Regional Forest Health Staff

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Background on EAB

- Invasive wood boring beetle from East Asia, most likely China

- First detected in Detroit area, and Winsor Ontario in 2002

- Most destructive and costly forest insect to invade the U.S.
  - “worst-case scenario”
Regulatory Status of EAB in Wisconsin

- Statewide quarantine went into effect at the end of March 2018 and remains
- Allows unrestricted movement of ash materials within WI
- Removal of the federal EAB quarantine likely in 2019
EAB Detections

Emerald Ash Borer Detections
December 2019
EAB-caused tree mortality and crown dieback was mapped on 161k acres, mostly in southeastern and southwestern WI.

Damage was also mapped in Green Bay, Rhinelander, Sturgeon Bay, and Superior.
How fast does ash mortality spread across the landscape?

- In southeastern Michigan from 1998 to 2001, when infestations were more scattered, ash mortality spread at a rate of **2 miles per year**

- Between 2001 to 2003, the rate increased to **8 miles per year** as satellite populations grew and coalesced

- Major finding: After EAB found in a county, ash mortality increases significantly **6-7 years later** until most ash in the area are killed - **about 12 years after being discovered**

Morin et al. 2016
How fast does ash die within a stand?

- Within a stand, after exit holes are first found, it’s about 5 years until most ash are killed—roughly 7-8 years after arrival in stand.

(Knight et al. 2013)
How many ash trees die?

- Expected to kill 99% of white, green, and black ash in Wisconsin, regardless of a stand’s size, ash density or species composition
- Attacks and kills trees 1 inch in diameter and greater
- White ash may be less preferred but still likely to suffer significant mortality
- Blue Ash, a native of s.e. WI, is more tolerant of EAB
- Growth rates of non-ash species increase after ash death as competition for light and soil resources decreases
What’s the long-term fate of ash?

- In many places, ash regeneration from seeds and sprouts is present.
- Ash may persist in the long term if it can sprout or produce seed before being killed by EAB.
- However, ash is unlikely to be as common as it currently and can be re-infested by EAB once it grows one inch caliper.
- “Lingering Ash”: Little natural resistance to EAB in the native ash population, but a small proportion of ash remain alive after the surrounding ash have died.
- After initial wave of tree mortality, EAB populations decline dramatically. Low numbers remain in small, regenerating ash as well as surviving, larger trees and low-level ash mortality continues.
EAB Signs & Symptoms

Woodpecker flecking

Years

2

5
EAB Signs & Symptoms

D-shaped exit holes, bark cracks, feeding tunnels, larvae
Thank you!

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