Oxford County

Growing stronger together

Managed Forest Plan

2018-2027

Authored by Eleanor Reed, RPF
Submitted February 2018

Contents

Managed Forest Plan

This Managed Forest Plan is for the 20 year period from: Jan. 1, 2018 to December 31, 2037. The detailed work schedule is for the 10-year period from: January 1, 2018 to December 31, 2027.

Section 1: Property Information

1.1 Registered Property Owner(s)

Name(s):	Oxford County
Mailing Address:	21 Reeve Street, P.O. Box 1614, Woodstock, Ontario
Postal Code:	N4S 7Y3
Telephone:	519-539-9800
Fax:	519-537-1053

1.2 Plan Author Information

Name(s):	Eleanor J. Reed, R.P.F.
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1.3 Property Information

The forests within Oxford County have been grouped following the convention in Bylaw 5854-2016, with the former Agreement Forests in Schedule A and County Lands in Schedule B. This format will be followed throughout the plan. Several properties have been included that do not have forest cover; however there is potential for tree-planting on these properties.

Table 1: Forests within Oxford County properties

Sched.	Prop #	Name	Address	Township	Area (ha)	Area (ac)
A	1	Chesney Tract	846033 Road 11	Blandford-Blenheim	41.3	102.37
A	2	Creditville Tract	814929 Muir Line	Norwich	20.2	50.06
A	3	Drumbo Tract	807297 Oxford Rd 30	Blandford-Blenheim	17.5	43.29
A	4	Embro Tract	355892 35th LINE	Zorra	38.3	95.07
A	5	Hall Tract	847021 Twp Rd 11	Blandford-Blenheim	76.8	190.41
A	6	Lakeside Tract	236697 23rd LINE	Zorra	40.4	100.14
A	7	McBeth Tract	363398 McBeth Rd	South/West Oxford	26.6	66.01
A	8	Vance Tract	565948 Towerline Rd	Norwich	40.3	99.86
A	9	Zenda Tract	364790 Evergreen St	Norwich	40.4	100.07
Total					**341.6**	**847.28**

B	1	West Zorra (Embro) Closed Landfill	335381 33rd Line	Zorra	0.0	0.00
B	2	North Oxford (Thamesford) Closed Landfill	622914 Road 62	Zorra	0.0	0.00
B	3	Lakeside Closed Landfill	256321 25th LINE	Zorra	35.6	88.20
B	4	Highland Shop Buffer	884107 Road 89	Zorra	6.3	15.60
B	5	Oxford Cty Tavistock Lagoon	227 William St E	East Zorra	7.1	17.70
B	6	Oxford County Plattsville Lagoon	906885 Twp Rd 12	Blandford-Blenheim	0.0	0.00
B	7	Blandford-Blenheim Closed Landfill Pt A	846651 Twp Rd 9	Blandford-Blenheim	0.0	0.00
B	7	Blandford-Blenheim Closed Landfill Pt B	846141 King Rd	Blandford-Blenheim	3.8	9.40
B	10	Holbrook Closed Landfill	345071 Quaker St	Norwich	7.7	19.10
B	11	Holbrook Closed Landfill Buffer Lands	345071 Quaker St	Norwich	5.1	12.70
B	12	Oxford County Norwich Lagoons		Norwich	9.0	22.30
B	13	Otterville Closed Landfill	772481 Hwy 59	Norwich	1.3	3.20
B	14	Tillsonburg Closed Landfill		Town of Tillsonburg	32.3	80.00
B	15	Oxford Cty Waste Mgt Facility Buffer Lands	384108 Salford Rd	South/West Oxford	1.5	3.70
B	16	Oxford County Waste Management Facility	384060 Salford Rd	South/West Oxford	0.8	1.90
B	17	Oxford County Beachville Park		South/West Oxford	27.9	69.30
B	18	Thornton Wellfield, Hodge's Pond		South/West Oxford	286.9	711.60
Total					**425.3**	**1054.70**

Section 2: Background Information

2.1 Soils, Geology and Climate

This portion of Ontario has been subjected to repeated glaciations and the bedrock is covered by a mantle of drift, consisting of boulder clay, sand, gravel and clay, which vary from a few feet to several hundred feet in thickness.

Several textural classes of tills are present in Oxford County. Tills with a clay or a clay loam texture occur along the border of Perth County and rather extensively east and south of Woodstock. Tills with a loam or silt loam texture are interspersed with water laid sediments throughout the central portion of the county, particularly in North Oxford and West Oxford Townships. The principal areas of outwash sands and gravels are in Blandford, Blenheim and South Norwich Townships. Other deposits that are somewhat similar to outwash in the nature of the materials are Kame and Esker deposits; such a deposit occurs in the vicinity of Lakeside. The term lacustrine, or lake laid, has been applied to fine textured sediments, occurring in many smooth level areas such as found in East Nissouri and West Zorra Townships. These probably represent areas of local ponding and were of short duration since the depth of the deposits are thin and sorting of the materials is not well defined.

This region of Ontario has a varied relief and possesses the typical land form features associated with Continental glaciations. Elongated hills, known as drumlins, occupy much of the central part of the county, while the southern half consists of sand plains of deltaic origin interchanged with moraine ridges. (Soils Survey of Oxford County, 1961)

The Geographic Land Information and Mapping Resource (GLIMR) were used to identify soil texture in Oxford County forests. In general the soils are fertile loams. However plant species, topography and the prevalence of significant wetlands (GLIMR, Land Information Ontario) indicates that the soils may have imperfect to poor drainage, particularly in the former Agreement Forest properties (Schedule 'A') which were abandoned from agriculture.

Table 2: Soil texture found in Oxford County forests

Sched.	Prop #	Name	Soil texture
A	1	Chesney Tract	SL
A	2	Creditville Tract	SL
A	3	Drumbo Tract	Loam
A	4	Embro Tract	Loam
A	5	Hall Tract	Loam/Org
A	6	Lakeside Tract	fSL, Org
A	7	McBeth Tract	CL
A	8	Vance Tract	Si-CL
A	9	Zenda Tract	SiL/Org
B	1	West Zorra (Embro) Closed Landfill	Loam
B	2	North Oxford (Thamesford) Closed Landfill	SL
B	3	Lakeside Closed Landfill	SL
B	4	Highland Shop Buffer	SiL
B	5	Oxford Cty Tavistock Lagoon	Si-CL
B	6	Oxford County Plattsville Lagoon	Loam
B	7	Blandford-Blenheim Closed Landfill Pt B	Loam/Org
B	10	Holbrook Closed Landfill	CL
B	11	Holbrook Closed Landfill Buffer Lands	CL
B	12	Oxford County Norwich Lagoons	SL
B	13	Otterville Closed Landfill	LS
B	14	Tillsonburg Closed Landfill	LS - SiL
B	15	Oxford County Waste Management Facility Buffer Lands	CL
B	16	Oxford County Waste Management Facility	CL
B	17	Oxford County Beachville Park	SL/Org
B	18	Thornton Wellfield, Hodge's Pond	SL/Org

Oxford County experiences a uniform distribution of precipitation and a long growing season. The County includes rich agricultural land and there is potential for high quality forest products.

2.2 Forest Regions

Oxford County is situated in a transition zone between two forest regions, home to species from both zones.

Great Lakes–St. Lawrence forest region

The southern portion of the Great Lakes–St. Lawrence forest extends into the populated areas of Ontario. The Great Lakes–St. Lawrence forest is dominated by hardwood forests, featuring species such as maple, oak, yellow birch, white and red pine. Coniferous trees such as white pine, red pine, hemlock and white cedar, commonly mix with deciduous broad-leaved species, such as yellow birch, sugar and red maples, basswood and red oak. Much of the forest in the Great Lakes–St. Lawrence forest is uneven aged.

The Great Lakes–St. Lawrence region is home to a wide variety of wildlife, including:

- predators such as black bear, wolves
- large ungulates like white-tailed deer and moose
- many small mammals such as beaver, muskrat, otter
- Pileated woodpecker and various migratory birds

Deciduous forest region

The deciduous forest is the southernmost region in Ontario, dominated by agriculture and urban areas. This region has largely been cleared with scattered woodlots remaining on sites too poor for agriculture. This forest generally has the greatest diversity of tree species, while at the same time having the lowest proportion of forest.

It has most of the tree and shrubs species found in the Great Lakes–St. Lawrence forest, and also contains black walnut, butternut, tulip, magnolia, black gum, many types of oaks, hickories, sassafras and red bud — species commonly found in Ohio, Pennsylvania and the Carolinas in the USA.

The deciduous forest region has the most diverse forest life in Ontario. The region has many rare mammals, birds, plants, insects, reptiles and amphibians such as:

- sassafras and tulip tree
- southern flying squirrel and red-bellied woodpecker
- black rat snake, milk snake and gray tree frog

(Source: www.ontario.ca/page/forest-regions)

2.3 Federal, Provincial and local policies and regulations

The properties may be subject to some of the following policies and regulations.

The properties do not fall within the Greenbelt or Oak Ridges Moraine.

Hunting and use of off-road motorized vehicles is regulated on County lands and enforced by County By-law 5854-2016.

The Municipal Act (2001) and the Forestry Act (1998) allow municipalities in Ontario to pass forest conservation by-laws to regulate tree cutting. The Oxford County Woodlands Conservation Bylaw 2006 helps to conserve and improve woodlands in the County. Commercial timber harvesting on County properties must have a prescription developed by a Qualified Ontario Professional Foresters Association (OPFA) member and follow 'good forestry practices' as defined in the Forestry Act. 'Good forestry practices' means the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of the landscape. Trees must be marked prior to harvesting.

The County lands are subject to the Endangered Species Act (2007). The Ministry of Natural Resources & Forestry (MNR&F): Species at Risk Biologist will be able to determine whether a species of concern or its habitat has been noted on a property. The biologist should be consulted during the process of developing a harvest prescription. The species at risk and/or its habitat can be protected by designating season of harvest, leaving protective reserves or making adjustments to tree marking prescriptions. The MNR& F Land Information Ontario: Natural Heritage Areas mapping tool indicated that a number of species tracked by the provincial government have been found on the properties, Table 3. These species may be rare, threatened or endangered. In addition, there may be Butternut trees on the properties.

Table 3: NHIC Tracked Species in Oxford County forests

Sched.	Prop #	Name	NHIC: Tracked species
A	1	Chesney Tract	Snapping Turtle
A	2	Creditville Tract	Snapping Turtle
A	3	Drumbo Tract	Greater Redhorse, Wavy-rayed Lampmussel
A	4	Embro Tract	na
A	5	Hall Tract	King Rail, Acadian Flycatcher, Snapping Turtle
A	6	Lakeside Tract	na
A	7	McBeth Tract	Bobolink, Blanding's Turtle, Least Bittern, Eastern Milksnake
A	8	Vance Tract	Snapping Turtle
A	9	Zenda Tract	Snapping Turtle, Bobolink
B	1	W. Zorra (Embro) Closed Landfill	na
B	2	N. Oxford (Thamesford) Closed Landfill	Bobolink
B	3	Lakeside Closed Landfill	Snapping Turtle
B	4	Highland Shop Buffer	Snapping Turtle
B	5	Oxford Cty Tavistock Lagoon	na
B	6	Oxford County Plattsville Lagoon	Snapping Turtle, Bobolink, Eastern Meadowlark, Black Redhorse
B	7	Blandford-Blenheim Closed Landfill	King Rail, Acadian Flycatcher, Snapping Turtle
B	10	Holbrook Closed Landfill	Snapping Turtle, Eastern Meadowlark
B	11	Holbrook Closed Landfill Buffer Lands	Snapping Turtle, Eastern Meadowlark
B	12	Oxford County Norwich Lagoons	Eastern Milksnake, Snapping Turtle
B	13	Otterville Closed Landfill	Eastern Milksnake
B	14	Tillsonburg Closed Landfill	Cerulean Warbler, Taper-leaved Water horehound, Weak Bluegrass, Snapping Turtle, Eastern Sand Darter, Greater Redhorse, RESTRICTED SPECIES, Lowland Brittle Fern, Eastern Burning Bush, Riverine Clubtail, Laura's Clubtail
B	15	Oxford County Waste Management Facility Buffer Lands	Snapping Turtle
B	16	Oxford County Waste Management Facility	Snapping Turtle
B	17	Oxford County Beachville Park	Spiny Softshell, Eastern Milksnake, Chimney Swift
B	18	Thornton Wellfield, Hodge's Pond	Snapping Turtle, River Bluet, Bobolink, RESTRICTED SPECIES

All of the County properties are part of the Lake Erie basin and fall within a Conservation Authority watershed. These partners should be consulted with regard to development proposals or stream crossings and for assistance with tree planting.

Image 1: Conservation Authorities within Oxford County
Image source: http://www.camaps.ca

Section 3: History and Significance of County Forests

3.1 Forest History

Forest and Agricultural History

Oxford County was first settled by European immigrants in 1794 (Tchir and Johnson 2000). The forest at that time was dense, with only a few openings of marsh, bog and willow meadow and the trees were large, an average of 3 to 6 feet in diameter. The principle cover type of the original upland forest in Oxford County was sugar maple, followed by beech and elm. The presence of the maple-beech forest was an indication of where the best soil for producing profitable crops would be found. Norfolk and southern Oxford had enormous oaks and pines on well drained soils, both of which were in great demand for square timber. The timber industry thrived in the 1830's and 1840's and once these merchantable species were removed, the lands were settled.

Swamps and poorly drained soils were often located at the head waters and formed large natural surface water storage areas. Hemlock and cedar were found near the streams while the swamps were primarily composed of white elm, cedar and soft maple.

Major deforestation occurred from 1850 to 1890. The attitude toward forests at the time was that they were obstacles to agriculture and development. It was also thought that timber was inexhaustible. By 1860, approximately 60% of the forests were depleted, and by 1910 over 90% of the forests were gone with the wood used for an ever growing number of uses.

In the early 1900's it was common to see abandoned farms throughout south Oxford because of the loss of organic material, which depleted the fertility of the sandy soils. Attention to the environment grew as a result of the over-clearing and government programs were introduced to reforest the marginal lands to conserve soil and protect water sources. (The Oxford Natural Heritage Study Final Report, October 18, 2006)

County and Township Boundaries

The boundaries of Oxford County for most of its existence were established in 1850 with the implementation of the Baldwin Act. In 1855, Norwich Township in the county's southeast was divided into North and South townships to accommodate significant population levels in that area. Except for this adjustment, the township boundaries within the county remained intact until the late 20th century.

On 1 January 1975, major revisions to Oxford County's structure took effect when the townships were reduced to the current five under an amalgamation. Three urban municipalities also remained, namely Ingersoll, Tillsonburg and Woodstock. Today's county boundaries also show slight adjustments to include the urban areas of Tavistock in the north and of Tillsonburg in the south. (Wikipedia)

County of Oxford Forest Tracts (formally called Agreement Forests)

Agreement Forest were parcels of land owned by townships, counties and regional municipalities or conservation authorities and managed for forestry purposes under long-term agreement by the Province of Ontario through the Ministry of Natural Resources.

The County of Oxford first began acquiring abandoned farmland during the 1940's, with the intent to reforest these sites. The last two properties were acquired in 1974, with a total of 344.2 hectares (850.2 acres) within 9 tracts of land.

Tree planting began in 1944 and continued until 1978. Other work over the decades included weed control, pest control and pruning. In some plantations there was work to release conifers from Poplar competition, Scots pine removal and a first row thinning. Many plantations experienced insect and disease issues including White pine Weevil, White pine Blister rust and 'Red pine Decline'.

The original agreement between the Ministry of Natural Resources (then Lands and Forests) was dated September 1, 1950. This was subsequently replaced by a thirty-nine year agreement dated March 31, 1961 and ending on March 31, 2000. A termination

agreement between the Ministry of Natural Resources and the County of Oxford was signed on August 30, 2000. The County of Oxford is now responsible for maintaining these parcels of land.

The goal of management for the Oxford County Forest is to manage the properties for "forestry purposes". Forestry purposes include the production of wood and wood products, provision of proper environmental conditions for wildlife, recreation, protection against erosion, scientific research and protection and production of water supplies.

In 2006 the County of Oxford obtained the services of a forestry consultant (GWG Resources) to prepare management plans for the County Tracts. The tree-marking and harvesting took place between 2006 and 2011. All Schedule 'A' plantations were thinned except McBeth, Embro 'North' and Drumbo.

County of Oxford Lands

The County of Oxford owns a large number of properties, many of which contain some forest area. These properties were originally Township properties purchased over the years to be used for sewage lagoons, landfills, buffer lands or water supply protection. After amalgamation the landfills were capped and closed.

Some tree-planting has taken place through the 50 Million Trees Program and with the assistance of the Upper Thames Conservation Authority on Thornton Wellfield and Hodge's Pond properties. Timber harvesting has taken place at the Lakeside Closed Landfill and at the Thornton Wellfield properties since 2011.

Agricultural use continues through rental agreements with neighbouring farmers. There may be opportunities for tree planting in various locations as the rental agreements come to an end. Open areas on closed landfill sites and at lagoon properties may provide opportunities for tree planting. Partnership with Ducks Unlimited to restore wetlands at several locations will provide tree planting opportunities on berms. Under-planting may be needed on several sites to establish a variety of species where natural regeneration is lacking or Ash dominates.

Insects, Disease and Invasive Species

Beech bark disease (BBD) is a non-native insect-fungus complex caused by the beech scale (Cryptococcus fagisuga) and the canker fungus Neonectria faginata. In 1999, BBD was officially confirmed in Ontario, and has since spread throughout most of the species' local range. Beech bark disease has dramatically altered hardwood forest structure and composition across northeastern North America. Most Beech trees in Oxford County are dead or dying. The loss of Beech trees has a significant impact on wildlife but less of a financial loss due to the low commercial value of the trees. In one property (Norwich County Lagoon) the extensive over story mortality has resulted in prolific root-sprouting leading to the development of understory thickets of clonal small-stemmed beech.

The Emerald Ash Borer (EAB) was first detected in North America in 2002, but probably arrived on this continent at least a decade earlier. Typically, within six years of an infestation arriving in a woodlot, more than 99% of the ash trees have been killed. Since its arrival in Oxford County, it has killed many trees and is present in all properties on trees as small as 10 centimeters in diameter. The EAB causes considerable economic and ecological impacts. Forest management efforts from 2008-2011 focused on harvesting most merchantable Ash trees on County properties. The extensive mortality in all properties increases the likelihood of invasion of forests by invasive plants such as Buckthorn.

Common Buckthorn is native to Europe. It was likely introduced around the 1880s, becoming widespread in the early 1900s. Common Buckthorn is shade and drought tolerant. It is now found throughout Oxford County and grows in a wide range of habitats, spreading rapidly along roadsides, fence lines, woodland edges, and in pastures and abandoned fields. Buckthorn fruit has a laxative effect on wildlife which helps to widely distribute the seeds. Common Buckthorn out-competes native plants and tree seedlings, reduces biodiversity, and degrades the quality of wildlife habitat.

Garlic mustard is a non-native invasive plant present in all Oxford County properties. Garlic Mustard forms dense monocultures that reduce the biodiversity and

aesthetic value of natural areas. The effects of Garlic Mustard on ecosystems are long-lasting and may permanently alter forests, even after removal. It releases allelopathic chemicals that change soil chemistry and prevent growth of other plants and trees. It outcompetes and actively displaces native woodland plants, many of which are now listed as species at risk.

3.2 Importance of the Properties to the Surrounding Landscape

The properties are for the most part, small isolated patches of forest within a mainly agricultural and rural land-base. Forest cover in the County is relatively low and below the ideal of 30% cover to maintain species and watershed health. The County is a significant forest landowner and there is potential to increase forest cover on County properties through tree planting.

The properties are often located in Provincially Significant Wetlands or Significant Valleylands. Provincially Significant Wetlands (PSWs) are those areas identified by the province as being the most valuable. They are determined by a science-based ranking system known as the Ontario Wetland Evaluation System (OWES). This Ministry of Natural Resources & Forestry (MNR&F) framework provides a standardized method of assessing wetland functions and societal values, which enables the province to rank wetlands relative to one another. Valleylands means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year. Wetlands are a very important part of the natural ecosystem and the water cycle. They act as filters by removing sediment, nutrients, and bacteria from water that travels through them. Wetlands also provide natural flood control, acting like a sponge to absorb water, and gradually release it over a longer period of time instead of all at once. The Ministry of Natural Resources & Forestry: Land Information Ontario and the Oxford County: Geographic Land Information and Mapping Resource websites were searched for significant natural heritage features. Table 4 shows that almost 80% of the County Forests contain significant wetlands, as do 50% of the County Lands.

Table 4: Natural Heritage Values on County Lands

Sched.	Prop #	Name	GLIMR: Natural & Cultural Resources	LIO/NHIC: Wetlands
A	1	Chesney Tract		
A	2	Creditville Tract	PSW: Class 3	
A	3	Drumbo Tract		
A	4	Embro Tract	Significant Valleylands	
A	5	Hall Tract	PSW: Black River Swamp	
A	6	Lakeside Tract	PSW: Lakeside Wildwood Complex	
A	7	McBeth Tract	PSW: Mud Lake, Class 2	
A	8	Vance Tract	Class 3 Wetland	
A	9	Zenda Tract	Significant Valleylands	Zenda Tract Evaluated
B	1	W. Zorra (Embro) Closed Landfill		
B	2	N. Oxford (Thamesford) Closed Landfill		
B	3	Lakeside Closed Landfill	PSW: Lakeside Wildwood Complex	
B	4	Highland Shop Buffer	Significant Valleylands	
B	5	Oxford Cty Tavistock Lagoon		
B	6	Oxford County Plattsville Lagoon		
B	7	Blandford-Blenheim Closed Landfill	PSW: Black River Swamp	
B	10	Holbrook Closed Landfill	Significant Valleylands	PSW: Otter Creek Wetland Complex
B	11	Holbrook Closed Landfill Buffer Lands	Significant Valleylands	PSW: Otter Creek Wetland Complex
B	12	Oxford County Norwich Lagoons		
B	13	Otterville Closed Landfill		
B	14	Tillsonburg Closed Landfill	Big Otter Creek, Life Sci ANSI	
B	15	Oxford County Waste Management Facility Buffer Lands		
B	16	Oxford County Waste Management Facility		
B	17	Oxford County Beachville Park		PSW: Thames River Wetland
B	18	Thornton Wellfield, Hodge's Pond	PSW: Cedar Creek Swamp	

The large forested area at the Thornton Wellfield/Hodge's Pond property creates 'interior forest conditions'. Forest interior habitat is that portion of a stand which is at least 100 metres from any edge of the stand. A stand with suitable interior habitat should be at least 300 metres in diameter (a 100- metre buffer around the outside and an interior which is 100 metres across). Interior habitat is vital for certain species

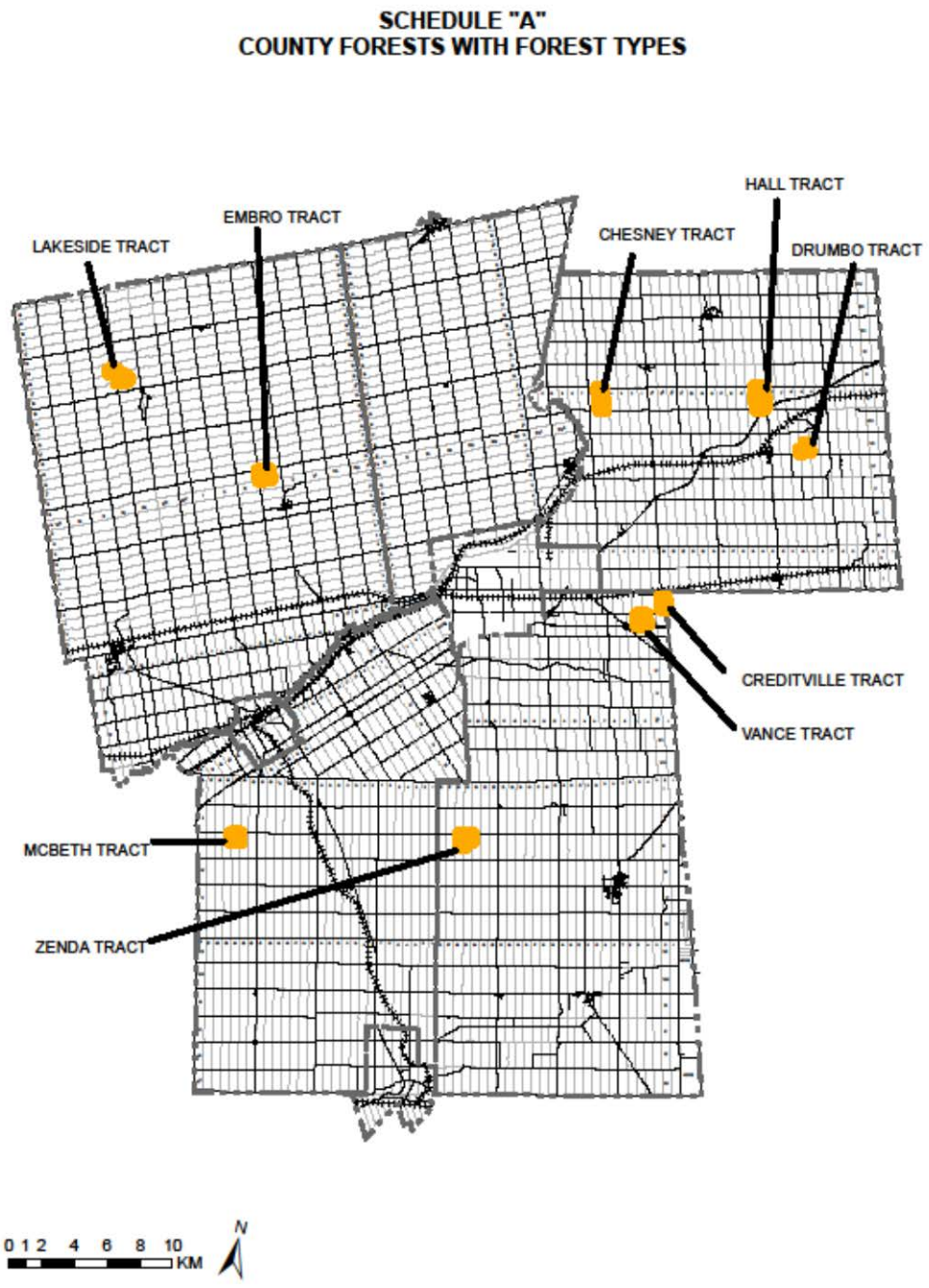
(particularly some warblers) which need solitude and shelter away from the disturbances and nest predators (Raccoons, Blue Jays) which are more frequent and abundant around the edges. These birds are also very susceptible to nest parasitism from Cowbirds, having never evolved mechanisms to deal with foreign eggs in their nests. Cowbirds live along forest edges only, shunning interior habitats. Other species of wildlife (Fisher, Red-shouldered Hawk) require large forested blocks or connections to other forest stands in order to provide sufficient travel routes and home range size. Large forest stands provide more interior habitat and are therefore more important to interior species of wildlife. Connections are important for all species in order to maintain genetic transfer within the species, and to ensure that the dispersal of individuals will provide replacements for those which die. The property supports a large herd of White-tailed Deer.

The Carolinian forest occurs on the southern half of Oxford County. Even though the Carolinian forest region is quite small compared with other Canadian vegetation zones, making up only 1% of Canada's total land area, it boasts a greater number of both flora and fauna species than any other ecosystem in Canada. It is estimated that some 2,200 species of herbaceous plants are found here, including 64 species of ferns, at least 110 species of grasses, and over 130 different sedge species. There are 70 species of trees alone. (https://caroliniancanada.ca)

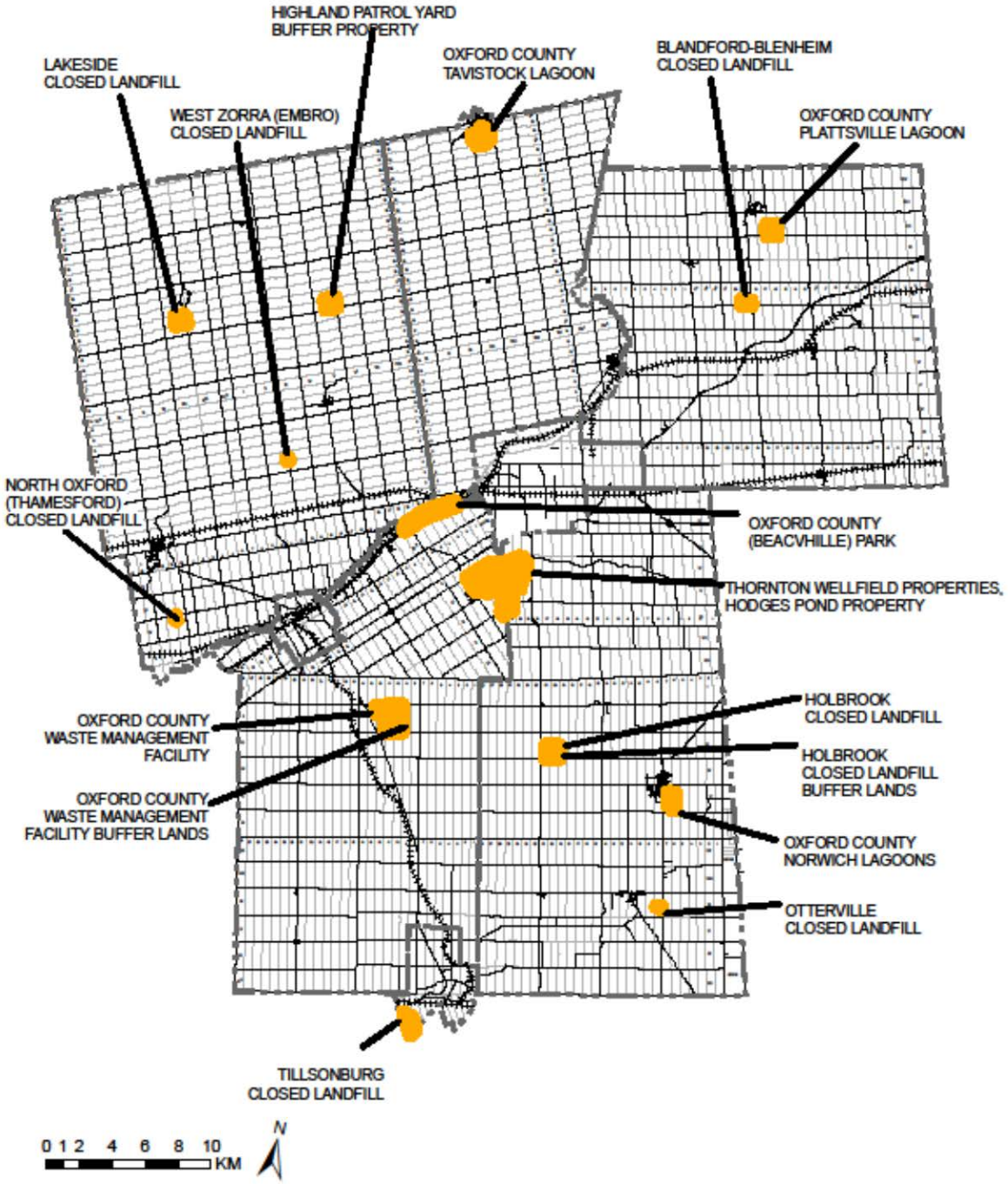
Image 2: Carolinian Forest Region (green) within Oxford County
Image source: caroliniancanada.ca

Section 4: Property Maps and Surrounding Area

4.1 Property Key Maps



SCHEDULE "B"
COUNTY LANDS WITH FOREST TYPES



Section 5: Landowner Objectives

5.1 Priority of Objectives

The objectives for the Forest Management Plan are guided by The County of Oxford BY-LAW No. 5854-2016, which declares in Part 2:

2.1 The Council of the County of Oxford hereby declares the use of the lands known as the County Forests to be for "forestry purposes" that is to include the production of wood and wood products, provision of proper environmental conditions for wildlife, protection against flood and erosion, recreation and protection and production of water supplies.

2.2 The Council of the County of Oxford hereby declares the use of the lands known as the County Lands to be for "forestry purposes and agricultural purposes" that is to include the production of wood and wood products, production of agricultural products including food and fodder, provision of proper environmental conditions for wildlife, protection against flood and erosion, recreation and protection and production of water supplies.

County Forests are Schedule 'A' lands and forests on County Lands are Schedule 'B' lands in the By-law. Schedule 'B' lands include an objective for agricultural production.

Oxford County staff is able to carry out some of the planned work, and will seek the assistance of Conservation Authorities, Ducks Unlimited and consultants as needed.

5.2 Explanation of Property Objectives

Forest Products: Oxford County expects the properties to generate a sustainable supply of forest products and regular revenue. This will be achieved by:

- Inspecting properties on a regular basis to assess forest health, potential for commercial harvest, condition of natural regeneration and extent of invasive species or infractions to By-laws;
- Following 'good forestry practices' and the Oxford County Forest Conservation By-law for commercial harvests;
- Prioritizing the harvest and salvage of Ash trees throughout properties due to the infestation of Emerald Ash Borer.

Protection again Flood and Erosion and Protection of Water Supplies: Oxford County maintains water supplies for many communities. Water resources will be protected by:

- Maintaining forest cover through the use of selective harvests;
- Monitoring and protecting seedlings from insects and diseases;
- Increasing forest cover through afforestation of agricultural lands and lagoon lands or establishing new seedlings in forests where necessary by under-planting;
- Protecting significant wetlands and valleylands using Good Forestry Practices for commercial harvest as appropriate or leaving them undisturbed;
- Looking for, protecting and reporting endangered species;
- Monitoring and controlling invasive species, i.e. Buckthorn, Dog-strangling vine;
- Protecting plantations and forest cover by maintaining fences and gates and by enforcing Bylaws.

Recreation and Environmental Conditions for Wildlife: Oxford County properties provide habitat for wildlife as well as opportunities for hunting. Habitat within forests will be maintained and protected by:

- Following Good Forestry Practices and following Provincial Guidelines for the Provision of Wildlife Habitat during tree-marking for commercial harvest;
- Maintaining or increasing forest cover on County properties;
- Protecting plantations and forests by maintaining fences and gates and by enforcing Bylaws.

Section 6: Detailed Forest Compartment Maps

The maps in Section 6 are presented in the same order as the County By-law Schedules A and B. Each property has a Table which lists the Forest Compartments, including the species composition and area.

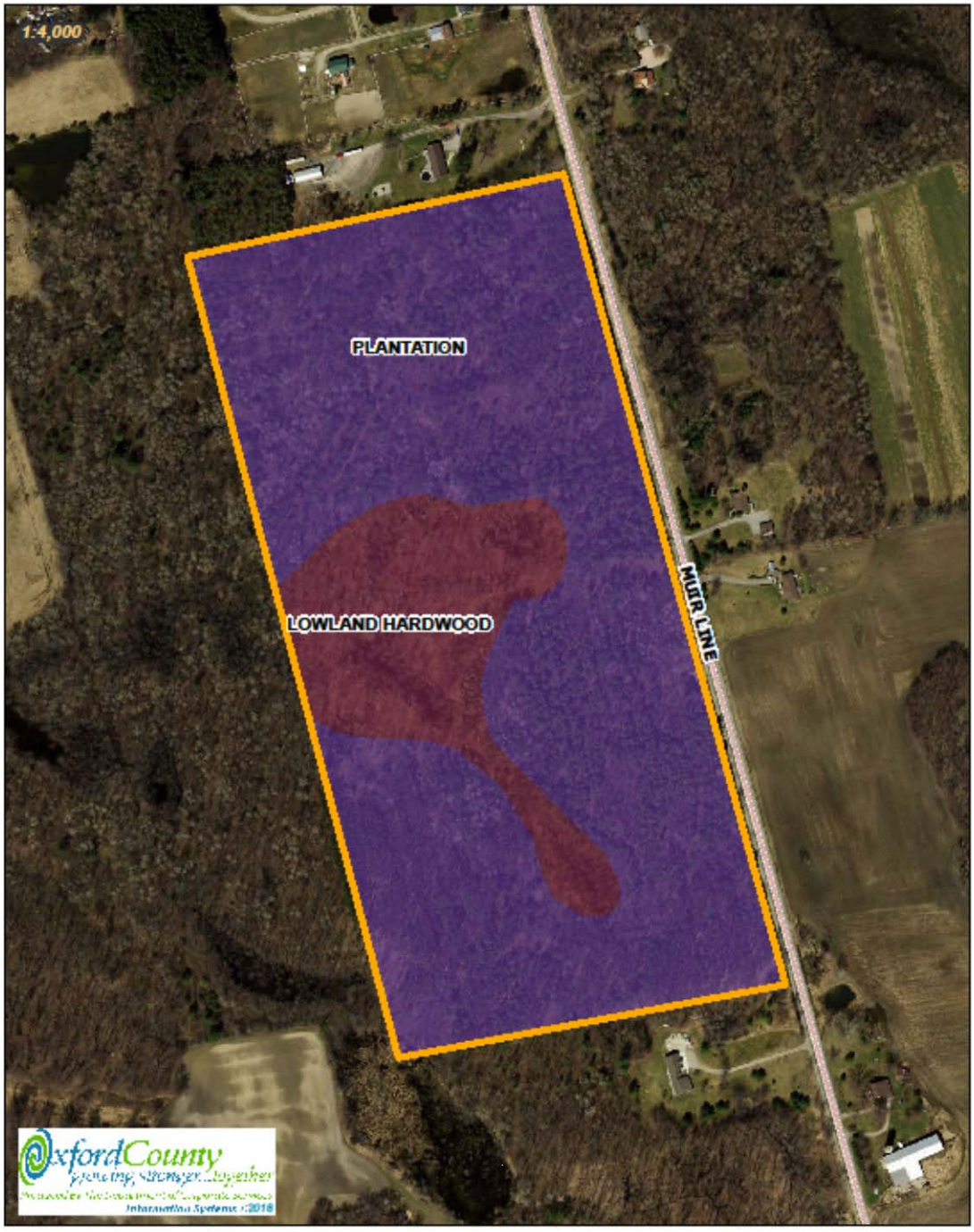
Open areas and wetlands are mapped on Schedule 'A' properties as they are part of total area calculation. Schedule 'B' lands only include forested areas with the exception of several sites with potential for tree planting.

SCHEDULE ‘A’ COUNTY FORESTS

SCHEDULE "A"
COUNTY FOREST TYPES - CHESNEY TRACT

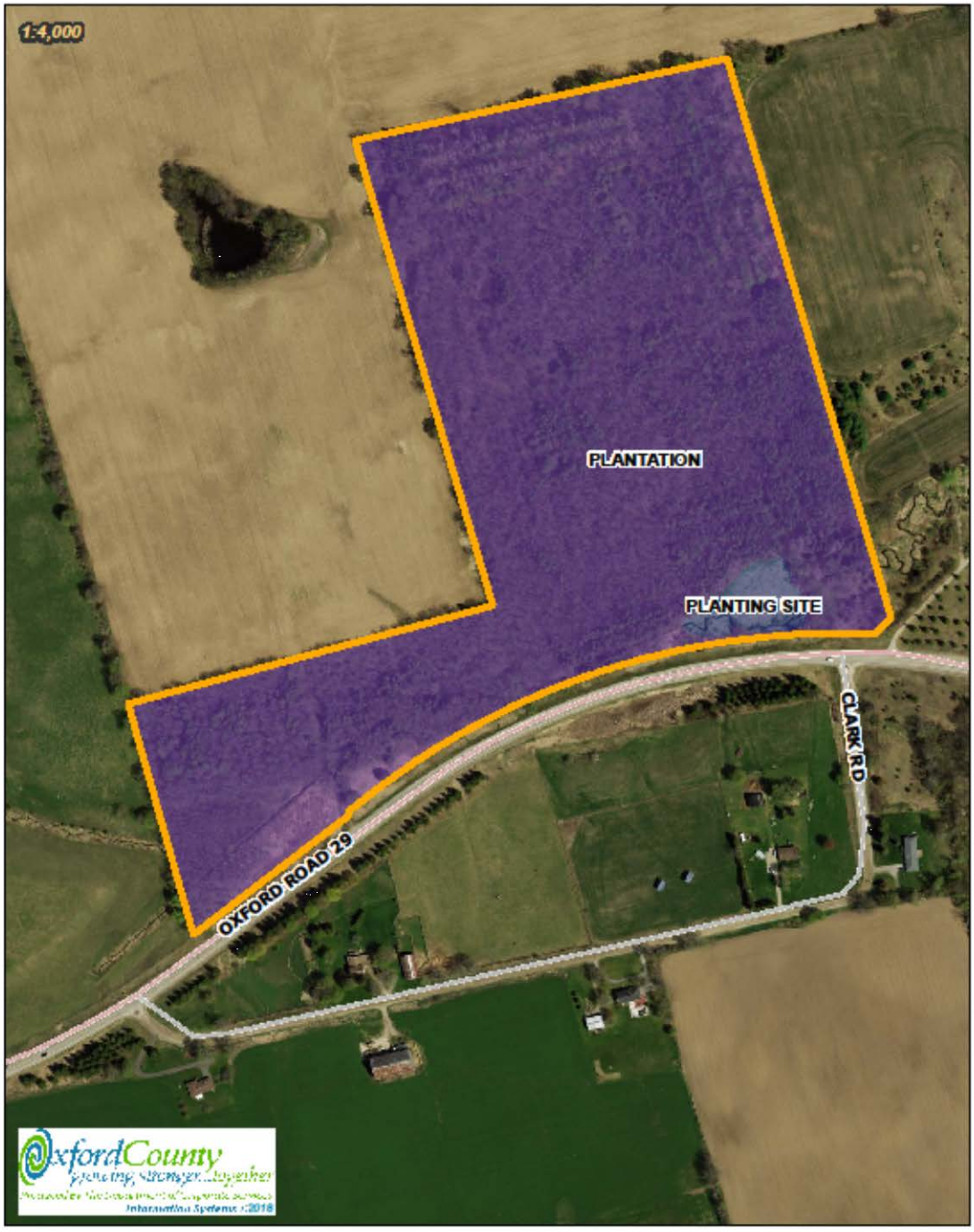
Prop #	Name	Area (ac)	Forest type	Species Comp
1	Chesney Tract	22.60	Lowland Hdwd	Ms10
1	Chesney Tract	48.40	Mixed wood	Sn2Aw2Pw2Cb2Po1Ms1
1	Chesney Tract	31.37	Upland Hdwd	Mh5Pw2Ms1Cb1Oh1

COUNTY FOREST TYPES - CREDITVILLE TRACT



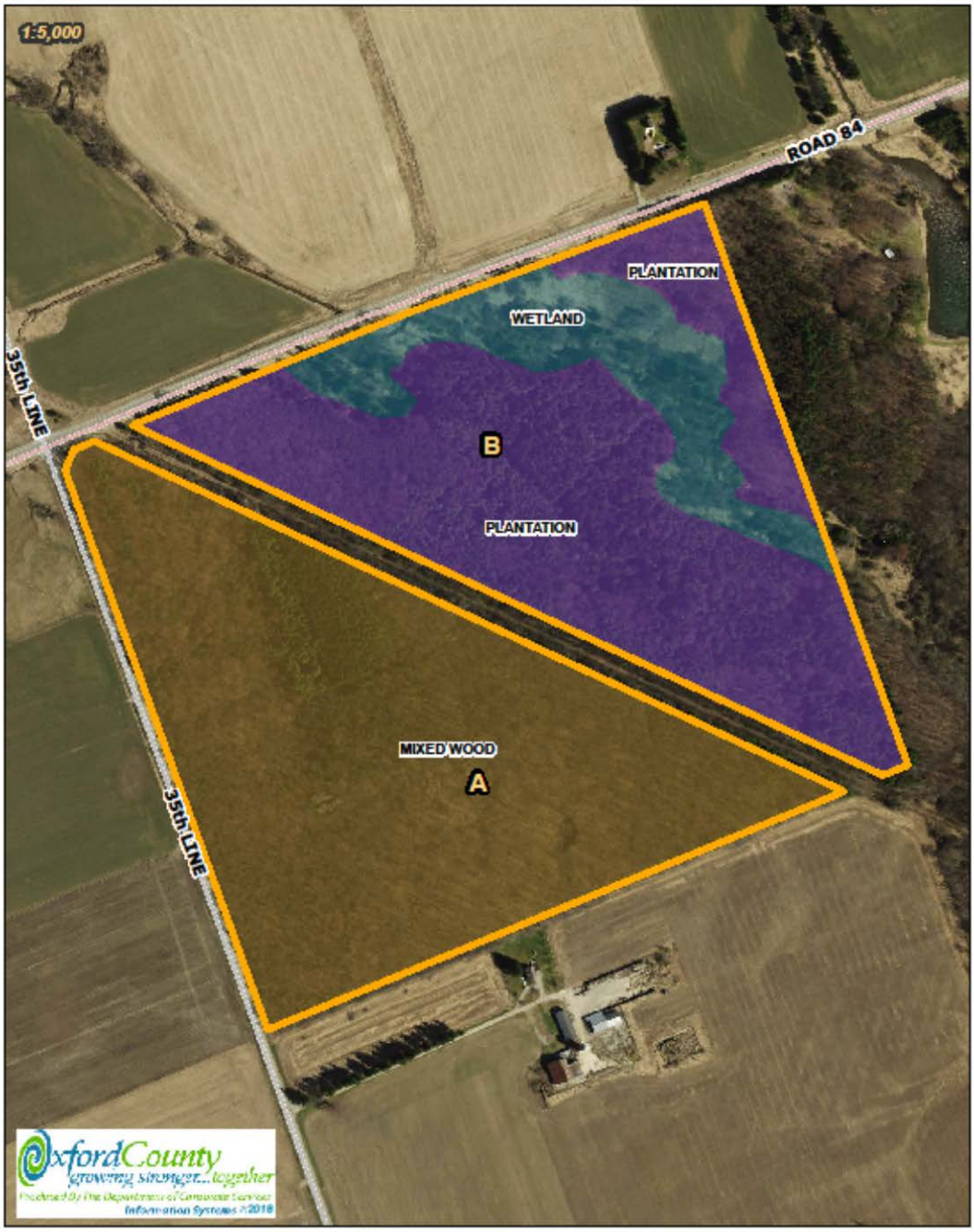
Prop #	Name	Area (ac)	Forest type	Species Comp
2	Creditville Tract	12.00	Lowland Hdwd	Ms4Aw4Ob1Oh1
2	Creditville Tract	38.06	Plantation	Pr6Pw3Oh1

COUNTY FOREST TYPES - DRUMBO TRACT



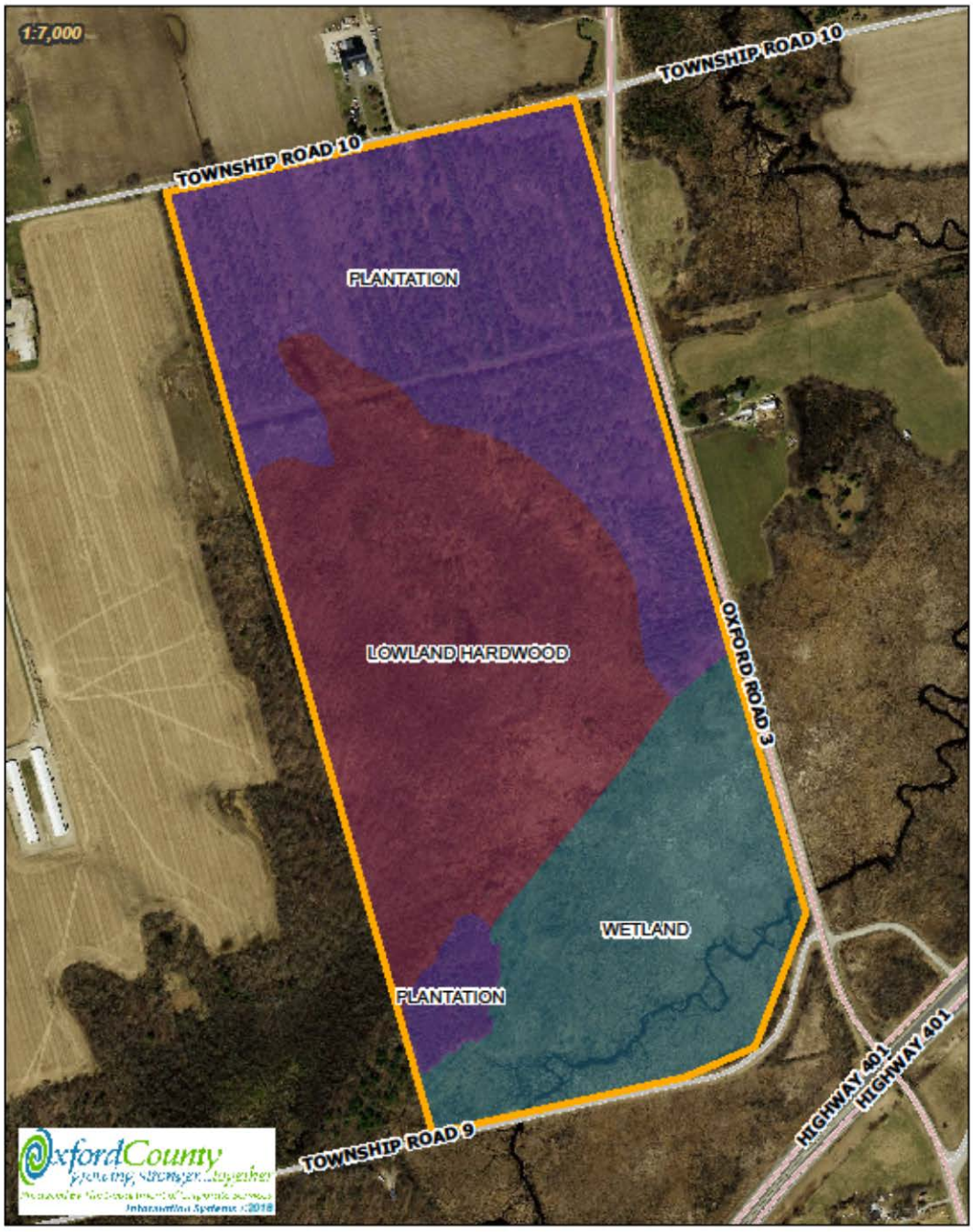
Prop #	Name	Area (ac)	Forest type	Species Comp
3	Drumbo Tract	0.50	Open area	
3	Drumbo Tract	42.79	Plantation	Wb5Pw3Sw1Oh1

SCHEDULE "A"
COUNTY FOREST TYPES - EMBRO TRACT



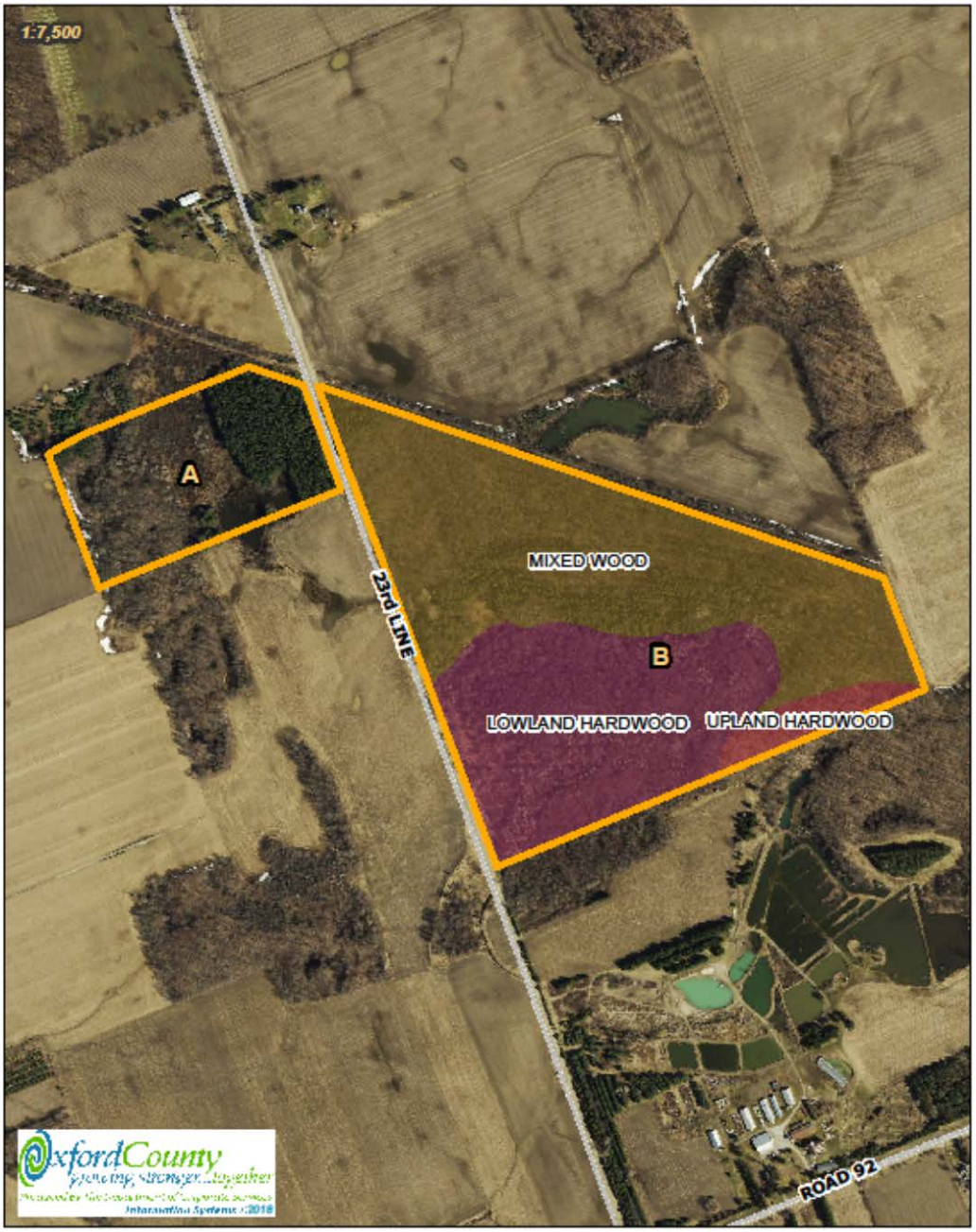
Prop #	Name	Area (ac)	Forest type	Species Comp
4	Embro Tract South	46.37	Mixed wood	Aw3Ms3Wb2Pr1Oh1
4	Embro Tract North	37.00	Plantation	Sn6Pw4
4	Embro Tract South	11.70	Wetland	Treed swamp

COUNTY FOREST TYPES - HALL TRACT



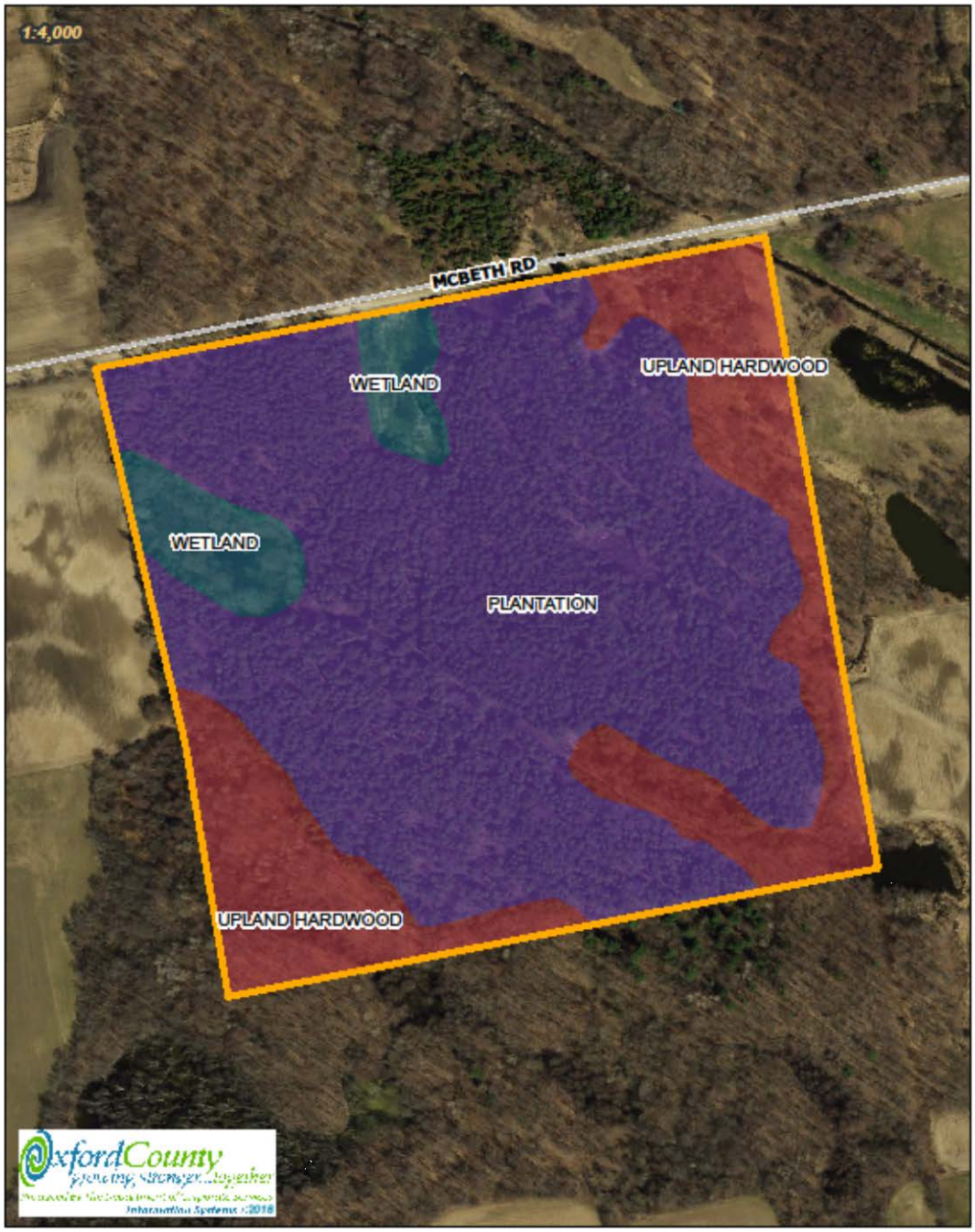
Prop #	Name	Area (ac)	Forest type	Species Comp
5	Hall Tract	70.91	Lowland Hdwd	Ms5Aw3Wi1Oh1
5	Hall Tract	73.00	Plantation	Pr3Pw3Aw2Po1Oh1
5	Hall Tract	46.50	Wetland	

COUNTY FOREST TYPES - LAKESIDE TRACT



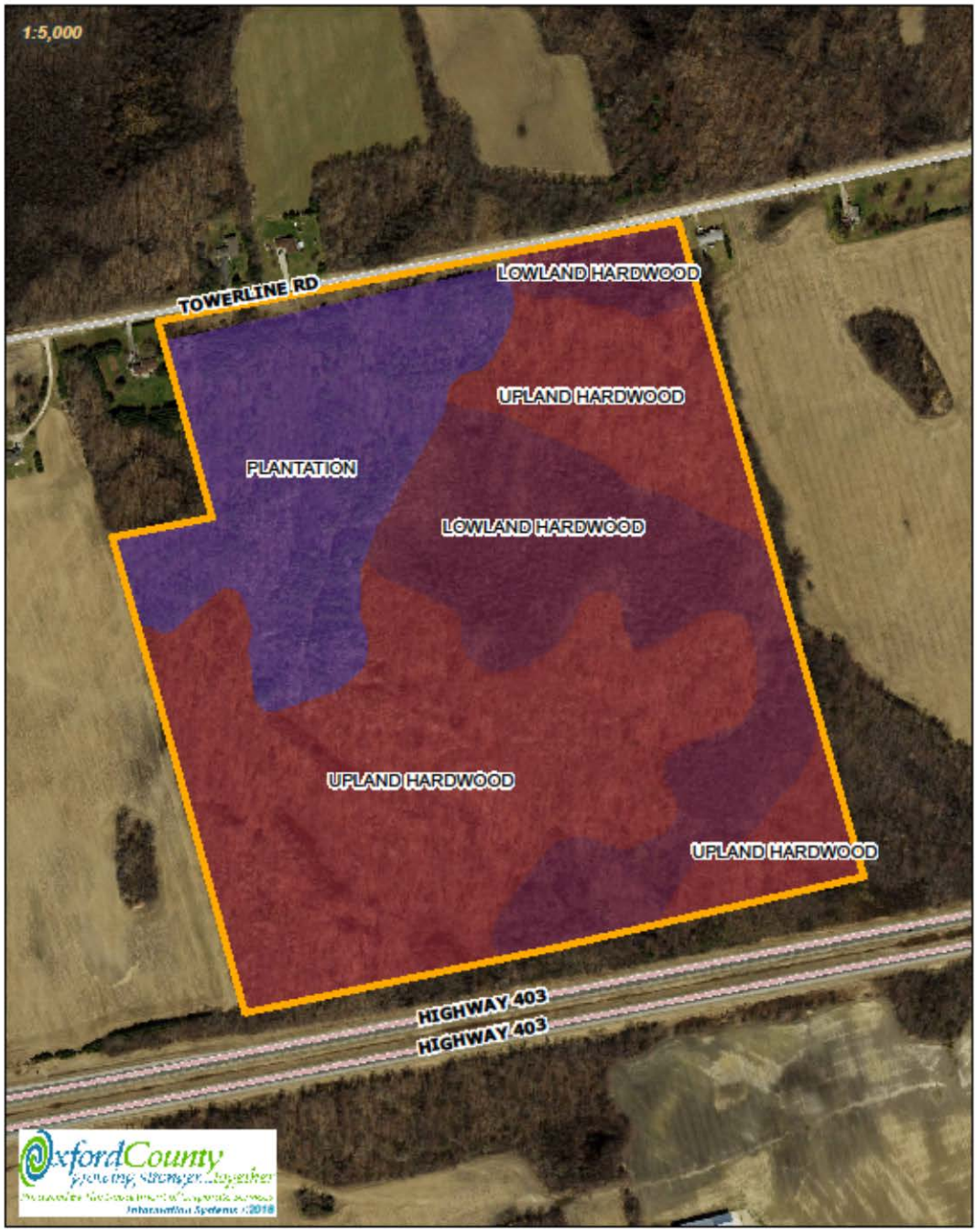
Prop #	Name	Area (ac)	Forest type	Species Comp
6	Lakeside Tract	27.40	Lowland Hdwd	Ms10
6	Lakeside Tract	70.34	Mixed wood	Aw3Pw3Sn3Ce1
6	Lakeside Tract	2.40	Upland Hdwd	Mh9Cb1

COUNTY FOREST TYPES - MCBETH TRACT



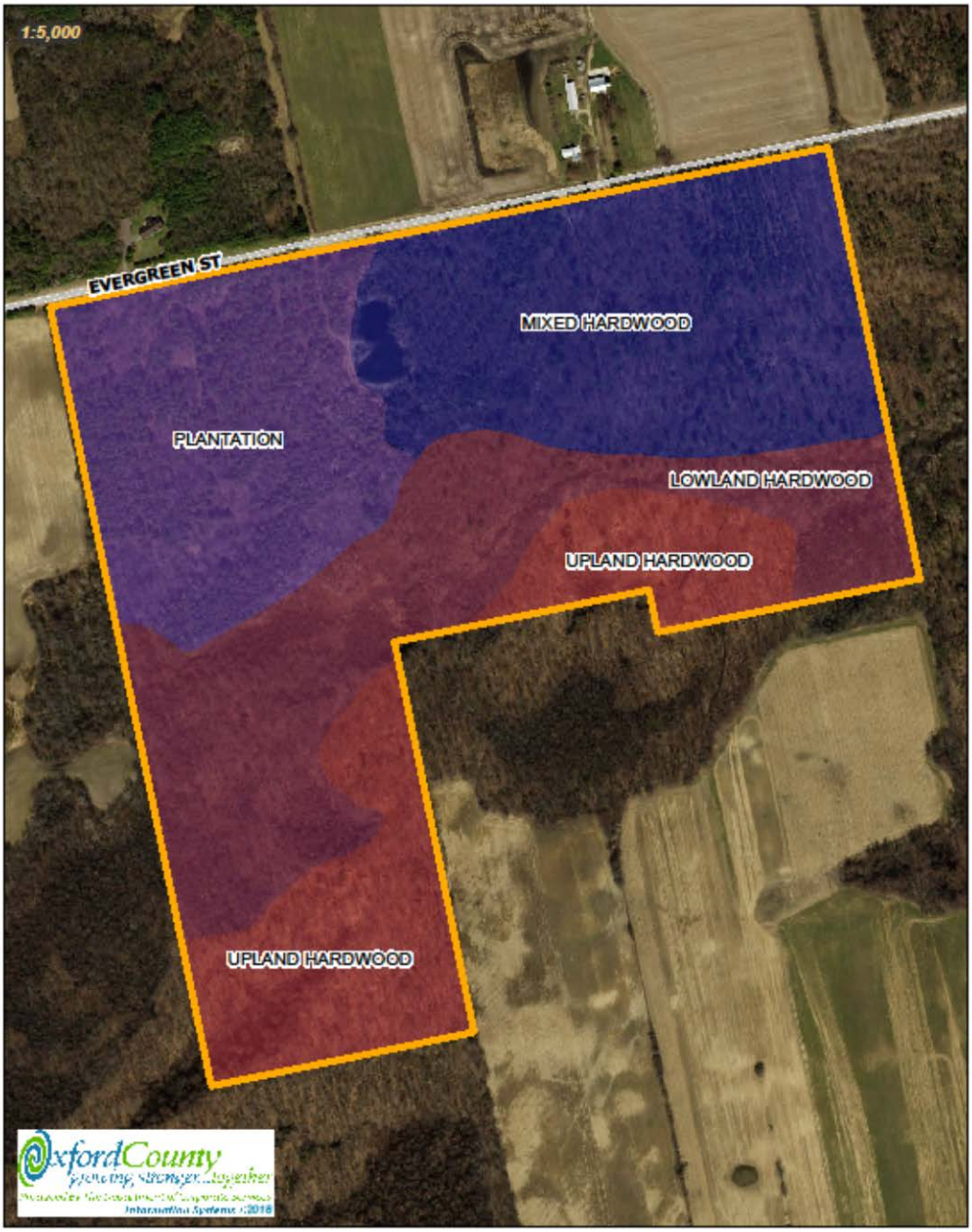
Prop #	Name	Area (ac)	Forest type	Species Comp
7	McBeth Tract	48.11	Plantation	Sn5Pw4Oh1
7	McBeth Tract	13.80	Upland Hdwd	Aw3Ob3Mh2Cb1Hi1
7	McBeth Tract	4.10	Wetland	

SCHEDULE "A"
COUNTY FOREST TYPES - VANCE TRACT



Prop #	Name	Area (ac)	Forest type	Species Comp
8	Vance Tract	22.00	Lowland Hdwd	Ms9Aw1
8	Vance Tract	19.00	Plantation	Pw5Aw2Wb2Ms2
8	Vance Tract	58.86	Upland Hdwd	Po4Aw3Ms2Oh1

SCHEDULE "A"
COUNTY FOREST TYPES - ZENDA TRACT



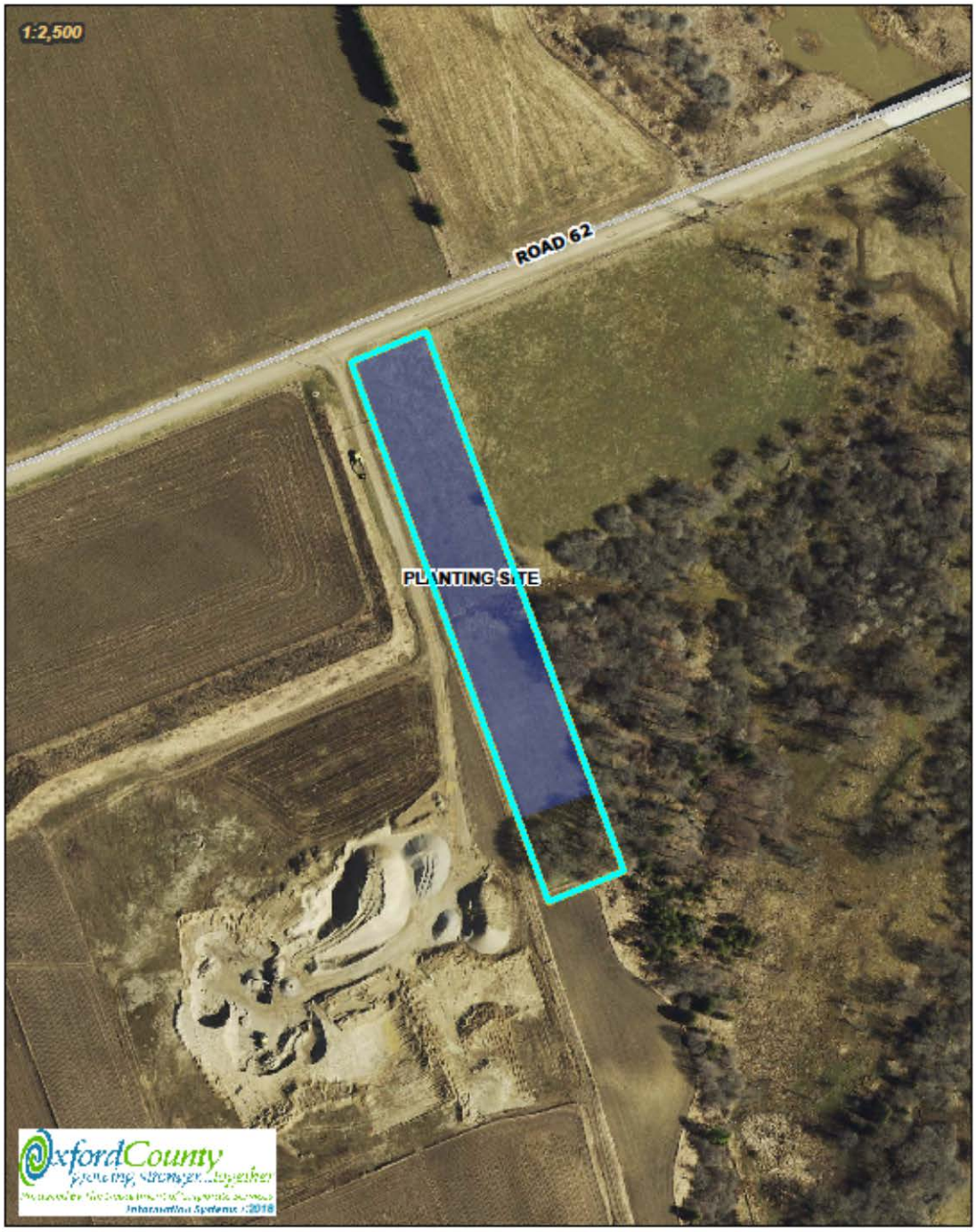
Prop #	Name	Area (ac)	Forest type	Species Comp
9	Zenda Tract	33.07	Lowland Hdwd	Ms7Aw3
9	Zenda Tract	30.00	Mixed wood	Pr3Mh3Pw2Aw1Wb1
9	Zenda Tract	21.00	Plantation	Pw4Sw3Pr2Oh1
9	Zenda Tract	16.00	Upland Hdwd	Aw5Ms2Mh1Cb1Pw1

SCHEDULE ‘B’ COUNTY LANDS

SCHEDULE "B"
COUNTY FOREST TYPES - WEST ZORRA (EMBRO)
CLOSED LANDFILL

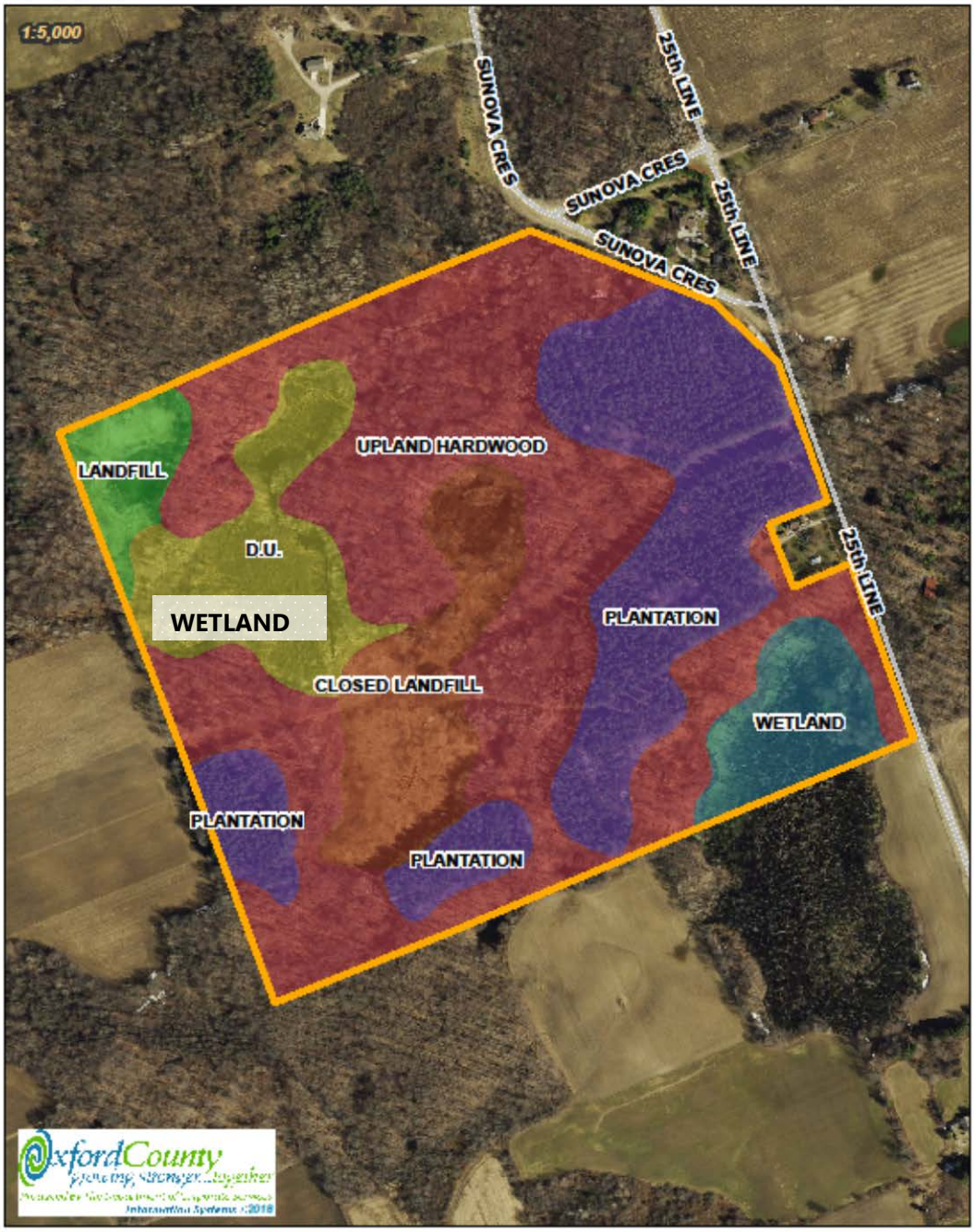
Prop #	Name	Area (ac)	Forest type	Species Comp
1	West Zorra (Embro) Closed Landfill	0.00	Open area	planted Black locust plus fence-line trees

COUNTY FOREST TYPES - NORTH OXFORD (THAMESFORD)
CLOSED LANDFILL



Prop #	Name	Area (ac)	Forest type	Species Comp
2	North Oxford (Thamesford) Closed Landfill	0.00	Open area	Few Willow/Man. Maple/Apple

COUNTY FOREST TYPES - LAKESIDE CLOSED LANDFILL

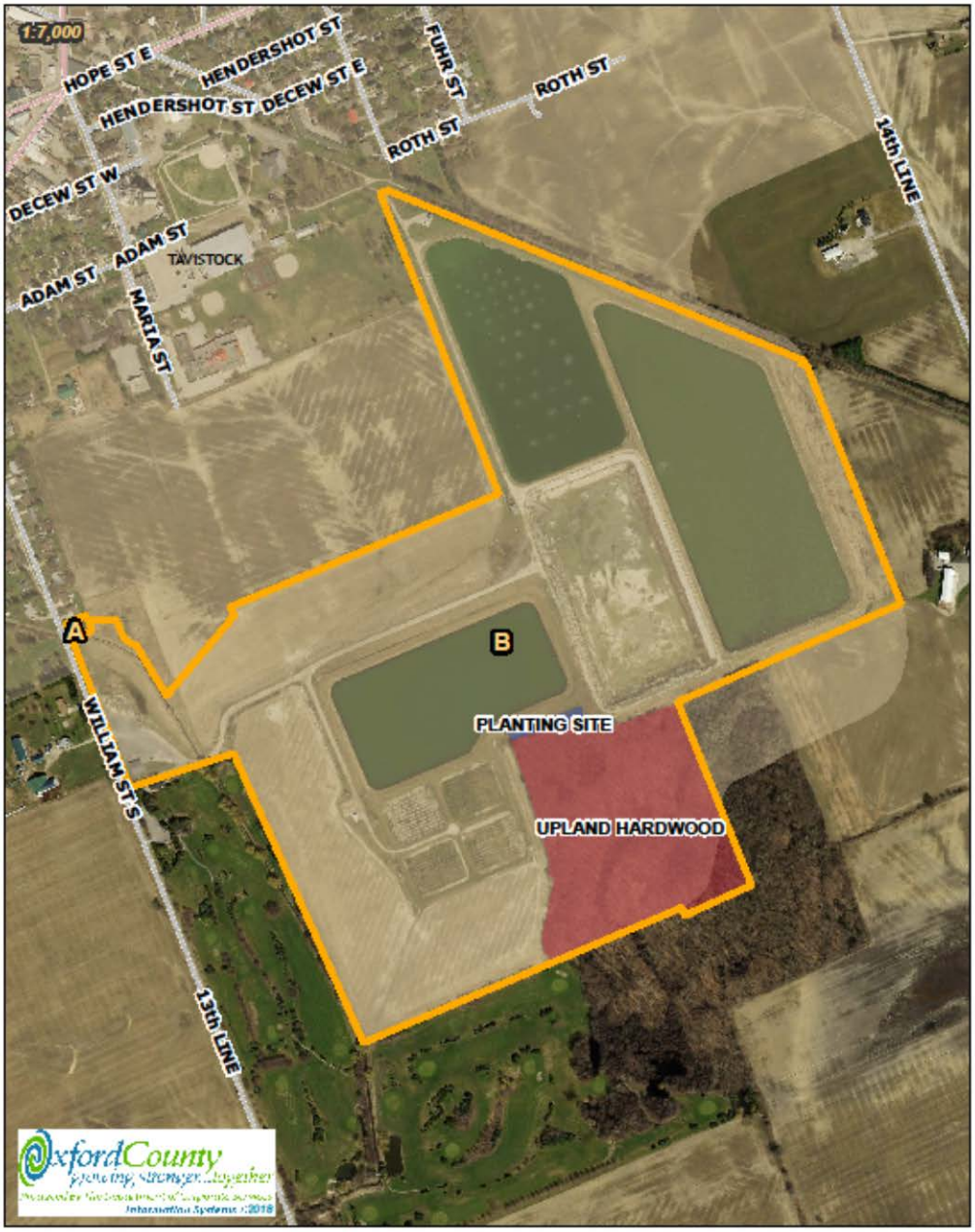


Prop #	Name	Area (ac)	Forest type	Species Comp
3	Lakeside Closed Landfill	24.20	Plantation	Pw9Cb1
3	Lakeside Closed Landfill	32.80	Upland Hdwd	Ms5Mh2Hi2Cb1
3	Lakeside Closed Landfill	31.20	Wetland	Shrubby wetland

COUNTY FOREST TYPES - HIGHLAND PATROL YARD
BUFFER PROPERTY

Prop #	Name	Area (ac)	Forest type	Species Comp
4	Highland Shop Buffer	13.60	Lowland Hdwd	Ms, Willow, Apple
4	Highland Shop Buffer	2.00	Open area	

COUNTY FOREST TYPES - OXFORD COUNTY
TAVISTOCK LAGOON

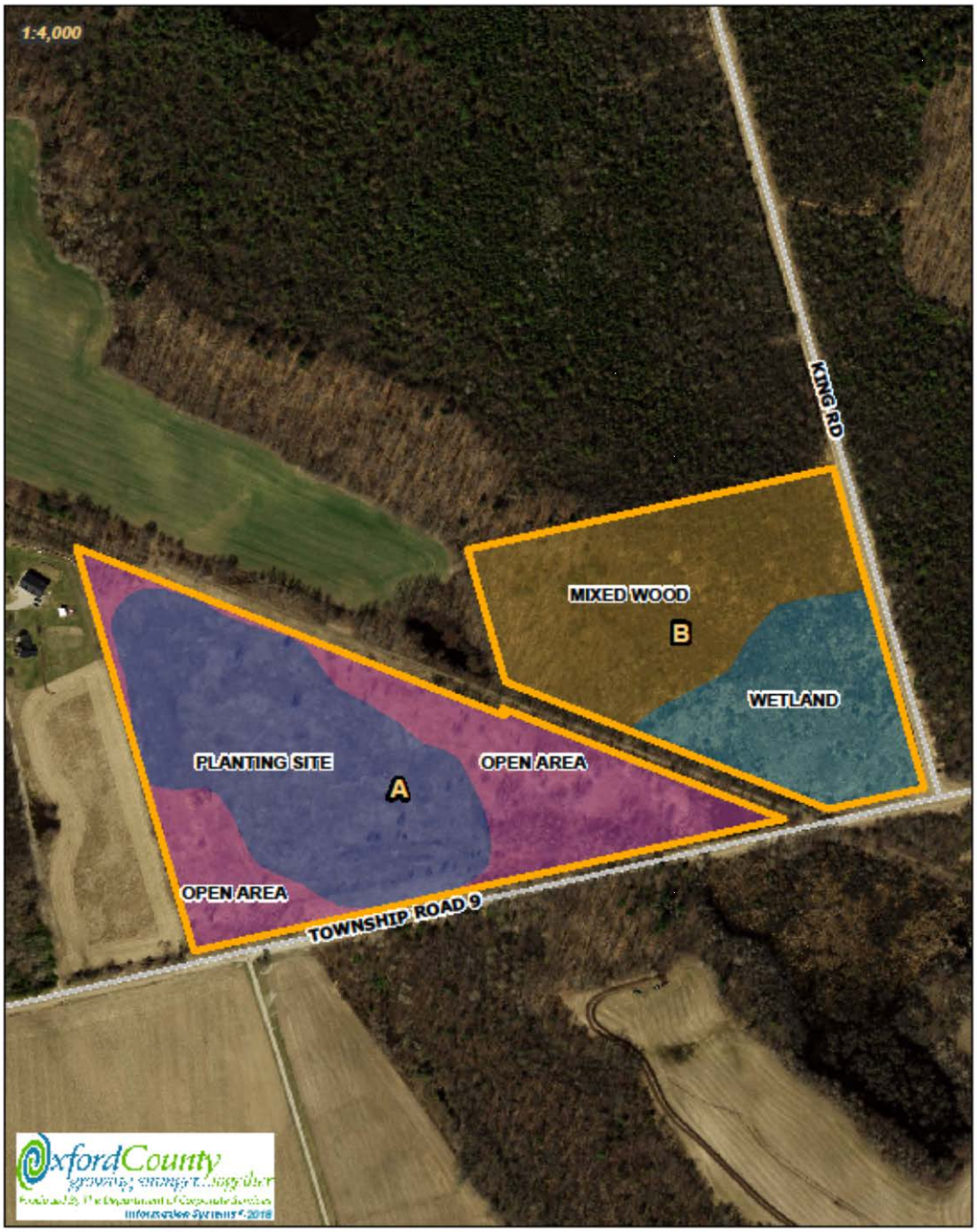


Prop #	Name	Area (ac)	Forest type	Species Comp
5	Oxford Cty Tavistock Lagoon		Open area	
5	Oxford Cty Tavistock Lagoon	17.70	Upland Hdwd	Ms5Mh2Aw1Be1Oh1

COUNTY FOREST TYPES - OXFORD COUNTY
PLATTSVILLE LAGOON

Prop #	Name	Area (ac)	Forest type	Species Comp
6	Oxford County Plattsville Lagoon		Open area	

COUNTY FOREST TYPES - BLANDFORD-BLENHEIM
CLOSED LANDFILL



Prop #	Name	Area (ac)	Forest type	Species Comp
7	Blandford-Blenheim Closed Landfill Pt B	9.40	Mixed wood	Aw2Po2Ce2Mh2Pw2
7	Blandford-Blenheim Closed Landfill Pt A		Open area	

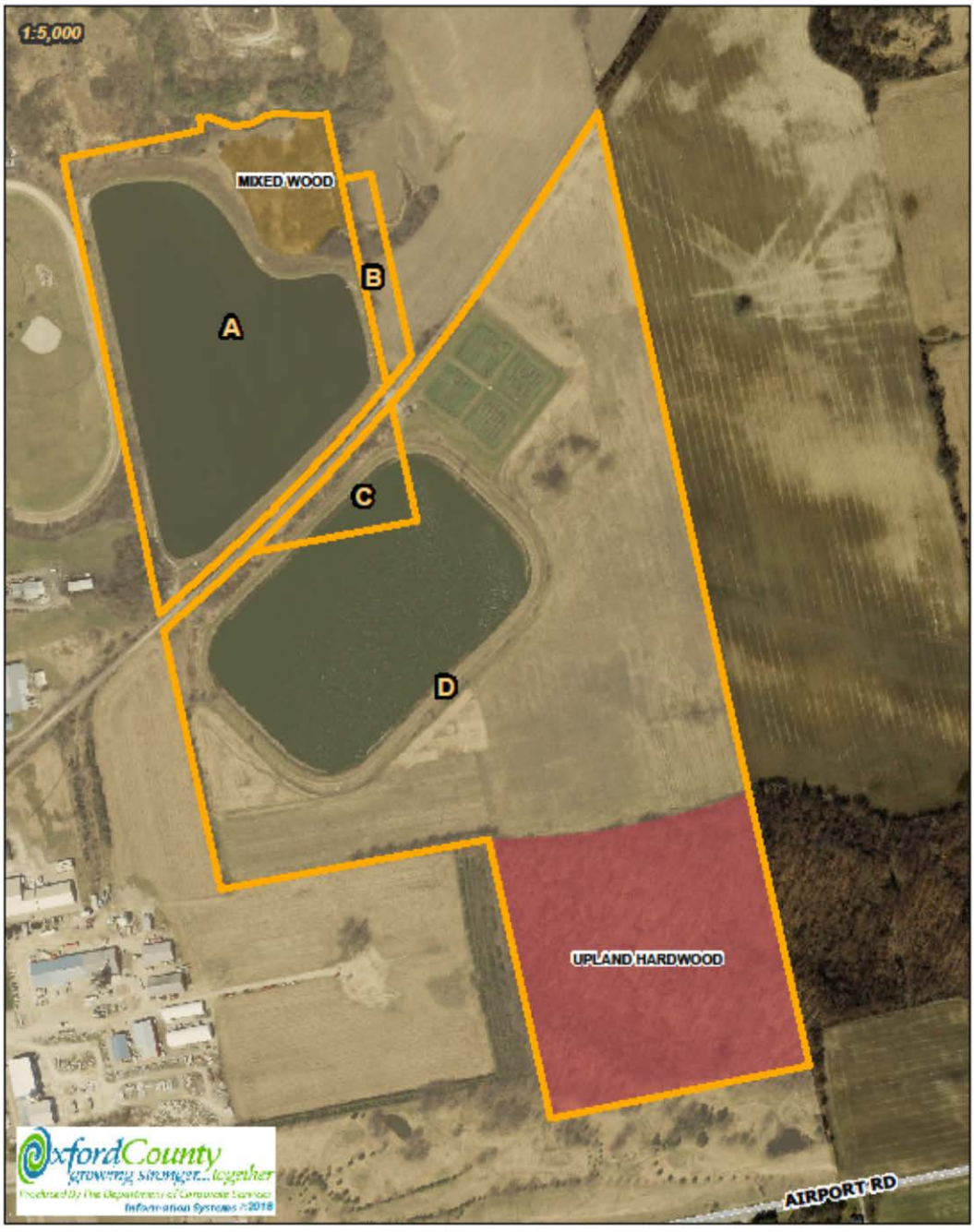
COUNTY FOREST TYPES - HOLBROOK
CLOSED LANDFILL BUFFER LANDS

Prop #	Name	Area (ac)	Forest type	Species Comp
11	Holbrook Closed Landfill Buffer Lands	4.30	Lowland Hdwd	Ms5Aw5
11	Holbrook Closed Landfill Buffer Lands	1.50	Plantation	
11	Holbrook Closed Landfill Buffer Lands	6.90	Upland Hdwd	Aw3He2Mh2Cb2Oh1

SCHEDULE "B"
COUNTY FOREST TYPES - HOLBROOK
CLOSED LANDFILL

Prop #	Name	Area (ac)	Forest type	Species Comp
10	Holbrook Closed Landfill	10.00	Mixed wood	Aw, Ce, Apple
10	Holbrook Closed Landfill	9.10	Upland Hdwd	Mh3Be3Or1Bd1Oh2

SCHEDULE "B"
COUNTY FOREST TYPES - OXFORD COUNTY
NORWICH LAGOONS

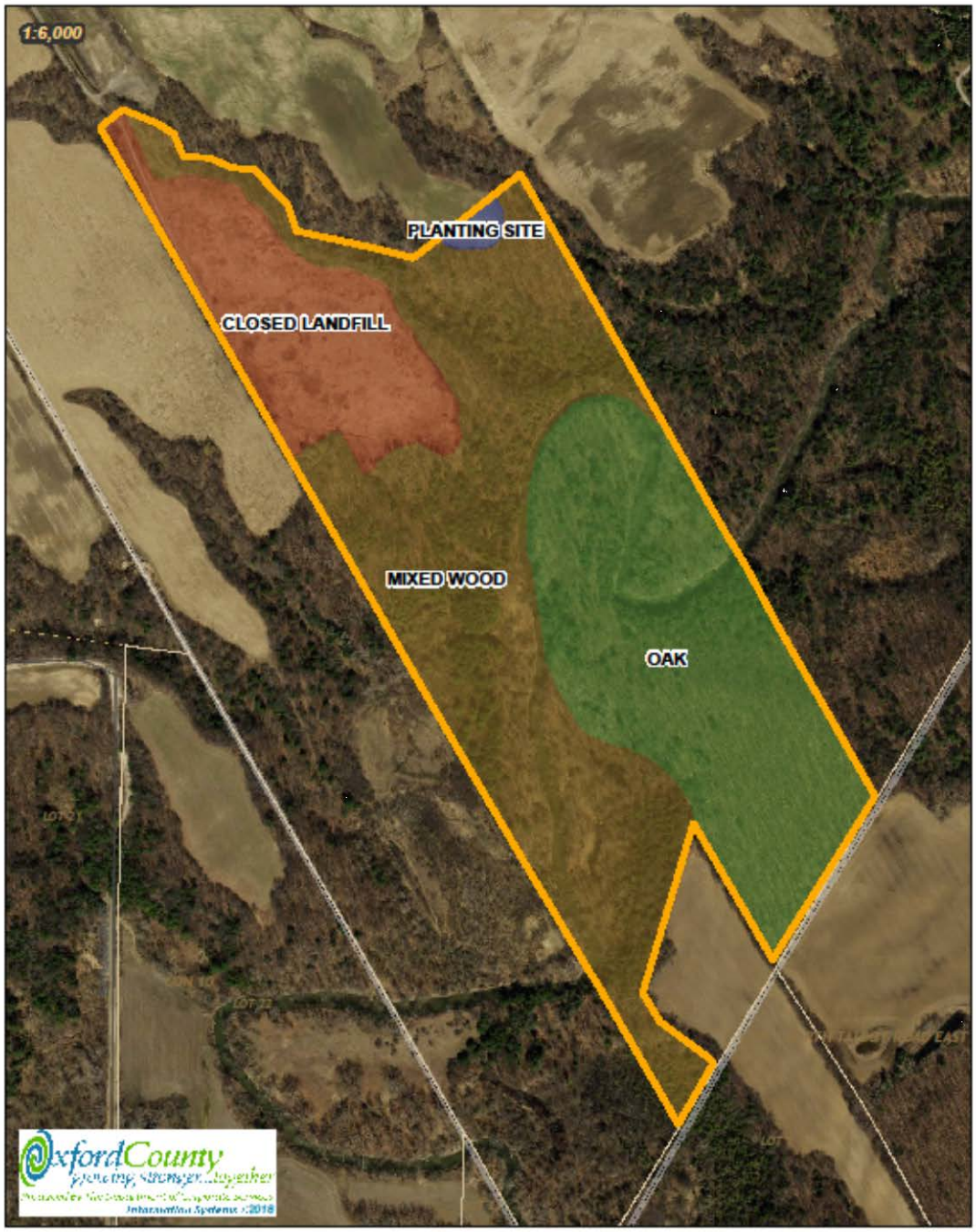


Prop #	Name	Area (ac)	Forest type	Species Comp
12	Oxford County Norwich Lagoons	4.10	Mixed wood	
12	Oxford County Norwich Lagoons	18.20	Upland Hdwd	Ms4Be3Mh1Aw1Bd1

COUNTY FOREST TYPES - OTTERVILLE
CLOSED LANDFILL

Prop #	Name	Area (ac)	Forest type	Species Comp
13	Otterville Closed Landfill	3.20	Plantation	Black locust9Po1

SCHEDULE "B"
COUNTY FOREST TYPES - TILLSONBURG
CLOSED LANDFILL



Prop #	Name	Area (ac)	Forest type	Species Comp
14	Tillsonburg Closed Landfill	63.00	Mixed wood	Pw2Or2Mh2He2Oh2
14	Tillsonburg Closed Landfill	27.00	Oaks	Or5Ms2Ow1Mh1Oh1

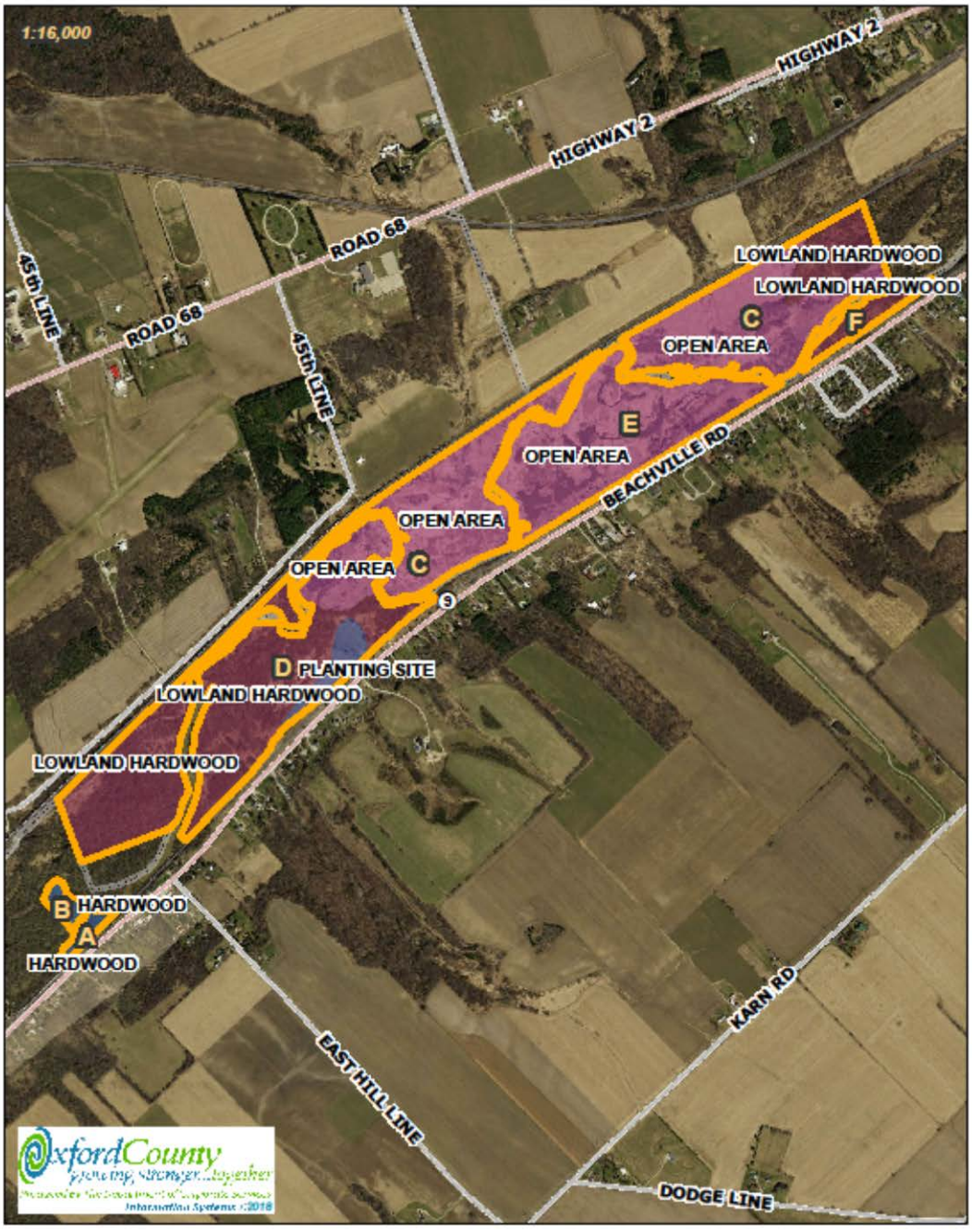
COUNTY FOREST TYPES - OXFORD COUNTY
WASTE MANAGEMENT FACILITY

Prop #	Name	Area (ac)	Forest type	Species Comp
16	Oxford County Waste Management Facility	1.90	Lowland Hdwd	Ms5Mh2Aw2Oh1

COUNTY FOREST TYPES - OXFORD COUNTY
WASTE MANAGEMENT FACILITY BUFFER LANDS

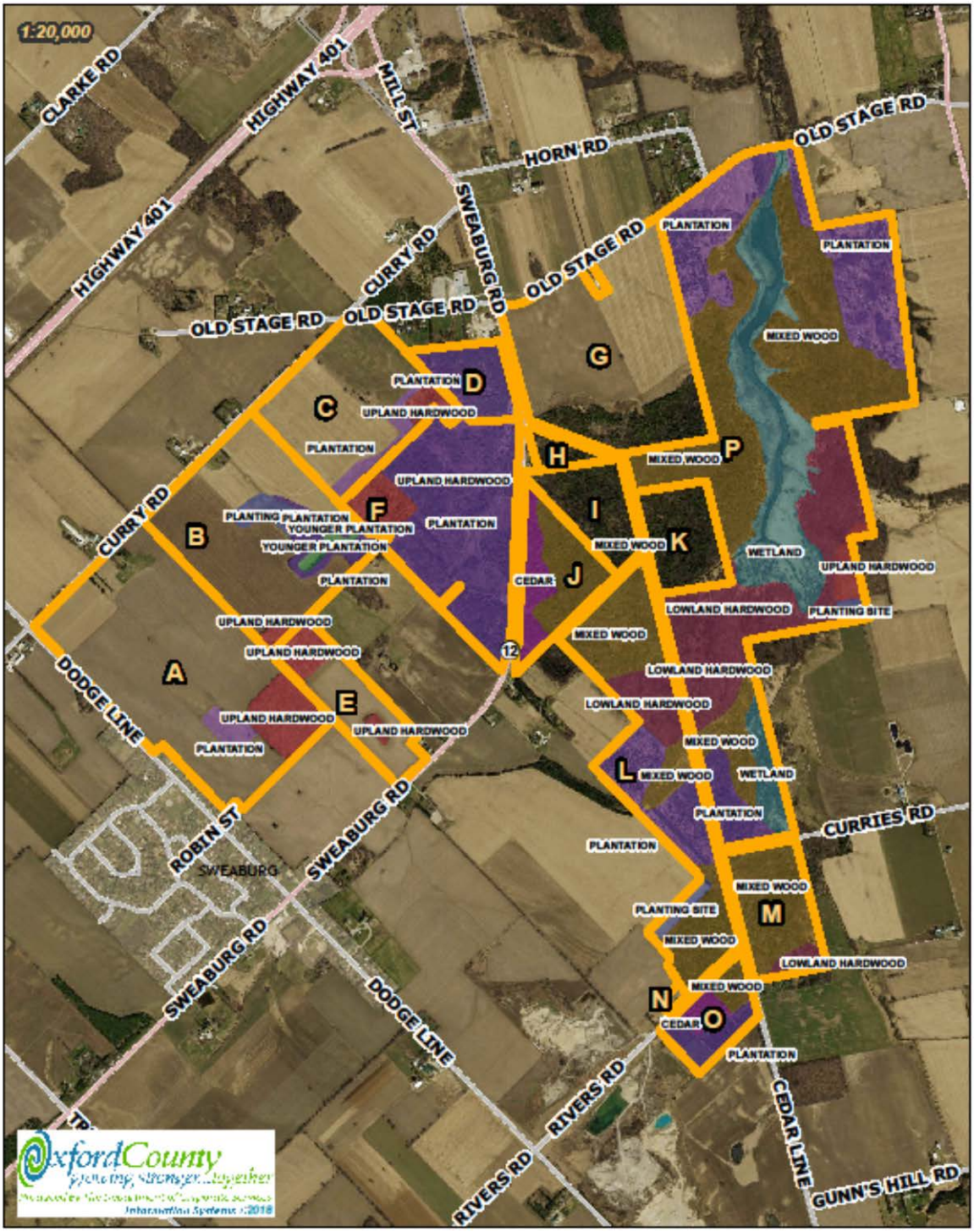
Prop #	Name	Area (ac)	Forest type	Species Comp
15	Oxford County Waste Management Facility Buffer Lands	3.70	Upland Hdwd	Mh3Aw2Be2Bd2Cb1Hi1

COUNTY FOREST TYPES - OXFORD COUNTY (BEACHVILLE) PARK



Prop #	Name	Area (ac)	Forest type	Species Comp
17	Oxford County Beachville Park	69.30	Lowland Hdwd	Ms6Aw2Ob1Wb1
17	Oxford County Beachville Park		Open area	

SCHEDULE "B"
COUNTY FOREST TYPES - THORNTON WELLFIELD PROPERTIES
HODGES POND PROPERTY



Prop #	Name	Area (ac)	Forest type	Species Comp
18	Thornton Wellfield, Hodge's Pond: J	9.80	Cedar	Ce8Pr2
18	Thornton Wellfield, Hodge's Pond: O	4.50	Cedar	Ce9Aw1
18	Thornton Wellfield, Hodge's Pond: L	16.00	Lowland Hdwd	
18	Thornton Wellfield, Hodge's Pond: M	5.00	Lowland Hdwd	
18	Thornton Wellfield, Hodge's Pond: P	16.00	Lowland Hdwd	Ms8Aw1Oh1
18	Thornton Wellfield, Hodge's Pond: P	17.00	Lowland Hdwd	Ms9Aw1
18	Thornton Wellfield, Hodge's Pond: G	29.70	Mixed wood	Ce Aw Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: H	7.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: I	27.70	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: K	29.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: J	26.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: L	54.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: M	22.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: O	7.30	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: P	127.00	Mixed wood	Aw Ce Po Pw Ms
18	Thornton Wellfield, Hodge's Pond: L		Open area	
18	Thornton Wellfield, Hodge's Pond: N		Open area	
18	Thornton Wellfield, Hodge's Pond: P		Open area	
18	Thornton Wellfield, Hodge's Pond: B	13.50	Plantation	Pw10
18	Thornton Wellfield, Hodge's Pond: C	6.80	Plantation	young plantation
18	Thornton Wellfield, Hodge's Pond: F	89.70	Plantation	Pr2Sw2Pw2Sn2Oh2
18	Thornton Wellfield, Hodge's Pond: D	20.80	Plantation	Pw6Pr4
18	Thornton Wellfield, Hodge's Pond: G	5.10	Plantation	young plantation
18	Thornton Wellfield, Hodge's Pond: L	28.00	Plantation	Pw6Sw3Oh(Aw,Ob)1
18	Thornton Wellfield, Hodge's Pond: O	10.50	Plantation	Pw4Pr3Sn3
18	Thornton Wellfield, Hodge's Pond: P	11.50	Plantation	Pw9Oh1
18	Thornton Wellfield, Hodge's Pond: P	73.00	Plantation	Pw4Sw2Sn2Aw1Wb1
18	Thornton Wellfield, Hodge's Pond: A	16.50	Upland Hdwd	Mh7Cb2Be1
18	Thornton Wellfield, Hodge's Pond: E	10.00	Upland Hdwd	Mh7Cb2Be1
18	Thornton Wellfield, Hodge's Pond: B	4.00	Upland Hdwd	Mh7Cb2Be1
18	Thornton Wellfield, Hodge's Pond: C	6.90	Upland Hdwd	Mh6Wb2Sn1Aw1
18	Thornton Wellfield, Hodge's Pond: F	10.30	Upland Hdwd	Mh6Wb2Sn1Aw1
18	Thornton Wellfield, Hodge's Pond: P	7.00	Upland Hdwd	Mh3Aw3Hi2Oh2
18	Thornton Wellfield, Hodge's Pond: P	0.00	Wetland	Hodge's Pond

Section 7: Managed Forest Compartment Descriptions

7.1 General Description

To assist in the development and implementation of a suitable resource management program, the property and its forests were divided into smaller, manageable areas called compartments. Compartments are patches of land that are relatively homogeneous in their vegetation composition, age, history and productivity. They generally have a well-defined boundary, which will help with their identification on the ground. The compartments are shown on Section 6. The Ministry of Natural Resources & Forestry, Land Information Ontario and Oxford County Geographic Land Information and Mapping Resource (GLIMR) were used to establish compartments based on the main tree species, forest origin or site conditions as the defining characteristic. The compartments were checked on the ground and the boundaries were refined as necessary.

Description of forest compartments

There are eight compartments in the properties. A low intensity sample of the forests was carried out to determine the tree species composition, site conditions, average Basal Area, potential for harvest, extent of natural regeneration, insect and disease threats, presence of invasive species, potential for tree planting and contraventions of the By-law.

The forest compartments in Oxford County properties are:

1. Plantations
2. Mixed woods
3. Cedar
4. Lowland hardwoods
5. Upland hardwoods
6. Oaks
7. Old fields
8. Wetlands

Table 5: Description of the Forest Compartments found in Oxford County properties

Forest Compartment	General Description	7.1 Compartment Name		7.2 Compartment Characteristics	7.3 Compartment History
PLANTATIONS **Total Area: 571.76 ac (230.5 Ha)**	• Mixed coniferous forest dominated by planted White pine, Red pine, White spruce, Norway spruce, Black walnut • Minor associate species: Ash, Black cherry • Few cavities, some fallen logs (blow down) and snags (particularly where Walnut was planted). Future super canopy trees and nest sites for raptors • Red pine is generally stagnant or in decline • Ash trees are infested with Emerald Ash Borer • Basal Area is medium to high • Understory: Ash is often ample, other species (Mh, Be, Cb) less common • All plantations are affected by Garlic Mustard. Nearly all plantations have at least some Buckthorn • Continue to manage this compartment as a plantation • Several plantations are ready to be thinned • Silvicultural System: Plantation Management Row and/or Selection	Creditville Tract	38.06	o Deep soils o Well to imperfectly drained o Loamy texture o Neutral and stone-free o Flat topography	• Schedule 'A' Properties were abandoned by owners and ownership assumed by Oxford County. Managed by MNR under 'Agreement Forest until August 30, 2000. Tree planting between 1944-1978. • Commercial thinning by row and selection at most properties; last harvest between 2006-2011 • Schedule 'B' Properties have older plantations with unknown history; younger plantations
		Drumbo Tract	42.79		
		Embro Tract North	37.00		
		Hall Tract	73.00		
		McBeth Tract	48.11		
		Vance Tract	19.00		
		Zenda Tract	21.00		
		Lakeside Closed Landfill	24.20		
		Holbrook Closed Landfill Buffer Lands	1.50		
		Otterville Closed Landfill	3.20		
		Thornton Wellfield, Hodge's Pond: A,B,C,D,F,G,L,O,P	263.9		
			571.76		

<table>
<tr><th>Forest Compartment</th><th>General Description</th><th>7.1 Compartment Name</th><th>7.2 Compartment Characteristics</th><th>7.3 Compartment History</th></tr>
<tr><td></td><td></td><td></td><td></td><td>established through 50 MTP.
• Commercial thinning at Block F, P in 2011.</td></tr>
<tr><td><u>MIXED WOODS</u>

Total Area: 611.31 ac (246.5 ha)</td><td>• Natural forest or former plantations
• Mixed forest with significant coniferous percentage especially White pine and White cedar
• Major associate species: White ash
• Few cavities, fallen logs (blow down) and snags (particularly where Walnut was planted). Future super canopy trees and nest sites for raptors
• Ash trees are infested with Emerald Ash Borer
• Basal Area is highly variable and generally low
• Understory: Ash is often ample, other species (Mh, Be, Cb) less common
• All properties are affected by Garlic Mustard. Nearly all properties have at least some Buckthorn
• No commercial value during this plan period</td><td><table><tr><td>Chesney Tract</td><td>48.40</td></tr><tr><td>Lakeside Tract</td><td>70.34</td></tr><tr><td>Embro Tract South</td><td>46.37</td></tr><tr><td>Zenda Tract</td><td>30.00</td></tr><tr><td>Blandford-Blenheim Closed Landfill Pt B</td><td>9.40</td></tr><tr><td>Holbrook Closed Landfill</td><td>10.00</td></tr><tr><td>Oxford County Norwich Lagoons</td><td>4.10</td></tr><tr><td>Tillsonburg Closed Landfill</td><td>63.00</td></tr><tr><td>Thornton Wellfield, Hodge's Pond: G,H,I,J,K,L,M,O,P</td><td>329.7</td></tr><tr><td></td><td>611.31</td></tr></table></td><td>o Deep soils
o Well to imperfectly drained
o Loamy texture
o Neutral and stone-free
o Flat topography</td><td>• Properties were abandoned by owners and ownership assumed by Oxford County
• Managed by MNR under ‘Agreement Forest until August 30, 2000
• Plantations had a Commercial thinning by row and selection; last harvest between 2006-2011</td></tr>
<tr><td><u>CEDAR</u>

Total Area: 14.3 ac</td><td>• Forest areas dominated by Eastern White cedar
• Minor associate species: White ash
• Some cavities, fallen logs and snags</td><td><table><tr><td>Thornton Wellfield, Hodge's Pond: J,O</td><td>14.3</td></tr></table></td><td>o Deep soils
o Imperfectly drained to seasonally</td><td>• These areas were abandoned as they are too wet for agriculture,</td></tr>
</table>

Forest Compartment	General Description	7.1 Compartment Name		7.2 Compartment Characteristics	7.3 Compartment History
(5.8 ha)	• Basal Area is high • Understory: generally absent • All properties are affected by Garlic Mustard. Nearly all properties have at least some Buckthorn • Potential Commercial harvest during this plan period • Silvicultural System: Single Tree Selection System			wet o Loamy texture o Neutral and stone-free o Flat topography	and naturally regenerated with dense Cedar • No evidence of forest management
<u>LOWLAND HARDWOODS</u> **Total Area: 331.1 ac (133.5 ha)**	• Forest areas dominated by Soft maple • Major associate species: White ash • Some cavities, fallen logs and snags; often Ash • Ash trees are infested with Emerald Ash Borer • Basal Area is generally high • Understory: Ash is often ample, other species (Ms, Ob, Be) less common • All properties are affected by Garlic Mustard. Nearly all properties have at least some Buckthorn • Potential Commercial harvest in several properties • Silvicultural System: Single Tree Selection System	Chesney Tract Creditville Tract Hall Tract Lakeside Tract Vance Tract Zenda Tract Highland Shop Buffer Holbrook Closed Landfill Buffer Lands Oxford County Waste Management Facility Oxford County Beachville Park Thornton Wellfield, Hodge's Pond: L,M,P 	22.60 12.00 70.91 27.40 22.00 33.07 13.60 4.30 1.90 69.30 54.00 331.08	o Deep soils o Imperfectly drained and often seasonally flooded o Loamy texture o Neutral and stone-free o Flat topography	• These areas were abandoned as they are too wet for agriculture • May be part of a PSW, Significant Valleylands or agricultural drain system • Many of the properties had a Commercial harvest between 2009-2017
<u>UPLAND HARDWOODS</u> **Total Area:**	• Forest areas dominated by Hard (Sugar) maple • Major associate species: Soft maple, White ash	Chesney Tract Lakeside Tract McBeth Tract Vance Tract Zenda Tract	31.37 2.40 13.80 58.86 16.00	o Deep soils o Well drained o Loamy texture o Neutral and	• Most properties contained a remnant of the farm woodlot

<table>
<tr><th>Forest Compartment</th><th>General Description</th><th colspan="2">7.1 Compartment Name</th><th>7.2 Compartment Characteristics</th><th>7.3 Compartment History</th></tr>
<tr>
<td>265.5 ac (107.1 ha)</td>
<td>• Minor associate species: Beech, Black cherry
• Ash trees are infested with Emerald Ash Borer. Beech trees are infested with Beech Bark Disease. Few Target canker.
• Downed woody debris, snags and cavities are quite common – often Ash or Beech.
• Basal Area is generally medium to high; potential for high quality. All aged. Fully stocked.
• Understory: Mh, Aw, Be generally ample and patchy
• All properties are affected by Garlic Mustard. Nearly all properties have at least some Buckthorn
• Potential commercial harvest in several properties
• Silvicultural System: Single Tree Selection System</td>
<td colspan="2">
<table>
<tr><td>Lakeside Closed Landfill</td><td>32.80</td></tr>
<tr><td>Oxford Cty Tavistock Lagoon</td><td>17.70</td></tr>
<tr><td>Holbrook Closed Landfill</td><td>9.10</td></tr>
<tr><td>Holbrook Closed Landfill Buffer Lands</td><td>6.90</td></tr>
<tr><td>Oxford County Norwich Lagoons</td><td>18.20</td></tr>
<tr><td>Oxford County Waste Management Facility Buffer Lands</td><td>3.70</td></tr>
<tr><td>Thornton Wellfield, Hodge's Pond: A,B,C,E,F,P</td><td>54.70</td></tr>
<tr><td></td><td>265.5</td></tr>
</table>
</td>
<td>stone-free
o Flat to gentle slopes</td>
<td>retained during the settlement era
• Evidence of previous logging, some of which appears to be ‘high grading’
• Many of the properties had a Commercial harvest between 2008-2017</td>
</tr>
<tr>
<td><u>OAKS</u>

Total Area: 27.0 ac (10.9 ha)</td>
<td>• Forest areas dominated by Oaks
• Major associate species: Soft maple, Beech
• Beech trees are infested with Beech Bark Disease
• Some downed woody debris, few snags and cavities (Beech)
• Basal Area is high, quality is high. All</td>
<td colspan="2">
<table>
<tr><td>Tillsonburg Closed Landfill</td><td>27.00</td></tr>
</table>
</td>
<td>o Deep soils
o Well drained
o Loamy texture
o Neutral and stone-free
o Flat to steep slopes</td>
<td>• The forest was likely retained due to the erosion potential of the nearby slopes on Otter Creek
• No evidence of previous logging</td>
</tr>
</table>

Forest Compartment	General Description	7.1 Compartment Name		7.2 Compartment Characteristics	7.3 Compartment History
	aged. Fully stocked. • Understory: little, scattered Be, Mh • No invasive species • Potential commercial harvest • Silvicultural System: Group Selection (STS)				
OPEN AREAS **Total Area: 2.5 ac (1.0 ha)**	• Old fields, sometimes with scattered shrubs and trees • Often with heavy grass competition • Some berms created by wetland restoration in partnership with Ducks-Unlimited • Potential for tree planting	Drumbo Tract	0.50	o Deep soils o Well drained o Loamy texture o Neutral and stone-free o Flat to gentle slopes	• These areas are agricultural fields, lagoon lands or old fields adjacent to closed landfill sites
		West Zorra (Embro) Closed Landfill	0.00		
		North Oxford (Thamesford) Closed Landfill	0.00		
		Highland Shop Buffer	2.00		
		Oxford Cty Tavistock Lagoon			
		Oxford County Plattsville Lagoon			
		Blandford-Blenheim Closed Landfill Pt A			
		Oxford County Beachville Park			
		Thornton Wellfield, Hodge's Pond: L,N,P			
			2.50		
WETLANDS **Total Area: 93.5 ac (37.7 ha)**	• Areas with a variety of shrubs and plants adapted to flooded conditions • No potential for forestry • May be part of a PSW, Significant Valleylands or agricultural drain system	Embro Tract South	11.70	o Deep organic soils o Flooded year-round o Flat topography	• These areas are too wet for agriculture or forestry
		Hall Tract	46.50		
		McBeth Tract	4.10		
		Lakeside Closed Landfill	31.20		
		Thornton Wellfield, Hodge's Pond: P	0.00		

7.4 Silvicultural Systems

Plantation Management to Restore Mixed wood Forest

Plantations, generally of conifer species, were established on abandoned agricultural land by the Ministry of Natural Resources through the Agreement Forest program and more recently through the 50 Million Trees Program. A series of periodic systematic thinnings of the planted trees removes poorly formed, sub-dominant and competing stems, and generates revenue. Trees are removed to obtain a target basal area, distributing the trees to be removed across the area, and never removing more than 1/3 of the pre-harvest basal area. It results in the establishment of natural regeneration of locally adapted tree species. The long-term goal after several partial thinnings and many decades is an all-aged forest of mixed species.

The presence of Emerald Ash Borer, Buckthorn and Garlic Mustard will affect the transition of plantations to mixed wood forests, as Ash is the dominant seedling, sapling and pole-wood species in most plantations. As the Ash die, the canopy opens and sunlight stimulates the development of thickets of Buckthorn – which prevent other species from becoming established. The forest manager will need to make efforts to control Buckthorn, under-plant other shade-tolerant species if necessary and consider increasing the length of the cutting cycle.

Table 6 lists properties containing Forest Compartments where Plantations may be managed with a row or selective harvest. They are listed in order of Basal Area from high to low.

Table 6: Oxford County Properties with Plantations

(Listed in descending order of Basal Area)

Sched.	Prop #	Name	Area (ac)	Previous Harvest	Species Comp	BA	Product	Avg Dbh (cm)
B	18	Thornton Wellfield, Hodge's Pond: D	20.80		Pw6Pr4	45.5	Pine pulp	25
A	7	McBeth Tract	48.11		Sn5Pw4Oh1	46.0	Sn Logs	30
A	4	Embro Tract North	37.00		Sn6Pw4	45.0	Sn Logs	30
B	3	Lakeside Closed Landfill	24.20		Pw9Cb1	44.0	Pw logs	30
B	18	Thornton Wellfield, Hodge's Pond: B	13.50		Pw10	42.0		20
B	18	Thornton Wellfield, Hodge's Pond: O	10.50	unmerch	Pw4Pr3Sn3	36.0	pulp	20
A	2	Creditville Tract	38.06	2009	Pr6Pw3Oh1	33.4	Pine logs	30
A	5	Hall Tract	73.00	2006	Pr3Pw3Aw2Po1Oh1	32.9	Pine logs	40
B	18	Thornton Wellfield, Hodge's Pond: F	89.70	2011	Pr2Sw2Pw2Sn2Oh2	32.6		25
B	18	Thornton Wellfield, Hodge's Pond: P	11.50	2011	Pw9Oh1	30.7	Pw logs	40
A	3	Drumbo Tract	42.79	unmerch	Wb5Pw3Sw1Oh1	24.0	Wb logs	25
A	8	Vance Tract	19.00	2010	Pw5Aw2Wb2Ms2	24.0		
A	9	Zenda Tract	21.00	2011	Pw4Sw3Pr2Oh1	30.0	Pine logs	32
B	13	Otterville Closed Landfill	3.20	unmerch	Black locust9Po1	20.0	locust	15
B	18	Thornton Wellfield, Hodge's Pond: L	28.00	unmerch	Pw6Sw3Oh(Aw, Ob)1	na		
B	18	Thornton Wellfield, Hodge's Pond: P	73.00	unmerch	Pw4Sw2Sn2Aw1Wb1	na		10
B	11	Holbrook Closed Landfill Buffer Lands	1.50	unmerch	young plantation	na		
B	18	Thornton Wellfield, Hodge's Pond: C	6.80	unmerch	young plantation	na		
B	18	Thornton Wellfield, Hodge's Pond: A	5.00	unmerch	young plantation	na		
B	18	Thornton Wellfield, Hodge's Pond: G	5.10	unmerch	young plantation	na		

Single Tree Selection System

Selection systems favor trees that grow well in the shade (e.g., maple, beech, hemlock). While clear cutting and shelterwood systems create even-aged forests, the selection system creates or maintains uneven-aged forests containing trees of different ages and sizes. This system is designed to maintain permanent forest cover despite periodic partial-cuttings. At no time is the complete canopy removed. Instead trees are removed to obtain a target basal area, distributing the trees to be removed across all diameter classes, and never removing more than 1/3 of the pre-harvest basal area. To reach the target basal area and maintain the target basal area distribution over diameter classes, trees of lesser quality are removed first, either individually or in small groups, over the entire stand. Periodic harvests occur on a short cycle (8 to 25 years) and usually establish regeneration following each cut. (Ontario Tree-marking Guide, 2004)

In practice, forests in Oxford County have most often been harvested following a 'diameter limit' system, where trees are selected for harvest based on size and value. This 'high-grading' of County forests has continued until recent times and resulted in poor stand structure, low quality trees and longer harvest cycles. The presence of Emerald Ash Borer, Buckthorn and Garlic Mustard will affect the development of new crops of trees in the forest, as Ash is the dominant seedling, sapling and pole-wood species in most compartments. The forest manager will need to make efforts to control Buckthorn, under-plant other shade-tolerant species if necessary and consider increasing the length of the cutting cycle.

Table 7 lists properties containing Forest Compartments where the Single Tree Selection System will be followed. This includes the Cedar, Lowland Hardwood, Upland Hardwood and Mixed wood Compartments.

Table 7: Oxford County Properties managed with the Single Tree Selection System

Sched.	Prop #	Name	Area (ac)	Previous Harvest	Species Comp	BA	Product
B	18	Thornton Wellfield, Hodge's Pond: J	9.80		Ce8Pr2	50.0	Ce, Pr pulp
B	18	Thornton Wellfield, Hodge's Pond: O	4.50		Ce9Aw1	80.0	Ce logs

A	1	Chesney Tract	22.60		Ms10	43.0	Ms Logs
B	18	Thornton Wellfield, Hodge's Pond: P	17.00		Ms9Aw1	40.5	Ms Logs
A	5	Hall Tract	70.91	2011	Ms5Aw3Wi1 Oh1	36.7	Ms Logs
A	6	Lakeside Tract	27.40		Ms10	36.0	Ms Logs
B	18	Thornton Wellfield, Hodge's Pond: P	16.00	2017	Ms8Aw1Oh1	33.2	Ms Logs
A	9	Zenda Tract	33.07	2009	Ms7Aw3	32.5	wood
A	2	Creditville Tract	12.00	2010	Ms4Aw4Ob1 Oh1	23.0	
A	4	Embro Tract South	46.37		Aw3Ms3Wb 2Pr1Oh1	33.0	Aw Logs
A	9	Zenda Tract	30.00	2011	Pr3Mh3Pw2 Aw1Wb1	37.0	Pine logs
B	5	Oxford Cty Tavistock Lagoon	17.70		Ms5Mh2Aw 1Be1Oh1	31.5	Aw, logs
A	7	McBeth Tract	13.80		Aw3Ob3Mh 2Cb1Hi1	29.3	Aw Logs
A	6	Lakeside Tract	2.40		Mh9Cb1	30.0	Mh Logs
B	11	Holbrook Closed Landfill Buffer Lands	6.90		Aw3He2Mh 2Cb2Oh1	37.0	
A	1	Chesney Tract	31.37	2008	Mh5Pw2Ms 1Cb1Oh1	33.5	Mh/Pw logs
B	3	Lakeside Closed Landfill	32.80	2011	Ms5Mh2Hi2 Cb1	31.0	small
B	18	Thornton Wellfield, Hodge's Pond: P	7.00		Mh3Aw3Hi2 Oh2	30.0	small
A	9	Zenda Tract	16.00	2009	Aw5Ms2Mh 1Cb1Pw1	28.0	
B	10	Holbrook Closed Landfill	9.10		Mh3Be3Or1 Bd1Oh2	28.0	
B	12	Oxford County Norwich Lagoons	18.20		Ms4Be3Mh1 Aw1Bd1	27.2	Be wood
B	18	Thornton Wellfield, Hodge's Pond: A	16.50	2011	Mh7Cb2Be1	26.0	
B	18	Thornton Wellfield, Hodge's Pond: E	10.00	2011	Mh7Cb2Be1	26.0	
B	18	Thornton Wellfield, Hodge's Pond: B	4.00	2011	Mh7Cb2Be1	26.0	
B	18	Thornton Wellfield, Hodge's Pond: C	6.90	2011	Mh6Wb2Sn 1Aw1	22.0	
B	18	Thornton Wellfield, Hodge's Pond: F	10.30	2011	Mh6Wb2Sn 1Aw1	22.0	
A	8	Vance Tract	22.00	2010	Ms9Aw1	29.3	
B	11	Holbrook Closed Landfill Buffer Lands	4.30	unmerch	Ms5Aw5	10.0	
B	17	Oxford County Beachville Park	69.30	unmerch	Ms6Aw2Ob1 Wb1	low/var	
B	16	Oxford County Waste Management Facility	1.90		Ms5Mh2Aw 2Oh1	30.0	logs

Group Selection (variation of Single Tree Selection System)

This variation removes trees in small groups and thus opens the canopy up more than single-tree selection. It is best used to encourage regeneration of mid-tolerant species such as yellow birch, red oak, white ash, and occasionally the more intolerant black cherry. The goal is to maintain these species within an uneven-aged stand by developing a staged mosaic of even-aged patches that are periodically regenerated in various cutting cycles (OMNR 1998a). This variation could be minor in nature (e.g., by creating an occasional opening to encourage mid-tolerant species), or major, for example, where several group openings are created or when single-tree selection is used in conjunction with it, to remove trees between the group openings.

Forest managers have found it to be a challenge to establish new crops of Oak seedlings, as shade tolerant species such as Maple and Beech will out-compete and dominate the Oak. The forest manager may need to control other hardwoods or Buckthorn using herbicides, a brush-saw or prescribed fire in order to be successful. Harvesting should be timed to coincide with a mast year. Table 8 lists the only property where the Group Selection System will be considered.

Table 8: Oxford County Properties managed with the Group Selection (Single Tree Selection) System

Sched.	Prop #	Name	Area (ac)	Forest Comp	Previous Harvest	Species Comp	BA	reason	Harv year	Product
B	14	Tillsonburg Closed Landfill	27.00	Oaks		Or5Ms2Ow1Mh1Oh1	39.2	BA	2024	Maple logs

Section 8: Proposed 10 Year Activities (2018-2027)

The Council of the County of Oxford has declared the use of these lands to be for "forestry purposes" that is to include the production of wood and wood products, provision of proper environmental conditions for wildlife, protection against flood and erosion, recreation and protection and production of water supplies.

Oxford County forests are expected to generate a sustainable supply of forest products. The harvests will be carried out using the appropriate Silvicultural System and follow Good Forestry Practices. Ash and Beech will be a priority for harvest or salvage. Table 9 lists the properties which have a high priority for commercial harvest during the next 10 years. The timing of harvests will depend on several factors, including: demand for various species and products, weather conditions specifically affecting lowland sites, and ability to control invasive shrub species.

Table 9: Commercial Harvest 2018-2027

Sched.	Prop #	Name	Forest Comp. (ac)	Forest type	Species Comp	BA	Harv yr	product
A	4	Embro Tract South	46.37	Mixed wood	Aw3Ms3Wb2Pr1Oh1	33.0	2018	Aw Logs
B	5	Oxford Cty Tavistock Lagoon	17.70	Upland Hdwd	Ms5Mh2Aw1Be1Oh1	31.5	2018	Aw logs
A	7	McBeth Tract	13.80	Upland Hdwd	Aw3Ob3Mh2Cb1Hi1	29.3	2018	Aw Logs
B	18	Thornton Wellfield, Hodge's Pond: O	4.50	Cedar	Ce9Aw1	80.0	2019	Ce logs
B	18	Thornton Wellfield, Hodge's Pond: J	9.80	Cedar	Ce8Pr2	50.0	2019	Ce, Pr pulp
B	18	Thornton Wellfield, Hodge's Pond: D	20.80	Plantation	Pw6Pr4	45.5	2019	Pine pulp
A	7	McBeth Tract	48.11	Plantation	Sn5Pw4Oh1	46.0	2020	Sn Logs
A	4	Embro Tract North	37.00	Plantation	Sn6Pw4	45.0	2021	Sn Logs
B	3	Lakeside Closed Landfill	24.20	Plantation	Pw9Cb1	44.0	2021	Pw logs
A	1	Chesney Tract	22.60	Lowland Hdwd	Ms10	43.0	2022	Ms Logs
B	18	Thornton Wellfield, Hodge's Pond	17.00	Lowland Hdwd	Ms9Aw1	40.5	2023	Ms Logs
B	14	Tillsonburg Closed Landfill	27.00	Oaks	Or5Ms2Ow1Mh1Oh1	39.2	2024	Mh logs
A	5	Hall Tract	70.91	Lowland Hdwd	Ms5Aw3Wi1Oh1	36.7	2025	Ms Logs
A	6	Lakeside Tract	27.40	Lowland Hdwd	Ms10	36.0	2026	Ms Logs

Oxford County maintains and protects water supplies for many communities. The protection against floods and erosion and the provision of proper environmental conditions for wildlife will be enhanced by increasing forest cover through tree planting. Table 10 lists properties with potential tree planting sites. The scheduling of tree planting will depend on tree stock availability, size of project and staff time. Partnerships with Conservation Authorities, Ducks Unlimited and volunteers will be sought where appropriate.

Table 10: Tree Planting 2018-2027

Sched.	Prop #	Name	Tree plant (ac)	Notes
A	3	Drumbo Tract	0.5	lowland site, heavy competition; Ob, Ms, Ce; large stock; 200/ac
B	13	Otterville Closed Landfill	0.5	possible planting site but may be landfill cap
B	14	Tillsonburg Closed Landfill	0.5	small agricultural field
B	5	Oxford Cty Tavistock Lagoon	1.0	upland site; mix of Hdwd; 200/ac
B	18	Thornton Wellfield, Hodge's Pond: N	1.5	add topsoil prior to planting, very stony
B	4	Highland Shop Buffer	2.0	lowland site, heavy competition; Ob, Ms, Ce; large stock; 200/ac
B	15	Oxford County Waste Management Facility Buffer Lands	2.0	possible planting site to link the 4 small woodlots
B	18	Thornton Wellfield, Hodge's Pond: P	2.0	small agricultural field
B	2	North Oxford (Thamesford) Closed Landfill	2.5	possible planting site but may be landfill cap
B	1	West Zorra (Embro) Closed Landfill	3.5	possible planting site but may be landfill cap
B	18	Thornton Wellfield, Hodge's Pond: L	4.0	small agricultural field
B	17	Oxford County Beachville Park	5.0	Tree plant on DU berms and old field site along the road
B	18	Thornton Wellfield, Hodge's Pond: B	6.0	unused part of agricultural field, steep slopes
B	7	Blandford-Blenheim Closed Landfill Pt A	10.5	Tree planting potential site (unsure where landfill cap is).
A	5	Hall Tract	DU	tree plant on DU berms
B	7	Blandford-Blenheim Closed Landfill Pt B	DU	tree plant on DU berms
B	18	Thornton Wellfield, Hodge's Pond: P	DU	Tree plant on DU berms
B	6	Oxford County Plattsville Lagoon	Lagoon	possible planting site around lagoons
B	18	Thornton Wellfield, Hodge's Pond: O	under plant	Under plant prior to harvest of Cedar
B	18	Thornton Wellfield, Hodge's Pond: O	under plant	under plant in empty rows

B	18	Thornton Wellfield, Hodge's Pond: D	under plant	under plant with mix of shade tolerant species before harvest
B	10	Holbrook Closed Landfill	under plant	Under plant Or, Hemlock and Hickory

Table 11 is a list of properties that have a high priority for commercial harvest due to Emerald Ash Borer infestation or high Basal Area AND that also have some invasive Buckthorns present. The threat to the forests by invasive species will be addressed by controlling Buckthorn prior to a commercial harvest. The work will be scheduled based on budget and time availability but is intended to be carried out in the year prior to a planned commercial harvest.

Table 11: Invasive Species Control 2018-2027

Sched.	Prop #	Name	Comp. size (ac)	Forest type
B	18	Thornton Wellfield, Hodge's Pond: J	9.80	Cedar
B	18	Thornton Wellfield, Hodge's Pond: O	4.50	Cedar
A	1	Chesney Tract	22.60	Lowland Hardwood
A	5	Hall Tract	70.91	Lowland Hardwood
A	6	Lakeside Tract	27.40	Lowland Hardwood
A	4	Embro Tract South	46.37	Mixed wood
A	7	McBeth Tract	48.11	Plantation
B	18	Thornton Wellfield, Hodge's Pond: D	20.80	Plantation
A	6	Lakeside Tract	2.40	Upland Hardwood
A	7	McBeth Tract	13.80	Upland Hardwood
B	5	Oxford Cty Tavistock Lagoon	17.70	Upland Hardwood
B	3	Lakeside Closed Landfill	24.20	Plantation
A	4	Embro Tract North	37.00	Plantation

Various other issues and projects will be addressed on the following properties. The work will be scheduled based on budget and time availability.

Table 12: Various Projects 2018-2027

Sched.	Prop #	Name		Planned Activity
A	7	McBeth Tract	2018	Control beaver population
B	11	Holbrook Closed Landfill Buffer Lands	2018	Remove Permanent Hunting Blind
B	12	Oxford County Norwich Lagoon	2019	Control Beech clone thickets

B	14	Tillsonburg Closed Landfill	2019	Fence property due to ATV use and erosion
B	17	Oxford County Beachville Park	2018	Investigate Tall-grass Prairie remnant for restoration work
B	18	Thornton Wellfield, Hodge's Pond: L & O	2018-2020	Release young Oaks from competing conifers
All	All	All	Annual	Monitor gates, fences and replace signs

The forest manager should develop an annual work schedule based on the 10 Year plan.

Image 3: Black cherry at Chesney Tract
Image source: Eleanor Reed

Section 9: Proposed 10 Year Reporting (2018-2027)

A system of record keeping will need to be developed and maintained. An annual report should list Property name, project type, area, revenue and costs.

Section 10: Contacts and Notes

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