

# Invasive Species Centre 2023 Oak Wilt Training Workshop Final Report

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## 1. Background

Oak wilt (*Bretziella fagacearum*) is an invasive fungal pathogen that spreads in the vascular system of oak trees, restricting the upward movement of water and nutrients. The leaves of infected trees can wilt and drop without these resources, resulting in complete defoliation early in the spring and summer. Red oak trees are particularly vulnerable to oak wilt and typically die within a single season, sometimes as early as 2-4 weeks. While white oaks can slowly develop the signs of oak wilt, the infection is far more deadly and apparent in red oaks. The pathogen has been identified in 24 States, with the closest known U.S. detection found within 500 metres from Windsor, Ontario on Belle Isle, Michigan. In May 2023, the Canadian Food Inspection Agency confirmed the first ever case of oak wilt in Canada after receiving reports of symptomatic trees in the City of Niagara Falls, Ontario. Oak wilt was later confirmed in the township of Springwater and nearby town of Niagara-on-the-Lake.

The arrival of this destructive forest invader is concerning for the health of oak trees in urban and natural forests throughout Ontario and Eastern Canada. Oak trees are mast-producing keystone species that play an important role in the structure and function of local communities. The loss of oak trees could reduce biodiversity, habitat, and available ecosystem services like carbon sequestration and temperature regulation. Oak wilt infestations in the endangered oak savanna ecosystems in southern and central Ontario would be particularly concerning as they provide food and habitat for a variety of species, including rare plants, insects, reptiles, birds, and mammals.

The spread of oak wilt would also have large economic impacts to Canadians. Oak trees are highly valued for their durable, strong, and stable wood, making them suitable for creating furniture, cabinets, floors, fences, barrels, and more. The loss of these trees would reduce available timber supply, disrupting both commercial and residential construction. The specific economic impacts of oak wilt have been analysed in both the United States and Canada. In 2020, [Pedlar and colleagues](#) estimated the value of standing oak timber in Eastern Canada at \$126 million and the cost of removal and replacement of impacted oak street trees to be between \$266 and \$420 million.

Learning how to identify and report oak wilt is extremely important for the early detection and rapid response of this pathogen. To increase oak wilt monitoring, the ISC organized and hosted an in-person Oak Wilt Training Workshop in Windsor, Ontario for government staff and independent arborists. There have been extensive efforts since the initial detection to increase public awareness in the regions directly impacted by oak wilt, but outreach to neighbouring high-risk areas is just as important. The proximity of Windsor and Essex County to Michigan makes it extremely vulnerable to a future oak wilt invasion, making it a perfect location for additional training. This report summarizes the activities and outcomes of this workshop and the continued support for key audiences as a result of this funding.

## 2. Deliverables Summary

Through the Oak Wilt Training Workshop, the Invasive Species Centre (ISC) has been able to increase oak wilt awareness and outreach in southern Ontario, including the high-risk areas around Essex County.

### Windsor Training Workshop

The Invasive Species Centre hosted a free, full day Oak Wilt Training Workshop in Windsor on September 7<sup>th</sup> in collaboration with the Ontario Woodlot Association and the Ontario Chapter of the International Society of Arboriculture (Figure 1).

### Oak Wilt Training Workshop Agenda

**Location:** Ojibway Nature Centre | 5200 Matchette Rd, Windsor ON, N9C 4E8  
**Date:** September 7, 2023  
**Time:** 9:00AM – 4:00PM

9:00	Welcome, Introduction & Overview Madison Sturba   <i>Invasive Species Centre</i>
9:10	Oak Wilt Overview David Dutkiewicz   <i>Invasive Species Centre</i>
9:45	Oak Wilt in Canada Chris Balardo and Jason Griffin   <i>Canadian Food Inspection Agency</i> *Virtual presentation
10:45	Oak Wilt in Niagara Falls Charlie Smith   <i>City of Niagara Falls</i>
11:25	Morning Break Refreshments available
11:40	Oak Wilt in Michigan Heidi Frei   <i>Michigan Department of Natural Resources</i>
12:40	New Research David Dutkiewicz   <i>Invasive Species Centre</i>
1:10	Resources Madison Sturba   <i>Invasive Species Centre</i>
1:15	Questions and Trivia Panel will answer any additional questions Winners of trivia will receive a prize!
1:30	Afternoon Break Some refreshments available – please bring a backup lunch
1:50	Outdoor Practical Scenario Participants will be given a scenario and asked to determine next steps (e.g., measure oak trees, determine tree removals, establish trench lines, etc.)

Figure 1. Agenda for the Oak Wilt Training Workshop in Windsor.

The workshop drew 32 attendees from a variety of affiliations, including municipalities, federal and provincial government, conservation authorities, campgrounds, and independent arborists (e.g., City of Windsor, City of St. Thomas, Town of Oakville, City of Brantford, Highland Pines Campground, Essex Region Conservation Authority, Ontario Parks, Long Point Region Conservation Authority, etc.). Representatives from 17 different tree service companies were also in attendance (e.g., Davey Tree, Wyoming Tree Service, etc.) to learn about safer oak care practices.

The event was held at the Ojibway Nature Centre and consisted of an indoor morning session and outdoor afternoon session. The indoor session ran for approximately 5 hours and featured five different guest speakers from the Invasive Species Centre, Canadian Food Inspection Agency (CFIA), City of Niagara Falls, and Michigan Department of Natural Resources (MDNR; Figure 2). After learning about the biology, spread, and impacts of oak wilt, attendees heard from federal and municipal experts: Chris and Jason from the CFIA talked about how the Canadian government has been preparing and monitoring for oak wilt, and Charlie from the City of Niagara Falls updated on how oak wilt was managed at the infested sites in Ontario. Heidi provided a United States government perspective on how oak wilt has been managed in Michigan and talked about some lessons learned that could be applied here in the



future. The indoor session wrapped up with a talk from the ISC about new oak wilt research, which could help inform best management practices. Having a wide range of speakers and affiliations was done in order to bring a variety of experiences and expertise, as well as provide those in attendance with additional connections after the event.



Figure 2. Indoor session of the Oak Wilt Training Workshop

In the afternoon, attendees were guided outside for a practical field scenario led by Heidi Frei from MDNR. To gain a better understanding of how oak wilt is managed, attendees were brought to two different “infected” field sites in Ojibway Park where they were then asked to assess the area, take measurements, determine tree removals, and plan trench lines. Everyone was given a handout of the Bruhn Model, which is a system used to determine the likelihood of underground root grafting and oak wilt spread. Each site had different management outcomes: site #1 had smaller red oaks isolated in a cluster along park trails, meaning less trenching would be required (Figure 3). Site #2 was out in the oak savannah where there were larger red oaks spread out across the field (Figure 4), meaning heavy trenching would be required to isolate oak wilt.



A)



B)





C)

Figure 3. Site #1 for the outdoor session. A) Signage to represent a tree infected with oak wilt. B) Attendees measuring the distance between red oak trees to determine the likelihood of underground oak wilt spread. C) Attendees placing flags for trench lines to separate root grafts



A)



B)

Figure 4. Site #2 for the outdoor scenario. A) Attendees assessing the site to figure out which trees are at risk for oak wilt. B) Attendee measuring the diameter of a large red oak tree for Bruhn Model.

The ISC provided take-home resources for attendees, including [fact sheets](#) and [plant pest cards](#), to further increase the reach of the information outside of the workshops. Attendees were also directed to the ISC website, which has additional recourses and information on oak wilt in both English and French (e.g., [species profile](#)). These resources support municipal, conservation, and forest industry staff by providing additional knowledge to identify and report oak wilt in Ontario. 15 eligible individuals also received Continuing Education Units through the International Society of Arboriculture for attending the Windsor workshop.

Surveys were distributed virtually in the days following the event. The Oak Wilt Training Workshop received positive feedback, with all 11 respondents strongly agreeing (73%) or agreeing (27%) that the content was informative (Figure 5; see appendix). All respondents either strongly agreed (64%) or agreed (36%) that they feel better equipped to champion oak wilt preparation and awareness within their organization, showing a potential increase in action and future eyes-on-the-ground monitoring (Figure 6; see appendix).

Continued training in these high-risk areas will be important in preventing the spread of oak wilt in Ontario and throughout Canada. Key audiences are recognizing the benefits of training, as all respondents said they feel more compelled to participate in future invasive species action (45% strongly agree, 55% agree; Figure 7; see appendix).

### 3. Budget Breakdown

Several attendees expressed interest in receiving additional resources and outreach materials following the event. After the workshop, the ISC printed a variety of factsheets, signage, additional invasive species resources etc., for several priority pests impacting the areas of those in attendance. These materials will be used as sources of information for staff and members of the public that were unable to attend the in-person workshop.

Planning for the Windsor Workshop originally included cross-border travel to visit known infection zones in Michigan. While this has been done in the past, companies no longer offer this service post-Covid. As a result, the ISC adapted workshop planning to include an outdoor practical scenario led by a Michigan expert. This change was well-received, with one participant saying they “found Heidi Frei’s presentation and practical portion to be the most helpful. It seemed like most of the attendees needed to know what to do when we encounter oak wilt and her pieces addressed that.” Another participant said, “the quiz and outdoor activities were great ways to recall what we had learned, and put them to use in a variety of ‘what-if’ scenarios.” Due to the change in location, we were able to reduce spending on the workshop logistics and, with OWF approval, move spending to produce additional outreach materials to help expand the reach of the workshop. Forest pest public outreach material kits have been sent out to partners in City of Windsor, City of Niagara Falls, and Township of Springwater to support their forest pest and oak wilt outreach to the public.

A portion of the funds were used to increase accessibility of our existing oak wilt checklist for municipalities which was previously only available in English. We’ve seen an increased demand for bilingual resources, and this allowed us to add this factsheet to our French forest pest materials.

Table 1. Breakdown of costs for Oak Wilt Training Workshop in Windsor

Item	Cost (rounded)
Workshop venue and food for participants (e.g. coffee, juices, pastry and fruit trays, pizza)	\$590

Outreach materials for oak wilt and other priority pests impacting the areas of those in attendance (e.g., printing of factsheets, oak wilt municipal checklist, signage, CFIA pest cards; English-French translations)	\$4210
Shipping educational materials to participants and municipalities	\$200
<b>Total (CAD)</b>	\$5000

#### 4. Appendix

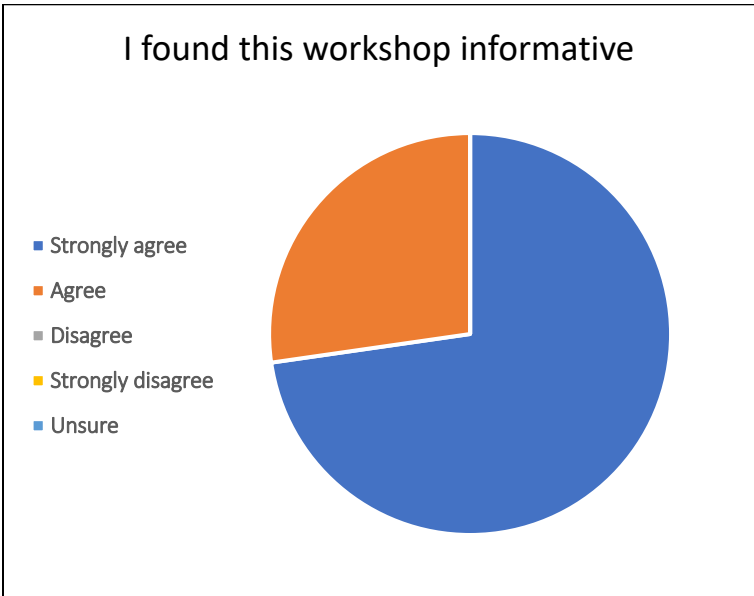


Figure 5. Responses to question #1 based on attendees that filled out the survey. The survey results showed that 8 respondents (73%) strongly agreed and 3 (27%) agreed that the workshop was informative.



Figure 6. Responses to survey question #2 based on attendees that filled out they survey. The survey results showed that 7 respondents (64%) strongly agreed and 4 (36%) agreed that the workshop made them feel better equipped to champion oak wilt preparation and awareness within their own organization.



Figure 7. Responses to question #3 based on attendees that filled out the survey. The survey results showed that 5 respondents (45%) strongly agreed and 6 (55%) agreed that they felt more compelled to participate in invasive species action after attending the workshop.





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