:**  
 Specialized habitat such as vernal pools  
 Degree of disturbance: minimal (no notes on ELC cards about disturbance; old logging); moderate (possibly grazed, some garbage - typically at woodlot edge, firewood cutting); heavy (grazed)  
 Vertical stratification: If there was an understorey, was considered vertically stratified. Only cases where it wouldn't be, would be if it was grazed or a plantation.

<b>Table 5.8: Evaluation of Significance – Grassland Habitats</b> (Area Sensitive and Habitat for Species of Conservation Concern)						
<b>Grassland #</b>	<b>Size (ha)</b>	<b>Grassland &gt;30 ha (Y/N)</b>	<b>Presence of Area Sensitive or PIF Species (Y/N)</b>	<b>Presence of SAR Species</b>	<b>Significant Grassland (Y/N)</b>	<b>Discussion</b>
A	70.0	Y	Y	Y	Y	Assumed significant. No encroachment
B	29.7	N	Y	Y	Y	Assumed significant. No encroachment
C	46.5	Y	Unknown	Unknown	Y	Assumed significant. No encroachment.



**Table 5.9: Evaluation of Significance – Amphibian Woodland Breeding Habitat**

Feature No.	Vernal Pool No.	Description	Characteristic and Function						Significant Wildlife Habitat - Frogs (Yes/No)	Significant Wildlife Habitat - Salamanders (Yes/No)
			Several ponds and/or close to creeks (Yes/No)	Emergent or submergent vegetation (Yes/No)	Shoreline vegetation (Yes/No)	Adjacent closed forest canopy (Yes/No)	Fish absent (Yes/No)	Water depth and permanency (Yes/No)		
8	1 2 3	Three vernal pools were present within the assessed woodlot (FOD5-1 and FOD6-5); 8m, 4m, and 4m in diameter; water depths of 0, <5 cm, and <5cm; with a few ash present at the edge, no vegetation, and no vegetation, respectively.	Yes	No	Yes No No	Yes	Yes	0cm; no <5cm; no <5cm; no	Yes	Yes
10	31	One vernal pool present within FOD9-4; dimensions of 10x25m with no standing water during assessment; dogwood emergent vegetation.	No	Yes	Yes	Yes	Yes	No	Yes	Yes
15	32 33 34	Series of three small vernal pools scattered throughout FOD 9-6*; no water at time of assessment and dogwood emergent vegetation.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
19	4 36	Two vernal pools both within the FOD5-12* community, ; 5x10m in size with no standing water; graminoid emergent vegetation; the second is 2m in diameter with less than 5 cm standing water.	Yes	Yes	Yes	Yes	Yes	<5cm; no 0cm; no	Yes	Yes
22	37 38	Two vernal pools found in FOD5-2; generally small in size (1m diameter) and very shallow; no standing water.	Yes	Yes	Yes	Yes	Yes	No	Yes	No
30	5 6 7 8 9	Five vernal pools along ATV ruts in FOD9-1 and SWD3-3; measuring 1x3m up to 3x25m in size; 5 to 10 cm deep; supported leopard frog tadpoles.	Yes	Yes	Yes	Yes	Yes		Yes	No
31	39 40 41 42 43 44 45	Vernal pools were abundant: 1-2m in diameter; no standing water. One pond located within FOD 9-4A; no standing water, 10m in diameter, and had dogwood shrubs along the edges.	Yes	Yes	Yes	Yes for vernal pools/No for pond	Yes	No	Yes	Yes
32	46 47 48	Vernal pools were observed occasionally, mainly in the western portion of the feature. Sizes were large (10-15m diameter) with no standing water. One notable, deep pool was present in the FOD5-3 community at the western edge of the feature, but no standing water was present. Field surveys in March 2011, confirmed no water.	No	Yes	Yes	Yes	Yes	No	No	No
38	10	Dug pond within SWD3-3; 8m diameter; approximately 20 cm deep; no vegetation.	No	No	No	Yes	Yes	20cm; yes	Yes	Yes
39	11	Vernal pool present in SWD2-2B measuring 5x30m; no standing water; reed-canary grass and blue flag emergent vegetation with buttonbush along the edge.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
42	12	One vernal pool was present in FOD6-5; measuring 3x5m in size with a water depth of less than 5 cm.	No	Yes	Yes	Yes	Yes	<5cm; no	Yes	Yes
47	13 14 15 16	Four vernal pools were observed within the FOD6-5; 2m, 8m, 10m, 20m diameter; <5cm, <5cm, 10-15cm, 15-25cm water depth; none, elderberry, meadowsweet and dogwood, and dogwood emergent vegetation, all respectively.	Yes	Yes	Yes	Yes	Yes	<5cm; <5cm; 10-15cm; 15-25 cm	Yes	Yes
49	17 18	Two vernal pools were present in the FOD5-2; 10m to 25m diameter; 5 to 10 cm water depth; with logs present at edges.	Yes	Yes	Yes	Yes	Yes	5-10cm 5-10cm	Yes	Yes
54	49 50 51 52 53 54 55	Vernal pools were observed throughout the deciduous forest portions of the feature: diameters were variable (from 1 to 10m) with graminoid vegetation. No standing water was observed.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

**Table 5.9: Evaluation of Significance – Amphibian Woodland Breeding Habitat**

Feature No.	Vernal Pool No.	Description	Characteristic and Function						Significant Wildlife Habitat - Frogs (Yes/No)	Significant Wildlife Habitat - Salamanders (Yes/No)
			Several ponds and/or close to creeks (Yes/No)	Emergent or submergent vegetation (Yes/No)	Shoreline vegetation (Yes/No)	Adjacent closed forest canopy (Yes/No)	Fish absent (Yes/No)	Water depth and permanency (Yes/No)		
56	56 57	Two vernal pools were observed in the forest community, and all were shallow with no standing water.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
68	20 21 58 59 60 61	Vernal pools present throughout the eastern end of the forest communities: of variable sizes; no standing water present in September 2010 or March 2011. A dug pond was located at the edge of the FOD7-2; it measured approximately 30m in diameter and was over 1m deep. In the western end of the forest community, one vernal pool (21) was identified in the SWD2-2 community; 30m, diameter; 30cm in depth with little shrub cover.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
69	22 23 24 25 26 27 28 62 63 64 65 66 67	Various vernal pools scattered throughout the feature. Several vernal pools were observed in the FOD9-4B and FOD5-9 in the northeastern portion of the feature; measuring approximately 10-30m in diameter and 10-30cm deep (in March 2011). Centrally within the features, vernal pools occurred in the FOD9-4A within ATV tire ruts; these pools measured approximately 3-4m in diameter and up to 30cm deep. Within the FOD5-2 and FOD5-3 communities, vernal pools occurred measuring 2-20m in diameter, <5cm deep and lacked emergent vegetation. A dug pond occurred in the southwestern portion of the feature, approximately 20m in diameter and over 1m deep with some canopy cover and scattered shrubs around periphery. A second dug pond occurred in the northeastern portion of the feature, approximately 20m in diameter, over 1m deep and encompassing cattail marsh.	Yes	No	Yes	Yes	No in 22; yes for rest	Yes for 22, 23, 24 and 65; no for rest	Yes	Yes
71	29	One vernal pool; 5x22 m in size; no standing water; dominated by jewelweed	No	Yes	Yes	Yes	Yes	No	Yes	No
72	30	One vernal pool; 10x10m in size; no standing water; dominated by reed-canary grass with white elder shrubs.	No	Yes	Yes	Yes	Yes	No	Yes	Yes
77	68 69	Two vernal pools were located within the FOD9-4; 3-5m diameter; no standing water; gray dogwood emergent vegetation.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Total # of SWH Woodlands supporting anuran breeding: 19

Total # of SWH Woodlands supporting salamander breeding: 16

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
1	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable
	Significant Wetland	Transmission Line		None	None	
2	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable
	Significant Wetland	Transmission Line	None - Line located on opposite side of the roadway	None	None	
3	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable
	Significant Wetland	Transmission Line	None - Line located on opposite side of the roadway	None	None	
4	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable
	Significant Wetland	Transmission Line	None - Line located on opposite side of the roadway	None	None	
	Habitat of Declining Species	Transmission Line	None - Line located on opposite side of the roadway	None	None	
5	Significant Woodland	Wind Turbine (43) Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
	Significant Wetland	Wind Turbine (43) Access Road Construction Area	No direct impacts. Indirect: construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Turbine foundation minimum 44 m from wetland; Power cables trenches minimum 30 m from wetland. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
6	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable
7	Significant Woodland	Wind Turbine (34) Wind Turbine (41) Wind Turbine (45) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
	Significant Wetland	Wind Turbine (34) Wind Turbine (41) Wind Turbine (45) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Turbine foundation minimum 56m from wetland; Power cables trenches minimum 10 m from wetland Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable
	Deer Wintering Area	Wind Turbine (34) Wind Turbine (41) Wind Turbine (45) Access Road	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Avoidance of construction in sensitive period (Jan-Feb) Institute construction best management practices*	Construction: temporary and mitigable Operation: temporary until deer adapt	Not applicable

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Area-Sensitive Species Habitat	Collector Line Construction Area  Wind Turbine (34) Wind Turbine (41) Wind Turbine (45) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat of Declining Species	Wind Turbine (34) Wind Turbine (41) Wind Turbine (45) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
8	Significant Woodland	Wind Turbine (33) Wind Turbine (36) Access Road Construction Area Collector Line	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices* Vegetated buffer established between woodland and access road Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable
	Significant Wetland	Wind Turbine (33) Wind Turbine (36) Access Road Construction Area Collector Line	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Turbine foundation 89 m from wetland. Access road a minimum 5 m from wetland. Above-grade construction of all portions of the access road within 30 m, with equalization culverts installed as required. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Vegetated buffer established between wetland and access road Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Rare Vegetation Community	Wind Turbine (33) Wind Turbine (36) Access Road Construction Area Collector Line	No direct impacts. Indirect: construction-related (dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
	Amphibian Breeding Pools	Access Road Construction Area Collector Line	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
			compaction, potential for spills, sedimentation and erosion).			
9	Significant Woodland	Wind Turbine (36) Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Minimum 115 m setback to woodland Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
	Significant Wetland	Wind Turbine (36) Construction Area	No direct impacts. Indirect Impacts: construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 140 m setback to wetland Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
10	Significant Woodland	Transmission Line Wind Turbine (58) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
	Habitat of Declining Species	Transmission Line Wind Turbine (58) Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
11	Significant Woodland	Transmission Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable
13	Significant Woodland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Transmission Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
14	Significant Woodland	Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat of Declining Species	Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
15	Significant Woodland	Wind Turbine (28) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.



**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Significant Wetland	Wind Turbine (28) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 26 m setback to wetland Institute construction best management practices*  Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Access Road	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
16	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
17	Significant Woodland	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
	Significant Wetland	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
	Amphibian Breeding Pools	Collector Line	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Declining Species	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
	Area-Sensitive Species Habitat	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
18	Significant Wetland	Transmission Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	Negligible	Not applicable.
19	Significant Woodland	Transmission Line Collector Line Wind Turbine (20) Wind Turbine (24) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology.  Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Transmission Line Collector Line Wind Turbine (24) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust,	Transmission line crosses Haldimand Rd 20 to avoid wetland interference. A minimum 11 m setback during construction will be maintained from the wetland. Above-grade construction of all portions of	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Area-Sensitive Species Habitat	Transmission Line Collector Line Wind Turbine (20) Wind Turbine (24) Access Road Construction Area	noise, potential for spills, sedimentation and erosion)  No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* in addition to the naturalization of the area between the access road and the woodland to the east with native grassland species and the seeding of the areas between the turbine installation area and natural feature prior to construction to encourage the establishment of a natural buffer during construction Install equalization culverts beneath access road  Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
20	Significant Woodland  Significant Wetland	Transmission Line Wind Turbine (24)  Transmission Line Wind Turbine (24)	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)  No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Mitigation as per Feature 19. Institute construction best management practices*  Minimum 5 m setback to wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible  Construction: temporary and mitigable Operation: negligible	Not applicable.  Not applicable.
22	Significant Woodland	Wind Turbine (16) Wind Turbine (48) Access Road Construction Area Collector Line	No direct impacts Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Installation of equalization culverts across an existing swale crossed by the access road. Realignment of swales present around the work area to avoid flooding while maintaining downstream flows. Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Area-Sensitive Species Habitat	Wind Turbine (16) Access Road Construction Area Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing to take place during periods of vulnerability Undertake mortality / disturbance monitoring	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Amphibian Breeding Pools	Wind Turbine (16) Wind Turbine (48) Access Road Construction Area Collector Line	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat of Declining Species	Wind Turbine (16) Wind Turbine (48) Access Road Construction Area Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability Undertake mortality / disturbance monitoring	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
23	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
24	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
27	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
28	Significant Woodland	Wind Turbine (10) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Install equalization culverts beneath access road Realignment of swales present around the work area to avoid flooding while maintaining downstream flows.	Construction: temporary and mitigable Operation: negligible	Not applicable.
29	Significant Woodland	Transmission Line Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Transmission Line Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
30	Significant Woodland	Transmission Line Collector Substation Access Road Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to woodlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Significant Wetland	Transmission Line Collector Substation Access Road	No direct impacts. Indirect: changes to hydrology, construction-related (soil	30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Habitat of Declining Species	Solar Panels Fence (Solar Lands)	compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	maintenance of drainage patterns Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Transmission Line Collector Substation Access Road Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable.
		Transmission Line Collector Substation Access Road Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	30 m naturalized setback to woodlands. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
31	Significant Woodland	Solar Panels Fence (Solar Lands) Collector Line Wind Turbine (56) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. 30 m naturalized setback to woodlands. Infiltration of stormwater. Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Significant Wetland	Solar Panels Fence (Solar Lands) Collector Line	No direct impacts. Indirect: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure maintenance of drainage patterns Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Deer Wintering Area	Solar Panels Fence (Solar Lands) Collector Line Wind Turbine (56) Construction Area Access Road	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	30 m naturalized setback to woodlands Avoidance of construction in sensitive period (Jan-Feb) Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Area-Sensitive Species Habitat	Solar Panels Fence (Solar Lands) Collector Line Wind Turbine (56) Construction Area Access Road	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability Undertake mortality / disturbance monitoring.	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat of Declining Species	Solar Panels Fence (Solar Lands) Collector Line Wind Turbine (56) Construction Area Access Road	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability Undertake mortality / disturbance monitoring.	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Amphibian Breeding Pools	Solar Panels Fence (Solar Lands) Collector Line	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	30 m naturalized setback to woodlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Not applicable.
32	Significant Woodland	Wind Turbine (25) Wind Turbine (56) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (25) Access Road Collector Line	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 53 m from turbine foundation and 2m setback from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat)
	Deer Wintering Area	Wind Turbine (25) Wind Turbine (56) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Avoidance of construction in sensitive period (Jan-Feb) Institute construction best management practices*	Construction: temporary and mitigable Operation: temporary until deer adapt	Not applicable.
	Rare Vegetation Community	Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Area-Sensitive Species Habitat	Wind Turbine (25) Wind Turbine (56) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat of Declining Species	Wind Turbine (56) Access Road Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
			vicinity of turbines and associated human activity	during periods of vulnerability		
33	Significant Woodland	Wind Turbine (29) Wind Turbine (42) Access Road Construction Area Collector Line	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (29) Wind Turbine (42) Access Road Construction Area Collector Line	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 10 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
34	Significant Woodland	Wind Turbine (22) Access Road Construction Area Collector Line	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Area-Sensitive Species Habitat	Wind Turbine (22) Access Road Construction Area Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat of Declining Species	Wind Turbine (22) Access Road Construction Area Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
35	Significant Woodland	Collector Line	None	None	None	Not applicable.
36	Significant Woodland	Transmission Line Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
37	Significant Wetland	Transmission Line	None - Line located on opposite	None	None	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
38	Significant Woodland	Collector Line Solar Panels Fence (Solar Lands) Screening Berm	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Line located on opposite side of the roadway. 30 m naturalized setback to woodlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Significant Wetland	Collector Line Solar Panels Fence (Solar Lands) Screening Berm	No direct impacts. Indirect: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Line located on opposite side of the roadway. 30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure maintenance of drainage patterns Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Amphibian Breeding Pools	Collector Line Solar Panels Fence (Solar Lands) Screening Berm	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Line located on opposite side of the roadway 30 m naturalized setback to woodlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Not applicable.
39	Significant Woodland	Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to woodlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Significant Wetland	Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure maintenance of drainage patterns Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
	Amphibian Breeding Pools	Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Line located on opposite side of the roadway 30 m naturalized setback to wetlands. Infiltration of stormwater.	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat of Declining Species	Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable.
40	Significant Woodland	Fence (Solar Lands) Screening Berm Solar Panels	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust,	30 m naturalized setback to woodlands. Infiltration of stormwater	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Significant Wetland	Collector Line  Fence (Solar Lands) Screening Berm Solar Panels Collector Line	noise, potential for spills, sedimentation and erosion  No direct impacts. Indirect: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure maintenance of drainage patterns Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
41	Significant Wetland	Solar Panels Fence (Solar Lands)	No direct impacts. Indirect: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	30 m naturalized setback to wetlands. Infiltration of stormwater. No significant grading to ensure maintenance of drainage patterns. Implementation of construction best management practices*	Construction: temporary and mitigable Operation: negligible	Vegetation monitoring to prevent occurrence of invasive species.
42	Significant Woodland	Wind Turbine (17) Wind Turbine (27) Wind Turbine (44) Wind Turbine (52) Wind Turbine (53) Wind Turbine (55) Access Road Collector Line Construction Area	Direct: loss of 0.471 ha of woodland associated with a plantation Indirect: changes to hydrology, loss of species, introduction of exotic species, disruption of wildlife habitat / movement, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Ensure vegetation removal is limited to 0.961 ha, and re-vegetate 0.491 ha as soon as feasible. Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: direct permanent loss of 0.47 ha of habitat; disturbance effects temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (17) Wind Turbine (53) Wind Turbine (55) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 9 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Amphibian Breeding Pools	Collector Line Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Migratory Birds	Wind Turbine (55) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in	Institute construction best management practices*	Construction: temporary and mitigable Operation: may be residual effects	Post-construction disturbance and mortality monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)



**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Habitat of Declining Species	Wind Turbine (17) Wind Turbine (44) Wind Turbine (52) Wind Turbine (53) Wind Turbine (55) Access Road Collector Line Construction Area	vicinity of turbines and associated human activity Direct: removal of plantation (non-preferred habitat). Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity,	Avoid deciduous woodland features where PIF species inhabit Ensure vegetation removal is limited to 0.961 ha, and re-vegetate 0.491 ha as soon as feasible. Plant addition trees throughout the plantation to offset construction loss. Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: direct permanent loss of 0.47 ha of habitat; disturbance effects temporary and mitigable Operation: may be residual disturbance	Post-construction disturbance and mortality monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
43	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
44	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
45	Significant Woodland	Collector Line	None - Combo (some of Line located on opposite side of the roadway /some on same)	None	None	Not applicable.
46	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
47	Significant Woodland	Wind Turbine (57) Collector Line Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (57) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Deer Wintering Area	Wind Turbine (57) Access Road	No direct impacts. Indirect: construction-related	Avoidance of construction in sensitive period (Jan-Feb)	Construction: temporary and mitigable Operation: temporary until deer adapt	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Amphibian Breeding Pools	Collector Line Construction Area  Wind Turbine (57) Collector Line Access Road Construction Area	(temporary disturbance to wildlife)  No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Institute construction best management practices*  Avoidance of periods of vulnerability for breeding amphibians (April-June) during construction Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
48	Significant Woodland	Collector Line	None - Line located on opposite side of the roadway	None	None	Not applicable.
49	Significant Woodland	Wind Turbine (15) Wind Turbine (49) Wind Turbine (50) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (15) Wind Turbine (49) Wind Turbine (50) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Area-Sensitive Species Habitat	Wind Turbine (15) Wind Turbine (50) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual effects	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Amphibian Breeding Pools	Collector Line	Negligible	None	None	Not applicable.
50	Significant Wetland	Wind Turbine (49) Access Road	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 4 m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
				Install equalization culverts beneath access road Wildlife culverts with fencing to funnel wildlife across access roads		
51	Significant Woodland	Wind Turbine (19) Wind Turbine (30) Wind Turbine (26) Collector Line Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (19) Wind Turbine (30) Wind Turbine (26) Collector Line Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 4m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Rare Vegetation Community	Wind Turbine (26) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat of Declining Species	Wind Turbine (19) Wind Turbine (30) Wind Turbine (26) Collector Line Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual effects	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
52	Significant Wetland	Access Road	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
				wetland and access road Install equalization culverts beneath access road		
53	Significant Woodland	Wind Turbine (47) Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
54	Significant Woodland	Wind Turbine (14) Wind Turbine (39) Wind Turbine (40) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Wind Turbine (14) Wind Turbine (40) Access Road Collector Line Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Declining Species	Wind Turbine (14) Wind Turbine (39) Wind Turbine (40) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
55	Significant Woodland	Wind Turbine (35) Wind Turbine (37) Wind Turbine (38) Wind Turbine (68) Access Road Construction Area	Direct: minor pruning of vegetation adjacent to existing access road Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (35) Wind Turbine (37) Wind Turbine (38) Wind Turbine (68) Access Road Construction Area	Direct: minor pruning of vegetation adjacent to existing access road Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 20 m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Habitat for Declining Species	Wind Turbine (35) Wind Turbine (37) Wind Turbine (38) Wind Turbine (68) Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	road  Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
56	Significant Woodland	Wind Turbine (68) Access Road	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (68) Access Road	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 13m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Wind Turbine (68) Access Road	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
57	Significant Woodland	Collector Line	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
58	Significant Woodland	Wind Turbine (11) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Line located on opposite side of the roadway  Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Significant Wetland	Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Line located on opposite side of the roadway Minimum 5 m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Area-Sensitive Species Habitat	Wind Turbine (11) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat for Declining Species	Wind Turbine (11) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
59	Significant Wetland	Access Road	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Line located on opposite side of the roadway Minimum 11m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
60	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
64	Significant Woodland	Collector Line	None- Line located on opposite	None	None	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Significant Wetland	Collector Line	side of the roadway None- Line located on opposite side of the roadway	None	None	Not applicable.
65	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Valleyland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
66	Significant Woodland	Wind Turbine (9) Wind Turbine (51) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices* Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (9) Wind Turbine (51) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road Vegetated buffer established between wetland and access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Significant Valleyland	Collector Line	No direct impacts.	None	None	Not applicable.
	Habitat for Declining Species	Wind Turbine (9) Wind Turbine (51) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat for Migratory Birds	Wind Turbine (9) Wind Turbine (51) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Post-construction disturbance and mortality monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
Area-Sensitive Species Habitat	Wind Turbine (9) Wind Turbine (51) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)	
67	Significant Woodland	Collector Line	No direct impacts.	Line located on opposite side of the	None	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
			Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	roadway. Institute construction best management practices*		
68	Significant Woodland	Wind Turbine (2) Wind Turbine (4) Wind Turbine (5) Wind Turbine (21) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (4) Wind Turbine (5) Wind Turbine (21) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback to wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Amphibian Breeding Habitat	Wind Turbine (2) Wind Turbine (4) Wind Turbine (5) Wind Turbine (21) Access Road Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Declining Species	Wind Turbine (2) Wind Turbine (4) Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Habitat for Migratory Birds	Wind Turbine (2) Wind Turbine (4) Wind Turbine (5) Wind Turbine (21) Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Post-construction disturbance and mortality monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Area-Sensitive Species Habitat	Wind Turbine (2) Wind Turbine (4) Wind Turbine (5)	No direct impacts. Indirect: construction-related (temporary disturbance to	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)



**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
		Wind Turbine (21) Access Road Construction Area	wildlife), avoidance of habitat in vicinity of turbines and associated human activity	during periods of vulnerability		
69	Significant Woodland	Wind Turbine (1) Wind Turbine (3) Wind Turbine (6) Wind Turbine (8) Wind Turbine (69) Access Road Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (1) Wind Turbine (6) Wind Turbine (8) Wind Turbine (69) Access Road Collector Line Construction Area	No direct effects. Indirect Impacts: changes to hydrology, loss of species, introduction of exotic species, disruption of wildlife habitat / movement, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Existing road immediately adjacent to wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Habitat	Wind Turbine (6) Wind Turbine (8) Access Road Collector Line Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Migratory Birds	Wind Turbine (1) Wind Turbine (3) Wind Turbine (6) Wind Turbine (8) Wind Turbine (69) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of increased human activity	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Post-construction disturbance and mortality monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
	Area-Sensitive Species Habitat	Wind Turbine (1) Wind Turbine (3) Wind Turbine (6) Wind Turbine (8) Wind Turbine (69) Access Road Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability Undertake mortality / disturbance monitoring	Construction: temporary and mitigable Operation: negligible	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
70	Significant Woodland	Wind Turbine (54) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices* Install equalization culverts beneath access road Vegetated buffer established between woodland and access road Wildlife culverts with fencing to funnel wildlife across access roads	Construction: temporary and mitigable Operation: negligible	Not applicable.
71	Significant Wetland	Wind Turbine (7) Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Line located on opposite side of the roadway Minimum 12 m setback to wetland. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Wind Turbine (7) Access Road Collector Line Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
72	Amphibian Breeding Pools	Wind Turbine (7) – blade tip Construction Area	No direct impacts. Indirect: construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Located beyond 120 m of any ground-based project components. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
73	Significant Woodland	Wind Turbine (7) Collector Line Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (7) Collector Line Construction Area	No direct impacts. Indirect Impacts: construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 110 m setback to wetland. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Habitat for Declining Species	Wind Turbine (7) Collector Line Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
74	Significant Woodland	Wind Turbine (65) Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Significant Wetland	Wind Turbine (65) Construction Area	disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)  No direct impacts. Indirect Impacts: construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 76 m setback to wetland. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Rare Vegetation Community	Wind Turbine (65) Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
75	Significant Woodland	Wind Turbine (66) Wind Turbine (67) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (66) Wind Turbine (67) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Vegetated buffer established between wetland and access road Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
76	Significant Woodland	Wind Turbine (64) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Installation of culverts in access road to provide animal movement between features and maintain hydrology. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (64) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 5 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit.	Construction: temporary and mitigable Operation: negligible	Not applicable.

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
	Area-Sensitive Species Habitat	Wind Turbine (64) Access Road Construction Area	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife), avoidance of habitat in vicinity of turbines and associated human activity	Institute construction best management practices* Install equalization culverts beneath access road  Avoidance of periods of vulnerability for breeding birds (May 1 to July 23) during construction Undertake nest surveys if clearing or construction is to take place during periods of vulnerability	Construction: temporary and mitigable Operation: may be residual disturbance	Not applicable (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)
77	Significant Woodland	Wind Turbine (59) Access Road Construction Area	No direct impacts. Indirect: changes to hydrology, construction-related (temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion)	Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Significant Wetland	Wind Turbine (59) Access Road Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 4 m setback to wetland from access road. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road	Construction: temporary and mitigable Operation: negligible	Not applicable.
	Amphibian Breeding Pools	Wind Turbine (59) Access Road Construction Area	No direct impacts. Indirect: Road mortality, changes to wetland hydrology, construction-related disturbance to breeding areas (soil compaction, potential for spills, sedimentation and erosion).	Post vehicle speed limit Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Not applicable.
78	Significant Wetland	Access Road Collector Line Construction Area	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Minimum 18m setback between access road and wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit. Institute construction best management practices*	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

**Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions**

Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
				Install equalization culverts beneath access road		
79	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
81	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Deer Wintering Area	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Habitat for Migratory Birds	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	James N. Allan Provincial Park	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
82	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
83	Significant Woodland	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
84	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
85	Significant Woodland	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
86	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
87	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Migratory Bird Habitat	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
88	Significant Woodland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
	Significant Wetland	Collector Line	None- Line located on opposite side of the roadway	None	None	Not applicable.
89	Significant Wetland	Collector Line	No direct impacts. Indirect: construction-related (temporary disturbance to wildlife)	Institute construction best management practices*	None	Not applicable.
90	Significant Wetland	Access Roads Collector Line	No direct impacts. Indirect Impacts: changes to hydrology, construction-related (soil compaction, temporary disturbance to wildlife, dust, noise, potential for spills, sedimentation and erosion).	Existing road immediately adjacent to wetland. Above-grade construction of all portions of the access road within 30 m with provisions for equalization culverts to ensure no ponding or disruption of surface water flow. Power cable trenches within 30 m of the wetland will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not	Construction: temporary and mitigable Operation: negligible	Post-construction hydrology monitoring (see Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitats)

Table 6.1 Summary of Potential Impacts and Mitigation Measures on Significant Natural Features and Functions						
Natural Feature #	Significant Natural Features and Functions	Project Components Within 120m	Potential Impacts	Mitigation Measures	Net Effects	Post-Construction Monitoring
				drawn along the sand-filled conduit. Institute construction best management practices* Install equalization culverts beneath access road Wildlife culverts with fencing to funnel wildlife across access roads		

\*Construction Best Management Practices are outlined in Section 6.1.3, 6.2.3 and 6.3.3 of the NHA and EIS Report



**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
<b>CONSTRUCTION – GENERAL</b>								
Grading, cut-and-fill, soil erosion, soil compaction, damage to overhanging vegetation, and/or encroachment into adjacent natural features	Maintaining minimum setbacks during grading and construction activities will avoid soil compaction and prevent inadvertent damage or encroachment into the natural features.  To prevent potential impacts, a construction fence (or heavy duty silt fence) should be installed prior to any on-site work and maintained during all phases of construction to control potential sediment transport from erosion and to function as a visual boundary to demarcate the work site and assist in controlling encroachment or incidental damage to edge species during construction and grading activities.	Silt barriers to remain in good repair  No deposition or erosion > 5cm outside silt barriers	Visual inspection of silt barriers	All silt barriers	Weekly	n/a	Monthly	Repair any gaps or holes in silt barriers  Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)
Potential effects of light pollution on wildlife	Ensure that direct glare is not visible beyond the substation boundaries by installing low intensity and downward pointing lights.  All outdoor lighting should be turned off when not in use, except where used for security and safety purposes, where motion sensors should be used.	Lighting is used appropriately during dark hours	Not necessary if lighting use is respected	n/a	n/a	n/a	n/a	Reiteration of appropriate lighting uses
Potential effects of noise pollution	Proper muffling of construction machinery should keep noise levels at a minimum.  Sudden, loud noise will be infrequent.	Muffling of machinery noise is applied where/when appropriate	Not necessary if muffling is applied	n/a	n/a	n/a	n/a	Muffling will be applied if not in use
Potential effects of machine and vehicle usage adjacent to natural heritage features	Vehicle movements within construction areas and access roads will be minimized to avoid the harassment of wildlife. Maintenance vehicle traffic will primarily be restricted to daytime hours. Vehicle speeds should be restricted to 30km/h or less.  Speed limit signage will be erected to communicate 30km/hr limit.	Adherence to maximum vehicle speeds	Not necessary if speed limits are respected	n/a	n/a	n/a	n/a	Speed limits will be reiterated and enforced
Contamination of natural heritage features through accidental spills	Any fuel storage and activities with the potential for contamination should occur in properly protected and sealed areas.  Adherence to Emergency Response Plan  Contact MOE Spills Action Centre and emergency spill procedures implemented immediately.  All equipment refueling should occur	Minimize likelihood of spill  Contain spill material	Visual inspections to ensure proper storage	Storage areas	Weekly	n/a	Monthly	Follow-up monitoring/inspections in the event of an accidental spill/leak  Remedial actions may be required in the event monitoring indicates a negative effect to natural features



**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	well away from natural features.							
<b>CONSTRUCTION – WIND PROJECT</b>								
<b>Wetlands and Woodlands</b>								
Ponding or disruption of surface water flow during construction	<p>Portions of the access roads within 30 m of wetlands will be constructed above-grade to avoid interfering with groundwater flow, and will include equalization culverts to maintain surface flow contributions to wetlands.</p> <p>Power cable trenches within 30 m of wetlands will be backfilled with sand, with a clay plug every 30 m to ensure that groundwater entering the trenches is not drawn along the sand-filled conduit.</p>	Minimal change to existing hydrologic conditions; no significant ponding or drying	Visual inspection	Access roads, crane pads	Weekly during spring, summer	n/a	Monthly	To be developed based on site-specific conditions; may include installation of additional culverts.
Soil compaction, erosion, sedimentation, dust generation and/or encroachment	<p>Silt barriers (e.g., fencing) should be erected along wetland edges that occur within 30 m of construction work areas.</p> <p>Inspectors will ensure construction vehicles, personnel and debris stay within the demarcated areas, thereby limiting the disturbance of natural vegetation.</p>	<p>Silt barriers to remain in good repair</p> <p>No deposition or erosion &gt; 5cm outside silt barriers</p>	Visual inspection of silt barriers and edges of natural areas	All silt barriers	Weekly	n/a	Monthly	<p>Repair any gaps or holes in silt barriers</p> <p>Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)</p> <p>Remove any construction-related debris from natural areas</p>
<b>Wildlife Habitat</b>								
<p>Disturbance to breeding birds due to increased traffic, noise, dust during construction</p> <p>Direct loss of birds' nests during vegetation clearing</p>	<p>To the extent practical, tree and/or brush clearing will be completed prior to or after May 1 to July 23. Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken within 48 hours of clearing to identify the presence / absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.</p> <p>To the extent practical, construction of Turbine 53 within Feature 42 will not occur from May 1 to July 23 to minimize impacts on breeding birds.</p>	<p>Protect all known birds' nests from direct loss, and a suitable setback to minimize disturbance effects</p> <p>No vegetation clearing beyond the limits delineated in the field.</p>	Not necessary if timing window is respected.	n/a	n/a	n/a	n/a	Should clearing be required during these dates, prior to construction, surveys will be undertaken to identify the presence/ absence of nesting birds. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.
Changes to woodland or wetland hydrology due to roads and crane pads	<p>Access roads to be constructed at, or above, grade.</p> <p>Cross-culverts to be installed, as needed, to maintain surface drainage.</p> <p>Use of permeable materials (gravel).</p>	Minimal change to existing hydrologic conditions; no significant ponding or drying	Visual inspection	Access roads, crane pads	Weekly during spring, summer	n/a	Monthly	To be developed based on site-specific conditions; may include installation of additional culverts
Vegetation removal	All disturbed areas to be re-vegetated as soon as conditions allow.	Re-vegetated to pre-construction conditions	Visual inspection	All disturbed areas, temporary laydown areas	Monthly	n/a	Monthly	To be developed based on site-specific conditions; may include reseeding of native

**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	Excavated soil from crane pads should be re-used on site as feasible.  If required, areas should be reseeded with native species.							species
<b>CONSTRUCTION - SOLAR</b>								
<b>Wetlands</b>								
Grading, soil erosion, sedimentation and dust generation near wetlands	All solar panels and associated access roads and electrical equipment have maintained a 30 m setback from the dripline of the adjacent wetland features.  Silt barriers to be erected along wetland edges that occur within 30 m of construction work.  No significant grading  Existing drainage patterns will be maintained, ensuring any surface water flows currently draining to the various wetlands will be maintained.	Silt barriers to remain in good repair  No deposition or erosion > 5cm outside silt barriers	Visual inspection of silt barriers	All silt barriers	Weekly	n/a	Monthly	Repair any gaps or holes in silt barriers  Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)
<b>Woodlands</b>								
Grading, soil erosion, sedimentation and dust generation near woodlands	All solar panels and associated access roads and electrical equipments will maintain a 30 m setback from the dripline of the adjacent woodland features  No grading within the root zone	Silt barriers to remain in good repair  No deposition or erosion > 5cm outside silt barriers	Visual inspection of silt barriers	All silt barriers	Weekly	n/a	Monthly	Repair any gaps or holes in silt barriers  Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)
Disturbance, fragmentation and removal of woodland habitats	Limits of vegetation clearing to be staked in the field	No clearing beyond staked limits  Pruning of retained trees to be done in accordance with arborist recommendations.	Visual inspections to ensure stakes are present and works stay within demarcated areas	All clearing areas in woodland	Weekly	n/a	Monthly	Replace any missing stakes  Immediately stop work in off-limit areas and replant or reseed as needed
<b>Wildlife Habitat</b>								
Potential effects of vegetation removal during construction	The majority of the proposed solar land development will be located within existing agricultural fields.  No removal of natural vegetation communities is proposed, except for the removal of hedgerows. No rare species or rare vegetation communities will be removed.  To the extent practical, tree and/or brush clearing will be completed prior to or after May 1 to July 23. Should clearing be required during the breeding bird season, prior to construction, surveys	No clearing beyond staked limits  Protect all known birds' nests from direct loss, and a suitable setback to minimize disturbance effects	Visual inspections to ensure stakes are present and works stay within demarcated areas  Not necessary if breeding bird timing window is respected	Limits of construction	Weekly	n/a	Monthly	Replace any missing stakes  Immediately stop work in off-limit areas and replant or reseed as needed  Should clearing be required during these dates, prior to construction, surveys will be undertaken to identify the presence/ absence of nesting birds. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.

**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	<p>will be undertaken within 48 hours of clearing to identify the presence/absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.</p> <p>Areas beneath and surrounding the solar panels will be vegetated with native grassland species.</p> <p>The lands immediately adjacent to the natural features have been disturbed by agricultural activities. Enhancing these areas through the establishment of naturalized setbacks will benefit the adjacent natural features and associated habitat.</p> <p>Maintain and enhance the corridor between feature 30 and 31 through planting of native species.</p>							
<b>Hydrology</b>								
Potential changes to current hydrological conditions during construction	<p>A passive system of stormwater management will be comprised of local ditches/swales alongside access roads.</p> <p>Solar cells will be mounted above the ground, infiltration, filtration through vegetation and other natural hydrologic process will continue similar to existing conditions.</p> <p>Drainage will generally be directed to existing receiving systems (drainage paths, roadside ditches, wetlands etc.) as under current conditions.</p>	Minimal change to existing hydrologic conditions; no significant ponding or drying	Visual inspection	Access roads; setbacks surrounding naturalized features	Weekly during spring, summer	n/a	Monthly	To be developed based on site-specific conditions; may include installation of additional culverts
<b>CONSTRUCTION – TRANSMISSION LINE</b>								
Potential localized disturbance of natural heritage features which occur within the municipal right-of-way during construction of monopoles and foundations.	<p>Proper erosion and sediment controls and construction management practices will be applied (see above, Construction – General)</p> <p>The poles will be installed at a shallow depth and the total area impacted will be small; therefore there are no anticipated changes to the surface water or groundwater contributions to the features. Construction activities are expected to be short term in duration (completed within a day) and small in scale, so minimal dust will be generated.</p> <p>Tree removal for the construction of the</p>	<p>Silt barriers to remain in good repair</p> <p>No deposition or erosion &gt; 5cm outside silt barriers</p> <p>Protect all known birds' nests from direct loss, and a suitable setback to minimize disturbance effects</p>	<p>Visual inspection of silt barriers</p> <p>Not necessary if breeding bird timing window is respected.</p>	All silt barriers	Weekly	n/a	Monthly	<p>Repair any gaps or holes in silt barriers</p> <p>Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)</p> <p>Should clearing be required during these dates, prior to construction, surveys will be undertaken to identify the presence/ absence of nesting birds. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.</p>

**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	<p>pole structures should occur outside of the breeding bird window (prior to or after May 1 to July 23). Should clearing be required during the breeding bird season, prior to construction, surveys will be undertaken within 48 hours of clearing to identify the presence/absence of nesting birds or breeding habitat. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.</p> <p>Monopoles have been located outside of all wetlands and located within the municipal right-of-way.</p>							
<b>OPERATION – WIND FARM</b>								
Disturbance effects to woodland breeding bird species during operation	<p>Wind Project : Minimal removal of woodland habitat through avoidance, use of existing access roads.</p> <p>Solar Project: Avoidance of woodland habitat and implementation of 30 m setback.</p> <p>Transmission Project: Avoidance of woodland habitat through use of existing road right-of-way for transmission line; implementation of minimum 30 m setback to substation and Operations and Management buildings.</p>	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to woodland breeding birds is occurring, and whether such effect is attributed to the Project and not external factors. These discussions will determine whether contingency measures will be undertaken.	Point count survey using methods outlined in MNR 2010a (see EEMP for Wildlife and Wildlife Habitats)	A minimum of 20 point counts will be established in significant woodland habitats within 120 m of the project location (12 within 120 m of turbines within the Wind Project; 3 within 120 m of the Solar Project; 5 within 120 m of the Transmission Project).	Twice in June, annually for three years (one year pre-construction, two years post-construction)	Breeding pair density is a standard measure that can be compared among years	Annually	<p>Should performance objectives not be met:</p> <ol style="list-style-type: none"> <li>1. Compare declines to population trends noted through province or continent-wide breeding bird surveys</li> <li>2. Develop additional control/impact point count study to confirm that decline is due to disturbance, and determine extent of disturbance effect</li> <li>3. Additional post-construction monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/avoidance effects associated with woodland breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation.</li> </ol>
Disturbance effects to grassland breeding bird species during operation	<p>Wind Project : Minimal removal of woodland habitat through avoidance, use of existing access roads.</p> <p>Solar Project: Avoidance of woodland habitat and implementation of 30 m setback.</p> <p>Transmission Project: Avoidance of woodland habitat through use of existing road right-of-way for transmission line;</p>	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to grassland breeding birds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	Point count survey using methods outlined in MNR 2010a (see EEMP for Wildlife and Wildlife Habitats)	A minimum of 10 point counts will be established in significant grassland habitats within 120 m of the Wind, Solar and Transmission Project Locations.	Twice in June, annually for three years (one year pre-construction, two years post-construction)	Breeding pair density is a standard measure that can be compared among years	Annually	<p>Should performance objectives not be met:</p> <ol style="list-style-type: none"> <li>1. Compare declines to population trends noted through province or continent-wide breeding bird surveys</li> <li>2. Develop additional control/impact point count study to confirm that decline is due to disturbance, and determine extent of disturbance effect</li> <li>3. Investigate habitat management options to increase breeding density on leased lands</li> </ol>

**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	implementation of minimum 30 m setback to substation and Operations and Management buildings.							4. Additional post-construction monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/ avoidance effects associated with grassland breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation.
Disturbance effects to migratory landbird species during operation	Wind Project: Minimal removal of woodland habitat through avoidance, use of existing access roads.	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to migratory landbirds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	Transect survey using methods outlined in MNR 2010a (see EEMP for Wildlife and Wildlife Habitats)	Transect surveys will be completed at each turbine located within 120 m of a significant migratory landbird stopover area	Twice per week, spring (end of April to end of May) and fall (end of August to end of October) for 3 years	Species counts (# of individuals) and species diversity are a standard measure that can be compared among years	Annually	Should performance objectives not be met: <ol style="list-style-type: none"> <li>1. Compare declines to population trends noted through province or continent-wide breeding bird surveys</li> <li>2. Develop additional control/impact point count study to confirm that decline is due to disturbance, and determine extent of disturbance effect</li> <li>3. Investigate habitat management options to increase breeding density on leased lands</li> <li>4. Additional post-construction monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/ avoidance effects associated with grassland breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation.</li> </ol>
<b>OPERATION – SOLAR</b>								
<b>Wildlife Habitat</b>								
Addition of landscape structures and potential affects to wildlife movement	Solar panels will be suspended above grade; therefore, the property will remain porous to allow for the movement of small rodents and mammals across the site.	Minimal change to existing animal movement conditions	Visual inspection during winter wildlife studies	Along fence and features 30 and 31	Two visits during winter conditions for two visits post-construction	To detect evidence of barrier effect	Annually	If barrier effect is noted, options for improving access should be explored.

**Table 6.2: Post-Construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	<p>A 2 m high fence separating features 30 and 31 may disrupt some larger animal movement, although this fence would not be considered an impediment to adult deer or small mammals and amphibians. Installation of measures to facilitate the passage of wildlife species is encouraged.</p> <p>Deer yards will be protected and connectivity maintained beyond the solar land area.</p> <p>Areas beneath and surrounding the solar panels will be vegetated with native grassland species.</p>							
<b>OPERATION – TRANSMISSION LINE</b>								
<p>An increase in impervious surface cover (substation, access, O&amp;M building), corresponding hydrologic impacts, and encroachment into, over and adjacent to natural features</p>	<p>No components of the project are located within or over a wetland.</p> <p>Grading adjacent to the woodland and wetland feature will be minimal.</p> <p>Local drainage to the wetland will be maintained through cross-culverts beneath the access road to convey surface drainage to the wetland.</p> <p>Use of permeable materials (gravel).</p> <p>Storm water management for the O&amp;M building will be provided through a constructed wetland facility providing water quality and quantity control, which will outlet southward to the tributary of Wardell's Creek.</p>	<p>Silt barriers to remain in good repair</p> <p>No deposition or erosion &gt; 5cm outside silt barriers</p> <p>Minimal change to existing hydrologic conditions; no significant ponding or drying</p>	<p>Visual inspection of silt barriers and water ponding or drying</p>	<p>All silt barriers</p> <p>Access roads</p>	<p>Weekly for silt barriers</p> <p>Weekly during spring, summer for water ponding or drying</p>	<p>n/a</p>	<p>Monthly</p>	<p>Repair any gaps or holes in silt barriers</p> <p>Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)</p> <p>To be developed based on site-specific conditions; may include installation of additional culverts.</p>