

REPORT TO COUNTY COUNCIL

2023 Managed Forest Plan Update

To: Warden and Members of County Council

From: Director of Public Works

RECOMMENDATION

1. That County Council receive Report PW 2024-07 entitled “Managed Forest Plan Update: 2023 Review and Operational Activity Forecast” for information.

REPORT HIGHLIGHTS

- This report provides an update on 2023 Managed Forest Plan undertakings, including, but not limited to:
 - Commercial timber harvesting generating close to \$14,000 in revenue, including harvests on 11.3 ha across the Zenda and Drumbo Tracts as well as the Lakeside Closed Landfill;
 - Afforestation plantings of 12,000 trees across 6.9 ha of fallow land;
 - Reforestation plantings of 700 trees across 3.6 ha of existing woodland/wetland; and
 - Invasive species management across 45.4 ha.
- Details of the proposed upcoming operational activity forecast associated with the active management of both the Agreement Forests and forested sections of other County-owned rural properties are also highlighted.

IMPLEMENTATION POINTS

Implementation of the recommended activities included within the 20 year Managed Forest Plan (MFP) began in 2018. County-managed forest properties consist of parcels of land acquired as Agreement Forests in accordance with the provisions of the *Forestry Act, 1990*, as well as parcels of land acquired for other purposes such as source water protection, wastewater lagoon operations and the monitoring of closed landfills.

In previous years, a primary focus of forest management has been the salvage/harvest of ash and beech trees on affected properties. Presently, the percentage and quality of ash trees is severely declining and subsequently so is the demand for logging this species.

In accordance with the MFP, secondary and tertiary thinning of conifer plantations in Agreement Forests, as well as tree planting, invasive species management and wetland rehabilitation initiatives are currently the driving forces behind active management. In future years, activities will be selected based on priorities listed within the Plan, new priorities based on the current state of County woodlands, funding availability, specialized contractor availability and workload.

Financial Impact

Revenue generated from the 2023 MFP harvesting activities totalled approximately \$14,000 (2023 budget forecasted revenue = \$15,000) as follows:

- Lakeside Closed Landfill generated ~ \$9,350 from a second thinning in a white pine/white spruce parcel;
- Zenda Tract generated ~ \$3,125 from a second thinning in a white pine parcel; and
- Drumbo Tract generated ~ \$1,450 from a hybrid poplar parcel (partial harvest).

The 2023 Woodlands Conservation total operating expense budget was \$249,032. The 2023 operating expense budget included the management of County owned forested properties and wetlands (\$139,400) and activities associated with landowner engagement, enforcement of the County's Woodlands Conservation and Weed Control By-laws (\$76,456).

Communications




The County's forest management work is outlined for the public in the [Managed Forest Plan](#) as posted on the County's website. The MFP is planned to be updated in 2027 and implemented in 2028. Closer to the 2027 update, Public Works will share the program's progress in the most recent 10-year period.

A copy of Report PW 2024-07 will be made available to the Ontario Woodlot Association, Woodland Owners Association, Ducks Unlimited, Upper Thames River Conservation Authority, Grand River Conservation Authority, Long Point Region Conservation Authority, Catfish Creek Conservation Authority and the Ministry of Natural Resources and Forestry. Highlights from the Managed Forest Plan Update will also be shared on social media.

2023-2026 STRATEGIC PLAN

Oxford County Council approved the [2023-2026 Strategic Plan](#) on September 13, 2023. The Plan outlines 39 goals across three strategic pillars that advance Council's vision of "Working together for a healthy, vibrant, and sustainable future." These pillars are: (1) *Promoting community vitality*, (2) *Enhancing environmental sustainability*, and (3) *Fostering progressive government*.

The recommendations in this report supports the following Strategic Plan Pillars and Goals:

PILLAR 1	PILLAR 2	PILLAR 3
		
Promoting community vitality	Enhancing environmental sustainability	Fostering progressive government
	<p>Goal 2.1 – Climate change mitigation and adaptation</p> <p>Goal 2.2 – Preserve and enhance our natural environment</p>	

See: [Oxford County 2023-2026 Strategic Plan](#)

DISCUSSION

Background

In August 2017, County Council adopted Report [CAO 2017-11](#), “County Managed Forest Properties Review.” The Report recommended the continued public ownership and active management of the forest tracts owned by the County, in accordance with good forestry practices and for staff to consider partnership opportunities to advance the forest properties’ natural environment and public value.

As per Report [PW 2019-26](#), staff retained a forestry consulting services to develop a 20-year Managed Forest Plan (MFP). The MFP covers the period from 2018 to 2037 and concentrates resources on commercial harvesting, tree planting and invasive species management. The MFP included a detailed 10-year Operational Work Schedule for the first ten-year period (2018 to 2027) in which 14 parcels were identified as a priority for commercial harvest.

While the MFP identifies 14 parcels for management, it should be noted that harvesting activities are not strictly limited to these parcels. Several other parcels from both Agreement Forests and Source Water Protection forests are assessed for harvesting on a yearly basis based on ideal tree stocking, weather conditions and contractor availability.

Tree planting and invasive species management, while included in the MFP, were not associated with any specific timeline. The MFP recognized that a tree planting and invasive species management program would be established gradually and increased year-over-year. Only a general framework and parcel management recommendations were given. Review and evaluation of the work related to these tasks in the first ten-year period will be used to inform the work schedule for the second ten-year period (2028 to 2037).

Comments

Summary of 2023 Managed Forest Plan Undertakings

A number of projects and/or programs were undertaken in 2023 in support of the active management of the County's forested properties. These activities are detailed below.

i) Tree Harvesting

Three parcels not initially included in the 2023 MFP commercial harvest schedule (Lakeside Closed Landfill, Zenda Tract and Drumbo Tract) were added to the 2023 undertakings. Thornton Wellfield, Hodges Pond parcel 'P' was scheduled in the 2023 MFP; however, commercial harvesting in that parcel was put off for the foreseeable future as it is a highly sensitive wetland with limited access and challenging topography.

The Lakeside Closed Landfill harvest was originally scheduled for 2021 in the MFP but was carried-over and undertaken in 2023. The market conditions were not suitable in 2021 and contractor availability in 2022 was limited. The white pine parcels were subjected to a typical "second thinning" and small patch of white spruce was salvaged with a clear cut in 2023.

The conifer plantation at the Zenda Tract was slated for a full-scale harvest in the fall of 2021 but the risk of a market freeze on material used to make pressure-treated products was looming. Rather than risk a price drop or market freeze during a large-scale machine-harvest, the planned harvesting was delayed to 2022. The white pine parcel at the Zenda Tract was subjected to a typical "second thinning" and completed early 2023.

The plantation at the Drumbo Tract was not originally identified or scheduled in the MFP. Juglone toxicity caused by the black walnut planted throughout the stand killed adjacent white pine. The hybrid poplar section of the plantation was subjected to a partial harvest (2 of 6 hectares) in December 2023 and paused as ground conditions worsened.

While not considered a commercial harvest, a 6-hectare parcel of 25 year-old white spruce and white pine in the northern section of Thornton Wellfield, Hodges Pond parcel 'P' was thinned as part of an oak savannah restoration project. Between 30% and 50% of the canopy was removed with the intention of re-utilizing the material as shredded biomass in a new Source Water Protection wetland (Strik Drain) in 2024. The operation is slated to continue throughout 2024 in similar parcels throughout Thornton Wellfield, Hodges Pond parcel 'P'.

In accordance with the MFP, the 2023 harvesting activities were focused primarily on conifer plantation thinning as well as stand improvement harvesting in hardwood parcels. Hardwood forests require stand improvement to remove trees with major defects, undesirable species and unacceptable growing stock in order to improve the overall quality of the stand.

Conifer plantations, while primarily intended as a nurse crop for shade tolerant deciduous hardwoods, function as a valuable habitat type and source of quality timber. Periodic thinning is required to allow the diameter and timber quality of the conifers to increase as well as increase the amount of natural regeneration and the number of trees in the future forest. Trails and access points used by logging equipment in turn allow for greater access for the public to enjoy

hiking and hunting. Wildlife habitat quality increases dramatically in the years following a timber harvest as new growth establishes.

A summary of 2023 tree harvesting activities by property is shown below in Table 1.

Table 1: Tree Harvesting Projects/Programs Undertaken in 2023

Operation	Objective	Hectares	MFP Timeframe	Actual Timeframe Completed
Lakeside Closed Landfill	Second thinning of white pine plantation and clear cut of white spruce plantation	7.2 ha	2021	April 2023
Zenda Tract (agreement forest)	Second thinning of white pine plantation	2.1 ha	No timeframe given	April 2023
Drumbo Tract (agreement Forest)	Group selection of hybrid poplar plantation	2.0 ha	No timeframe given	December 2023

ii) Tree Reforestation and Afforestation

Afforestation is the planting of trees in an area not previously forested. Afforestation projects in 2023 included 12,000 trees across 6.9 ha of fallow land. Reforestation plantings of 700 trees occurred across 3.6 ha of previously-harvested woodland and immature conifer plantations. Overall, a total of 12,700 seedlings were planted. The 2023 afforestation effort focused on the Thames River Wetlands (Beachville Park: 'C') and Thornton Wellfield - Hodge's Pond 'P' as follows:

- Thames River Wetlands - 12,000 seedlings were planted to establish woodlands on historically fallow pastureland and increase connectivity between two large parcels of woodland bordering the north and south of the compartment to the benefit of a strong wildlife population.
- Thornton Wellfield, Hodges Pond 'P' - 700 seedlings were planted with stakes and tree shelters in order to transition a poor quality, immature conifer plantation into a combination of tall prairie grass, oak savannah and woodland over 100 acres in order to create an ecosystem with significantly greater wildlife and cultural value.

The woodland parcels subjected to commercial harvest in 2022 did not received any reforestation in 2023 as they had adequate natural regeneration present.

A summary of tree planting activities by property is shown below in Table 2.

Table 2: Tree Afforestation and Reforestation Undertaken in 2023

Operation	Objective	Acreage	MFP Timeframe	Actual Timeframe Completed
Thames River Wetlands (Beachville Park: 'C'): afforestation (seedlings)	Machine plant: 4,000 white pine; 4,000 hybrid poplar; 1,000 swamp white oak; 500 sycamore; 500 red oak.	5.5 ha Planted along the Thames River and its tributaries	No given timeframe	May 2023
Thames River Wetlands (Beachville Park: 'C'): afforestation (seedlings)	Hand plant: 1,000 white pine; 1,000 bur oak.	1.4 ha Planted along the Thames River and its tributaries	No given timeframe	May 2023
Thornton Wellfield, Hodges Pond – parcel 'P': reforestation (seedlings)	Hand plant: 400 bur oak; 50 shagbark hickory; 100 American hazelnut; 100 wild apple; 50 paw paw.	3.6 ha Scatter planted throughout with stakes and shelters installed	No given timeframe	May 2023

iii) Invasive Species Management

Management of invasive species in County woodlands is often guided by commercial logging activity. The rationale being that heavy equipment activity and the change of canopy density have the greatest influence on the spread of seed and the growth rate of established plants. Invasive species management is not strictly limited to non-native plants. Within woodlands, European buckthorn (invasive shrub) and American beech root clones (native plant displaying qualities of an invasive species) are of greatest concern. In woodland edges and open ground, Japanese knotweed and *Phragmites Australis* (phragmites) are of greatest concern. In a planting site, reed canary and other grass species pose the greatest concern.

Much of the phragmites present on rural County properties has been, or is in the process of being, eradicated. Therefore, the focus has started to move toward other non-native grasses that form monocultures. Reed canary grass presents many of the same concerns as phragmites as they both form dense monocultures that prevent the establishment of native species. Reed canary grass is often eradicated in anticipation of tree planting or seeding of native wildflowers and prairie grasses the following year.

The only foliar herbicide application for 2023 was an overspray of the planting compartment at the Thames River Wetlands to reduce grass competition with the recently planted tree seedlings. The herbicide application covered approximately 5.6 ha.

European buckthorn, tatarian honeysuckle, beech root clones and several less common understory species are actively being targeted for eradication within County managed woodlands. Heavy equipment use is a common vector for the spread of invasive species. Approximately 45.4 ha across 2 properties were treated with a basal spray of Garlon RTU in order to control the population of invasive shrubs prior to harvest activity. This will allow native hardwood and herbaceous species to establish in the understory and a commercial harvest may be considered in future years.

A summary of invasive species management activities by property is shown below in Table 3.

Table 3: Invasive Species Management Activities Undertaken in 2023

Operation	Objective	Acreage	MFP Timeframe	Actual Timeframe Completed
Creditville Tract - northern half (agreement forest):	Garlon RTU application on European buckthorn, glossy buckthorn, multi-flora rose, spindle bush and tatarian honeysuckle	5.0 ha	No given timeframe	November 2022
Vance Tract (agreement forest)	Garlon RTU application on European buckthorn, multi-flora rose, spindle bush and tatarian honeysuckle	40.4 ha	No given timeframe	November 2022
Thames River Wetlands (Beachville Park: 'C')	Glyphosate application on cool-season grasses competing with new seedling trees	5.6 ha	No given timeframe	November 2023

iv) Planned 2024 Managed Forest Plan Undertakings

Overall, as per the 2024 budget, 24.2 ha of woodland are planned for commercial harvest and 5.5 ha are planned for non-commercial thinning. Approximately 10,000 tree seedlings will be planted across 8 compartments totalling 14.8 ha. Invasive species management will be carried out on three properties totalling 24.7 ha. The projects and/or programs planned to be initiated in 2024 are detailed below in Table 4.

Table 4: Planned 2024 Undertakings

Operation	Objective	Hectares	MFP Timeframe	Anticipated Timeframe
Tree Harvesting				
Hall Tract (agreement forest)	Final removal of failed red pine plantation	10.1 ha	No given timeframe	March 2024
Lakeside Tract (agreement forest)	Final removal of red pine in mixed wood stand	8.1 ha	No given timeframe	April 2024
Drumbo Tract (agreement forest)	First (and final) thinning of white pine; and, First (and final) thinning of hybrid poplar	6.0 ha	No given timeframe	March 2024
Thornton Wellfield, Hodges Pond parcel 'P'	Non-commercial thinning of immature white pine and white spruce parcels	5.5 ha	No given timeframe	Summer 2024
Invasive Species Management				
Thames River Wetlands parcel 'D'	Garlon RTU application on European buckthorn	6.4 ha	No given timeframe	Spring 2024
Drumbo Tract (agreement forest): competition management	Glyphosate/Simazine application on invasive herbaceous plants and grasses around planted seedlings	8.2 ha	No given timeframe	Summer 2024
Hall Tract (agreement forest): competition management	Glyphosate foliar application on invasive smooth bedstraw and garlic mustard as preparation for 2025 tree planting	10.1 ha	No given timeframe	Spring and fall 2024

Table 4: Planned 2024 Undertakings (Continued)

Tree Reforestation and Afforestation				
Drumbo Tract: Rehabilitation project	Hand plant and install tube shelters: bur oak seedlings within patch clear cuts (1,000 seedlings with tall grass prairie)	8.2 ha	No given timeframe	May 2024
Thames River Wetlands (Beachville Park parcel 'D'): afforestation (seedlings)	Hand plant coniferous and deciduous seedlings: standard density (3,000 seedlings)	1.6 ha	No given timeframe	May 2024
Thornton Wellfield, Hodges Pond parcel 'L' (seedlings)	Hand plant coniferous seedlings: low density (2,150 seedlings)	1.3 ha	No given timeframe	May 2024
Drumbo Tract: road allowance (seedlings)	Hand plant coniferous and deciduous seedlings: standard density (1,200 seedlings with tall grass prairie)	0.8 ha	No given timeframe	May 2024
Thornton Wellfield, Hodges Pond parcel 'G' (seedlings and potted stock)	Hand plant deciduous seedlings: standard density (1,400 seedlings)	0.8 ha	No given timeframe	May 2024
Tavistock Lagoons: woodland edge	Hand plant coniferous and deciduous seedlings: low density (500 seedlings, oaks installed with tree shelters)	0.2 ha	No given timeframe	May 2024
Thornton Wellfield, Hodges Pond parcel 'C' (seedlings)	Hand plant coniferous seedlings: standard density (1,800 seedlings)	1.2 ha	No given timeframe	May 2024
Thornton Wellfield, Hodges Pond parcel 'B' (seedlings)	Hand plant coniferous seedlings: standard density (1,200 seedlings)	0.7 ha	No given timeframe	May 2024

In terms of commercial harvesting, the Hall Tract and Lakeside Tract were not scheduled for 2024 in the MFP as there was no accurate way to predict when the red pine would decline to the point that a final removal would be warranted. The red pine at these Tracts now have matured that they are sufficiently suitable for harvesting. Reforestation of the Hall Tract will be carried out in 2025, 2026 and 2027. The red pine at the Lakeside Tract has sufficient natural regeneration of desired species that it can be removed without the need to reforest the stand.

The Drumbo Tract was also not scheduled in the MFP because the amount of the white pine parcel still alive in the stand was not considered large enough to warrant harvesting and the hybrid poplar had no commercial value at the time. One property (Tillsonburg Closed Landfill) was scheduled for commercial harvest for 2024 in the MFP but can not commercially harvested since the sole private land access to the parcel was denied the neighbouring landowner.

v) Challenges

As no detailed inventory of County-owned forest tracts has been completed and historical management data is limited, many smaller-scale timber harvesting activities have not been given a specific timeframe for completion. Many woodland tracts are seasonally flooded restricting the window for harvest opportunity to persistent sub-zero winter temperatures or dry summer weather. Ideal winter conditions are becoming less common with the change in climate, adding additional challenges to harvesting on schedule. The window for offsetting the impacts of Emerald Ash Borer and Beech Scale through commercial harvesting is narrowing as a result of timber quality decline.

By breaking down large tracts into smaller parcels, actively monitoring each property and maintaining high level communication with logging contractors, mills and local forestry professionals, staff are able to operate under shorter timeframes. This allows for a larger percentage of forest stands to be actively managed under ideal conditions and presents the opportunity to eradicate invasive species and reforest cut-over areas with greater efficacy.

CONCLUSIONS

The Managed Forest Plan serves as a framework to guide the activities associated with active management of County owned forested lands. The ultimate goal is not restricted to maximizing the revenue generated over the short term, but rather the long-term sustainable supply of forestry products.

The operational activities identified will improve the overall health of the forest lands and has the potential to serve as a role model for sustainable environmental management practices through habitat enhancement and good forestry practices.

SIGNATURES

Report author:

Original signed by

Travis Lockhart
Woodlands Conservation Municipal Law Enforcement Officer

Departmental approval:

Original signed by

David Simpson, P.Eng., PMP
Director of Public Works

Approved for submission:

Original signed by

Benjamin R. Addley
Chief Administrative Officer