

Surveillance of elm trees for Dutch elm disease and Dutch elm disease public awareness in municipalities along the Alberta and Saskatchewan border

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Project Background

As part of the agreement between the Alberta Agriculture and Rural Development and the Society to Prevent Dutch Elm Disease (STOPDED), surveillance of elm trees must be done in municipalities where the Dutch elm disease (DED) vectors have been found. Since smaller elm bark beetles (SEEBB) and banded elm bark beetles (BEBB) have been captured in a number of Alberta (AB) and Saskatchewan (SK) municipalities along the AB/SK border, and since SK has reduced their DED provincial management/prevention program, the goal was to survey all elm trees in approximately 30 municipalities along this border the first year while the elm trees are leafed out. DED detection is dependent on the public, therefore public awareness of disease identification and prevention are essential. A public awareness campaign was conducted in each surveyed municipality by distributing brochures and posters, speaking to key municipal personal and Agriculture Fieldman and encouraging STOPDED public awareness material to be viewed including the STOPDED "Last Stand" DVD

Project Objectives

1. To determine if Dutch Elm Disease (DED) is suspected in the municipalities surveyed.
2. To take samples from elms showing suspect symptoms and sent into the STOPDED approved lab for diagnosis.
3. To increase public awareness activities on DED and how to prevent the disease conducted in all surveyed municipalities. When possible, key municipal personal and Agriculture Fieldmen are to be contacted and pamphlets, posters and business cards of the STOPDED executive director were to be distributed.

Materials Methods and Discussion

1. To determine if Dutch Elm Disease (DED) is suspected in the municipalities surveyed.

The surveillance was carried out in municipalities in the following Alberta Municipality Districts and Counties during the months of July-August of 2010. Elm totals are included and taken from the STOPDED inventory taken in 1998-1999 found on www.stopded.org.

- Municipal District of Acadia Valley (1476 elm)
 - Acadia Valley,
- Municipal District of Taber (4,868 elm)
 - Barnwell, Enchant, Grassy Lake, Taber Vauxhall.
- Municipal District Wainwright (3,290 elm)
 - Chauvin, Edgerton, Fabyan, Greenshields, Heath, Irma, Jarrow, Ribstone, Wainwright, Military Base camp at Wainwright
- Municipal District Provost (1,357 elm)
 - Municipalities surveyed in the M.D. of Provost were Amisk, Bodo, Cadogan, Czar, Hayter, Hughenden, Metiskow and Provost.

- County of Cardston (1,174 elm)
 - Municipalities surveyed in the M.D. of Cardston included Cardston, Hill Spring, Leavitt, Magrath, Spring Coulee and Welling.
- County of Cypress (3,839 elm)
 - Dunmore, Irvine, Onefour, Ralston, Red Cliff, Suffield, Walsh, Wildhorse
- County of Warner (1,241 elm)
 - Municipalities surveyed in Warner County included Coutts, Milk River, Raymond, Stirling and Warner.
- County of Forty Mile (1,303 elm)
 - Bow Island, Burdett, Foremost, Manyberries, Etzikon and Orion.
- Special Areas #2 and #3 (6,826 elm)
 - Cereal, Empress, Oyen, Sedalia, Sibbald ,Youngstown
- Municipality of Drumheller (6,223 elm)

Municipal Districts Wainwright and Provost were added later to be surveyed. Due to a smaller European elm bark beetle (SEEBB) found on the first set of 2010 trap in Wainwright, the high elm populations in these districts, their close proximity to Saskatchewan and the history of an isolated case of DED in 1998 in the Town of Wainwright, it was felt that all elms should be surveyed in these districts. A SEEBB was also found in the Municipality of Drumheller in a 2010 trap and for that reason it also was surveyed this year. Drumheller has a large amount of elm trees and a large tourist population who could perhaps be transporting firewood from a beetle infested province.

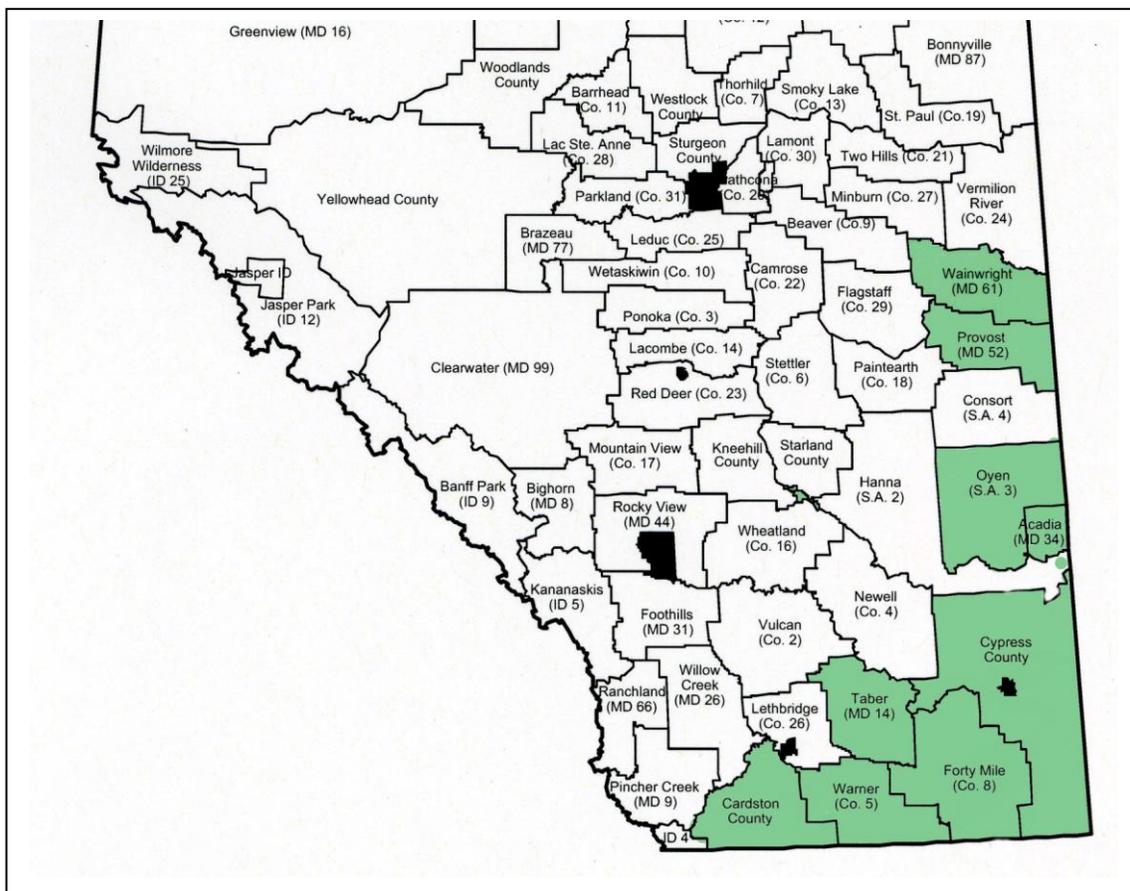


Figure 1. Areas surveyed in this study are highlighted in green

County of Cypress

In smaller towns (Suffield, Irvine, Walsh) the elm were mostly Manchurian elm and many with much dieback, typical of the species where insufficient water and care were available. Redcliff, Dunmore and Ralston have both American and Manchurian elm in good numbers and though the dieback on Manchurian was noted on a few trees, most were in very good shape. Onefour is an Agriculture Canada Research farm where many Elms (mostly Manchurian) had been planted around the residential and administration buildings. Upkeep including proper pruning has been carried out as well as time and budget has allowed, but irrigation to the landscape has not been available for several years and trees are suffering.

Municipal District of Acadia Valley, Special Areas #2, and Special Areas #3

Oyen and Youngstown have both American and Manchurian elm, mostly Manchurian. The elm were in good shape and well maintained in general in both towns, though three Manchurian elm in Youngstown were severely pruned into a pom-pom shape and a Manchurian elm hedge was spotted in Oyen. The remaining towns have Manchurian elm almost exclusively, and there was the typical dieback seen on some of these elm due to lack of water and attention. The elms in Sedalia and Sibbald were particularly poor as were many of the other tree species planted there. A Manchurian hedge was spotted in Cereal.

Municipal District of Taber

The Manchurian elm at Enchant does show much dieback but the few American elm there were good. Elms are not a major tree species in Enchant. The remaining towns have both American and Manchurian elm planted and are doing fine in all these communities. There are occasional Manchurian elm with the typical dieback (particularly at Grassy Lake), but not in great numbers. A Manchurian elm hedge was spotted at Vauxhall.

Municipal District of Wainwright

Rural farm locations in a two mile radius of the Town of Wainwright were also observed as the elm inventory had included them. Chauvin, Edgerton, Fabyan, Greenshields, Heath, Irma and Jarrow had mostly Manchurian elm and they were generally in good shape though the typical dieback was noted on a few trees at each location. The American elm in these towns are fine and a Manchurian elm hedge was spotted at Edgerton. There are no elm at Ribstone. The military base at Wainwright has mostly very good Manchurian elm with some recently planted American elm (Brandon?) in the newer district. The town of Wainwright has many very good mature elm of both species lining the streets. There are a few Manchurian elm in town with dieback, but none displaying DED symptoms. Elms noted on farmsteads were mostly Manchurian elm and though some displayed dieback common with the species, most were in good shape.

Municipal District of Provost

Bodo, Cadogan, Czar, Hayter and Metiskow have mostly Manchurian elm which were good except there were few in each town showing the typical dieback. Amisk and Hughenden also had a fair number of American elm which were in good shape where some of their Manchurian elm did show dieback. The town of Provost has some streets lined with beautiful mature American elm. Good mature Manchurian elm are observed in some districts. Typical dieback was spotted on a few Manchurian elm.

County of Forty Mile

Manyberries and Orion has mostly Manchurian elm which were good with a few showing dieback. Burdett and Etzikon have more American elm than Manchurian elm all generally in good shape. Both Bow Island and Foremost have many good American and Manchurian elm with dieback showing on some of the Manchurians

in both towns. Many farms on the road between Bow Island and Foremost have elms growing as shelterbelts and around the farmsteads. Manchurian elm is used more and dieback is present on some. American elm were in good shape with little or no dieback.

County of Warner

In this county most of the elm planted are American elm. Manchurian elm were present especially in Milk River, but little or no dieback was observed. Both species of elm were good. Very few trees were present in areas between municipalities.

Municipal District of Cardston

Most of the elm planted in the M.D. of Cardston are American elm. The village of Spring Coulee has a grouping of American elm in a poor location which are struggling with some dieback. Other elm there are fine. Other species (caragana) near the poor elm also suffer. In Magrath most of the elm (American) are in very good shape except two showing dieback. Welling and Leavitt have a few American elm which are all doing well. Hill Spring has mostly good American elm with one row of about ten Manchurian elm with one displaying some dieback. Cardston has a few Manchurian elm with typical dieback but mostly without. American elm is more predominant and are good to very good specimens.

Drumheller Municipality

In 1998 several villages were absorbed into the municipality of Drumheller. Those which were surveyed included Cambria, East Coulee, Lehigh, Nacmine, Rosedale and the town of Drumheller. The Drumheller Valley has a large amount of volunteer Manchurian elm seedlings growing along the ditches and parkways. These were observed and though in some cases dieback was showing, DED symptoms were not. In Cambria, East Coulee, Lehigh and Nacmine the elm were Manchurian and dieback was showing on a few specimens but the remainder were good. In Rosedale, Manchurian elm was the dominant elm and a few had been severely pruned to encourage a profusion of branches from a large cut (like topping). Other Manchurian elm and American elm were good. Drumheller has many very good Manchurian elm specimens, but dieback had been observed on a few. The American elm were good. Severe pruning of a few Manchurian elm was observed.

2. “To take samples from elms showing suspect symptoms and sent into the STOPDED approved lab for diagnosis.”

This was to be done by surveying or observing the elm population of identified municipalities and rural areas looking for DED symptoms. If symptoms were observed, samples were to be taken and sent using the procedures and forms on the STOPDED web site at www.stopded.org. Throughout the survey, no symptoms of DED had been observed and therefore no sampling was necessary.

3. “To increase public awareness activities on DED and how to prevent the disease conducted in all surveyed municipalities. When possible, municipal personal and Agriculture Fieldmen are to be contacted and pamphlets, posters and business cards of the STOPDED executive director were to be distributed.”

Agriculture Fieldmen and town officials were contacted if possible. Town offices were visited on occasion and information was left for distribution. Not all the Agriculture Fieldmen were available and messages were left if possible. About 20 Fieldmen and town officials were contacted. Four different Travel Alberta

Information Centres were visited and in all cases, information brochures were displayed and posters were up. About a dozen campsites and rest areas were visited along the way and poster put up for public awareness. At Provost, the local newspaper ran an article on the survey.

Conclusions

Fortunately, DED symptoms were not seen in any of the municipalities surveyed in 2010. I did find that a large number of Manchurian elm with dieback may be a concern. Many municipalities along the Alberta/Saskatchewan border from the M.D. of Wainwright down to Cypress County and along the Alberta/Montana border to the M.D. of Cardston were surveyed for the presence of DED this summer. Public awareness seems to be growing and the materials are available. Visitors entering the province can see the STOPDED signs from every direction and bins for the firewood are at every border crossing. These must be contributing factors to the result of the survey that no symptoms of DED were observed.

Lessons Learned

To keep expenses down and allow for more of the research funds to go towards labor and not expenses, I used my tent trailer and stayed in campgrounds as overnight accommodations instead of hotels. This allowed more municipalities to be surveyed within the budget.

Contacts made were very helpful and keenly interested (for the most part) in the survey and the survey results.

Many of the campsites and recreation areas visited already had the information available and the posters up.

Onefour in Cypress County is an Agriculture Canada research farm and to access the farm itself requires application forms and up to at least a month for approval. Fortunately the all the elms are located around the residence and administration buildings and were accessible for the survey.

Most of the trees were observed while driving the streets slowly. In larger communities, some parks and alleyways had to be surveyed on foot. A GPS device was a very helpful tool for the survey.

The survey was concluded at the end of August when trees were beginning to show fall colour. The elm were still showing green leaves mostly though some stressed trees were beginning to change. A suggested target date for completion of future surveys may be the end of the third week of August.