



Wisconsin Emerald Ash Borer Program

Managing Emerald Ash Borer (EAB) Infested Wood

Regulations and Recommendations for Transport, Storage, Utilization and Disposal

A key aspect of reducing the spread of emerald ash borer is properly managing the wood, brush and stump grindings generated by removal of infested trees. This requires an understanding of the processes that will destroy the insect, but also the USDA APHIS, Wisconsin DATCP, Wisconsin DNR and local regulations that apply to those processes and to the movement, storage and disposal of infested material. In addition, it is important to consider how to best utilize the wood to minimize environmental impact, offset disposal costs or even create a value-added product.

Processing Options to Eliminate EAB

The following options are available for processing infested ash wood to kill EAB or prevent completion of its life cycle and spread to uninfested trees:

- Chipping – ash wood, brush and stump grindings must be chipped or ground down to a maximum size of no more than 1" in two dimensions (two of the three measurements - length, width and depth - must be 1" or smaller). The typical chipper used in tree care operations will not reliably create chips that meet this specification. Chippers equipped with a 1" screen will assure compliance.
- Debarking – complete removal of all bark plus one-half inch of wood. Note that the removed bark and wood must be chipped down to a maximum size of 1" by 1" in 2 dimensions.
- Heat treatment – the wood temperature must reach 160 degrees Fahrenheit for 75 minutes in the center of the piece. Heat treatment chambers or kilns need to be certified by USDA APHIS.
- Composting – To compost bark and the additional one-half inch wood, temperatures must reach at least 140 degrees Fahrenheit for four days and the compost pile must be turned after four days.
- Fumigation – use labeled fumigants by a process approved by state or federal agencies.
- Burning – wood, brush or chips may be burned prior to insect emergence
- Aging – ash wood material that is aged for 2 years after tree death will be free of EAB. The wood will have dried to the point EAB can no longer survive in it and any EAB present when the tree died or that infested the wood shortly after cutting will have emerged during the 2 year period. If this processing option is used, it should be understood that EAB will continue to emerge during the 2 year aging period and this wood poses a risk of infestation to living ash in the area where it is being aged. This wood must not be moved out of a quarantined area during the aging period.

Storage Until Processing

Adult emerald ash borers can emerge from infested wood from May through September. Infested wood should be processed by April 30 to avoid risk of emergence. If processing before adult emergence is not possible or if infested wood is found during an emergence period, double-bagging can be used to contain emerging adults.

- Double-bagging – this procedure is feasible for small quantities of infested wood. Loosely double bag in 4mil or thicker plastic bags. Keep bags tightly closed until October 1 to contain emerging adults. This is a temporary storage plan; processing should occur after bagging to destroy emerald ash borers.



Wisconsin Emerald Ash Borer Program

Utilization Options

The following is a list of the options in recommended order for utilizing properly treated wood waste:

- Use as **lumber** (with no bark present) to produce value added products
- Use as **chipped mulch** for landscaping and trail surfaces.
- Use chipped material as a **carbon source** for compost piles.
- Use as **boiler fuel** in a boiler equipped with the appropriate air pollution control equipment. This generally means industrial and utility boilers approved to burn wood. Consult individual boiler owners for required fuel specifications.
- Use as **firewood** for wood burning stoves and outdoor camp fires. Residential outdoor wood fired boilers are not recommended due to their heavy release of fine particulate matter pollution.

Disposal Options

If wood cannot be utilized by one of the options listed above, it may be disposed using the following options:

- Disposal in a **landfill**.
- Non-landfill **burial**.
- Burn in an **Air Curtain Destructor** or incinerator without energy recovery.
- Burn in a licensed **wood burning site**.

Regulations and Recommendations Within the Quarantine Area

1. Transportation

- Technically, it is legal to move ash wood material anywhere within the quarantine area. However, movement of untreated infested ash wood material should be avoided to prevent possible spread of EAB to uninfested areas in the quarantine zone. If transport is absolutely necessary, distance traveled should be minimized.
- If the logs, brush or chips will be transported for another use such as mulch, compost, boiler fuel or daily cover at a landfill, no DNR Waste Program approvals or licenses are necessary.
- If the wood is to be landfilled or burned without energy recovery, a DNR solid waste transportation license is required.

2. Storage – Marshalling Yards/Collection Sites

- Wood may be stored temporarily either on site or at a dedicated marshalling yard for transfer elsewhere without a DNR Waste Program approval or license, if done in a nuisance free and environmentally sound manner.
- A DNR construction site storm water permit under NR 216, Wis. Adm. Code is necessary if the activity on-site or at a marshalling yard results in a land disturbance of one or more acres which could happen if the stumps are removed or if an area is cleared to accept the wood.



Wisconsin Emerald Ash Borer Program

3. Lumber

- Lumber and the products that are made from it do not have to be treated if they will never leave the quarantine area. Ash logs and lumber will need to be processed in an approved manner, such as complete removal of bark (plus one-half inch of wood), kiln drying by approved standards, or fumigation prior to distribution out of the quarantine area. All processes will need approval by DATCP and/or APHIS.

4. Chipping/Grinding for Mulch

- Wood may be ground up for use as landscaping mulch or trail cover. Grinding to no larger than 1" by 1" is not required inside the quarantine area, but it is recommended to reduce possible emergence of adults or if the material will be transported away from its source.
- No DNR Waste Program approvals or licenses are necessary for grinding or use of this material.

5. Chipping/Grinding for Compost

- Wood may be ground up for use as a supplemental carbon source for composting operations. Grinding to no larger than 1" by 1" is not required inside the quarantine, but it is recommended to reduce emergence of adult EAB that could supplement the local population or start new infestations if the material is transported away from its source.
- Small compost operations (< 50 cubic yards) utilizing yard and vegetable food waste do not require a DNR Waste Program approval and license, but must be operated in a nuisance free and environmentally sound manner.
- Existing licensed municipal yard waste composting sites may also be used.

6. Boiler Fuel

- Wood may be used as industrial fuel in large industrial boilers, if authorized by their DNR Air Management operation permit.
- The boiler would be exempt from DNR Waste Program approvals and licenses but the resulting ash may be subject to testing requirements prior to disposal.
- Household wood fired boilers are not recommended for this material due to heavy release of fine particulate matter pollution and lack of pollution control equipment.

7. Firewood

- Movement of firewood is believed to be the primary means of overland spread of EAB, so utilization of infested wood for firewood should not be considered unless it can be assured that it will be treated to kill the insects and prevent the completion of their life cycle. Firewood treatments include heat drying, fumigation and debarking (plus removal of one-half inch of wood). These processes must be approved by DATCP if wood will be moved within Wisconsin or APHIS if wood will be moved out of state.
- Firewood not for commercial sale (homeowner use) legally may be moved within the quarantine area, but users are advised not to move firewood any distance from the area where the wood originated to reduce further spread of EAB. All untreated firewood should be burned before April 30 to prevent insect emergence.
- Other firewood information can be found at: <http://dnr.wi.gov/invasives/firewood/>



Wisconsin Emerald Ash Borer Program

8. Landfill

- Landfills may be able to accept wood waste for disposal.
- A written exemption may be needed from the DNR Waste Program for brush material.
- Ground or chipped brush/wood may be acceptable as daily cover at a landfill with DNR Waste Program approval.

9. Non-landfill Burial

- Wood waste may be disposed of by burial without a DNR Waste Program approval or license as long as it is not in a floodplain and is done in a nuisance free and environmentally sound manner. At least 12 to 13 inches of soil cover is needed to prevent emergence of EAB adults.
- However, burying of large amounts of wood waste may preclude future land uses of property due to methane gas formation and instability concerns.
- A DNR construction site storm water permit under NR 216, Wis. Adm. Code is necessary if the burial results in a land disturbance of one or more acres.

10. Air Curtain Destructors

- An air curtain destructor is a device which uses a fixed dimension pit and mechanical air supply to reduce the amount of smoke emitted.
- Air curtain destructors must be approved and licensed by the DNR Waste Program.

11. Woodburning Site

- This option is discouraged unless no other alternatives are available.
- Wood waste may be open-burned on the property where it is generated without DNR Waste Program approvals or licenses.
- Wood waste must be burned in a safe manner, when wind and weather conditions are such as to minimize adverse effects on humans and the environment.
- Burning must conform to local and state fire protection regulations.
- Wood may not be transported off site and open burned without a DNR Waste Program approval and license. Existing licensed wood burning sites may be utilized as long as the pile is burned in accordance with DNR Air Management Program recommendations and DNR Waste Program rules and approvals.
- More information on open burning can be found at: <http://dnr.wi.gov/environmentprotect/ob/>

Regulations and Recommendations Outside the Quarantine Area

The regulations and use/disposal options for ash wood material generated outside the quarantine area are the same as those listed above. The major exception is that the material does not need to be treated to eliminate EAB since the insect has not been found outside of the quarantine area. Be aware that any ash wood material brought into the quarantine zone will then be subject to the quarantine except for wood being transported through the quarantined area that is:

- transported through without stops (brief stops for fueling, traffic signals, etc. are allowed) and
- wood is covered securely to prevent access by adult beetles between April 30 and Oct 1 when adult beetles could infest wood.



Wisconsin Emerald Ash Borer Program

Regulations for Transporting Ash Wood Materials from the Quarantine Area to the Non-quarantine Area

The intent of these regulations is to prevent the spread of EAB, starting with standing infested trees until the wood and any residue are completely processed.

Compliance Agreements:

All ash wood producers, transporters and processors must sign a compliance agreement with DATCP and APHIS officials before ash wood materials can be moved out of a quarantine area.

- Producers – these include anyone that takes down infested trees and moves the material off site, for example, loggers, commercial arborists or municipal crews. Producers need a compliance agreement to move the infested material away from where the trees were growing or to a certified facility if it is outside the quarantine area.
- Truckers and Transporters - Truckers and transporters that move ash logs and materials out of a quarantine area must sign a compliance agreement stating that the transporter will deliver regulated (ash) logs and materials only to mills or processors with an approved compliance agreement and will only ship the material between October 1 and March 31.
- Mills and Processors - The mill or processor must be visited by a DATCP or APHIS official and a compliance agreement must be completed and signed.

Compliance agreements are not complicated and it's a simple process to obtain one. Sample copies of compliance agreements are available at: <http://emeraldashborer.wi.gov/>

The following regulations apply to moving ash wood materials outside a quarantine area:

- Mills and other processors located outside a quarantine area can only receive ash logs and materials from within the quarantine area between October 1 and March 31. (This is after and prior to emergence and flight by adult emerald ash borers.)
- Ash logs and materials must be processed by April 30.
- Residual bark and one-half inch of wood from debarking operations must be utilized or disposed by an approved method by April 30.
 - Chipping - bark and one-half inch wood must be chipped to less than one inch in two dimensions.
 - Composting - bark and one-half inch wood must be composted so that temperatures reach at least 140 degrees Fahrenheit for four days and the compost pile must be turned after four days.
- All ash logs or materials at the processor, whether from inside or outside the quarantine area, are considered regulated unless the mills or other facilities can segregate and mark the ash logs or green lumber. If they can keep the different materials separate, then the other non-quarantine ash logs or lumber can be processed as usual.
- Ash green lumber must be free of bark prior to movement out of the mill unless heat treated according to USDA specifications.



Wisconsin Emerald Ash Borer Program

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