





6.0 Woodlands

There are 40 woodlands found within 120m of the Bornish Wind Energy Centre project location, ranging in size from less than 1ha to 119.5ha. Each woodland was assigned a unique identifier (WOD). A description of each woodland is found below and a summary is compiled in Table 9. Ecological Land Classification mapping of these features can be seen in Figures 3 to 7, while detailed mapping of woodlands within the project area can be seen in Figures 8 to 12. Several woodland or forest communities were evaluated during the site investigation, which were later determined to be well outside of the final project area. These communities have not been included, as such; there are several woodland identifier (WOD) numbers missing in the sequence below.

<u>WOD-001 – Dry-Fresh Sugar Maple Basswood Deciduous Forest Type (FODM5-6)</u> This 2.1 ha rolling upland forest with a canopy dominated by sugar maple (*Acer saccharum*) with basswood (*Tilia americana*), white elm (*Ulmus Americana*) and American beech (*Fagus grandifolia*) associates. The sub-canopy contains sugar maple, basswood, white elm and white ash (*Fraxinus americana*) while the understory is comprised of sugar maple, white ash and white elm. The groundcover consists of sugar maple, poison ivy (*Rhus radicans*), white ash and Canada anemone (*Anemone canadensis*). The dripline of this woodland is located 5 m from proposed underground cabling.

WOD-002 – Moist Elm Deciduous Woodland (WODM5-2)

This community is a 4.6 ha lowland woodland with a canopy of white elm, shagbark hickory (*Carya ovate*) and basswood. The sub-canopy is characterized by white elm, basswood and shagbark hickory, while the understory is made up of white ash, basswood, white elm, and wild red raspberry (*Rubus idaeus*). The groundcover consists of white ash, basswood, barren strawberry (*Waldsteinia fragariodes*) sedge species (*carex sp.*) and poison ivy. The dripline of this woodland is located 6 m from a proposed access road and underground cabling. This woodlot also contains three wetland areas, including two duckweed floating-leaved shallow aquatic ecosites (SAF_1-3) and a red maple mineral deciduous swamp (SWDM3-1). These wetlands are discussed in the subsequent section of this report.

WOD-003 - Dry-Fresh Sugar Maple Deciduous Woodland (WODM4-3) WOD-003 is a 15.1 ha rolling upland community with a canopy and sub-canopy mainly dominated by sugar maple, white ash, American beech and hop hornbeam (Ostrya virginiana), while the understory consists of American beech, dogwood species (Cornus sp.), sugar maple and aster species (Aster sp.). The groundcover is made up of sugar maple, white ash, aster species and Virginia creeper (Parthenocissus quinquefolia). This woodland contains a silver maple mineral deciduous swamp (SWDM3-2) inclusion and an open water pond, which are discussed in the following section. The dripline of this woodland is located 6 m from a proposed access road and underground cabling.

WOD-004 - Fresh Sugar Maple Deciduous Woodland (WODM4-3)

This woodland is a 15.6 ha community including a stream channel with riverine topographic features and the dripline of this woodland is located >0.1m from a proposed access road and underground cabling. The canopy consists of sugar maple, white ash, green ash (*Fraxinus pennsylvanica*), red oak (*Quercus rubra*) and willow species (*Salix sp.*). The sub-canopy contains European buckthorn (*Rhamnus cathartica*), white ash, green ash, hawthorn species (*Crataegus sp.*), American beech and white elm. The understory is made up of European buckthorn, goldenrod species (*Solidago sp.*), aster species and white ash, while the groundcover consists of garlic mustard (*Alliaria officinalis*), aster species, poison ivy and white ash. Soil augering of this habitat determined the soil is moist sility clay with 5 cm of organics. The vegetation composition is not representative of wetland species; therefore, this was deemed a woodland. This woodland contains three complexes, including a buckthorn deciduous shrub thicket (THDM2-6), a dry-fresh sugar maple-white ash deciduous forest (FODM5-8) and a dry-fresh forb meadow (MEFM1) ecosite.

<u>WOD-006 - Dry-Fresh Sugar Maple – Basswood Deciduous Forest (FODM5-6)</u>
This forested community is a 38.9 ha community with a canopy consisting of sugar maple, basswood, white ash and American beech. The sub-canopy contains sugar maple, basswood, white ash and American beech, while the understory includes basswood, sugar maple, American beech and white ash. The groundcover consists of white ash, herb-robert (*Geranium robertianum*), goldenrod species and sugar maple. This woodland contains a man-made open water pond and a dry-fresh white pine naturalized coniferous plantation (FOCM6-1). The dripline of WOD-006 is proposed to be crossed by underground cabling, which will be avoided through the use of directional drilling.

WOD-007 - Dry-Fresh White Ash Deciduous Woodland (WODM4-2)

This is a 37.2 ha community has a canopy dominated by white ash, sugar maple and a sub-canopy consisting of white ash, sugar maple, basswood and shagbark hickory. The understory contains white ash, goldenrod species, garlic mustard and aster species, while the groundcover is made up of white ash, poison ivy and riverbank grape (*Vitis riparia*). The dripline of this woodland is 5 m from a proposed access road and underground cabling.

WOD-008 - Dry-Fresh Sugar Maple – White Ash Deciduous Forest (FODM5-8) This is a 30.6 ha rolling upland community has a canopy characterized by sugar maple, white ash and American beech, while the sub-canopy contains white ash, sugar maple, American beech and basswood. The understory consists of white ash, garlic mustard and goldenrod species, and the groundcover is made up of white ash, poison ivy, Virginia creeper and zigzag goldenrod (*Solidago flexicaulis*). This woodland contains two inclusions, including a green ash mineral deciduous swamp (SWDM2-2), which is discussed in the subsequent section and a naturalized coniferous (spruce) plantation (FOCM6). The dripline of this woodland is proposed to be crossed by underground cabling, which will be avoided through the use of directional drilling.

WOD-009 - Dry-Fresh White Ash - Hardwood Deciduous Forest (WODM4-2)

This is an 11.0 ha community with a canopy dominated by white ash and sugar maple, while the sub-canopy contains basswood, white ash, American beech and shagbark hickory. The understory is made up of basswood, goldenrod species and shagbark hickory, and the groundcover consists of poison ivy, garlic mustard and white ash. The dripline of this woodland is 4 m from proposed underground cabling.

WOD-010 – Dry-Fresh Sugar Maple – White Ash Deciduous Forest (FODM5-8) This is a 4.3 ha lowland community with a canopy containing sugar maple and white ash, while the sub-canopy consists of sugar maple, white ash and silver maple (*Acer saccharinum*). The understory is made up of sugar maple and silver maple and the groundcover is dominated by poison ivy, garlic mustard and silver maple. This woodland includes a green ash mineral deciduous swamp (SWDM2-2), which will be discussed in the next section. The dripline of this woodland is located >0.1 m from proposed underground cabling. Buffer zone protection will be outlined in the Environmental Impact Statement (EIS) Report.

WOD-012/WOD 021 Dry-Fresh Sugar Maple Deciduous Woodland (WODM4-3) This 5.8 ha community was initially surveyed as two separate natural areas. These communities were later combined as they are connected and contain the same species composition. This community has a canopy that is dominated by sugar maple, white ash and a sub-canopy that contains sugar maple, white ash, white elm and hop hornbeam. The understory includes wild red raspberry, goldenrod species, garlic mustard and aster species. The dripline of this woodland is located 47 m from proposed wind turbine #T42.

WOD-013 – Dry-Fresh Sugar Maple Deciduous Woodland (WODM4-3)

This woodland was surveyed from Roddick Road as no access was granted onto the property. This is a 10.4 ha community with a canopy containing sugar maple, white ash, hop hornbeam and basswood. The sub-canopy consists of white ash, black walnut (*Juglans nigra*), hawthorn species and sugar maple. The understory is made up of hawthorn species, apple species (*Malus sp.*), white ash and sugar maple, while the groundcover contains goldenrod species, aster species, brome species and hawthorn species. The dripline of this woodland is 28 m from proposed overhead cabling.

WOD-014 – Fresh-Moist White Elm Lowland Deciduous Forest (FODM7-1)
This forest is an 11.7 ha lowland natural area with roughly half of the area dominated by a white elm community, while the other half contains a Freeman's maple (*Acer X freemanii*) swamp. The canopy and sub canopy of the forest community are dominated by white elm, while the understory contains white elm and aster species and the ground cover is made up of garlic mustard and poison ivy. The dripline of this woodland is located >0.1 m from a proposed access road and underground cabling. Included in this forest is a Freeman's maple mineral deciduous swamp (SWDM3), which is largely dominated by Freeman's maple and contains green ash. This swamp will be further examined in the subsequent section of this report.

WOD-015 - Dry-Fresh White Ash - Hardwood Deciduous Forest (FODM4-2)

This forest is less than 1 ha with a canopy and sub-canopy that are dominated by white ash and red elm (*Ulmus rubra*). The understory contains white ash, red elm and European buckthorn, while the groundcover is dominated by poison ivy and Virginia creeper. The dripline of this woodland is located 5 m from a proposed access road and underground cabling.

<u>WOD-016 – Dry-Fresh White Ash - Hardwood Deciduous Forest (FODM4-2)</u>
This wooded area is 1.1 ha with a canopy dominated by white ash and containing white elm, shagbark hickory and sugar maple associates. The sub-canopy is dominated by white ash and also contains white elm, shagbark hickory and basswood, while the understory is made up of aster species, yellow avens (*Geum aleppicum*), sugar maple and white ash. The groundcover is largely dominated by poison ivy, garlic mustard, wild red raspberry and white ash. The dripline of this woodland is located 0.4 m away from a proposed access road and underground cabling.

WOD-018 – Dry-Fresh Sugar Maple Deciduous Woodland (WODM4-3)
This 4.3 ha woodland contains a canopy that is dominated by sugar maple and also includes American beech, white ash and basswood, while the sub-canopy consists of sugar maple, American beech, white ash and shagbark hickory. The understory is made up of goldenrod species, aster species and black raspberry (*Rubus occidentalis*), while the groundcover is dominated by poison ivy and Virginia creeper. Within this woodland there is a graminoid mineral shallow marsh (MASM1) complex, which will be further discussed in the next section. The dripline of this woodland is located 7 m from a proposed access road and underground cabling.

<u>WOD-020 – Dry-Fresh White Pine Naturalized Coniferous Plantation (FOCM6-1)</u> This 1.8 ha plantation has a canopy dominated by eastern white pine and contains a small amount of black walnut, while the sub-canopy is characterized by eastern white pine, black walnut and white ash. The understory consists of aster species and goldenrod species, while the groundcover is dominated by grass species and wild strawberry (*Fragaria virginiana*). The dripline of this woodland is located 110 m from proposed underground cabling.

<u>WOD-022 – Dry-Fresh Sugar Maple – Beech Deciduous Forest (FODM5-2)</u>
This 18.2 ha forest has a canopy and sub-canopy dominated by sugar maple and containing small amounts of American beech. The understory is almost completely dominated by spicebush (*Lindera benzoin*), while the groundcover contains poison ivy and sensitive fern (*Onoclea sensibilis*). The dripline of this woodland is located 48 m from proposed wind turbine #T26.

WOD-023 – Dry-Fresh Sugar Maple – White Ash Deciduous Forest (FODM5-8) This 4.3 ha forest was surveyed from Springbank Road, as no property access was granted for this area. The canopy of the forest consists of sugar maple, white ash and basswood, while the sub-canopy contains basswood, shagbark hickory and sugar maple. The understory could not be identified from the roadside location. The dripline of this woodland is located 14 m from a proposed access road and underground cabling.

WOD-024 – Dry-Fresh White Ash Hardwood Deciduous Forest (FODM4-2)

This 21.0 ha forest was surveyed from the property directly south of the western portion of the woodlot where property access was granted. The canopy is dominated by white ash and sugar maple, while the sub-canopy consists of shagbark hickory, sugar maple and red oak. The understory contains wild red raspberry, European buckthorn and aster species, while the groundcover is made up of wild strawberry and poison ivy. The dripline of this woodland is located 9 m from proposed overhead cabling.

WOD-025 - Green Ash Mineral Deciduous Swamp (SWDM2-2)

This 1.9 ha lowland woodland was surveyed from Coldstream Road, as property access was not granted to the property. The canopy of the woodland consists of green ash, trembling aspen (*Populus tremuloides*) and silver maple, while the subcanopy contains willow species. The understory is dominated by common reed grass (*Phragmites australis*), while the groundcover consists of goldenrod species, aster species and New England aster. The dripline of this woodland is located 35 m from proposed overhead cabling.

WOD-027 – Dry-Fresh White Ash Hardwood Deciduous Forest (FODM4-2)

This 12.6 ha natural area was surveyed from the property directly south of the forest, as access to this property was not granted. The canopy is dominated by white ash and sugar maple, while the sub-canopy contains mostly trembling aspen. The understory was not discernible from the location, while the groundcover was identified as containing goldenrod species and New England aster. This forest also contains an apple deciduous shrub thicket (THDM2-10) inclusion. The dripline of this woodland is located 6 m from a proposed access road.

WOD-028 – Dry-Fresh Basswood Deciduous Forest (FODM4-4)

This 3.7 ha natural area was surveyed from the property directly north of the forest, as access to this property was not granted. The canopy of the forest contains basswood, sugar maple and shagbark hickory, while the sub-canopy contains basswood and shagbark hickory. The understory consists of shagbark hickory, black raspberry and aster species, while the groundcover is dominated by wild strawberry. The dripline of this woodland is located 6 m from a proposed access road and underground cabling.

WOD-029 – Fresh-Moist Elm Deciduous Woodland (WODM5-2)

This 6.1 ha woodland was surveyed from the property to the west of the community as access to this property was not granted. The canopy of this woodland contains white elm, shagbark hickory, white ash and white oak, while the sub-canopy consists of shagbark hickory, white elm and dogwood species. The understory is dominated by goldenrod species, aster species and wild red raspberry, while the groundcover is dominated by wild strawberry. The dripline of this woodland is located 2 m from proposed underground cabling.

WOD-030 - Silver Maple Mineral Deciduous Swamp (SWDM3-2)

This 1.5 ha lowland woodland was surveyed from the property south of the community as access to this property was not granted. The canopy is dominated by silver maple, Freeman's maple and green ash, while the sub-canopy contains

mainly silver maple and Freeman's maple. The understory is made up of silver maple, goldenrod species and common reed grass, while the groundcover was indistinguishable from the survey location. The dripline of this woodland is located 73 m from a proposed access road and cabling.

WOD-031 – Dry-Fresh White Oak Woodland (WODM3-3)

This 3.0 ha rolling upland community was surveyed from the property directly north of the woodland, as access to this property was not granted. The canopy is dominated by white oak, while the sub-canopy contains basswood, shagbark hickory and white ash. The understory is largely made up of Canada goldenrod (*Solidago canadensis*) and New England aster, while the groundcover consists of wild strawberry, herb-robert and poison ivy. The dripline of this woodland is located 64 m from a proposed access road and underground cabling.

WOD-038 - Naturalized Coniferous Plantation (FOCM6)

This 0.8 ha lowland plantation was surveyed from Kerwood Road as access to this property was not granted. The canopy is dominated by Scots pine (*Pinus sylvestris*) and contains white spruce (*Picea glauca*), eastern white pine and basswood. The sub-canopy includes Scots pine, white spruce and basswood, while the understory was unidentifiable from the roadside location. The groundcover contains wild teasel (*Dipsacus fullonum ssp. Sylvestris*) and grass species. The dripline of this woodland is located 37 m from supporting infrastructure.

WOD-039 – Naturalized Coniferous Plantation (FOCM6)

This 5.2 ha lowland plantation was surveyed from Kerwood Road as access to this property was not granted. The canopy is dominated by white spruce, Scots pine and eastern white pine, while the sub-canopy contains white spruce and white pine. The understory and groundcover were unidentifiable from the roadside location. The dripline of this woodland is located 15 m from proposed overhead cabling.

WOD-045 – Naturalized Coniferous Plantation (FOCM6)

This 10.6 ha plantation was surveyed from Nairn Road as access to this property was not granted. The canopy is dominated by white spruce, while the sub-canopy contains mainly eastern white cedar (*Thuja occidentalis*) and low numbers of eastern red cedar (*Juniperus virginiana*). The understory includes gray dogwood (*Cornus racemosa*) and willow species, while the groundcover is dominated by goldenrod species, grass species and riverbank grape. The dripline of this woodland is located 15 m from proposed overhead cabling.

WOD-046 – Dry-Fresh Sugar Maple – Basswood Deciduous Forest (FODM5-6) This 4.4 ha forest was surveyed from Nairn Road as access to this property was not granted. The canopy is dominated by sugar maple and basswood with smaller numbers of bur oak (*Quercus macrocarpa*) and silver maple. The sub-canopy largely consists of basswood and sugar maple and also includes silver maple and shagbark hickory. The understory is made up of sugar maple, bur oak and shagbark hickory, while the groundcover contains goldenrod species. The dripline of this woodland is located 12 m from proposed overhead cabling.

WOD-047 - Fresh-Moist Deciduous Woodland (WODM5)

This 1.6 ha riverine woodland was surveyed from Elginfield Road as access to this property was not granted. The canopy and sub-canopy are dominated by black locust (*Robinia pseudo-acacia*) and contain silver poplar (*Populus alba*) and Scots pine. The understory consists of Scots pine, eastern red cedar and European buckthorn, while the groundcover is dominated by cattail species (*Typha sp.*), goldenrod species and grass species. The dripline of this woodland is located 20 m from proposed overhead cabling. This natural area is further discussed in the Valleyland section of the report.

WOD-048 – Fresh-Moist Mixed Woodland (WOMM3)

This 119.5 ha lowland community was surveyed from Elginfield Road as access to this property was not granted. The canopy is dominated by white ash and Scots pine, while the sub-canopy largely consists of Scots pine, common apple and eastern red cedar. The understory includes common apple and red cedar, while the groundcover contains goldenrod species and grass species. The dripline of this woodland is located 5 m from proposed overhead cabling.

<u>WOD-050 – Dry-Fresh White Pine Naturalized Coniferous Plantation (FOCM6-1)</u> This 3.0 ha plantation has a canopy and sub-canopy composed of eastern white pine, while there is no understory present. The groundcover contains grass species, goldenrod species and wild red raspberry. This plantation also contains a naturalized deciduous plantation consists entirely of white ash. The dripline of this woodland is 3 m from proposed supporting infrastructure.

<u>WOD-051 – Dry-Fresh Sugar Maple – Hickory Deciduous Forest (FODM5-5)</u>
This 11.1 ha forest has a canopy consisting of sugar maple, shagbark hickory and American beech, while the sub-canopy includes sugar maple, American beech and shagbark hickory. The understory is mainly dominated by goldenrod species and wild red raspberry, while the groundcover contains grass species and garlic mustard. The dripline of this woodland is located 51 m from proposed supporting infrastructure.

<u>WOD-052 – Dry-Fresh White Ash – Hardwood Deciduous Forest (FODM4-2)</u>
This 25.0 ha forest has a canopy containing white ash, sugar maple and white elm, while the sub-canopy is dominated by sugar maple, white ash and white elm. The understory includes European buckthorn and silky dogwood (*Cornus amomum ssp. Oblique*), while the groundcover mainly contains grass species, reed canary grass (*Phalaris arundinacea*) and goldenrod species. This forest contains an 11.7 ha buckthorn deciduous shrub thicket (THDM2-6), which is dominated by European buckthorn. The dripline of this woodland is located 10 m from proposed supporting infrastructure.

WOD-053 – Naturalized Coniferous Plantation (FOCM6)

This 1.0 ha plantation contains only white spruce and eastern white cedar. This plantation does not contain a sub-canopy or understory, while the groundcover is dominated by grass species. The dripline of this woodland is located 15 m from proposed supporting infrastructure.

