

Table 3.3 Vegetation Communities Identified Within the 120 m Area of Investigation

Natural Area	Total Size of Natural Area (ha)	Date of Site Investigation	Date Re-visited (if applicable)	ELC Code	ELC Name	Inclusions (if applicable)	Area (ha)	Community Age	Vegetation Composition	Incidental Wildlife Observed
279	7.0	2-May-12		MAM3-2	Reed-canary Grass Organic Meadow Marsh Type <u>Surveyed from roadside</u>		0.8	Young	There is no canopy, sub-canopy or shrub layer within this young meadow marsh. The ground cover consists of mainly reed canary grass with fewer goldenrod species and aster species.	<b>Birds:</b> Song Sparrow, Killdeer, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Northern Flicker, Rose-breasted Grosbeak <b>Lepidoptera:</b> Red Admiral <b>Herpetofauna:</b> Northern Leopard Frog <b>Mammals:</b> White-tailed Deer
		2-May-12		SWD6-3	Swamp Maple Organic Deciduous Swamp Type <u>Surveyed from roadside</u>		6.2	Mid-age	The canopy layer within this mid-age swamp is dominated by Freeman's maple with fewer green ash, less white elm, and even less eastern cottonwood. The sub-canopy layer is dominated by Freeman's maple with fewer green ash. The shrub layer consists of choke cherry and Freeman's maple. The ground cover consists of garlic mustard, spotted jewelweed, buttercup species, and violet species.	<b>Birds:</b> Song Sparrow, Killdeer, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Northern Flicker, Rose-breasted Grosbeak <b>Lepidoptera:</b> Red Admiral <b>Herpetofauna:</b> Northern Leopard Frog <b>Mammals:</b> White-tailed Deer
280	90.3	21-Sep-11	24-Apr-12	SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		1.3	Mid-age to Mature	This mid-age to mature deciduous swamp community is dominated by freeman's maple, green ash, paper birch and black ash. The sub-canopy is comprised of freeman's maple, blue beech, white elm and green ash, while spicebush dominates the shrub layer with fewer white elm. Herbaceous species recorded include wild lily-of-the-valley, sensitive fern, moonseed and tall white aster.  Seasonal flooding is evident.	<b>Birds:</b> Common Grackle, Wild Turkey, American Crow, Blue Jay, Black-capped Chickadee, Northern Flicker, Hairy Woodpecker, American Robin, Great Blue Heron (fly over), Yellow-rumped Warbler, Red-eyed Vireo, White-breasted Nuthatch, Red-winged Blackbird, Turkey Vulture <b>Lepidoptera:</b> Clouded Sulphur, Cabbage White <b>Herpetofauna:</b> Spring Peeper, Wood Frog, Eastern Red-backed Salamander <b>Mammals:</b> White-tailed Deer, Eastern Chipmunk, Raccoon, Gray Squirrel
		24-Apr-12		CUP3-2	White Pine Coniferous Plantation Type		1.0	Mid-age	The canopy within this mid-age plantation is dominated by eastern white pine. The sub-canopy is dominated by white elm. The shrub layer is dominated by black raspberry. The ground cover is dominated by running strawberry bush.	<b>Birds:</b> American Crow, Downy Woodpecker, Northern Flicker, Turkey Vulture
		24-Apr-12		CUP3-1	Red Pine Coniferous Plantation Type		1.2	Young to Mid-age	The canopy layer within this young to mid-age plantation is dominated by red pine with less eastern white pine. The sub-canopy is dominated by white elm. There was no shrub layer or ground cover layer.	<b>Birds:</b> Turkey Vulture, Black-capped Chickadee
		24-Apr-12		FOD6-1	Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type (east of Turbine 23)	CUM1-1: Dry - Moist Old Field Meadow Type	1.3	Mid-age	The canopy layer within this mid-age forest consists of sugar maple, green ash, and white elm. The sub-canopy is mainly green ash with less white elm. The shrub layer is mainly choke cherry with fewer white elm and less spicebush. The ground cover consists mainly of yellow trout lily and star flowered solomon.  The sub-canopy of the cultural meadow inclusion is dominated by trembling aspen. The shrub layer is mainly red-osier dogwood with less willow species. The ground cover consists mainly of grasses, with some tall goldenrod and garlic mustard.	<b>Birds:</b> Turkey Vulture, Black-capped Chickadee
		24-Apr-12		FOD6-1	Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type (southwest of Turbine 22)	FOD4d: Dry - Fresh Trembling Aspen Deciduous Forest Type	1.5	Mid-age	The canopy within this mid-age forest is mainly sugar maple with fewer white ash. The sub-canopy is similar. The shrub layer consists mainly of choke cherry and white elm with less nannyberry and less spicebush. The ground cover is mainly yellow trout lily with wood anemone.  The canopy layer within the young forest inclusion consists mainly of trembling aspen with fewer green ash and much less white birch and eastern hemlock. The sub-canopy is mainly green ash with some trembling aspen. The shrub layer is mainly white elm with less nannyberry. The ground cover consists of wild black currant and wild strawberry.	<b>Birds:</b> American Crow, Downy Woodpecker, Northern Flicker, Turkey Vulture
		21-Sep-11	24-Apr-12	SWD4b	Green Ash - Trembling Aspen Mineral Deciduous Swamp Type (northeast corner of property)		4.3	Mid-age	This is a seasonally flooded mid-age deciduous swamp is co-dominated by green ash and trembling aspen in the canopy. Blue beech dominates the sub-canopy with lesser amounts of white elm, while the shrub layer is dominated by spicebush. The herbaceous layer is comprised of sensitive fern, sedges and dwarf raspberry.  Evidence of seasonal flooding was noted however no water was present at the time of site investigation.	<b>Birds:</b> Common Grackle, Wild Turkey, American Crow, Blue Jay, Black-capped Chickadee, Northern Flicker, Hairy Woodpecker, American Robin, Great Blue Heron (fly over), Yellow-rumped Warbler, Red-eyed Vireo, White-breasted Nuthatch, Red-winged Blackbird, Turkey Vulture <b>Lepidoptera:</b> Clouded Sulphur, Cabbage White <b>Herpetofauna:</b> Spring Peeper, Wood Frog, Eastern Red-backed Salamander <b>Mammals:</b> White-tailed Deer, Eastern Chipmunk, Raccoon, Gray Squirrel

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		24-Apr-12		FOD5-8	Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type		56.0	Mid-age to Mature	The canopy layer within this mid-age to mature forest consists of sugar maple, white ash, American beech, basswood and large tooth aspen. The sub-canopy is dominated by American beech with lesser amounts of sugar maple and white ash. The sub-canopy is mainly sugar maple with less white ash. The shrub layer includes white elm, American beech, maple-leaved viburnum, choke cherry and spicebush. The ground cover consists of yellow trout lily, star flowered solomon, sedges, white trillium and partridge-berry.	<b>Birds:</b> Common Grackle, Wild Turkey, American Crow, Blue Jay, Black-capped Chickadee, Northern Flicker, Hairy Woodpecker, American Robin, Great Blue Heron (fly over), Yellow-rumped Warbler, Red-eyed Vireo, White-breasted Nuthatch, Red-winged Blackbird, Turkey Vulture <b>Lepidoptera:</b> Clouded Sulphur, Cabbage White <b>Herpetofauna:</b> Spring Peeper, Wood Frog, Eastern Red-backed Salamander <b>Mammals:</b> White-tailed Deer, Eastern Chipmunk, Raccoon, Gray Squirrel
		24-Apr-12		FOD7-2	Fresh - Moist Ash Lowland Deciduous Forest Type		3	Mid-age	The canopy within this mid-age forest is dominated by green ash with fewer eastern cottonwood and less Freeman's maple. The sub-canopy is mainly green ash with fewer Freeman's maple and less white elm. The shrub layer is mainly white ash with fewer nannyberry and less spicebush. The ground cover is mainly white avens and wild black currant.	<b>Birds:</b> American Crow, Downy Woodpecker, Northern Flicker, Turkey Vulture
		21-Sep-11	24-Apr-12	FOD4e	Dry - Fresh Large-tooth Aspen Deciduous Forest Type (east of Turbine 22)	SWD2-2: Green Ash Mineral Deciduous Swamp Type	3.5	Mid-age	The canopy of this mid-age forest is mainly large-tooth aspen with fewer green ash and much less white birch and less basswood. The sub-canopy layer is mainly green ash with less trembling aspen. The shrub layer consists of white elm with fewer nannyberry and less spicebush. The ground cover consists of mainly yellow trout lily with fewer wild black currant and less wild strawberry.  The inclusions are mid-age green ash deciduous swamps with evidence of extensive flooding occurring up to 50 cm in depth.	<b>Birds:</b> Common Grackle, Wild Turkey, American Crow, Blue Jay, Black-capped Chickadee, Northern Flicker, Hairy Woodpecker, American Robin, Great Blue Heron (fly over), Yellow-rumped Warbler, Red-eyed Vireo, White-breasted Nuthatch, Red-winged Blackbird, Blue Jay, Black-capped Chickadee, American Crow, Turkey Vulture <b>Lepidoptera:</b> Clouded Sulphur, Cabbage White <b>Herpetofauna:</b> Spring Peeper, Wood Frog, Eastern Red-backed Salamander <b>Mammals:</b> Eastern Chipmunk, Raccoon, White-tailed Deer, Gray Squirrel
282	22.3	25-Apr-12		SWD2-2	Green Ash Mineral Deciduous Swamp Type		2.1	Mid-age	The canopy layer within this mid-age swamp is mainly green ash with less Freeman's maple. The sub-canopy is dominated by green ash. The shrub layer is mainly Freeman's maple with less white elm. The ground cover is dominated by dotted sedge.	<b>Birds:</b> Song Sparrow, Turkey Vulture, Red-bellied Woodpecker, Downy Woodpecker, Yellow-bellied Sapsucker, American Crow, Red-winged Blackbird, White-throated Sparrow, American Robin, Ruby-crowned Kinglet, Common Grackle <b>Lepidoptera:</b> Cabbage White, Red Admiral
		25-Apr-12		CUM1-1	Dry - Moist Old Field Meadow Type	FOD6-4: Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type	1.6	Pioneer	The canopy layer within this pioneer meadow is dominated by trembling aspen. There is no sub-canopy layer. The shrub layer is dominated by staghorn sumac. The ground cover is dominated by reed canary grass.	<b>Birds:</b> Song Sparrow, Turkey Vulture, Red-bellied Woodpecker, Downy Woodpecker, Yellow-bellied Sapsucker, American Crow, Red-winged Blackbird, White-throated Sparrow, American Robin, Ruby-crowned Kinglet, Common Grackle <b>Lepidoptera:</b> Cabbage White, Red Admiral
		25-Apr-12		FOD6-4	Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type		12.5	Mid-age	The canopy layer within this mid-age forest is dominated by sugar maple with fewer white ash and less white elm. The sub-canopy is mainly sugar maple with less white elm. The shrub layer is mainly choke cherry with less nannyberry. The ground cover is mainly yellow trout lily with some white trillium.	<b>Birds:</b> Song Sparrow, Turkey Vulture, Red-bellied Woodpecker, Downy Woodpecker, Yellow-bellied Sapsucker, American Crow, Red-winged Blackbird, White-throated Sparrow, American Robin, Ruby-crowned Kinglet, Common Grackle <b>Lepidoptera:</b> Cabbage White, Red Admiral
285	5.9	28-Jun-12		FOD7-2	Fresh - Moist Ash Lowland Deciduous Forest Type		0.7	Mid-age	The canopy of this mid-age deciduous forest consists of green ash, white elm and trembling aspen. The sub-canopy consists of white elm and green ash. The shrub layer consists of spicebush with lesser amount of green ash. The ground layer consists of thicket creeper, enchanter's nightshade, black raspberry and white avens.	<b>Birds:</b> Wild Turkey, Black-capped Chickadee, Mourning Dove, Killdeer, Blue Jay
		28-Jun-12		CUP3-2	White Pine Coniferous Plantation Type	SWD4c: Cottonwood Mineral Deciduous Swamp Type  CUM1-1: Dry - Moist Old Field Meadow Type	1.6	Mid-age	The canopy of this mid-age plantation consists of eastern white pine. There is also some planted white spruce and red pine, and some regeneration by green ash and white elm. The sub-canopy is comprised of white spruce. The shrub layer consists of green ash and spicebush. The ground cover consists of poison ivy and thicket creeper.	<b>Birds:</b> Wild Turkey, Black-capped Chickadee, Mourning Dove, Killdeer, Blue Jay

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290	3.5	21-Sep-11	25-Apr-12	FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		3.5	Mid-age	Co-dominant species observed within the canopy of this mid-age deciduous forest include sugar maple, basswood, white ash, and American beech while the sub-canopy is comprised of sugar maple and American beech. The shrub layer consists of choke cherry, American beech, sugar maple, and white ash. Dominant species recorded within the herbaceous layer include poison ivy, calico aster, running strawberry bush and white avens.	<b>Birds:</b> Red-tailed Hawk, Vesper Sparrow, Downy Woodpecker, Black-capped Chickadee, Red-winged Blackbird <b>Mammals:</b> White-tailed Deer, Raccoon <b>Lepidoptera:</b> Eastern Comma, Red Admiral	
291	3.8	7-Nov-11	26-Apr-12	SWD4a	Swamp Maple - Green Ash Deciduous Swamp Type		1.0	Mid-age	Canopy species recorded within this mid-age deciduous swamp were green ash and freeman's maple while sub-canopy species included white elm, green ash and freeman's maple. The shrub layer consists of silky dogwood and freeman's maple and the herbaceous layer consists of fowl manna grass, sedge species and tall white aster.  Seasonally flooded, no water present at time of site investigation. Variable canopy openings with evidence of selective cutting of larger swamp maple within last few years.	<b>Birds:</b> Hairy Woodpecker, Black-capped Chickadee, Downy Woodpecker, Northern Flicker, Wild Turkey, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Killdeer, American Goldfinch <b>Mammals:</b> White-tailed Deer, Coyote	
		7-Nov-11	26-Apr-12	FOD8-1	Fresh - Moist Poplar Deciduous Forest Type		2.9	Mid-age	Species observed within the canopy of this mid-age deciduous forest included trembling aspen and green ash while the sub-canopy consists of common buckthorn, white elm and green ash. Shrub layer species recorded include common buckthorn and choke cherry while species recorded within the herbaceous layer include white avens, tall white aster, running strawberry bush and poison ivy.  This community has an undulating topography creating small areas of seasonal flooding throughout, with the low areas being swamp and slightly elevated areas forest.	<b>Birds:</b> Hairy Woodpecker, Black-capped Chickadee, Downy Woodpecker, Northern Flicker, Wild Turkey, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Killdeer, American Goldfinch <b>Mammals:</b> White-tailed Deer, Coyote	
300	73.1	7-Nov-11	26-Apr-12	CUM1-1	Dry - Moist Old Field Meadow Type		0.7	Young	This is a young cultural meadow community with scattered trees throughout consisting of common apple, white elm, green ash and Russian olive. Dominant species found within the herbaceous layer include awnless brome, orchard grass, Canada goldenrod and Kentucky bluegrass.	<b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch, Hairy Woodpecker, Wild Turkey (feather), Red-winged Blackbird, Blue Jay, Northern Flicker <b>Herpetofauna:</b> Wood Frog, Spring Peeper <b>Mammals:</b> Raccoon, Meadow Vole	
		2-May-12		FOD7c	Fresh - Moist Manitoba Maple - Green Ash - White Elm - Freeman's Maple Lowland Deciduous Forest Type <u>Surveved from roadside</u>		1.5	Mid-age	The canopy layer of this mid-age forest consists of Manitoba maple, green ash, white elm, and Freeman's maple. There is no sub-canopy layer. The shrub layer consists of sandbar willow and Freeman's maple. The ground cover is dominated by garlic mustard.	<b>Birds:</b> Red-winged Blackbird, Song Sparrow <b>Lepidoptera:</b> Red Admiral	
		21-Sep-11		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type (northwest of Turbine 32) <u>Surveved from roadside</u>		5.6	Mature	The canopy layer of this mature deciduous swamp is dominated by Freeman's maple with a lesser amount of white elm. Other dominant species observed include jewelweed, panicked aster, and orchard grass.	No wildlife observed	
		7-Nov-11	26-Apr-12	FOD7-2	Fresh - Moist Ash Lowland Deciduous Forest Type	SWD3-3: Swamp Maple Mineral Deciduous Swamp Type		28.2	Mid-age	The canopy of this mid-age to mature deciduous forest is dominated by green ash with lesser amounts of basswood, while the sub-canopy consists of white elm. Spicebush dominates the shrub layer and the herbaceous layer is comprised of wild strawberry and white avens.  Evidence of recent selective logging was observed.	<b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch, Hairy Woodpecker, Wild Turkey (feather), Red-winged Blackbird, Blue Jay, Northern Flicker <b>Herpetofauna:</b> Wood Frog, Spring Peeper <b>Mammals:</b> Raccoon, Meadow Vole
		7-Nov-11	26-Apr-12	SWD3-3	Swamp Maple Mineral Deciduous Swamp Type (west of Turbine 32)	FOD6-5: Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type		1.2	Mid-age	The canopy layer species recorded with this mid-age deciduous swamp include freeman's maple with some green ash, while the sub-canopy species recorded include white elm and freeman's maple. The herbaceous layer consists of black nightshade, pale smartweed, and sedge species.  Seasonal flooding was apparent and areas in the northeast corner of the swamp had standing water at the time of site investigation. Recent selective cutting of larger maples was evident.	<b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch, Hairy Woodpecker, Wild Turkey (feather), Red-winged Blackbird, Northern Flicker <b>Herpetofauna:</b> Wood Frog, Spring Peeper <b>Mammals:</b> Raccoon, Meadow Vole

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309	19.7	3-Oct-11		FOD7-4	Fresh - Moist Black Walnut Lowland Deciduous Forest Type		3.3	Mid-age	The canopy of this mid-age deciduous forest is comprised of black walnut, Freeman's maple, white ash, and white elm. The sub-canopy is dominated by equal amounts of Freeman's maple and white ash with some choke cherry. Herbaceous species recorded within the shrub and herbaceous layers were calico aster, jewelweed, wild black currant, dame's rocket, garlic mustard, avens species, and running strawberry bush.	<b>Herpetofauna:</b> Gray Treefrog <b>Mammals:</b> Eastern Chipmunk
		3-Oct-11		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		5.4	Mature	The canopy layer of this mature deciduous swamp is dominated by Freeman's maple with lesser amounts of black walnut, white ash, and white elm. The sub-canopy consists of white ash, white elm, Freeman's maple and black walnut. The herbaceous layer is comprised by a variable mix of spotted jewelweed, garlic mustard, stinging nettle, tall meadow rue and running strawberry bush.	<b>Herpetofauna:</b> Gray Treefrog <b>Mammals:</b> Eastern Chipmunk
321	4.4	20-Jul-11	5-Oct-2011 23-Apr-2012	FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type	SWD3-3: Swamp Maple Mineral Deciduous Swamp Type	4.3	Mature	This mature deciduous forest is dominated by sugar maple with lesser amounts of beech and white ash. The sub-canopy is also dominated by sugar maple with lesser amounts of white ash, white elm and witch hazel. Species noted within shrub layer include black raspberry, sugar maple, calico aster, and mapleleaf viburnum. The herbaceous layer consisted of poison ivy, sugar maple and bearded shorthusk.	<b>Birds:</b> Song Sparrow, Red-winged Blackbird, American Robin, Chipping Sparrow, American Crow, Black-capped Chickadee, Common Grackle, American Goldfinch, Blue Jay, Downy Woodpecker, Wild Turkey <b>Mammals:</b> White-tailed Deer, Coyote, Eastern Cottontail, Woodchuck <b>Herpetofauna:</b> Spring Peeper, Eastern Garter Snake
326	8.3	22-Sep-11	26-Apr-12	FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		3.0	Mature	This mature deciduous forest is dominated by basswood with lesser amounts of sugar maple, white ash, and American beech, while the sub-canopy is comprised of equal amounts of blue beech, white ash, and sugar maple. Other species observed in the ground layer include zigzag goldenrod, calico aster, blue cohosh, fowl manna grass, enchanter's nightshade, running strawberry bush, garlic mustard, and herb robert.  The forest shows evidence of selective harvesting and appears to have been carefully managed.	<b>Birds:</b> Downy Woodpecker, Pileated Woodpecker (excavations), Cedar Waxwing, Red-winged Blackbird <b>Herpetofauna:</b> Wood Frog, Gray Treefrog, Spring Peeper
		22-Sep-11	20-Jul-11 26-Apr-12	FOD5-1	Dry - Fresh Sugar Maple Deciduous Forest Type	CUP3c: Colorado Spruce Coniferous Plantation Type	5.3	Mature	The canopy layer within this mature forest is dominated by sugar maple with some American beech, basswood, and white ash. The sub-canopy is dominated by sugar maple with lesser amounts of white ash, red elderberry and blue beech. The shrub layer is mainly sugar maple with some choke cherry and less ironwood. The ground layer is yellow trout lily with a variety of other species that include yellow violet, calico aster, blue cohosh, zigzag goldenrod, jack-in-the-pulpit, enchanter's nightshade and running strawberry bush.  The mid-age coniferous plantation inclusion is dominated by Colorado spruce with some white pine, white spruce, white ash and trembling aspen.	<b>Birds:</b> Canada Goose, American Crow, Red-bellied Woodpecker, Song Sparrow, Wood Thrush, Cedar Waxwing, Northern Flicker, American Robin, Indigo Bunting, Blue Jay, Gray Catbird, Baltimore Oriole, Great Crested Flycatcher, House Wren, Downy Woodpecker, Pileated Woodpecker (excavations), Red-winged Blackbird <b>Herpetofauna:</b> Wood Frog, Gray Treefrog, Spring Peeper
331	5.9	4-Jul-12		FOD5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type <u>Surveyed from fence line</u>		5.3	Mid-age	The canopy layer within this mid-age forest consists of sugar maple and American beech. The sub-canopy layer consists of sugar maple and American beech. The shrub layer consists of blue beech, sugar maple and American beech. The ground cover consists of choke cherry, poison ivy, sugar maple and enchanter's nightshade.	<b>Birds:</b> Red-tailed Hawk
339	13.0	7-Sep-11	8-Nov-11	SWD3-3	Swamp Maple Mineral Deciduous Swamp Type <u>Surveyed from fence line</u>	MAS2-2: Bulrush Mineral Shallow Marsh Type	0.6	Mid-age	This is a complex of deciduous swamp and marsh communities.  The canopy of this mid-age deciduous swamp is dominated by freeman's maple with lesser amounts of green ash and trembling aspen. The sub-canopy layer consists of black ash and green ash. The ground layer is dominated by common reed, bulrush species and sedge species.	<b>Birds:</b> Eastern Wood-pewee, Mourning Dove, American Goldfinch, White-breasted Nuthatch, Cooper's Hawk, Downy Woodpecker, Wild turkey (feather), Blue Jay, Snow Bunting <b>Herpetofauna:</b> Spring Peeper

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		7-Sep-11	8-Nov-11	FOD5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type <u>Surveyed from fence line</u>		6.2	Mature	The canopy layer of this mature forest is dominated by sugar maple and American beech with lesser amounts of basswood and white ash. The sub-canopy layer consists of American beech and sugar maple. The shrub layer is dominated by choke cherry. The herbaceous layer is mainly comprised of woodland strawberry, choke cherry, tall white aster and zigzag goldenrod.  This forest exhibits evidence of selective cutting within the past few years.	<b>Birds:</b> Eastern Wood-pewee, Mourning Dove, American Goldfinch, White-breasted Nuthatch, Cooper's Hawk, Downy Woodpecker, Wild Turkey (feather), Blue Jay, Snow Bunting <b>Herpetofauna:</b> Spring Peeper
342	2.8	16-Aug-11		FOD5-5	Dry - Fresh Sugar Maple - Hickory Deciduous Forest Type		2.8	Mature	The canopy layer of this mature deciduous forest is comprised of sugar maple, shagbark hickory, white ash, and American beech while the sub-canopy consists of sugar maple, white ash, shagbark hickory, and basswood. The shrub layer is dominated by sugar maple with lesser amounts of shagbark hickory and basswood. Species observed within the herbaceous layer include jack-in-the-pulpit, sugar maple, enchanter's nightshade and zigzag goldenrod.	<b>Birds:</b> Red-tailed Hawk (vocalization pair, agitated), Wild Turkey (feathers), Eastern Wood-pewee, White-breasted Nuthatch
346	1.2	12-Dec-11	3-Jul-12	FOD4g	Dry - Fresh Green Ash Deciduous Forest Type	CUP3-2: White Pine Coniferous Plantation Type  CUM1-1: Dry - Moist Old Field Meadow Type	1.2	Mid-age	The canopy within this mid-age deciduous forest consists mainly of green ash with fewer white birch and white elm. The sub-canopy consists of green ash, white elm and white birch. The shrub layer consists mainly of spice bush with fewer green ash and witch hazel. The ground cover consists of wild red raspberry, enchanter's nightshade, thicket-creeper, poison ivy and yellow avens.  The mid-age plantation inclusion consists of eastern white pine. The shrub layer consists of ash species. The ground cover consists of ash species.  The canopy layer within the meadow inclusion consists mainly of green ash with fewer black walnut. There is no sub-canopy or shrub layer. The ground cover consists of reed canary grass.	<b>Birds:</b> Great Crested Flycatcher, Blue Jay, Song Sparrow, House Wren, Black-capped Chickadee
349	2.6	12-Dec-11	3-Jul-12	FOD7-2	Fresh - Moist Ash Lowland Deciduous Forest Type		1.6	Mid-age	The canopy and sub-canopy of this mid-age deciduous forest was dominated by green ash with lesser amounts of white elm. The shrub layer was dominated by spice bush and common buckthorn. The ground cover was mainly yellow avens, poison ivy, and wild red raspberry.	<b>Birds:</b> Great Crested Flycatcher, Blue Jay, Song Sparrow, House Wren, Black-capped Chickadee
352	7.2	16-Aug-11		FOD5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type <u>Surveyed from fence line</u>		7.2	Mature	The canopy of this mature deciduous forest is dominated by sugar maple and American beech with lesser amounts of white ash and basswood. The sub-canopy is dominated by sugar maple and with ash with lesser amounts of basswood and ironwood. The shrub layer consists of sugar maple with equal amounts of American beech and white ash and lesser amounts of choke cherry. Herbaceous layer species include immature white ash, immature sugar maple, jack-in-the-pulpit and enchanter's nightshade.	<b>Birds:</b> Great Crested Flycatcher, Cedar Waxwing, American Robin, Eastern Wood-pewee, Pileated Woodpecker, Yellow-throated Vireo <b>Lepidoptera:</b> Red-spotted Purple, Monarch
358	4.5	7-Sep-11 9-Nov-11		FOD5-2	Dry - Fresh Sugar Maple - Beech Deciduous Forest Type <u>Surveyed from fence line</u>	MAM2-10: Forb Mineral Meadow Marsh Type	4.5	Mature	The canopy layer of this mature deciduous forest is dominated by American beech, sugar maple, ironwood and white ash. The sub-canopy layer consists of sugar maple and American beech. The shrub layer is dominated by American beech and white ash, while the herbaceous layer was mainly comprised of zigzag goldenrod, ironwood, poison ivy, tall white aster and wild leek.  This meadow marsh inclusion is located along an intermittent channel within the deciduous forest portion of the feature. The sparse shrub layer consists of common elderberry. The herbaceous layer consists of jewelweed, pale smartweed, goldenrod species and bitterdock.	<b>Birds:</b> Wild Turkey, Turkey Vulture, Ruby-throated Hummingbird, American Goldfinch, Eastern Wood-pewee

Table 3.3 Vegetation Communities Identified Within the 120 m Area of Investigation

Natural Area	Total Size of Natural Area (ha)	Date of Site Investigation	Date Re-visited (if applicable)	ELC Code	ELC Name	Inclusions (if applicable)	Area (ha)	Community Age	Vegetation Composition	Incidental Wildlife Observed
361	2.5	12-Dec-11		CUW1b	Ash - Basswood Mineral Cultural Woodland Type		0.8	Young to Mid-age	The canopy of this young to mid-age deciduous forest is dominated by ash with lesser amounts of basswood. The sub-canopy also consists of ash. The shrub layer consists of winterberry, ash species and poison ivy. The herbaceous layer was dominated by avens species with lesser amounts of calico aster and Canada goldenrod.	<b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch
		3-Jul-12 12-Dec-11		FOD7-2	Fresh - Moist Ash Lowland Deciduous Forest Type <u>Survived from roadside and fence line</u>		1.6	Mid-age	The canopy layer within this mid-age deciduous forest consists mainly of green ash with some basswood and Freeman's maple. The sub-canopy layer consists mainly of green ash and white elm. The shrub layer consists of green ash. The ground cover could not be seen.	No wildlife observed
362	2.0	7-Jun-12		FOD8-1	Fresh - Moist Poplar Deciduous Forest Type <u>Survived from fence line</u>		1.8	Mid-age	The canopy of this mid-age forest consists of trembling aspen, green ash, white elm and basswood. The sub-canopy consists of green ash, trembling aspen and white elm. The shrub layer consists of alternate-leaved dogwood and wild red raspberry. The ground cover consists of garlic mustard, goldenrod species, aster species and grasses.	<b>Birds:</b> Horned Lark, Brown Thrasher, House Wren, Vesper Sparrow, Rose-breasted Grosbeak
364	48.2	8-Sep-11		FOD5-1	Dry - Fresh Sugar Maple Deciduous Forest Type		3.2	Mature	The canopy layer of this mature deciduous forest is dominated by sugar maple with lesser amounts of white ash and American beech. The shrub layer consists of American beech, white ash and common elderberry. The ground layer was mainly comprised of zigzag goldenrod, Pennsylvania sedge, red baneberry, jack-in-the-pulpit and false solomon's seal.  This forest exhibits evidence of logging; abundant stumps were present.	<b>Birds:</b> Wild Turkey <b>Herpetofauna:</b> Wood Frog
369	13.7	23-Sep-11		CUW1e	Sweet Cherry - White Elm Mineral Cultural Woodland Type		1.0	Mid-age	This mid-age cultural woodland is dominated by white elm, basswood and white ash. The sub-canopy is dominated by sweet cherry with lesser amount of white ash and white elm. The shrub and herbaceous layers consist of New England aster, hairy aster, garlic mustard, wild strawberry and poison ivy.	No wildlife observed
370	0.9	11-Jun-12		CUP2a	White Pine - Carolina Poplar Mixed Plantation Type <u>Survived from fence line</u>		0.9	Mid-age	The canopy within this mid-age plantation consists of Carolina poplar. The sub canopy consists of eastern white pine, white spruce and red cedar. The shrub layer consists of smooth brome.	No wildlife observed
372	4.0	30-May-11	26-Apr-12	FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		4.0	Mid-age to Mature	The canopy layer within this mid-age to mature deciduous forest consists of basswood and sugar maple, with some white ash, black cherry and American beech. The sub-canopy is dominated by sugar maple. The shrub layer consists of choke cherry and running strawberry bush with lesser amounts of American beech and white elm. The ground cover consists of toothwort, yellow trout lily, jack-in-the-pulpit, red trillium, false solomon's seal and herb robert.	<b>Birds:</b> Red-winged Blackbird, Ruby-crowned Kinglet, Vesper Sparrow <b>Herpetofauna:</b> Wood Frog
373	1.7	27-Sep-11		CUM1-1	Dry - Moist Old Field Meadow Type		0.8	Young	This community is located along a dredged stream. The species observed include orchard grass, Canada goldenrod, tall white aster, reed canary grass, and wild carrot.	<b>Birds:</b> Black-capped Chickadee, American Goldfinch, Blue Jay, Song Sparrow <b>Herpetofauna:</b> American Toad <b>Lepidoptera:</b> Monarch, Clouded Sulphur, Eastern Comma, Orange Sulphur
		27-Sep-11		CUW1h	White Elm Mineral Cultural Woodland Type		0.9	Young	Dominant species observed include white elm, basswood, and black cherry within the canopy of this young cultural woodland, and the sub-canopy included apple and basswood. Species recorded within the herbaceous layer include white avens, red raspberry, and tall goldenrod.	<b>Birds:</b> Black-capped Chickadee, American Goldfinch, Blue Jay, Song Sparrow <b>Herpetofauna:</b> American Toad <b>Lepidoptera:</b> Monarch, Clouded Sulphur, Eastern Comma, Orange Sulphur
375	20.6	12-Dec-11		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		1.8	Mid-age	The canopy layer within this mid-age deciduous swamp is dominated by Freeman's maple with some green ash. The sub-canopy consists of Freeman's maple, white elm, and basswood. Species observed within the shrub layer include white elm with equal amounts of green ash, basswood, and choke cherry. The herbaceous layer is comprised of buttonbush, with equal amounts of choke cherry, sensitive fern, and spinulose wood fern.	<b>Birds:</b> White-breasted Nuthatch, Black-capped Chickadee, Blue Jay, Hairy Woodpecker, Downy Woodpecker <b>Mammals:</b> Eastern Cottontail

Table 3.3 Vegetation Communities Identified Within the 120 m Area of Investigation

Natural Area	Total Size of Natural Area (ha)	Date of Site Investigation	Date Re-visited (if applicable)	ELC Code	ELC Name	Inclusions (if applicable)	Area (ha)	Community Age	Vegetation Composition	Incidental Wildlife Observed
		5-Oct-11		FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (east of Turbine 4)		2.1	Mid-age	The canopy layer of this mature deciduous forest is dominated by sugar maple with lesser amounts of American beech, shagbark hickory and white ash. The sub-canopy consists of blue beech, sugar maple, spicebush and common elderberry. The shrub layer includes zig-zag goldenrod, fowl manna grass, northern lady fern and wild black currant, while the herbaceous layer includes false nettle, false solomon's seal, calico aster and Christmas fern.	<b>Birds:</b> Downy Woodpecker, Blue Jay, American Goldfinch, Northern Flicker, American Crow, Black-capped Chickadee, White-breasted Nuthatch <b>Herpetofauna:</b> Spring Peeper
		29-Nov-11		FOD5-1	Dry - Fresh Sugar Maple Deciduous Forest Type		2.2	Mid-age	This mid-age deciduous forest is dominated by sugar maple with lesser amounts of American beech, basswood and poplar species.	No wildlife observed
		5-Oct-11		MAM2a	Missouri Willow Mineral Meadow Marsh Type		2.3	Young	The canopy of this young meadow marsh is dominated by Missouri willow with lesser amounts of Bebb willow. The sub-canopy is dominated by common reed with lesser amounts of broad-leaved cattail and reed canary grass. The lower ground is variable and includes panicled aster, path rush, marsh fern, northern water-horehound, meadow horsetail and others.	No wildlife observed
		5-Oct-11	1-May-12	FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (northeast of Turbine 72)		3.0	Mid-age	The canopy layer of this mid-age deciduous forest consists of sugar maple with basswood and white ash, and lesser amounts of American beech. The sub-canopy consists of sugar maple, basswood, American beech, white elm, blue beech, spice bush and choke cherry. The shrub layer consists of sugar maple, calico aster, false solomon's seal, black raspberry and choke cherry, white elm and running strawberry bush, while the herbaceous layer consists of poison ivy, wild leek, yellow trout lily, garlic mustard and white trillium.	<b>Birds:</b> Gray Catbird, White-breasted Nuthatch, American Robin <b>Herpetofauna:</b> Spring Peeper
		5-Oct-11		FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (northwest of Turbine 5)	FOM6-1: Fresh-Moist Sugar Maple - Hemlock Mixed Forest Type	8.8	Mid-age	The canopy of this mid-age deciduous forest is dominated by sugar maple, basswood, white ash, American beech and ironwood. The sub-canopy consists of trembling aspen, blue beech, sweet cherry and silky dogwood. The shrub layer includes calico aster, wild black currant and fly honeysuckle, and the herbaceous layer was dominated by poison ivy with lesser amounts of large bellwort and woodland strawberry.	<b>Birds:</b> White-breasted Nuthatch, Black-capped Chickadee, Blue Jay, Hairy Woodpecker, Downy Woodpecker <b>Herpetofauna:</b> Spring Peeper <b>Mammals:</b> Eastern Cottontail
379	352.7	27-Sep-11	8-Nov-11 24-Apr-12	CUP3-1	Red Pine Coniferous Plantation Type	MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type	6.7	Mature	The canopy layer within this mature plantation is dominated by red pine with fewer eastern white pine, less white spruce and even less white ash. The sub-canopy is mainly white ash with fewer eastern white pine and less white spruce and sweet cherry. The shrub layer is dominated by white ash with fewer choke cherry, common buckthorn and wild red raspberry. The ground cover consists of garlic mustard, herb-robert, bittersweet nightshade, immature white ash, poison ivy and avens species.  The meadow marsh inclusion is associated with an intermittent drainage feature. Scattered trees consisting of willow and Manitoba maple were observed throughout with some red-osier dogwood. The community is dominated by reed canary grass.	<b>Birds:</b> Blue Jay, American Crow, Northern Flicker, Red-winged Blackbird, Song Sparrow, Downy Woodpecker, Brown-headed Cowbird, Black-capped Chickadee, Warbler Species <b>Herpetofauna:</b> Spring Peeper <b>Mammals:</b> White-tailed Deer, Raccoon
392	11.8	12-Dec-11		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		0.7	Mid-age	The canopy layer within this mid-age deciduous forest consists of freeman's maple, and green ash, while species within the sub-canopy include freeman's maple, green ash, and poison ivy. The shrub layer consists of equal amounts of freeman's maple and green ash while the ground cover layer is comprised of red-osier dogwood with lesser amounts of poison ivy and sensitive fern.	<b>Birds:</b> Mourning Dove, Blue Jay, Black-capped Chickadee, American Crow, White-breasted Nuthatch, American Goldfinch, Yellow-bellied Sapsucker (holes in tree)
		2-Jun-11	15-Aug-11 12-Dec-11 23-Apr-12	FOD5-2	Dry - Fresh Sugar Maple Beech Deciduous Forest Type	SWD3-3: Swamp Maple Mineral Deciduous Swamp Type	8.9	Mid-age	Species observed within the canopy of this mid-age deciduous forest include sugar maple and American beech, with some white ash, basswood and black cherry. The sub-canopy is dominated sugar maple with lesser amounts of American beech, ironwood, and white elm. Species recorded in the shrub layer include white ash, American beech, choke cherry and ironwood, while the herbaceous layer includes large flowered bellwort, thicket creeper, poison ivy, yellow avens, yellow trout lily, basswood, garlic mustard, and common blue violet.	<b>Birds:</b> Wood Duck, Song Sparrow, Red-winged Blackbird, Downy Woodpecker, Mourning Dove, Blue Jay, Black-capped Chickadee, American Crow, White-breasted Nuthatch, American Goldfinch, Yellow-bellied Sapsucker (holes in tree) <b>Herpetofauna:</b> Wood Frog <b>Mammals:</b> Raccoon, White-tailed Deer

Table 3.3 Vegetation Communities Identified Within the 120 m Area of Investigation

Natural Area	Total Size of Natural Area (ha)	Date of Site Investigation	Date Re-visited (if applicable)	ELC Code	ELC Name	Inclusions (if applicable)	Area (ha)	Community Age	Vegetation Composition	Incidental Wildlife Observed
609	49.1	31-May-12		SWD2-2	Green Ash Mineral Deciduous Swamp Type <u>Surveyed from fence line</u>	CUP3: Coniferous Plantation Ecosite  SWT2-2: Willow Mineral Thicket Swamp Type	2.3	Mid-age	The canopy layer of this mid-age deciduous swamp community consists of green ash and Freeman's maple. The sub-canopy layer consists of Freeman's maple and green ash. The shrub layer consists of wild red raspberry, Freeman's maple and green ash. The ground cover consists of wood nettle, goldenrod species, spotted jewelweed and blue flag iris.	<b>Birds:</b> Baltimore Oriole, Brown-headed Cowbird, Red-winged Blackbird, American Robin, Magnolia Warbler, Song Sparrow, Turkey Vulture, American Goldfinch, Woodpecker Species, Rose-breasted Grosbeak, Eastern Wood-pewee, Great Crested Flycatcher, Chipping Sparrow, White-throated Sparrow <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Northern Leopard Frog, Green Frog <b>Lepidoptera:</b> Monarch, Cabbage White, Milbert's Tortoiseshell
		31-May-12		SWT2-2	Willow Mineral Thicket Swamp Type <u>Surveyed from fence line</u>	OAO: Open Aquatic  SWD2-2: Green Ash Mineral Deciduous Swamp Type	4.3	Mid-age	The canopy within this mid-age thicket swamp community consists of crack willow and green ash. There is no sub-canopy. The shrub layer consists of sandbar willow, alternate-leaved dogwood and red-osier dogwood. The ground cover consists of reed canary grass, wood nettle, spotted jewelweed and goldenrod species.	<b>Birds:</b> Baltimore Oriole, Brown-headed Cowbird, Red-winged Blackbird, American Robin, Magnolia Warbler, Song Sparrow, Turkey Vulture, American Goldfinch, Woodpecker Species, Rose-breasted Grosbeak, Eastern Wood-pewee, Great Crested Flycatcher, Chipping Sparrow, White-throated Sparrow <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Northern Leopard Frog, Green Frog <b>Lepidoptera:</b> Monarch, Cabbage White, Milbert's Tortoiseshell
611	2.7	13-Jun-12	12-Jul-12	FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type		2.7	Mid-age	The canopy of this mid-age deciduous forest consists of American basswood, sugar maple and American beech. The sub-canopy consists of American basswood, sugar maple and white elm. The shrub layer consists of choke cherry, blue beech and white ash. The ground layer consists of poison ivy, thicket creeper, avens species and enchanter's nightshade.	<b>Birds:</b> Red-tailed Hawk, Song Sparrow, House Wren, Eastern Wood-pewee, Common Grackle, Black-capped Chickadee, American Robin, Northern Flicker <b>Lepidoptera:</b> Cabbage White, Orange Sulphur
635	9.3	5-Jun-12		CUM1-1	Dry - Moist Old Field Meadow Type <u>Surveyed from roadside</u>	CUT1j: Hawthorn - Apple - Buckthorn Mineral Cultural Thicket Type	3.1	Young	There is no canopy, sub-canopy, or shrub layer within this young meadow. The ground cover consists of reed canary grass, goldenrod species, aster species and dame's rocket.  This young to mid-age thicket contains a tall shrub layer consisting of hawthorns, common apple and common buckthorn. A partial lower shrub layer of smooth rose is present. The ground cover consists of a goldenrod species, aster species and reed canary grass.	<b>Birds:</b> Field Sparrow, Song Sparrow, Red-winged Blackbird, Northern Flicker, Common Yellowthroat, Vesper Sparrow, American Robin, Killdeer, Horned Lark
636	25.6	3-May-12		CUM1-1	Dry - Moist Old Field Meadow Type		2.7	Pioneer	This pioneer meadow consists mainly of grasses, with a few bittersweet nightshade and aster species.	<b>Birds:</b> Red-winged Blackbird <b>Mammals:</b> White-tailed Deer <b>Lepidoptera:</b> Eastern Comma, Cabbage White <b>Herpetofauna:</b> Green Frog <b>Crustaceans:</b> Chimney Crayfish
637	2.7	31-May-12		CUP3a	Scots Pine - White Pine Coniferous Plantation Type		0.6	Young	The canopy of this young plantation consists of a mix of planted scots pine, eastern white pine, black walnut and eastern cottonwood. The shrub layer consists of green ash. The ground cover consists of wild carrot and grasses.	<b>Birds:</b> Red-winged Blackbird, Field Sparrow, Black-capped Chickadee, Great Blue Heron, American Robin, Baltimore Oriole, American Goldfinch, Song Sparrow, Red-tailed Hawk, Killdeer <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Green Frog <b>Mammals:</b> White-tailed Deer
		31-May-12		CUM1-1	Dry - Moist Old Field Meadow Type		1.6	Young	The canopy within this young meadow consists of green ash and crack willow. The shrub layer consists of gray dogwood, hawthorn and common apple. The ground cover consists of goldenrod, reed canary grass, bird's foot trefoil, and wild mint.	<b>Birds:</b> Red-winged Blackbird, Field Sparrow, Black-capped Chickadee, Great Blue Heron, American Robin, Baltimore Oriole, American Goldfinch, Song Sparrow, Red-tailed Hawk, Killdeer <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Green Frog <b>Mammals:</b> White-tailed Deer
648	8.0	5-Jun-12		FOD9a	Fresh - Moist Bitternut Hickory - Basswood - Ironwood - Bur Oak Deciduous Forest Type	FOD8-1: Fresh-Moist Poplar Deciduous Forest Type  CUP3: Coniferous Plantation Ecosite	2.8	Mid-age	The canopy within this mid-age forest consists of bitternut hickory, white elm, ironwood and trembling aspen. The sub-canopy consists of bitternut hickory, ironwood, and white elm. The shrub layer consists of English hawthorn, white elm, bitternut hickory and wild red raspberry. The ground layer consists of garlic mustard, yellow avens, thicket creeper and violet species.	<b>Birds:</b> Common Yellowthroat, Eastern Wood-pewee, Baltimore Oriole, House Wren, Brown-headed Cowbird, Song Sparrow, Turkey Vulture, Great Crested Flycatcher, American Goldfinch <b>Mammals:</b> White-tailed Deer, Raccoon.



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		5-Jun-12	28-Jun	CUM1-1	Dry - Moist Old Field Meadow Type	CUT1: Mineral Cultural Thicket Ecosite	5.0	Young	The canopy within this meadow consists of green ash and white elm. There is no sub-canopy layer. The shrub layer consists of English hawthorn with equal parts of common apple and common buckthorn. The ground layer consists of reed canary grass, a goldenrod species, an aster species and garlic mustard.  The canopy of this young cultural meadow consists of common apple with lesser amounts of white elm. There is no sub-canopy layer. The shrub layer is dominated by English hawthorn. The ground cover consists of reed canary grass.	<b>Birds:</b> Common Yellowthroat, Eastern Wood-pewee, Baltimore Oriole, House Wren, Brown-headed cowbird, Song Sparrow, Turkey Vulture, Great Crested Flycatcher, American Goldfinch, Turkey Vulture, Red-winged Blackbird, Killdeer <b>Mammals:</b> White-tailed Deer, Raccoon.
661	1.6	5-Jun-12		FOD5-1	Dry - Fresh Sugar Maple Deciduous Forest Type		1.5	Young	The canopy of this young forest is dominated by sugar maple, with some white ash, American basswood and ironwood. The sub-canopy consists of bitternut hickory, American basswood and sugar maple. The shrub layer consists of sugar maple, bitternut hickory, and white ash. The ground cover consists of wild leek, herb robert, yellow avens and white trillium.	<b>Birds:</b> American Robin, Red-winged Blackbird, Northern Cardinal, Great Crested Flycatcher, Northern Flicker, Killdeer, European Starling <b>Herpetofauna:</b> Spring Peeper, Green Frog
662	4.4	31-May-12		FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		4.4	Young	The canopy within this young forest consists of basswood and sugar maple, with some red maple and white elm. The sub-canopy consists of sugar maple and basswood. The shrub layer consists of wild red raspberry, white ash and blue beech. The ground cover consists of starry false solomon and spotted geranium.	<b>Birds:</b> Baltimore Oriole, Song Sparrow, Great Crested Flycatcher, Eastern Wood-pewee, Brown-headed Cowbird, House Wren
695	5.8	3-May-12		FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		2.4	Young to Mid-age	The canopy layer within this young to mid-age forest community consists mainly of basswood with less bur oak. The sub-canopy is mainly sugar maple with some white elm. The shrub layer consists of nannyberry, choke cherry, and common buckthorn. The ground cover consists of yellow trout lily, Canada anemone, and spotted geranium.	<b>Birds:</b> Red-winged Blackbird, Turkey Vulture, Horned Lark, House Wren, Great Crested Flycatcher, Brown-headed Cowbird, Brown Thrasher, Song Sparrow <b>Mammals:</b> Raccoon, White-tailed Deer <b>Lepidoptera:</b> Red Admiral, Cabbage White <b>Herpetofauna:</b> American Toad
701	14.6	4-Jul-12		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		3.7	Mid-age to Mature	The canopy layer within this mid-age to mature swamp community consists mainly of Freeman's maple with less green ash. The sub-canopy consists of Freeman's maple and green ash. The shrub layer is mainly white elm with fewer blue beech and black ash. The ground cover consists of white avens, spotted geranium and false solomon's seal.	<b>Birds:</b> Blue Jay, Gray Catbird, Red-eyed Vireo, Great Crested Flycatcher
		3-May-12	4-Jul-12	FOD5-8	Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type		9.6	Mid-age	The canopy within this mid-age forest consists mainly of sugar maple, white ash and American beech. The sub-canopy layer is mainly sugar maple with fewer white ash. The shrub layer is mainly sugar maple, American beech and white elm. The ground layer consists mainly of sugar maple, spotted geranium, garlic mustard and false solomon's seal.	<b>Birds:</b> Gray Catbird, Red-eyed Vireo, House Wren, Blue Jay, American Robin, Ovenbird, Brown-headed Cowbird, Wood Thrush, Black-capped Chickadee, Great Crested Flycatcher, Song Sparrow, Chipping Sparrow <b>Lepidoptera:</b> Monarch
702	8.9	8-May-12		FOD9-1	Fresh - Moist Oak - Sugar Maple Deciduous Forest Type <u>Surveyed from fence line</u>		8.9	Mid-age	The canopy layer within this mid-age forest consist of white oak, sugar maple, basswood, and bitternut hickory. The sub-canopy layer is dominated by sugar maple. The shrub layer consists of common buckthorn and choke cherry. The ground cover consists of spotted geranium, yellow trout lily, false solomon's seal and white trillium.	<b>Birds:</b> Blue Jay, Song Sparrow <b>Lepidoptera:</b> Red Admiral, Cabbage White
720	2.7	7-May-12		FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type	CUM1-1: Dry - Moist Old Field Meadow Type  FOD7f: Fresh - Moist Basswood - White Elm - Freeman's Maple - Green Ash Lowland Deciduous Swamp Type  OAO: Open Aquatic	2.7	Young to Mid-age	The canopy layer in this young to mid-age forest community is mainly sugar maple with fewer white elm, white ash and green ash. The sub-canopy consists of sugar maple, white elm, bitternut hickory and ironwood. The shrub layer consists of sugar maple, white ash and green ash. The ground cover consists mainly of garlic mustard with fewer spotted geranium, yellow trout lily and wild strawberry.	<b>Birds:</b> Blue Jay, White-breasted Nuthatch, Song Sparrow, Horned Lark, Grosbeak Species, Brown-headed Cowbird, American Robin, Red-winged Blackbird, Hairy Woodpecker, Baltimore Oriole, Red-headed Woodpecker <b>Lepidoptera:</b> Red Admiral <b>Herpetofauna:</b> Spring Peeper

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721	4.8	6-Jun-12		FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type	SWD3-3: Swamp Maple Mineral Deciduous Swamp Type	1.1	Mid-age	The canopy within this mid-age forest consists of sugar maple, blue beech, ironwood and white ash. The sub canopy consists of sugar maple, blue beech and ironwood. The shrub layer consists of blue beech, white ash and sugar maple. The ground cover consists of yellow avens, poison ivy, spotted geranium and tall meadow-rue.	<b>Birds:</b> Song Sparrow, Tree Swallow, Great Crested Flycatcher, Vesper Sparrow, Eastern Wood-pewee, Baltimore Oriole, Rose-breasted Grosbeak <b>Lepidoptera:</b> Eastern Comma
		6-Jun-12		FOD7-1	Fresh - Moist White Elm Lowland Deciduous Forest Type		3.7	Mid-age	The canopy within this mid-age forest consists of white elm, green ash, ironwood and basswood. The sub-canopy consists of white elm, basswood and green ash. The shrub layer consists of white elm, basswood and green ash. The ground cover consists of yellow avens, thicket creeper, poison ivy and white avens.	<b>Birds:</b> Song Sparrow, Tree Swallow, Great Crested Flycatcher, Vesper Sparrow, Eastern Wood-pewee, Baltimore Oriole, Rose-breasted Grosbeak <b>Lepidoptera:</b> Eastern Comma
722	0.7	29-Jun-12		SWD3-3	Swamp Maple Mineral Deciduous Swamp Type		0.7	Mid-age	The canopy of this mid-age swamp consists of Freeman's maple with a lesser amount of white elm. The sub-canopy layer consists of Freeman's maple, white elm and green ash. The shrub layer consists of white elm, green ash, choke cherry, and common buckthorn. The ground cover consists of green ash, enchanter's nightshade and white avens.	<b>Birds:</b> Gray Catbird, Field Sparrow, American Crow
723	19.6	6-Jun-12		FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type <u>Surveyed from fence line</u>		18.6	Mid-age	The canopy within this mid-age forest consists of sugar maple, common buckthorn, basswood and white elm. The sub-canopy consists of sugar maple, white ash, basswood and white elm. The shrub layer consists of hawthorn species and alternate-leaved dogwood. The ground cover consists of garlic mustard, goldenrod species, spotted geranium and yellow avens.	<b>Birds:</b> Northern Harrier <b>Lepidoptera:</b> Monarch, Eastern Tiger Swallowtail <b>Mammals:</b> White-tailed Deer
738	9.5	3-Jul-12		CUT1k	Hawthorn Mineral Cultural Thicket Type		0.6	Young	Occasional tall eastern cottonwoods are present in the canopy of this young mineral cultural thicket. The shrub layer consists of hawthorns and common apple. The ground cover consists mainly of yellow avens with some bittersweet nightshade.	<b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow <b>Herpetofauna:</b> Green Frog <b>Lepidoptera:</b> Cabbage White <b>Odonates:</b> Ebony Jewelwing
		3-Jul-12		FOD5-6	Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type		0.6	Mid-age	The canopy and sub-canopy layers within this mid-age deciduous forest are dominated by basswood with some sugar maple. The shrub layer is mainly a hawthorn species with fewer choke cherry and gray dogwood. The ground cover consists mainly of yellow avens, common blackberry and wild strawberry.	<b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow <b>Herpetofauna:</b> Green Frog <b>Lepidoptera:</b> Cabbage White <b>Odonates:</b> Ebony Jewelwing
		3-Jul-12		SWD4-1	Willow Mineral Deciduous Swamp Type	MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type	1.0	Mid-age	The canopy layer within this mid-age swamp is dominated by hybrid crack willow. There is no sub-canopy layer. The shrub layer is dominated by alternate-leaved dogwood. The ground cover consists of reed-canary grass and spotted jewelweed.	<b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow <b>Herpetofauna:</b> Green Frog <b>Lepidoptera:</b> Cabbage White <b>Odonates:</b> Ebony Jewelwing
		3-Jul-12		CUM1-1	Dry - Moist Old Field Meadow Type		1.1	Pioneer	There is no canopy, sub-canopy or shrub layer within this pioneer meadow. The ground cover is mainly tall goldenrod and reed-canary grass.	<b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow <b>Herpetofauna:</b> Green Frog <b>Lepidoptera:</b> Cabbage White <b>Odonates:</b> Ebony Jewelwing
		3-Jul-12		FOD5-8	Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type		1.6	Mid-age	The canopy layer within this mid-age deciduous forest consists mainly of white ash with fewer sugar maple. The sub-canopy consists of sugar maple. The shrub layer consists mainly of sugar maple, choke cherry and common buckthorn. The ground cover consists mainly of sugar maple, jack-in-the-pulpit.	<b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow <b>Herpetofauna:</b> Green Frog <b>Lepidoptera:</b> Cabbage White <b>Odonates:</b> Ebony Jewelwing
739	48.9	3-May-12	5-Jul-12	MAM2-2	Reed-canary Grass Mineral Meadow Marsh Type		2.5	Young	The canopy within this young meadow contains scattered hybrid crack willow. The partial shrub layer contains tartarian honeysuckle and red-osier dogwood. The ground cover is dominated by dense reed canary grass.	<b>Birds:</b> Brown-headed Cowbird, Horned Lark, Turkey Vulture, Red-bellied Woodpecker, American Robin, Northern Cardinal <b>Lepidoptera:</b> Cabbage White
754	0.3	2-May-12		SWT2b	Grey Dogwood - Red Osier Dogwood - Sandbar Willow Mineral Thicket Swamp Type	SWD4-1: Willow Mineral Deciduous Swamp Type	0.3	Mid-age	The canopy within this mid-age thicket swamp consists of cottonwood with lesser amounts of green ash. There is no sub-canopy. The shrub layer consists of gray dogwood, red-osier dogwood and sandbar willow. The ground cover consists of common dandelion, garlic mustard, an avens species and Virginia strawberry.	<b>Birds:</b> Song Sparrow, Killdeer, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Northern Flicker, Rose-breasted Grosbeak <b>Lepidoptera:</b> Red Admiral <b>Herpetofauna:</b> Northern Leopard Frog <b>Mammals:</b> White-tailed Deer

Table 3.3 Vegetation Communities Identified Within the 120 m Area of Investigation

Natural Area	Total Size of Natural Area (ha)	Date of Site Investigation	Date Re-visited (if applicable)	ELC Code	ELC Name	Inclusions (if applicable)	Area (ha)	Community Age	Vegetation Composition	Incidental Wildlife Observed
756	0.3	n/a		MAS	Shallow Marsh Ecosite		0.3	Unknown	This community was identified through air photo interpretation.	Not applicable.
757	11.7	25-Apr-12		SWD2-2	Green Ash Mineral Deciduous Swamp Type		1.5	Mid-age	The canopy within this mid-age layer consists of green ash with lesser amounts of basswood. The sub-canopy is dominated by green ash. The shrub layer consists of spice bush with lesser amounts of green ash. The ground cover consists largely of green ash seedlings.	<b>Birds:</b> Ovenbird, Great Crested Flycatcher, Yellow-throated Vireo, Blue Jay, Black-capped Chickadee, Horned Lark, Song Sparrow, Brown Thrasher, White-breasted Nuthatch, Vesper Sparrow, Brown-headed Cowbird, Red-bellied Woodpecker, Northern Flicker, Hairy Woodpecker, Wood Duck, American Goldfinch, Wild Turkey <b>Herpetofauna:</b> Green Frog
		1-Jun-11	25-Apr-12	FOD6-5	Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type		10.1	Mid-age to Mature	The canopy layer of this mid-age to mature deciduous forest is dominated by sugar maple with lesser amounts of blue beech, basswood and ironwood. The shrub layer is dominated by spicebush with some black raspberry, blackberry and prickly gooseberry. The herbaceous layer is dominated by jack-in-the-pulpit with lesser amounts of false solomon's seal, false miterwort and cream violet.  Undulating topography was noted.	<b>Birds:</b> Ovenbird, Great Crested Flycatcher, Yellow-throated Vireo, Blue Jay, Black-capped Chickadee, Horned Lark, Song Sparrow, Brown Thrasher, White-breasted Nuthatch, Vesper Sparrow, Brown-headed Cowbird, Red-bellied Woodpecker, Northern Flicker, Hairy Woodpecker, Wood Duck, American Goldfinch, Wild Turkey <b>Herpetofauna:</b> Green Frog
759	0.7	20-Jul-11	23-Apr-12	CUP3-1	Red Pine Coniferous Plantation Type	OAO: Open Aquatic	0.7	Young	This young coniferous plantation is dominated by red pine with lesser amounts of Austrian pine, white spruce, and blue spruce. Species observed within the shrub layer includes white ash, pussy willow and sandbar willow, while the ground layer contains field species such as smooth brome, orchard grass, white heath aster, black-eyed susan, bird's foot trefoil, self heal, and red clover.  A dug pond inclusion is located within the plantation, and a second open aquatic community is located to the east of the plantation and north of the deciduous forest of natural area 321.	<b>Birds:</b> Song Sparrow, Red-winged Blackbird, American Robin, Chipping Sparrow, American Crow, Black-capped Chickadee, Common Grackle, American Goldfinch <b>Mammals:</b> White-tailed Deer, Coyote, Woodchuck, Eastern Cottontail <b>Herpetofauna:</b> Eastern Garter Snake

**Table 3.4 Total Area of ELC Communities Observed within the 120 m Area of Investigation**

Community Series Name	Size	Ecosite Name	Size
<b>Cultural Communities</b>			
CUM: Cultural Meadow	27.6	CUM1: Mineral Cultural Meadow	27.6
CUP: Cultural Plantation	35.2	CUP1: Deciduous Plantations	7.5
		CUP2: Mixed Plantations	1.3
		CUP3: Coniferous Plantations	26.4
CUT: Cultural Thicket	4.3	CUT1: Mineral Cultural Thicket Ecosite	4.3
CUW: Cultural Woodland	11.8	CUW1: Mineral Cultural Woodland Ecosite	11.8
<b>Total Hectares for Cultural Communities</b>			<b>78.9</b>
<b>Forest Communities</b>			
FOD: Deciduous Forest	581.8	FOD2: Dry-Fresh Oak-Maple-Hickory Deciduous Forest Ecosite	0.4
		FOD3: Dry-Fresh Poplar-White Birch Deciduous Forest Ecosite	1.8
		FOD4: Dry-Fresh Deciduous Forest Ecosite	23.3
		FOD5: Dry-Fresh Sugar Maple Deciduous Forest Ecosite	167.7
		FOD6: Fresh-Moist Sugar Maple Deciduous Forest Ecosite	115.4
		FOD7: Fresh-Moist Lowland Deciduous Forest Ecosite	119.3
		FOD8: Fresh-Moist Poplar-Sassafras Deciduous Forest Ecosite	5.9
		FOD9: Fresh-Moist Oak-Maple-Hickory Deciduous Forest Ecosite	148.0
FOM: Mixed Forest	37.4	FOM5: Dry-Fresh White Birch-Poplar-Conifer Mixed Ecosite	36.3
		FOM6: Dry-Moist Hemlock Mixed Forest Ecosite	1.1
<b>Total Hectares for Forest Communities</b>			<b>619.3</b>
<b>Swamp Communities</b>			
SWD: Deciduous Swamp	80.4	SWD2: Ash Mineral Deciduous Swamp Ecosite	27.4
		SWD3: Maple Mineral Deciduous Swamp Ecosite	34.1
		SWD4: Mineral Deciduous Swamp Ecosite	10.1
		SWD6: Maple Organic Deciduous Swamp Ecosite	8.8
SWM: Mixed Swamp	12.8	SWM: Mixed Swamp	12.8
SWT: Thicket Swamp	6.0	SWT2: Mineral Thicket Swamp Ecosite	6.0
<b>Total Hectares for Swamp Communities</b>			<b>99.2</b>
<b>Marsh Communities</b>			
MAM: Meadow Marsh	7.7	MAM2: Mineral Meadow Marsh Ecosite	6.5
		MAM3: Organic Meadow Marsh Ecosite	1.3
MAS: Shallow Marsh	0.3	MAS: Shallow Marsh	0.3
<b>Total Hectares for Marsh Communities</b>			<b>8.1</b>
<b>Open Water Communities</b>			
OAO: Open Aquatic	7.3	n/a	7.3
<b>Total Hectares for Open Water Communities</b>			<b>7.3</b>
<b>Total:</b>			<b>812.7</b>

### 3.3.2 Vascular Plant Inventory

A total of 368 vascular plant species were observed in natural areas occurring within the 120 m Area of Investigation. Of these, 278 (76%) are native and 90 (24%) are exotic. This level of species diversity is indicative of the high number of naturally occurring vegetation communities present within the Project Study Area. Co-efficient of conservatism (CC) is used as a standardized numerical measure of habitat quality which describes the ecological sensitivity or propensity of individual plants to occur in areas disturbed by humans (Bried *et al.*, 2012). Of the species observed, the majority (56%) had a moderate coefficient of conservatism (CC) (between 4 and 6). Species with this range of CC are associated with a specific community (e.g., deciduous forest, meadow marsh, etc.) but can tolerate moderate disturbance. Twenty-nine percent (29%) of the species observed are ranked as having the lowest sensitivity (between 1 and 3) and these are species that can be found on a variety of sites including disturbed sites. Thirteen percent (14 %) of species have a high CC rank (between 7 and 8). These species are associated with a mature community, and are tolerant of only minor disturbances. While less than 2% of the species rank the highest CC (9 and 10); these species can only tolerate undisturbed and high quality native habitat.

A complete list of plant species observed in each natural area is presented in Appendix H. The rarity of each species was determined using Appendices J and M of the SWHTG and the Natural Heritage Information Centre (MNR, 2011a). Of the species recorded during site investigations, 253 are ranked as S5 (Secure) and 14 are ranked as S4 (Apparently Secure). Five provincially rare (S1-S3) species were observed during site investigations:

- Field Thistle (*Cirsium discolor*) ranks as S3 (Vulnerable) and was observed in natural area 198 which is located along South Road and west of Mollard Line;
- Burning Bush (*Euonymus atropurpurea*) ranks as S3 and was observed in natural area 326 located east of Bronson Line and North of Dashwood Road;
- Cream Violet (*Viola striata*) ranks as S3 (Vulnerable) and was observed in the northwest portion of natural area 392 located south of Rogerville Road and west of Babylon Line;
- Narrow-leaved Sedge (*Carex amphibola*) ranks as S2 (Imperiled) and was observed in natural area 189 located south of South Road and west of Grand bend Line; and
- Perfoliate Bellwort (*Uvularia perfoliata*) ranks as S1 (Critically Imperiled) and was observed within natural area 375 located north of Pepper Road and east of Goshen Line.

No other plant species of conservation concern or rare plant species within the Area of Investigation were observed during site investigations. All suitable ELC polygons in the natural areas where rare species were observed were carried forward to the Evaluation of Significance as described in Section 3.3.6.4 below.

### 3.3.3 Wetlands

A total of 1349.3 ha of wetland vegetation communities were observed within the Project Study Area, through a combination of aerial photography interpretation and site investigations. Of this, 169.9 ha or 12% of wetland communities observed are located within the 120 m Area of Investigation of which 162.3 ha or 96% are classified as swamp wetland type. The remaining 7.6 ha or 4% are classified as marsh wetland type. Each of these wetlands can be further divided into isolated, riverine, or palustrine site types, with isolated and riverine being the most commonly observed site type.

Following the Ministry of Natural Resources Wetland Evaluation complexing rules, a total of fourteen (14) wetland units were identified as being at least partially located within the 120 m Area of Investigation through the Records Review and site investigation process. Figure 3.3 shows the location of these identified units. A detailed description of the attributes, composition, and function of each wetland unit is presented in Table 3.5.

All 14 wetland complexes were carried forward to the Evaluation of Significance phase of this Natural Heritage Assessment.

### 3.3.4 Woodlands

A total of 75 woodlands were identified within the 120 m Area of Investigation through the Records Review and site investigation. The boundaries of these woodland units are shown on Figure 3.4. A description of the attributes, composition, and function of each woodland, as well as the distance from each woodland to the nearest project component, is provided in Table 3.6. All of these woodlands were carried forward to the Evaluation of Significance phase of this Natural Heritage Assessment.

**Table 3.5 Wetland Features Identified Through the Records Review and Site Investigations**

Wetland ID	Minimum Distance from Project Location <sup>3</sup>	Attributes			Composition	Function
		Total Size (ha)	Wetland Type	Site Type		
WET-006	>0.1 m (access road)	25.0	Swamp	Isolated and Riverine	Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows: <ul style="list-style-type: none"> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated green ash, freeman's maple, and white elm. The sub-canopy is comprised of white elm, green ash, and hawthorn species. The shrub layer is mainly dominated by American prickly ash, nannyberry, common buckthorn, and currant species while the ground cover consists of wild strawberry, dog violet, sedge species, and tall agrimony.</li> </ul> Wetland vegetation communities located outside of the 120 m Area of investigation include Lowland Forest (FOD7-2).	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
WET-008	38 m (collection line)	6.6	Swamp	Isolated and Palustrine	Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows: <ul style="list-style-type: none"> <li>Swamp Maple Deciduous Swamp (SWD3-3): The canopy is dominated by freeman's maple and green ash. The sub-canopy is dominated by Freeman's maple and green ash. Species present in the ground layer include a variable mix of sensitive fern, false nettle, lady fern, fowl manna grass, woodland strawberry, northern dewberry and bladder sedge</li> </ul> Wetland vegetation communities located outside of the 120 m Area of investigation include Deciduous Swamp (SWD) and Meadow Marsh (MAM).	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
WET-009	100 m (collection line)	3.3	Swamp	Isolated	Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows: <ul style="list-style-type: none"> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash, white elm, ironwood and basswood. The sub-canopy is mainly hawthorn species with red maple and white elm. Species within the shrub layer consist mainly of choke cherry with fewer red maple. The ground cover consists of yellow trout lily, white trillium, garlic mustard and spotted geranium.</li> </ul> Wetland vegetation communities located outside of the 120 m Area of investigation include Deciduous Swamp (SWD).	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
WET-010	3 m (collection line)	78.6	Swamp and Marsh	Riverine and Isolated	Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows: <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy is dominated by green ash.</li> <li>Reed-canary Grass Mineral Meadow Marsh (MAM2-2): Dominated by reed canary grass.</li> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): The community is dominated by Freeman's maple, black ash and shagbark hickory. The sub-canopy consists of Freeman's maple and white elm. The ground layer consists of fowl manna grass hop sedge, rice cut grass and dwarf raspberry.</li> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash.</li> <li>Submerged Shallow Marsh (SAS1-3): Community dominated by stonewort.</li> <li>Mineral Thicket Swamp (SWT2): Community is dominated by spicebush.</li> </ul> Wetland vegetation communities located outside of the 120 m Area of investigation include Swamp Thicket (SWT), Deciduous Swamp (SWD), Mixed Swamp (SWM), Coniferous Swamp (SWC), Meadow Marsh (MAM), Shallow Marsh (MAS) and Submerged Aquatic (SAS).	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>

3. Reflects distance between feature and disturbance area associated with project infrastructure.

**Table 3.5 Wetland Features Identified Through the Records Review and Site Investigations**

Wetland ID	Minimum Distance from Project Location <sup>3</sup>	Attributes			Composition	Function
		Total Size (ha)	Wetland Type	Site Type		
WET-011	>0.1 m (access road)	18.6	Swamp	Riverine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): This community is dominated by freeman's maple with some green ash.</li> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash and freeman's maple, bur oak and basswood. The sub-canopy layer consists of white elm. The shrub layer is dominated by choke cherry. The ground cover layer is comprised of graceful sedge, tall white aster, running strawberry bush and herb-robert.</li> <li>Swamp Maple/Green Ash Mineral Deciduous Swamp (SWD4a): The canopy consists of Freeman's maple and green ash while the sub-canopy consists of freeman's maple and white elm.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Deciduous Swamp (SWD), and Shallow Marsh (MAS).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
WET-012	>0.1 m (transmission line)	238.8	Swamp	Riverine, Palustrine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy and sub-canopy layers consist of green ash and freeman's maple. The shrub layer consists of wild red raspberry, freeman's maple and green ash. The ground cover consists of wood nettle, goldenrod species, spotted jewelweed and blue flag iris.</li> <li>Willow Mineral Thicket Swamp (SWT2-2): The canopy consists of crack willow and green ash. There is no sub-canopy. The shrub layer consists of sandbar willow, alternate-leaved dogwood and red-osier dogwood. The ground cover consists of reed canary grass, wood nettle, spotted jewelweed and goldenrod species.</li> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy is dominated by freeman's maple.</li> <li>Reed Canary Grass Mineral Meadow Marsh (MAM2-2): The canopy includes scattered trees consisting of willow and Manitoba maple with some red-osier dogwood. The community is dominated by reed canary grass</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation Meadow Marsh (MAM), Shallow Marsh (MAS), Swamp Thicket (SWT), Deciduous Swamp (SWD), and Coniferous Swamp (SWC).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
WET-014	>0.1 m (collection line)	198.7	Swamp	Riverine, Palustrine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy consists of green ash, freeman's maple and white elm. The sub-canopy consists of Manitoba maple, hawthorn species and green ash. The shrub layer is mainly comprised of a hawthorn species with red-osier dogwood and willows. The ground cover consists of smooth brome grass with fewer garlic mustard, wild madder common dandelion, and wild strawberry.</li> <li>Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy is dominated by green ash with some white elm, shagbark hickory and bitternut hickory associates. The sub-canopy layer consists of white elm and green ash. The shrub layer consists of white elm, bitternut hickory and green ash. The ground cover consists of green ash, moneywort and poison ivy.</li> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy is dominated by Freeman's maple and green ash. The sub-canopy layer is dominated by freeman's maple. Species within the shrub layer consist of red-osier dogwood, choke cherry and common buckthorn. The ground cover is long-stalked sedge</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM) and Shallow Marsh (MAS), Swamp Thicket (SWT), Deciduous Swamp (SWD), and Mixed Swamp (SWM).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>

**Table 3.5 Wetland Features Identified Through the Records Review and Site Investigations**

Wetland ID	Minimum Distance from Project Location <sup>3</sup>	Attributes			Composition	Function
		Total Size (ha)	Wetland Type	Site Type		
<b>WET-019</b>	>0.1 m (collection line)	56.3	Swamp	Riverine, Palustrine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>• Russian Olive – Sandbar Willow – Gray Dogwood Mineral Thicket Swamp (SWT2a): The canopy of this mid-age swamp consists of green ash and Freeman’s maple. The shrub layer consists of autumn olive, sandbar willow, and gray dogwood. The groundcover is dominated by reed canary grass, common dandelion, sedge species, and clover.</li> <li>• Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy is dominated by freeman’s maple, green ash, paper birch and black ash. The sub-canopy is comprised of freeman’s maple, blue beech, white elm and green ash, while spicebush dominates the shrub layer with some white elm. Herbaceous species recorded include wild lily-of-the-valley, sensitive fern, moonseed and tall white aster.</li> <li>• Green Ash - Trembling Aspen Mineral Deciduous Swamp (SWD4b): The canopy is co-dominated by green ash and trembling aspen. The canopy is dominated by blue beech with some white elm, while the shrub layer is dominated by spicebush. The ground cover layer consists of sensitive fern, sedges and dwarf raspberry.</li> <li>• Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash, cottonwood, trembling aspen, white elm and freeman’s maple. The sub-canopy is mainly green ash with some freeman’s maple and white elm. The shrub layer is mainly white ash with some nannyberry and spicebush and green ash. The ground cover is dominated by white avens, wild black currant thicket creeper, enchanter’s nightshade, and black raspberry.</li> <li>• Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy is dominated by green ash.</li> <li>• Cottonwood Mineral Deciduous Swamp (SDW4c): Community is dominated by cottonwood.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM), Swamp thicket (SWT), Deciduous Swamp (SWD), and Mixed Swamp (SWM).</p>	<ul style="list-style-type: none"> <li>• Flood attenuation</li> <li>• Water quality improvement</li> <li>• Habitat and resources for wetland flora and fauna</li> </ul>
<b>WET-021</b>	>0.1 m (collection line)	117.4	Marsh and Swamp	Riverine and Paulstrine	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>• Reed Canary Grass Organic Meadow Marsh (MAM3-2): The shrub layer is dominated by sandbar willow and red-osier dogwood. The ground cover is dominated by reed canary grass, goldenrod species and aster species.</li> <li>• Swamp Maple Organic Deciduous Swamp (SWD6-3): The canopy is dominated by Freeman’s maple, green ash, cottonwood and basswood. The shrub layer is dominated by gray dogwood. The ground cover consists of garlic mustard, spotted jewelweed, buttercup species, and violet species.</li> <li>• Swamp Maple - Green Ash Deciduous Swamp (SWD4a): Canopy is dominated by green ash and freeman’s maple while sub-canopy species included white elm, green ash and freeman’s maple. The shrub layer consists of silky dogwood and freeman’s maple and the herbaceous layer consists of fowl manna grass, sedge species and tall white aster.</li> <li>• Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy layer is dominated by freeman’s maple, green ash, white elm and some black walnut. The herbaceous layer consisted of include jewelweed, panicked aster, orchard grass, black nightshade, pale smartweed, sedge species, garlic mustard, stinging nettle, tall meadow rue and running strawberry bush.</li> <li>• Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash and basswood, while the sub-canopy consists of white elm. The shrub layer is dominated by my spicebush while the herbaceous layer is comprised of wild strawberry and white avens.</li> <li>• Grey Dogwood-Red Osier Dogwood-Sandbar Willow Mineral Thicket Swamp (SWT2b): The canopy consists of cottonwood and green ash. The shrub layer consists of gray dogwood, red-osier dogwood and sandbar willow. The ground cover consists of common dandelion, garlic mustard, avens species and Virginia strawberry.</li> </ul>	<ul style="list-style-type: none"> <li>• Flood attenuation</li> <li>• Water quality improvement</li> <li>• Habitat and resources for wetland flora and fauna</li> </ul>



**Table 3.5 Wetland Features Identified Through the Records Review and Site Investigations**

Wetland ID	Minimum Distance from Project Location <sup>3</sup>	Attributes			Composition	Function
		Total Size (ha)	Wetland Type	Site Type		
					<ul style="list-style-type: none"> <li>Willow Mineral Deciduous Swamp (SWD4-1): The canopy is dominated by willow. Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM), Mineral Shallow Marsh (MAS), Meadow Marsh (MAM), Deciduous Swamp (SWD), and Mixed Swamp (SWM).</li> </ul>	
<b>WET-025</b>	16 m (access road)	5.3	Marsh and Swamp	Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy is dominated by freeman's maple and green ash. The sub-canopy consists of freeman's maple, white elm, green ash and basswood. Species observed within the shrub layer include white elm, red-osier dogwood, green ash, basswood, poison ivy, and choke cherry. The herbaceous layer is comprised of buttonbush, choke cherry, sensitive fern, and spinulose wood fern.</li> <li>Missouri Willow Mineral Meadow Marsh (MAM2a): The canopy is dominated by Missouri willow and bebb's willow. The sub-canopy is dominated by common reed grass, broad-leaved cattail and reed canary grass. The ground cover is comprised of paniced aster, path rush, marsh fern, northern water-horehound, meadow horsetail and others.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Deciduous Swamp (SWD).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
<b>WET-032</b>	>0.1 m (collection line)	549.8	Swamp	Riverine, Palustrine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy consists of green ash, white elm and shagbark hickory. The sub-canopy layer consists of green ash and white elm. The ground cover consists of reed canary grass, fowl manna grass, sedge species and paniced aster.</li> <li>Green Ash Lowland Deciduous Forest (FOD7-2): The canopy is dominated by green ash, trembling aspen, bur oak, and shagbark hickory. The sub-canopy layer consists of green ash, white elm and hawthorn species. The herbaceous layer is comprised of tall goldenrod, poison-ivy, white avens, graceful sedge, enchanter's nightshade, tall white aster and Virginia strawberry.</li> <li>Swamp Maple - Green Ash Deciduous Swamp (SWD4a): The canopy is co-dominated by freeman's maple and green ash. The sub-canopy layer consists of white elm and freeman's maple while the shrub layer is dominated by white elm. The herbaceous layer was mainly comprised of sedge species, fowl meadow grass and tall white aster.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM), Shallow Marsh (MAS), Deciduous Swamp (SWD), Coniferous Swamp (SWC), and Mixed Swamp (SWM).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
<b>WET-038</b>	114 m (transmission line)	4.2	Swamp	Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Swamp Maple Mineral Deciduous Swamp (SWD3-3): The canopy and sub-canopy layers consist of freeman's maple and green ash. The shrub layer is dominated by white elm, blue beech and black ash while the ground cover consists of white avens, spotted geranium and false solomon's seal.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Deciduous Swamp (SWD).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>
<b>WET-049</b>	13 m (turbine construction footprint)	26.2	Swamp	Palustrine and Isolated	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp (SWD2-2): The canopy layer consists of green ash and basswood while the sub-canopy is dominated by green ash. The shrub layer consists of spicebush and green ash. The ground cover is dominated by green ash seedlings.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM), Shallow Marsh (MAS), and Deciduous Swamp (SWD).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>

**Table 3.5 Wetland Features Identified Through the Records Review and Site Investigations**

Wetland ID	Minimum Distance from Project Location <sup>3</sup>	Attributes			Composition	Function
		Total Size (ha)	Wetland Type	Site Type		
WET-053	>0.1 m (transmission line)	20.3	Swamp	Riverine	<p>Wetland vegetation communities and species composition within the 120 m Area of Investigation is as follows:</p> <ul style="list-style-type: none"> <li>Willow Mineral Deciduous Swamp (SWD4-1): The canopy layer is dominated by hybrid crack willow while the shrub layer is dominated by alternate-leaved dogwood. The ground cover consists of reed-canary grass and spotted jewelweed.</li> <li>Reed Canary Grass Mineral Meadow Marsh (MAM2-2): The canopy consists of scattered hybrid crack willow. The partial shrub layer contains tartarian honeysuckle and red-osier dogwood. The ground cover is dominated by dense reed canary grass.</li> </ul> <p>Wetland vegetation communities located outside of the 120 m Area of investigation include Meadow Marsh (MAM), Swamp Thicket (SWT) and Deciduous Swamp (SWD).</p>	<ul style="list-style-type: none"> <li>Flood attenuation</li> <li>Water quality improvement</li> <li>Habitat and resources for wetland flora and fauna</li> </ul>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-001</b>	177	>0.1 m (access road)	17.4	Deciduous Forest	Mid-age to Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): This mid-age to mature forest has a broken canopy allowing for dense shrub layer growth. Species observed within the canopy include green ash, Freeman’s maple, and white elm. The sub-canopy is comprised of white elm, green ash, and hawthorn species. The shrub layer is mainly dominated by American prickly ash, nannyberry, common buckthorn, and currant species. The ground cover consists of wild strawberry, dog violet, sedge species, and tall agrimony.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Canada Goose, Downy Woodpecker, Turkey Vulture, Red-tailed Hawk, Indigo Bunting, White-breasted Nuthatch, Killdeer, Northern Flicker</p> <p><b>Lepidoptera:</b> Monarch, Red-spotted Purple, Giant Swallowtail</p> <p><b>Odonata:</b> Yellow-legged Meadowhawk</p> <p><b>Mammals:</b> White-tailed Deer</p>
<b>WOD-012</b>	189	7 m (turbine construction footprint)	63.4	Deciduous Forest	Young, Mid-age to Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Fresh - Moist Bitternut Hickory Deciduous Forest Type (FOD9-5): The canopy within this mature deciduous forest is dominated by bitternut hickory with equal amounts of shagbark hickory and ironwood. The sub-canopy is dominated by equal amounts of beaked hazelnut and blue beech with some black cherry. The ground layer is dominated by poison ivy with some clearweed and narrow-leaved sedge species.</li> <li>Fresh - Moist Shagbark Hickory Deciduous Forest Type (FOD9-4) Surveyed from fence line: The canopy within this mature forest is dominated by shagbark hickory with fewer American beech, sugar maple and green ash associates. The sub-canopy is mainly sugar maple with some green ash. The shrub layer is dominated by choke cherry. The ground cover consists of yellow trout lily and white trillium.</li> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer within this mid-age to mature deciduous forest is dominated by sugar maple, basswood, shagbark hickory, and ironwood. The ground cover layer is comprised of herb robert, spotted geranium, and false solomon’s seal.</li> <li>Fresh - Moist White Elm - Ash - Hawthorn Deciduous Forest Type (FOD7d): Species observed within this young to mid-age forest include white elm, green ash, and basswood, while the sub-canopy layer consists mainly of hawthorn with some common apple. The herbaceous layer consists of a mixture of white avens, Canada blue-joint grass, garlic mustard, and graceful sedge. This community is an early successional forest occurring on moist level ground.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> American Crow, Great Blue Heron, Northern Flicker, American Goldfinch, Wild Turkey, Northern Cardinal, Turkey Vulture, Woodpecker Species, Red-tailed Hawk, Black-billed Cuckoo, Song Sparrow, Eastern Wood-pewee, Black-capped Chickadee</p> <p><b>Mammals:</b> Gray Squirrel, Raccoon, White-tailed Deer</p>

4. Reflects distance between feature and disturbance area associated with project infrastructure.

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
WOD-018	198	>0.1 m (collection line)	7.1	Deciduous Forest	Young to Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy within this young to mid-age forest is dominated by green ash with fewer Freeman's maple. The sub-canopy consists of Manitoba maple. The shrub layer is mainly comprised of a hawthorn species with fewer red-osier dogwood and willows. The ground cover is mainly smooth brome grass with fewer garlic mustard and less wild madder. Vegetation communities outside the 120 m Area of Investigation consist of small cultural meadow and open aquatic ecosystems.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Turkey Vulture, Song Sparrow, American Crow, House Wren, American Goldfinch, Yellow Warbler, Downy Woodpecker, American Robin</p> <p><b>Mammals:</b> White-tailed Deer</p> <p><b>Lepidoptera:</b> Monarch</p>
WOD-023	203	>0.1 m (collection line)	39.9	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Bur Oak Deciduous Forest Type (FOD9-3): The canopy layer of this mid-age forest is dominated by bur oak with some shagbark hickory and less green ash and white elm associates. The sub-canopy layer consists mainly of white elm with fewer green ash and less ironwood. Species within the shrub layer are mainly bitternut hickory with fewer choke cherry. The ground cover consists of spotted geranium with some yellow trout lily and less violet species and sedge species.</li> </ul>	Provides habitat for the following bird species: <p><b>Birds:</b> Killdeer, Red-winged Blackbird</p>
WOD-026	206	21 m (turbine blade tip)	11.2	Cultural Woodland and Deciduous Forest	Mid-age and Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Green Ash - Apple - Hawthorn Mineral Cultural Woodland Type (CUW1c): The relatively open canopy layer of this mid-age deciduous forest is dominated by green ash, apple, and cockspur hawthorn. The shrub layer consists of staghorn sumac and grey dogwood. The ground cover layer consists of Canada goldenrod and tall goldenrod, with some tall white aster and New England aster.</li> <li>Fresh - Moist Shagbark Hickory Deciduous Forest Type (FOD9-4): The canopy layer of this mature deciduous forest is dominated by shagbark hickory, green ash, bur oak and bitternut hickory. The sub-canopy layer consists of shagbark hickory and green ash, and the shrub layer is dominated by green ash. The ground cover layer consists of spotted geranium, green ash and running strawberry bush.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Red-tailed Hawk, Great Blue Heron (fly-by)</p> <p><b>Herpetofauna:</b> Wood Frog, American Toad</p>
WOD-028	209	8 m (collection line)	12.6	Coniferous Plantation and Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Shagbark Hickory - Sugar Maple - American Beech - Blue Beech Deciduous Forest Type (FOD9e): The canopy layer of this mid-age forest consists of shagbark hickory, sugar maple, American beech and red maple. The sub-canopy consists of American beech and blue beech. Species within the shrub layer are mainly spicebush with fewer blue beech, gray dogwood, and choke cherry associates. The ground cover consists of yellow trout lily, spotted geranium, jack-in-the-pulpit, and false solomon's seal.</li> <li>White Pine Coniferous Plantation Type (CUP3-2): The canopy layer of this mid-age forest is dominated by eastern white pine. The sub-canopy layer consists of eastern white pine and green ash. The shrub layer is dominated by choke cherry. The ground cover consists of wild strawberry, spotted geranium, and avens species.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Red-winged Blackbird, Black-capped Chickadee, Song Sparrow, Northern Flicker, Blue Jay, Canada Goose, White-throated Sparrow, Chipping Sparrow, American Crow, Northern Cardinal</p> <p><b>Mammals:</b> White-tailed Deer</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>There are several small polygons (inclusions) associated with the deciduous forest:</p> <ul style="list-style-type: none"> <li>• Thicket swamp (SWT2) dominated by spice bush</li> <li>• Plantation (CUP3d) consisting of eastern white pine, red pine, scots pine, and balsam fir. The sub-canopy is dominated by green ash. The shrub layer is dominated by choke cherry. The ground cover consists of Virginia strawberry, spotted geranium, buttercup species, and avens species.</li> <li>• Dry to fresh oak-red maple deciduous forest (FOD2-1).</li> <li>• Fresh to moist poplar deciduous forest (FOD8-1).</li> </ul> <p>There are several small polygons (inclusions) associated with the plantation:</p> <ul style="list-style-type: none"> <li>• Pond, open aquatic (OAO).</li> <li>• White Pine - White Ash - Trembling Aspen Mixed Plantation Type (CUP2b). The canopy layer of this plantation consists mainly of eastern white pine with fewer amounts of white ash and trembling aspen. The sub-canopy consists mainly of eastern white pine with fewer amounts of white ash and trembling aspen. The shrub layer consists of choke cherry and tartarian honeysuckle. The ground cover consists of giant goldenrod, choke cherry and thimbleweed.</li> <li>• Mineral Cultural Thicket Ecosite (CUT1).</li> </ul>	
<b>WOD-032</b>	190, 210	>0.1 m (collection line)	46.9	Deciduous Forest and Cultural Woodland	Young, Mid-age, and Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Green Ash - Hawthorn Mineral Cultural Woodland Type (CUW1m): The canopy of this mid-age cultural woodland is dominated by green ash with hawthorn and common apple found throughout. The ground cover is comprised mainly of garlic mustard with lesser amounts of poison ivy.</li> <li>• Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8): This mid-age community is located on a small valley slope. Canopy species within this dry-fresh deciduous forest include white ash and sugar maple while the sub-canopy is dominated mainly by sugar maple with some white ash. The shrub layer consists of equal amounts of grey dogwood and sugar maple.</li> <li>• Fresh - Moist White Elm Lowland Deciduous Forest Type (FOD7-1): The canopy layer of this mature deciduous forest is dominated by Freeman's maple with lesser amounts of white elm, white ash and black walnut. Species observed within the sub canopy include white ash, hawthorn, and prickly ash. Species observed within the shrub layer include black raspberry, and prickly-ash. The herbaceous layer consists of garlic mustard, wood nettle, poison ivy, thicket creeper, and yellow avens.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy within this young to mid-age forest consists of green ash, Manitoba maple and white elm. The sub-canopy consists of a hawthorn species, green ash, and Manitoba maple. The ground cover consists of common dandelion, garlic mustard, Manitoba maple and wild strawberry.</li> <li>• Dry - Fresh White Ash-White Elm Deciduous Forest Type (FOD4-2): The canopy layer within this mid-age deciduous forest is dominated by white ash and white elm with lesser amounts of sugar maple, while the sub-canopy consists of</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Eastern Phoebe, American Goldfinch, Killdeer, Vesper Sparrow, Horned Lark, Downy Woodpecker, Black-capped Chickadee, Black-billed Cuckoo</p> <p><b>Lepidoptera:</b> Red Admiral</p> <p><b>Mammals:</b> White-tailed Deer</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						hawthorn, white ash, and choke cherry. The shrub layer consists of yellow avens, red currant, may apple and tall buttercup, and the herbaceous layer consists of poison ivy, thicket creeper, and running strawberry bush.	
<b>WOD-033</b>	215	>0.1 m (collection line)	12.5	Deciduous Forest and Deciduous Swamp	Mid-age and Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer of this mature deciduous forest is dominated by basswood with equal amounts of sugar maple, beech and shagbark hickory. The sub-canopy consists of blue beech with equal amounts of sugar maple and American beech and some choke cherry. The shrub layer consists of prickly gooseberry and black raspberry, and the herbaceous layer contains running strawberry bush, false solomon's seal, yellow avens and Virginia waterleaf.</li> <li>• Dry - Fresh White Ash - Basswood Deciduous Forest Type (FOD4f): Dominant species observed within the canopy of this mid-age deciduous forest include white ash, basswood, and lesser amounts of white elm. The sub-canopy is dominated by basswood with equal amounts of bitternut hickory, and sugar maple. The shrub layer consists of choke cherry, white ash and basswood, and the herbaceous layer is comprised of poison ivy, white avens, and calico aster. This forest includes a cultural meadow forest type as an inclusion.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy within this mature deciduous swamp is dominated by freeman's maple with lesser amounts of green ash. The sub-canopy is dominated by Freeman's maple with lesser amounts of green ash. Species present in the ground layer include a variable mix of sensitive fern, false nettle, lady fern, fowl manna grass, woodland strawberry, northern dewberry and bladder sedge.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Wild Turkey, American Crow, Blue Jay, American Goldfinch, Downy Woodpecker</p> <p><b>Mammals:</b> White-tailed Deer, Gray Squirrel</p> <p><b>Herpetofauna:</b> Spring Peeper</p>
<b>WOD-034</b>	216	>0.1 m (collection line)	25.0	Cultural Woodland and Deciduous Forest	Mid-age and Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Black Walnut Mineral Cultural Woodland Type (CUW1d): The canopy layer in this mid-age cultural woodland is dominated by black walnut, white ash and white pine.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy layer of this mid-age deciduous forest is dominated by green ash and white ash. The sub-canopy layer consists of green ash, pin cherry and staghorn sumac. The shrub layer is dominated by grey dogwood. The ground cover layer is mainly comprised of giant ragweed, Canada goldenrod and alternate-leaved dogwood.</li> <li>• Fresh - Moist Oak - Maple Deciduous Forest Type (FOD9-2): The canopy layer of this mature deciduous forest consists of bur oak, shagbark hickory and green ash. The sub-canopy consists of equal amounts of bur oak and shagbark hickory with lesser amounts of green ash and white elm. The shrub layer consists of bitternut hickory and basswood with equal amounts of green ash and bur oak, while the herbaceous layer consists of graceful sedge, avens species and choke cherry.</li> </ul> <p>Two small vegetation communities (inclusions) are associated with this forest polygon:</p> <ul style="list-style-type: none"> <li>• Mineral Thicket Swamp (SWT2)</li> <li>• Dry - Moist Old Field Meadow Type (CUM1-1)</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Wild Turkey, Gray Catbird, White-breasted Nuthatch, Tundra or Trumpeter Swan (fly over)</p> <p><b>Lepidoptera:</b> Monarch</p> <p><b>Mammals:</b> Eastern Cottontail, White-tailed Deer</p> <p><b>Odonata:</b> Common Green Darner</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-035</b>	217	100 m (collection line)	1.3	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy layer of this mid-age forest is dominated by green ash with fewer white elm, ironwood and basswood. The sub-canopy is mainly hawthorn species with fewer red maple and less white elm. Species within the shrub layer consist mainly of choke cherry with fewer red maple. The ground cover consists of yellow trout lily, white trillium, garlic mustard and spotted geranium.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-winged Blackbird, Downy Woodpecker <b>Mammals:</b> Coyote, Red Fox
<b>WOD-042</b>	225	7 m (collection line)	3.5	Deciduous Forest and Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Shagbark Hickory - Green Ash Deciduous Forest Type (FOD9d): Canopy species recorded in this mid-age deciduous forest include equal amounts of shagbark hickory, and green ash while sub-canopy species include equal amounts of sugar maple, hawthorn, white elm and green ash. The herbaceous layer includes running strawberry bush, sedge species and white avens.</li> <li>Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer of this mid-age deciduous swamp is dominated by green ash. One inclusion is associated with this forest habitat: <ul style="list-style-type: none"> <li>Reed-canary Grass Mineral Meadow Marsh Type (MAM2-2)</li> </ul> </li> </ul>	Provides habitat for the following species: <b>Birds:</b> Black-capped Chickadee, Mourning Dove, Eastern Phoebe, Song Sparrow, Red-winged Blackbird, Yellow-bellied Sapsucker, Red-tailed Hawk, Northern Flicker <b>Crustaceans:</b> Chimney Crayfish
<b>WOD-044</b>	236	30 m (collection line)	0.4	Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp Type (east of Turbine 37) (SWD2-2): This mid-age deciduous swamp is dominated by green ash.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> American Crow, American Pipit, Killdeer, American Robin, White-breasted Nuthatch, Turkey Vulture, Downy Woodpecker, Black-capped Chickadee, Belted Kingfisher, Northern Flicker, Blue Jay <b>Mammals:</b> White-tailed Deer, Gray Squirrel <b>Lepidoptera:</b> Red Admiral, Cabbage White, Clouded Sulphur, Grey Comma <b>Herpetofauna:</b> Green Frog, Eastern Newt, Spring Peeper
<b>WOD-047</b>	229	>0.1 m (access road)	4.3	Deciduous Forest	Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): The canopy of this mature deciduous forest consists of equal amounts of sugar maple and basswood with lesser amounts of white ash and American beech. The sub-canopy consists of sugar maple, ironwood and American beech. The shrub layer consists of sugar maple with some choke cherry, while the herbaceous layer consists of white avens, zigzag goldenrod and calico aster. There is a small hedgerow inclusion wherein the canopy layer is dominated by basswood with equal amounts of white elm, bitternut hickory, and white ash. The sub-canopy</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Song Sparrow, American Goldfinch, American Robin, Red-winged Blackbird, Brown-headed Cowbird, American Pipit, American Goldfinch, Northern Flicker, Blue Jay, White-crowned Sparrow <b>Lepidoptera:</b> Monarch <b>Mammals:</b> Coyote

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						consists of grey dogwood, white elm and common apple. Species observed within the shrub layer include red raspberry, and the herbaceous layer includes garlic mustard, white avens and tall white aster.	
<b>WOD-049</b>	232	<1 m (collection line)	118.0	Deciduous Forest, Deciduous Swamp, Cultural Plantation, Mixed Forest	Mid-age to Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8): The canopy species of this mid-age deciduous forest include white ash and sugar maple with some paper birch. The sub-canopy is dominated by sugar maple. Shrub layer species observed include spicebush, black cherry and sugar maple, while the herbaceous layer consists of running strawberry bush and creeping partridge berry.</li> <li>• White Pine Coniferous Plantation Type (CUP3-2): The canopy and sub-canopy of this mid-age to mature coniferous plantation is dominated by white pine with some deciduous regeneration including white ash and sugar maple. Species observed within the shrub layer include white ash and sugar maple. The herbaceous layer consists of poison ivy, herb-robert, garlic mustard and calico aster.</li> <li>• Dry - Fresh White Ash - Paper Birch Deciduous Forest Type (FOD4c): Species observed within the canopy of this mid-age deciduous forest include white ash, paper birch, sugar maple, and basswood. The sub-canopy consists of equal amounts of basswood and sugar maple. The shrub layer is dominated by sugar maple, spicebush, and blackberry while dominant species in the herbaceous layer include running strawberry bush and violet species.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy of this mid-age deciduous forest is dominated by green ash with lesser amounts of basswood and white elm, while the sub-canopy consists of sugar maple and blue beech. Dominant species observed within the shrub layer are multiflora rose, grey dogwood, immature sugar maple, and red raspberry. The herbaceous layer includes species such as white avens, herb robert, running strawberry bush, Virginia strawberry and graceful sedge. The community had evidence of selective logging and was somewhat disturbed. A Swamp Maple Deciduous Swamp (SWD3-3) inclusion was found within the community as well as a drainage ditch.</li> <li>• Dry - Fresh Sugar Maple - Hickory Deciduous Forest Type (FOD5-5): The canopy within this mid-age forest is mainly shagbark hickory with fewer sugar maple. The sub-canopy layer is dominated by sugar maple. Species within the shrub layer consist of nannyberry and choke cherry. The ground cover consists of running strawberry bush with fewer yellow trout lily.</li> <li>• Dry - Fresh Poplar Deciduous Forest Type (FOD3-1): Dominant species within the canopy of this mid-age deciduous forest include white ash, trembling aspen, cottonwood and sugar maple. The sub-canopy consists of hawthorn, white ash, witch hazel and blue beech. The sparse shrub layer contains black currant, while the herbaceous layer consists of running strawberry bush, Canada may flower, fowl manna grass and jack-in-the-pulpit.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-tailed Hawk, American Crow, White-throated Sparrow, White-crowned Sparrow, Blue Jay, Hairy Woodpecker, Song Sparrow, White-breasted Nuthatch, Mourning Dove</p> <p><b>Mammals:</b> Eastern Chipmunk, Raccoon.</p>



**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>There are three small vegetative communities included in FOD4c polygon:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1)</li> <li>• Fresh - Moist Sugar Maple - Hemlock Mixed Forest Type (FOM6-1)</li> <li>• Dry - Fresh White Cedar - Poplar Deciduous Forest Type (FOD4-2)</li> </ul>	
<b>WOD-053</b>	235	>0.1 m (turbine construction footprint)	1.6	Deciduous Forest and Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Bitternut Hickory - Basswood Deciduous Forest Type (FOD9c): This is a small woodland. Dominant species observed within the canopy of this mid-age deciduous forest include basswood, bitternut hickory and equal amounts of white elm and green ash. The sub-canopy species include equal amounts of white elm and ironwood. Species observed within the herbaceous layer include poison ivy, tall white aster and some zigzag goldenrod.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): This community is located in the southern portion of the feature and is dominated by freeman's maple with some green ash. There is evidence of seasonal flooding, likely brief in duration.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> American Crow, Red-winged Blackbird, Cowbird, White-breasted Nuthatch, Downy Woodpecker, Northern Flicker, Mallard, Song Sparrow</p> <p><b>Mammals:</b> White-tailed Deer</p> <p><b>Herpetofauna:</b> Spring Peeper</p> <p><b>Lepidoptera:</b> Clouded Sulphur, Orange Sulphur, Red Admiral, Cabbage White, Eastern Comma</p> <p><b>Odonata:</b> Common Green Darner.</p>
<b>WOD-054</b>	236	>0.1 m (collection line)	28.4	Deciduous Forest, Deciduous Swamp, Mixed Forest	Young, Mid-age, Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Shagbark Hickory Deciduous Forest Type (FOD9-4) (southeast of Turbine 36): The canopy layer of this mid-age deciduous forest is dominated by shagbark hickory with small amounts of white elm within the sub-canopy. The shrub layer is dominated by shagbark hickory, while the herbaceous layer consists of herb-robert, running strawberry bush, tall white aster, immature white ash and garlic mustard.</li> <li>• Dry - Fresh White Ash Deciduous Forest Type (FOD4-2): This mid-age to mature deciduous forest community is dominated by white ash with small amounts of American beech, sugar maple and ironwood. The sub-canopy contains equal amounts of sugar maple and ironwood. The shrub layer consist of American beech and ironwood while the ground cover is dominated by Canada goldenrod, radiate sedge, zig zag goldenrod and white avens.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) (north of Turbine 36): This mid-age swamp community is dominated by freeman's maple.</li> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2) (east of Turbine 37): This mid-age deciduous swamp is dominated by green ash.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): This mid-age deciduous forest is dominated by green ash.</li> <li>• Fresh - Moist Shagbark Hickory - White Ash - Beech Deciduous Forest Type (FOD9b) (northeast of Turbine 37): The canopy within this mid-age forest consists of shagbark hickory, bur oak, and white ash. The sub-canopy consists of sugar maple and white elm. The ground cover consists of sedge species and white avens.</li> <li>• Fresh - Moist Shagbark Hickory - White Ash - Beech Deciduous Forest Type (FOD9b) (northeast of Turbine 36): This mid-age deciduous forest has no clear</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-eyed Vireo, Eastern Wood Peewee, White-breasted Nuthatch, Black-capped Chickadee, Song Sparrow, American Robin, Red-bellied Woodpecker, Blue Jay, Northern Flicker, White-crowned Sparrow, Swamp Sparrow, American Crow, Killdeer, American Goldfinch, Turkey Vulture, Belted Kingfisher</p> <p><b>Herpetofauna:</b> Spring Peeper, Green Frog, Eastern Newt</p> <p><b>Mammals:</b> White-tailed Deer, Grey Squirrel, Eastern Cottontail, Raccoon</p> <p><b>Lepidoptera:</b> Red Admiral, White Cabbage, Grey Comma</p> <p><b>Odonata:</b> Common Green Darner.</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>dominant species observed within the canopy. Species observed include shagbark hickory, white ash, red oak and American beech. There is a small pond located at the edge of the forest. Water depth in the pond was approximately 1 m at the time of investigation although there had been recent rain.</p> <p>There is one inclusion associated with this forested feature:</p> <ul style="list-style-type: none"> <li>Stonewort Submerged Shallow Aquatic Type (SAS1-3).</li> </ul>	
<b>WOD-056</b>	240	18 m (access road)	0.7	Deciduous Forest	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): This mid-age deciduous forest is dominated by green ash with lesser amounts of bur oak, sugar maple and basswood. The sub-canopy is dominated by green ash. The shrub layer is dominated by choke cherry. The ground layer is dominated by grass species.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> American Robin, Northern Flicker, Red-winged Blackbird, Brown-headed Cowbird.</p>
<b>WOD-060</b>	242	>0.1 m (access road)	3.7	Deciduous Forest	Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type (FOD6-1): The canopy layer within this mid-age forest is dominated by sugar maple with fewer green ash, white elm and basswood. The sub-canopy layer consists of bitternut hickory, sugar maple and green ash. Species within the shrub layer consist of choke cherry and sugar maple. The ground cover consists of spotted geranium, yellow trout lily, garlic mustard and toothwort.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, American Robin, Savannah Sparrow, Vesper Sparrow, Blue Jay, American Goldfinch, Indigo Bunting, Eastern Wood-pewee, Gray Catbird, Northern Flicker, Downy Woodpecker, Hairy Woodpecker, Red-bellied Woodpecker, Red-winged Blackbird, Field Sparrow, Northern Cardinal</p> <p><b>Herpetofauna:</b> Spring Peeper</p> <p><b>Mammals:</b> Coyote, Mink, Raccoon, Gray Squirrel, White-tailed Deer.</p>
<b>WOD-063</b>	244	68 m (turbine construction footprint)	8.7	Deciduous Forest and Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer within this mid-age forest is dominated by sugar maple with fewer basswood and less white ash and shagbark hickory. The sub-canopy is dominated by sugar maple. Species within the shrub layer consist of white elm with less choke cherry. The ground cover consists of yellow trout lily with less spotted geranium.</li> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy cover within this mid-age swamp community is dominated by Freeman's maple with fewer green ash. The sub-canopy is dominated by Freeman's maple with fewer green ash. The shrub layer is dominated by white elm with fewer nannyberry. The ground cover consists of sedge species, with fewer reed canary grass.</li> </ul>	<p>Provides habitat for the following bird species:</p> <p><b>Birds:</b> Turkey Vulture, Brown Thrasher, Hairy Woodpecker, Yellow-bellied Sapsucker, Vesper Sparrow, White-breasted Nuthatch, Downy Woodpecker, Northern Flicker, Blue Jay, House Wren, American Crow, Brown-headed Cowbird.</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
WOD-064	245	>0.1 m (access road)	6.9	Deciduous Forest	Mid-age to Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer within this mid-age forest is mainly sugar maple with fewer white elm, less white ash and less bitternut hickory. The sub-canopy is dominated by sugar maple. The shrub layer is dominated by choke cherry with fewer sugar maple. The ground cover consists of spotted geranium, yellow trout lily, white trillium, and may apple.</li> <li>• Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type (FOD6-4): The canopy layer within this mid-age deciduous forest consists of sugar maple and white elm with lesser amounts of basswood and shagbark hickory. The sub-canopy consists of white elm, sugar maple, white ash and blue beech. The shrub layer includes white ash, sugar maple, calico aster and blue beech. Species found within the herbaceous layer consist of running strawberry bush, poison ivy, white ash and avens species.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): This mature community is a mosaic of deciduous forest and deciduous swamp communities. The canopy cover is dominated by green ash and freeman's maple with lesser amounts of bur oak and basswood. The sub-canopy layer consists of white elm. The shrub layer is dominated by choke cherry. The ground cover layer was mainly comprised of graceful sedge, tall white aster, running strawberry bush and herb-robot. Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) inclusions were found throughout.</li> <li>• There are several small inclusions in the mosaic forest polygon. The canopy layer within the mid-age CUP1c inclusion consists of equal amounts of red oak and black walnut with lesser amounts of bur oak. The sub-canopy consists of equal amounts of sugar maple, basswood and white elm. Calico aster and sedge species were found within the herbaceous layer. The red oak and black walnut were likely planted as they are evenly aged however are not in rows and appear natural.</li> <li>• The canopy within the mature FOD5b inclusion includes equal amounts of white ash and basswood with lesser amounts of sugar maple. The sub-canopy consists of equal amounts of sugar maple, basswood and white elm. The shrub layer consists of equal amounts of choke cherry and sugar maple.</li> <li>• The canopy layer within the mid-age FOD7e inclusion is mainly green ash with fewer white elm. The sub-canopy layer is mainly white elm with less basswood and less sugar maple. There is no shrub layer. The ground cover consists of sedge species. The canopy within the mature SWD4a inclusion consists of equal amounts of Freeman's maple and green ash. The sub-canopy consists of equal amounts of freeman's maple and white elm.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Eastern Wood-pewee, White-breasted Nuthatch, House Wren, Red-eyed Vireo, American Goldfinch, American Robin, Song Sparrow, Turkey Vulture, Killdeer, Eastern Phoebe, Black-capped Chickadee, Vesper Sparrow, Red-winged Blackbird, Red-tailed Hawk, Blue Jay, Downy Woodpecker, Brown-headed Cowbird, Cedar Waxwing</p> <p><b>Lepidoptera:</b> Red Admiral</p> <p><b>Mammals:</b> Raccoon, White-tailed Deer.</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-068</b>	249	67 m (access road)	7.8	Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Green Ash Deciduous Mineral Swamp (SWD2-2) The canopy within this mid-age swamp consists mainly of green ash with fewer white elm. The sub-canopy layer consists mainly of green ash with fewer white elm. There is no shrub layer. The ground cover consists of reed canary grass.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-winged Blackbird <b>Herpetofauna:</b> Green Frog
<b>WOD-070</b>	250	52 m (access road)	10.3	Deciduous Forest	Young to Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): This young to mid-age deciduous forest is dominated by sugar maple with lesser amounts of white elm, white ash and American beech. The sub-canopy is dominated by sugar maple. The shrub layer is dominated by sugar maple with less amounts of choke cherry. The ground cover consists of a violet species and yellow trout lily.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Turkey Vulture, Red-winged Blackbird, Song Sparrow, Blue Jay, Rose-breasted Grosbeak, Chipping Sparrow, American Crow, American Goldfinch, Yellow Warbler <b>Mammals:</b> White-tailed Deer <b>Herpetofauna:</b> Spring Peeper, Eastern Garter Snake
<b>WOD-076</b>	251	116 m (turbine construction footprint)	2.0	Deciduous Forest	Mid-age to Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple-Black Cherry Deciduous Forest Type (FOD5-7): The canopy layer of this mid-age deciduous forest includes sugar maple and black cherry. The sub-canopy is dominated by sugar maple, while the shrub layer is dominated by red raspberry. The herbaceous layer consists of running strawberry bush and graceful sedge.</li> <li>Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): The canopy layer of this mature deciduous forest is dominated by sugar maple with lesser amounts of bitternut hickory. The sub-canopy is dominated by sugar maple. The herbaceous layer consisted of running strawberry bush and garlic mustard. Dominant species observed within the canopy of a mature FOD4-1 inclusion associated with this forest include American beech, basswood, white ash and sugar maple. The sub-canopy includes sugar maple and ironwood. The shrub layer is dominated by American beech, and the herbaceous species observed include zig zag goldenrod and poison ivy.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Northern Flicker, Red-bellied Woodpecker, Blue Jay, American Crow, Dark-eyed Junco, American Pipit
<b>WOD-087</b>	259	>0.1 m (collection line)	19.6	Deciduous Forest and Deciduous Swamp	Young, Mid-age, Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2) (north of Turbine 21): The canopy layer in this young deciduous forest is dominated by green ash with lesser amounts of shagbark hickory. The sub-canopy layer consists of green ash, white elm and hawthorn species. The herbaceous layer was mainly comprised of tall goldenrod, poison-ivy, white avens, graceful sedge, and Virginia strawberry.</li> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2) (southwest of Turbine 66): The canopy layer of this young to mid-age deciduous forest is</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Blue Jay, American Crow, Red-winged Blackbird, House Wren, Black-capped Chickadee, American Robin, Eastern Wood-pewee, White-breasted Nuthatch, American Goldfinch, Northern Flicker, Downy Woodpecker, White-throated Sparrow, Black-and-white Warbler, Blackpoll Warbler, Red-eyed Vireo

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>dominated by green ash with lesser amounts of trembling aspen. The sub-canopy layer consists of green ash and hawthorn species. The herbaceous layer was mainly comprised of enchanter's nightshade and tall white aster.</p> <ul style="list-style-type: none"> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy within this mid-age swamp consists of green ash with lesser amounts of shagbark hickory. The sub-canopy consists of green ash and white elm. The ground cover consists of fowl manna grass, sedge species and panicked aster.</li> <li>• Swamp Maple - Green Ash Deciduous Swamp Type (SWD4a): The canopy layer of this mid-age deciduous swamp is co-dominated by freeman's maple and green ash. The sub-canopy layer consists of white elm and freeman's maple. The shrub layer is dominated by white elm. The herbaceous layer was mainly comprised of sedge species, fowl meadow grass and tall white aster. There is a broken canopy (60% cover) from selective cutting. There is also strong evidence of seasonal flooding, although no water was present at the time of site investigation. There may be suitable amphibian breeding habitat.</li> <li>• Fresh - Moist Shagbark Hickory Deciduous Forest Type (FOD9-4): The canopy of this mid-age deciduous forest is dominated by shagbark hickory with lesser amounts of bur oak. The sub-canopy layer consists of shagbark hickory, white elm, sugar maple and blue beech. The shrub layer is dominated by blue beech, choke cherry and green ash. The herbaceous layer was mainly comprised of Virginia strawberry, sedge species and running strawberry bush. Open canopy is present (50-60%) from selective cutting within past two years.</li> <li>• Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): The canopy layer of this mature deciduous forest is dominated by sugar maple with lesser amounts of American basswood and white ash. The sub-canopy layer consists of sugar maple, blue beech, American basswood and shagbark hickory. The shrub layer is dominated by sugar maple with lesser amounts of choke cherry. The herbaceous layer is mainly comprised of running strawberry bush, zigzag goldenrod, sedge species, and calico aster.</li> </ul> <p>There are two small Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2) inclusions in this forest polygon.</p>	<p><b>Lepidoptera:</b> Appalachian Brown, Cabbage White, Monarch, Red-spotted Purple</p> <p><b>Herpetofauna:</b> Wood Frog, Spring Peeper</p> <p><b>Mammals:</b> Raccoon, Gray Squirrel, Eastern Chipmunk.</p>
<b>WOD-093</b>	261	>0.1 m (transmission line and substation)	9.5	Deciduous Forest	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Bitternut Hickory - Basswood - Ironwood - Bur Oak Deciduous Forest Type (FOD9a): The canopy of this mid-age forest consists of bitternut hickory, American basswood, ironwood and bur oak. The sub-canopy consists of bitternut hickory, shagbark hickory, sugar maple and green ash. The shrub layer consists of choke cherry and blue beech. The ground cover consists of climbing poison ivy, spotted geranium, tall goldenrod, and white avens.</li> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer of this mid-age forest consists of sugar maple, white elm, ironwood, and American beech. The sub-canopy consists of sugar maple and ironwood.</li> </ul>	<p>Acts as a buffer for wetland ecosystems and provides habitat for the following species:</p> <p><b>Birds:</b> Downy Woodpecker, Northern Flicker, Blue Jay, Red-winged Blackbird, Horned Lark, Blue Jay, House Wren, American Crow, White-breasted Nuthatch, Great-crested Flycatcher, Baltimore Oriole, Eastern Wood-pewee</p> <p><b>Mammals:</b> Red Fox.</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>The shrub layer consists mainly of choke cherry with less blue beech, sugar maple, American beech and ironwood. The ground cover consists mainly of white trillium, with fewer yellow trout lily, less may apple and less Virginia water leaf. There are four small inclusions associated with this forest polygon, they include:</p> <ul style="list-style-type: none"> <li>• Two Green Ash Mineral Deciduous Swamps (SWD2-2).</li> <li>• Grey Dogwood Mineral Thicket Swamp (SWT2-9). The sparse canopy within this mid-age inclusion consists of cottonwood, green ash and hybrid crack willow. The sub-canopy consists of green ash, white elm and American beech. The shrub layer consists of green ash with gray dogwood. The ground layer consists of wood nettle, calico aster and reed canary grass.</li> <li>• Mineral Deciduous Swamp (SWD4).</li> </ul>	
<b>WOD-101</b>	267	>0.1 m (collection line)	5.1	Deciduous Forest	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): Species observed within the canopy of this narrow band of mid-age deciduous forest include green ash with lesser amounts of white elm, bur oak, and shagbark hickory.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-tailed Hawk, American Robin, Blue Jay  <b>Herpetofauna:</b> Spring Peeper  <b>Mammals:</b> Gray Squirrel.</p>
<b>WOD-103</b>	269	>0.1 m (substation)	3.7	Deciduous Forest and Deciduous Swamp	Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): The canopy layer within the mature forest consists mainly of sugar maple and American beech with fewer basswood and ironwood. The sub-canopy is comprised of equal amounts of sugar maple, American beech, and ironwood. Species found within the shrub layer include mainly blue beech with some choke cherry and less American beech. The ground cover is comprised of yellow trout lily, running strawberry bush, white trillium and spotted geranium. An abundance of downed woody debris was noted.</li> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer within this mature forest community consists mainly of green ash with a moderate amount Freeman's maple and fewer eastern cottonwood. The sub-canopy and shrub layers are comprised of Freeman's maple. The ground cover is comprised of mainly sedge species.</li> </ul> <p>There is a small inclusion associated with this polygon:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2).</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Downy Woodpecker, Gray Catbird, Robin, Red-winged Blackbird, Song Sparrow, Black-capped Chickadee, Northern Flicker  <b>Mammals:</b> White-tailed Deer  <b>Lepidoptera:</b> Red Admiral.</p>
<b>WOD-104</b>	609	>0.1 m (transmission line)	1.0	Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer of this mid-age deciduous swamp community consists of green ash and Freeman's maple. The sub-canopy layer consists of Freeman's maple and green ash. The shrub layer consists of wild red raspberry, Freeman's maple and green ash. The ground cover consists of wood nettle, goldenrod species, spotted jewelweed and blue flag iris.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Baltimore Oriole, Brown-headed Cowbird, Red-winged Blackbird, American Robin, Magnolia Warbler, Song Sparrow, Turkey Vulture, American Goldfinch, Woodpecker Species, Rose-breasted Grosbeak, Eastern Wood-pewee, Great-crested Flycatcher, Chipping Sparrow, White-throated Sparrow</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
							<b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Leopard Frog, Green Frog <b>Lepidoptera:</b> Monarch, Cabbage White, Milbert's Tortoiseshell
<b>WOD-106</b>	271	37 m (turbine construction footprint)	6.2	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type (FOD6-4): The canopy within this mid-age forest is mainly sugar maple with fewer white elm. The sub-canopy is dominated by sugar maple with less white elm. The shrub layer is mainly choke cherry with less white elm. The ground cover consists of yellow trout lily, spotted geranium and garlic mustard.</li> </ul> There is a small cultural meadow ecosystem associated with this forest as an inclusion.	Provides habitat for the following species: <b>Birds:</b> Yellow-bellied Sapsucker, Turkey Vulture
<b>WOD-109</b>	609	>0.1 m (transmission line)	45.1	Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer of this mid-age deciduous swamp community consists of green ash and Freeman's maple. The sub-canopy layer consists of Freeman's maple and green ash. The shrub layer consists of wild red raspberry, Freeman's maple and green ash. The ground cover consists of wood nettle, goldenrod species, spotted jewelweed and blue flag iris.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Baltimore Oriole, Brown-headed Cowbird, Red-winged Blackbird, American Robin, Magnolia Warbler, Song Sparrow, Turkey Vulture, American Goldfinch, Woodpecker Species, Rose-breasted Grosbeak, Eastern Wood-pewee, Great-crested Flycatcher, Chipping Sparrow, White-throated Sparrow <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Leopard Frog, Green Frog <b>Lepidoptera:</b> Monarch, Cabbage White, Milbert's Tortoiseshell
<b>WOD-112</b>	637	77 m (transmission line)	1.1	Coniferous Cultural Plantation and Old Field / Meadow	Young	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Scots Pine - White Pine Coniferous Plantation Type (CUP3a): The canopy of this young plantation consists of a mix of planted scots pine, eastern white pine, black walnut and eastern cottonwood. The shrub layer consists of green ash. The ground cover consists of wild carrot and grasses. Dry - Moist Old Field Meadow Type (CUM1-1): The canopy within this young meadow consists of green ash and crack willow. The shrub layer consists of gray dogwood, hawthorn and common apple. The ground cover consists of goldenrod, reed canary grass, bird's foot trefoil, and wild mint.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-winged Blackbird, Field Sparrow, Black-capped Chickadee, Great Blue Heron, American Robin, Baltimore Oriole, American Goldfinch, Song Sparrow, Red-tailed Hawk, Killdeer <b>Crustaceans:</b> Chimney Crayfish <b>Herpetofauna:</b> Green Frog <b>Mammals:</b> White-tailed Deer

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
WOD-113	611	24 m (transmission line)	4.5	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest (FOD6-5): The canopy of this mid-age deciduous forest consists of American basswood, sugar maple and American beech. The sub-canopy consists of American basswood, sugar maple and white elm. The shrub layer consists of choke cherry, blue beech and white ash. The ground layer consists of poison ivy, thicket creeper, avens species and enchanter's nightshade.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-tailed hawk, Song Sparrow, House Wren, Eastern Wood-pewee, Common Grackle, Black-capped Chickadee, American Robin, Northern Flicker <b>Lepidoptera:</b> Cabbage white, Orange Sulphur
WOD-114	273	11 m (collection line)	0.9	Deciduous Forest	Young	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Poplar Deciduous Forest Type (FOD8-1): The canopy within this young forest is dominated by trembling aspen with less basswood, white elm, and green ash. The sub-canopy consists of mainly white elm, with fewer blue beech, less Freeman's maple, and even less basswood. The shrub layer consists of chock cherry, blue beech, and wild black currant. The ground cover consists of false solomon's seal, garlic mustard, common dandelion, and goldenrod species. A small Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) inclusion is associated with this forest polygon.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> American Robin, Red-winged Blackbird, BlueJay, Song Sparrow, Brown-headed Cowbird <b>Lepidoptera:</b> Red Admiral, Cabbage White <b>Mammals:</b> White-tailed Deer
WOD-117	255, 258	13 m (turbine construction footprint)	455.3	Deciduous Forest and Mixed Forest	Young	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Poplar Mixed Forest Type (FOM5-2): The canopy layer within this young forest community consists of trembling aspen and scots pine. The sub-canopy consists of trembling aspen and scots pine. The shrub layer is mainly nannyberry and gray dogwood. The ground cover consists of grasses.</li> <li>Fresh - Moist Shagbark Hickory Deciduous Forest Type (FOD9-4): The canopy layer of this young to mature deciduous forest is dominated by sugar maple, shagbark hickory and white ash. The sub-canopy layer consists of sugar maple, bitternut hickory, blue beech and ironwood. The shrub layer is dominated by alternate-leaved dogwood, calico aster, swamp red currant, blackberry and northern lady fern. The herbaceous layer consists of sedge, blue violet, garlic mustard, common speedwell, poison ivy, drooping wood sedge and star-flowered solomon's seal. Portions of this community are young with many pole size trees. There is a stream located along the edge of the forest where there is a more disturbed open canopy.</li> <li>Fresh - Moist White Elm Lowland Deciduous Forest Type (FOD7-1): The canopy layer of this mature deciduous forest is dominated by white elm with lesser amounts of white ash and basswood. Species observed within the sub-canopy consist of white ash, sugar maple and hawthorn. The herbaceous layer consists of garlic mustard, calico aster, wild black currant, poison ivy, running strawberry bush, yellow avens and wood nettle.</li> </ul> Five inclusions are associated with this forest, including: <ul style="list-style-type: none"> <li>Coniferous Plantation Ecosite (CUP3)</li> <li>Two Swamp Maple Mineral Deciduous Swamp Types (SWD3-3)</li> <li>Two Green Ash Mineral Deciduous Swamp Types (SWD2-2)</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Common Yellowthroat, Rose-breasted Grosbeak, Red-winged Blackbird, Black-capped Chickadee, American Crow, Horned Lark, Field Sparrow, Savannah Sparrow, Canada Goose, Northern Flicker, Wood Thrush, Brown-headed Cowbird, Blue Jay, Blue-winged Warbler, Chipping Sparrow, Ruby-throated Hummingbird, Baltimore Oriole, American Goldfinch, Turkey Vulture, Red-tailed Hawk, Mourning Dove, American Crow <b>Lepidoptera:</b> Red Admiral, Cabbage White <b>Mammals:</b> Gray Squirrel, Eastern Chipmunk, White-tailed Deer <b>Herpetofauna:</b> Spring Peeper <b>Crustaceans:</b> Chimney Crayfish



**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-118</b>	275	4 m (collection line)	8.1	Deciduous Forest and Deciduous Swamp	Mid-age and Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer within this mid-age forest is mainly sugar maple with less basswood, American beech and white ash. The sub-canopy layer is mainly sugar maple with less basswood, American beech and white ash. The shrub layer is mainly blue beech with less choke cherry, shagbark hickory, and white ash. The ground cover consists of mainly spotted geranium, yellow trout lily, wild strawberry and false solomon's seal.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type: (SWD3-3): The canopy layer within this mid-age to mature forest is dominated by Freeman's maple with fewer green ash and less white elm. The sub-canopy layer is mainly white elm with less Freeman's maple and green ash. The shrub layer is dominated by green ash with fewer white elm and less Freeman's maple. The ground cover consists of moneywort, spotted geranium, and poison ivy.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Savannah Sparrow, Rose-breasted Grosbeak, Canada Goose, Brown-headed Cowbird, Blue Jay, Mallard</p>
<b>WOD-120</b>	648	0 m (transmission line)	2.8	Deciduous Forest	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh-Moist Bitternut Hickory - Basswood - Ironwood - Bur Oak Deciduous Forest Type (FOD9a): The canopy within this mid-age forest consists of bitternut hickory, white elm, ironwood and trembling aspen. The sub-canopy consists of bitternut hickory, ironwood, and white elm. The shrub layer consists of English hawthorn, white elm, bitternut hickory and wild red raspberry. The ground layer consists of garlic mustard, yellow avens, thicket creeper and violet species.</li> </ul> <p>Two inclusions are present in the forest polygon:</p> <ul style="list-style-type: none"> <li>• Fresh-Moist Poplar Deciduous Forest Type (FOD8-1)</li> <li>• Coniferous Plantation Ecosite (CUP3)</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Common Yellowthroat, Eastern Wood-pewee, Baltimore Oriole, House Wren, Brown-headed Cowbird, Song Sparrow, Turkey Vulture, Great-crested Flycatcher, American Goldfinch</p> <p><b>Mammals:</b> White-tailed Deer, Raccoon.</p>
<b>WOD-129</b>	279, 274	>0.1 m (collection line)	8.8	Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <p>There are two separate Swamps of the same type with slightly different compositions.</p> <ul style="list-style-type: none"> <li>• Swamp Maple Organic Deciduous Swamp Type (SWD 6-3): The canopy layer within this mid-age swamp is dominated by Freeman's maple with fewer green ash, less white elm, and even less eastern cottonwood. The sub-canopy layer is dominated by Freeman's maple with fewer green ash. The shrub layer consists of choke cherry and Freeman's maple. The ground cover consists of garlic mustard, spotted jewelweed, buttercup species, and violet species.</li> <li>• Swamp Maple Organic Deciduous Swamp Type (SWD6-3): The canopy within this mid-age swamp is dominated by Freeman's maple with fewer green ash and less basswood. There is no sub-canopy layer. The shrub layer consists of gray dogwood. There was no ground cover layer at the time of site investigation.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Killdeer, Red-winged Blackbird, Brown-headed Cowbird, Blue Jay, Northern Flicker, Rose-breasted Grosbeak, American Robin</p> <p><b>Lepidoptera:</b> Red Admiral, Cabbage White</p> <p><b>Herpetofauna:</b> Leopard Frog</p> <p><b>Mammals:</b> White-tailed Deer</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-130</b>	701	11 m (transmission line)	14.4	Deciduous Forest and Deciduous Swamp	Mid-age to Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8): The canopy within this mid-age forest consists mainly of sugar maple, white ash and American beech. The sub-canopy layer is mainly sugar maple with fewer white ash. The shrub layer is mainly sugar maple, American beech and white elm. The ground layer consists mainly of sugar maple, spotted geranium, garlic mustard and false solomon's seal.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy layer within this mid-age to mature swamp community consists mainly of Freeman's maple with less green ash. The sub-canopy consists of Freeman's maple and green ash. The shrub layer is mainly white elm with fewer blue beech and black ash. The ground cover consists of white avens, spotted geranium and false solomon's seal.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Gray Catbird, Red-eyed Vireo, House Wren, Blue Jay, American Robin, Ovenbird, Brown-headed Cowbird, Wood Thrush, Black-capped Chickadee, Great-crested Flycatcher, Song Sparrow, Chipping Sparrow</p> <p><b>Lepidoptera:</b> Monarch</p>
<b>WOD-131</b>	266, 280	>0.1 m (collection line)	199.8	Cultural Plantation, Deciduous Swamp, Deciduous Forest	Young, Mid-age, Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Eastern Cottonwood Deciduous Plantation Type (CUP1a): The canopy of this mid-age plantation is mainly eastern cottonwood with fewer basswood and much less white elm and shagbark hickory. The sub-canopy is dominated by green ash. The shrub layer is mainly green ash with fewer choke cherry and less tartarian honeysuckle. The ground cover consists of common dandelion, garlic mustard, wild strawberry, and graceful sedge.</li> <li>• Bur Oak Deciduous Plantation Type (CUP1b): The canopy of this mid-age plantation is dominated by bur oak with less green ash. The sub-canopy layer consists of green ash and sugar maple. The shrub layer consists of mainly green ash with fewer tartarian honeysuckle and less autumn olive. The ground cover consists of common dandelion.</li> <li>• Dry - Fresh White Ash - Paper Birch - Cottonwood - White Cedar Deciduous Forest Type (FOD4a): The canopy layer of this young to mid-age deciduous forest consists of large-toothed aspen, white ash, sugar maple, paper birch, cottonwood and white cedar. The shrub layer is dominated by grey dogwood and sugar maple with fewer Freeman's maple and less large-toothed aspen, and the herbaceous layer includes goldenrod species, white trillium, yellow trout lily, common dandelion and aster species.</li> <li>• Mixed Swamp Community Series (SWM): This community was identified through air photo interpretation.</li> <li>• Red Pine Coniferous Plantation Type (CUP3-1): The canopy layer within this young to mid-age plantation is dominated by red pine with less eastern white pine. The sub-canopy is dominated by white elm. There is no shrub layer or ground cover layer.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): This mid-age to mature deciduous swamp community is dominated by freeman's maple, green</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Mallard, American Woodcock, Chipping Sparrow, Mourning Dove, Black-capped Chickadee, Eastern Wood-pewee, Ruffed Grouse, Downy Woodpecker, Blue Jay, Brown-headed Cowbird, Great Blue Heron, American Goldfinch</p> <p><b>Lepidoptera:</b> Red Admiral, Cabbage White</p> <p><b>Herpetofauna:</b> Wood Frog, American Toad, Leopard Frog, Eastern Red-backed Salamander</p> <p><b>Mammals:</b> White-tailed Deer, Red Fox, Eastern Chipmunk, Raccoon, Gray Squirrel</p> <p><b>Herpetofauna:</b> Eastern Garter Snake</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>ash, paper birch and black ash. The sub-canopy is comprised of freeman's maple, blue beech, white elm and green ash, while spicebush dominates the shrub layer with fewer white elm. Herbaceous species recorded include wild lily-of-the-valley, sensitive fern, moonseed and tall white aster. Seasonal flooding is evident.</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy within this mid-age forest is dominated by green ash with fewer eastern cottonwood and less Freeman's maple. The sub-canopy is mainly green ash with fewer Freeman's maple and less white elm. The shrub layer is mainly white ash with fewer nannyberry and less spicebush. The ground cover is mainly white avens and wild black currant.</li> <li>• Dry - Fresh Large-tooth Aspen Deciduous Forest Type (FOD) (east of Turbine 22): The canopy of this mid-age forest is mainly large-tooth aspen with fewer green ash and much less white birch and less basswood. The sub-canopy layer is mainly green ash with less trembling aspen. The shrub layer consists of white elm with fewer nannyberry and less spicebush. The ground cover consists of mainly yellow trout lily with fewer wild black currant and less wild strawberry.</li> <li>• White Pine Coniferous Plantation Type (CUP3-2): The canopy within this mid-age plantation is dominated by eastern white pine. The sub-canopy is dominated by white elm. The shrub layer is dominated by black raspberry. The ground cover is dominated by running strawberry bush.</li> <li>• Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type FOD6-1) (east of Turbine 23): The canopy layer within this mid-age forest consists of sugar maple, green ash, and white elm. The sub-canopy is mainly green ash with less white elm. The shrub layer is mainly choke cherry with fewer white elm and less spicebush. The ground cover consists mainly of yellow trout lily and star-flowered solomon.</li> <li>• Green Ash - Trembling Aspen Mineral Deciduous Swamp Type (SWD4b) (northeast corner of property): This seasonally flooded mid-age deciduous swamp is co-dominated by green ash and trembling aspen in the canopy. Blue beech dominates the sub-canopy with lesser amounts of white elm, while the shrub layer is dominated by spicebush. The herbaceous layer is comprised of sensitive fern, sedges and dwarf raspberry. Evidence of seasonally flooding was noted however no water was present at the time of site investigation.</li> <li>• Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8): The canopy layer within this mid-age to mature forest consists of sugar maple, white ash, American beech, basswood and large tooth aspen. The sub-canopy is dominated by American beech with lesser amounts of sugar maple and white ash. The sub-canopy is mainly sugar maple with less white ash. The shrub layer includes white elm, American beech, maple-leaved viburnum, choke cherry and spicebush. The ground cover consists of yellow trout lily, false solomon's seal, sedges, white trillium and partridge-berry.</li> </ul>	

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>Seven inclusions are associated with the forest:</p> <ul style="list-style-type: none"> <li>• Two Green Ash Mineral Deciduous Swamp Types (SWD2-2)</li> <li>• Dry - Fresh Trembling Aspen Deciduous Forest Type (FOD4d)</li> <li>• Two White Pine - Red Pine - Norway Spruce - White Spruce Coniferous Plantation Types (CUP3e)</li> <li>• Green Ash Deciduous Plantation Type (CUP1-7)</li> <li>• Black Walnut - Red Oak Deciduous Plantation Type (CUP1c)</li> </ul>	
<b>WOD-133</b>	282	>0.1 m (collection line)	20.6	Deciduous Forest and Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type (FOD6-4): The canopy layer within this mid-age forest is dominated by sugar maple with fewer white ash and less white elm. The sub-canopy is mainly sugar maple with less white elm. The shrub layer is mainly choke cherry with less nannyberry. The ground cover is mainly yellow trout lily with some white trillium.</li> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer within this mid-age swamp is mainly green ash with less Freeman's maple. The sub-canopy is dominated by green ash. The shrub layer is mainly Freeman's maple with less white elm. The ground cover is dominated by dotted sedge.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Turkey Vulture, Red-bellied Woodpecker, Downy Woodpecker, Yellow-bellied Sapsucker, American Crow, Red-winged Blackbird, White-throated Sparrow, American Robin, Ruby-crowned Kinglet, Common Grackle</p> <p><b>Lepidoptera:</b> Cabbage White, Red Admiral</p>
<b>WOD-134</b>	662	0 m (transmission line)	4.4	Deciduous Forest	Young	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD6-5): The canopy within this young forest consists of basswood and sugar maple, with some red maple and white elm. The sub-canopy consists of sugar maple and basswood. The shrub layer consists of wild red raspberry, white ash and blue beech. The ground cover consists of false solomon's seal and spotted geranium.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Baltimore Oriole, Song Sparrow, Great-crested Flycatcher, Eastern Wood-pewee, Brown-headed Cowbird, House Wren</p>
<b>WOD-135</b>	661	94 m (transmission line)	1.5	Deciduous Forest	Young	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): The canopy of this young forest is dominated by sugar maple, with some white ash, American basswood and ironwood. The sub-canopy consists of bitternut hickory, American basswood and sugar maple. The shrub layer consists of sugar maple, bitternut hickory, and white ash. The ground cover consists of wild leek, herb robert, yellow avens and white trillium.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> American Robin, Red-winged Blackbird, Northern Cardinal, Great-crested Flycatcher, Northern Flicker, Killdeer, European Starling</p> <p><b>Herpetofauna:</b> Spring Peeper, Green Frog</p>
<b>WOD-136</b>	695	115 m (transmission line)	5.4	Deciduous Forest	Young to Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): The canopy layer within this young to mid-age forest community consists mainly of basswood with less bur oak. The sub-canopy is mainly sugar maple with some white elm. The shrub layer consists of nannyberry, choke cherry, and common buckthorn. The ground cover consists of yellow trout lily, Canada anemone, and spotted geranium.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-winged Blackbird, Turkey Vulture, Horned Lark, House Wren, Great-crested Flycatcher, Brown-headed Cowbird, Brown Thrasher, Song Sparrow</p> <p><b>Mammals:</b> Raccoon, White-tailed Deer</p> <p><b>Lepidoptera:</b> Red Admiral, Cabbage White</p> <p><b>Herpetofauna:</b> American Toad</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-137</b>	285	49 m (turbine construction footprint)	5.8	Deciduous Forest and Coniferous Plantation	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy of this mid-age deciduous forest consists of green ash, white elm and trembling aspen. The sub-canopy consists of white elm and green ash. The shrub layer consists of spicebush with lesser amount of green ash. The ground layer consists of thicket creeper, enchanter's nightshade, black raspberry and white avens.</li> <li>White Pine Coniferous Plantation Type (CUP3-2): The canopy of this mid-age plantation consists of eastern white pine. There is also some planted white spruce and red pine, and some regeneration by green ash and white elm. The sub-canopy is comprised of white spruce. The shrub layer consists of green ash and spicebush. The ground cover consists of poison ivy and thicket creeper.</li> </ul> There are two small inclusions associated with the White Pine plantation: <ul style="list-style-type: none"> <li>Cottonwood Mineral Deciduous Swamp Type (SWD4c)</li> <li>Dry - Moist Old Field Meadow Type (CUM1-1)</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Wild Turkey, Black-capped Chickadee, Mourning Dove, Killdeer, Blue Jay
<b>WOD-145</b>	702	40 m (transmission line)	8.9	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Oak - Sugar Maple Deciduous Forest Type (FOD 9-1): The canopy layer within this mid-age forest consist of white oak, sugar maple, basswood, and bitternut hickory. The sub-canopy layer is dominated by sugar maple. The shrub layer consists of common buckthorn and choke cherry. The ground cover consists of spotted geranium, yellow trout lily, false solomon's seal and white trillium.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Blue Jay, Song Sparrow <b>Lepidoptera:</b> Red Admiral, Cabbage White
<b>WOD-146</b>	290	11 m (turbine construction footprint)	3.5	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD 5-6): Co-dominant species observed within the canopy of this mid-age deciduous forest include sugar maple, basswood, white ash, and American beech while the sub-canopy is comprised of sugar maple and American beech. The shrub layer consists of choke cherry, American beech, sugar maple, and white ash. Dominant species recorded within the herbaceous layer include poison ivy, calico aster, running strawberry bush and white avens.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-tailed Hawk, Vesper Sparrow, Downy Woodpecker, Black-capped Chickadee, Red-winged Blackbird <b>Mammals:</b> White-tailed Deer, Raccoon <b>Lepidoptera:</b> Eastern Comma, Red Admiral
<b>WOD-149</b>	291	9 m (access road)	3.8	Deciduous Forest and Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): Co-dominant species observed within the canopy of this mid-age deciduous forest include sugar maple, basswood, white ash, and American beech while the sub-canopy is comprised of sugar maple and American beech. The shrub layer consists of choke cherry, American beech, sugar maple, and white ash. Dominant species recorded within the herbaceous layer include poison ivy, calico aster, running strawberry bush and white avens.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-tailed Hawk, Vesper Sparrow, Downy Woodpecker, Black-capped Chickadee, Red-winged Blackbird <b>Mammals:</b> White-tailed Deer, Raccoon <b>Lepidoptera:</b> Eastern Comma, Red Admiral

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-154</b>	723	>0.1 m (transmission line)	18.6	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD 6-5): The canopy within this mid-age forest consists of sugar maple, common buckthorn, basswood and white elm. The sub-canopy consists of sugar maple, white ash, basswood and white elm. The shrub layer consists of hawthorn species and alternate-leaved dogwood. The ground cover consists of garlic mustard, goldenrod species, spotted geranium and yellow avens.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Northern Harrier <b>Lepidoptera:</b> Monarch, Eastern Tiger Swallowtail <b>Mammals:</b> White-tailed Deer
<b>WOD-158</b>	300	36 m (access road)	46.7	Deciduous Forest and Deciduous Swamp	Mid-age and Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy of this mid-age to mature deciduous forest is dominated by green ash with lesser amounts of basswood, while the sub-canopy consists of white elm. Spicebush dominates the shrub layer and the herbaceous layer is comprised of wild strawberry and white avens. Evidence of recent selective logging was observed.</li> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) (northwest of Turbine 32): The canopy layer of this mature deciduous swamp is dominated by Freeman's maple with a lesser amount of white elm. Other dominant species observed include jewelweed, paniced aster, and orchard grass.</li> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) (west of Turbine 32): The canopy layer species recorded with this mid-age deciduous swamp include freeman's maple with some green ash, while the sub-canopy species recorded include white elm and freeman's maple. The herbaceous layer consists of black nightshade, pale smartweed, and sedge species. Seasonal flooding was apparent and areas in the northeast corner of the swamp had standing water at the time of site investigation. Recent selective cutting of larger maples was evident.</li> <li>Fresh - Moist Manitoba Maple - Green Ash - White Elm - Freeman's Maple Lowland Deciduous Forest Type (FOD7c): The canopy layer of this mid-age forest consists of Manitoba maple, green ash, white elm, and Freeman's maple. There is no sub-canopy layer. The shrub layer consists of sandbar willow and Freeman's maple. The ground cover is dominated by garlic mustard.</li> </ul> Three inclusions are associated with the forest polygon: <ul style="list-style-type: none"> <li>Two Swamp Maple Mineral Deciduous Swamp Type (SWD3-3)</li> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5)</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch, Hairy Woodpecker, Wild Turkey (feather), Red-winged Blackbird, Blue Jay, Northern Flicker, Song Sparrow <b>Herpetofauna:</b> Wood Frog, Spring Peeper <b>Mammals:</b> Raccoon, Meadow Vole <b>Lepidoptera:</b> Red Admiral
<b>WOD-164</b>	722	0 m (transmission line)	0.7	Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy of this mid-age swamp consists of Freeman's maple with a lesser amount of white elm. The sub-canopy layer consists of Freeman's maple, white elm and green ash. The shrub layer consists of white elm, green ash, choke cherry, and common buckthorn. The ground cover consists of green ash, enchanter's nightshade and white avens.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Gray Catbird, Field Sparrow, American Crow

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-176</b>	300	47 m (collection line)	5.6	Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3) (west of Turbine 32): The canopy layer species recorded with this mid-age deciduous swamp include freeman's maple with some green ash, while the sub-canopy species recorded include white elm and freeman's maple. The herbaceous layer consists of black nightshade, pale smartweed, and sedge species. Seasonal flooding was apparent and areas in the northeast corner of the swamp had standing water at the time of site investigation. Recent selective cutting of larger maples was evident.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch, Hairy Woodpecker, Wild Turkey (feather), Red-winged Blackbird, Northern Flicker <b>Herpetofauna:</b> Wood Frog, Spring Peeper <b>Mammals:</b> Raccoon, Meadow Vole
<b>WOD-180</b>	721	0 m (transmission line)	4.8	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy within this mid-age forest consists of sugar maple, blue beech, ironwood and white ash. The sub canopy consists of sugar maple, blue beech and ironwood. The shrub layer consists of blue beech, white ash and sugar maple. The ground cover consists of yellow avens, poison ivy, spotted geranium and tall meadow-rue.</li> <li>Fresh - Moist White Elm Lowland Deciduous Forest Type (FOD7-1): The canopy within this mid-age forest consists of white elm, green ash, ironwood and basswood. The sub-canopy consists of white elm, basswood and green ash. The shrub layer consists of white elm, basswood and green ash. The ground cover consists of yellow avens, thicket creeper, poison ivy and white avens.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Song Sparrow, Tree Swallow, Great-crested Flycatcher, Vireo Sparrow, Eastern Wood-pewee, Baltimore Oriole, Rose-breasted Grosbeak <b>Lepidoptera:</b> Eastern Comma
<b>WOD-191</b>	309	>0.1 m (collection line)	8.7	Deciduous Forest and Deciduous Swamp	Mid-age and Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Black Walnut Lowland Deciduous Forest Type (FOD7-4): The canopy of this mid-age deciduous forest is comprised of black walnut, Freeman's maple, white ash, and white elm. The sub-canopy is dominated by equal amounts of Freeman's maple and white ash with some choke cherry. Herbaceous species recorded within the shrub and herbaceous layers were calico aster, jewelweed, wild black currant, dame's rocket, garlic mustard, avens species, and running strawberry bush.</li> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy layer of this mature deciduous swamp is dominated by Freeman's maple with lesser amounts of black walnut, white ash, and white elm. The sub-canopy consists of white ash, white elm, Freeman's maple and black walnut. The herbaceous layer is comprised by a variable mix of spotted jewelweed, garlic mustard, stinging nettle, tall meadow rue and running strawberry bush.</li> </ul>	Provides habitat for the following species: <b>Herpetofauna:</b> Gray Treefrog <b>Mammals:</b> Eastern Chipmunk

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-200</b>	720	0 m (transmission line)	2.3	Deciduous Forest	Young to Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer in this young to mid-age forest community is mainly sugar maple with fewer white elm, white ash and green ash. The sub-canopy consists of sugar maple, white elm, bitternut hickory and ironwood. The shrub layer consists of sugar maple, white ash and green ash. The ground cover consists mainly of garlic mustard with fewer spotted geranium, yellow trout lily and wild strawberry. This forest polygon includes three inclusions:</li> <li>• Two Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Types (FOD6-5)</li> <li>• Fresh - Moist Basswood - White Elm - Freeman's Maple - Green Ash Lowland Deciduous Forest Type (FOD7f)</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Blue Jay, White-breasted Nuthatch, Song Sparrow, Horned Lark, Rose-breasted Grosbeak, Brown-headed Cowbird, American Robin, Red-winged Blackbird, Hairy Woodpecker, Baltimore Oriole</p> <p><b>Lepidoptera:</b> Red Admiral</p> <p><b>Herpetofauna:</b> Spring Peeper</p>
<b>WOD-210</b>	738	>0.1 m (transmission line)	3.2	Deciduous Forest and Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Willow Mineral Deciduous Swamp Type (SWD4-1): The canopy layer within this mid-age swamp is dominated by hybrid crack willow. There is no sub-canopy layer. The shrub layer is dominated by alternate-leaved dogwood. The ground cover consists of reed-canary grass and spotted jewelweed.</li> <li>• Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): The canopy and sub-canopy layers within this mid-age deciduous forest are dominated by basswood with some sugar maple. The shrub layer is mainly a hawthorn species with fewer choke cherry and gray dogwood. The ground cover consists mainly of yellow avens, common blackberry and wild strawberry.</li> <li>• Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8): The canopy layer within this mid-age deciduous forest consists mainly of white ash with fewer sugar maple. The sub-canopy consists of sugar maple. The shrub layer consists mainly of sugar maple, choke cherry and common buckthorn. The ground cover consists mainly of sugar maple, jack-in-the-pulpit.</li> </ul> <p>One inclusions is associated with this forest:</p> <ul style="list-style-type: none"> <li>• Reed-canary Grass Mineral Meadow Marsh Type (MAM2-2).</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-winged Blackbird, Eastern Wood-pewee, Blue Jay, Gray Catbird, Song Sparrow</p> <p><b>Herpetofauna:</b> Green Frog</p> <p><b>Lepidoptera:</b> Cabbage White, <b>Odonata:</b> Ebony Jewelwing</p>
<b>WOD-227</b>	321	>0.1 m (collection line)	4.4	Deciduous Forest	Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): This mature deciduous forest is dominated by sugar maple with lesser amounts of beech and white ash. The sub-canopy is also dominated by sugar maple with lesser amounts of white ash, white elm and witch hazel. Species noted within shrub layer include black raspberry, sugar maple, calico aster, and maple-leaved viburnum. The herbaceous layer consisted of poison ivy, sugar maple and bearded shorthusk.</li> </ul> <p>There are five inclusions associated with this forest of the same type: Swamp Maple Mineral Deciduous Swamp Type (SWD3-3).</p>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Red-winged Blackbird, American Robin, Chipping Sparrow, American Crow, Black-capped Chickadee, Common Grackle, American Goldfinch, Blue Jay, Downy Woodpecker, Wild Turkey</p> <p><b>Mammals:</b> White-tailed Deer, Coyote, Cottontail, Woodchuck</p> <p><b>Herpetofauna:</b> Spring Peeper, Eastern Garter Snake</p>



**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-231</b>	759	4 m (access road)	0.6	Coniferous Plantation	Young	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Red Pine Coniferous Plantation Type (CUP3-1): This young coniferous plantation is dominated by red pine with lesser amounts of Austrian pine, white spruce, and blue spruce. Species observed within the shrub layer includes white ash, pussy willow and sandbar willow, while the ground layer contains field species such as smooth brome, orchard grass, white heath aster, black-eyed susan, bird's foot trefoil, self heal, and red clover. A dug pond inclusion is located within the plantation, and a second open aquatic community is located to the east of the plantation and north of the deciduous forest of natural area 321.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Song Sparrow, Red-winged Blackbird, American Robin, Chipping Sparrow, American Crow, Black-capped Chickadee, Common Grackle, American Goldfinch</p> <p><b>Mammals:</b> White-tailed Deer, Coyote, Woodchuck, Cottontail</p> <p><b>Herpetofauna:</b> Eastern Garter Snake</p>
<b>WOD-251</b>	326, 331	>0.1 m (access road)	14.3	Deciduous Forest and Coniferous Plantation	Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): This mature deciduous forest is dominated by basswood with lesser amounts of sugar maple, white ash, and American beech, while the sub-canopy is comprised of equal amounts of blue beech, white ash, and sugar maple. Other species observed in the ground layer include zigzag goldenrod, calico aster, blue cohosh, fowl manna grass, enchanter's nightshade, running strawberry bush, garlic mustard, and herb robert. The forest shows evidence of selective harvesting and appears to have been carefully managed.</li> <li>Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): The canopy layer within this mature forest is dominated by sugar maple with some American beech, basswood, and white ash. The sub-canopy is dominated by sugar maple with lesser amounts of white ash, red elderberry and blue beech. The shrub layer is mainly sugar maple with some choke cherry and less ironwood. The ground layer is yellow trout lily with a variety of other species that include yellow violet, calico aster, blue cohosh, zigzag goldenrod, jack-in-the-pulpit, enchanter's nightshade and running strawberry bush.</li> <li>Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): The canopy layer within this mid-age forest consists of sugar maple and American beech. The sub-canopy layer consists of sugar maple and American beech. The shrub layer consists of blue beech, sugar maple and American beech. The ground cover consists of choke cherry, poison ivy, sugar maple and enchanter's nightshade.</li> </ul> <p>One Colorado Spruce Cultural Plantation (CUP 3c) is present. This Mid-age plantation is dominated by Colorado spruce with some white pine, white spruce, white ash and trembling aspen.</p>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Canada Goose, American Crow, Red-Bellied Woodpecker, Song Sparrow, Wood Thrush, Cedar Waxwing, Northern Flicker, American Robin, Indigo Bunting, Blue Jay, Gray Catbird, Baltimore Oriole, Great-crested Flycatcher, House Wren, Downy Woodpecker, Pileated Woodpecker (excavations), Red-winged Blackbird, Red Tail Hawk</p> <p><b>Herpetofauna:</b> Wood Frog, Gray Treefrog, Spring Peeper</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-278</b>	339, 342	>0.1 m (collection line)	15.8	Deciduous Forest and Deciduous Swamp	Mid-age and Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): The canopy layer of this mature forest is dominated by sugar maple and American beech with lesser amounts of basswood and white ash. The sub-canopy layer consists of American beech and sugar maple. The shrub layer is dominated by choke cherry. The herbaceous layer is mainly comprised of woodland strawberry, choke cherry, tall white aster and zigzag goldenrod. This forest exhibits evidence of selective cutting within the past few years.</li> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): This is a complex of deciduous swamp and marsh communities. The canopy of this mid-age deciduous swamp is dominated by freeman's maple with lesser amounts of green ash and trembling aspen. The sub-canopy layer consists of black ash and green ash. The ground layer is dominated by common reed, bulrush species and sedge species.</li> <li>• Dry - Fresh Sugar Maple - Hickory Deciduous Forest Type (FOD5-5): The canopy layer of this mature deciduous forest is comprised of sugar maple, shagbark hickory, white ash, and American beech while the sub-canopy consists of sugar maple, white ash, shagbark hickory, and basswood. The shrub layer is dominated by sugar maple with lesser amounts of shagbark hickory and basswood. Species observed within the herbaceous layer include jack-in-the-pulpit, sugar maple, enchanter's nightshade and zigzag goldenrod.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Red-tailed Hawk (vocalization pair, agitated), Wild Turkey (feathers), Eastern Wood-pewee, White-breasted Nuthatch, Mourning Dove, American Goldfinch, Cooper's Hawk, Downy Woodpecker, Wild turkey (feather), Blue Jay, Snow Bunting</p> <p><b>Herpetofauna:</b> Spring Peeper</p>
<b>WOD-286</b>	349, 346	16 m (collection line)	3.5	Deciduous Forest	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Dry - Fresh Green Ash Deciduous Forest Type (FOD4g): The canopy within this mid-age deciduous forest consists mainly of green ash with fewer white birch and white elm. The sub-canopy consists of green ash, white elm and white birch. The shrub layer consists mainly of spice bush with fewer green ash and witch hazel. The ground cover consists of wild red raspberry, enchanter's nightshade, thicket-creeper, poison ivy and yellow avens.</li> <li>• Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy and sub-canopy of this mid-age deciduous forest was dominated by green ash with lesser amounts of white elm. The shrub layer was dominated by spice bush and common buckthorn. The ground cover was mainly yellow avens, poison ivy, and wild red raspberry.</li> </ul> <p>One inclusion is associate with this forest: White Pine Coniferous Plantation (CUP3-2): The mid-age plantation inclusion consists of eastern white pine. The shrub layer consists of ash species. The ground cover consists of ash species.</p>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Great-crested Flycatcher, Blue Jay, Song Sparrow, House Wren, Black-capped Chickadee</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-289</b>	352	21 m (access road)	7.2	Deciduous Forest	Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): The canopy of this mature deciduous forest is dominated by sugar maple and American beech with lesser amounts of white ash and basswood. The sub-canopy is dominated by sugar maple and with ash with lesser amounts of basswood and ironwood. The shrub layer consists of sugar maple with equal amounts of American beech and white ash and lesser amounts of choke cherry. Herbaceous layer species include immature white ash, immature sugar maple, jack-in-the-pulpit and enchanter's nightshade.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Great-crested Flycatcher, Cedar Waxwing, American Robin, Eastern Wood-pewee, Pileated Woodpecker, Yellow-throated Vireo</p> <p><b>Lepidoptera:</b> Red-spotted Purple, Monarch</p>
<b>WOD-295</b>	358	>0.1 m (collection line)	4.1	Deciduous Forest	Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): The canopy layer of this mature deciduous forest is dominated by American beech, sugar maple, ironwood and white ash. The sub-canopy layer consists of sugar maple and American beech. The shrub layer is dominated by American beech and white ash, while the herbaceous layer was mainly comprised of zigzag goldenrod, ironwood, poison ivy, tall white aster and wild leek.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Wild Turkey, Turkey Vulture, Ruby-throated Hummingbird, American Goldfinch, Eastern Wood-pewee</p>
<b>WOD-299</b>	362	118 m (collection line)	2.0	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>• Fresh - Moist Poplar Deciduous Forest Type (FOD 8-1): The canopy of this mid-age forest consists of trembling aspen, green ash, white elm and basswood. The sub-canopy consists of green ash, trembling aspen and white elm. The shrub layer consists of alternate-leaved dogwood and wild red raspberry. The ground cover consists of garlic mustard, goldenrod species, aster species and grasses.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Horned lark, Brown Thrasher, House Wren, Vesper Sparrow, Rose-breasted Grosbeak</p>
<b>WOD-300</b>	757	10 m (turbine construction footprint)	11.7	Deciduous Forest	Mid-age to Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>• Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy within this mid-age layer consists of green ash with lesser amounts of basswood. The sub-canopy is dominated by green ash. The shrub layer consists of spice bush with lesser amounts of green ash. The ground cover consists largely of green ash seedlings.</li> <li>• Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5): The canopy layer of this mid-age to mature deciduous forest is dominated by sugar maple with lesser amounts of blue beech, basswood and ironwood. The shrub layer is dominated by spicebush with some black raspberry, blackberry and prickly gooseberry. The herbaceous layer is dominated by jack-in-the-pulpit with lesser amounts of false solomon's seal, false miterwort. Undulating topography was noted.</li> </ul>	Provides habitat for the following species: <p><b>Birds:</b> Ovenbird, Great-crested Flycatcher, Yellow-throated Vireo, Blue Jay, Black-capped Chickadee, Horned Lark, Song Sparrow, Brown Thrasher, White-breasted Nuthatch, Vesper Sparrow, Brown-headed Cowbird, Red-bellied Woodpecker, Northern Flicker, Hairy Woodpecker, Wood Duck, American Goldfinch, Wild Turkey</p> <p><b>Herpetofauna:</b> Green Frog</p>

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
WOD-301	361	8 m (collection line)	2.5	Deciduous Woodland and Deciduous Forest	Young to Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Ash - Basswood Mineral Cultural Woodland Type (CUW1b): The canopy of this young to mid-age deciduous forest is dominated by ash with lesser amounts of basswood. The sub-canopy also consists of ash. The shrub layer consists of winterberry, ash species and poison ivy. The herbaceous layer was dominated by avens species with lesser amounts of calico aster and Canada goldenrod.</li> <li>Fresh - Moist Ash Lowland Deciduous Forest Type (FOD7-2): The canopy layer within this mid-age deciduous forest consists mainly of green ash with some basswood and Freeman's maple. The sub-canopy layer consists mainly of green ash and white elm. The shrub layer consists of green ash. The ground cover could not be seen.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Blue Jay, Downy Woodpecker, American Goldfinch
WOD-303	364	5 m (collection line)	9.6	Deciduous Forest	Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): The canopy layer of this mature deciduous forest is dominated by sugar maple with lesser amounts of white ash and American beech. The shrub layer consists of American beech, white ash and common elderberry. The ground layer was mainly comprised of zigzag goldenrod, Pennsylvania sedge, red baneberry, jack-in-the-pulpit and false solomon's seal. This forest exhibits evidence of logging; abundant stumps were present.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Wild Turkey <b>Herpetofauna:</b> Wood Frog
WOD-306	369	27 m (turbine construction footprint)	13.7	Cultural Woodland	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Sweet Cherry - White Elm Mineral Cultural Woodland Type (CUW1e): This mid-age cultural woodland is dominated by white elm, basswood and white ash. The sub-canopy is dominated by sweet cherry with lesser amount of white ash and white elm. The shrub and herbaceous layers consist of New England aster, hairy aster, garlic mustard, wild strawberry and poison ivy.</li> </ul>	No wildlife were observed, but this area is suitable for many of the species observed in other cultural woodlands.
WOD-307	370	102 m (access road)	1.4	Mixed Plantation	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>White Pine - Carolina Poplar Mixed Plantation Type (CUP2a): The canopy within this mid-age plantation consists of Carolina poplar. The sub canopy consists of eastern white pine, white spruce and red cedar. The shrub layer consists of smooth brome.</li> </ul>	No wildlife were observed, but this area is suitable for many of the species observed in other plantations.
WOD-309	372	49 m (turbine construction footprint)	4.0	Deciduous Forest	Mid-age to Mature	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6): The canopy layer within this mid-age to mature deciduous forest consists of basswood and sugar maple, with some white ash, black cherry and American beech. The sub-canopy is dominated by sugar maple. The shrub layer consists of choke cherry and running strawberry bush with lesser amounts of American beech and white elm. The ground cover consists of toothwort, yellow trout lily, jack-in-the-pulpit, red trillium, false solomon's seal and herb robert.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Red-winged Blackbird, Ruby-crowned Kinglet, Vesper Sparrow <b>Herpetofauna:</b> Wood Frog

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
<b>WOD-310</b>	375	12 m (collection line)	3.0	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5) (northeast of Turbine 72): The canopy layer of this mid-age deciduous forest consists of sugar maple with basswood and white ash, and lesser amounts of American beech. The sub-canopy consists of sugar maple, basswood, American beech, white elm, blue beech, spice bush and choke cherry. The shrub layer consists of sugar maple, calico aster, false solomon's seal, black raspberry and choke cherry, white elm and running strawberry bush, while the herbaceous layer consists of poison ivy, wild leek, yellow trout lily, garlic mustard and white trillium.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Gray Catbird, White-breasted Nuthatch, American Robin <b>Herpetofauna:</b> Spring Peeper
<b>WOD-311</b>	373	97 m (turbine construction footprint)	0.9	Cultural Woodland	Young	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>White Elm Mineral Cultural Woodland Type (CUW1h): Dominant species observed include white elm, basswood, and black cherry within the canopy of this young cultural woodland, and the sub-canopy included apple and basswood. Species recorded within the herbaceous layer include white avens, red raspberry, and tall goldenrod.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Black-capped Chickadee, American Goldfinch, Blue Jay, Song Sparrow <b>Herpetofauna:</b> American Toad <b>Lepidoptera:</b> Monarch, Common Sulphur, Eastern Comma, Alfalfa Butterfly
<b>WOD-312</b>	375	29 m (access road)	2.1	Deciduous Forest	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5) (east of Turbine 4): The canopy layer of this Mid-age deciduous forest is dominated by sugar maple with lesser amounts of American beech, shagbark hickory and white ash. The sub-canopy consists of blue beech, sugar maple, spicebush and common elderberry. The shrub layer includes zig-zag goldenrod, fowl manna grass, northern lady fern and wild black currant, while the herbaceous layer includes false nettle, false solomon's seal, calico aster and Christmas fern.</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Downy Woodpecker, Blue Jay, American Goldfinch, Northern Flicker, American Crow, Black-capped Chickadee, White-breasted Nuthatch <b>Herpetofauna:</b> Spring Peeper
<b>WOD-313</b>	375	>0.1 m (collection line)	13.2	Deciduous Forest and Deciduous Swamp	Mid-age	Vegetation community and species composition within the 120 m Area of Investigation as follows: <ul style="list-style-type: none"> <li>Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type (FOD6-5) (northwest of Turbine 5): The canopy of this mid-age deciduous forest is dominated by sugar maple, basswood, white ash, American beech and ironwood. The sub-canopy consists of trembling aspen, blue beech, sweet cherry and silky dogwood. The shrub layer includes calico aster, wild black currant and fly honeysuckle, and the herbaceous layer was dominated by poison ivy with lesser amounts of large bellwort and woodland strawberry.</li> <li>Dry - Fresh Sugar Maple Deciduous Forest Type (FOD5-1): This mid-age deciduous forest is dominated by sugar maple with lesser amounts of American beech, basswood and poplar species.</li> <li>Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy layer within this mid-age deciduous swamp is dominated by Freeman's maple with some green ash. The sub-canopy consists of Freeman's maple, white elm, and</li> </ul>	Provides habitat for the following species: <b>Birds:</b> Downy Woodpecker, Blue Jay, American Goldfinch, Northern Flicker, American Crow, Black-capped Chickadee, White-breasted Nuthatch <b>Herpetofauna:</b> Spring Peeper <b>Mammals:</b> Eastern Cottontail

**Table 3.6 Woodland Features Identified Through the Records Review and Site Investigation**

Woodland ID	Natural Area	Minimum Distance from Project Location <sup>4</sup>	Attributes			Composition	Functions
			Total Size (ha)	Forest Community Type	Woodland Age		
						<p>basswood. Species observed within the shrub layer include white elm with equal amounts of green ash, basswood, and choke cherry. The herbaceous layer is comprised of buttonbush, with equal amounts of choke cherry, sensitive fern, and spinulose wood fern.</p> <p>There is a Fresh-Moist Sugar Maple - Hemlock Mixed Forest Type (FOM6-1) inclusion associated with this forest.</p>	
<b>WOD-328</b>	392	10 m (access road)	9.7	Deciduous Forest and Deciduous Swamp	Mid-age	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Swamp Maple Mineral Deciduous Swamp Type (SWD3-3): The canopy layer within this mid-age deciduous forest consists of freeman's maple, and green ash, while species within the sub-canopy include freeman's maple, green ash, and poison ivy. The shrub layer consists of equal amounts of freeman's maple and green ash while the ground cover layer is comprised of red-osier dogwood with lesser amounts of poison ivy and sensitive fern.</li> <li>• Dry - Fresh Sugar Maple - Beech Deciduous Forest Type (FOD5-2): Species observed within the canopy of this mid-age deciduous forest include sugar maple and American beech, with some white ash, basswood and black cherry. The sub-canopy is dominated sugar maple with lesser amounts of American beech, ironwood, and white elm. Species recorded in the shrub layer include white ash, American beech, choke cherry and ironwood, while the herbaceous layer includes large flowered bellwort, thicket creeper, poison ivy, yellow avens, yellow trout lily, basswood, garlic mustard, and common blue violet.</li> </ul> <p>There are two inclusions of the same type associated with this forest: Swamp Maple Mineral Deciduous Swamp Type (SWD3-3).</p>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Wood Duck, Song Sparrow, Red-winged Blackbird, Downy Woodpecker, Mourning Dove, Blue Jay, Black-capped Chickadee, American Crow, White-breasted Nuthatch, American Goldfinch, Yellow-bellied Sapsucker (holes in tree)</p> <p><b>Herpetofauna:</b> Wood Frog</p> <p><b>Mammals:</b> Raccoon, White-tailed Deer</p>
<b>WOD-331</b>	379	23 m (access road)	1030.6	Coniferous Plantation	Mature	<p>Vegetation community and species composition within the 120 m Area of Investigation as follows:</p> <ul style="list-style-type: none"> <li>• Red Pine Coniferous Plantation Type (CUP3-1): The canopy layer within this mature plantation is dominated by red pine with fewer eastern white pine, less white spruce and even less white ash. The sub-canopy is mainly white ash with fewer eastern white pine and less white spruce and sweet cherry. The shrub layer is dominated by white ash with fewer choke cherry, common buckthorn and wild red raspberry. The ground cover consists of garlic mustard, herb-robert, bittersweet nightshade, immature white ash, poison ivy and avens species.</li> </ul>	<p>Provides habitat for the following species:</p> <p><b>Birds:</b> Blue Jay, American Crow, Northern Flicker, Red-winged Blackbird, Song Sparrow, Downy Woodpecker, Brown-headed Cowbird, Black-capped Chickadee</p> <p><b>Herpetofauna:</b> Spring Peeper</p> <p><b>Mammals:</b> White-tailed Deer, Raccoon</p>

### 3.3.5 Valleylands

One valleyland feature was identified within the 120 m Area of Investigation through the Records Review and site investigation. The boundary of this valleyland feature is shown on Figure 3.5. A description of the attributes, composition, and function of this valleyland feature, as well as the distance from this feature to the nearest project components, is provided in Table 3.7 below. This valleyland feature was carried forward to the Evaluation of Significance phase of this Natural Heritage Assessment.

**Table 3.7 Valleyland Feature Identified Through the Records Review and Site Investigation**

Valleyland ID	Minimum Distance from Project Location <sup>5</sup>	Attributes		Composition	Functions
		Size within Study Area (ha)	Catchment Area		
VAL-02	>0.1 m (transmission line)	2683.5	The total catchment area of the surface water feature through the valleyland is 32,249 ha	<p>Vegetation community and species composition within the 120 m Area of Investigation include:</p> <ul style="list-style-type: none"> <li>Green Ash Mineral Deciduous Swamp Type (SWD2-2): The canopy layer of this mid-age deciduous swamp community consists of green ash and Freeman’s maple. The sub-canopy layer consists of Freeman’s maple and green ash. The shrub layer consists of wild red raspberry, Freeman’s maple and green ash. The ground cover consists of wood nettle, goldenrod species, spotted jewelweed and blue flag iris. Two inclusions have been identified within this vegetation community: Coniferous Plantation Ecosite (CUP3) and Willow Mineral Thicket Swamp Type (SWT2-2).</li> <li>Willow Mineral Thicket Swamp Type (SWT2-2): The canopy within this mid-age thicket swamp community consists of crack willow and green ash. There is no sub-canopy. The shrub layer consists of sandbar willow, alternate-leaved dogwood and red-osier dogwood. The ground cover consists of reed canary grass, wood nettle, spotted jewelweed and goldenrod species. Two inclusions have been identified within this vegetation community: Open Aquatic (OAO) and Green Ash Mineral Deciduous Swamp Type (SWD2-2).</li> <li>Red Pine Coniferous Plantation Type (CUP3-1): The canopy layer within this mature plantation is dominated by red pine with fewer eastern white pine, less white spruce and even less white ash. The sub-canopy is mainly white ash with fewer eastern white pine and less white spruce and sweet cherry. The shrub layer is dominated by white ash with fewer choke cherry, common buckthorn and wild red raspberry. The ground cover consists of garlic mustard, herb-robert, bittersweet nightshade, immature white ash, poison ivy and avens species. The meadow marsh inclusion is associated with an intermittent drainage feature. Scattered trees consisting of willow and Manitoba maple were observed throughout with some red-osier dogwood. The community is dominated by reed canary grass.</li> </ul> <p>Vegetation communities outside the 120 m Area of Investigation include deciduous forest (FOD), deciduous swamp (SWD), thicket swamp (SWT), cultural thicket (CUT), cultural woodland (CUW), meadow marsh (MAM), open aquatic (OAO).</p>	<ul style="list-style-type: none"> <li>Provides habitat and resources for wildlife including mammals such as White-tailed and numerous bird species including: Baltimore Oriole, Brown-headed Cowbird, Red-winged Blackbird, American Robin, Magnolia Warbler, Song Sparrow, Turkey Vulture, American Goldfinch, Woodpecker sp., Rose-breasted Grosbeak, Eastern Wood-pewee, Great-crested Flycatcher, Chipping Sparrow, White-throated Sparrow, Blue Jay, Northern Flicker, Black-capped Chickadee.</li> <li>Area is considered of regional significance for winter cover for White-tailed Deer (MNR, 1987);</li> <li>Site is an important water storage area and contains the headwaters for Black Creek (MNR, 2011a);</li> <li>Provides a corridor function for the movement of species across the broader landscape.</li> </ul>

5. Reflects distance between feature and disturbance area associated with project infrastructure.

### 3.3.6 Wildlife Habitat

The presence or absence of candidate Significant Wildlife Habitat within the 120 m Area of Investigation was confirmed through site investigations. A description of how a determination was made of the presence or absence of each type of candidate Significant Wildlife Habitat identified through the Records Review and site investigation is provided in the sections that follow. The locations of candidate Significant Wildlife Habitat carried forward to the Evaluation of Significance phase of the NHA are shown on Figure 3.6a, 3.6b, 3.6c and 3.6d.

#### 3.3.6.1 Seasonal Concentration Areas

Seasonal concentration areas are described in the SWHTG. The following seasonal concentration areas were identified as potentially occurring in the Project Study Area through the Records Review:

- Colonial bird nesting sites;
- Waterfowl stopover and staging areas;
- Waterfowl nesting habitat;
- Shorebird migratory stopover areas;
- Raptor wintering areas;
- Reptile hibernacula;
- Bat hibernacula; and
- Bat maternity colonies.

A description of the results of site investigations pertaining to seasonal concentration areas follows.

#### Colonial-Nesting Bird Breeding Habitat (Bank and Cliff Swallows)

Nesting colonies of Bank Swallows can be found on exposed eroding banks, such as shoreline bluffs, river banks sand piles and abandoned pits, and steep slopes. Cliff Swallows will nest on steep rock faces such as cliffs, but in this area nesting more commonly occurs on man-made structures such as bridges and barns (which do not qualify as Significant Wildlife Habitat). Rock cliff faces do not occur in the 120 m Area of Investigation but bluffs can occur along some creeks or in abandoned pits. Bluffs (BLO) can be an ELC community on its own, or occasionally may occur in an abandoned pit or stream bank in cultural meadow, cultural thicket or cultural savannah communities. No bluff or cliff ecosites were identified during site investigations (refer to Figures 3.1 and 3.2a, b, c, d and e).

While there were a total of 13 natural areas containing cultural vegetation communities belonging to one of the specified ecosites (e.g., community types belonging to CUM1, CUT1 or CUS ecosites) identified within the 120 m Area of Investigation during the site investigation, none of these contained suitable natural Bank Swallow or Cliff Swallow nesting habitat (refer to Table 3.8). In addition to these, one feature, 209, contained cultural vegetation community CUP3, and a man-made bridge being used for nesting habitat. As man-made structures are not considered Significant Wildlife Habitat, this site was not carried forward to the Evaluation of Significance.

Candidate Colonial-nesting Bird Breeding Habitat (Bank and Cliff Swallows) does not occur in the 120 m Area of Investigation. This type of Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.



**Table 3.8 Candidate Significant Wildlife Habitat - Colonial-Nesting Birds (Bank and Cliff Swallows)**

Natural Area No.	ELC Unit	Contains Bank, Cliff, Slope, etc. Habitat	Within 120 m of Turbine	Within Project Location	Carried forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
198	CUM1-1	No	Yes	No	No	No	No suitable habitat.
209	CUP3	Bridge nesting habitat	No	No	No	No	Only natural habitat is considered for SWH. Man-made structures do not qualify as SWH.
210	CUM1-1 CUT1i	No	No	No	No	No	No suitable habitat.
220	CUM1-1	No	No	No	No	No	No suitable habitat.
227	CUM1-1	No	No	No	No	No	No suitable habitat.
236	CUT1h	No	Yes	No	No	No	No suitable habitat.
282	CUM1-1	No	No	No	No	No	No suitable habitat.
300	CUM1-1	No	No	No	No	No	No suitable habitat.
373	CUM1-1	No	Yes	No	No	No	No suitable habitat.
635	CUM1-1	No	No	Yes	No	No	No suitable habitat.
636	CUM1-1	No	No	No	No	No	No suitable habitat.
637	CUM1-1	No	No	Yes	No	No	No suitable habitat.
648	CUM1-1	No	No	Yes	No	No	No suitable habitat.
738	CUM1-1 CUT1k	No	No	No	No	No	No suitable habitat.

#### Colonial-Nesting Bird Breeding Habitat (Tree/ Shrub)

Nesting colonies of herons generally occur within trees in treed wetlands such as mixed or deciduous swamps or treed fen habitats (refer to Table 3.2 for corresponding ELC units). Colonies are specific sites where herons congregate to build nests and raise young but need to fly out and forage widely from the colony in all directions over many square kilometres. Consequently an area the size of the Project Study Area would only support a few colonies at best. No treed fens were identified during site investigations; however a number of natural areas containing deciduous or mixed swamp communities were identified within the 120 m Area of Investigation.

According to the Atlas of the Breeding Birds of Ontario, there is evidence of breeding for several tree colonial nesting breeding birds including Great Blue Heron and Green Heron in the general vicinity of the Project Study Area (Cadman *et al.*, 2007). Great Blue Heron were recorded during spring and summer avian surveys conducted by Golder in the Project Study Area (Golder Associates, 2011) as well as Green Heron and Great Blue Heron recorded by AECOM during breeding bird surveys conducted in 2011 (Appendix D). In southern Ontario, Great Blue Heron typically nests in dead trees in large deciduous swamps, large marshes or lakes. Green Heron usually nests over water or very close to it, often in shrubs adjacent to or in wetlands, as well as in flooded timber. There is no evidence of Black-crowned Night Heron or Great Egret breeding in this area (Cadman *et al.*, 2007).

Heron nests, particularly of Great Blue Heron, are large and conspicuous, even outside of the breeding season. The birds often remain in the vicinity of colonies well after the breeding season. All vegetation units within the 120 m Area of Investigation were visited and nests searched for during ELC and vegetation surveys.

Most colonies (at least those large enough to qualify as Significant Wildlife Habitat) are known to MNR and although there were some identified to the north of the Project Study Area, none were identified within the Project Study Area.

Table 3.9 identifies swamp units within the Area of Investigation where heronries (breeding grounds for herons) were observed during ELC surveys. One heronry was observed in natural area 189 within the 120 m Area of Investigation. It is more than 120 m away from proposed turbine locations and was therefore carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat. The location of this generalized candidate Significant Wildlife Habitat is shown on Figure 3.6b.

**Table 3.9 Candidate Significant Wildlife Habitat - Colonial-Nesting Birds (Tree/ Shrub)**

Natural Area No.	ELC Unit	Area of Woodland + Wetland Complex (ha)	Contains Suitable Habitat	Nests Observed During ELC Survey	Within 120 m of Turbine	Within 120 m of Road	Within Project Location	Carried forward to EOS		Rationale
								Candidate SWH	Generalized Candidate SWH	
189	FOD9-4 SWD2-2	12.2	Yes	Yes	No	No	No	No	Yes	Observed Great Blue Heron nests during site investigation.

#### Colonial Bird Nesting Sites: Ground

Colonies of ground-nesting birds may occur on any rocky island or peninsula (natural or artificial) within a lake or large river. No such habitats were identified in or within the 120 m Area of Investigation through the Records Review or site investigation.

Brewer's Blackbird requires open fields or pastures with scattered trees or shrubs in close proximity to watercourses. Although potentially suitable habitat does exist within the Project Study Area, the Breeding Bird Atlas does not have any records of this species in the area (Cadman *et al.*, 2007).

This type of Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.

#### Waterfowl Stopover and Staging Areas: Terrestrial

Tundra Swan stopover and staging habitat typically consists of agricultural fields with waste grains that are subject to annual spring flooding from melt water or runoff. These fields function as important feeding areas for Tundra Swan during spring migration. Agricultural fields with waste grains that are not subject to annual spring flooding may also be used by migrating Tundra Swans but cannot be identified as readily.

Information provided by landowners, aerial photo interpretation and preliminary Tundra Swan migration surveys conducted in 2010 and 2012 was used to identify potential candidate Tundra Swan stopover and staging habitats. A total of 10 possible candidate Tundra Swan stopover and staging habitat sites, shown on Figure 2.1, were initially identified through the Records Review. Site investigations were undertaken at these locations to determine whether the sites exhibit evidence of annual spring flooding (e.g. by examining local topography, soil conditions and plant species composition) as well as whether forage crops are present, and to delineate the boundaries of candidate significant Tundra Swan stopover and staging habitats. As described in the SWHTG, the area of the waterfowl stopover and staging habitat plus an additional 100 to 300 m may be protected, depending on the sensitivity of the birds, local site conditions and adjacent land use. A conservative approach was taken herein, where the area within 300 m of the delineated habitat boundary was considered to form part of the habitat and distances to project components were measured from the outer limit of this area (refer to Figure 3.6c).

Of the 10 sites identified through the Records Review, two are located within the 120 m Area of Investigation, had visible evidence of spring flooding and are within 120 m of a proposed turbine location (Table 3.10); therefore, these two features (WSST-15 and WSST-36) were carried forward to the Evaluation of Significance as candidate significant Tundra Swan stopover and staging habitats. The locations of these candidate Significant Wildlife Habitats are shown on Figure 3.6c.

**Table 3.10 Tundra Swan Stopover and Staging Areas**

Feature No.	Method of Identification	Evidence of Annual Spring Flooding	Forage Crop Present	Within 120 m of Turbine	Within Project Location	Carried Forward to EOS		Rationale
						Candidate SWH	Generalized Candidate SWH	
WSST-08	Tundra Swans observed by AECOM	No evidence of spring flooding in agricultural fields	Yes	Yes	Yes	No	No	WSST-08 was not carried forward to EOS due to lack of evidence of spring flooding.
WSST-14	Tundra Swans observed by AECOM	Evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-14 was not carried forward to EOS as it is not within 120 m of the Project Location.
WSST-15	Tundra Swans observed by AECOM	Potential low area adjacent watercourse at east end of property	Yes	Yes	Yes	Yes (WSST-15)	No	WSST-15 falls within 120 m of a proposed turbine and supports evidence of annual spring flooding.
WSST-16	Tundra Swans observed by AECOM	No evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-16 was not carried forward to EOS as it is not within 120 m of the Project Location.
WSST-32	Tundra Swans reported by resident	No evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-32 was not carried forward to EOS as it is not within 120 m of the Project Location.
WSST-33	Tundra Swans reported by resident	No evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-33 was not carried forward to EOS as it is not within 120 m of the Project Location.
WSST-34	Tundra Swans reported by Resident	No evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-34 was not carried forward to EOS as it is not within 120 m of the Project Location.
WSST-35	Tundra Swans observed by AECOM	No evidence of spring flooding in agricultural fields	Yes	No	No	No	No	WSST-35 is not within 120 m of the Project Location.
WSST-36	Tundra Swans reported by resident	Evidence of spring flooding in agricultural fields	Yes	Yes	Yes	Yes (WSST-36)	No	WSST-36 falls within 120 m of a proposed turbine and supports evidence of spring flooding.
WSST-37	Tundra Swans reported by resident	No evidence of spring flooding in agricultural fields	Yes	Yes	Yes	No	No	WSST-37 was not carried forward to EOS due to lack of evidence of spring flooding.

Other terrestrial waterfowl stopover and staging habitat may also occur in cultural meadow or cultural thicket communities where there is evidence of annual spring flooding from melt water or runoff. These melt water ponds can function as important feeding areas used by waterfowl during spring and fall migration.

A total of 26 natural areas containing cultural meadow or cultural thicket vegetation communities were identified within the 120 m Area of Investigation during the site investigation (refer to Table 3.11). None of these have meadow marsh inclusions. Many are located within the limits of ABCA Regulated Area and therefore may be subject to some seasonal flooding. Overall the field areas are not extensive and did not show evidence of seasonal flooding that would be extensive enough to provide habitat for a large number of staging waterfowl. Only relatively large areas located in a floodplain and presenting evidence of extensive annual spring flooding are considered to have some potential to provide significant waterfowl staging habitat, as such areas have potential to attract large numbers of the target waterfowl species. The only waterfowl likely to congregate in fields within the 120 m Area of Investigation are Mallard and Canada Goose, neither which are target species for this Significant Wildlife Habitat type. Consequently, none of the areas were carried forward to Evaluation of Significance under this criterion.

**Table 3.11 Waterfowl Stopover and Staging Areas (Terrestrial)**

Natural Area No.	ELC Unit	Area of Cultural Community Complex (ha)	Evidence of Annual Spring Flooding	Within 120 m of Turbine	Within Project Location	Carried Forward to EOS		Rationale
						Candidate SWH	Generalized Candidate SWH	
198	CUT1h	0.2	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
	CUM1-1	1.2		No	No	No	No	
204	CUM1-1	0.1	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
209	CUM1-1	0.04	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
	CUT1	0.05		No	No	No	No	
210	CUM1-1	0.5	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
	CUTi	1.6		No	No	No	No	
215	CUM1-1	0.5	No evidence of annual spring flooding.	No	No	No	No	No evidence of annual spring flooding.
216	CUM1-1	0.2	No evidence of annual spring flooding.	Yes	No	No	No	No evidence of annual spring flooding.
220	CUM1-1	1.1	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
227	CUM1-1	4.9	Possible, within ABCA Regulated Area.	Yes	No	No	No	Insufficient size to support required number of waterfowl.
236	CUT1h	0.9	Possible, within ABCA Regulated Area.	Yes	No	No	No	Insufficient size to support required number of waterfowl.
	CUM1-1	0.2		Yes	No	No	No	
250	CUM1-1	0.4	No evidence of annual spring flooding.	No	No	No	No	No evidence of annual spring flooding.
255	CUM1-1	0.5	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
258	CUM1-1	0.2	No evidence of annual spring flooding.	No	No	No	No	No evidence of annual spring flooding.
266	CUT	0.4	No evidence of annual spring flooding.	No	No	No	No	No evidence of annual spring flooding.
	CUM1-1	0.2		No	No	No	No	
	CUM1-1	0.3		No	No	No	No	
271	CUM1-1	0.4	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
280	CUM1-1	0.1	No evidence of annual spring flooding.	Yes	No	No	No	No evidence of annual spring flooding.
282	CUM1-1	1.4	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
285	CUM1-1	0.1	No evidence of annual spring flooding.	Yes	No	No	No	No evidence of annual spring flooding.
300	CUM1-1	0.7	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
346	CUM1-1	0.3	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
373	CUM1-1	0.8	Possible, within ABCA Regulated Area.	Yes	No	No	No	Insufficient size to support required number of waterfowl.
635	CUM1-1	2.7	Possible, within ABCA Regulated Area.	No	Yes	No	No	Insufficient size to support required number of waterfowl.
	CUTi	0.3		No	No	No	No	
	CUTi	0.2		No	Yes	No	No	
636	CUM1-1	2.7	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.
637	CUM1-1	1.6	Possible, within ABCA Regulated Area.	No	Yes	No	No	Insufficient size to support required number of waterfowl.
648	CUM1-1	4.8	Possible, within ABCA Regulated Area.	No	Yes	No	No	Insufficient size and water levels to support required number of waterfowl.
	CUT1	0.2		No	Yes	No	No	
720	CUM1-1	0.3	No evidence of annual spring flooding.	No	Yes	No	No	No evidence of annual spring flooding.
738	CUM1-1	1.1	Possible, within ABCA Regulated Area.	No	No	No	No	Insufficient size to support required number of waterfowl.

Waterfowl Stopover and Staging Areas: Aquatic

Larger wetlands and those associated with shorelines are usually preferred by waterfowl and tend to attract the largest concentrations. Marsh habitats where open water and emergent plant cover are interspersed tend to be higher quality sites because they provide an optimum mix of food and cover. Aquatic waterfowl stopover and staging areas may be found within marsh, shallow water and deciduous swamp vegetation communities (refer to Table 3.2 to identify corresponding ELC units) with fairly extensive areas of shallow open water.

Generally, the Project Study Area does not contain marshes with sufficient extent of open water to serve as waterfowl stopover and staging areas. A total of eight natural areas with qualifying vegetation communities containing standing water were determined to be located within the 120 m Area of Investigation (Table 3.12). None of these features contain suitable waterfowl stopover and staging (aquatic) areas due to their insufficient size and diversity to support the required number of waterfowl. Consequently this type of Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.

**Table 3.12 Waterfowl Stopover and Staging Areas (Aquatic)**

Natural Area No.	ELC Unit	Area of Wetland + Open Water Complex (ha)	Standing Water Present	Within 120 m of Turbine	Within Project Location	Carried Forward to EOS		Rationale
						Candidate SWH	Generalized Candidate SWH	
225	MAM2-2	0.1	Yes – vernal pool	Yes	No	No	No	Insufficient size and diversity to support required number of waterfowl
235	SWD3-3	0.7	Yes – vernal pool	No	No	No	No	Insufficient size and diversity to support required number of waterfowl
236	SWD3-3	1.4	Yes – vernal pools & evidence of seasonal flooding	Yes	No	No	No	Insufficient size and diversity to support required number of waterfowl
	SWD3-3	3.7	Yes – vernal pools & evidence of seasonal flooding	Yes	No	No	No	Insufficient size and diversity to support required number of waterfowl
244	SWD3-3	0.6	Yes – vernal pool	Yes	No	No	No	Insufficient size and diversity to support required number of waterfowl
275	SWD3-3	1.5	Yes – vernal pool	No	No	No	No	Insufficient size and diversity to support required number of waterfowl
300	SWD3-3	1.2	Yes – vernal pools & evidence of seasonal flooding	No	No	No	No	Insufficient size and diversity to support required number of waterfowl
309	SWD3-3	5.4	Yes – vernal pools	No	No	No	No	Insufficient size and diversity to support required number of waterfowl
375	SWD 3-3	1.8	Yes – vernal pool	No	No	No	No	Insufficient size and diversity to support required number of waterfowl

Waterfowl Nesting Areas

Waterfowl nesting areas are typically located in upland vegetation communities composed of grasses, sedges, rushes and low shrubs adjacent to wetland habitat with open standing water. Wood Duck nesting areas, which consist of nesting cavities in large hollow trees or nest boxes within forests or swamps with open standing water, are also considered waterfowl nesting area Significant Wildlife Habitat. In addition to these requirements the surrounding upland habitat must also be greater than 120 m in width to decrease nest predation (SWHTG), which is generally higher in upland habitat adjacent wetlands.

Wetland communities that contain enough standing water and adjacent upland habitat to support a large number of nesting waterfowl are rare in the Project Study Area, as the majority of lands in the area have been cleared for agricultural use. Only one site within the 120 m Area of Investigation, located in natural area 209, contained suitable habitat and was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat (Table 3.13). The location of this generalized candidate significant waterfowl nesting area is show on Figure 3.6b.

**Table 3.13 Waterfowl Nesting Areas**

Natural Area No.	ELC Unit	Width > 120 m	Size of Adjacent Wetland (ha)	Age of Trees	Type of Adjacent Wetland	Within 120 m of Turbine	Within Project Location	Carried Forward to EOS		Rationale
								Candidate SWH	Generalized Candidate SWH	
189	FOD6-5	Yes	12.2	Mid-age	SWD2-2	Yes	No	No	No	Insufficient water in wetland to support target number of broods
	FOD9-4	Yes		Mature		Yes	No	No	No	
	FOD9-5	Yes		Mature		Yes	No	No	No	
	FOD7	Yes		Young to mid-age		Yes	No	No	No	
209	CUP3-2	Yes	0.9	Mid-age	OAO	No	No	No	Yes	Suitable habitat present
	CUP2b	Yes		Mid-age		No	No	No		
209	FOD9e	Yes	0.2	Mid-age	SWT2	No	No	No	No	Insufficient water in wetland to support target number of broods
215	FOD6-5	Yes	1.7	Mature	SWD3-3	Yes	No	No	No	Insufficient water in wetland to support target number of broods
216	FOD9-2	Yes	0.9	Mid-age	SWD, SWT2	Yes	No	No	No	Insufficient wetland size to support target number of broods
	FOD	Yes		Mid-age		Yes	No	No	No	
232	FOD2-4	Yes	16.6	Mid-age	SWD2-2	No	No	No	No	Insufficient water in wetland to support target number of broods
	CUP	Yes	3.9	Mid-age		No	No	No	No	
236	FOD9b	Yes	0.6	Mid-age	SWD2-2	Yes	No	No	No	Insufficient water in wetland to support target number of broods
	FOD4-2	Yes	0.8	Mid-age to mature		Yes	No	No	No	
	FOD9-4	Yes	2.2	Mid-age		Yes	No	No	No	
244	FOD6-5	Yes	0.6	Mid-age	SWD3-3	Yes	No	No	No	Insufficient wetland size to support target number of broods
258	CUP	Yes	22.8	Mid-age	SWD	No	No	No	No	Insufficient water in wetland to support target number of broods
	FOD	Yes	7.4	Mid-age		No	No	No	No	
	FOD9-4	Yes	40.3	Young to mid-age		No	No	No	No	
259	FOD	Yes	5.3	Mid-age	SWD4a, SWD2-2	No	No	No	No	Insufficient water in wetland to support target number of broods
	FOD5-9	Yes	0.6	Mid-age		No	No	No	No	
	FOD5-1	Yes	4.8	Mid-age		No	No	No	No	
266	CUP1a	Yes	4.4	Mid-age	SWT2a	No	No	No	No	Insufficient water in wetland to support target number of broods
275	FOD6-5	Yes	5.9	Mid-age	SWD3-3	No	No	No	No	Insufficient water in wetland to support target number of broods
339	FOD5-2	Yes	6.2	Mature	SWD3-3	No	No	No	No	Insufficient wetland size to support target number of broods
	FOM	Yes	17.4			No	No	No	No	
	FOD	Yes	962.3			No	No	No	No	
701	FOD5-8	Yes	9.6	Mid-age	SWD3-3	No	No	No	No	Insufficient water in wetland to support target number of broods
757	FOD6-5	Yes	10.1	Mid-age to mature	SWD3-3	Yes	No	No	No	Insufficient water in wetland to support target number of broods

### Shorebird Migratory Stopover Areas

Shorebird stopover areas are used by migratory shorebirds to rest and feed along their migration route. Natural areas that function as migration stopover areas for shorebirds typically provide a stretch of undisturbed shoreline and relatively abundant invertebrate food. These habitats can be found along the shorelines of lakes, rivers and wetlands, including beach areas, bars, seasonally flooded shoreline, mudflats, rock groynes, and other forms of armour rock lakeshore.

One Lesser Yellowlegs (during fall migration study), 49 American Golden Plovers (during the fall migration study), five Least Sandpipers (spring breeding surveys), three Spotted Sandpipers (1 observed in the spring, 2 in the summer), and one Upland Sandpiper (summer breeding survey) were recorded during avian surveys conducted in the Project Study Area (Golder Associates, 2011).

A total of four natural areas containing marsh ELC polygons (i.e. vegetation communities larger than 0.5 ha) were identified within the 120 m Area of Investigation during the site investigation (Table 3.14). The meadow marsh communities in this area contain minimal open water and therefore do not have the potential to form more than just small areas of mudflats. None of the communities meet the habitat requirements for shorebird migratory stopover areas (e.g., presence of mudflats or shorelines adjacent to large open water area). Small numbers of migrant shorebirds may occasionally occur but would be far below the thresholds to qualify for Significant Wildlife Habitat. This type of Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.

**Table 3.14 Shorebird Migratory Stopover Areas**

Natural Area No.	ELC Vegetation Type	Shoreline Habitat Present	Within 120 m of Turbine	Within Project Location	Carried Forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
274	MAM3-2	No	No	No	No	No	No open water present.
279	MAM3-2	No	No	No	No	No	No open water present.
375	MAM2a	No	No	No	No	No	No open water present.
739	MAM2-2	No	No	No	No	No	No open water present.

### Reptile Hibernacula

Rock crevices, rock piles and abandoned foundations which allow snakes to enter ground below the frost line provide protection from the harsh winter temperatures and support overwinter survival. Some snake species can hibernate in large groups, such as the Eastern Garter Snake, while other species tend to hibernate in isolation. Once spring has arrived, snakes will typically come out of hibernation, bask in the sun's warmth on sunny days in close proximity, and then return to their hibernating sites at night. They may remain in the vicinity of their hibernaculum for a week or so before moving out to their summer range. Locating snake hibernacula is nearly impossible unless long-term and invasive radio telemetry studies are employed, which is not realistic for this kind of study. While rock piles and old foundations are often used, a hibernaculum can be a simple hole in the ground with no obvious surface features. Rock outcrops and crevices are not present in the Project Study Area.

During autumn, many snake species search out wooded areas to be used for hibernation over the winter months. Ideal hibernating sites include wooded areas rich in dead organic materials, areas below the frost line and rock crevices. Decaying organic matter produces small amounts of heat of which the snakes take advantage. In addition snakes generally occur in edge habitat and open habitats at greater densities than closed forests. Consequently forests adjacent to extensive fields or thickets are more likely to contain hibernacula than forests not connected to open habitats.

The Project Study Area is generally a fragmented, intensively cultivated agricultural area on mostly clay-based soils that is not known to harbour large or diverse snake populations. The only snakes encountered during field investigations were Eastern Garter Snakes. This species was observed in natural areas 232, 251, 266, 321 and 759. Rock piles were noted in two of these natural areas (232 and 321); however the Eastern Garter Snake observed within feature 321 was not observed near the potential hibernaculum.

Possible reptile hibernacula were noted within the 120 m Area of Investigation in a total of 11 natural areas, during site investigations (refer to Table 3.15). These mainly consisted of identified stone piles at the edge of cultivated fields. One candidate significant reptile hibernaculum was identified through the site investigation and within 120 m of qualifying infrastructure (RH-01). The location of feature RH-01 is shown on Figure 3.6a. Four additional features were identified within the 120 m Area of Investigation that had the potential to extend below frostline and were at the edge of a wooded area and field or thicket but were not located within 120 m of qualifying infrastructure; therefore these features were treated as generalized candidate Significant Wildlife Habitat. The locations of these features are also shown on Figure 3.6a. These features were carried forward to the Evaluation of Significance.

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**Table 3.15 Potential Reptile Hibernacula**

Natural Area No.	ELC Unit	Description of Hibernaculum	Description of Surrounding Habitat	Snakes Observed	Potential to Extend Below Frostline	Within 120 m of Road or Turbine	Carried forward to EOS		Rationale
							Candidate SWH	Generalized Candidate SWH	
232	FOD5-5	Rock pile with 0.15 m diameter rocks	Shagbark hickory, sugar maple, wild red raspberry and adjacent to an agricultural field	Yes	Yes	No	No	Yes	Rock pile has potential to extend below frostline and Garter Snake observed near rock pile during site investigation.
235	FOD9c	Rocks and soil	Surrounding area dominated by grasses and raspberry	No	Yes	Yes	No	No	Even though the stone pile has potential to extend below frostline, the woodlot is small and isolated, and not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.
236	SWD3-3	Cement slabs	Surrounding habitat composed of aster and raspberry, and adjacent to agricultural field	No	Yes	Yes	No	No	Even though the cement slab pile has the potential to extend below frostline, the stone pile is small (3 m long and 0.8 m high) and is adjacent to an agricultural field, therefore unlikely to be Significant Wildlife Habitat.
	FOD9b	Cement slabs, bricks, large woody debris, soil	Cultural meadow species with some mature trees	No	Yes	Yes	No	No	Even though the pile has the potential to extend below frostline, the stone pile is adjacent to an agricultural field (not adjacent to fields or thickets), therefore unlikely to be Significant Wildlife Habitat.
275	SWD3-3	Picked stone from field	Man-made ditch and adjacent to an agricultural field	No	Yes	No	No	No	Stone pile has the potential to extend below frostline but is not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.
290	FOD5-6	Rock and woody debris	White ash and sugar maple and adjacent to an agricultural field	No	Yes	No	No	No	Stone pile has the potential to extend below frostline but is not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.
300	CUM1-1	Dirt pile inter-mixed with logs and rocks	Cultural meadow	No	Yes	Yes	Yes (RH-01)	No	Large stone pile with the potential to extend below frostline. Potential hibernaculum is located at the edge of a wooded area adjacent to a cultural meadow.
321	FOD6-5	Rocks, soil, logs, and garbage	Agricultural land and within hedgerow of two natural areas	Yes	Yes	Yes	No	No	Stone pile with potential to extend below frostline however surrounded by agricultural land; Garter Snake observed during site investigation was not near the stone pile.
609	SWD2-2	Exposed old brick foundation and cement slabs along watercourse	Swamp thicket bordering onto stream community	No	Yes	No	No	Yes	Old foundation with potential to extend below frostline and surrounded by a swamp thicket habitat.
661	FOD5-1	Pile of flat and large rocks	Sugar maple deciduous forest. Cattle around rock pile	No	Yes	No	No	No	Stone pile has the potential to extend below frostline but is not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.
695	FOD5-6	Large rocks with vegetation on top	Reed-canary grass surrounding area and on top of rock pile	No	Yes	No	No	Yes	Large stone pile with the potential to extend below frostline and is located at the edge of a wooded area and cultural meadow.
	FOD5-6	Rock pile with 50% 0.1 m to 0.4 m diameter, and 50% with 0.15 m diameter	Grasses along hedgerow and surrounding by agricultural land	No	Yes	No	No	No	Stone pile has the potential to extend below frostline but is not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.
723	FOD6-5	Large stone pile consisting of collected stones from field	Sugar maple and agricultural lands	No	Yes	No	No	No	Stone pile has the potential to extend below frostline but is not adjacent to fields or thickets, therefore unlikely to be Significant Wildlife Habitat.

Bat Hibernacula and Maternity Colonies

Bat winter hibernacula may be found in caves, mine shafts, underground formations and karsts. No candidate bat winter hibernacula were identified in the 120 m Area of Investigation by AECOM or NRSI. This type of candidate Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.

Details regarding the identification of bat maternity colonies are provided in Appendix G. In summary, 17 candidate significant bat maternity roost habitats were identified in woodlands found within 120 m of proposed wind turbines and two candidate significant bat maternity roost habitats were found that are proposed to be overlapped by the transmission line (refer to Table 3.16). These locations potentially qualify as Significant Wildlife Habitat for bat maternity colonies on the basis on MNR criteria (refer to Section 3.2.6.1 and Table 3.2) and were therefore carried forward to the Evaluation of Significance as Candidate Significant Wildlife Habitat. Other woodlands located within 120 m of the Project Location but more than 120 m from proposed turbines and not overlapped by the transmission line also contain suitable habitat for bat maternity colonies (NRSI, 2012; refer to Appendix G). These were treated as generalized candidate Significant Wildlife Habitat and carried forward to the Evaluation of Significance. The locations of these features are shown on Figure 3.6c.

**Table 3.16 Bat Maternity Colonies**

Natural Area No.	Contains >10 cavity trees/ha	Within 120 m of Turbine	Within Project Location	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
177	Yes	Yes	No	Yes (BMC-177)	No	Contains >10 cavity trees/ha
189	Yes	Yes	No	Yes (BMC-189)	No	Contains >10 cavity trees/ha
215	Yes	Yes	No	Yes (BMC-215)	No	Contains >10 cavity trees/ha
229	Yes	Yes	No	Yes (BMC-229)	No	Contains >10 cavity trees/ha
235	Yes	Yes	No	Yes (BMC-235)	No	Contains >10 cavity trees/ha
236	Yes	Yes	No	Yes (BMC-236)	No	Contains >10 cavity trees/ha
242	Yes	Yes	No	Yes (BMC-242)	No	Contains >10 cavity trees/ha
249	Yes	Yes	No	Yes (BMC-249)	No	Contains >10 cavity trees/ha
267	Yes	Yes	No	Yes (BMC-267)	No	Contains >10 cavity trees/ha
282	Yes	Yes	No	Yes (BMC-282)	No	Contains >10 cavity trees/ha
285	Yes	Yes	No	Yes (BMC-285)	No	Contains >10 cavity trees/ha
326	Yes	Yes	No	Yes (BMC-326)	No	Contains >10 cavity trees/ha
342	Yes	Yes	No	Yes (BMC-342)	No	Contains >10 cavity trees/ha
352	Yes	Yes	No	Yes (BMC-352)	No	Contains >10 cavity trees/ha
358	Yes	Yes	No	Yes (BMC-358)	No	Contains >10 cavity trees/ha
372	Yes	Yes	No	Yes (BMC-372)	No	Contains >10 cavity trees/ha
757	Yes	Yes	No	Yes (BMC-757)	No	Contains >10 cavity trees/ha
648	Yes	No	Yes (transmission line)	Yes (BMC-648)	No	Contains >10 cavity trees/ha
720	Yes	No	Yes (transmission line)	Yes (BMC-720)	No	Contains >10 cavity trees/ha

### Amphibian Woodland Breeding Habitat

Woodland breeding amphibians congregate in temporary wooded ponds (vernal or ephemeral ponds) in spring where they mate and eggs are laid in water. The larvae then hatch and live in the water for several months until they emerge as adults. To be suitable, woodland pools must hold water until at least July so that the larvae have sufficient time to develop and transform. Pools therefore must be sufficiently deep, preferably about 50 cm in the early spring. In the Project Study Area, swamps show a considerable drop in the water table from spring through summer. Many swamps are seasonally flooded for only a brief period in spring or contain pools that are too shallow and ephemeral to support breeding amphibians. In addition pools should have shrubs or some emergent vegetation to be productive. Generally pools should be free of fish since fish will devour larvae. During site visits the conditions of encountered pools were recorded. Even in late summer or autumn when pools have dried up, it is possible to determine the depth of springtime pools using waterline marks on trees and other indicators. This evidence provides a good indication of their hydroperiod. In addition the presence of emergent plants and shrubs will determine if the pool is likely to provide suitable amphibian habitat.

The adults of most woodland breeding amphibians live in terrestrial habitat away from the ponds for most of the active season, only to return in the spring to breed. Some may winter in the pools but many hibernate terrestrially and migrate to pools with spring thaws.

Table 3.17 indicates all locations where woodland vernal pools or ponds were observed during site investigations. These are woodland or swamp vegetation communities wherein vernal pools or ponds were noted during site investigations. Some of the natural areas contained ephemeral pools or ponds within two or more different vegetation communities. These were identified on the basis of presence of ephemeral pools or ponds in forest or swamp that appeared to hold water until at least July. In total, 17 features were identified as candidate Significant Wildlife Habitat requiring Evaluation of Significance studies, including 14 features located within 120 m of a proposed access road (AWO-03, AWO-04, AWO-06, AWO-07, AWO-08, AWO-09, AWO-14, AWO-17, AWO-24, AWO-25, AWO-26, AWO-27, AWO-28 and AWO-30) and three features located in woodlands where vegetation removal is proposed for the transmission line (AWO-33, AWO-34, and AWO-35). In addition, 20 locations were identified as generalized candidate Significant Wildlife Habitat. The locations of these features are shown on Figure 3.6d.

**Table 3.17 Amphibian Breeding Habitat (Woodland)**

Natural Area No.	ELC Unit	Vernal Pools or Ponds Observed	Potential to Hold Water until July	Water Depth (m)	% Open Water / % Emergent Vegetation	Logs	Within 120 m of Access Road	Within Project Location	Carried forward to EOS		Rationale
									Candidate SWH	Generalized Candidate SWH	
189	FOD6-5	Shallow vernal pools, but with potential to hold water until July in a wetter year.	No	0.10	-	None	No	No	No	No	Does not have potential to hold water until July
198	FOD7-2, OAO	Pond	Yes	Unknown	100 / 0	None	Yes	No	Yes (AWO-03)	No	Suitable habitat present
209	FOD9e	Permanent pond (dug pond)	Yes	0.40	90 / 5	Fallen woody debris around portions of area	No	No	No	Yes	Suitable habitat present
210	FOD4-2	Vernal pools	Yes	-	-	-	No	No	No	Yes	Suitable habitat present
225	SWD2-2	Vernal pool	Yes	0.25	80 / 5	5-25 cm diameter logs present	Yes	No	Yes (AWO-04)	No	Suitable habitat present
232	FOD5-5	Vernal pool	Yes	0.15	N / N	Sparse 10 cm diameter logs around edges	No	No	No	Yes	Suitable habitat present
235	SWD3-3	Vernal pool	Yes	0.30	80 / 2	Fallen logs have been put into piles	Yes	No	Yes (AWO-06)	No	Suitable habitat present
236	FOD9b, SAS1-3	Pond	Yes	3.00	2 / 5	None	Yes	No	Yes (AWO-07)	No	Suitable habitat present
	FOD9b	Vernal pool	Yes	0.25	80 / 0	10 to 20 cm diameter logs within pool	Yes	No	Yes (AWO-08)	No	Suitable habitat present
	SWD3-3	Vernal pool	Yes	0.35	15 / 0	10-30 cm diameter logs within pond	Yes	No	Yes (AWO-09)	No	Suitable habitat present
	MAM2-2, OAO	Pond	Yes	0.60	30 / 2	None	Yes	No	No	Yes	Suitable habitat present
	SWD3-3	Vernal pool	Yes	0.25	60 / 0	Minimal downed logs, one large log going across pond	Yes	No	No	Yes	Suitable habitat present
245	FOD7-2	Vernal pool	Yes	0.25	80 / 0	Fallen logs surrounding pond	No	No	No	Yes	Suitable habitat present
249	SWD2-2, OAO	Site appears to be a dug pond, but could not see into water to collect detailed information	Yes	-	- / -	None	Yes	No	Yes (AWO-14)	No	Suitable habitat present
255	FOM5-2	Pond	Yes	1.00	80 / 0	None	No	No	No	Yes	Suitable habitat present

**Table 3.17 Amphibian Breeding Habitat (Woodland)**

Natural Area No.	ELC Unit	Vernal Pools or Ponds Observed	Potential to Hold Water until July	Water Depth (m)	% Open Water / % Emergent Vegetation	Logs	Within 120 m of Access Road	Within Project Location	Carried forward to EOS		Rationale
									Candidate SWH	Generalized Candidate SWH	
258	FOD9-4	Vernal pool	Yes	0.40	90 / 5	Abundant 10-25 cm diameter logs within pond	No	No	No	Yes	Suitable habitat present
	FOD9-4	Vernal pool	Yes	0.20	70 / 6	10-25 cm diameter logs within pool	Yes	No	Yes (AWO-17)	No	Suitable habitat present
	FOD9-4	Vernal pool	Yes	0.10	40 / 30	None	No	No	No	Yes	Suitable habitat present
261	FOD6-5	Vernal pool	No	0.30	70 / 10	-	No	No	No	No	Does not have potential to hold water until July
266	FOD4a	Vernal pool	Yes	0.15	0 / 0	None	No	No	No	Yes	Suitable habitat present
	OAO	Pond	Yes	1.0	90 / -	5 cm twigs within pond, large logs along outside of pond	Yes	No	No	Yes	Suitable habitat present
269	SWD2-2	Vernal pool	Yes	0.30	90 / 2	10-20 cm diameter logs within pond as well as along bank	No	No	No	Yes	Suitable habitat present
	SWD2-2	Vernal pool	Yes	0.30	40 / 5	10-50 cm diameter logs along edge and within pond.	No	No	No	Yes	Suitable habitat present
275	SWD3-3	Vernal pool	No	0.40	60 / 25	-	No	No	No	No	Does not have potential to hold water until July.
280	SWD2-2	Vernal pool with evidence of higher water mark on trees	Yes	0.15	0 / 0	40% cover by 10 cm diameter logs along edge of pool	No	No	No	Yes	Suitable habitat present
	FOD7-2	Vernal pool	Yes	0.15	100 / 0	Abundant 10 cm diameter logs, Infrequent 15 cm diameter logs	No	No	No	Yes	Suitable habitat present
300	SWD3-3	Vernal pool	Yes	0.10	97 / 0	10-20 cm diameter logs within along edges	Yes	No	Yes (AWO-24)	No	Suitable habitat present
	SWD3-3	Vernal pool	Yes	0.30	80 / 0	None	Yes	No	Yes (AWO-25)	No	Suitable habitat present

**Table 3.17 Amphibian Breeding Habitat (Woodland)**

Natural Area No.	ELC Unit	Vernal Pools or Ponds Observed	Potential to Hold Water until July	Water Depth (m)	% Open Water / % Emergent Vegetation	Logs	Within 120 m of Access Road	Within Project Location	Carried forward to EOS		Rationale
									Candidate SWH	Generalized Candidate SWH	
309	FOD7-4	Vernal pool	Yes	-	-	-	No	No	No	Yes	Suitable habitat present
	SWD3-3	Vernal pool	Yes	-	-	-	No	No	No	Yes	Suitable habitat present
321	FOD6-5	Vernal pool	Yes	0.30	40-70 / -	10-25 cm diameter logs abundant within and adjacent to the pond	Yes	No	Yes (AWO-26)	No	Suitable habitat present
342	FOD5-5	Vernal pool	Yes	-	-	-	No	No	No	Yes	Suitable habitat present
375	SWD3-3	Vernal pool	Yes	-	-	-	No	No	No	Yes	Suitable habitat present
392	FOD5-2	Vernal pool	Yes	0.30	90 / 0	40 cm diameter logs throughout	Yes	No	Yes (AWO-30)	No	Suitable habitat present
648	FOD9a	Vernal pool	Yes	0.03	100 / 1	None	No	Yes	Yes (AWO-35)	No	Suitable habitat present
661	FOD5-1	Pond	Yes	3.00	100 / 0	None	No	No	No	Yes	Suitable habitat present
720	FOD6-5	Pond	Yes	1.00	95 / 5	None	No	Yes	Yes (AWO-33)	No	Suitable habitat present
721	FOD6-5	Vernal pool	Yes	0.20	75 / 15	None	No	Yes	Yes (AWO-34)	No	Suitable habitat present
757	FOD6-5	Vernal pool	Yes	0.20	90 / 0	Several 10-24 cm diameter logs fallen in and around vernal pool	Yes	No	Yes (AWO-28)	No	Suitable habitat present
759	CUP3-1, OAO	Open aquatic dug pond	Yes	3.00	90 / 0	None	Yes	No	Yes (AWO-27)	No	Suitable habitat present

Amphibian Wetland Breeding Habitat

Wetland breeding amphibians congregate in temporary or permanent standing water in spring where they mate and lay eggs. The larvae then hatch and live in the water for several months to over a year in the case of Green Frogs and Bullfrogs. Amphibian species require a sufficient water depth with submergent and/or emergent shoreline vegetation to support populations of invertebrates on which the larvae feed, and to provide protection from predators. To be suitable, pools must hold water until at least July so that the larvae have sufficient time to develop and transform. Pools therefore must be sufficiently deep, preferably about 50 cm in the early spring. In the Project Study Area, wetlands show a considerable drop in water table from spring through summer. Many meadow marshes are seasonally flooded for only a brief period in spring and are too shallow and ephemeral to support breeding amphibians. During site visits the conditions of encountered pools were recorded. Even in late summer or autumn when pools have dried up, it is possible to determine the depth of pools in spring which is a good indication of their hydroperiod. In addition the presence of emergents and shrubs will indicate whether the pool is likely to provide suitable amphibian habitat.

The adults of some wetland breeding amphibians such as Spring Peeper and Leopard Frog live in terrestrial habitat away from the ponds for most of the active season. Others such as Green Frog and Eastern Newt mainly stay in or near the water. Some may winter in the pools but many hibernate terrestrially and migrate to pools with spring thaws. Areas of open water were identified during site investigations.

Table 3.18 indicates all locations within the 120 m Area of Investigation where marsh or swamp thicket vegetation communities with standing water were observed during site investigations. Deciduous swamps identified to have standing water were assessed as Amphibian Woodland Breeding Habitat and described in the section above. One natural area within 120 m of a proposed access road was deemed to have potential for amphibian wetland breeding habitat and was therefore carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (AWE-29). An additional two natural areas were treated as generalized candidate Significant Wildlife Habitat and carried forward to the Evaluation of Significance. The locations of these features are shown on Figure 3.6c.

**Table 3.18 Amphibian Breeding Habitat (Wetland)**

Natural Area No.	ELC Unit	Vernal Pools or Ponds Observed	Potential to hold water until July	Water Depth (m)	% Open Water / % Emergent Vegetation	Logs	Within 120 m of Road	Carried forward to EOS		Rationale
								Candidate SWH	Generalized Candidate SWH	
379	MAM2-2	Drainage feature with pooling	Yes	0.4	100 / 0	None	Yes	Yes (AWE-29)	No	Suitable habitat present, near provincially significant wetland
609	SWT2-2, OAO	Permanent Pond	Yes	3.0	100 / 0	None	No	No	Yes	Suitable habitat present
754	SWT2b	Permanent pond in middle of agricultural field.	Yes	2.0	90 / 5	None	No	No	Yes	Suitable habitat present

3.3.6.2 *Rare Vegetation Communities or Specialized Habitats for Wildlife*

Rare vegetation communities or specialized habitats for wildlife are described in the SWHTG. The following rare vegetation communities or specialized habitats for wildlife were identified as potentially occurring in the Project Study Area through the Records Review and site investigation:

- Rare vegetation communities including:
  - Alvars;
  - Tall-grass prairies;
  - Savannahs;
  - Rare forest types;
  - Talus slopes;
  - Rock barrens;
  - Sand barrens;
  - Great Lake dunes;
- Habitat for area sensitive species (interior forest breeding birds, open country breeding birds);
- Old-growth or mature forest stands;

- Turtle habitat (nesting, over-wintering);
- Woodland raptor nesting habitat;
- Bald Eagle nesting habitat;
- Osprey nesting, foraging and perching habitat;
- Cliffs and talus slopes;
- Seeps and springs; and
- Marsh breeding bird habitat.

A description of the results of the site investigation pertaining to rare vegetation communities or candidate significant specialized habitats for wildlife follows.

Rare Vegetation Communities

The presence/absence of rare vegetation communities in the 120 m Area of Investigation was confirmed through the site investigations. No alvars, tall-grass prairies, savannahs, cliffs and talus slopes, sand barrens or Great Lakes dune vegetation communities were identified in or within 120 m of the Project Location.

The global and provincial rankings for all vegetation communities identified within the 120 m Area of Investigation were obtained from the Natural Heritage Information Centre (NHIC), Southern Ontario Vegetation Communities and Appendix J of the SWHTG. These are provided in Table 3.19.

**Table 3.19 Global and Provincial Rankings of Vegetation Communities Identified through the Site Investigation**

ELC Community	Global Rank (G-rank) <sup>1</sup>	Provincial Rank (S-rank) <sup>2</sup>
<b>Cultural Meadow (CUM)</b>		
CUM1-1: Dry-Moist Oldfield Meadow Type	Cultural Communities not ranked	
<b>Cultural Plantation (CUP)</b>		
CUP1-7: Green Ash Deciduous Plantation Type	Cultural Communities not ranked	
CUP1a: Eastern Cottonwood Deciduous Plantation Type	Cultural Communities not ranked	
CUP1b: Bur Oak Deciduous Plantation Type	Cultural Communities not ranked	
CUP1c: Black Walnut - Red Oak Deciduous Plantation Type	Cultural Communities not ranked	
CUP2a: White Pine - Carolina Poplar Mixed Plantation Type	Cultural Communities not ranked	
CUP2b: White Pine - White Ash - Trembling Aspen Mixed Plantation Type	Cultural Communities not ranked	
CUP3: Coniferous Plantations	Cultural Communities not ranked	
CUP3-1: Red Pine Coniferous Plantation Type	Cultural Communities not ranked	
CUP3-2: White Pine Coniferous Plantation Type	Cultural Communities not ranked	
CUP3a: Scots Pine - White Pine Coniferous Plantation Type	Cultural Communities not ranked	
CUP3c: Colorado Spruce Coniferous Plantation Type	Cultural Communities not ranked	
CUP3d: White Pine - Red Pine - Scots Pine - Balsam Fir Coniferous Plantation Type	Cultural Communities not ranked	
CUP3e: White Pine - Red Pine - Norway Spruce - White Spruce Coniferous Plantation Type	Cultural Communities not ranked	
<b>Cultural Thicket (CUT)</b>		
CUT1: Mineral Cultural Thicket Ecosite	Cultural Communities not ranked	
CUT1h: Green Ash Mineral Cultural Thicket Type	Cultural Communities not ranked	
CUT1i: Green Ash - Manitoba Maple Mineral Cultural Thicket Type	Cultural Communities not ranked	
CUT1j: Hawthorn - Apple - Buckthorn Mineral Cultural Thicket Type	Cultural Communities not ranked	
CUT1k: Hawthorn Mineral Cultural Thicket Type	Cultural Communities not ranked	
<b>Cultural Woodland (CUW)</b>		
CUW1b: Ash - Basswood Mineral Cultural Woodland Type	Cultural Communities not ranked	
CUW1c: Green Ash - Apple - Hawthorn Mineral Cultural Woodland Type	Cultural Communities not ranked	
CUW1d: Black Walnut Mineral Cultural Woodland Type	Cultural Communities not ranked	
CUW1e: Sweet Cherry - White Elm Mineral Cultural Woodland Type	Cultural Communities not ranked	
CUW1h: White Elm Mineral Cultural Woodland Type	Cultural Communities not ranked	
CUW1m: Green Ash - Hawthorn Mineral Cultural Woodland Type	Cultural Communities not ranked	



**Table 3.19 Global and Provincial Rankings of Vegetation Communities Identified through the Site Investigation**

ELC Community	Global Rank (G-rank) <sup>1</sup>	Provincial Rank (S-rank) <sup>2</sup>
<b>Deciduous Forest (FOD)</b>		
FOD2-1: Dry - Fresh Oak - Red Maple Deciduous Forest Type	G?	S5
FOD3-1: Dry-Fresh Poplar Deciduous Forest Type	G5	S5
FOD4-1: Dry - Fresh Beech Deciduous Forest Type	G4G5	S4S5
FOD4-2: Dry-Fresh White Ash Deciduous Forest Type	G?	S5
FOD4a: Dry - Fresh White Ash - Paper Birch - Cottonwood - White Cedar Deciduous Forest Type	Community not ranked	
FOD4b: Dry - Fresh Basswood - White Elm - Bitternut Hickory - White Ash Deciduous Forest Type	Community not ranked	
FOD4c: Dry - Fresh White Ash - Paper Birch Deciduous Forest Type	Community not ranked	
FOD4d: Dry - Fresh Trembling Aspen Deciduous Forest Type	Community not ranked	
FOD4e: Dry - Fresh Large-tooth Aspen Deciduous Forest Type	Community not ranked	
FOD4f: Dry - Fresh White Ash - Basswood Deciduous Forest Type	Community not ranked	
FOD4g: Dry - Fresh Green Ash Deciduous Forest Type	Community not ranked	
FOD5-1: Dry-Fresh Sugar Maple Deciduous Forest Type	G5?	S5
FOD5-2: Dry-Fresh Sugar Maple-Beech Deciduous Forest Type	G5?	S5
FOD5-5: Dry - Fresh Sugar Maple - Hickory Deciduous Forest Type	G?	S4
FOD5-6: Dry-Fresh Sugar Maple-Basswood Deciduous Forest Type	G?	S5
FOD5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest Type	Community not ranked	
FOD5-8: Dry-Fresh Sugar Maple-White Ash Deciduous Forest Type	G?	S5
FOD5b: Dry - Fresh Sugar Maple - White Ash - Basswood Deciduous Forest Type	Community not ranked	
FOD6-1: Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type	G?	S5
FOD6-4: Fresh - Moist Sugar Maple - White Elm Deciduous Forest Type	G?	S5
FOD6-5: Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type	G5?	S5
FOD7-1: Fresh-Moist White Elm Lowland Deciduous Forest Type	Community not ranked	
FOD7-2: Fresh-Moist Ash Lowland Deciduous Forest Type	Community not ranked	
FOD7-4: Fresh-Moist Black Walnut Lowland Deciduous Forest Type	G4?	S2S3
FOD7c: Fresh - Moist Manitoba Maple - Green Ash - White Elm - Freeman's Maple Lowland Deciduous Forest Type	Community not ranked	
FOD7d: Fresh - Moist White Elm - Ash - Hawthorn Deciduous Forest Type	Community not ranked	
FOD7e: Fresh - Moist Green Ash - White Elm Deciduous Forest Type	Community not ranked	
FOD7f: Fresh - Moist Basswood - White Elm - Freeman's Maple - Green Ash Lowland Deciduous Swamp Type	Community not ranked	
FOD8-1: Fresh - Moist Poplar Deciduous Forest Type	G4?	S5
FOD9-1: Fresh - Moist Oak - Sugar Maple Deciduous Forest Type	Community not ranked	
FOD9-2: Fresh - Moist Oak - Maple Deciduous Forest Type	Community not ranked	
FOD9-3: Fresh - Moist Bur Oak Deciduous Forest Type	Community not ranked	
FOD9-4: Fresh - Moist Shagbark Hickory Deciduous Forest Type	Community not ranked	
FOD9-5: Fresh - Moist Bitternut Hickory Deciduous Forest Type	Community not ranked	
FOD9a: Fresh - Moist Bitternut Hickory - Basswood - Ironwood - Bur Oak Deciduous Forest Type	Community not ranked	
FOD9b: Fresh - Moist Shagbark Hickory - White Ash - Beech Deciduous Forest Type	Community not ranked	
FOD9c: Fresh - Moist Bitternut Hickory - Basswood Deciduous Forest Type	Community not ranked	
FOD9d: Fresh - Moist Shagbark Hickory - Green Ash Deciduous Forest Type	Community not ranked	
FOD9e: Fresh - Moist Shagbark Hickory - Sugar Maple - American Beech - Blue Beech Deciduous Forest Type	Community not ranked	
<b>Mixed Forest (FOM)</b>		
FOM5-2: Dry - Fresh Poplar Mixed Forest Type	Community not ranked	
FOM6-1: Fresh-Moist Sugar Maple - Hemlock Mixed Forest Type	G4G5	S4S5
FOM6-2: Fresh - Moist Hemlock - Hardwood Mixed Deciduous Forest Type	Community not ranked	
<b>Meadow Marsh (MAM)</b>		
MAM2-10: Forb Mineral Meadow Marsh Type	G?	S4S5
MAM2-2: Reed Canary Grass Mineral Meadow Marsh Type	Community not ranked	
MAM2a: Missouri Willow Mineral Meadow Marsh Type	Community not ranked	
MAM3-2: Reed-canary Grass Organic Meadow Marsh Type	Community not ranked	
<b>Shallow Marsh (MAS)</b>		
<b>Open Aquatic (OAO)</b>		

**Table 3.19 Global and Provincial Rankings of Vegetation Communities Identified through the Site Investigation**

ELC Community	Global Rank (G-rank) <sup>1</sup>	Provincial Rank (S-rank) <sup>2</sup>
<b>Submerged Shallow Aquatic (SAS)</b>		
SAS1-3: Stonewort Submerged Shallow Aquatic Type	G5Q	S4S5
<b>Deciduous Swamp Type (SWD)</b>		
SWD2-2: Green Ash Mineral Deciduous Swamp Type	G?	S5
SWD2a: Shagbark Hickory - Green Ash Deciduous Swamp Type	Community not ranked	
SWD3-3: Swamp Maple Mineral Deciduous Swamp Type	Community not ranked	
SWD4: Mineral Deciduous Swamp Ecosite	Ecosites not ranked	
SWD4-1: Willow Mineral Deciduous Swamp Type	G?	S5
SWD4a: Swamp Maple - Green Ash Deciduous Swamp Type	Community not ranked	
SWD4b: Green Ash - Trembling Aspen Mineral Deciduous Swamp Type	Community not ranked	
SWD4c: Cottonwood Mineral Deciduous Swamp Type	Community not ranked	
SWD6-3: Swamp Maple Organic Deciduous Swamp Type	Community not ranked	
<b>Mixed Swamp (SWM)</b>		
<b>Thicket Swamp (SWT)</b>		
SWT2: Mineral Thicket Swamp Ecosite	Ecosites not ranked	
SWT2-2: Willow Mineral Thicket Swamp Type	G5	S5
SWT2-9: Gray Dogwood Mineral Thicket Swamp Type	G5	S3S4
SWT2a: Russian Olive – Sandbar Willow – Gray Dogwood Mineral Thicket Swamp	Community not ranked	
SWT2b: Grey Dogwood-Red Osier Dogwood-Sandbar Willow Mineral Thicket Swamp Type	Community not ranked	

<sup>1</sup> **G-rank** G rank Global ranks are assigned by a consensus of the network of CDCs, scientific experts, and The Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies or variety.

- G1 Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
- G2 Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
- G3 Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common; demonstrably secure under present conditions
- G? Not Yet Ranked; or if following a ranking, Rank Uncertain (e.g. G3?). S? Species have not had a rank assigned.

<sup>3</sup> **S-rank:** S The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNR Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. Definitions are as follows:

- S1 Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
- S2 Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
- S3 Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- S4 Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- S5 Very common and demonstrably secure in Ontario.
- SE Exotic; not believed to be a native component of Ontario's flora.
- SH Possibly Extirpated (Historical)—Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.
- S? Not Yet Ranked; or if following a ranking, Rank Uncertain (e.g. S3?). S? Species have not had a rank assigned.

Only one provincially rare vegetation community was identified within the 120 m Area of Investigation. This community, Fresh-Moist Black Walnut Lowland Deciduous Forest Type (FOD7-4), is a rare forest type with a provincial ranking of S2S3 and is shown on Figure 3.6c. This community occurs in Natural Area 309 and is not located within 120 m of a proposed access road, and therefore was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat.

Habitat for Area Sensitive Species: Interior Forest Breeding Birds

Forest-interior birds, also referred to as area-sensitive birds, are susceptible to forest fragmentation and require large tracts of forest for nesting. These large sections of continuous forest provide shelter and nesting habitat, in addition to food for its inhabitants. Birds that prefer forest interiors tend to avoid edges, whereas birds that are considered area-sensitive tend to prefer forests with certain size characteristics.

While some area sensitive breeding birds may occur in much smaller woodlots, these woodlots may not contribute to reproductive success for those species. Interior forest species utilizing smaller woodlots have fewer young reaching maturity due to greater susceptibility to nest parasitism, and nest and fledgling predation known to occur in edge habitats. In order to be considered as significant habitat for interior forest breeding birds, a natural area must contain a contiguous area of forest of at least 10 ha, of which at least 4 ha must comprise interior habitat (i.e., at least 200 m from a forest edge), based on MNR criteria (refer to Table 3.2). The forest must also contain some mature forest. While several woodlots within the 120 m Area of Investigation are greater than 10 ha in size, most are narrow linear natural areas between concession lines that do not meet the interior criteria (Table 3.2). Three woodlands located within 120 m of the Project Location have more than 4 ha of interior forest habitat; however, two were found to be young to mid-age during site investigations and therefore do not qualify under the mature forest criterion (Table 3.2). One woodland unit, WOD-331, met the criteria. Vegetation removal is not proposed within this woodland; therefore, it was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat. The location of this feature is shown on Figure 3.6a.

**Table 3.20 Habitat for Interior Forest Breeding Birds**

Woodland Unit	Forest >10 ha	Mature Forest	Woodland Contains >4 ha of Interior Forest Habitat	Woodland Area is Located Within Project Location	Carried forward to EOS Generalized Candidate SWH		Rationale
					Candidate SWH	Generalized Candidate SWH	
WOD-117	Yes (455.3 ha)	No	Yes (101.6 ha)	No	No	No	No mature forest present.
WOD-131	Yes (199.8 ha)	No	Yes (69.4 ha)	No	No	No	No mature forest present.
WOD-331	Yes (1030.6 ha)	Yes	Yes (758.8 ha)	No	No	Yes	Mature forest with >4 ha interior habitat.

Habitat for Area Sensitive Species (Open Country Breeding Birds)

Area sensitive open country breeding birds are dependent on large patches of grassland or old field habitat for successful breeding. To qualify as significant wildlife habitat, the MNR criterion for grassland patches is that they must be greater than 30 ha in size (refer to Table 3.2). No such suitable habitats for open country breeding birds were identified in the 120 m Area of Investigation during site investigations. The largest single patch of grassland is a 4.9 ha cultural meadow in natural area 227, which is well below this threshold. Consequently no sites were brought forward to the Evaluation of Significance.

Old-growth or Mature Forest Stands

Mature forest stands consist of very large trees and a broad range of tree size classes, large standing snags and abundant downed wood of variable sizes creating a diverse structure. Mature forest stands that lack evidence of recent disturbances or evidence of logging are considered Significant Wildlife Habitat. Mature forests identified within the 120 m Area of Investigation are listed in Table 3.21. No vegetation removal is proposed within these areas. Twenty natural areas containing mature forests that lack evidence of recent disturbances were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat. The locations of these features are shown on Figure 3.6c.

**Table 3.21 Old Growth or Mature Forest Stands Locations**

Natural Area ID	ELC Community	Mature or Old Growth Forest	Evidence of Disturbance	Within Project Location	Carried forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
189	FOD9-4	Mature	Yes	No	No	No	Evidence of selective tree removal and oldest tree only 60 years old
	FOD9-5	Mature	No	No	No	Yes	Undisturbed, mature forest present
206	FOD9-4	Mature	No	No	No	Yes	Undisturbed, mature forest present
210	FOD7-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
215	SWD3-3	Mature	No	No	No	Yes	Undisturbed, mature forest present
	FOD6-5	Mature	No	No	No	Yes	Undisturbed, mature forest present
216	FOD9-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
229	FOD5-6	Mature	No	No	No	Yes	Undisturbed, mature forest present
236	SWD3-3	Mature	No	No	No	Yes	Undisturbed, mature forest present
242	FOD6-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
245	FOD7-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
251	FOD5-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
258	FOD7-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
259	FOD5-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
269	FOD5-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
	SWD2-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
300	SWD3-3	Mature	No	No	No	Yes	Undisturbed, mature forest present
309	SWD3-3	Mature	No	No	No	Yes	Undisturbed, mature forest present
321	FOD6-5	Mature	No	No	No	Yes	Undisturbed, mature forest present
326	FOD5-6	Mature	Yes	No	No	No	Forest has been managed through selective cutting
	FOD5-1	Mature	No	No	No	Yes	Undisturbed, mature forest present
339	FOD5-2	Mature	Yes	No	No	No	Forest has been selectively logged
342	FOD5-5	Mature	No	No	No	Yes	Undisturbed, mature forest present
352	FOD5-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
358	FOD5-2	Mature	No	No	No	Yes	Undisturbed, mature forest present
364	FOD5-1	Mature	Yes	No	No	No	Forest has been selectively logged

Turtle Habitat (Nesting, Over-wintering)

Larger beaches provide higher quality nesting habitat and reduce the chances of a nest being discovered by a predator, such as the Striped Skunk or Raccoon. In areas where sand and gravel beaches are limited, small pockets of these beaches become essential for turtle nesting and species maintenance. Large beaches or extensive sand deposits are not present in the Project Study Area, and there are few large bodies of water that support turtles within 120 m of the Project Location.

Turtles typically nest in areas of open vegetation in the general vicinity of ponds, marshes, lakes or other water bodies that support turtle populations. Ideal turtle nesting habitat is located within several hundred metres of a permanent water feature, is elevated to protect the nest from being inundated, and consists of sand or sand mixed with gravel as these are light enough to allow turtles to dig out nests. In addition, sand and gravel absorb heat from the sun which aids in incubating the eggs thus accelerating hatching. Nests will be laid in other soils if sand is not available, preferably exposed and on south or west facing slopes to maximize radiant heat.

Areas where turtles nest are often easily identifiable because high rates of nest predation result in egg shells being exposed at the ground surface for a year or more. No predated turtle nests were observed during site investigations, however a resident provided information that nesting turtles have been observed around the pond in natural feature 209.

A total of eleven natural areas containing open water were identified in the 120 m Area of Investigation during the site investigations (refer to Table 3.22). The majority of these do not have appropriate substrate for turtle nesting habitat. However, several ponds do have sufficient water depth and substrate for over-wintering. Six features were carried forward to the Evaluation of Significance as a generalized candidate Significant Wildlife Habitat and three as candidate Significant Wildlife Habitat (TOW-01, TOW-02, and TOW-03). The locations of these features are shown on Figure 3.6a.

**Table 3.22 Turtle Nesting and Overwintering Habitat**

Natural Area No.	ELC Unit	Description of Standing Water	Substrate Along Shoreline	Evidence of Turtles	Water Depth (m)	Within 120 m of Road	Within Project Location	Carried forward to EOS		Rationale
								Candidate SWH	Generalized Candidate SWH	
198	OAO	Pond	Mineral Soil	None	Unknown	Yes	No	No	No	Not suitable habitat
209	OAO	Permanent dug pond, appears to be spring-fed	Gravel road/clay substrate	Evidence of nesting turtles within gravel driveway along pond	0.4	No	No	No	Yes	Suitable substrate for nesting habitat, nesting turtles reported by resident
236	OAO, MAM2-2	Pond	Mineral soil	None	0.6	Yes	No	No	No	Not suitable habitat
	FOD9b, SAS1-3	Permanent dug pond	Mineral soil	None	3	Yes	No	Yes (TOW-03)	No	Deep pond may be overwintering habitat
249	OAO	Site appears to be a dug pond, but could not see into water to collect detailed information	Mineral soil, some exposed around edges of pond	None	Unknown	Yes	No	No	No	Not suitable habitat
255	OAO	Pond	Mineral Soil	None	1	No	No	No	Yes	Deep pond may be overwintering habitat
266	OAO	Permanent Pond	Mineral soil	None	Deep	No	No	No	Yes	Deep pond may be overwintering habitat
759	OAO	Pond	Mineral soil	None	3	Yes	No	Yes (TOW-01)	No	Deep pond may be overwintering habitat
609	OAO	Permanent Pond	Mineral soil, very little exposed	None	3	No	No	No	Yes	Deep pond may be overwintering habitat
661	FOD5-1, MAM2	Dug pond	Clay soil	None	3	No	No	No	Yes	Deep pond may be overwintering habitat
720	OAO	Permanent pond	Mineral soil, 30% exposed	None	1	No	Yes	Yes (TOW-02)	No	Deep pond may be overwintering habitat
754	SWT2b	Permanent pond	Mineral Soil	None	2	No	No	No	Yes	Deep pond may be overwintering habitat

Woodland Raptor Nesting Habitat

Woodland raptors find shelter, build nests and hunt for prey in forested habitat. These species are sensitive to seemingly minor changes in habitat as they have specialized habitat requirements. Woodland raptors are very territorial and seldom nest closer than one kilometre to another of the same species. As a result, the species are highly sensitive to fragmentation because they require large tracts of forest cover. In addition, woodland raptors are intolerant of human activity which can result in disturbance to nests and ultimately may affect brood survival.

Red-tailed Hawk and Cooper's Hawk were identified as confirmed breeders within the Project Study Area in the Breeding Bird Atlas (Cadman *et al.*, 2007). Possible breeding raptors observed during the Atlas of the Breeding Birds of Ontario included Sharp-shinned Hawk, Broad-winged Hawk and Barred Owl. Sharp-shinned Hawk, Cooper's Hawk, and Broad-winged Hawk were recorded in the Project Study Area during spring/summer avian surveys conducted by Golder Associates (2011). Further studies conducted by AECOM during the 2012 breeding season also identified Cooper's Hawk within the Project Study Area.

Cooper's Hawk usually nests in deciduous forests greater than 50 ha in size. This species prefers upland forests, tends to nest in intermediate-aged or mature forests and forest interior, and often nests within 300 m or less of water (Wildlife Habitat Decision Support System, Index #45; MNR, 2010b).

Sharp-shinned Hawk's secretive nature and tendency to nest within dense vegetation makes it a difficult species to detect during the breeding season. These hawks breed mainly in large stands of deciduous, coniferous and mixed pine-hardwood forests and pine plantations (Bildstein & Meyer, 2000).

The Broad-winged Hawk can be found nesting in continuous deciduous or mixed-deciduous forests with canopy openings and water nearby. Nests are usually located in the first main crotch of deciduous tree, or on a platform of horizontal branches against the trunk in a conifer (Goodrich *et al.*, 1996).

The nests are well concealed and woodland raptors are very cryptic around their nests, consequently it is difficult to confirm this type of Significant Wildlife Habitat. The natural areas within the 120 m Area of Investigation which are part of woodlands or swamps over 30 ha in area and contain greater than 4 ha of interior forest habitat are identified in Table 3.23. No vegetation removal is proposed within these three features; therefore they were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat. The locations of these features are shown on Figure 3.6c.

**Table 3.23 Woodland Raptor Nesting Habitat**

Woodland	At least 30 ha in Size	Contains >4 ha interior forest	Within Project Location	Carried Forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
WOD-117	Yes (455.3 ha)	Yes (101.6 ha)	No	No	Yes	Woodland meets size and interior forest criteria for candidate Woodland Raptor Nesting habitat.
WOD-131	Yes (199.8 ha)	Yes (69.4 ha)	No	No	Yes	Woodland meets size and interior forest criteria for candidate Woodland Raptor Nesting habitat.
WOD-331	Yes (1030.6 ha)	Yes (758.8 ha)	No	No	Yes	Woodland meets size and interior forest criteria for candidate Woodland Raptor Nesting habitat.

### Bald Eagle and Osprey Nesting Habitat

Osprey and Bald Eagles nest near open water where fish species are abundant. Nests are built in large trees, or in artificial structures, and can become very large as new material is added with each year. These species can be sensitive to human activity, so remoteness may be a factor in determining a nest site.

Osprey nests in Ontario are usually 9 to 18 m from the ground and are within 10 km of large lakes, marshes or productive foraging areas. Ospreys prefer dead coniferous tree tops with unobstructed views and there is typically a tall perch near-by for the male. As such, the majority of nests are found in mature, isolated trees, rather than groups of trees.

Like Osprey, most Bald Eagle nests are associated with large lakes. Bald Eagle nests are typically 15 to 22 m from the ground and are often found in mature forest with discontinuous or open canopy but may also be in isolated groups of trees. In Ontario, Bald Eagles show a preference for live trees and conifers, typically at least 60 centimetres diameter at breast height (dbh). Bald Eagles choose trees with an unobstructed view and flight path. Both the Osprey and Bald Eagle may use the same nest every year, for decades.

Osprey and Bald Eagle prey on fish species in clear, shallow water. Osprey typically hunts in water less than 1 m deep while the Bald Eagle will hunt in areas less than 6 m deep. As such, nesting habitats must be located near large water bodies with large shallow areas and an abundance of fish populations.

The Atlas of the Breeding Birds of Ontario presents evidence of possible Bald Eagle breeding in the general vicinity of the Project Study Area (Cadman *et al.*, 2007). A total of seven Bald Eagles were recorded during avian surveys conducted in the Project Study Area (Golder Associates, 2011). All observations during avian surveys were outside the breeding season: one individual was observed during winter surveys, while six were observed in the fall.

Although there is no evidence of breeding for Osprey in the general vicinity of the Project Study Area (Cadman *et al.*, 2007) correspondence with the MNR during Records Review provided information relating to possible nesting, foraging and perching habitat within the Project Study Area. Two Osprey were recorded during avian use studies conducted in the Project Study Area (Golder Associates, 2011). They were recorded during summer and fall surveys.

Locations of nest bowls and stick nests observed during site investigations were recorded, including an approximate height above ground and relative size. Bald Eagle and Osprey nests are usually very conspicuous because of their large size and prominent locations since the birds prefer unobstructed views. Consequently, these distinctive nests would have been identified as belonging to these species during site investigations. No Bald Eagle or Osprey nests were observed during site investigations therefore no sites were carried forward to the Evaluation of Significance.

### Seeps and Springs

Wildlife may rely on open water available at seeps and springs during the winter. Seeps are also important for baseflow to streams thereby contributing to fish habitat, and as habitat for a number of specialized plant species.

A total of 15 natural areas were identified as containing seep indicators during site investigations (refer to Table 3.24). Eleven of these were located in forested areas, but none of them occur within the Project Location and therefore all were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat. The locations of these features are shown on Figure 3.6b.

**Table 3.24 Seeps and Spring Location**

Natural Area No.	Waterbody No.	ELC Unit	Seep Indicators Present	Within Project Location	Carried Forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
198	C68	CUM1-1	Watercress	No	No	No	This area is not forested.
232	C48	FOD7-2	Water Speedwell	No	No	Yes	Suitable habitat
249	C52	SWD2-2	Watercress	No	No	Yes	Suitable habitat
266	C44	CUP1a CUP1-7	Watercress	No	No	Yes	Suitable habitat
267	C43	FOD7-2	Watercress	No	No	Yes	Suitable habitat
273	D53	FOD8-1	Water Speedwell	No	No	Yes	Suitable habitat
280	C124	FOD4e	Watercress	No	No	Yes	Suitable habitat
280	C42	FOD7-2 FOD6-1	Watercress	No	No	Yes	Suitable habitat
282	D17	CUM1-1	Watercress	No	No	No	This area is not forested.
309	C33	SWD3-3	Watercress	No	No	Yes	Suitable habitat
369	C7	CUW1e	Iron staining	No	No	Yes	Suitable habitat
609	D36	SWT2-2	Watercress	No	No	Yes	Suitable habitat
635	D37	CUM1-1	Watercress, Water Speedwell	No	No	No	This area is not forested.
648	D38	CUM1-1	Watercress	No	No	No	This area is not forested.
723	D40	FOD6-5	Watercress, Water Speedwell, Bittercress	No	No	Yes	Suitable habitat

Marsh Bird Breeding Habitat

A number of bird species in Ontario require high quality marsh habitat for successful breeding. According to the Atlas of the Breeding Birds of Ontario, there is breeding evidence for Sora, American Coot, Pied-billed Grebe and Green Heron in the general vicinity of the Project Study Area (Cadman *et al.*, 2007). Green Heron was also recorded during avian surveys conducted in the Project Study Area (Golder Associates, 2011). A total of 93 Common Loons, 7 Horned Grebe and 2 Trumpeter Swans were also recorded during avian surveys conducted in the Project Study Area (Golder Associates, 2011) but these were migrants (refer to Table 3.25).

**Table 3.25 Marsh Breeding Bird Habitat**

Natural Area No.	ELC Unit	Habitat Diversity	Within 120 m of Turbine	Carried Forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
225	MAM2-2	Small marsh, approximately 0.1 ha in size, no open water	Yes	No	No	Insufficient size and habitat diversity
236	SAS1-3	Small pond, approximately 0.01 ha in size and 1 m deep, along edge of forest	No	No	No	Insufficient size and habitat diversity
236	MAM2-2	Small marsh, approximately 0.3 ha in size with a small pond	No	No	No	Insufficient habitat diversity
236	MAM2-2	Small marsh, approximately 0.4 ha in size, minimal open water	No	No	No	Insufficient habitat diversity
274	MAM3-2	Small marsh, approximately 0.5 ha in size, with no open water	No	No	No	Insufficient habitat diversity
279	MAM3-2	Small marsh, approximately 0.8 ha in size, with no open water	No	No	No	Insufficient habitat diversity
358	MAM2-10	Small marsh, approximately 0.4 ha in size, adjacent intermittent watercourse	Yes	No	No	Insufficient habitat diversity
375	MAM2a	2.3 ha marsh with no open water	No	No	No	Insufficient habitat diversity
379	MAM2-2	Small marsh, approximately 0.3 ha in size, adjacent intermittent watercourse	No	No	No	Insufficient size and habitat diversity
738	MAM2-2	Small marsh, approximately 0.2 ha in size, with no open water.	No	No	No	Insufficient size and habitat diversity
739	MAM2-2	2.5 ha marsh with no open water	No	No	No	Insufficient habitat diversity



The target marsh bird species generally require large marshes with a good interspersed of deeper water (at least 30 cm) and emergent marsh vegetation. Shallow water or open water without much emergent vegetation will not suffice. For example, Sandhill Crane nests in large wetlands, typically at least 200 ha but occasionally smaller, and usually bogs and fens, but occasionally in marshes, and usually nests at least 1 km from any human activity. There is no suitable nesting habitat for this species within the 120 m Area of Investigation.

All of the locations containing marsh (ELC polygons and inclusions) within the 120 m Area of Investigation are listed on Table 3.25. These consist mainly of meadow marshes along stream floodplains or within swamps. None of the marsh habitats contained suitable habitat, therefore none were carried forward to the Evaluation of Significance.

### 3.3.6.3 Animal Movement Corridors

#### Amphibian Corridors

Many woodland and open wetland breeding amphibians move from their hibernation sites to breeding areas in spring and then to their summer habitats. The Project Study Area is characterized by isolated woodlots spread out on a mostly agricultural landscape. Many amphibians will move from one woodlot to another for breeding, crossing inhospitable agricultural cropland in the process, then return to their home woodlot. These movements mostly take place at night, particularly during rainy nights in the spring.

In order to identify likely amphibian corridors, the significance of Amphibian Woodland Breeding and Amphibian Wetland Breeding Habitats must first be confirmed in the Evaluation of Significance. As such, the animal movement corridors were determined based on the locations of the identified significant breeding areas and discussed in the Evaluation of Significance (Section 4). These significant breeding areas were examined in the context of the landscape by making assumptions about where amphibians are migrating from and also identifying likely movement corridors based on connecting vegetation, riparian links, and nearness of natural areas or context of roads. Amphibian corridors are of particular concern for proposed roads because moving amphibians are susceptible to road mortality. Narrow strips of vegetation connecting two larger blocks of habitat where at least one has a significant breeding location could be identified as a candidate significant amphibian corridor.

### 3.3.6.4 Species of Conservation Concern

Any plant or animal species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO is provincially significant and considered to be a species of conservation concern. A total of sixty-three species of conservation concern were identified as potentially occurring within the Project Study Area through the Records Review (Table 2.5). Most of these species are rare locally and highly specialized to their preferred habitat.

A number of the animal species identified during the Records Review have been assessed under other categories of Significant Wildlife Habitat, as follows:

- **Bald Eagle** (*Haliaeetus leucocephalus*)  
Special Concern – Breeding habitat for this species was assessed as Bald Eagle Nesting Habitat (Section 3.3.6.1). No candidate significant Bald Eagle nesting habitats were identified within the 120 m Area of Investigation, therefore habitat of this species of conservation concern was not carried forward to Evaluation of Significance.
- **Short Eared Owl** (*Asio flammeus*)  
Special Concern – Seasonal concentration areas for this species were assessed as part of Raptor Winter Feeding and Roosting Areas (Section 3.3.6.1), and breeding habitat of this species was

assessed as part of Open Country Bird Breeding Habitat (Section 3.3.6.2). No candidate significant Raptor Winter Feeding and Roosting Areas or Open Country Bird Breeding Habitat were identified within the 120 m Area of Investigation, therefore habitat of this species of conservation concern was not carried forward to Evaluation of Significance.

- **Yellow-breasted Chat** (*Icteria virens*)  
Special Concern – Breeding habitat for this species was assessed as part of Shrub/Early Successional Bird Breeding Habitat (Section 3.3.6.4). No candidate significant shrub/early successional bird breeding habitats were identified within the 120 m Area of Investigation, therefore habitat of this species of conservation concern was not carried forward to Evaluation of Significance. No Yellow-breasted Chats were observed during avian use surveys conducted by Golder in 2011 or during breeding bird surveys conducted by AECOM in 2012.
- **Eastern Ribbonsnake** (*Thamnophis sauritus*)  
Special Concern – Seasonal concentration areas for this species were assessed as part of Reptile Hibernacula (Section 3.3.6.1). One candidate reptile hibernacula (RH-01) and three generalized candidate reptile hibernacula SWH were carried forward to Evaluation of Significance (refer to Figure 3.6a for locations).
- **Milksnake** (*Lampropeltis triangulum*)  
Special Concern – Seasonal concentration areas for this species were assessed as part of Reptile Hibernacula (Section 3.3.6.1). One candidate reptile hibernacula (RH-1) and three generalized candidate reptile hibernacula SWH were carried forward to Evaluation of Significance (refer to Figure 3.6a for locations).
- **Snapping Turtle** (*Chelydra serpentina*)  
Special Concern – Specialized habitats for this species were assessed as part of Turtle Nesting Habitat and Turtle Over-wintering Habitat (Section 3.3.6.2). No candidate significant turtle nesting habitats were identified within the eleven natural areas noted, however three candidate turtle overwintering areas (TOW-01, TOW-02, and TOW-03) were identified and six features were carried forward to the Evaluation of Significance as a generalized candidate significant turtle nesting or overwintering habitat (refer to Figure 3.6a for locations).
- **Little Brown Bat** (*Myotis lucifugus*)  
Endangered federally – Seasonal concentration areas for this species were assessed as part of Bat Hibernacula and Bat Maternity Colonies (Section 3.3.6.1). No candidate Bat Hibernacula were identified whereas 19 candidate Bat Maternity Colonies were identified within the 120 m Area of Investigation, therefore habitat of this species of conservation concern was carried forward to the Evaluation of Significance (refer to Figure 3.6c for locations).

#### Plant Species of Conservation Concern

Five provincially rare (S1-S3) species were observed during site investigations:

- Burning Bush (*Euonymus atropurpurea*) ranks as S3 and was observed in natural area 326 located east of Bronson Line and North of Dashwood Road;
- Field Thistle (*Cirsium discolor*) ranks as S3 (Vulnerable) and was observed in a Dry - Moist Old Field Meadow Type in natural area 198 located along South Road and west of Mollard Line;
- Cream Violet (*Viola striata*) ranks as S3 (Vulnerable) and was observed in natural area 757 north of Pepper Road and east of Goshen Line;

- Narrow-leaved Sedge (*Carex amphibola*) ranks as S2 (Imperiled) and was observed in natural area 189 located south of South Road and west of Grand bend Line; and
- Perfoliate Bellwort (*Uvularia perfoliata*) ranks as S1 (Critically Imperiled) and was observed within natural area 375 located north of Pepper Road and east of Goshen Line

The observed occurrences of these rare species during site investigations confirm natural areas 198, 326, 392, 189 and 375 as Significant Wildlife Habitat according to the Ecoregion Criteria Schedules addendum to the Significant Wildlife Habitat Technical Guide, for Ecoregion 6E (MNR 2011f). All suitable ELC polygons in the natural areas where rare species have been observed were carried forward to the Evaluation of Significance as confirmed Significant Wildlife Habitat (SCP-12, SCP-13, SCP-14, SCP-15, SCP-16 and SCP-17). The locations of these features are shown on Figure 3.6a. A complete list of plant species observed during site investigations is provided in Appendix H.

Habitats of the plant species of conservation concern identified through the Records Review were assessed individually as follows (refer to Table 3.2 for detailed description of habitat preferences and related references).

Habitats for the following plant species of conservation concern were carried forward to the Evaluation of Significance as either generalized candidate Significant Wildlife Habitat or candidate Significant Wildlife Habitat:

- **American Gromwell** (*Lithospermum latifolium*)  
S3 (Vulnerable) – This species prefers shaded river banks, and wooded floodplains. The species may also be found within river floodplains, woods and edges of woods. The population of this plant species is scattered throughout southern Ontario, with records in areas adjacent to Huron County from 1950-1964. The last known occurrence of this species in the vicinity of the Project Study Area was in 1989. The species is believed to be only known in Huron County from the Maitland River valley (M.J. Oldham, personal communication). Suitable habitat for this species was found within the 120 m Area of Investigation, where Fresh-Moist Lowland Deciduous Forest Ecosites (FOD7) were identified on floodplains mapped by Conservation Authorities (natural areas 177, 189, 210, 232, 258, 280 and 300). No infrastructure is proposed within these ELC polygons and therefore these were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for American Gromwell. The locations of these features are shown on Figure 3.6a.
- **Burning Bush** (*Euonymus atropurpureus*)  
S3 (Vulnerable) - Burning Bush grows in dry to moist thickets, valleys, and forest edges. This species has isolated populations scattered across southern Ontario. The last known occurrence of this species in the vicinity of the Project Study Area was in 1983. Since the habitat of this species is relatively common and found throughout the Project Study Area, all potential habitats for this species (i.e. all FOC, FOM or FOD series) within the 120 Area of Investigation were treated as generalized candidate Significant Wildlife Habitat for Burning Bush and carried forward to Evaluation of Significance, with the exception of natural areas 648, 662, 720 and 721 where the transmission line is proposed within suitable habitat. In total, seven candidate Significant Wildlife Habitats (SCP-03, SCP-04, SCP-05, SCP-06, SCP-09, SCP-10, SCP-11) were identified in these four natural areas requiring Evaluation of Significance (refer to Figure 3.6a for locations).

In addition, this species was observed during 2011 site investigations in an FOD5 Ecosite of natural area 326. An access road is proposed to be built directly adjacent to the natural area but project activities will not occur within it; therefore, no infrastructure is proposed within this natural area. Since Burning Bush was observed, this natural area is confirmed to be Significant Wildlife Habitat (SCP-12) and was carried forward to the Evaluation of Significance (refer to Figure 3.6a for locations).

- **Chinese Hemlock Parsley (*Conioselinum chinense*)**  
S2 (Imperiled) – This species prefers swampy places with deciduous trees (cedars and tamaracks), river banks and creek borders. The species can also be found in calcareous white cedar swamps, wet borders of streams and rivers as well as among calcareous seepage slopes. This species is present in scattered localities across southern Ontario. There is a pre-1925 record of its occurrence in Pinery Provincial Park and a post 1964 record in Huron County; the last observed occurrence in the study area is from 1986. The species is believed to be only known in Huron County from Maitland River valley (M.J. Oldham, personal communication). Suitable habitat for this species was found within the 120 m Area of Investigation, where a Mineral Mixed Swamp community (SWM) occurring on a floodplain mapped by Conservation Authorities was identified in natural area 266. There is no infrastructure proposed for this ELC polygon and therefore it was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for Chinese Hemlock Parsley (refer to Figure 3.6a for location).
- **Eastern Green-violet (*Hybanthus concolor*)**  
S2 (Imperiled) – This species can be found in rich, wet-mesic floodplain forests as well as mesic forests over limestone. The species may also be located in floodplains and river banks. The last known local record for this species dates from 1989. The species is believed to be only known in Huron County from the Maitland River valley (M.J. Oldham, personal communication). No infrastructure is proposed within the required habitat for this species, and the species was not recorded within the 120 m Area of Investigation during site investigations. Suitable habitat for this species was found within the 120 m Area of Investigation, where Fresh-Moist Lowland Deciduous Forest Ecosites (FOD7) were identified in Natural Areas 177, 189, 210, 232, 258, 280 and 300, occurring on floodplains mapped by Conservation Authorities. There is no infrastructure proposed in these ELC polygons and therefore they were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for Eastern Green-violet (refer to Figure 3.6a for locations).
- **Green Dragon (*Arisaema dracontium*)**  
Special Concern, S3 (Vulnerable) – This species is found in damp deciduous forest especially along floodplains. It also grows in wet forests dominated by maple, red ash and white elm. It was last observed in the vicinity of the Project Study Area in 2000. The species is believed to be only known in Huron County from the Maitland River valley (M.J. Oldham, personal communication). Green Dragon is distinctive and was not observed during site investigations. Since Green Dragon occurs in a common habitat, all potential habitats for this species (i.e. all FOD6, FOD7 or FOD9 ecosites; refer to ELC maps for locations) were treated as generalized candidate Significant Wildlife Habitat for Green Dragon and carried forward to the Evaluation of Significance, with the exception of natural areas 648, 720 and 721 where the transmission line is proposed in suitable habitat of the species; these features (SCP-03, SCP-05, SCP-06, SCP-09 and SCP-11) were carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (refer to Figure 3.6a for locations).
- **Hairy Bedstraw (*Galium pilosum*)**  
S3 (Vulnerable) - This species grows in dry, sandy woods and thickets as well as occasionally in sandy fields. This species is restricted to southern Ontario with most of the historical records concentrated along the Lake Huron shoreline extending from Kettle Point to Grand Bend (Argus *et al.*, 1982-1987). The last known occurrence in the vicinity of the Project Study Area was in 1999. Since this species has a broad habitat description, all potential suitable habitats (i.e. all FOD1, FOD2, FOD3, FOD4 and FOD5 ecosites; refer to ELC map for locations) within the 120 m Area of Investigation were treated as generalized candidate Significant Wildlife Habitat for Hairy Bedstraw, with the exception of natural area 662, where the transmission line is proposed in suitable habitat for the species; therefore, this habitat (SCP-04) was carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (refer to Figure 3.6a for locations).
- **Hairy Valerian (*Valeriana edulis*)**  
S1 (Critically Imperiled) – This species inhabits swampy river flats and meadows, wet prairies, wooded, rocky riverbanks and fens. There is a post-1964 record of this species occurring in North Huron County but it is not in

the vicinity of the Project Study Area (Argus *et al.*, 1982-1987). The species is believed to be only known in Huron County from Maitland River valley (M.J. Oldham, personal communication). There are no known records of this species in the Project Study Area. No fens or wet prairies were identified within the 120 m Area of Investigation and the species was not recorded within the 120 m Area of Investigation during site investigations. However, suitable habitat was found within the 120 m Area of Investigation in natural areas 236, 249, 280, 309, 609 and 738 (refer to Table 3.26 below). No infrastructure is proposed within the required habitat for this species. As such, these habitats were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for Hairy Valerian (refer to Figure 3.6a for locations).

**Table 3.26 Potential Habitat for Hairy Valerian within the 120 m Area of Investigation**

Natural Area No.	Area (ha)	Veg Type	Swampy River Flats or Rocky Riverbanks Present	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
189	12.2	SWD2-2	No	No	No	No suitable habitat
209	0.3	SWT2	No	No	No	No suitable habitat
215	1.7	SWD3-3	No	No	No	No suitable habitat
216	0.1	SWT2	No	No	No	No suitable habitat
216	0.1	SWT2	No	No	No	No suitable habitat
216	0.2	SWT2	No	No	No	No suitable habitat
225	1.5	SWD2-2	No	No	No	No suitable habitat
232	0.4	SWD3-3	No	No	No	No suitable habitat
235	0.7	SWD3-3	No	No	No	No suitable habitat
236	0.4	SWD2-2	No	No	No	No suitable habitat
236	0.4	SWD2a	No	No	No	No suitable habitat
236	0.6	SWD3-3	No	No	No	No suitable habitat
236	0.8	SWD3-3	No	No	No	No suitable habitat
236	1.4	SWD3-3	No	No	No	No suitable habitat
236	2.1	SWD2-2	Yes	No	Yes	Suitable habitat
236	3.7	SWD3-3	No	No	No	No suitable habitat
244	0.6	SWD3-3	No	No	No	No suitable habitat
245	0.1	SWD3-3	No	No	No	No suitable habitat
245	0.2	SWD4a	No	No	No	No suitable habitat
249	0.6	SWD2-2	Yes	No	Yes	Suitable habitat
258	0.1	SWD2-2	No	No	No	No suitable habitat
258	0.2	SWD3-3	No	No	No	No suitable habitat
258	0.4	SWD3-3	No	No	No	No suitable habitat
258	0.4	SWD2-2	No	No	No	No suitable habitat
259	1.5	SWD2-2	No	No	No	No suitable habitat
259	3.3	SWD4a	No	No	No	No suitable habitat
261	0.1	SWD4	No	No	No	No suitable habitat
261	0.1	SWD4	No	No	No	No suitable habitat
261	0.1	SWD2-2	No	No	No	No suitable habitat
261	0.4	SWD2-2	No	No	No	No suitable habitat
261	0.4	SWT2-9	No	No	No	No suitable habitat
266	0.4	SWT2a	No	No	No	No suitable habitat
266	0.6	SWT2a	No	No	No	No suitable habitat
266	12.8	SWM	No	No	No	No suitable habitat
269	1.2	SWD2-2	No	No	No	No suitable habitat
273	0.1	SWD3-3	No	No	No	No suitable habitat
274	2.6	SWD6-3	No	No	No	No suitable habitat
275	1.5	SWD3-3	No	No	No	No suitable habitat
279	6.2	SWD6-3	No	No	No	No suitable habitat
280	0.3	SWD2-2	No	No	No	No suitable habitat
280	0.4	SWD2-2	Yes	No	Yes	Suitable habitat
280	1.3	SWD3-3	No	No	No	No suitable habitat

**Table 3.26 Potential Habitat for Hairy Valerian within the 120 m Area of Investigation**

Natural Area No.	Area (ha)	Veg Type	Swampy River Flats or Rocky Riverbanks Present	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
280	4.3	SWD4b	No	No	No	No suitable habitat
282	2.1	SWD2-2	No	No	No	No suitable habitat
285	0.2	SWD4c	No	No	No	No suitable habitat
291	1.0	SWD4a	No	No	No	No suitable habitat
300	0.1	SWD3-3	No	No	No	No suitable habitat
300	0.2	SWD3-3	No	No	No	No suitable habitat
300	1.0	SWD3-3	No	No	No	No suitable habitat
300	5.6	SWD3-3	No	No	No	No suitable habitat
309	5.4	SWD3-3	Yes	No	Yes	Suitable habitat
321	0.0	SWD3-3	No	No	No	No suitable habitat
321	0.0	SWD3-3	No	No	No	No suitable habitat
321	0.1	SWD3-3	No	No	No	No suitable habitat
321	0.1	SWD3-3	No	No	No	No suitable habitat
321	0.2	SWD3-3	No	No	No	No suitable habitat
339	0.6	SWD3-3	No	No	No	No suitable habitat
375	0.5	SWD3-3	No	No	No	No suitable habitat
375	1.4	SWD3-3	No	No	No	No suitable habitat
392	0.1	SWD3-3	No	No	No	No suitable habitat
392	0.3	SWD3-3	No	No	No	No suitable habitat
392	0.7	SWD3-3	No	No	No	No suitable habitat
609	0.0	SWT2-2	Yes	No	Yes	Suitable habitat
609	0.3	SWT2-2	Yes	No	Yes	Suitable habitat
609	0.4	SWD2-2	Yes	No	Yes	Suitable habitat
609	0.4	SWT2-2	Yes	No	Yes	Suitable habitat
609	0.5	SWD2-2	Yes	No	Yes	Suitable habitat
609	0.6	SWD2-2	Yes	No	Yes	Suitable habitat
609	0.7	SWD2-2	Yes	No	Yes	Suitable habitat
609	3.0	SWT2-2	Yes	No	Yes	Suitable habitat
701	3.7	SWD3-3	No	No	No	No suitable habitat
721	0.1	SWD3-3	No	No	No	No suitable habitat
722	0.7	SWD3-3	No	No	No	No suitable habitat
738	0.3	SWD4-1	Yes	No	Yes	Suitable habitat
738	0.5	SWD4-1	Yes	No	Yes	Suitable habitat
754	0.0	SWD4-1	No	No	No	No suitable habitat
754	0.3	SWT2b	No	No	No	No suitable habitat
757	0.5	SWD2-2	No	No	No	No suitable habitat
757	1.0	SWD2-2	No	No	No	No suitable habitat

- Hairy Wood Mint (*Blephilia hirsuta*)**  
 S1 (Critically Imperiled) – This species can be found within rich woods, swamp forests, and floodplains. The species may also be found in woodlands, preferably rocky, and especially along rivers. The species was not recorded within the 120 m Area of Investigation during site investigations. The last known local record for this species dates from 1959 (MNR, 2011a). This very rare species is unlikely to occur in Huron County and the record may be an error (M.J. Oldham, personal communication). Woods and swamps were identified in the 120 m Area of Investigation; however, only those that were identified to occur on floodplains mapped by Conservation Authorities were considered suitable habitat for the species. Table 3.27 identifies suitable habitat found for Hairy Wood Mint within the 120 m Area of Investigation. No infrastructure is proposed within these ELC polygons and thus these locations were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for the species (refer to Figure 3.6a for locations).

**Table 3.27 Hairy Wood Mint Habitat**

Natural Area no.	ELC Unit	Rocky Riverbanks and/or Floodplains Present	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Generalized Candidate SWH	Candidate SWH	
177	FOD7-2	Yes	No	Yes	No	Suitable habitat present
189	SWD2-2	No	No	No	No	No suitable habitat present
189	FOD6-5	No	No	Yes	No	Suitable habitat present
189	FOD7d	Yes	No	Yes	No	Suitable habitat present
198	FOD7-2	No	No	No	No	No suitable habitat present
210	FOD7-1	Yes	No	Yes	No	Suitable habitat present
210	FOD7-2	Yes	No	Yes	No	Suitable habitat present
215	FOD6-5	No	No	No	No	No suitable habitat present
215	SWD3-3	No	No	No	No	No suitable habitat present
216	FOD7-2	Yes	No	Yes	No	Suitable habitat present
217	FOD7-2	No	No	No	No	No suitable habitat present
225	SWD2-2	No	No	No	No	No suitable habitat present
232	SWD3-3	Yes	No	Yes	No	Suitable habitat present
232	FOD7-2	Yes	No	Yes	No	Suitable habitat present
235	SWD3-3	No	No	No	No	No suitable habitat present
236	SWD3-3	Yes	No	Yes	No	Suitable habitat present
236	SWD2-2	Yes	No	Yes	No	Suitable habitat present
236	SWD2-2	No	No	No	No	No suitable habitat present
236	SWD2a	No	No	No	No	No suitable habitat present
236	SWD3-3	No	No	No	No	No suitable habitat present
236	SWD3-3	No	No	No	No	No suitable habitat present
236	SWD3-3	No	No	No	No	No suitable habitat present
236	FOD7-2	No	No	No	No	No suitable habitat present
240	FOD7-2	No	No	No	No	No suitable habitat present
242	FOD6-1	No	No	No	No	No suitable habitat present
244	FOD6-5	No	No	No	No	No suitable habitat present
244	SWD3-3	No	No	No	No	No suitable habitat present
245	FOD6-5	Yes	No	Yes	No	Suitable habitat present
245	SWD4a	No	No	No	No	No suitable habitat present
245	SWD3-3	No	No	No	No	No suitable habitat present
245	FOD7e	No	No	No	No	No suitable habitat present
245	FOD7-2	No	No	No	No	No suitable habitat present
245	FOD6-4	Yes	No	Yes	No	Suitable habitat present
249	SWD2-2	Yes	No	Yes	No	Suitable habitat present
258	SWD3-3	No	No	No	No	No suitable habitat present
258	SWD3-3	No	No	No	No	No suitable habitat present
258	SWD2-2	No	No	No	No	No suitable habitat present
258	FOD7-1	Yes	No	Yes	No	Suitable habitat present
258	SWD2-2	No	No	No	No	No suitable habitat present
259	FOD7-2	No	No	No	No	No suitable habitat present
259	FOD7-2	No	No	No	No	No suitable habitat present
259	SWD2-2	No	No	No	No	No suitable habitat present
259	FOD7-2	No	No	No	No	No suitable habitat present
259	SWD4a	No	No	No	No	No suitable habitat present
259	FOD7-2	No	No	No	No	No suitable habitat present
261	FOD6-5	No	No	No	No	No suitable habitat present
261	SWD4	No	No	No	No	No suitable habitat present
261	SWD4	No	No	No	No	No suitable habitat present
261	SWD2-2	No	No	No	No	No suitable habitat present
261	SWD2-2	No	No	No	No	No suitable habitat present
266	SWM	No	No	No	No	No suitable habitat present
267	FOD7-2	Yes	No	Yes	No	Suitable habitat present
269	SWD2-2	No	No	No	No	No suitable habitat present

**Table 3.27 Hairy Wood Mint Habitat**

Natural Area no.	ELC Unit	Rocky Riverbanks and/or Floodplains Present	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Generalized Candidate SWH	Candidate SWH	
271	FOD6-4	Yes	No	Yes	No	Suitable habitat present
273	SWD3-3	No	No	No	No	No suitable habitat present
274	SWD6-3	Yes	No	Yes	No	Suitable habitat present
275	FOD6-5	No	No	No	No	No suitable habitat present
275	SWD3-3	No	No	No	No	No suitable habitat present
279	SWD6-3	Yes	No	Yes	No	Suitable habitat present
280	SWD3-3	No	No	No	No	No suitable habitat present
280	FOD7-2	No	No	No	No	No suitable habitat present
280	SWD2-2	Yes	No	Yes	No	Suitable habitat present
280	SWD2-2	No	No	No	No	No suitable habitat present
280	FOD7-2	Yes	No	Yes	No	Suitable habitat present
280	FOD6-1	Yes	No	Yes	No	Suitable habitat present
280	SWD4b	No	No	No	No	No suitable habitat present
280	FOD6-1	No	No	No	No	No suitable habitat present
282	SWD2-2	No	No	No	No	No suitable habitat present
282	FOD6-4	Yes	No	Yes	No	Suitable habitat present
282	FOD6-4	Yes	No	Yes	No	Suitable habitat present
285	SWD4c	No	No	No	No	No suitable habitat present
285	FOD7-2	No	No	No	No	No suitable habitat present
291	SWD4a	No	No	No	No	No suitable habitat present
300	FOD7-2	Yes	No	Yes	No	Suitable habitat present
300	SWD3-3	No	No	No	No	No suitable habitat present
300	SWD3-3	No	No	No	No	No suitable habitat present
300	SWD3-3	No	No	No	No	No suitable habitat present
300	SWD3-3	No	No	No	No	No suitable habitat present
300	FOD6-5	No	No	No	No	No suitable habitat present
300	FOD7c	Yes	No	Yes	No	Suitable habitat present
309	SWD3-3	Yes	No	Yes	No	Suitable habitat present
309	FOD7-4	Yes	No	Yes	No	Suitable habitat present
321	FOD6-5	No	No	No	No	No suitable habitat present
321	SWD3-3	No	No	No	No	No suitable habitat present
321	SWD3-3	No	No	No	No	No suitable habitat present
321	SWD3-3	No	No	No	No	No suitable habitat present
321	SWD3-3	No	No	No	No	No suitable habitat present
321	SWD3-3	No	No	No	No	No suitable habitat present
339	SWD3-3	No	No	No	No	No suitable habitat present
349	FOD7-2	No	No	No	No	No suitable habitat present
361	FOD7-2	No	No	No	No	No suitable habitat present
375	FOD6-5	No	No	No	No	No suitable habitat present
375	FOD6-5	No	No	No	No	No suitable habitat present
375	SWD3-3	No	No	No	No	No suitable habitat present
375	SWD3-3	No	No	No	No	No suitable habitat present
375	FOD6-5	No	No	No	No	No suitable habitat present
392	SWD3-3	No	No	No	No	No suitable habitat present
392	SWD3-3	No	No	No	No	No suitable habitat present
392	SWD3-3	No	No	No	No	No suitable habitat present
609	SWD2-2	Yes	No	Yes	No	Suitable habitat present
609	SWD2-2	Yes	No	Yes	No	Suitable habitat present
609	SWD2-2	Yes	No	Yes	No	Suitable habitat present
609	SWD2-2	Yes	No	Yes	No	Suitable habitat present
611	FOD6-5	No	No	No	No	No suitable habitat present
701	SWD3-3	No	No	No	No	No suitable habitat present



**Table 3.27 Hairy Wood Mint Habitat**

Natural Area no.	ELC Unit	Rocky Riverbanks and/or Floodplains Present	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Generalized Candidate SWH	Candidate SWH	
720	FOD6-5	No	Transmission Line (in feature)	No	No	No suitable habitat present
720	FOD6-5	No	No	No	No	No suitable habitat present
720	FOD7f	No	Transmission Line (in feature)	No	No	No suitable habitat present
720	FOD6-5	No	No	No	No	No suitable habitat present
721	FOD7-1	No	Transmission Line (in feature)	No	No	No suitable habitat present
721	FOD6-5	No	Transmission Line (in feature)	No	No	No suitable habitat present
721	SWD3-3	No	Transmission Line (in feature)	No	No	No suitable habitat present
722	SWD3-3	No	Transmission Line (in feature)	No	No	No suitable habitat present
723	FOD6-5	Yes	No	Yes	No	Suitable habitat present
738	SWD4-1	Yes	No	Yes	No	Suitable habitat present
738	SWD4-1	Yes	No	Yes	No	Suitable habitat present
754	SWD4-1	Yes	No	Yes	No	Suitable habitat present
757	FOD6-5	No	No	No	No	No suitable habitat present
757	SWD2-2	No	No	No	No	No suitable habitat present
757	SWD2-2	No	No	No	No	No suitable habitat present

- **Harbinger-of-spring (*Erigenia bulbosa*)**

S3 (Vulnerable) – This species occurs in rich, moist deciduous woods, especially on floodplains. The species is ephemeral and has a very short flowering period early in the spring, after which it is easily overlooked. Although site investigations in 2012 took place during the flowering period for this species, it may have been missed. Since it occurs in a common habitat and the period of detection is very short, all potential habitats for this species (i.e., all FOD6, FOD7, FOD8 or FOD9 ecosites; refer to ELC map for locations) were treated as generalized candidate Significant Wildlife Habitat for Harbinger-of-spring and carried forward to Evaluation of Significance, with the exception of natural areas 720, 721 and 648 where the transmission line is proposed within the habitat for the species; six candidate Significant Wildlife Habitats were identified (SCP-03, SCP-10, SCP-05, SCP-11, SCP-06 and SCP-09) for these natural areas and were carried over to the Evaluation of Significance (refer to Figure 3.6a for locations).

- **Lizard's Tail (*Saururus cernuus*)**

S3 (Vulnerable) – This species inhabits shores and streambanks along shallow water, as well as swamps (usually deciduous but sometimes cedar), floodplains, shallow water and mudflats at the border of streams and ponds. The last known record in the area dates from 2005 (MNR, 2011a). Lizard's Tail is a distinctive and easily identifiable plant that was not observed during field investigations within the 120 m Area of Investigation; however, it may have been missed during late season surveys. No infrastructure is proposed within the preferred habitat for this species. Therefore, suitable habitat identified in Table 3.28 was carried forward as generalized candidate Significant Wildlife Habitat for Lizard's Tail (refer to Figure 3.6a for locations).

**Table 3.28 Potential Lizard's Tail Habitat**

Natural Area No.	ELC Unit	Date of Investigation	Species Observed	Streambank or Floodplain Present	Carried forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
189	SWD2-2	4-Jul-2012	No	No	No	No	No suitable habitat
215	SWD3-3	4-Oct-2012	No	No	No	No	No suitable habitat
225	MAM2-2	13-Jul-2011	No	No	No	No	No suitable habitat
225	SWD2-2	13-Jul-2011	No	No	No	No	No suitable habitat
232	SWD3-3	14-Oct-2011	No	No	No	No	No suitable habitat
235	SWD3-3	7-Nov-2011 19-Apr-2012	No	No	No	No	No suitable habitat
236	MAM2-2	13-Oct-2011 9-Nov-2011	No	No	No	No	No suitable habitat
236	SWD2-2	9-Nov-2011 18-Apr-2012 19-Apr-2012	No	No	No	No	No suitable habitat
236	SWD2a	13-Oct-2011 18-Apr-2012	No	No	No	No	No suitable habitat
236	MAM2-2	13-Oct-2011 18-Apr-2012	No	No	No	No	No suitable habitat
236	SWD3-3	13-Oct-2011 18-Apr-2012	No	No	No	No	No suitable habitat
236	SWD3-3	13-Oct-2011 18-Apr-2012	No	No	No	No	No suitable habitat
236	SWD3-3	13-Oct-2011 18-Apr-2012	No	No	No	No	No suitable habitat
236	SWD2-2	9-Nov-2011 18-Apr-2012 19-Apr-2012	No	Yes	No	Yes	Suitable habitat present
236	SWD3-3	21-Sep-2011 18-Apr-2012 19-Apr-2012	No	Yes	No	Yes	Suitable habitat present
244	SWD3-3	27-Apr-2012	No	No	No	No	No suitable habitat
245	SWD3-3	8-Sep-2011 9-Nov-2011 23-Apr-2012	No	No	No	No	No suitable habitat
245	SWD4a	8-Sep-2011 9-Nov-2011 23-Apr-2012	No	No	No	No	No suitable habitat
249	SWD2-2	4-Jul-2012	No	Yes	No	Yes	Suitable habitat present
258	SWD2-2	19-Jul-2011 21-Sep-2011 25-Apr-2012	No	No	No	No	No suitable habitat
258	SWD3-3	19-Jul-2011 21-Sep-2011 25-Apr-2012	No	No	No	No	No suitable habitat
258	SWD3-3	29-Nov-2011 1-May-2012	No	No	No	No	No suitable habitat
258	SWD2-2	9-Sep-2011	No	No	No	No	No suitable habitat
259	SWD2-2	9-Sep-2011	No	No	No	No	No suitable habitat
259	SWD4a	9-Sep-2011	No	No	No	No	No suitable habitat
261	SWD4	30-Apr-2012	No	No	No	No	No suitable habitat
261	SWD4	7-Jun-2012	No	No	No	No	No suitable habitat
261	SWD2-2	29-Jun-2012	No	No	No	No	No suitable habitat
261	SWD2-2		No	No	No	No	No suitable habitat
269	SWD2-2	18-Apr-2012	No	No	No	No	No suitable habitat
273	SWD3-3	2-May-2012	No	No	No	No	No suitable habitat
274	MAM3-2	2-May-2012	No	Yes	No	Yes	Suitable habitat present
274	SWD6-3	2-May-2012	No	Yes	No	Yes	Suitable habitat present
275	SWD3-3	8-May-2012	No	No	No	No	No suitable habitat
279	MAM3-2	2-May-2012	No	Yes	No	Yes	Suitable habitat present
279	SWD6-3	2-May-2012	No	Yes	No	Yes	Suitable habitat present

**Table 3.28 Potential Lizard’s Tail Habitat**

Natural Area No.	ELC Unit	Date of Investigation	Species Observed	Streambank or Floodplain Present	Carried forward to EOS		Rationale
					Candidate SWH	Generalized Candidate SWH	
280	SWD2-2	21-Sep-2011 24-Apr-2012	No	No	No	No	No suitable habitat
280	SWD2-2	21-Sep-2011 24-Apr-2012	No	Yes	No	Yes	Suitable habitat present
280	SWD3-3	21-Sep-2011 24-Apr-2012	No	No	No	No	No suitable habitat
280	SWD4b	21-Sep-2011	No	No	No	No	No suitable habitat
282	SWD2-2	25-Apr-2012	No	No	No	No	No suitable habitat
285	SWD4c	28-Jun-2012	No	No	No	No	No suitable habitat
291	SWD4a	26-Apr-2012	No	No	No	No	No suitable habitat
300	SWD3-3	7-Nov-2011 26-Apr-2012	No	No	No	No	No suitable habitat
300	SWD3-3	7-Nov-2011 26-Apr-2012	No	No	No	No	No suitable habitat
300	SWD3-3	7-Nov-2011 26-Apr-2012	No	No	No	No	No suitable habitat
300	SWD3-3	21-Sep-2011	No	Yes	No	Yes	Suitable habitat present
309	SWD3-3	3-Oct-2011	No	Yes	No	Yes	Suitable habitat present
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
321	SWD3-3	20-Jul-2011 5-Oct-2011 23-Apr-2012	No	No	No	No	No suitable habitat
339	SWD3-3	7-Sep-2011 8-Nov-2011	No	No	No	No	No suitable habitat
358	MAM2-10	7-Sep-2011	No	No	No	No	No suitable habitat
375	SWD3-3	12-Dec-2011	No	No	No	No	No suitable habitat
375	SWD3-3	12-Dec-2011	No	No	No	No	No suitable habitat
375	MAM2a	5-Oct-2011	No	No	No	No	No suitable habitat
379	MAM2-2	27-Sep-2011	No	No	No	No	No suitable habitat
392	SWD3-3	12-Dec-2011	No	No	No	No	No suitable habitat
392	SWD3-3	12-Dec-2011	No	No	No	No	No suitable habitat
392	SWD3-3	12-Dec-2011	No	No	No	No	No suitable habitat
609	SWD2-2	31-May-2012	No	Yes	No	Yes	Suitable habitat present
609	SWD2-2	31-May-2012	No	Yes	No	Yes	Suitable habitat present
609	SWD2-2	31-May-2012	No	Yes	No	Yes	Suitable habitat present
609	SWD2-2	31-May-2012	No	Yes	No	Yes	Suitable habitat present
701	SWD3-3	4-Jul-2012	No	No	No	No	No suitable habitat
721	SWD3-3	6-Jun-2012	No	No	No	No	No suitable habitat
722	SWD3-3	29-Jun-2012	No	No	No	No	No suitable habitat
738	MAM2-2	3-Jul-2012	No	Yes	No	Yes	Suitable habitat present
738	SWD4-1	3-Jul-2012	No	Yes	No	Yes	Suitable habitat present
738	SWD4-1	2-May-2012	No	Yes	No	Yes	Suitable habitat present
739	MAM2-2	5-Jul-2012	No	Yes	No	Yes	Suitable habitat present
754	SWD4-1	2-May-2012	No	Yes	No	Yes	Suitable habitat present
756	MAS	n/a	No	No	No	No	No suitable habitat
757	SWD2-2	25-Apr-2012	No	No	No	No	No suitable habitat
757	SWD2-2	25-Apr-2012	No	No	No	No	No suitable habitat

- Pawpaw (*Asimina triloba*)**  
 S3 (Vulnerable) – Pawpaw commonly grows in shady, rich moist deciduous woodlands and bottomlands. Although uncommon, Pawpaw occurs mostly in the extreme southern Ontario with a higher concentration of occurrences in Essex, Kent, and Niagara Counties and fewer occurrences in the Counties of Lambton and Middlesex. The last known local record of this species in the vicinity of the Project Study Area was from 1959. Since Pawpaw was not observed during site investigations and it occurs in a common habitat, all potential habitats for this species (i.e. all FOD6, FOD7 or FOD9 ecosites; refer to ELC map for locations) were treated as generalized candidate Significant Wildlife Habitat for the species and carried forward to the evaluations of significance, with the exception of natural areas 648, 720 and 721, where the transmission line is proposed in suitable habitat of the species; therefore, candidate Significant Wildlife Habitat identified within these features (SCP-03, SCP-05, SCP-06 and SCP-09) were carried forward to the Evaluation of Significance (refer to Figure 3.6a for locations).
- Pumpkin Ash (*Fraxinus profunda*)**  
 S2? (Imperiled?; rank uncertain) – This species is wetlands obligate and only grows in bottomland swamps and floodplains. Pumpkin Ash is very rare and is found in the extreme southwestern Ontario in Essex County along Lake Erie. The last known record of this species in the vicinity of the Project Study Area was from 1994. Swamps within the 120 m Area of Investigation occurring on floodplains mapped by Conservation Authorities were considered as suitable habitat for the species. Pumpkin ash was not observed during site investigations. However, suitable habitat was identified in the 120 m Area of Investigation in natural areas 210, 216, 232, 236, 244, 249, 258, 267, 274, 279, 280, 300, 309, 738 and 754, where no infrastructure is proposed within the required habitat of the species. These habitats were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat (refer to Table 3.29; refer to Figure 3.6a for locations).

**Table 3.29 Potential Pumpkin Ash Habitat**

Natural Area No.	ELC Unit	Within Floodplain (N/Y)	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
177	FOD7-2	No	No	No	No	Not suitable habitat
189	SWD2-2	No	No	No	No	Not suitable habitat
189	FOD7d	No	No	No	No	Not suitable habitat
198	FOD7-2	No	No	No	No	Not suitable habitat
210	FOD7-1	Yes	No	No	Yes	Suitable habitat present
210	FOD7-2	Yes	No	No	Yes	Suitable habitat present
215	SWD3-3	No	No	No	No	Not suitable habitat
216	FOD7-2	Yes	No	No	Yes	Suitable habitat present
217	FOD7-2	No	No	No	No	Not suitable habitat
225	SWD2-2	No	No	No	No	Not suitable habitat
232	SWD3-3	Yes	No	No	Yes	Suitable habitat present
232	FOD7-2	Yes	No	No	Yes	Suitable habitat present
235	SWD3-3	No	No	No	No	Not suitable habitat
236	SWD3-3	Yes	No	No	Yes	Suitable habitat present
236	SWD2-2	Yes	No	No	Yes	Suitable habitat present
236	SWD2-2	No	No	No	No	Not suitable habitat
236	SWD2a	No	No	No	No	Not suitable habitat
236	SWD3-3	No	No	No	No	Not suitable habitat
236	SWD3-3	No	No	No	No	Not suitable habitat
236	SWD3-3	No	No	No	No	Not suitable habitat
236	FOD7-2	Yes	No	No	Yes	Suitable habitat present
240	FOD7-2	No	No	No	No	Not suitable habitat
244	SWD3-3	Yes	No	No	Yes	Suitable habitat present
245	SWD4a	No	No	No	No	Not suitable habitat
245	SWD3-3	No	No	No	No	Not suitable habitat
245	FOD7e	No	No	No	No	Not suitable habitat
245	FOD7-2	No	No	No	No	Not suitable habitat

**Table 3.29 Potential Pumpkin Ash Habitat**

Natural Area No.	ELC Unit	Within Floodplain (N/Y)	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
249	SWD2-2	Yes	No	No	Yes	Suitable habitat present
258	SWD3-3	No	No	No	No	Not suitable habitat
258	SWD3-3	No	No	No	No	Not suitable habitat
258	SWD2-2	No	No	No	No	Not suitable habitat
258	FOD7-1	Yes	No	No	Yes	Suitable habitat present
258	SWD2-2	No	No	No	No	Not suitable habitat
259	FOD7-2	No	No	No	No	Not suitable habitat
259	FOD7-2	No	No	No	No	Not suitable habitat
259	SWD2-2	No	No	No	No	Not suitable habitat
259	FOD7-2	No	No	No	No	Not suitable habitat
259	SWD4a	No	No	No	No	Not suitable habitat
259	FOD7-2	No	No	No	No	Not suitable habitat
261	SWD4	No	No	No	No	Not suitable habitat
261	SWD4	No	No	No	No	Not suitable habitat
261	SWD2-2	No	No	No	No	Not suitable habitat
261	SWD2-2	No	No	No	No	Not suitable habitat
267	FOD7-2	Yes	No	No	Yes	Suitable habitat present
269	SWD2-2	No	No	No	No	Not suitable habitat
273	SWD3-3	No	No	No	No	Not suitable habitat
274	SWD6-3	Yes	No	No	Yes	Suitable habitat present
275	SWD3-3	No	No	No	No	Not suitable habitat
279	SWD6-3	Yes	No	No	Yes	Suitable habitat present
280	SWD3-3	No	No	No	No	Not suitable habitat
280	FOD7-2	No	No	No	No	Not suitable habitat
280	SWD2-2	Yes	No	No	Yes	Suitable habitat present
280	SWD2-2	No	No	No	No	Not suitable habitat
280	FOD7-2	Yes	No	No	Yes	Suitable habitat present
280	SWD4b	No	No	No	No	Not suitable habitat
282	SWD2-2	No	No	No	No	Not suitable habitat
285	SWD4c	No	No	No	No	Not suitable habitat
285	FOD7-2	No	No	No	No	Not suitable habitat
291	SWD4a	No	No	No	No	Not suitable habitat
300	FOD7-2		No	No	Yes	Suitable habitat present
300	SWD3-3	No	No	No	No	Not suitable habitat
300	SWD3-3	No	No	No	No	Not suitable habitat
300	SWD3-3	No	No	No	No	Not suitable habitat
300	SWD3-3	No	No	No	No	Not suitable habitat
300	FOD7c	Yes	No	No	Yes	Suitable habitat present
309	SWD3-3	Yes	No	No	Yes	Suitable habitat present
309	FOD7-4	Yes	No	No	Yes	Suitable habitat present
321	SWD3-3	No	No	No	No	Not suitable habitat
321	SWD3-3	No	No	No	No	Not suitable habitat
321	SWD3-3	No	No	No	No	Not suitable habitat
321	SWD3-3	No	No	No	No	Not suitable habitat
321	SWD3-3	No	No	No	No	Not suitable habitat
339	SWD3-3	No	No	No	No	Not suitable habitat
349	FOD7-2	No	No	No	No	Not suitable habitat
361	FOD7-2	No	No	No	No	Not suitable habitat
375	SWD3-3	No	No	No	No	Not suitable habitat
375	SWD3-3	No	No	No	No	Not suitable habitat
392	SWD3-3	No	No	No	No	Not suitable habitat
392	SWD3-3	No	No	No	No	Not suitable habitat
392	SWD3-3	No	No	No	No	Not suitable habitat
609	SWD2-2	No	No	No	No	Not suitable habitat
609	SWD2-2	No	No	No	No	Not suitable habitat
609	SWD2-2	No	No	No	No	Not suitable habitat

**Table 3.29 Potential Pumpkin Ash Habitat**

Natural Area No.	ELC Unit	Within Floodplain (N/Y)	Infrastructure Proposed Within Habitat	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
609	SWD2-2	No	No	No	No	Not suitable habitat
701	SWD3-3	No	No	No	No	Not suitable habitat
720	FOD7f	No	Yes (transmission line)	No	No	Not suitable habitat
721	FOD7-1	No	Yes (transmission line)	No	No	Not suitable habitat
721	SWD3-3	No	Yes (transmission line)	No	No	Not suitable habitat
722	SWD3-3	No	Yes (transmission line)	No	No	Not suitable habitat
738	SWD4-1	Yes	No	No	Yes	Suitable habitat present
738	SWD4-1	Yes	No	No	Yes	Suitable habitat present
754	SWD4-1	Yes	No	No	Yes	Suitable habitat present
757	SWD2-2	No	No	No	No	Not suitable habitat
757	SWD2-2	No	No	No	No	Not suitable habitat

- Ram's-head Lady's-slipper (*Cypripedium arietinum*)**  
S3 (Vulnerable) – This species can be found in undisturbed cedar woodlands and swamps, limestone plains and wooded fens, primarily in calcareous areas. Although it is uncommon in Ontario, most of its population is found along the Lake Huron shoreline. This species was last observed in the vicinity of the Project Study Area in 1994. This species was not encountered during site investigations; however, cultural woodlands were identified as the only suitable habitat for the species within the 120 m Area of Investigation in natural areas 190, 206, 216, 361, 369 and 373. There is no infrastructure proposed in these features and thus these were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat (refer to Figure 3.6a for locations).
- Round-leaved Groundsel (*Packera obovata*)**  
S3 (Vulnerable) – This species is found in moist woodlands and rocky outcrops. The last observed date in the vicinity of the Project Study Area was in 1987. It was not observed during site investigations. Since Round-leaved Groundsel occurs in a common habitat, all potential habitats for this species (i.e. all FOD6, FOD7 or FOD9 ecosites; refer to ELC map for locations) were treated as generalized candidate Significant Wildlife Habitat for this species and carried forward to the Evaluations of Significance, with the exception of natural areas 648, 720 and 721, where the transmission line is proposed in suitable habitat for the species; therefore candidate Significant Wildlife Habitat identified within these natural areas (SCP-03, SCP-05, SCP-06, and SCP-09) were carried forward to the Evaluation of Significance (refer to Figure 3.6a for locations).
- Round-leaved Hawthorn (*Crataegus lumaria*)**  
S3? (Vulnerable?; rank uncertain) – This species grows in old fields, poorly managed pastures, fence lines, and roadsides. It is locally common in extreme southwestern Ontario with historical records in Lambton and Middlesex Counties (Argus *et al.*, 1982-1987). The last known local record of the species dates from 1978. The Round-leaved Hawthorn was not encountered during site investigations and this species is generally not easily identified in the field. Suitable habitat in natural areas 635, 637, 648 and 720 where the transmission line is proposed inside the feature were carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (SCP-01, SCP-02, SCP-07 and SCP-08). Since the habitat of this species is relatively common, all other potential habitats for this species (i.e. all CUM1-1 and CUT1 ecosites; refer to ELC map for locations) within the 120 m Area of Investigation were treated as generalized candidate Significant Wildlife Habitat and carried forward to the Evaluation of Significance (refer to 3.6a for locations).

- **Slim-flowered Muhly (*Muhlenbergia tenuiflora*)**  
S2 (Imperiled) – This species can be found in rich deciduous forest, often on rocky or sandy soils. The species may also be found on wooded dunes, hillsides, and riverbanks dominated by either oak or beech-maple. Although no treed sand dunes were identified within the 120 m Area of Investigation, potentially suitable deciduous forest habitats are common. Since the species occurs in a common habitat and it is an obscure grass not easily recognized, all potential habitats for this species where no infrastructure is proposed (i.e., all FOD5 or FOD9 ecosites; refer to ELC map for locations) were treated as generalized candidate Significant Wildlife Habitat for Slim-flowered Muhly and carried forward to the Evaluation of Significance. However, as the transmission line is proposed inside suitable habitat identified in natural areas 662 and 648; two candidate Significant Wildlife Habitat were identified within these natural areas (SCP-04 and SCP-03) were carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (refer to Figure 3.6a for locations).
- **Tuberous Indian Plantain (*Arnoglossum plantagineum*)**  
Special Concern – This species is largely restricted to the coast of Lake Huron but may also be found in fens, wet meadows, and calcareous river flats. Where not in association with shorelines, it may be found in association with open seepage slopes. There are a few post-1964 records that indicate the occurrence of this species in Huron County (Argus *et al.*, 1982-1987); however, no records exist for the local area (MNR, 2011a). No fens are located in the 120 m Area of Investigation; however, potential habitat for the species was identified within the 120 m Area of Investigation in natural areas 274, 279, 738 and 739. These ELC polygons consist of wet meadows (MAM2-2 and MAM3-2) that occur on floodplains. No infrastructure is proposed within these habitats. Therefore, these features were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat (refer to Figure 3.6a for locations).

Habitats for the following plant species of conservation concern were not carried forward to the Evaluation of Significance:

- **A Moss (Muehlenberg's Astomum Moss) (*Astonum muehlenbergianum*)**  
S2 (Imperiled) – This moss species grows in soils over level outcrop ledges and soils found under grasses in open prairies. The last known occurrence of this species in the vicinity of the Project Study Area was in 1966. No suitable tallgrass prairie or alvar habitat was identified within the 120 m Area of Investigation nor was the species encountered during site investigations; therefore, the habitat for this species was not carried forward to the Evaluation of Significance.
- **Autumn Coral-root (*Corallorhiza odontorhiza*)**  
S2 (Imperiled) – This species prefers dry oak or oak-pine woods or occasionally open, red pine or white pine plantations. Scattered occurrences of this species are mainly restricted to the Carolinian zone, and the species is not listed for Huron County in Oldham (1993). Most of the historical occurrences are concentrated in Norfolk County with only one occurrence near Grand Bend from 1950-1964. The last observed date in the Project Study Area is unknown. Open oak dominated woodlands were considered candidate SWH for this species but plantations were not because it is not favoured habitat and the probability of occurrence there is very low. No suitable habitat was found within the 120 m Area of Investigation nor was this species observed during site investigations; therefore, the habitat for this species was not carried forward to the Evaluation of Significance.
- **Carolina Whitlow-grass (*Draba reptans*)**  
S3 (Vulnerable) – This species is primarily found in open, dry, sandy areas and limestone pavements. Historical records after 1964 suggest that this species occurred in the Pinery Provincial Park (Argus *et al.*, 1982-1987). The last known occurrence for the Carolina Whitlow-grass in the area was in 1958. As a habitat specialist, it only thrives in the coastal dune systems exclusive to the shoreline of Lake Huron. No suitable habitat was identified within the 120 m Area of Investigation nor was the species recorded during site investigations; therefore, the habitat for this species was not carried forward to Evaluation of Significance.

- **Crowned Beggarticks (*Bidens trichosperma*)**  
S2 (Imperiled) – This species can be found in openings in swamps, marshes, along shores and wet fields within the Carolinian zone and southeastern Georgian Bay. The species can also be found in bogs, fens, and tamarack swamps. Crowned Beggarticks was not recorded within the 120 m Area of Investigation during site investigations. No infrastructure is proposed within the required habitat for this species. The last known local record for this species dates from 1936 (MNR, 2011a), the species is not listed for Huron County in Oldham (1993), and M.J. Oldham (personal communication) is not aware of any more recent records. For these reasons, this species was not carried forward to Evaluation of Significance.
- **Dwarf Chinquapin (*Quercus prinoides*)**  
S2 (Imperiled) - This species specializes in open, dry and sandy habitats such as sandy woods and savannahs. The distribution of the Dwarf Chinquapin is only known from three sites in southern Ontario which include Grand Bend on Lake Huron (post-1964 record), Point Pelee and the Walsingham Township along the shore of Lake Erie (Argus *et al.*, 1982-1987). The last known record in the vicinity of the Project Study Area was in 1999 (MNR, 2011a). No suitable habitat was identified within the 120 m Area of Investigation nor was the species recorded during site investigations. Therefore, the habitat for the Dwarf Chinquapin was not carried forward to the Evaluation of Significance.
- **False Tomentose (*Packera paupercula* var. *pseudotomentosa*)**  
S2S3 (Imperiled to Vulnerable) - This species grows in prairies, sandy open woods, and savannahs. Its distribution range is confined to the Carolinian Zone of southern Ontario. This species was last observed in the vicinity of the Project Study Area in 1990. The species has specific habitat preferences and no such areas of suitable habitat were identified within the 120 m Area of Investigation. As a result, the habitat of this species was not carried forward to the Evaluation of Significance.
- **Fogg's Goosefoot (*Chenopodium foggii*)**  
S2 (Imperiled) - Fogg's Goosefoot inhabits dry sandy soil habitats under oak or pine-oak forests. The last known record of the species in the area dates from 1975. Although there are historical occurrences of Fogg's Goosefoot in Grand Bend, it would likely occur in the pine-oak savannah ecosystems restricted to the lakeshore of Lake Huron. As such, no areas of suitable habitat were identified with the 120 m Area of Investigation and thus the habitat was not carried forward to the Evaluation of Significance.
- **Giant Ironweed (*Vernonia gigantea*)**  
S1 (Critically Imperiled) - Giant Ironweed grows in wet prairies, thickets, moist woods, and grassy meadows. This species is rare in Ontario and most observations after 1964 are concentrated in extreme southern Ontario. Giant Ironweed was observed near Kettle Point between 1950-1964 (Argus *et al.*, 1982-1987). The last known occurrence of this species in the vicinity of the Project Study Area was in 1983 (MNR, 2011a). No suitable habitat was observed in the 120 m Area of Investigation nor was this species encountered during site investigations; therefore, the habitat for Giant Ironweed was not carried forward to the Evaluation of Significance.
- **Great Lakes Sand Reed (*Calamovilfa longifolia* var. *magna*)**  
S3 (Vulnerable) - This habitat specialist grows on active and stabilized sand dunes and open sand plains. It is endemic to the Lake Huron shoreline where it can abundantly occur from Point Edward in Lambton County stretching to Sauble Beach in Bruce County. This species has been commonly observed since 1964 along the Lake Huron shoreline (Argus *et al.*, 1982-1987). The last observed date for this species in the vicinity of the Project Study Area was in 2004 (MNR, 2011a). No suitable habitat for this species was identified within the 120 m Area of Investigation nor was this species observed during site investigations; thus, the habitat for this species was not carried forward to the Evaluation of Significance.



- **Hill's Pond Weed (*Potamogeton hillii*)**  
SC, S2 (Imperiled) – This is an aquatic plant found in highly alkaline waters of ditches, ponds, beaver ponds, and slow-moving cold waters chiefly confined to the Bruce Peninsula and Manitoulin Island, with a few additional areas elsewhere in the province. The species is not listed for Huron County in Oldham (1993). No suitable habitat was found that meets the cold water requirement of Hill's Pond Weed within the 120 m Area of Investigation and the species was not observed during site investigations; as a result, the habitat for this species was not carried forward to the Evaluation of Significance.
- **Large Round-leaved Orchid (*Platanthera macrophylla*)**  
S2 (Imperiled) – This species inhabits moist mixed woods. The species can be found in fairly mature, upland sugar maple-beech-eastern hemlock woodlands, a relatively common type of habitat in Ontario although this species is rarely encountered. At least one historic record was found in Huron County, dating from 1867 (NHIC). Since this historical record is more than 60 years old and the species was not observed during site investigation, habitat for Large Round-leaved Orchid was not carried forward to the Evaluation of Significance.
- **Moss phlox (*Phlox subulata*)**  
S1? (Critically Imperiled?; rank uncertain) - Moss phlox prefers open, dry, sandy habitats such as sandy woods, roadsides, and lakeshores. There is a historical record from 1906 of Moss Phlox near Kettle Point (MNR, 2011a; Argus *et al.*, 1982-1987). It is likely that this species occurred in the Pinery Provincial Park. No suitable habitat was identified within the 120 m Area of Investigation nor was this species encountered during site investigations; thus, the habitat of this species was not carried forward to the Evaluation of Significance.
- **Narrow leaved Puccoon (*Lithospermum incisum*)**  
S1 (Critically imperiled) - This species grows in dune, savannah, and sandy woods. This is a historical record seemingly within Pinery Provincial Park that predates 1925 (Argus *et al.*, 1982-1987). There are no recent records of this species in the Project Study Area. No suitable habitat was identified within the 120 m Area of Investigation nor was this species encountered during site investigations. Due to its habitat requirements, this species is confined to the coastal ecosystem of Lake Huron. As such, habitat of this species was not carried forward to the Evaluation of Significance.
- **Pillose Evening Primrose (*Oenothera pilosella*)**  
S2 (Imperiled) - This species grows in moist edges of woods and open, disturbed ground. There are historical records of the Pillose Evening Primrose on the Lake Huron shore near Kettle Point. The last known record of the species in the vicinity of the Project Study Area was in 1919. Since the historical record is more than 60 years old and this species was not observed during site investigations, the habitat for the Pillose Evening Primrose was not carried forward to the Evaluation of Significance.
- **Prostrate Tick-trefoil (*Desmodium rotundifolium*)**  
S2 (Imperiled) - This species prefers dry, sandy or rocky woods. There are historical records (1950-1964) of this species in Grand Bend (Argus *et al.*, 1982-1987); the last known record of this species in the vicinity of the Project Study Area was in 1970. Due to its specific habitat requirements this species is largely confined to the open Oak-Savannah habitat of Pinery Provincial Park where it has been known to occur from historical records. As well as, this species was not encountered during site investigations which should have captured its relatively late flowering period (July – September). As a result, habitat for the Prostrate Tick-trefoil was not carried forward to the Evaluation of Significance.
- **Rattlesnake Hawkweed (*Hieracium venosum*)**  
S2 (Imperiled) – This species can be found in open, dry sandy woods consisting of Jack pine, oak, and/or aspens. The last known local record for this species dates from 1956, and the species was not recorded within the 120 m Area of Investigation during site investigations despite its relatively long flowering period. This very rare species is unlikely to occur in Huron County and the record may be an error (M.J. Oldham, personal communication). Habitat of this species was not carried forward to the Evaluation of Significance.

- **Scarlet Beebalm** (*Monarda didyma*)  
S3 (Vulnerable) – This species can be found in moist, rich woods, thicket swamps, banks and floodplains. This species used to be fairly common in the Carolinian zone but now only a few isolated populations remain. The last known local record for this species dates from 1900. Scarlet Beebalm is a distinctive and easily identifiable plant that was not observed during site investigations; therefore its habitat was not carried forward to the Evaluation of Significance.
- **Shore Bluestem** (*Schizachyrium littorale*)  
S2? (Imperiled?; rank uncertain) - The Shore Bluestem prefers dry sandy habitats and is found on the sandy dunes and shores of the Lower Great Lakes. The last observed date of the Shore Bluestem in the vicinity of the Project Study Area was in 2000. Due to its specific habitat requirements, it is most likely that this species is confined to the Pinery Provincial Park. No suitable habitat for this species was identified within the 120 m Area of Investigation nor was this species encountered during site investigations. Therefore, the habitat of this species was not carried forward to the Evaluation of Significance.
- **Slender Blazing Star** (*Liatris cylindracea*)  
S3 (Vulnerable) – This species grows in dry woodlands, prairies, fields, and moist, sandy meadows as well as on limestone and dolostone alvars. This species was last observed in the vicinity of the Project Study Area in 2004. The Slender Blazing Star is a tallgrass habitat specialist and as such no suitable habitat was identified within the 120 m Area of Investigation nor was this species encountered during site investigations. Therefore, the habitat for this species was not carried forward to the Evaluation of Significance.
- **Slender Knotweed** (*Polygonum tenue*)  
S2 (Imperiled) - Slender Knotweed grows in dry, sandy, open areas in deciduous woods often dominated by Oak as well as prairie meadows and at edges of sand pits. There are historical records of this species occurring at or near Grand Bend (Argus *et al.*, 1982-1987). It was last observed in the vicinity of the Project Study Area in 1964. This species is a habitat specialist and is most likely confined to the Oak-Savannah ecosystem at Pinery Provincial Park located along the shores of Lake Huron. Suitable habitat was not identified within the 120 m Area of Investigation nor was this species encountered during site investigations. As a result, the habitat for this species was not carried forward to the Evaluation of Significance.
- **Slender Vulpia** (*Vulpia octoflora*)  
S2 (Imperiled) – This species inhabits dry, sandy habitats, including rocky woods meadows, dry forests, and stabilized dunes. The last known local record for this species dates from 1970. It is unlikely to occur in the study area (M.J. Oldham, personal communication) and its habitat was not encountered during site investigations, therefore its habitat was not carried forward to the Evaluation of Significance.
- **Slim-spikes Three awned Grass** (*Aristida longispica* var. *longispica*)  
S2 (Imperiled) - This species grows in dry to moist sandy fields and sandy openings in prairies. There are a few historical records of this grass species occurring in Kent and Essex Counties. The last known local record dates from 1989. This species is more commonly associated with wet to wet-mesic prairies. There were no sandy fields or prairies found within the 120 m Area of Investigation. In addition, this species was not encountered during site investigations. Therefore, habitat for this species was not carried forward to the Evaluation of Significance.
- **Stiff Gentian** (*Gentianella quinquefolia*)  
S2 (Imperiled) – This species is often found in moist soils of streambanks, edges of woods and wet prairies, as well as marshy meadows, bluffs and wooded hillsides. The last known local record for this species dates from 1982, and the species was not recorded within the 120 m Area of Investigation during site investigations. The species is not listed for Huron County in Oldham (1993) and M.J. Oldham (personal communication) was not aware of any more recent records, therefore this species was not carried forward to the Evaluation of Significance.

- **Sundial Lupine** (*Lupinus perennis*)  
S3 (Vulnerable) – This species is known to inhabit dry, sandy oak savannahs and prairies, as well as open barrens or clearings in woodlands of oak, jack pine, and/or aspen. The most frequent historical accounts of this species were in Norfolk County and Pinery Provincial Park (Argus *et al.*, 1982-1987). The last known local record for this species dates from 2000. The species is not listed for Huron County in Oldham (1993) and M.J. Oldham (personal communication) is not aware of any more recent records. No suitable habitats were identified within the 120 m Area of Investigation; therefore habitat of this species was not carried forward to the Evaluation of Significance.
- **Tall Blazing Star** (*Liatrix aspera*)  
S2 (Imperiled) – This species inhabits open, sandy woods, dry roadsides and sandy prairies. Occurrences of this species are mostly limited to extreme southwestern Ontario. There is a record of occurrence in 1999 near Grand Bend and Pinery Provincial Park. As a specialist, the Tall Blazing Star thrives best in tall grass prairie habitats which were not within the study area. No suitable habitat was identified in the 120 m Area of Investigation nor was this species observed during site investigations. Therefore, its habitat was not carried forward to the Evaluation of Significance.
- **Woodland Pinedrops** (*Pterospora andromedea*)  
S2 (Imperiled) – This species may be found in conifer forest, particularly under pines, but also hemlock, spruce, fir, and white cedar. It may also occur in dry or rocky soil, often with common juniper and sometimes aspen or birch. The most recent known record for this species in the area dates from 1936. Woodland Pinedrops is a distinctive and easily identifiable plant that was not observed during site investigations. No suitable habitats were identified within the 120 m Area of Investigation, therefore its habitat was not carried forward to the Evaluation of Significance.
- **Yellow Ladies'-tresses** (*Spiranthes ochroleuca*)  
S2 (Imperiled) – This species occurs on dry, open sites, usually on acidic sandy soil, and particularly prairie or savannah. It may also be found in dry to mesic open woodland, thickets, meadows, barrens, ledges, outcrops, and banks. Yellow Ladies'-tresses was not recorded within the 120 m Area of Investigation during site investigations. The species is not listed for Huron County in Oldham (1993) and the last known occurrence in the Project Study Area was in 1942. Since this record is more than 60 years old, it is considered historic and therefore habitat of this species was not carried forward to the Evaluation of Significance.
- **Yellow Stargrass** (*Hypoxis hirsute*)  
S3 (Vulnerable) – This species grows in dry open sandy woods, wet to dry prairies, and savannahs. Historical records from after 1964 indicate its occurrence in Pinery Provincial Park and Middlesex County (Argus *et al.*, 1982-1987); the last observed date in the vicinity of the Project Study Area was in 1983. This species was not encountered during site investigations and no suitable habitat was identified within the 120 m Area of Investigation. The habitat of this species was not carried forward to the Evaluation of Significance.

#### Bird Species of Conservation Concern

One bird species of conservation concern, Red-headed Woodpecker, was observed in natural area 720 during site investigations. No other animal species of conservation concern were observed during site investigations. A complete list of wildlife species observed during site investigations is provided in Appendix I.

Habitats of the remaining bird species of conservation concern identified through the Records Review were assessed individually as follows (refer to Table 3.2 for detailed description of habitat preferences and related references).

- Common Nighthawk (*Chordeiles minor*)**  
Special Concern – This species is an aerial forager that hunts insects over a wide variety of habitats, in particular open or semi-open areas such as farmland or open woodlands. The species nests on the ground in a wide range of open, sparse or vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, rock outcrops, rocky barrens, gravel pits and urban rooftops. It may sometimes nest in grasslands, pastures, peat bogs, marshes or lakeshores. Common Nighthawk was not recorded in the area in either the first or second Breeding Bird Atlas (Cadman *et al.*, 2007), or during 2011 (Golder, 2011) or 2012 (AECOM, 2012) crepuscular avian surveys. No infrastructure is proposed within the required habitat for this species. Because this species is a nocturnal aerial forager and its nests are difficult to locate, all suitable habitats (i.e., all CUW ecosites; refer to ELC map for locations) were treated as generalized candidate Significant Wildlife Habitat for Common Nighthawk and carried forward to Evaluation of Significance (refer to Figure 3.6d for locations).
- Louisiana Waterthrush (*Seiurus motacilla*)**  
Special Concern – This species inhabits mature forests along steeply sloped ravines adjacent to running water, and nests primarily along streams (Stucker, 2000). It is an area sensitive species. Breeding habitat for this species was partially assessed as part of Old-growth or Mature Forest Habitat (Section 3.3.6.2).

Large, mature deciduous or mixed forests containing both 4 ha of interior forest habitat and riparian habitat were found in natural areas 189, 255 and 379 (Table 3.30). No infrastructure is proposed within these features therefore they were treated as generalized candidate Significant Wildlife Habitat for Louisiana Waterthrush and carried forward to Evaluation of Significance (refer to Figure 3.6d for locations).

**Table 3.30 Potential Louisiana Waterthrush Habitat**

Natural Area No.	Forest Age	Area (ha)	Woodland Contains > 4 ha of Interior Forest Habitat	Riparian Habitat Present	Within Project Location	Carried Forward to EOS		Rationale
						Candidate SWH	Generalized Candidate SWH	
189	Mature	63.4	Yes	Yes	Yes	No	Yes	Suitable habitat present
255	Young to mid-age	455.3	Yes	Yes	Yes	No	Yes	Suitable habitat present
379	Mature	1030.6	Yes	Yes	Yes	No	Yes	Suitable habitat present

- Red-headed Woodpecker (*Melanerpes erythrocephalus*)**  
Special Concern – This species inhabits open woodland and woodland edges, especially in oak savannahs and riparian forest, open, deciduous forest with little understorey; fields or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees. The species generally requires cavity trees with at least 40 cm dbh. Red-headed Woodpecker was recorded in the area in the first Breeding Bird Atlas but not in the second (Cadman *et al.*, 2007). Breeding habitat for this species was partially assessed as Old-growth or Mature Forest Habitat (Section 3.3.6.2).

In addition to the Old-growth or Mature Forest Habitats (refer to Figure 3.6d for locations) carried forward to Evaluation of Significance as generalized candidate Significant Wildlife Habitat, woodlands containing mature trees were considered suitable habitat for this species (Table 3.31). No infrastructure is proposed within these features therefore they were treated as generalized candidate Significant Wildlife Habitat (refer to Figure 3.6d for locations). Red-headed Woodpecker was observed during site investigations in natural area 720 where the transmission line is proposed through the natural area. This feature was carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (SCB-03). The location of this feature is shown in Figure 3.6d.

**Table 3.31 Summary of Candidate Generalized Significant Wildlife Habitat for Red-Headed Woodpecker**

Woodland ID	Natural Area No.	Size (ha)	Community Age	ELC Unit	Evidence of Forest Management	Carried forward to EOS		Rationale
						Generalized Candidate SWH	Candidate SWH	
WOD-26	206	11.2	Mid-age and Mature	FOD9-4	No	Yes	No	Suitable habitat present
WOD-33	215	12.5	Mid-age and Mature	FOD6-5	No	Yes	No	Suitable habitat present
WOD-34	216	25	Mid-age and Mature	FOD9-2	No	Yes	No	Suitable habitat present
WOD-47	229	4.3	Mature	FOD5-6	No	Yes	No	Suitable habitat present
WOD-49	232	118	Mid-age to Mature	CUP3-2	No	Yes	No	Suitable habitat present
WOD-54	236	28.4	Young, Mid-age, Mature	FOD4-2	No	Yes	No	Suitable habitat present
WOD-64	245	6.9	Mid-age to Mature	FOD7-2	No	Yes	No	Suitable habitat present
WOD-158	300	46.7	Mid-age and Mature	FOD7-2	Evidence of recent selective logging	Yes	No	Suitable habitat present
WOD-227	321	4.4	Mature	FOD6-5	No	Yes	No	Suitable habitat present
WOD-289	352	7.2	Mature	FOD5-2	No	Yes	No	Suitable habitat present
WOD-295	358	4.1	Mature	FOD5-2	No	Yes	No	Suitable habitat present
WOD-309	372	4	Mid-age to Mature	FOD5-6	No	Yes	No	Suitable habitat present
WOD-300	757	11.7	Mid-age to Mature	FOD6-5	No	Yes	No	Suitable habitat present
WOD-32	190/210	46.9	Young, Mid-age, and Mature	FOD7-1	No	Yes	No	Suitable habitat present
WOD-251	326, 331	14.3	Mature	FOD5-6	Evidence of selective harvesting	Yes	No	Suitable habitat present
WOD-278	339/342	6.2	Mature	FOD5-2	Evidence of recent selective cutting	Yes	No	Suitable habitat present
WOD-278	339/342	2.8	Mature	FOD5-5	No	Yes	No	Suitable habitat present
WOD-012	189	6.5	Mature	FOD6-5	No	Yes	No	Suitable habitat present
WOD-012	189	6.1	Mature	FOD9-4	No	Yes	No	Suitable habitat present
WOD-251	326 / 331	5.1	Mature	FOD5-1	No	Yes	No	Suitable habitat present

Habitat for bird species of conservation concern was assessed during site investigations. Any feature with qualifying habitat was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for the target species (refer to Figure 3.6d for locations). Further study was conducted for woodlands with proposed vegetation removal in association with the transmission line. All woodlands where tree removal is proposed were treated as candidate Significant Wildlife Habitat for bird species of conservation concern (SCB-01, SCB-02, SCB-03, SCB-04 and SCB-05) and carried forward to the Evaluation of Significance (refer to Figure 3.6d for locations).

#### Insect Species of Conservation Concern

Habitats of the insect species of conservation concern identified through the Records Review were assessed individually as follows (refer to Table 3.2 for detailed description of habitat preferences and related references).

- **Azure Bluet (*Enallagma aspersum*)**  
S3 (Vulnerable) – This damselfly species inhabits fishless ponds, lakes and boggy swamps. According to the Ontario Odonata Atlas, there are historical records from after 1983 of the Azure Bluet in Huron Country. More recently, the last known occurrence of this species in the Project Study Area was in 1997. Ponds and other

water bodies where the fish habitat was unknown or where the absence of fish habitat was confirmed were treated as suitable habitat for the Azure Bluet (Table 3.32). In total, there are twelve ponds identified within the 120 m Area of Investigation. Of these, one pond was identified in natural area 720 where the transmission is proposed within the feature and therefore was carried forward to the Evaluation of Significance as candidate Significant Wildlife Habitat (SCI-01). In addition, nine ponds in eight natural areas were determined to be suitable habitat for the Azure Bluet. No infrastructure is proposed within these identified ponds and thus these habitats were carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat for the Azure Bluet (refer to Figure 3.6b for locations)

**Table 3.32 Potential Azure Bluet Habitat**

Natural Area No.	ELC Unit	Description of Standing Water	Substrate Along Shoreline	Evidence of Fish Present	Water Depth (m)	In Project Location	Carried forward to EOS		Rationale
							Candidate SWH	Generalized Candidate SWH	
198	CUT1h	Pond	Mineral Soil	Unknown	Unknown	No	No	Yes	Suitable habitat present
209	OAO	Permanent dug pond, appears to be spring-fed	Gravel road/clay substrate	Yes	0.4	No	No	No	Habitat not suitable due to presence of fish
236	OAO, MAM2-2	Pond	Mineral soil	Unknown	0.6	No	No	Yes	Suitable habitat present
	FOD9b, SAS1-3	Permanent dug pond	Mineral soil	Unknown	3	No	No	Yes	Suitable habitat present
249	OAO	Site appears to be a dug pond, but could not see into water to collect detailed information	Mineral soil, some exposed around edges of pond	No	Unknown	No	No	Yes	Suitable habitat present
255	OAO	Pond	Mineral soil	Unknown	1	No	No	Yes	Suitable habitat present
266	OAO	Permanent pond	Mineral soil	Unknown	Deep	No	No	Yes	Suitable habitat present
609	OAO	Permanent Pond	Mineral soil, very little exposed	Yes	3	No	No	No	Habitat not suitable due to presence of fish
661	FOD5-1, MAM2	Dug pond	Clay soil	Unknown	3	No	No	Yes	Suitable habitat present
720	OAO	Permanent pond	Mineral soil, 30% exposed	No	1	Yes	Yes (SCI-01)	No	Suitable habitat present
754	SWT2b	Permanent pond	Mineral soil	Unknown	2	No	No	Yes	Suitable habitat present
759	OAO	Pond	Mineral soil	Unknown	3	No	No	Yes	Suitable habitat present

- Dusted Skipper (*Atrytonospsis hianna*)**  
 S1 (Critically Imperilled) – This species is confined to remnants of dry prairie and sand dune areas. In Ontario, the Dusted Skipper is localized to a few sites along the shore of Lake Huron, most likely within the Pinery Provincial Park. The last known occurrence in the Project Study Area was in 1990 (MNR, 2011a). No prairie or sand dune areas were identified within the 120 m Area of Investigation, therefore the habitat of this species was not carried forward to the Evaluation of Significance.
- Monarch Butterfly (*Danaus plexippus*)**  
 Special Concern – According to MNR criteria, Monarch Migratory Stopover Areas are not associated with the study area and were therefore not assessed during the site investigation. Monarch Feeding and Breeding Habitat consists of old field habitats with an abundance of milkweed (*Asclepius*). Monarchs were observed

sporadically throughout the 120 m Area of Investigation; however, the Monarch is so widespread in meadows and so wide ranging that it is not practical to designate all locations where they occur as Significant Wildlife Habitat. Therefore, Monarch Feeding and Breeding Habitat was assessed as described in Table 3.2 above. No old fields containing a particular abundance of milkweed were identified within the 120 m Area of Investigation, therefore habitat of this species was not carried forward to the Evaluation of Significance.

- **Mottled Duskywing** (*Ernnis martialis*)  
S2 (Imperiled) – This species can be found in open woodlands, barrens, prairie hills, open brushy fields, and chaparrals. There are only five extant colonies in Ontario, one of which is in Pinery Provincial Park (CBIF, 2006). No suitable habitat for this species was identified within 120 m Area of Investigation nor was this species encountered during site investigations. Any suitable habitat that is likely to occur is confined to the Pinery Provincial Park which is located outside the Project Study Area. Thus, habitat for the Mottled Duskywing was not carried forward to the Evaluation of Significance.
- **Tawny Emperor** (*Asterocampa clyton*)  
S2S3 (Imperiled – Vulnerable) – This species inhabits densely wooded riparian areas, dry woods, open woods, fencerows and parks where its main host plants, Common Hackberry (*Celtis occidentalis*) and Dwarf Hackberry (*Celtis tenuifolia*), are abundantly found. No natural areas with a particular abundance of these species were encountered during site investigations. Currently, Tawny Emperor is most common in Pelee Island and rare everywhere else in southwestern Ontario. There are records of Tawny Emperor in the Lambton Shores and Pinery Provincial Park from 1991-2000 (Jones *et al.*, 2012). No suitable habitat for this species was identified in the 120 m Area of Investigation nor was this species observed during site investigations. This species is unlikely to occur in the study area and therefore the habitat for the Tawny Emperor was not carried forward to the Evaluation of Significance.
- **Sleepy Duskywing** (*Erynnis brizo*)  
S1 (Critically Imperilled) – This species occurs in open oak woodland, oak savannah or oak-pine scrub, chaparral or barrens occurring on well-drained sandy or shaly soils. This species has been observed in the Pinery Provincial Park since 2000 but it is likely restricted to dry oak savannah ecosystem along the shoreline of Lake Huron. No suitable habitats were identified within the 120 m Area of Investigation; therefore, habitat of this species was not carried forward to the Evaluation of Significance.
- **West Virginia White** (*Pieris virginiensis*)  
Special Concern – This species is restricted to rich, deciduous woods, where its food plants, toothworts (*Cardamine concatenata* and *C. diphylla*), are abundant. Abundant amounts of toothwort were found during site investigations in three locations within the 120 m Area of Investigation in natural areas 245, 326 and 372, within Dry-Fresh Sugar Maple Deciduous Forest Ecosites (FOD5). In addition, an abundance of toothworts was also found in natural area 242 within a Fresh – Moist White Elm Lowland Deciduous Forest Type (FOD6). West Virginia White has a very short flight period in early spring and closely resembles a more common butterfly; therefore, West Virginia White is easily missed. No infrastructure is proposed within the identified areas. Consequently, these suitable habitats where an abundance of toothwort occurred throughout the forest stand were treated as generalized candidate Significant Wildlife Habitat for West Virginia White and carried forward to the Evaluation of Significance (refer to Figure 3.6b for locations).

#### Shrub/Early Successional Bird Breeding Habitat

This type of Significant Wildlife Habitat consists of shrublands or successional fields greater than 30 ha in size, excluding Class 2 agricultural lands and lands actively used for farming (i.e., no row-cropping in the last 5 years). No such habitats were identified in or within the 120 m Area of Investigation during site investigations. This type of Significant Wildlife Habitat was not carried forward to the Evaluation of Significance.

Terrestrial Crayfish

Evidence of crayfish tubes or ‘chimneys’ was observed in proximity to 10 vegetation community polygons associated with six natural areas (refer to Table 3.33). The burrows were often present in the edge of agricultural fields immediately next to natural areas as opposed to actually in the vegetation community (i.e., the crayfish do not occur in FOD). The crayfish occur in areas of wet or seasonally wet clay-based soils that allow burrowing crayfish to form the tubes. These crayfish are an important keystone species as their burrows are used for hibernation by other wildlife species including amphibians, some snakes, and a variety of invertebrates. Crayfish burrows were located in one meadow marsh or shallow marsh vegetation community however no vegetation removal is proposed at this location, therefore that feature was carried forward to the Evaluation of Significance as generalized candidate Significant Wildlife Habitat (refer to Figure 3.6b for location).

**Table 3.33 Terrestrial Crayfish Habitat**

Natural Area No.	ELC Unit	Evidence of Chimney Crayfish Observed	Within Project Location	Carried forward to EOS		Rationale
				Candidate SWH	Generalized Candidate SWH	
189	FOD6-5	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
225	FOD9d	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
	SWD2-2 (with MAM2-2 inclusion)	Yes	No	No	Yes	Crayfish chimneys observed in meadow marsh inclusion
258	FOD7-1	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
	FOD9-4	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
609	SWD2-2	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
	SWT2-2	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
636	CUM1-1	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
637	CUM1-1	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat
	CUP3a	Yes	No	No	No	Not in meadow marsh or shallow marsh habitat

**3.3.6.5 Summary of Candidate Significant Wildlife Habitats Carried Forward to Evaluation of Significance**

Several candidate Significant Wildlife Habitats were identified within the 120 m Area of Investigation through the site investigation. The boundaries of these features are shown on Figures 3.6a, 3.6b, 3.6c and 3.6d. Generalized candidate Significant Wildlife Habitats are also shown on Figures 3.6a, 3.6b, 3.6c and 3.6d. A description of the attributes, composition, and function of each candidate Significant Wildlife Habitat and distance to the nearest project component is provided in Table 3.34 below. All of these candidate Significant Wildlife Habitats were carried forward to the Evaluation of Significance phase of this Natural Heritage Assessment.



**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
<b>Colonial-nesting Bird Breeding Habitat (Tree/Shrub)</b>	Generalized Candidate SWH	189	110 m (turbine construction footprint) (>120 m from turbines)	Nesting colonies of herons generally occur within treed wetlands such as mixed or deciduous swamps or treed fen habitats. Active Great Blue Heron nests were observed by AECOM during 2011 breeding bird surveys and 2012 site investigations, both conducted as fence line surveys. The number of nests is unknown.	Provides nesting sites that support a colony of Great Blue Herons.
<b>Waterfowl Stopover and Staging Areas (Terrestrial)</b>	WSST-15	Not applicable	0 m (overlapped by Project Location)	Tundra Swan stopover and staging habitat typically consists of agricultural fields with waste grains that are subject to annual spring flooding from melt water or runoff. Forage crops present and potential annual spring flooding observed.	May provide stopover and staging habitat for Tundra Swans during spring migration.
	WSST-36	Not applicable	0 m (overlapped by Project Location)	Tundra Swan stopover and staging habitat typically consists of agricultural fields with waste grains that are subject to annual spring flooding from melt water or runoff. Forage crops present and evidence of spring flooding in agriculture fields observed.	May provide stopover and staging habitat for Tundra Swans during spring migration.
<b>Waterfowl Nesting Areas</b>	Generalized Candidate SWH	209	8 m (collection line) (>120 m from turbines)	This Significant Wildlife Habitat type is a combination of wetland and adjacent upland habitat. Typically upland vegetation communities composed of grasses, sedges, rushes, and low shrubs, or cavities in large hollow trees within forests or swamps; at least 120 m wide, so that predators have difficulty locating nests.	May provide nesting habitat for waterfowl species, as well as brood rearing habitat in close association with upland habitat.
<b>Reptile Hibernacula</b>	RH-01	300	116 m (access road and collection line)	Snake hibernacula are typically rock crevices, rock piles and abandoned foundations which allow snakes to enter ground below the frost line provide protection from the harsh winter temperatures and support overwinter survival. This potential snake hibernaculum is a large stone pile with the potential to extend below the frostline. The potential hibernaculum is located at the edge of a wooded area adjacent to a cultural meadow.	Rock pile may allow snakes to enter ground below the frost line, providing protection from harsh winter temperatures and supporting overwinter survival.
	Generalized Candidate SWH	232 609 695	Varied (>120 m from access roads or turbines)	Snake hibernacula are typically rock crevices, rock piles and abandoned foundations which allow snakes to enter ground below the frost line provide protection from the harsh winter temperatures and support overwinter survival. These potential habitats are; 177: large stone pile; 232: rock pile; 609: exposed old foundation; and 695: large stone pile.	Rock piles or old foundations may allow snakes to enter ground below the frost line, providing protection from harsh winter temperatures and supporting overwinter survival.
<b>Bat Maternity Colonies</b>	BMC-177	177	42 m (turbine blade tip)	Young white elm, green ash, and Freeman's maple swamp. Towards the north end, there is an older Freeman's maple swamp, consisting of trees approximately 60 cm dbh. Contains one large freeman's maple with a large cavity beginning at the base of the tree, extending upward into the tree for approximately 3 m.	May provide habitat for bat maternity colonies.
	BMC-189	189	41 m (turbine blade tip)	This woodland contains sugar maple-hardwood deciduous forest, shagbark hickory deciduous forest, and some areas of white elm, ash, and hawthorn. Contains a large, dead American beech tree, approximately 100 cm dbh, with a large cavity as well as some exfoliating bark.	May provide habitat for bat maternity colonies.
	BMC-215	215	37 m (turbine blade tip)	This this woodland contains white ash-basswood forest, sugar maple-hardwood forest, and Freeman's maple deciduous swamp. Contains a white elm snag of approximately 30 cm dbh, with exfoliating bark.	May provide habitat for bat maternity colonies.

6. Reflects distance between feature and disturbance area associated with project infrastructure unless otherwise noted.

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	BMC-229	229	43 m (turbine blade tip)	This forest is dominated by basswood, white elm, and sugar maple. Contains a very large, live basswood, approximately 120 cm dbh, which is largely hollow. The cavity of the tree has a circular entrance of approximately 100 cm in diameter.	May provide habitat for bat maternity colonies.
	BMC-235	235	32 m (turbine blade tip)	A mid-age forest dominated by maple, with abundant basswood and rare black walnut and American beech. Contains 14.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-236	236	28 m (turbine blade tip)	This woodland contains green ash deciduous swamp, Freeman's maple swamp, fresh-moist hemlock mixed forest, moist shagbark hickory deciduous forest, oak-maple-hickory forest, and white ash deciduous forest. Contains two black walnut snags within 20 m of each other, each approximately 30 cm dbh and containing 1 small cavity each.	May provide habitat for bat maternity colonies.
	BMC-242	242	56 m (turbine blade tip)	Abundant sugar maple and white ash ( <i>Fraxinus americana</i> ), with occasional American beech, hop hornbeam, black cherry ( <i>Prunus serotina</i> ), blue beech ( <i>Carpinus caroliniana ssp. virginiana</i> ), basswood, and white elm. Contains 16.00 cavity trees per hectare	May provide habitat for bat maternity colonies.
	BMC-249	249	116 m (turbine blade tip)	This woodland contains green ash deciduous swamp. Access was not able to be obtained in order to describe the relevant attributes.	May provide habitat for bat maternity colonies.
	BMC-267	267	43 m (turbine blade tip)	A mid-age forest with abundant green ash and occasional basswood, sugar maple, ironwood, bur oak, and shagbark hickory. 20.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-282	282	106 m (turbine blade tip)	A mid-age forest with dominant maple, abundant white elm, American beech, and basswood. Contains 10.40 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-285	285	83 m (turbine blade tip)	Abundant white ash, with plantations of white pine ( <i>Pinus strobus</i> ). Also contains occasional large-tooth aspen ( <i>Populus grandidentata</i> ), white elm, white birch, blue beech, black cherry, and white spruce ( <i>Picea glauca</i> ). 12.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-326	326	37 m (turbine blade tip)	This woodland is a recently logged sugar maple forest, with few trees >30 cm dbh. Contains a sugar maple of approximately 30 cm dbh which contains a cavity approximately 10 m up the trunk. The cavity entrance is approximately 10 to 15 cm wide and 100 cm long.	May provide habitat for bat maternity colonies.
	BMC-342	342	117 m (turbine blade tip)	Abundant sugar maple, with occasional American beech, ironwood, bitternut hickory, white ash, and basswood. Contains 16.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-352	352	102 m (turbine blade tip)	Dominant sugar maple, with occasional American beech, white ash, basswood, black cherry, and hop hornbeam. Contains 12.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-358	358	77 m (turbine blade tip)	Abundant sugar maple and American beech, with occasional white ash, ironwood, black cherry, and white elm. Contains 14.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-372	372	59 m (turbine blade tip)	Dominant sugar maple, with occasional white ash, American beech, basswood, blue beech, hop hornbeam, and white elm. Contains 24.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	BMC-757	757	24 m (turbine blade tip)	This woodland largely consists of fresh-moist sugar maple hardwood deciduous forest, with some green ash deciduous swamp. Contains a dead white elm tree, approximately 30 cm dbh, with exfoliating bark.	May provide habitat for bat maternity colonies.
	BMC-648	648	0 m (overlapped by transmission line)	Dominated by bitternut hickory, with occasional sweet cherry, white elm, trembling aspen, ironwood, and English hawthorn. Contains 18.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	BMC-720	720	0 m (overlapped by transmission line)	Occasional sugar maple, basswood, freeman's maple, shagbark hickory, white elm, ironwood, American beech, and ash. Contains 10.00 cavity trees per hectare.	May provide habitat for bat maternity colonies.
	Generalized Candidate SWH	Varied	Varied	Ideal hibernating sites include wooded areas rich in dead organic materials, areas below the frost line and rock crevices.	May provide habitat for bat maternity colonies.
<b>Amphibian Woodland Breeding Habitat</b>	AWO-03	198	115 m (access road)	This potential amphibian woodland breeding habitat consists of a pond located within a green ash deciduous swamp community. The water depth is unknown.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-04	225	7 m (collection line) (105 m from access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with 5% emergent vegetation located within a green ash deciduous swamp community. Logs surrounding the pool are 5-25 cm in diameter and the water depth was 25 cm at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-06	235	24 m (turbine construction footprint) (106 m of access road)	This potential amphibian woodland breeding habitat consists of a vernal pool in a freemans maple deciduous swamp community. Fallen logs and/or logging debris have been piled by the landowner around the feature. A small amount of emergent vegetation is present and water depth was 30 cm at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-07	236	59 m (access road)	This potential amphibian woodland breeding habitat consists of a pond located within a deciduous forest community. The water in this pond is deep, estimate to be 3 m at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-08	236	46 m (access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with 25 cm of water present at the time of site investigations. The vernal pool is located in a deciduous forest. Logs measuring 10-20 cm in diameter are present in the feature.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-09	236	10 m (turbine construction footprint) (82 m from access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with 35 cm of water present at the time of site investigations. The vernal pool is located in a freemans maple deciduous swamp forest. Logs measuring 10-30 cm in diameter are present within the feature.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	AWO-14	249	21 m (access road)	This potential amphibian woodland breeding habitat consists of an apparently dug pond with little emergent vegetation and minimal down woody material. The pond is located within a deciduous swamp community.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-17	258	13 m (turbine construction footprint) (57 m from access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and water depth of 40 cm at the time of site investigations. Logs of 10-25 cm diameter occur within pool. The vernal pool is located within a deciduous forest community.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-24	300	37 m (access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and 10-20 cm diameter logs within along its edges. The vernal pool is located within a deciduous swamp community and was 10 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-25	300	37 m (access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and minimal down woody material. The vernal pool is located within a deciduous swamp community and was 30 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-26	321	>0.1 m (collection line) (100 m of access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with 70% cover of emergent vegetation and abundant 10-25 cm diameter logs within and adjacent to the feature. The vernal pool is located within a deciduous forest community and was 30 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-30	392	10 m (access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and 40 cm diameter logs present throughout. The vernal pool is located within a deciduous forest community and was 30 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-35	648	0 m (transmission line in feature) (>120 m of access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and minimal down woody material. The vernal pool is located within a deciduous forest community.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-33	720	0 m (transmission line in feature) (>120 m of access road)	This potential amphibian woodland breeding habitat consists of a pond with little emergent vegetation and minimal down woody material. The pond is located within a deciduous forest community and was 1 m deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	AWO-34	721	0 m (transmission line in feature) (>120 m of access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with 15% cover of emergent vegetation and minimal down woody material. The vernal pool is located within a deciduous forest community and was 20 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-28	757	10 m (turbine construction footprint)  (78 m of access road)	This potential amphibian woodland breeding habitat consists of a vernal pool with little emergent vegetation and several 10-24 cm diameter logs fallen in and around vernal pool. The vernal pool is located within a deciduous forest community and was 20 cm deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	AWO-27	759	12 m (access road and collection line)	This potential amphibian woodland breeding habitat consists of a pond with little emergent vegetation and minimal downed woody debris. The pond is located in cultural plantation community however adjacent to a deciduous forest and was estimated to be 3 m deep at the time of site investigations.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
	Generalized Candidate SWH	209, 210, 232, 236, 245, 255, 258, 266, 269, 280, 309, 342, 375, 661	Varied	This type of Significant Wildlife Habitat can occur in woodland or swamp communities with a wetland, lake or pond, including breeding pools that may be permanent, seasonal, ephemeral, and located within or adjacent to (within 120 m of) the woodland.	Woodland breeding amphibians congregate in temporary wooded ponds in the spring where they mate and lay eggs in the water. The larvae then hatch and live in the water for several months until they emerge as adults.
<b>Amphibian Wetland Breeding Habitat</b>	AWE-29	379	23 m (access road)	This potential amphibian wetland breeding habitat consists of meadow marsh inclusion created by a drainage feature with evidence of pooling in a red pine cultural plantation. This feature had little emergent vegetation, minimal downed woody debris, and a water depth of 0.4 m at the time of site investigations.	Wetland breeding amphibians congregate in temporary or permanent standing water in spring where they mate and lay eggs. The larvae then hatch and live in the water for several months to over a year in the case of Green Frogs and Bullfrogs.
	Generalized Candidate SWH	609 754	Varied	This type of Significant Wildlife Habitat generally occurs in meadow marsh, shallow marsh, submerged shallow aquatic, mixed shallow aquatic, floating-leaved shallow aquatic or swamp thicket communities where standing water is present in the spring or throughout the year.	Wetland breeding amphibians congregate in temporary or permanent standing water in spring where they mate and lay eggs. The larvae then hatch and live in the water for several months to over a year in the case of Green Frogs and Bullfrogs.
<b>Rare Vegetation Communities</b>	Generalized Candidate SWH	309	>0.1 m (collection line)	This rare vegetation community is a Fresh-Moist Black Walnut Lowland Deciduous Forest Type (FOD7-4), a rare forest type with a provincial ranking of S2S3. Dominant tree species found within this mid-age deciduous forest consist of black walnut, Freeman's maple, white ash, and white elm.	Rare forest types may provide specialized habitats and resources for plant and wildlife species. Mast (nuts) produced by black walnut is an important fall and winter food for forest wildlife species.
<b>Habitat for Area Sensitive Species: Interior Forest Breeding Birds</b>	Generalized Candidate SWH	WOD-331	23 m (access road)	This woodland consists of a Red Pine Coniferous Plantation Type (CUP3-1). This woodland unit contained mature forest and a greater than 4 ha of interior forest habitat that is suitable for area-sensitive birds.	Large, unfragmented forests may support populations of forest breeding birds that are area sensitive and require a minimum amount of suitable habitat in order to perform critical life functions.

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
<b>Mature Forest Stands</b>	Generalized Candidate SWH	Many	Varied	True old growth forest consists of very old forest that has never been cutover while mature forest stands consist of very large trees and a broad range of tree size classes, and large standing snags of abundant downed wood of variable sizes.	Old growth or mature forests may provide specialized habitats and resources for plant and wildlife species. A broad range of tree sizes creates a diversity of structure. Large standing snags are an important habitat for many wildlife species.
<b>Turtle Nesting Habitat</b>	Generalized Candidate SWH	209	21 m (collection line) (>120 m of access road)	Ideal turtle nesting habitat is located directly adjacent to a permanent water feature, is elevated to protect the nest from being inundated, and consists of sand or gravel as these are light enough to allow turtles to dig out nests. Gravel and clay substrate surrounds the permanent dug pool found in natural area 209. There is evidence of nesting turtles within gravel driveway along pond.	Nesting sites may support populations of turtles by providing breeding habitat suitable for the undertaking of critical life functions.
<b>Turtle Overwintering Habitat</b>	TOW-01	759	11 m (access road)	This potential turtle overwintering habitat consists of a deep pond with mineral soil substrate. The pond is located in a cultural plantation community and was estimated to be 3 m deep at the time of site investigations.	Overwintering sites provide protection from harsh winter temperatures and support overwinter survival.
	TOW-02	720	0 m (transmission line in feature) (>120 m of access road)	This potential turtle overwintering habitat consists of a deep pond with mineral soil substrate. The pond is located in a deciduous forest community and was estimated to be 1 m deep at the time of site investigations.	Overwintering sites provide protection from harsh winter temperatures and support overwinter survival.
	TOW-03	236	59 m (access road)	This potential turtle overwintering habitat consists of a deep pond with mineral soil substrate. The pond is located in a deciduous forest community and was estimated to be 3 m deep at the time of site investigations.	Overwintering sites provide protection from harsh winter temperatures and support overwinter survival.
	Generalized Candidate SWH	209, 255, 266 609, 661, 754	Varied	Overwintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen. The water in these features must deep enough not to freeze and have soft mud substrates.	Overwintering sites provide protection from harsh winter temperatures and support overwinter survival.
<b>Woodland Raptor Nesting Habitat</b>	Generalized Candidate SWH	WOD-117, WOD-131, WOD-331	Varied	Woodland raptors find shelter, build nests and hunt for prey in forested habitat. These woodlands are at least 30 ha in size and contain greater than 4 ha of interior forest habitat.	Large tract of unfragmented forest may provide important habitat for woodland raptors to use for shelter, build nests and hunt for prey.
<b>Seeps and Springs</b>	Generalized Candidate SWH	232, 249, 266, 267, 273, 280, 309, 369, 609, 723	Varied	This type of Significant Wildlife Habitat consists of naturally vegetated areas with evidence of groundwater upwelling. Within the 120 m Area of Investigation, these have varied plant species compositions, with the presence of seep indicator species such as water speedwell or watercress.	Wildlife may rely on open water available at seeps and springs during the winter. Seeps are also important for recharging to streams thereby contributing to fish habitat, and as habitat for a number of specialized plant species.
<b>Habitat for Species of Conservation Concern: Plants</b>	SCP-01	635	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a cultural meadow community. The dominant species observed include reed canary grass, goldenrod species, aster species and dame's rocket.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Round-leaved Hawthorn.</li> </ul>
	SCP-02	637	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a cultural meadow community. The dominant species observed include goldenrod, reed canary grass, bird's foot trefoil, and wild mint.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Round-leaved Hawthorn.</li> </ul>

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	SCP-03	648	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous forest community. The canopy consists of bitternut hickory, white elm, ironwood and trembling aspen. The sub-canopy consists of bitternut hickory, ironwood, and white elm. The shrub layer consists of English hawthorn, white elm, bitternut hickory and wild red raspberry. The ground layer consists of garlic mustard, yellow avens, thicket creeper and violet species.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel;</li> <li>• Round-leaved Hawthorn; and,</li> <li>• Slim-flowered Muhly.</li> </ul>
	SCP-04	662	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous forest community. The canopy within this young forest consists of basswood and sugar maple, with some red maple and white elm. The sub-canopy consists of sugar maple and basswood. The shrub layer consists of wild red raspberry, white ash and blue beech. The ground cover consists of starry false solomon and spotted geranium.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Hairy Bedstraw; and,</li> <li>• Slim-flowered Muhly.</li> </ul>
	SCP-05	720	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a young to mid-age deciduous forest community. The canopy layer is mainly sugar maple with fewer white elm, white ash and green ash. The sub-canopy consists of sugar maple, white elm, bitternut hickory and ironwood. The shrub layer consists of sugar maple, white ash and green ash. The ground cover consists mainly of garlic mustard with fewer spotted geranium, yellow trout lily and wild strawberry.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel; and,</li> <li>• Round-leaved Hawthorn.</li> </ul>
	SCP-06	721	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous forest community. The canopy within this mid-age forest consists of sugar maple, blue beech, ironwood and white ash. The sub canopy consists of sugar maple, blue beech and ironwood. The shrub layer consists of blue beech, white ash and sugar maple. The ground cover consists of yellow avens, poison ivy, spotted geranium and tall meadow-rue.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel.</li> </ul>
	SCP-07	648	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a cultural meadow community. Dominant species observed during site investigations consist of reed canary grass, a goldenrod species, an aster species and garlic mustard.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel;</li> <li>• Round-leaved Hawthorn; and,</li> <li>• Slim-flowered Muhly.</li> </ul>
	SCP-08	720	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a cultural meadow inclusion in a deciduous forest community.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel; and,</li> <li>• Round-leaved Hawthorn.</li> </ul>

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	SCP-09	721	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous forest community. The canopy consists of white elm, green ash, ironwood and basswood. The sub-canopy consists of white elm, basswood and green ash. The shrub layer consists of white elm, basswood and green ash. The ground cover consists of yellow avens, thicket creeper, poison ivy and white avens.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Green Dragon;</li> <li>• Pawpaw; and,</li> <li>• Round-leaved Groundsel</li> </ul>
	SCP-10	648	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a poplar deciduous forest inclusion in a deciduous forest community dominated by bitternut hickory, white elm, ironwood and trembling aspen.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel;</li> <li>• Round-leaved Hawthorn; and,</li> <li>• Slim-flowered Muhly.</li> </ul>
	SCP-11	720	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a deciduous forest inclusion in a deciduous forest community dominated by mainly sugar maple with fewer white elm, white ash and green ash.	May provide habitat for the following plant species of conservation concern: <ul style="list-style-type: none"> <li>• Burning Bush;</li> <li>• Green Dragon;</li> <li>• Pawpaw;</li> <li>• Round-leaved Groundsel; and,</li> <li>• Round-leaved Hawthorn.</li> </ul>
	SCP-12	326	>0.1 m (access road)	This confirmed Significant Wildlife Habitat consists of a mature deciduous forest. Dominant tree species observed include basswood, sugar maple, white ash, and American beech.	Confirmed habitat for Burning Bush.
	SCP-13	198	>0.1 m (access road)	This confirmed Significant Wildlife Habitat consists of a cultural meadow community. Dominant species observed during site investigations include Kentucky bluegrass and orchard grass.	Confirmed habitat for Field Thistle.
	SCP-14	757	78 m (access road)	This confirmed Significant Wildlife Habitat consists of a young deciduous forest. Dominant tree species include red pine with lesser amounts of Austrian pine, white spruce, and blue spruce.	Confirmed habitat for Cream Violet.
	SCP-15	189	114 m (turbine construction footprint)	This confirmed Significant Wildlife Habitat consists of a mature deciduous forest. Dominant tree species include bitternut hickory with equal amounts of shagbark hickory and ironwood.	Confirmed habitat for Narrow-leaved Sedge.
	SCP-16	375	29 m (access road)	This confirmed Significant Wildlife Habitat consists of a mid-age deciduous forest. Dominant tree species include sugar maple with lesser amounts of American beech, shagbark hickory and white ash.	Confirmed habitat for Perfoliate Bellwort.
	SCP-17	375	29 m (access road)	This confirmed Significant Wildlife Habitat consists of a mixed forest inclusion in a deciduous forest community. Dominant tree species include sugar maple, basswood, white ash, American beech and ironwood.	Confirmed habitat for Perfoliate Bellwort.



**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	Generalized Candidate SWH	Many	Varied	Varied; refer to Table 3.2 and Section 3.3.6.4 for descriptions of the attributes and composition of the preferred habitat for each species.	Any plant species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions.
<b>Habitat for Species of Conservation Concern: Birds</b>	SCB-01	648	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a poplar deciduous forest inclusion in a deciduous forest community dominated by bitternut hickory, white elm, ironwood and trembling aspen.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
	SCB-02	662	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a young deciduous forest community. The canopy consists of basswood and sugar maple, with some red maple and white elm. The sub-canopy consists of sugar maple and basswood. The shrub layer consists of wild red raspberry, white ash and blue beech. The ground cover consists of starry false solomon and spotted geranium.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
	SCB-03	720	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a young to mid-age deciduous forest community. The canopy layer is mainly sugar maple with fewer white elm, white ash and green ash. The sub-canopy consists of sugar maple, white elm, bitternut hickory and ironwood. The shrub layer consists of sugar maple, white ash and green ash. The ground cover consists mainly of garlic mustard with fewer spotted geranium, yellow trout lily and wild strawberry.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
	SCB-04	721	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous forest. Dominant tree species include sugar maple, blue beech, ironwood and white ash, as well as white elm, green ash and basswood.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).

**Table 3.34 Summary of Candidate Significant Wildlife Habitats Identified Through the Site Investigation**

Type of Significant Wildlife Habitat	Feature ID	Natural Areas	Minimum Distance from Project Location <sup>6</sup>	Attributes and Composition	Function
	SCB-05	722	0 m (transmission line in feature)	This potential Significant Wildlife Habitat consists of a mid-age deciduous swamp. The canopy consists of Freeman's maple with a lesser amount of white elm. The sub-canopy layer consists of Freeman's maple, white elm and green ash. The shrub layer consists of white elm, green ash, choke cherry, and common buckthorn. The ground cover consists of green ash, enchanter's nightshade and white avens.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
	Generalized Candidate SWH	Many	Varied	Varied; refer to Table 3.2 and Section 3.3.6.4 for descriptions of the attributes and composition of the preferred habitat for each species.	Any bird species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
<b>Habitat for Species of Conservation Concern: Other</b>	SCI-01	720	0 m (transmission line in feature) (>120 m of access road)	This potential Azure Bluet habitat consists of a deep pond with mineral soil substrate. The pond is located in a deciduous forest community and was estimated to be 1 m deep at the time of site investigations. There is no evidence of fish in the pond.	Any insect species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).
	Generalized Candidate SWH	Many	Varied	Varied; refer to Table 3.2 and Section 3.3.6.4 for descriptions of the attributes and composition of the preferred habitat for each species.	Any species designated as Special Concern or ranked S1, S2 or S3 and not already recognized as Endangered or Threatened by COSSARO are provincially significant and considered to be species of conservation concern. Habitats of species of conservation concern are comprised of the habitats required by those species to undertake critical life functions (e.g., breeding habitat).

### 3.4 Summary of Corrections to Records Review

Table 3.35 summarizes corrections that were made to the Records Review based on the findings of site investigations.

**Table 3.35 Summary of Corrections to Records Review**

Natural Area #	Correction	Reason for Correction
190	Vegetation Community changed from unevaluated ABCA wetland community to a Green Ash - Hawthorn Mineral Cultural Woodland Type (CUW1M).	AECOM conducted field investigations on October 14, 2011 and confirmed the ELC community to be CUW1M not a wetland community.
	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8).	AECOM conducted field investigations on October 14, 2011 and confirmed the ELC community to be FOD5-8 not a wetland community.
193	Vegetation Community changed from unevaluated ABCA wetland community to Fresh-Moist Sugar Maple – Hardwood Deciduous Forest Type (FOD6-5).	AECOM conducted field investigations on August 11 <sup>th</sup> , and confirmed the ELC community to be FOD6-5 not a wetland community.
203	Vegetation Community changed from unevaluated ABCA wetland community to Fresh - Moist Bur Oak Deciduous Forest Type (FOD9-3).	AECOM conducted field investigations on April 30 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD9-3 not a wetland community.
210	Vegetation Community changed from unevaluated ABCA wetland community to Fresh - Moist White Elm Lowland Deciduous Forest Type (FOD7-1).	AECOM conducted field investigations on August 11, 2011, November 7, 2011 and May 1st, 2012 and confirmed the ELC community to be FOD7-1 not a wetland community.
242	Vegetation Community changed from unevaluated ABCA wetland community to Fresh - Moist Sugar Maple - Lowland Ash Deciduous Forest Type (FOD6-1).	AECOM conducted field investigations on April 24 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD6-1 not a wetland community.
255	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Poplar Mixed Forest Type (FOM5-2).	AECOM conducted field investigations on May 9, 2012 and confirmed the ELC community to be FOM5-2 not a wetland community.
266	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh White Ash - Paper Birch - Cottonwood - White Cedar Deciduous Forest Type (FOD4a).	AECOM conducted field investigations on April 24 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD4a not a wetland community.
280	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8).	AECOM conducted field investigations on April 24 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD5-8 not a wetland community.
	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Large-tooth Aspen Deciduous Forest Type (FOD4e).	AECOM conducted field investigations on April 24 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD4e not a wetland community.
300	Vegetation Community changed from unevaluated ABCA wetland community to Fresh - Moist Manitoba Maple - Green Ash - White Elm - Freeman's Maple Lowland Deciduous Forest Type (FOD7c).	AECOM conducted field investigations on May 2 <sup>nd</sup> , 2012 and confirmed the ELC community to be FOD7c not a wetland community.
309	Vegetation Community changed from unevaluated ABCA wetland community to Fresh - Moist Black Walnut Lowland Deciduous Forest Type (FOD7-4).	AECOM conducted field investigations on October 3, 2011 and confirmed the ELC community to be FOD7-4 not a wetland community.
662	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Sugar Maple - Basswood Deciduous Forest Type (FOD5-6).	AECOM conducted field investigations on May 31 <sup>st</sup> , 2012 and confirmed the ELC community to be FOD5-6 not a wetland community.
701	Vegetation Community changed from unevaluated ABCA wetland community to Dry - Fresh Sugar Maple - White Ash Deciduous Forest Type (FOD5-8).	AECOM conducted field investigations on July 12 <sup>th</sup> , 2012 and confirmed the ELC community to be FOD5-8 not a wetland community.

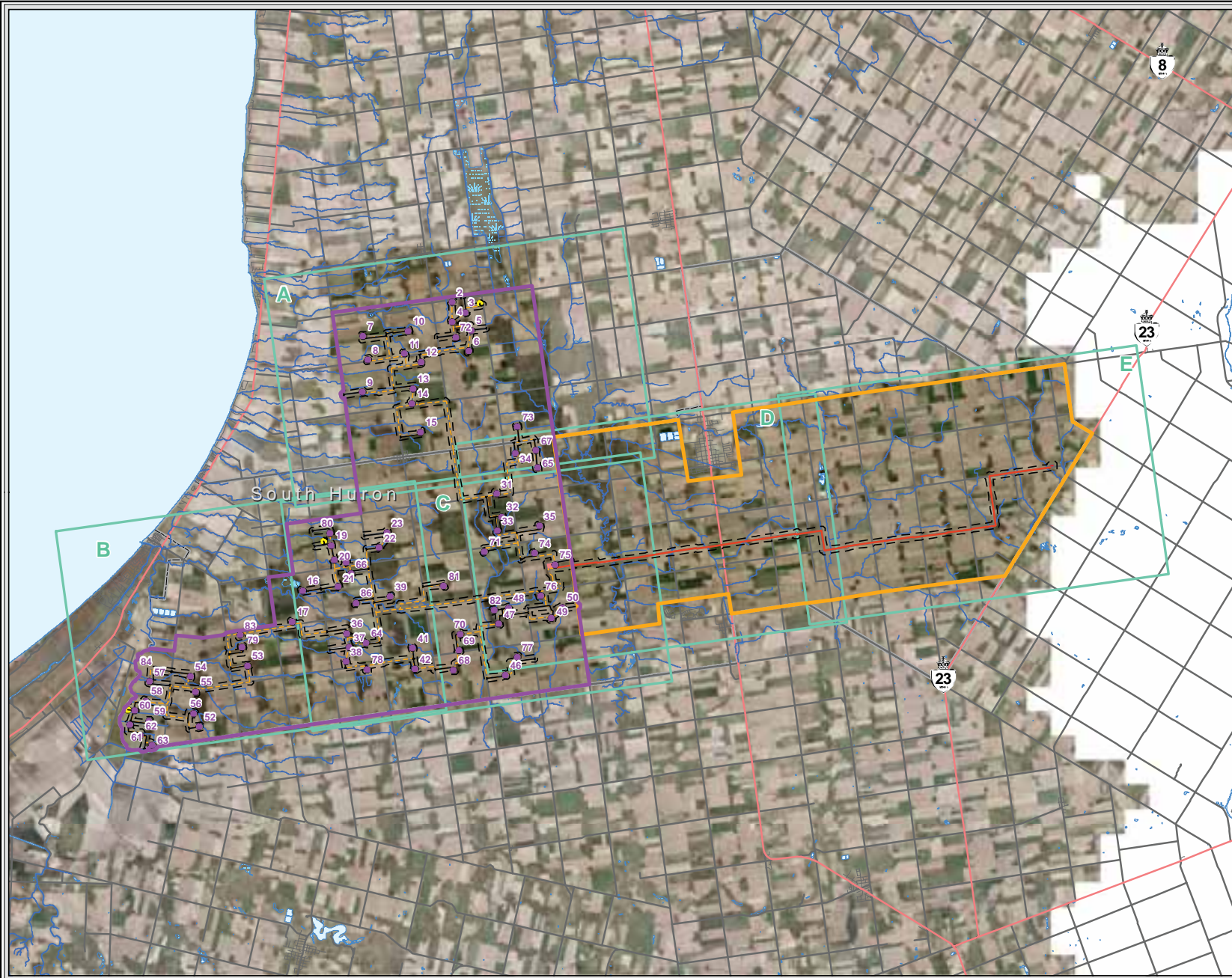
### 3.5 Summary of Key Findings of the Site Investigation

Table 3.36 summarizes the natural features identified through the Records Review and confirmed through site investigation as occurring in the Project Location or its associated 120 m Area of Investigation that were carried forward to the Evaluation of Significance.

**Table 3.36 Summary of Natural Features Carried Forward to Evaluation of Significance**

Feature	Results of Site Investigation
<b>Wetlands</b>	The following 14 wetland units or wetland complexes were confirmed within the 120 m Area of Investigation and were carried forward to Evaluation of Significance: <ul style="list-style-type: none"> <li>• WET-006, WET-008, WET-009, WET-010, WET-011, WET-012, WET-014, WET-019, WET-021, WET-025, WET-032, WET-038, WET-049 and WET-053.</li> </ul>
<b>Woodlands</b>	A total of 75 woodlands were confirmed within the 120 m Area of Investigation and were carried forward to Evaluation of Significance.
<b>Valleylands</b>	The following valleyland feature was confirmed within the 120 m Area of Investigation and was carried forward to Evaluation of Significance: <ul style="list-style-type: none"> <li>• VAL-02</li> </ul>
<b>Candidate Significant Wildlife Habitat</b>	<p>The following candidate Significant Wildlife Habitats were identified within the 120 m Area of Investigation and within 120 m of qualifying project infrastructure, and were therefore carried forward to Evaluation of Significance:</p> <ul style="list-style-type: none"> <li>• Waterfowl stopover and staging areas (terrestrial) (WSST-15 and WSST-36);</li> <li>• Reptile hibernacula (RH-01);</li> <li>• Bat maternity colonies (BMCBMC-177, BMCBMC-189, BMCBMC-215, BMCBMC-229, BMCBMC-235, BMCBMC-236, BMCBMC-242, BMCBMC-249, BMCBMC-267, BMCBMC-282, BMCBMC-285, BMCBMC-326, BMCBMC-342, BMCBMC-352, BMCBMC-358, BMCBMC-372, BMCBMC-757, BMCBMC-648 and BMCBMC-720);</li> <li>• Amphibian woodland breeding habitat (AWO-03ba, AWO-03b, AWO-04, AWO-06, AWO-07, AWO-08, AWO-09, AWO-10, AWO-11, AWO-14, AWO-17, AWO-32, AWO-24, AWO-25, AWO-26, AWO-30, AWO-35, AWO-33, AWO-34, AWO-28 and AWO-27);</li> <li>• Amphibian wetland breeding habitat (AWE-29);</li> <li>• Turtle overwintering habitat (TOW-01, TOW-02, TOW-03);</li> <li>• Habitats of plant species of conservation concern (SCP-01, SCP-02, SCP-03, SCP-04, SCP-05, SCP-06, SCP-07, SCP-08, SCP-09, SCP-10, SCP-11, SCP-12, SCP-13, SCP-14, SCP-15, SCP-16 and SCP-17);</li> <li>• Habitats of bird species of conservation concern (SCB-01, SCB-02, SCB-03, SCB-04 and SCB-05); and,</li> <li>• Habitat of insect species of conservation concern (SCI-01).</li> </ul> <p>The following candidate Significant Wildlife Habitats were identified within the 120 m Area of Investigation however not within 120 m of qualifying project infrastructure, and were therefore carried forward to the EIS as generalized candidate Significant Wildlife Habitat:</p> <ul style="list-style-type: none"> <li>• Colonial-nesting Bird Breeding Habitat (Tree/Shrub) (natural area 189);</li> <li>• Waterfowl nesting areas (natural area 209);</li> <li>• Reptile hibernacula (natural areas, 232, 609 and 695);</li> <li>• Bat maternity colonies (numerous);</li> <li>• Amphibian woodland breeding habitat (natural areas 209, 210, 232, 236, 245, 255, 258, 266, 269, 280, 309, 342, 375 and 661);</li> <li>• Amphibian wetland breeding habitat (natural areas 609 and 754);</li> <li>• Rare vegetation communities (natural area 309);</li> <li>• Habitat for area sensitive species: interior forest breeding birds (WOD-331);</li> <li>• Mature forest stands (numerous);</li> <li>• Turtle nesting habitat (natural area 209);</li> <li>• Turtle overwintering habitat (natural areas 209, 255, 266, 609, 661 and 754);</li> <li>• Woodland raptor nesting habitat (Woodland units WOD-117, WOD-131 and WOD-331);</li> <li>• Seeps and springs (natural areas 232, 249, 266, 267, 273, 280, 309, 369, 609 and 723); and,</li> <li>• Habitats of species of conservation concern (numerous).</li> </ul>

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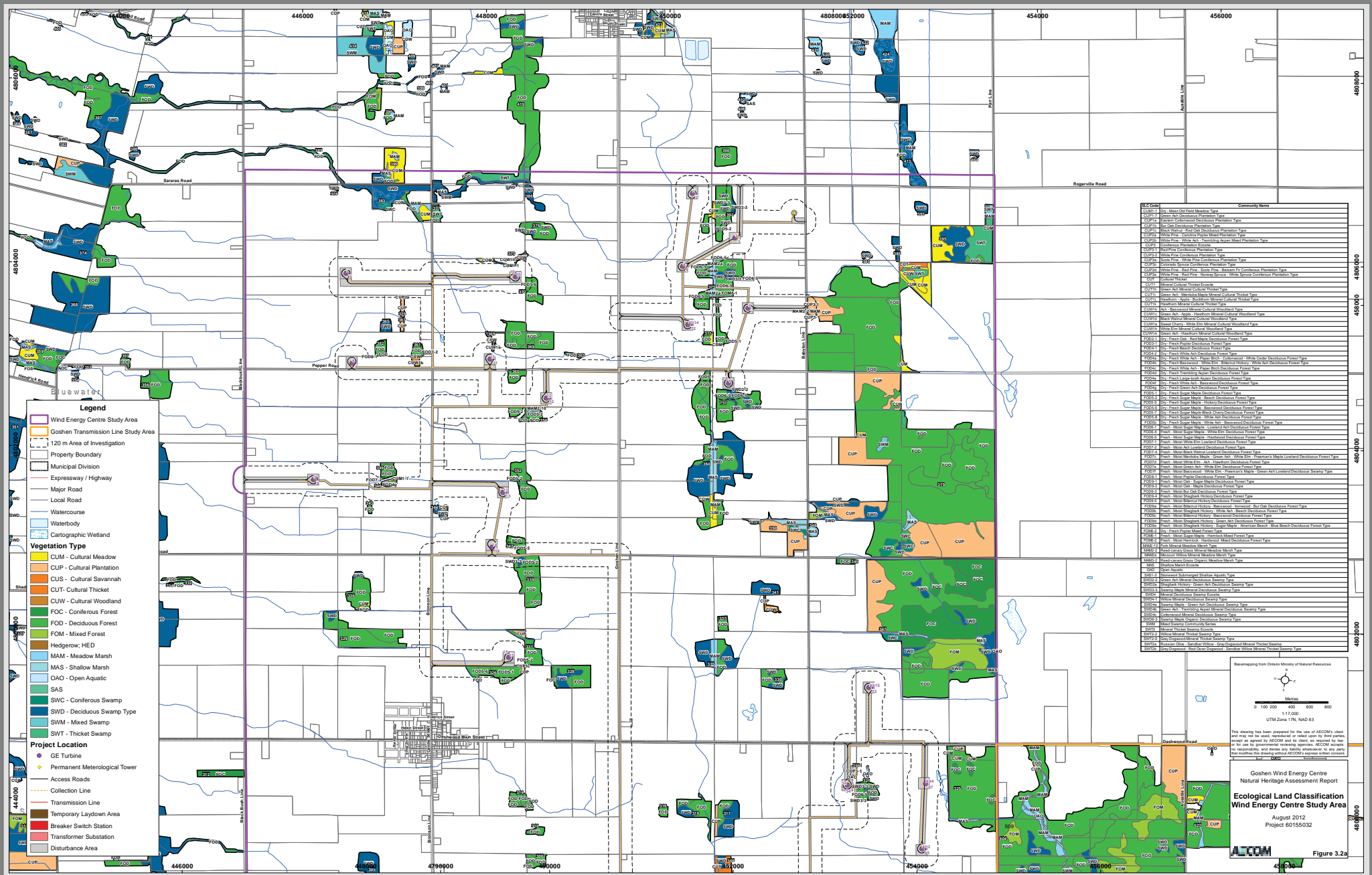
- Legend**
- Wind Energy Centre Study Area
  - Transmission Line Study Area
  - 120 m Area of Investigation
  - Municipal Division
  - ELC Map Coverage
- Project Location**
- GE Turbine
  - Permanent Meteorological Tower
  - Access Road
  - Collection Line
  - Transmission Line
  - Breaker Switch Station
  - Transformer Substation
  - Temporary Laydown Area
  - Waterbody
  - Cartographic Wetland

Basemapping from Ontario Ministry of Natural Resources  
Orthophotography: 2006, 2010

Kilometers  
0 0.75 1.5 3 4.5 6  
1:150,000  
UTM Zone 17N, NAD 83

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Goshen Wind Energy Centre  
Natural Heritage Assessment Report  
**Ecological Land Classification  
Key Map**  
August 2012  
Project 60155032



LU Code	Community Name
CU01	Dr. Mary O'Neil Park Meadow Type
CU02	Green Ash Deciduous Swamp Type
CU03	Green Ash Deciduous Swamp Type
CU04	Green Ash Deciduous Swamp Type
CU05	Green Ash Deciduous Swamp Type
CU06	Green Ash Deciduous Swamp Type
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 UTM Zone 19N, NAD 83  
 Goshen Wind Energy Centre  
 Natural Heritage Assessment Report  
 Ecological Land Classification  
 Wind Energy Centre Study Area  
 August 2012  
 Project 60155032  
 AECOM  
 Figure 3.2a

