

# Cooperative Pest Management Area for Emerald Ash Borer

## Wellsboro Borough and Deerfield Township In Tioga County, Pennsylvania

Prepared by Erica Tomlinson, Tioga Conservation District

Template provided by PA DCNR, Bureau of Forestry. Modified by Wellsboro Borough & Deerfield Township



## Table of Contents

Administration.....	2
Executive Summary.....	3-4
Authority.....	5-6
Definitions.....	7
Introduction.....	8-9
EAB Infestation.....	9
Ash Resource .....	10-12
Management Options.....	13-14
Management Approaches.....	14-15
Replanting.....	16
Wood Utilization.....	17
Community Outreach.....	18
Cost/Benefit Analysis.....	19
Fiscal Planning.....	20
Time Table.....	20
Data Collection and Reporting.....	20-21
Contacts and Information.....	21
Acknowledgements.....	22
References.....	22
Appendices.....	22-32



Figure 1: Adult Borer (ojibway.com).

## **Administration**

The Cooperative Pest Management Area for Emerald Ash Borer in Tioga County is administrated by each individual Borough or Township EAB Manager. The EAB Manager reports to the Borough Council and/or the Supervisors of the individual township. Borough or township residents are encouraged to contact their EAB Manager for questions or concerns related to this plan.

### **Tioga County Commissioners:**

Roger C. Bunn Commissioner  
Mark L. Hamilton Commissioner  
Erick J. Coolidge Commissioner

### **Wellsboro Borough:**

John E. Wheeler, Wellsboro Mayor  
Daniel Strausser, Borough Manager

### **EAB Manager:**

Howard Rutledge, Chairman Wellsboro Shade Tree Commission  
Peter L. Herres, Executive Director Wellsboro Parks and Recreation  
14 Crafton St., Wellsboro, PA 16901  
570-724-3186

### **DCNR Service Forester:**

Steve Hoover  
Department of Conservation and Natural Resources  
One Nessmuck Lane, Wellsboro, PA 16901-9700  
(570)-724-8128

### **Deerfield Township:**

Douglas Paultz, Chairman Supervisor

### **EAB Manager:**

Roger Bacon, Supervisor  
5322 Rt. 49, Knoxville, PA 16928  
814-326-4930

### **Tioga County Conservation District:**

Erica Tomlinson, District Manager  
50 Plaza Lane, Wellsboro, Pa 16901  
570-724-1801

## Executive Summary

Tioga County, Pennsylvania is a rural county that is located in the north central portion of the state. The county is 1,137 sq. miles and is made up of 39 municipalities. According to the 2013 census the population is 42,463. The major land use categories in the county are: Forestland (67%), Agriculture (23%), and residential (3.8%). Another important land use for this plan is a small area (0.2%) which is designated as recreation and green space (2005 Tioga County Comprehensive Plan). The majority of the forest land within Tioga County is located within the three state parks, six state picnic areas, three state game land tracts and two US Army Corp of Engineers facilities.

The Tioga County Emerald Ash Borer Plan is a unique plan in comparison to other plans written throughout the state as it encompasses both urban and rural settings. This presents some interesting challenges due to differences in street trees vs. trees along rural roadways as well as different or lack of tree-specific ordinances. The county recognizes the importance of ash trees within our area and is striving to provide outreach, education, and assistance throughout the entire community.

The positive impacts that trees have upon our communities include aesthetics, air quality improvement, energy conservation, storm water mitigation, carbon dioxide uptake, oxygen release and increased property values. Ash species make up a sizeable portion of the tree populations in the Borough of Wellsboro and Deerfield Township, Tioga County, PA. Ash trees were surveyed within the borough along selected sections of streets and public use areas such as parks and playgrounds. This was only a representative sampling. Two large wooded areas also exist within the Borough of Wellsboro limits and were not surveyed. These likely contain many more ash. Deerfield Township, being much larger and mostly privately held, was surveyed in a much more general way as to respect landowner rights. This being said, 1,376 ash trees were counted along roadway samplings within Deerfield Township. Many more occur along the throughout the rest of the landscape. Wellsboro trees are appraised at \$ 241,483 with Deerfield trees at \$85,339.52. The non-native invasive EAB is a very serious threat to every one of these trees. As of September 2014, the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) listed 55 of 67 Pennsylvania Counties as infested. "A capture and confirmation of the EAB was made by an employee of the PA DCNR , Bureau of Forestry , Division of Pest Management , north of Leonard Harrison State Park (also) on a purple trap ."

<http://ento.psu.edu/extension/trees-shrubs/emerald-ash-Borer/timeline-of-eab-detection-in-pa> .

Wellsboro's chosen management option is one of action, with the focus on removal. The Borough of Wellsboro, however, will chemically treat highly-prized ash trees. Out of a total of 222 ash trees, 23 ash trees within the borough will be treated with a chemical injection and 199 are slated for removal. Wellsboro is intending to replace all of the ash trees over the next ten years with non-host species. Since the ash trees within Deerfield Township are outside of the township right-of-way, the township's

management option is no special action. The township plans on doing education and outreach to residents and plans to remove hazardous and fallen trees within their jurisdiction and will not chemically treat or replace ash trees.

The 10-year cost for Wellsboro is estimated at \$218,214.12, varying from \$ 7,234.00 - \$25,390.00 per year. For Deerfield, the total is estimated at \$ 821,472, with an unknown amount being spent per year due to the uncertainty of when/if they become a safety issue within the road right-of-way. The hope is to conduct extensive education about the Emerald Ash Borer and get the landowners to begin managing their forest plots for lumber or firewood, etc. Both communities will actively apply for grants from various government and private organizations to help them pay for their costs.

Owners of private property are responsible for ash (including street trees) on their properties. Wellsboro Shade Tree Commission, Deerfield Township Supervisors and/or the PA DCNR will provide technical advice. Please contact the EAB Manager listed above for further details.

Wellsboro Borough's EAB Program Manager will oversee the plan implementation and the borough's council will audit it annually. As conditions change, adjustments to the plan may be made yearly. Within Deerfield Township, the Township's Supervisors will be in charge.

Public gatherings and media events will inform the communities about EAB and the progress of the management plan. Public input and inquiries are welcome, as are cooperation and volunteerism.

All data for this report were gathered by Pennsylvania College of Technology, Forest Technology student interns under the direction of the Pennsylvania Urban and Community Forestry Council, PA DCNR and Tioga County Conservation District. All management decisions were made by the EAB Program Managers and the Township Supervisors. This plan was formatted from the Emerald Ash Borer Management Plan Template provided by the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, Division of Forest Pest Management.



## Authority

The health of the ash trees in Tioga County, Pennsylvania is threatened by the EAB. Tioga County understands that the loss of these trees will have a negative impact on the quality of its shade tree canopy, and public safety concern will arise when these trees are found in public places. Federal, State, and Local regulations provide local authority to manage the EAB and mitigate its damage in Tioga County.

**Wellsboro** jurisdiction maintains the following (as taken from the Wellsboro Shade Tree Commission Ordinance#601, Amendment to Ordinance #420 found in Appendix 1):

**Section 2:** The commission shall have exclusive custody and control of the shade trees in the right of way of the borough of Wellsboro, and is authorized to plant maintain and protect shade trees on the public highways in the Borough.

**Section 5-C-(1):** No person may remove, prune, trim, or alter a shade tree in the public right of way without first obtaining a permit under the provision of this ordinance. When removal of a shade tree is deemed appropriate by the commission, upon issuance of the permit, the shade tree commission shall allow the tree to be removed, and require the stump to be removed to a minimum depth of 4” below the surface of the surrounding ground.

**Section 5-C-(2):** All pruning of shade trees within the public right of way of the municipality of Wellsboro shall conform to ANSI A300- 1995 or current pruning standards-“Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices” (see full document Appendix 2); and the latest revision of the ANSI Z133-1 “Safety Requirements for Pruning, Trimming, Repairing, Maintenance, Removing Trees and for Cutting Brush. A copy of both of these documents will be kept on file at the Borough office.

Under **Section 13** of said ordinance: The commission may, after investigation and upon a finding by it that certain plants, shrubs, or trees are afflicted with Dutch Elm disease or any other disease which threatens to injure or destroy other plants, shrubs, or shade trees, require an owner to cut and remove such afflicted plants, shrubs, or trees, whether they be located upon a public street, or elsewhere upon the property of such owner, within two weeks of such written notice.

**Section 13-A:** If occurrence is on private property, the commission shall first contact the owner and identify the problem. The commission reserves the right to order a tree removed that is infected with Dutch Elm or other disease, which in the opinion of the commission imposes a hazard to other shade trees in the municipality.

Borough residents are urged to direct any and all questions of jurisdiction to their borough office, and read the full Wellsboro Shade Tree Ordinance (Appendix 1) before performing any and all tree activities.

The Hazard Tree program of Wellsboro: any tree deemed unsafe by the commission shall be removed by the commission and their contractor. No tree may be removed by private property landowner. The cost of the operation to remove these said hazard trees will be paid by the landowner with a 50% reimbursement by the commission of Wellsboro Borough.

**Wood Removal:** Removal of any and all wood debris from trees that are maintained by the Borough shall be handled by the Borough commission. All transportation of ash wood must be done so according to current state and federal regulations.

**Deerfield Township** jurisdiction maintains the following:

Deerfield Township states that there is no current ordinance in place at the township level for removal of hazard trees. Removal of dead and dying trees on property owners' land is the responsibility of the property owner. Deerfield Township only has jurisdiction in the Township's right of way and must keep roads open. If a hazard tree fails and falls into the road, Deerfield Township will remove at the expense of the township; however, if an excessive amount of trees fall into township roads because of lack of action in removal by owners, Deerfield Township may enact a new ordinance for reimbursement by the property owner for cost of removal.

**Wood Removal:** It is a determination by the Township that all wood debris left from failed trees found in the road shall be left for property owners' fuel or disposal once the trees are removed from the road. All transportation of ash wood must be done according to state and federal regulations.

All residents of Tioga County that reside outside of Wellsboro Borough and Deerfield Townships' jurisdiction are asked and encouraged to read your Borough or Township ordinances regarding any and all tree activities. Contact your Borough Manager and /or Township Supervisors with any questions you may have regarding tree maintenance, treatments, and removals. You may also contact the local service forester from the Department of Conservation and Natural Resources for questions on Emerald Ash Borer infestation or visit their website at [www.dcnr.state.pa.us](http://www.dcnr.state.pa.us).

## **Definitions**

Canopy – the upper stems, limbs and foliage which spread out from the main tree trunk

Canopy cover – the percentage of a land area topped by tree canopy

Chemical injection - the application of insecticide, by hypodermic needle, into the trunk or roots of the tree to kill invasive boring insects feeding on living tree tissues

DBH – tree diameter at breast height (4 ½ feet above ground)

EAB – emerald ash borer

Infestation – trees found to have been invaded by insects feeding upon their living tissues

Phloem – in vascular plants, phloem is the living tissue that carries organic nutrients, particularly sucrose, to all parts of the plant

Quarantine – a ban on the transportation of ash materials from one county or state jurisdiction to another



## Introduction

The County of Tioga lies in the northern tier of Pennsylvania, and is home to the Grand Canyon of Pennsylvania. It is known for its beautiful views from the mountaintops, forested state lands for hunting and camping, and also for many large lakes for fishing and boating activities. Tioga County contains 10 Boroughs, 29 Townships, and 10 unincorporated communities. Trees are a vital part of Tioga County's beauty. The ash trees (*Fraxinus* spp.) makes up an estimated 305 million trees in Pennsylvania forests (McCaskill, 2013). Tioga County has become aware of the dangers that face their ash tree population by the infestation of the Emerald Ash Borer (*Agrilus plannipennis* Fairmaire).



**Figure 2: Colton Point State Park (pinterest.com).**

In 2002, the emerald ash borer was discovered in the forests of Michigan. It is a beetle native to northeast Asia. The female lays eggs under the bark where they hatch. First instars burrow into the bark and cambial region, feeding on the nutrients and the water that the tree uptakes. The tree will face a 99% mortality rate just 4-5 years after first attack. It has been reported that tens of millions of ash trees have been decimated because of this non-native threat.



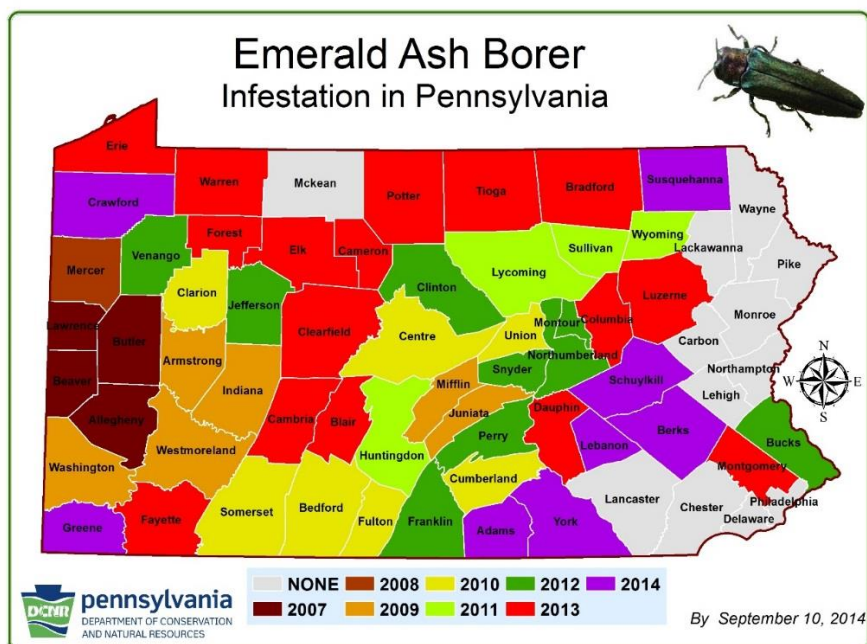
**Figure 3: Destruction of timber (clarksvilleonline.com).**

This Cooperative Pest Management plan will serve as the master plan and as a model for Tioga County. Currently this plan is geared towards Wellsboro Borough and Deerfield Township to manage its' street and hazardous right-of-way ash trees for the course of the next 10 years. The goals for this plan are to protect valuable street trees in parks and public roadways, and to minimize the risk of hazard trees caused by EAB infestation. In the next 10 years, EAB infestation will continue to be monitored on Borough streets and Township roads. Hazard trees will be removed, and valuable trees will be treated with insecticide as funding allows.

### EAB Infestation

Tioga County was first detected with EAB in 2013, north of Leonard Harrison State Park. EAB is capable of flying at least a half mile from the tree it emerged from, according to <http://ento.psu.edu>. Map 1 shows the infestation as it has manifested on a yearly basis. Local agencies will need to routinely monitor ash for signs of infestation. Citizens of Tioga County are encouraged to become educated about EAB and its' signs of infestation and quickly report any suspicions of EAB to the Wellsboro EAB Manager at 570-724-3186, Deerfield Township Supervisor at 814-326-4930 or PA DCNR's Service Forester at (570)-724-8128.

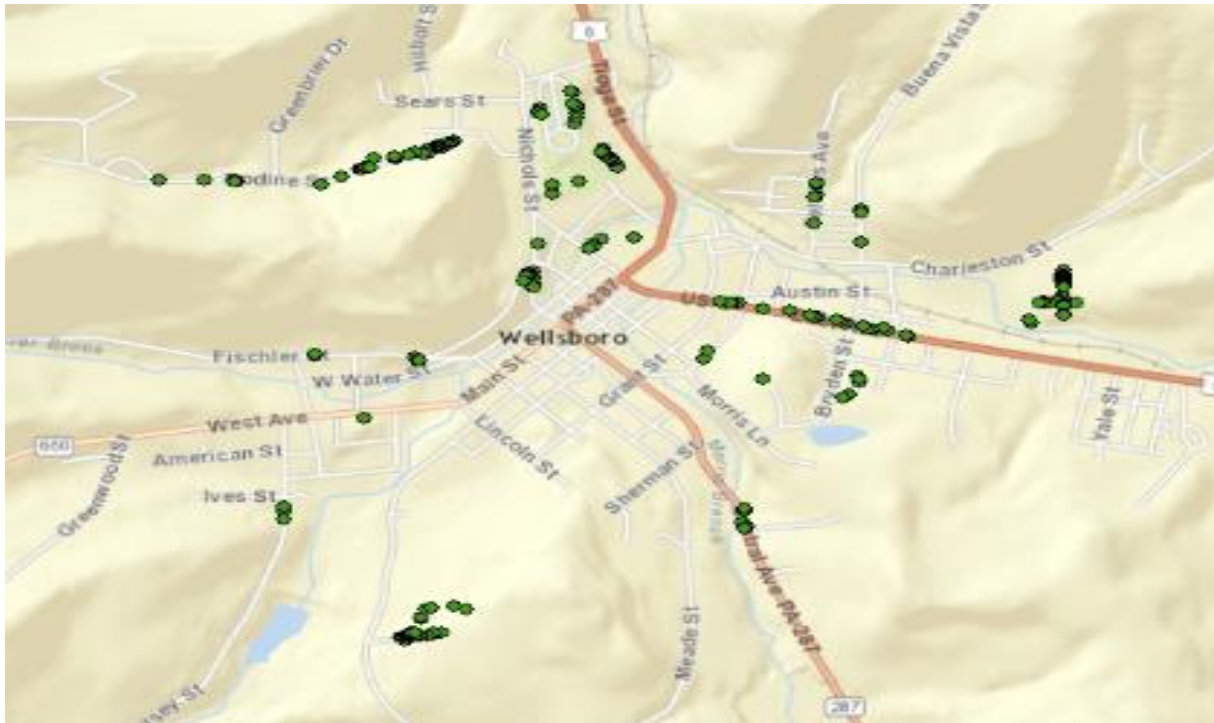
**Map 1: EAB Infestation in PA on yearly basis.**



## Ash Resource

An ash tree inventory was conducted in the Borough of Wellsboro and the Township of Deerfield by interns with the Tioga County Conservation District in June 2014. In the Borough of Wellsboro, a total of 222 ash trees were inventoried ranging in diameter from 1-35 inches at breast height (Table 1). The assessment showed that 97% of the trees are less than 25 inches in diameter while only 3% are between 26-35 inches in diameter. It revealed that 32% of the ash trees are in excellent condition, 29% identified are in good condition, 24% fair, and 14% are in poor condition. Map 2 indicates the locations of all the ash that were found within the boundary of the Borough of Wellsboro. Table 1 shows the relationship between the diameters of the trees found and their current health status.

**Map 2: Location of Wellsboro Borough Ash Trees**



**Table 1: Diameters and Health Conditions of ash trees in Wellsboro Borough**

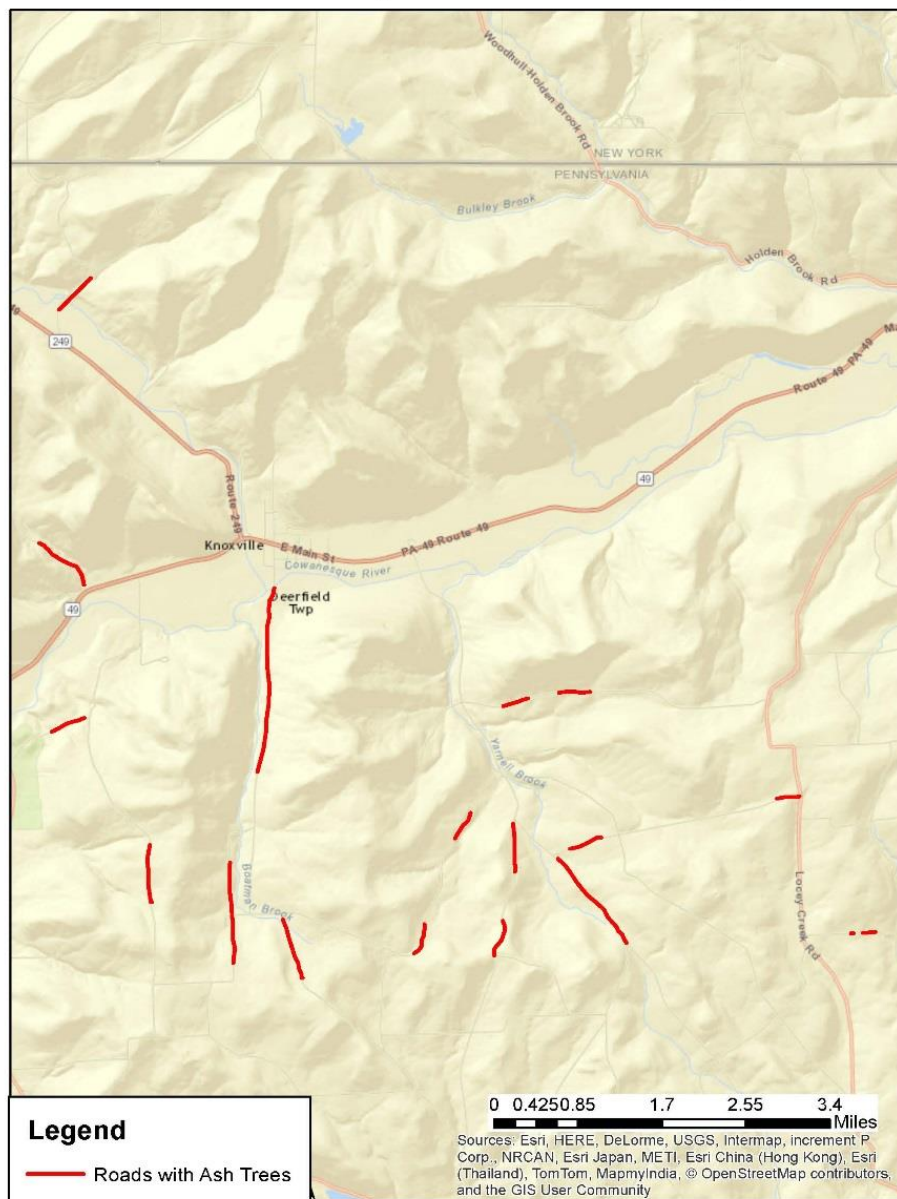
<b>Wellsboro Ash Tree Conditions</b>	<b>0&lt;10"</b>	<b>10-24"</b>	<b>25-35"</b>	<b>Total</b>
<b>Excellent</b>	<b>59</b>	<b>10</b>	<b>1</b>	<b>70</b>
<b>Good</b>	<b>31</b>	<b>29</b>	<b>4</b>	<b>64</b>
<b>Fair</b>	<b>29</b>	<b>24</b>	<b>0</b>	<b>53</b>
<b>Poor</b>	<b>19</b>	<b>13</b>	<b>3</b>	<b>35</b>
<b>Dead</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

There was no inventory conducted on private properties even though numerous ash trees were identified on individual properties in the Borough of Wellsboro. Property owners are encouraged to contact their local Service Forester or an ISA Certified Arborist for help in identification, tree health evaluation and possible treatment options available.

The inventory conducted in Deerfield Township did not include any park trees. The ash trees in Deerfield are found to be all along private property boundaries on gravel roads with the exception of one large ash in a cemetery. The ash trees along these designated boundaries however were counted, with a total estimated number of 1,400. Map 3 identifies the roadways with ash trees visible from the road right-of-way. Private property owners along these roadways are urged to contact their EAB manager for more information on removal or treatment of these trees.

**Map 3: Roadways with Ash Trees inventoried visible from the roadway (Red lines indicate where ash trees have been found.)**

### Deerfield Township Ash Tree Inventory, 2014





## Management Options

Trees provide communities with shade in canopy cover, aesthetic value, erosion control, and provide a renewable valuable resource. After EAB infestation, communities will have to properly manage the resulting remains of their ash resource. Whether it is removal and replanting trees of a non-host species, or treating high value street trees, some form of management strategy and approach must be used. A good management plan requires diligence on the part of the community to make sure each strategy is carried out to minimize the long lasting effects of a reduction in canopy and the loss of high value trees.

The following are management options that a community can choose from:

**Option A: No Special Action.** Upon taking no special action, a community must realize that the end result will be a loss of all of their ash trees, regardless of size and location, to EAB infestation.

**Deerfield Township** has selected Option A. They will, however, be active in property owner outreach and continued awareness so private landowner can have the tools to actively manage their own woodlots.

**Option B: Semi-Action.** In this option, all individual trees along roadways, streets, and in parks will be removed and replaced with non-host species. No future survey of EAB will occur, and no future concerns of EAB will need to be addressed. Communities will have a high cost of removal associated with this option, and canopies in the community will have gaps for several years until natural or planted replacements fill the canopy.

**Option C: Action.** All high value ash trees in the public areas will be managed actively with all privately owned trees left alone. Ash trees will be monitored in the future for EAB activity, and chemical treatment will be put into place for high value trees. Removal and/or replacement are possible and will be put into effect on all other ash trees. The results of this option are all privately owned trees will die and need to be removed, unless they are treated by the property owner. Community boundaries that contain high value trees will be chemically treated and allowed to grow for future generations. All other trees on roadways, streets, and parks will be removed with some possibly being replaced.

**Wellsboro Borough** has selected Option C for their action plan.

**Option D: Aggressive Action.** In this option, all ash resources will be managed aggressively within the community. Chemical control will be put into place to treat all trees, with only dead and dying trees removed and replaced on all roadways, streets, parks, and public places. This option would accumulate the highest costs because of cost of treatment, removal and replacement. EAB surveys will be performed in the future, and all EAB monitoring will continue after treatment is conducted. The results



of this option will be a no reduction in canopy, and the ability to save most of all of the communities' ash resource.

### Management Approaches

Chemical treatment, tree removal and replacement of ash trees will be conducted in Wellsboro as their budget allows. Deerfield will not need to perform these activities, however, the township urges its' residents to become well informed on the EAB infestation, and the tools needed to perform treatment and/or removal as needed.

### Chemical Treatment

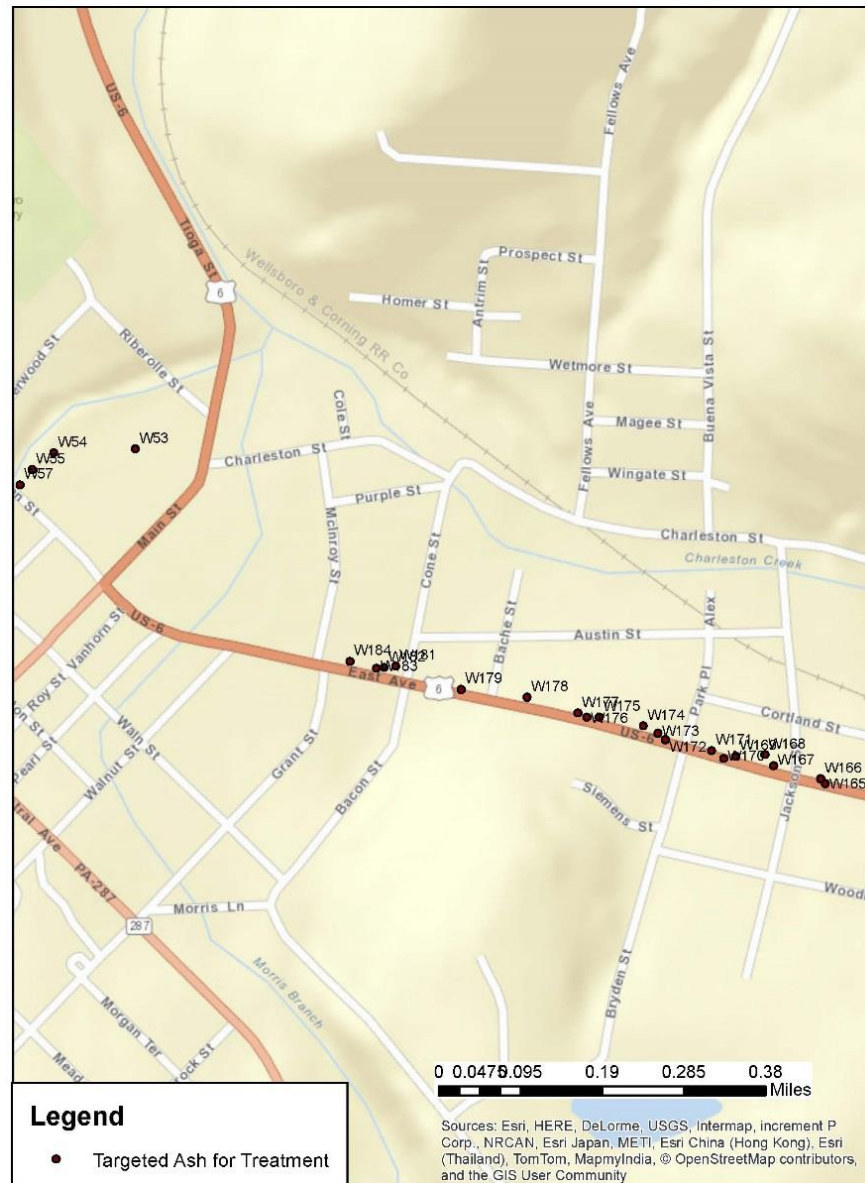
The available ways by which to treat trees include chemical injection, and soil drenches around the base of the tree. Wellsboro Borough has indicated that they will be using the effective Tree-age injection containing the insecticide emamectin benzoate. Trees that have been chosen to treat are in excellent condition and are 10" or larger in diameter. These trees will be treated over the course of the next 10 years as their budget allows. Table 2 indicates diameters and numbers of trees that were found to be in excellent condition within Wellsboro Borough limits, and there by highly recommended to be treated. Map 4 shows the location of the majority of the trees that will be treated by Wellsboro Borough. More detailed information about the treatment options can be found at [http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr\\_010087.pdf](http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_010087.pdf).

**Table 2: Proposed Ash Trees Designated for Treatment by Diameter**

	0<10"	11-20"	21-35"	Total
No. Trees	21	1	1	23

**Map 4: Wellsboro Borough Trees Designated for Treatment (those that are located on East Ave and Packer Park).**

### Wellsboro Ash Trees for Treatment



## Tree Removal

The detrimental effects of the EAB infestation will become illustrated in the coming years by dead and dying trees along park walkways, streets, and roadways in the communities. A total of 199 of the 222 trees that were assessed will be removed. Wellsboro will remove these trees according to available budget and man-power within the Borough. Trees that are dead and dying will be selected for removal first, followed by trees that were assessed in poor, fair, and good condition. Hazard trees in parks and along streets will also be a top priority. Deerfield Township will remove trees as they become a hazard to their roadways. Figure 5 is a illustrating of Sharps Tree Service, an ISA certified arborist, removing a street tree.



**Figure 5: Tree removal ([sharpstreeservice.com](http://sharpstreeservice.com)).**

## Replanting

All trees that are removed may be replaced to ensure that gaps in canopy cover will once again be closed and future generations may enjoy all the value that these trees bring to a community. In Wellsboro, replanting will occur at a 1:1 ratio. Replanting efforts, if needed, will be funded by not only the Shade Tree budget, but also by the use of Foundations such as the Packer, Sweet, Tabor, Ether, and Patterson Foundations that provide funds for the replanting of community trees.

Deerfield Township and other communities may access the help of The Arbor Day Foundation (<http://www.arborday.org/programs/treeCityUSA/treecities.cfm?chosenstate=Pennsylvania>), TreeVitalize (<http://www.treevitalize.net/InYourArea.aspx>), and other organizations both public and private to access funding for tree replanting. All private residents of Tioga County are urged to research all public and private organizations that they may utilize for help in the replanting of their trees.

### **Wood Utilization and Disposal**

Wood debris that is left from ash tree removal or decaying trees that have failed and are falling down into roadways must be removed. According to the current USDA EAB Quarantine policy, as of July 2012, EAB regulated material can move freely within the federal quarantined area of the country, but cannot move past the Federal Quarantine Boundary into protected areas. Movement of regulated ash material from quarantined areas to protected areas may only be completed with the proper federal permit (USDA APHIS, 2014).

According to the current Pennsylvania State quarantine issuance as of April 2011; due to the number of EAB detections in Pennsylvania and surrounding counties in other states, the internal state quarantine restricting the movement of ash debris in Pennsylvania has been rescinded. The Federal Quarantine is still in effect (Emerald Ash Borer Info, 2014).

Wellsboro Borough will be in charge of all wood debris removal within the Borough. Deerfield Township will remove wood debris from roadways, and remove the wood or leave for the property owner if desired for the use of fuel. All other communities and private landowners in the County of Tioga are urged to contact their individual community officials to learn who is in charge of wood disposal in their individual community.

Resident property owners of Tioga County may want to log the ash on their property while it is still viable timber, and may still bring them a financial return. Residents must understand that after EAB infestation, there is not an exact length of time known that the wood is still viable timber, because of entry of fungi, parasites, insects, weather conditions, and moisture, etc. (Easton, PCT). If residents want to timber their woodlot, they are urged to contact their local forester, or the Department of Conservation and Natural Resources Bureau of Forestry at 570-724-2868.



**Figure 6. Community outreach on forestry initiatives.**

### **Community Outreach**

Information can be found about EAB infestations, ash trees, wood disposal, quarantine, chemical treatment, tree removal and replanting. This information will be issued through and not limited to the local newspaper, public open forums, community events, and community and township meetings during the program period.

Property owners within Wellsboro Borough and Deerfield Township are encouraged to attend any one of these informative sessions. Property owners in other areas of Tioga County are also urged to access any one of these activities in your nearby community, and ask your community to access the tools to hold its' own community seminar or training. Information can be obtained by contacting the Department of Forestry, Department of Conservation and Natural Resources of Pennsylvania at (570)724-2868.

Ash trees found on private property are the landowners' responsibility. Landowners must decide whether they will treat their trees, remove them, and/or replant. Wellsboro Borough will help private property owners in their Hazard Tree program, by reimbursing property owners 50% for the removal of a hazard tree that the Borough deems necessary to remove; however, the Boroughs' contractor is the contractor allowed to remove the tree under the program. The private landowner is urged to contact their individual community for further information.

### Cost/ Benefit Analysis

Wellsboro has a total cost of treatment of \$218,214.00 and the current ecological value is \$241,483.00. They are planning on chemically treating the best of trees at a cost of \$1,895/treatment. Over the ten year period this will cost them approximately \$5,682. The remainder of the cost is for removal of the remaining 199 ash trees with a cost of removal at \$700/tree and replanting at \$368/tree.

**Table 3. Ten-Year Budget Proposal for Wellsboro Borough.**

Year	Chemical	Removal	Replace
2015	\$1,894.04	\$3,500.00	\$1,840.00
2016	\$0.00	\$14,700.00	\$7,728.00
2017	\$0.00	\$15,400.00	\$8,096.00
2018	\$1,894.04	\$15,400.00	\$8,096.00
2019	\$0.00	\$15,400.00	\$8,096.00
2020	\$0.00	\$15,400.00	\$8,096.00
2021	\$0.00	\$15,400.00	\$8,096.00
2022	\$1,894.04	\$14,700.00	\$7,728.00
2023	\$0.00	\$14,700.00	\$7,728.00
2024	\$0.00	\$14,700.00	\$7,728.00

Deerfield Township has a total cost of removal of \$821,472, with a current ecological value of \$85,339.52. The township does not have a ten year budget since they currently have no jurisdiction over the trees. The townships plans are to educate the landowners and are anticipating that a large portion of the financial burden of removal will be averted by good forestry management. They will continue to pursue grant funding for the possibility of assisting landowners in removal or treatment on private property.



### **Fiscal Planning**

The 10-year cost for Wellsboro is estimated at \$218,214.12, varying from \$ 7,234.00 - \$25,390.00 per year. For Deerfield, the total is estimated at \$ 821,472, with an unknown amount being spent per year due to the uncertainty of when/if they become a safety issue within the road right-of-way. The hope is to conduct extensive education about the Emerald Ash Borer and get the landowners to begin managing their forest plots for lumber or firewood, etc. Both communities will actively apply for grants from various government and private organizations to help them pay for their costs.

Both Wellsboro Borough and Deerfield Township realize the importance in managing Ash Trees within their communities and are working towards.

### **Time Table**

Each of the communities will be working with our Local Service Forester and ISA Certified Arborist to make educated decisions on tree treatment or removal and replacement. This will be a long term project, but for this plan the time line is estimated over a ten-year period. Wellsboro is planning to complete chemical treatment on 23 of their trees in the first year and remove the most hazardous of the trees. They will then work over the next ten years at removing the trees in the worst condition and advancing on to the trees that are in better condition and chemically treating the 23 target trees every three years to prevent infestation. They will also pursue further grant funding, so the timelines and treatment options may be altered slightly depending on funding availability and the rate in which the trees display declining health. Deerfield Township is planning to conduct education and outreach with hopes that the landowners can take advantage of the resource they have on their property and that the trees can be properly removed prior to becoming a hazard on the roadway.

### **Data Collection and Reporting**

The data for this plan was collected by two interns from the Tioga County Conservation District, Mark Weist and Sharon Morris, in coordination with Kendra McMillin, intern with DCNR Urban Forestry Initiative, Pennsylvania Urban Community Forestry Council and the Tioga County Conservation District. In Wellsboro Borough, an initial survey was completed by the Shade Tree Commission and the interns then went to the streets and chosen locations that were identified. The trees were inventoried for location, DBH, health condition of tree, power line location, and height. From the factors collected a health rating was determined for each tree (Poor, Fair, Good, and Excellent.) This information was then collated and put into a tree inventory program called i-tree (<https://www.itreetools.org/>) on line to give estimates on the ecological benefits of the trees. The information was presented to Wellsboro and determinations were made on which trees should be saved and which should be removed. For Deerfield Township, the township supervisor gave general information as to which roadways had a

good potential to have ash trees along them and the interns went to the selected roads and did a brief survey. Since the trees are located off-right-of-way, the interns were not able to do a full assessment but they did count all of the ash trees they could see and determined an average diameter for the ash trees to be 13" DBH. This information was then used to determine the cost of removal if the tree became a hazard within the roadway and also the ecological benefit of the ash trees along the roadways within Deerfield Township.

### **Contacts and Information**

Pennsylvania Department of Conservation and Natural Resources ([www.dcnr.state.pa.us/forestry/fpm](http://www.dcnr.state.pa.us/forestry/fpm))

Pennsylvania Department of Agriculture EAB hotline: 1-866-253-7189 or ([Badbug@state.pa.us](mailto:Badbug@state.pa.us))

Pennsylvania State University Extension (<http://ento.psu.edu/extension/trees/shrubs/emeraldashBorer>)

Emerald Ash Borers ([www.emeraldashBorerr.info](http://www.emeraldashBorerr.info))

USDA APHIS ([http://www.aphis.usda.gov/planthealth/plant\\_pest\\_info/emerald\\_ash\\_b/regulatory.shtml](http://www.aphis.usda.gov/planthealth/plant_pest_info/emerald_ash_b/regulatory.shtml))

USDA Forest Service (<http://na.fs.fed.us/fhp/eab/>)

i-Tree - Tools for Assessing and Managing Community Forests (<http://www.itreetools.org/>)

TreeVitalize - A partnership to restore tree cover in Pa. communities  
(<http://treevitalize.net/TreeCare/SelectingTrees.aspx>)

EAB Cost Calculator (<http://extension.entm.purdue.edu/treecomputer/index.php>)

National Tree Benefit Calculator (<http://extension.entm.purdue.edu/treecomputer/index.php>)

### **Acknowledgements**

We would like to thank the following individuals for their help in making this Emerald Ash Borer management plan possible:

Wellsboro Borough and Deerfield Township officials for participating in the plan and for your cooperation and helpful information as it pertained to your locality.

Professional Foresters: Steve Hoover, Kerry Gyekis, and Eric Easton (also Forestry instructor, PCT) for their knowledge and help with all of our questions.

Erica Tomlinson from the Tioga County Conservation District for help with coordinating outreach in the communities, and Kendra McMillin, intern for Pennsylvania Urban Forest Council and DCNR for helping us formulate the plan.

Grant funding supported through the USDA Forest Service and the Pennsylvania Urban & Community Forestry Council. Technical assistance and Emerald Ash Borer Management Plan template provided through the Pennsylvania Department of Conservation & Natural Resources, Bureau of Forestry.

## References

*Emerald Ash Borer Info*. (2014). Retrieved from eabinfo.com: [www.eabinfo.com](http://www.eabinfo.com)

Cummings, Smith, Inc. (2005) Tioga County Comprehensive Plan.

McCaskill, G. (2013). *Forests of Pennsylvania 2009*.

USDA APHIS. (2014). Retrieved July 2014, from US Dep Of Agriculture: [www.USDAaphis.gov](http://www.USDAaphis.gov)

## Appendices

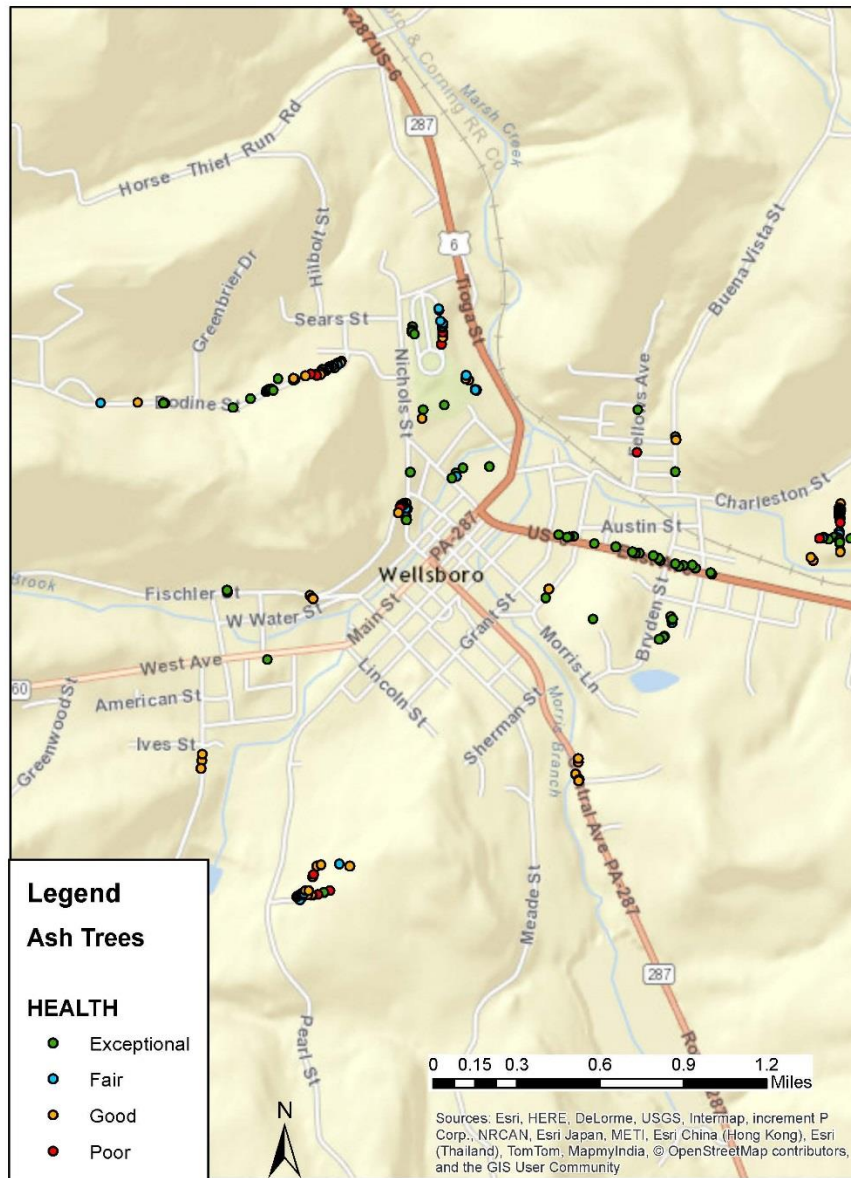
Appendix 1: Wellsboro Borough Tree Inventory Maps

Appendix 2: Deerfield Township Tree Inventory Maps

## Appendix 1. Wellsboro Borough Detailed Maps for 2014 Ash Tree Inventory

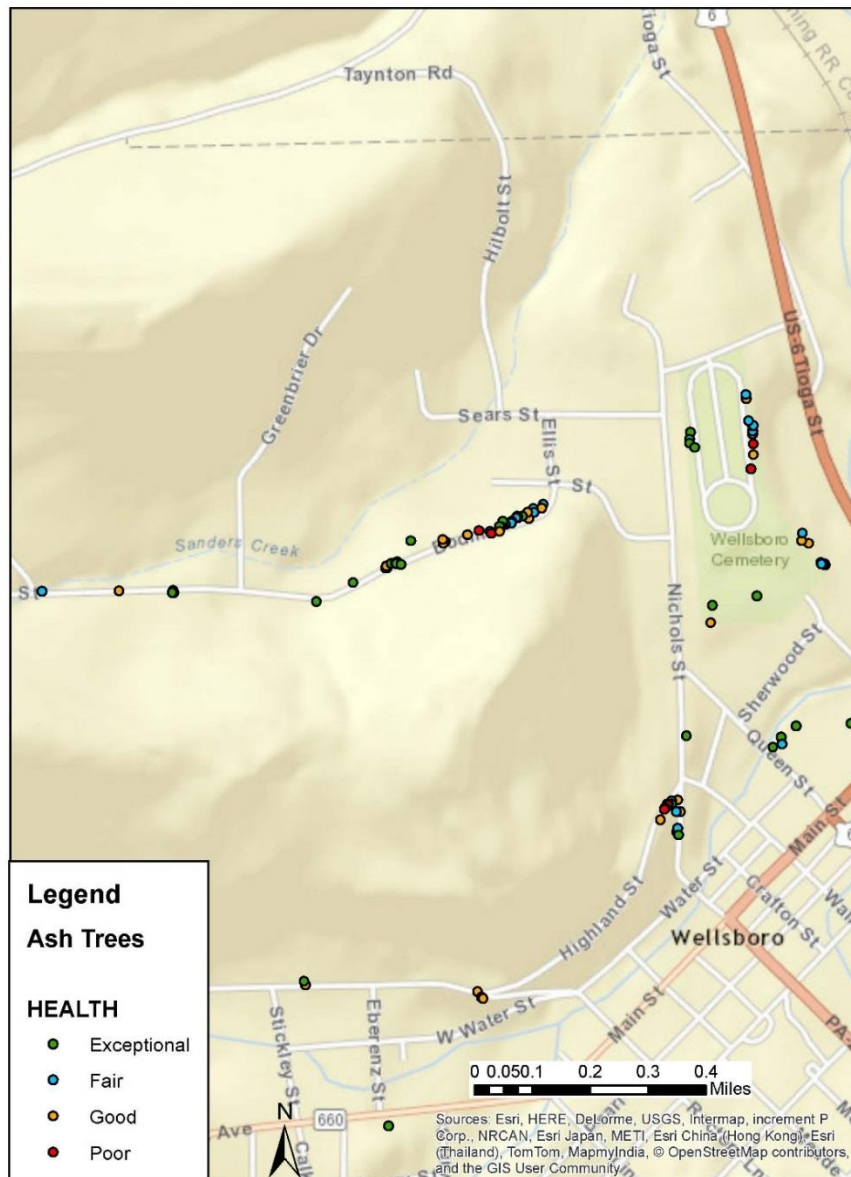
**Map 4. Wellsboro Borough Overview Map for 2014 Ash Tree Inventory**

Wellsboro, PA Ash Tree Inventory 2014



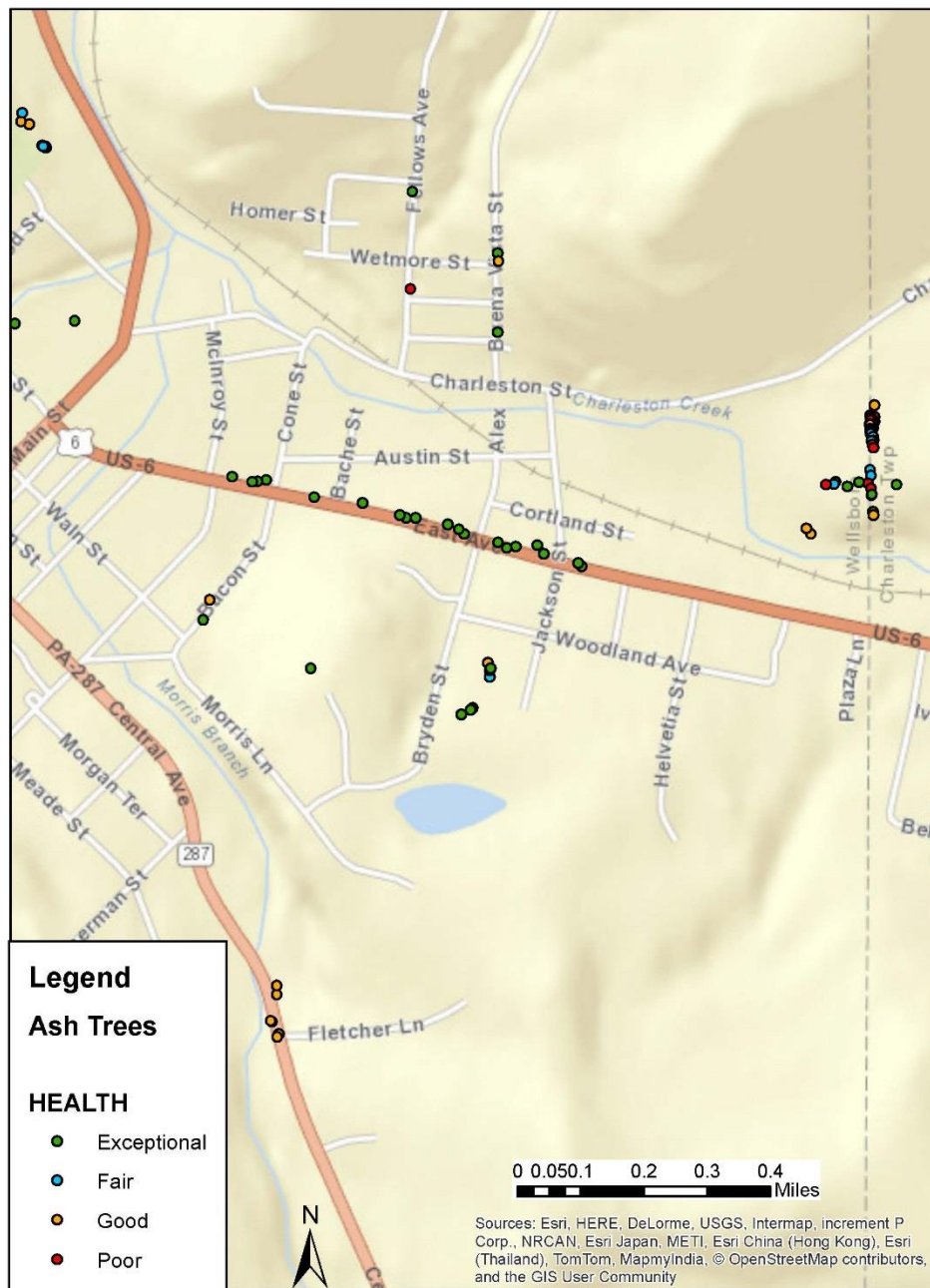
**Map 5. Wellsboro Borough North West Quad for 2014 Ash Tree Inventory.**

## Wellsboro Ash Inventory, NW Quad



Map 6. Wellsboro Borough North East Quad for 2014 Ash Tree Inventory.

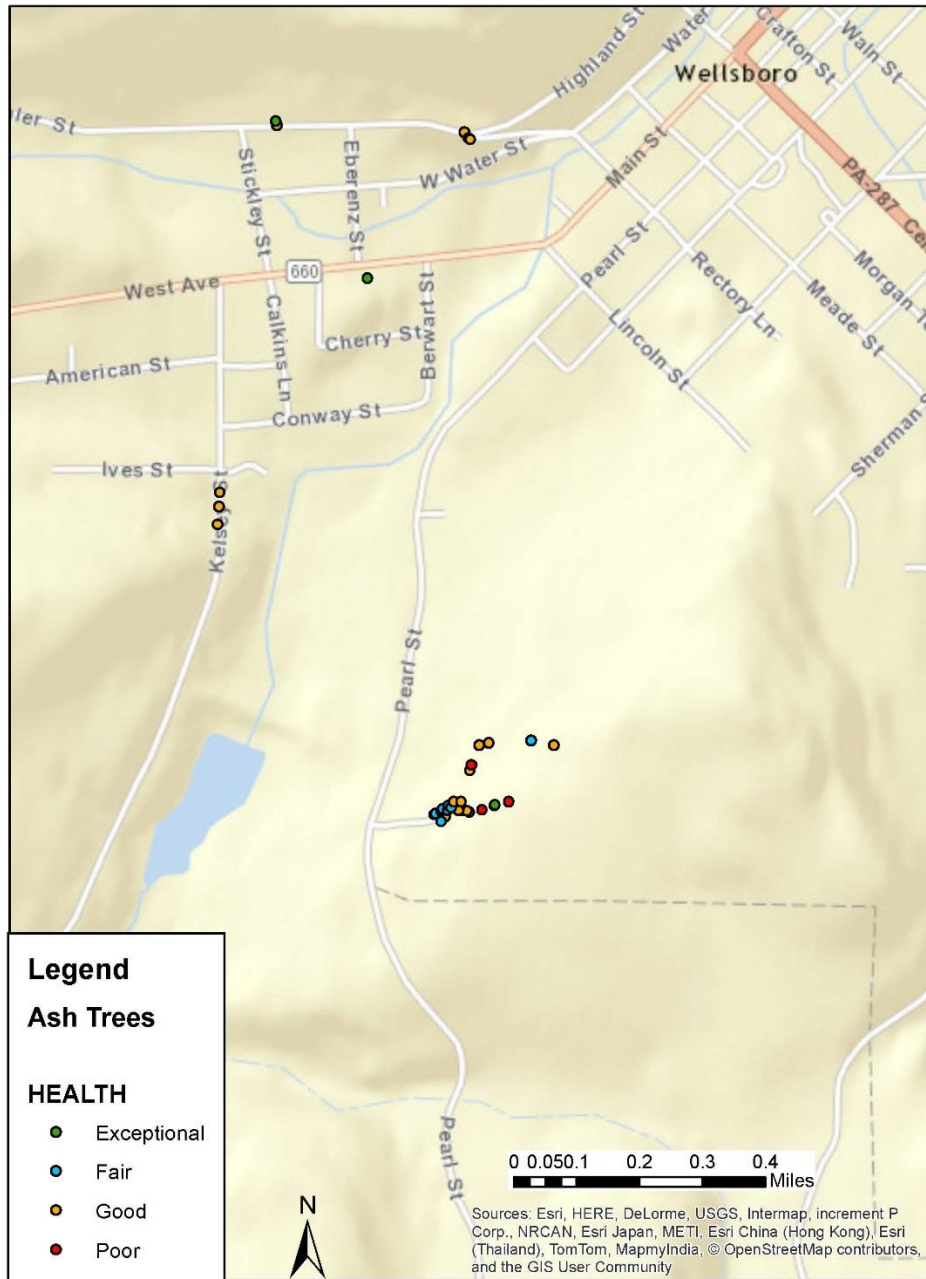
## Wellsboro Ash Inventory, NE Quad



Map 7. Wellsboro Borough South West Quad for 2014 Ash Tree Inventory.

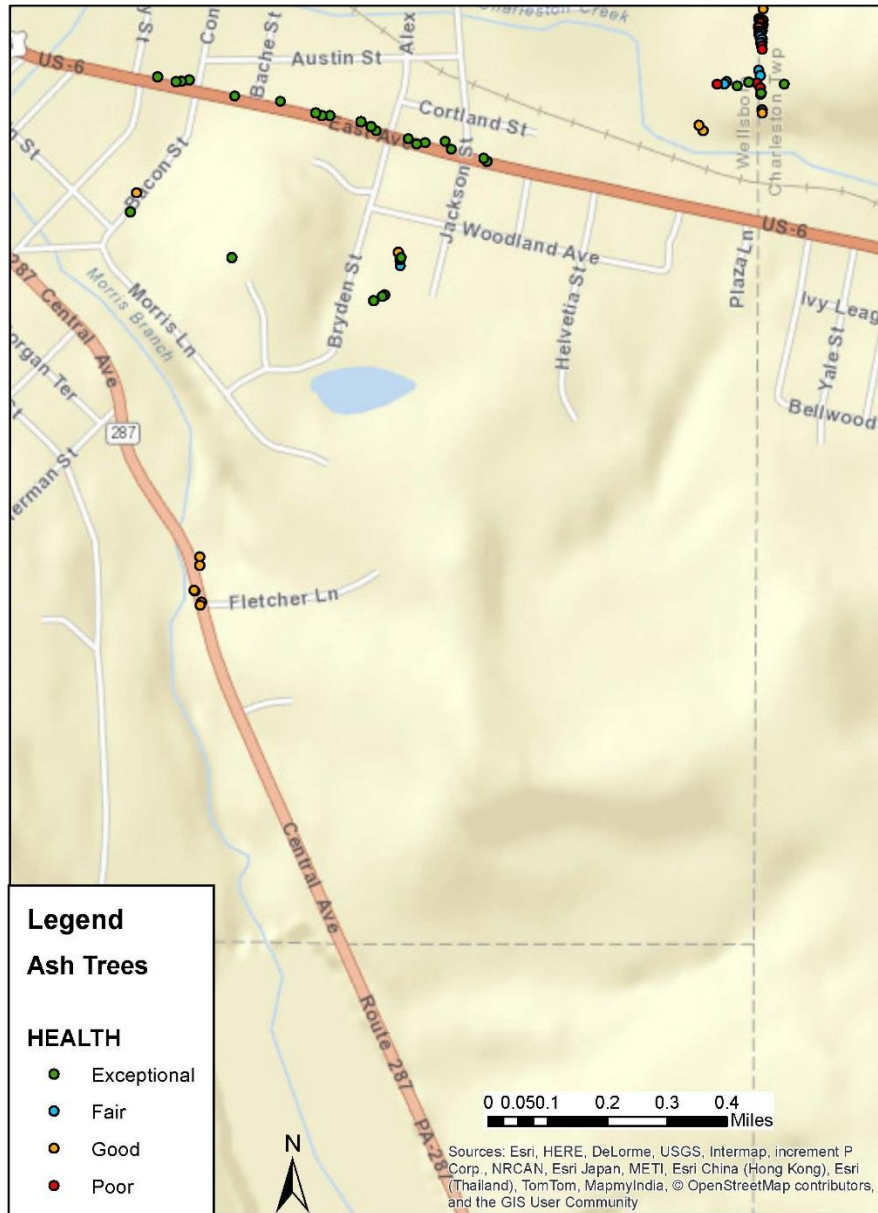


## Wellsboro Ash Inventory, SW Quad



Map 8. Wellsboro Borough South East Quad for 2014 Ash Tree Inventory.

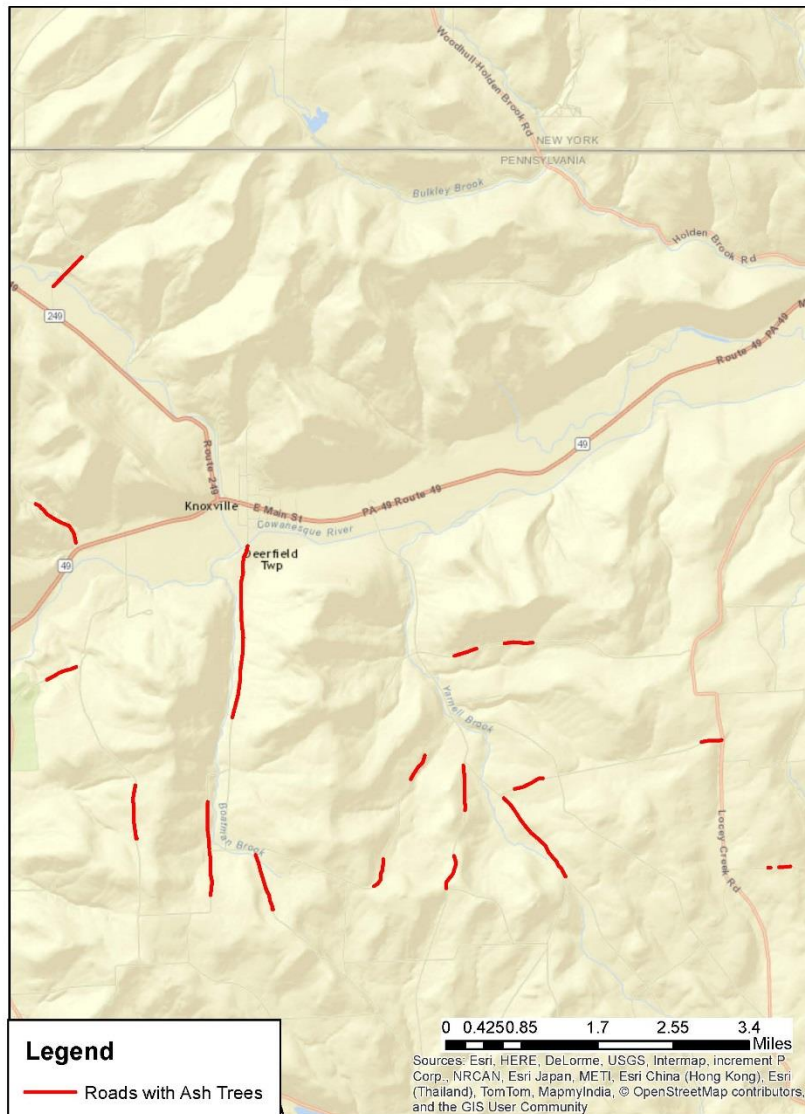
### Wellsboro Ash Inventory, SE Quad



### Appendix 2. Deerfield Township Detailed Maps for 2014 Ash Tree Inventory

### Map 9. Deerfield Township Overview Map for 2014 Ash Tree Inventory

#### Deerfield Township Ash Tree Inventory, 2014



### Map 10. Deerfield Township North West Quad for 2014 Ash Tree Inventory

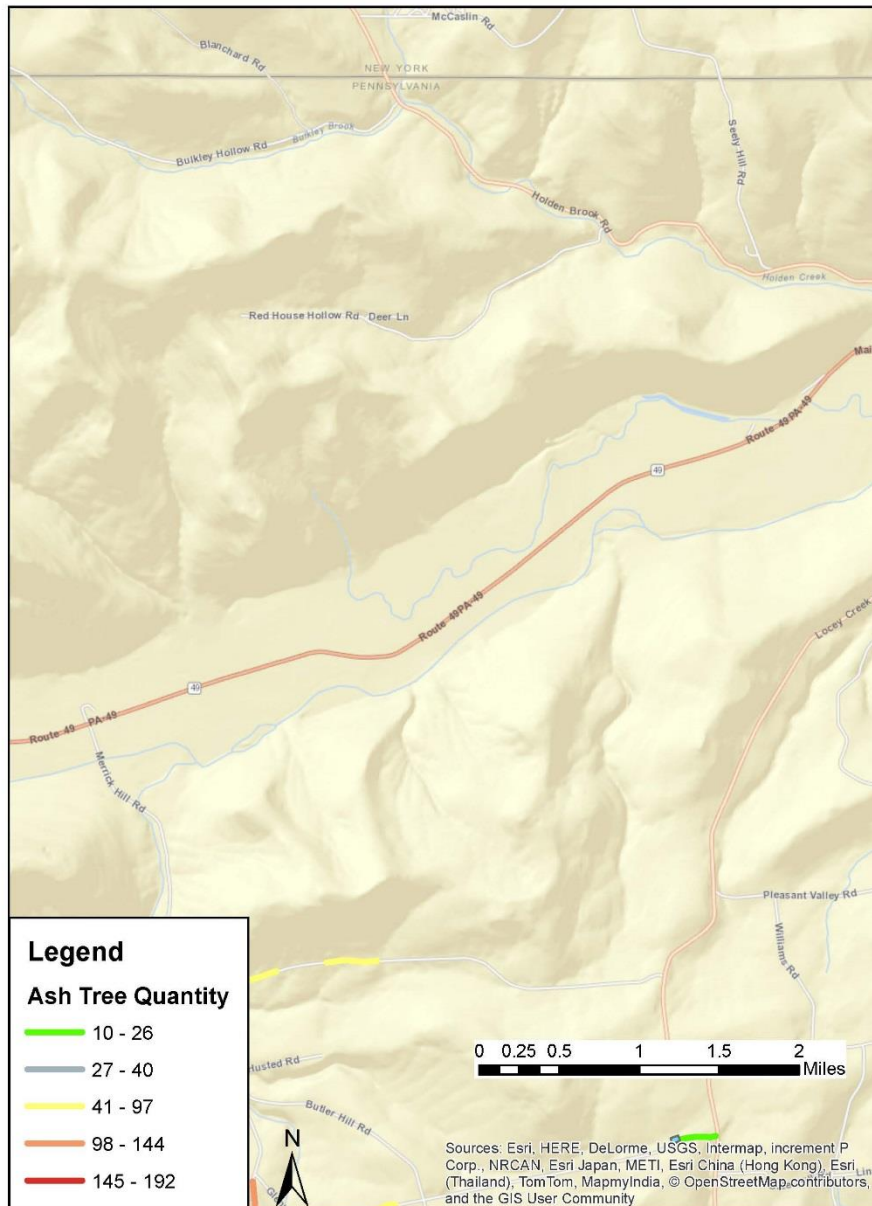
## Deerfield Township Ash Tree Inventory, NW Quad



Map 11. Deerfield Township North East Quad for 2014 Ash Tree Inventory

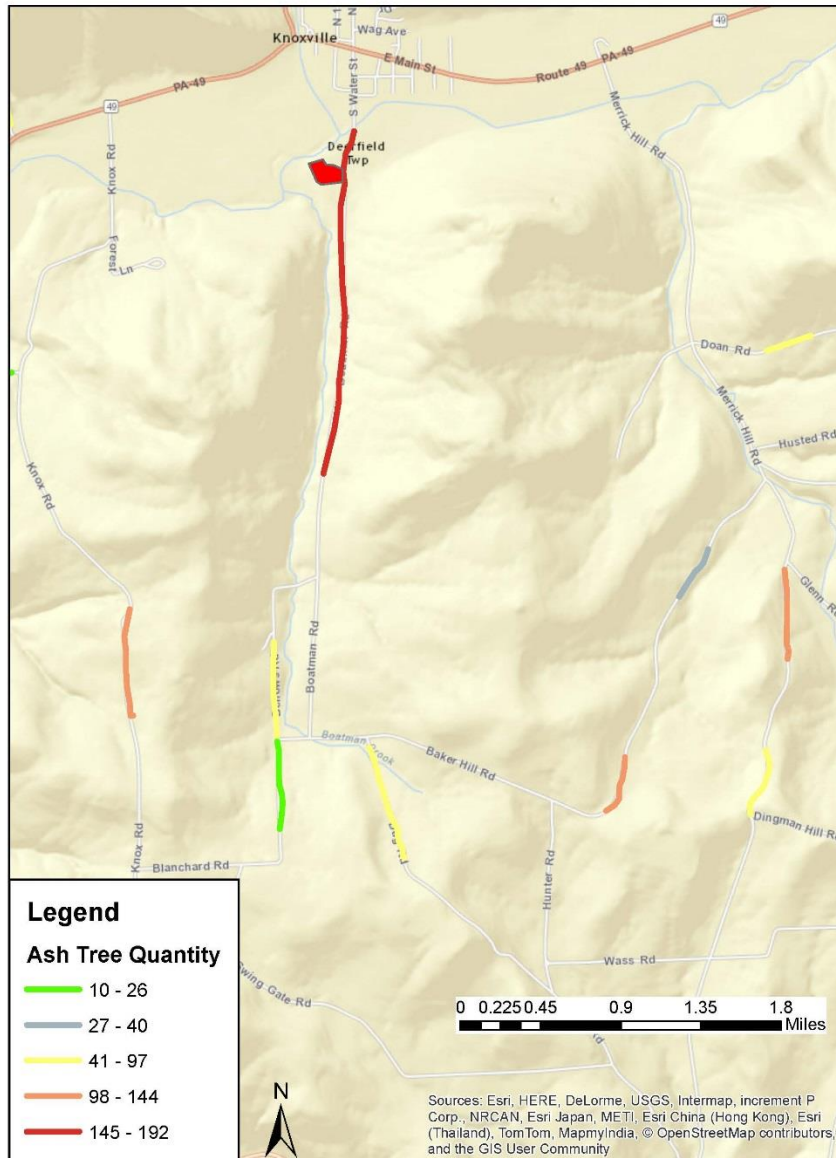


## Deerfield Township Ash Tree Inventory, NE Quad



Map 12. Deerfield Township South West Quad for 2014 Ash Tree Inventory

## Deerfield Township Ash Tree Inventory, SW Quad



Map 13. Deerfield Township South East Quad for 2014 Ash Tree Inventory



## Deerfield Township Ash Tree Inventory, SE Quad

