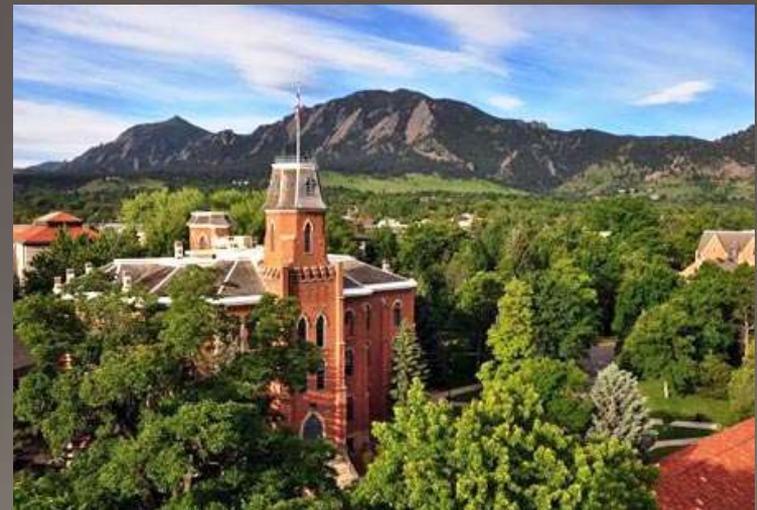




Emerald Ash Borer

A collaborative approach to preparing for and reacting to EAB: A Colorado example

Urban Forestry in Colorado



It's not easy being a tree in Colorado!



It's not easy being a tree in Colorado!

2002 Drought



2013 Flood



Challenges for Colorado Ash

Ash bark beetle



Lilac / ash borer



Cytospora canker



Which of these ash has EAB?





Interagency Collaboration



Colorado Tree Coalition (CTC)

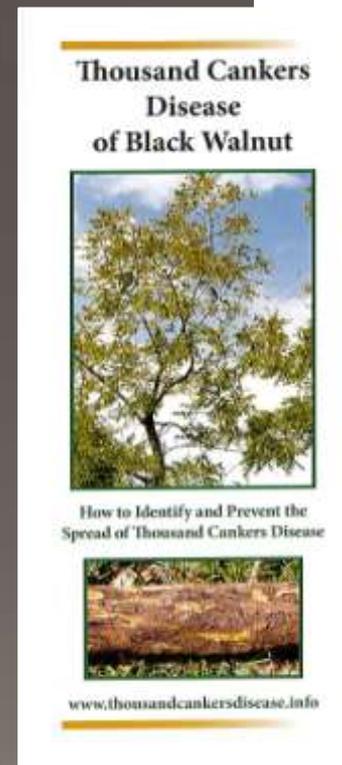
- Volunteer organization of foresters
- Dedicated to leading statewide efforts to preserve, renew, and enhance community forests
- Dates back to mid 1980's
- Chapters meet bi-monthly
- Programs
 - Trees Across Colorado - Regional collaboration to facilitate distribution of trees
 - Champion / Notable Tree Program and Calendar
 - Tree Risk Assessment
 - Select Tree Program
 - CO TreeView Urban Tree Inventory Tool
 - Grants



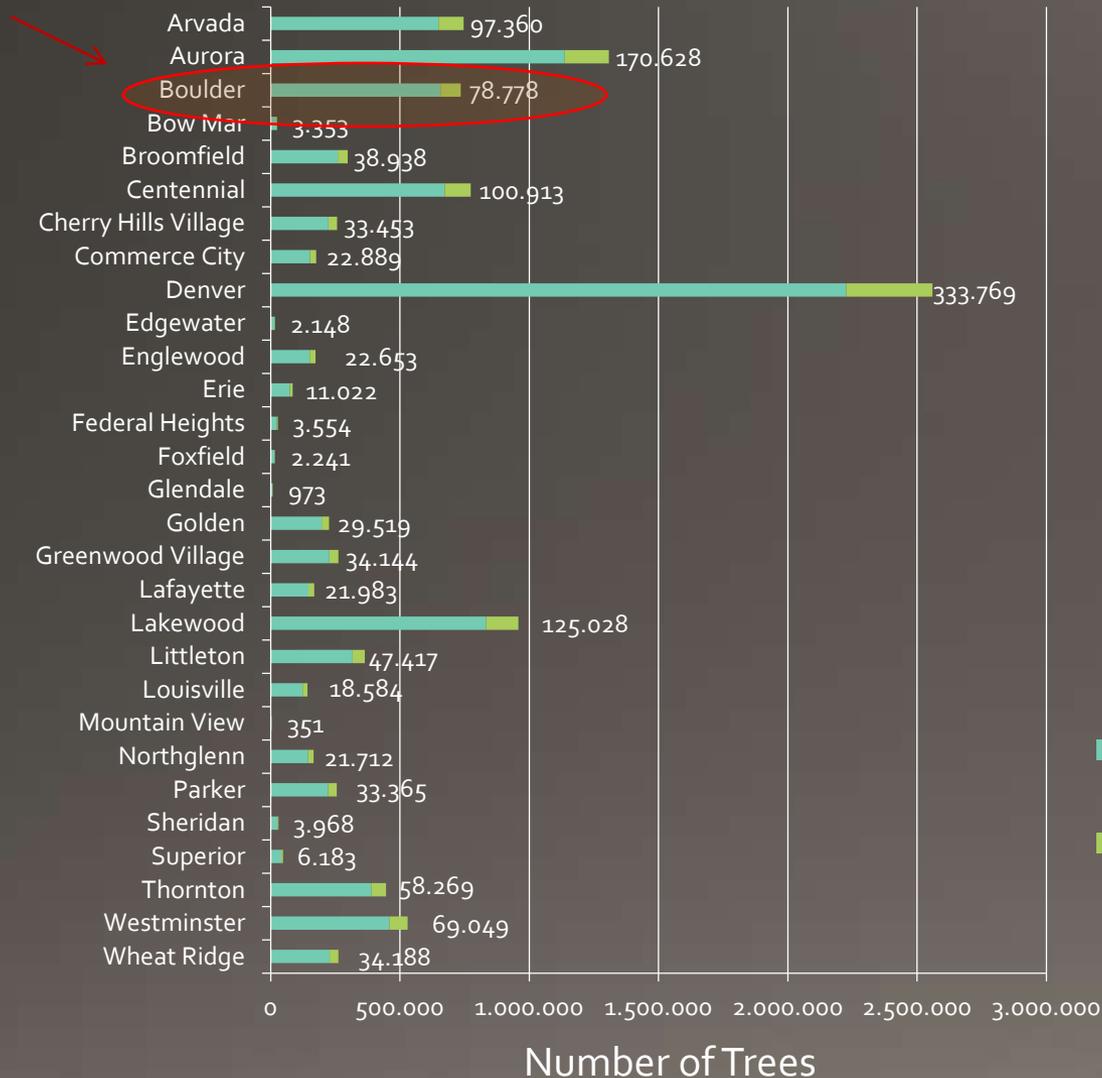
Multi-agency collaboration - EPIC

EPIC (Emerging Pests in Colorado)

- Started in 2009 to assist with Thousand Cankers disease response and EAB preparedness
- Focus is invasive insect and disease pests
- Participating agencies
 - City Foresters (Boulder, Denver, Fort Collins)
 - Colorado Department of Agriculture
 - Colorado State Forest Service
 - Colorado State University
 - US Forest Service
 - USDA Animal & Plant Health Inspection Service (APHIS)
 - Green and Wood Industries
- Goals
 - Cooperation and Communication
 - Education and Outreach
 - Develop CO EAB Response Plan
 - Organize invasive species workshops



Risk from EAB in Colorado



Total Estimated
Ash Tree Population For
Metro Denver is
1.4 Million Trees

Non-Ash Trees

Ash Trees

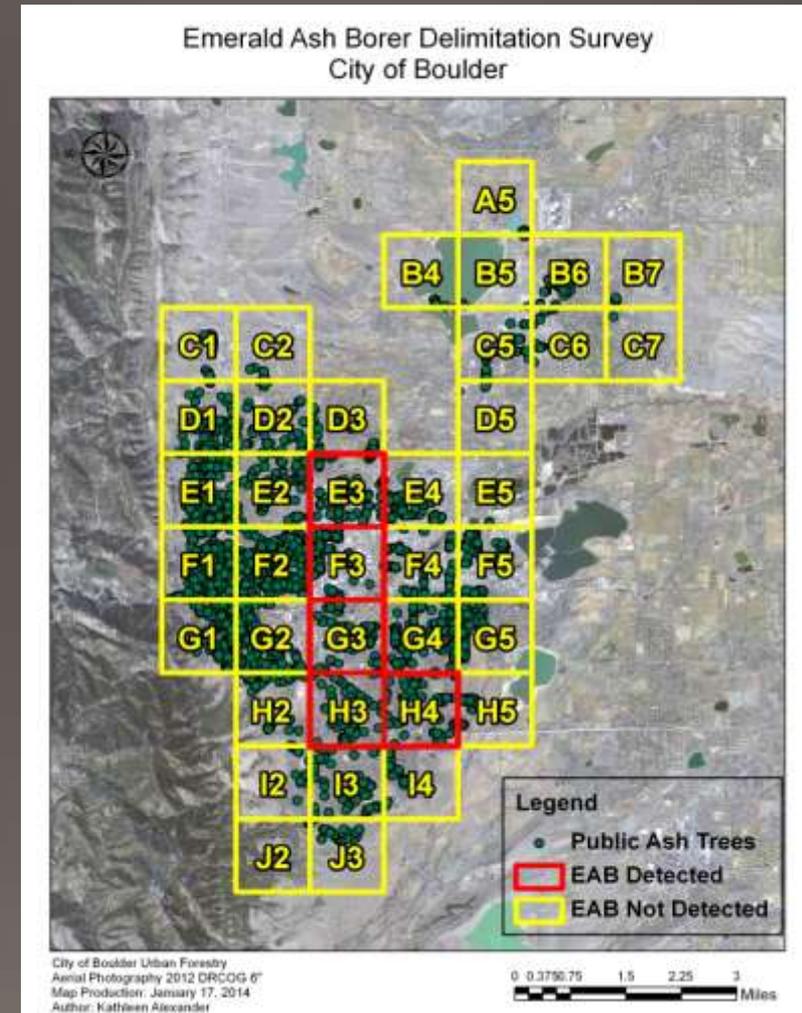


Colorado's EAB Response



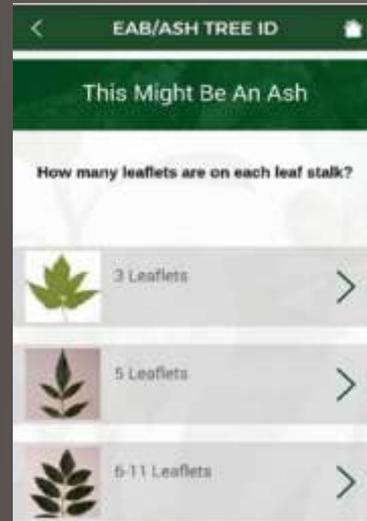
Delimitation Survey

- Canadian Forest Service branch sampling protocols
- 38 grids; 10 public ash trees per grid; 2 branch samples/tree
- 384 trees sampled; 768 branches peeled
- Collaboration! Over 1000 hours time from 11 federal, state, county and city agencies



Regional Trainings / Outreach

- Detection / branch peeling training for arborists, foresters and industry groups
 - 452 trained in 18 classes
- EAB van tours
 - 362 trained in 13 tours
- 95+ EAB presentations
- Biennial workshops for industry professionals
- EAB / Ash Tree ID App
- News Releases and media interviews
 - 2013 – 10 releases; 75+ media interviews
 - 2014 - 2018 – 29 releases; 225+ media contacts





Boulder EAB Strategy



How did we develop our Boulder EAB Strategy?

- 2 opposing viewpoints:
 - Let all the ash trees die...
 - Protect our ash trees...
- Slow down the process
- Internal EAB Strategic Team
- Educate and solicit input from the public:
 - Homeowners Association Meetings
 - Open houses
 - Feedback loop with citizen advisory boards
 - Opt-out letters for treatment:
 - 2014 – 80 letters; 2 opt out due to pesticides
 - 2015 – 436 letters; 10 opt out
 - 2016 - 460 letters; 6 opt out
- City Council Study Session – 2 years after detection



Boulder EAB Strategy

- Tree Inventory
- Planting
 - 500 trees/year
 - Minimum 35 species
 - 85% large maturing
- Removals
- Pesticide Application
 - Treating 25% public ash
 - 3 year rotation with emamectin benzoate
- Biocontrols
- Wood Utilization
- Enforcement of dying ash on private property
- Public Outreach
 - Boulder specific
 - Regional
 - Industry
- Urban Forest Strategic Plan
 - Tree canopy analysis
 - Tree Resource report
 - EAB Management Plan
 - Extensive outreach



Boulder Outreach

- Digital Outreach (Apps/Websites):
 - EABBoulder.org
 - ResilientTogether.org
 - CH 8 Videos
- News Releases
- Open Houses / Farmers Markets
- Homeowners Association and neighborhood groups
- Community newsletter
- Beer coasters (Boulder County)
- "Kiss My Ash" t-shirts
- Youth outreach
 - Schools
 - Tree Plantings



Economic Considerations

- Total annual Boulder Forestry Budget = \$1.2 M
- Total appraised value of public trees under Forestry jurisdiction ~ \$110 million
- Increase to Budget for EAB = \$5.25 million over 14 years (2015 – 2028)
- Staffing – from 4 to 7 FTE's



EAB Financial Impacts – Municipal

Inventory:

\$3.20/tree = **\$160,000 total**

Planting:

Annual cost to plant 500 trees = **\$175,000** (\$350/tree)

Tank Watering of new trees = **\$20,000/year**

Tree Removals:

Estimated cost for 4,500 untreated public ash = **\$1.8 million**
(\$400/tree)

Pesticide Applications:

Treat 25% of public ash on 3 year rotation; annual cost **\$50,000**
(~\$4.50/inch)

Wood Utilization / Disposal:

\$30,000 for 2015 / 2016

\$100,000 for 2017 / 2018

Loss of UTC services – ash comprises 25% UTC in Boulder

Deferred Maintenance



EAB Financial Impacts - Private

Planting

Cost to plant 1 tree \$35 - \$500

Tree Removals

Cost ranges \$350 - \$4,000 depending upon size and location

Pesticide Applications

Emamectin benzoate:

\$8-\$10/diameter inch; 10" diameter tree = \$80 - \$100

TreeAzin:

\$10-\$12/diameter inch



Residence with 2 dead ash trees in the backyard that will likely require a crane removal.

Tree Care Companies

- Difficulties finding available contractors
- Costs increasing
- Cities competing against others for services
- Why are prices increasing?
 - Increased demand for services
 - Labor shortages
 - Increased risk
 - Dead ash dulls chainsaws / chipper knives
 - Quarantine restrictions
- Regional approach to contracting...?



Everything Changes...

- Increase of Scale
 - Service requests - # and response time
 - Planting
 - Removals
 - Pesticide applications
 - Enforcement
 - Wood
 - Media Requests
 - Questions from public
- Contract Specifications: Pruning, Removals, Wood/mulch, Pesticide Applications
- Risk assessments
- Development review: Tree Appraisals, Reassess ash on projects
- Rotational pruning
- Arborist licensing
- City codes
- Inventory / Asset management



Need to look at all your programs through EAB Glasses

Look for grants & partnerships - early and everywhere

- Grants:

- Knight Foundation Challenge Grant - #TreeOpp (\$200,000 - Boulder)
- Landscape Scale Restoration Grant thru USFS for wood utilization and community preparedness (\$300,000 - Regional)
- Xcel Energy Foundation (\$6,000 - Boulder)
- Colorado Tree coalition grants also available to communities

- Partnerships:

- Rockefeller Foundation 100 Resilient Cities supported Urban Tree Canopy Analysis
- National Arbor Day Foundation
- Local tree care companies
- Sell lumber through ReSource
- Boulder County biomass
- Energy companies – wood pellets



THE SMART ASH!



Denver Outreach and Planning



Denver EAB Strategy (How to be proactive!)

- Denver has not yet detected EAB
- Took a Road Trip to educate city council and upper management
- Proactive planning!
- Updated public tree inventory
 - Approximately 28,700 public ash
 - Estimated 268,000 private ash
- Result - \$2.9M annual expansion in 2016 and beyond
 - \$1M for proactive planting (3,800 trees/year for 10 years)
 - \$1M for treatment program (treat 30% or 9,000 public ash)
 - \$650,000 for 10 new forestry staff
 - \$200K outreach education



Denver Outreach



www.BeaSmartAsh.org



Traditional Marketing

BUS TAILS & POSTERS

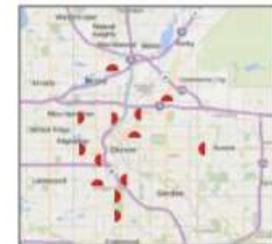


Bus tails ran in April and May (with some buses retaining the ads for many months during the summer and posters ran from April – June)

Bus Tails



Posters



Partnerships with news networks

9NEWS PARTNERSHIP

The 9NEWS digital campaign kicked off in January and ran in phases through July with various digital components, such as the 9NEWS mobile website, mobile app, targeted display advertising, as well as social media and website content distribution and earned media.

9NEWS is still the market leader, but if we move ahead with another TV partner in 2018, it's worth reviewing proposals from other stations; we recommend another TV partnership once EAB is found.

- Facebook Post #1 Live Stream with Rob Davis at City Park (5/12/2017 – 10:03 am)
 - Total Reach: 44,409
 - Total Impressions: 56,997
 - Total Video Views: 14,068
 - Total Comments: 39
 - Total Shares: 29
- Sponsored Story: Transporting wood can have devastating consequences on tree populations (6/7/17) ; page views: 4,798
- Sample Traffic and Engagement on BeASmartAsh.org From 9NEWS Ads (02)
 - Sessions: 4,094
 - Average Number of Pages Per Session: 1.58
 - Average Session Duration: 00:00:47
 - Bounce Rate: 72.01%
 - New Sessions: 38.28%



Branding and Giveaways



MATERIALS/GIVEAWAYS

EMERALD ASH BORER TREATMENT OPTIONS

1 in 6 TREES IN DENVER IS AN ASH TREE

DO YOU HAVE AN ASH?

- Opposite branching
- Compound leaves
- Diamond-pattern bark

DO YOU WANT TO SAVE YOUR ASH?

Can I treat my tree myself? **Yes** / **No**

Is there a cost? **Yes, you have the expertise** / **No**

Should your tree still be treated with EAB and die? **Yes** / **No**

Is your tree greater than 10 inches in diameter at 4.5 feet off the ground? **Yes** / **No**

Do you have the expertise? **Yes, you have the expertise** / **No**

Will you need to hire a licensed tree professional to remove your tree? **Yes** / **No**

Can you hire a licensed tree professional to assess and treat your tree? **Yes** / **No**

Can you hire a licensed tree professional to remove your tree? **Yes** / **No**

BE A SMART ASH
THE EMERALD ASH BORER IN DENVER

DENVER PARKS & RECREATION

If you have room for a new tree in the public right-of-way next to your property, you may be eligible to have a free tree planted for you. Visit BeASmartAsh.org for more information.



Social Media – Facebook, Twitter, Instagram



CenterTable
@MeetACT

Follow

#Ash puns + bus tails = 1 #SmartAsh combination in our book! Always fun helping our @BeASmartAsh #clients increase #EAB awareness in Denver



2:57 PM - 28 Mar 2017

Denver Parks & Rec and 1 other liked

brandy lablanc (@brandy21 · 21 May 2016)
Thanks to the Denver Forester #SmartAsh program for free trees & @denverparkrec for providing shovel #OU.Cigs.Trees



Peter McLaughlin (@McLaughlin_P · 18 May 2016)
I'm proud to be a #SmartAsh! Minnesota should coordinate a strategic response to the forthcoming loss of trees

Be a Smart Ash @BeASmartAsh
@McLaughlin_P was #SmartAsh of the Week for his @StarTribune column advocating for preemptive funds to fight #EAB with mn/VT/LN/MX

Be a Smart Ash @BeASmartAsh · 10 May 2016
@McLaughlin_P was #SmartAsh of the Week for his @StarTribune column advocating for preemptive funds to fight #EAB with mn/VT/LN/MX



Denver Botanic Gardens

Like Page

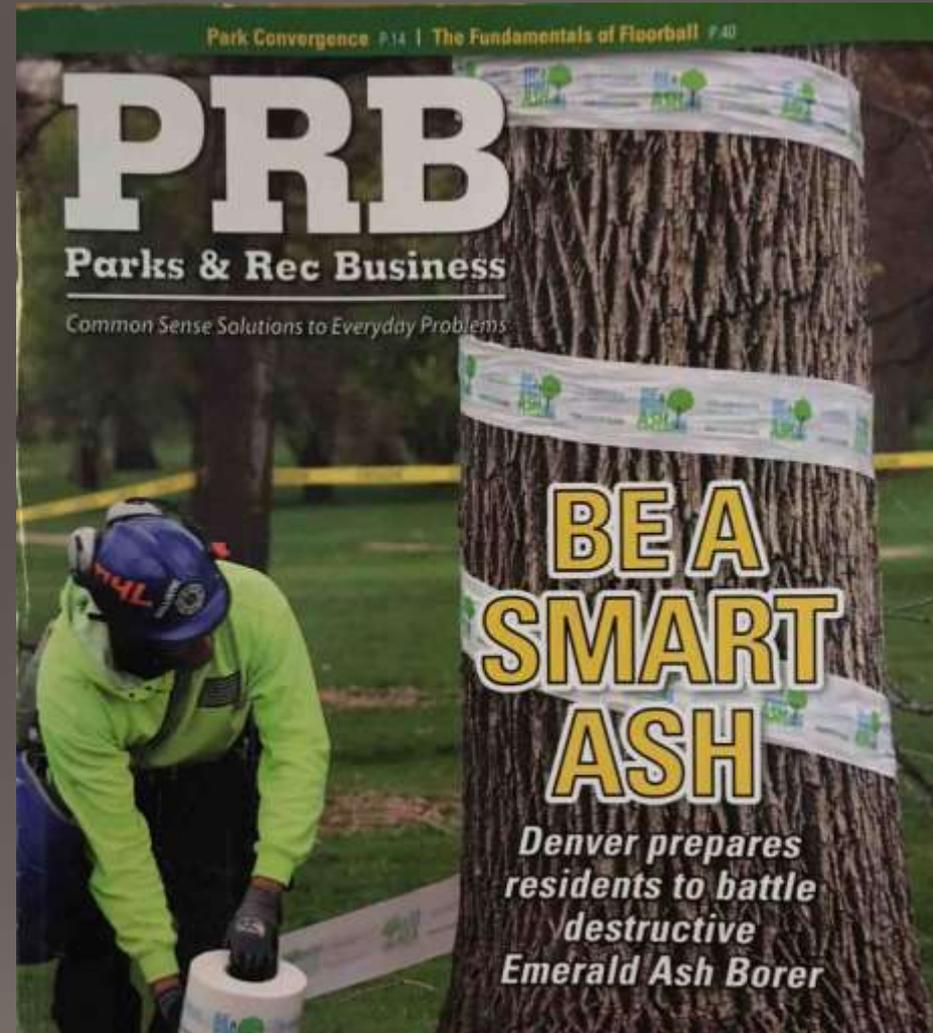
June 27, 2016

GNOMADIC MONDAY

Denbo took a #BeASmartAsh selfie with our giant Emerald Ash Borer (EAB). Infestation is coming soon and we need to learn how to care for our trees and replace at risk Ash with nonthreatened trees. We partnered with Denver Parks and Recreation to share information about how we can save our important tree canopies, www.beasmartash.org. To begin awareness, take a selfie with this EAB in the Boettcher Lobby and use #BeASmartAsh



Marking Treated Trees



Jonny-5 EAB Video

Get Ready for Emerald Ash Borer in Colorado
Posted by Denver Parks and Recreation
49,265 Views

Share



I'm beautiful, I'm nasty and I'm coming to kill your ash tree.

Youth Engagement

1st Grade "Ashvocates"



1st Grade Ashvocates Help Spread EAB Awareness in Denver

© November 30, 2017

DENVER — Ashvocates at Denver Public Schools' Downtown Denver Expeditionary School (DDES) hit the city streets to learn more about ash trees, Emerald Ash Borer (EAB) and ways to combat the borer. These students know that the impending arrival of the EAB is nothing to kid about.

"We should protect ash trees," a DDDES first grader said. "Ash trees make oxygen and shade. And without ash trees, we'd be so hot! Please help save the ash trees!"

The Expeditionary Learning approach to teaching and learning makes subjects come alive for students by connecting learning to real-world issues and needs. By utilizing Downtown Denver as a campus, DDDES students were able to identify, touch and feel many of the ash trees lining the public streets. When asked how to treat trees for EAB, one student said, "You can put special medicine in the trees."

Recent Posts

- Be A Smart Ash EAB awareness campaign winning hearts in Denver
- Emerald Ash borer discovered in Lyons, Colorado
- Don't judge a tree by its cover: Winter tree & EAB treatment guide
- 1st Grade Ashvocates Help Spread EAB Awareness in Denver
- Emerald ash borer drone research ongoing in Colorado

Archives

- March 2018
- February 2018
- November 2017
- October 2017
- September 2017
- August 2017
- July 2017
- June 2017
- May 2017
- March 2017

The "Smart Ash" superhero!



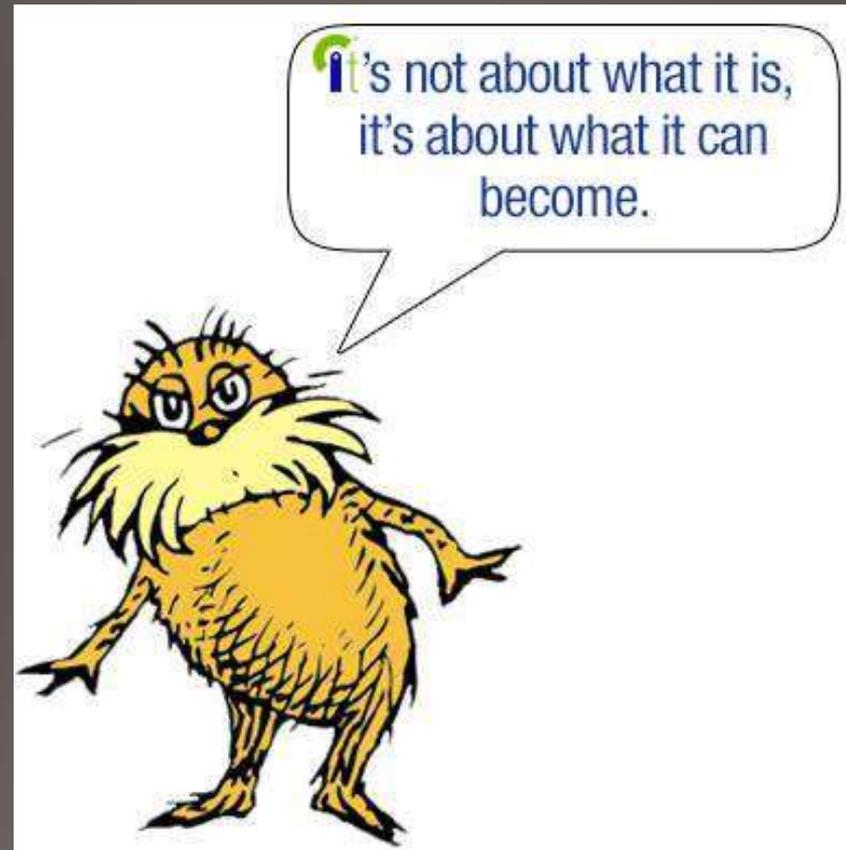
Lessons Learned

- Be Proactive!
 - Update Tree inventories
 - Baseline canopy assessment
 - Educating leadership and residents
 - Continued planting
 - Push diversity
- Think regionally
- Partnerships are critical
- Collaborate
- Outreach
 - Know your audience
 - Focus on monetary costs and loss of services to engage broader audience
 - Worst thing is for someone to say, “why didn’t you tell us?”
- Maintain a sense of humor



EAB is an awful opportunity...

- Plan now!
- Increased contact with municipal and state decision makers
- Media Opportunities
- Promote Urban Forestry
- **E**nhanced **A**rboricultural **B**udgets
 - \$\$\$\$ - Ops, Inventory, Planning, Outreach
 - Additional Staff



Questions ?



Acknowledgements

- EAB PREPSYS organizers
- EPIC and CO EAB Response Team
- City of Boulder team
- City of Denver
- Colorado Department of Agriculture
- Colorado State Forest Service
- Colorado State University Extension
- USDA APHIS PPQ
- Deb McCullough
- Canadian Forest Service
- US Forest Service

Kathleen Alexander, City Forester:
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www.EABBoulder.org

<https://BeASmartAsh.org>



Courtesy of Jim Myer – City of Denver