



Urban Forestry Advisory Council

Summer Meeting 2019

A decorative graphic consisting of two wavy, horizontal lines. The top line is red and the bottom line is dark blue, both curving upwards from left to right.

Forest Health Activities in the District

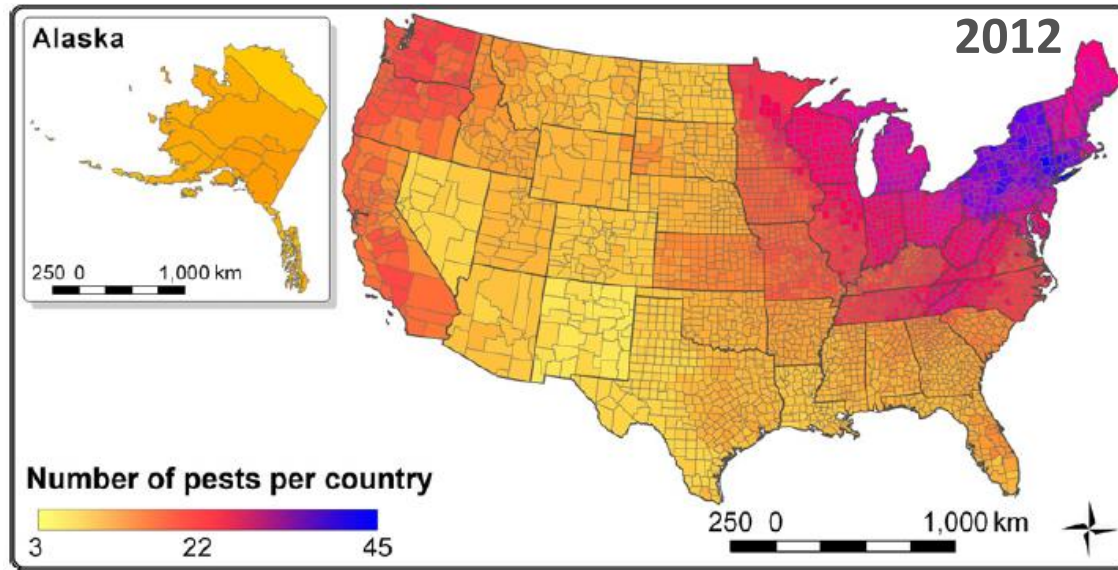
Urban Forestry Advisory Council

Urban Forestry Division

- Cryptic wood-borer survey
- DED management program
- Pest vulnerability matrix
- Emerging pests and pathogens



Why care about insects in trees?



Cryptic wood-borer survey, Washington, DC

2014-2016



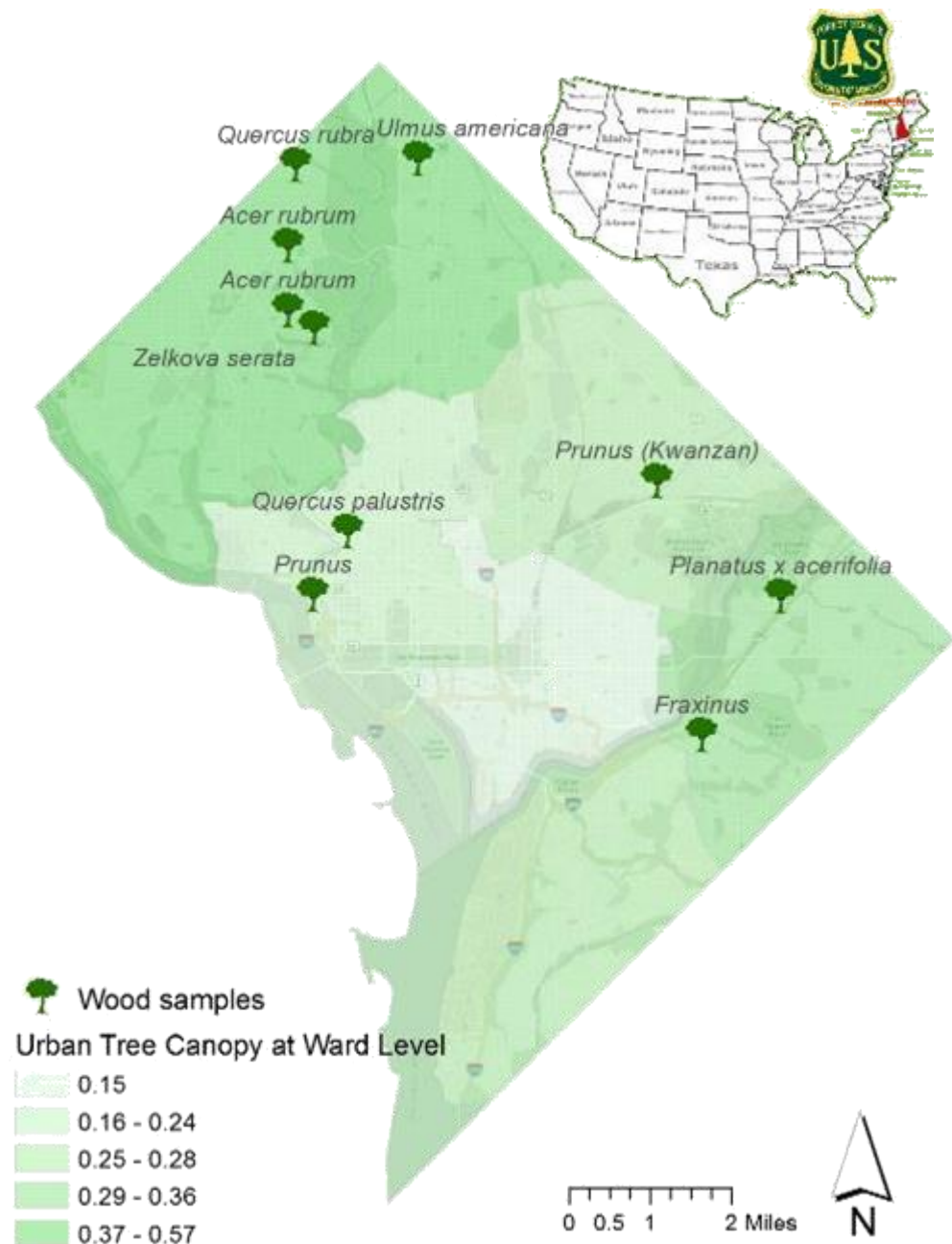
ECC Leader Keisha Alvarenga adding labels to sample vials, with rearing tubes in the background.



d.

Cryptic wood-borer survey, 2014-2016

- Red oak, *Quercus rubra*
- Pin oak, *Q. palustris*
- Kwanzan cherry, *Prunus*
- Ash, *Fraxinus* spp.
- Zelkova, *Zelkova serata*
- Red maple, *Acer rubrum*
- American elm, *Ulmus americana*



Wood-boring beetles

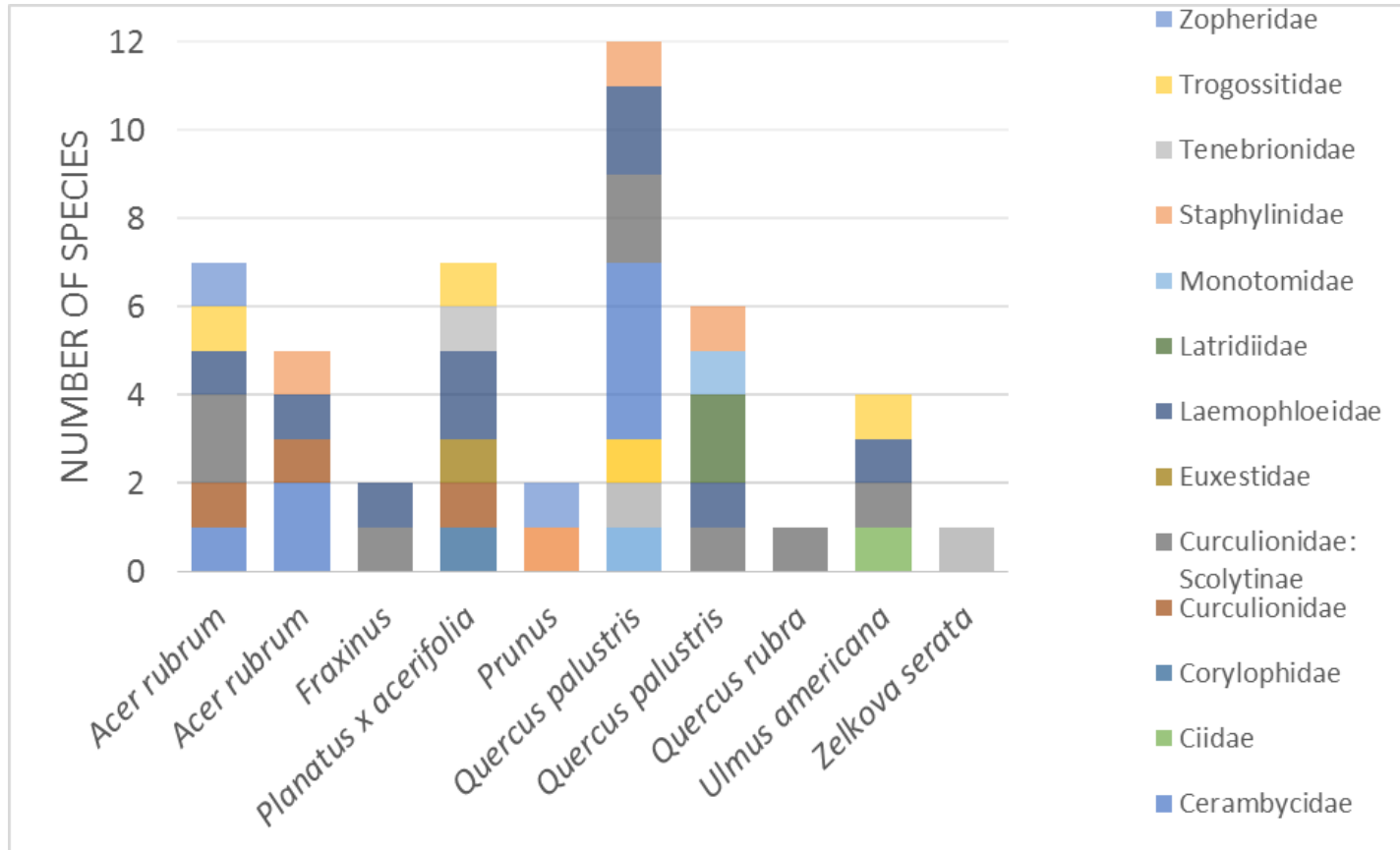
- Identified 36 species of wood boring beetles
- Eight bark and ambrosia beetles
- Three bark/ambrosia beetles that went undetected in EDRR trapping in 2016

Meet DC's newest Staphylinid beetle, *Eudectus crassicornis*.



Diversity of wood-boring beetles by host tree

Cryptic wood-borer survey



Shothole borer,
Cnestus mutilatus.

DED management

- Sanitation
- Plant DED resistant/tolerant elms
- Fungicide treatment
- Pruning restriction

Annual elm removals

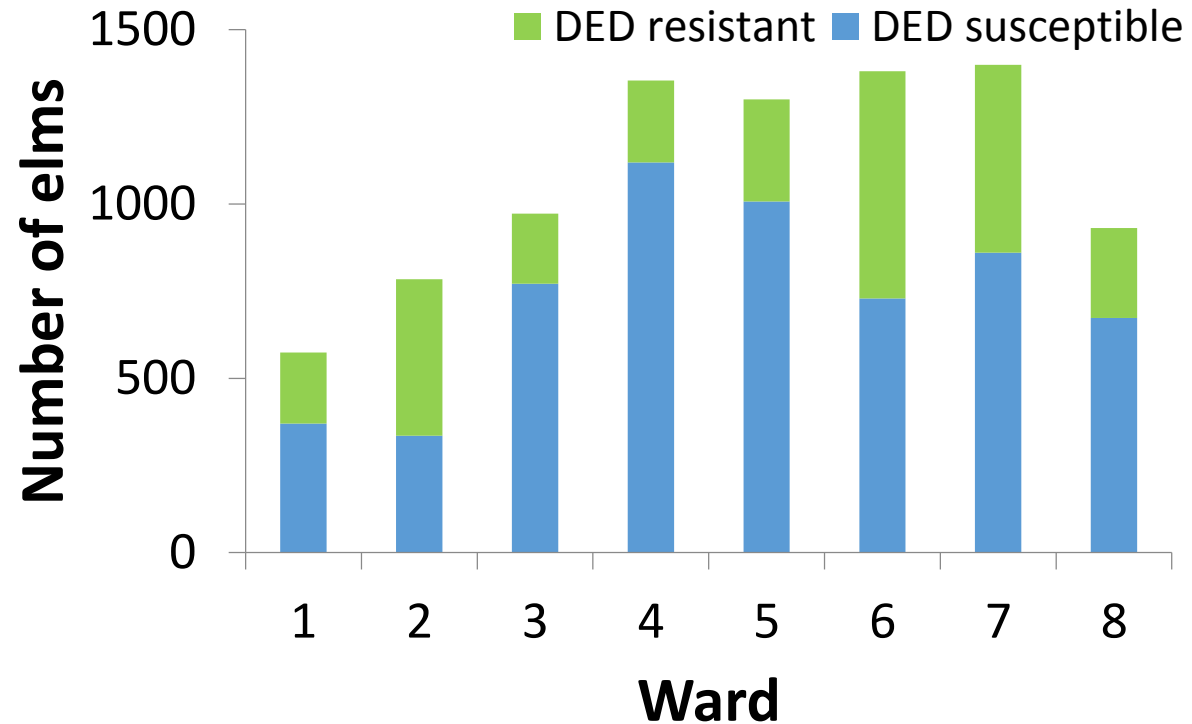
Year	Elm removals	% Loss
2014	196	2.1
2015	196	2.2
2016	187	2.1
2017	151	1.8
2018	68	0.8
2019*	28	TBD

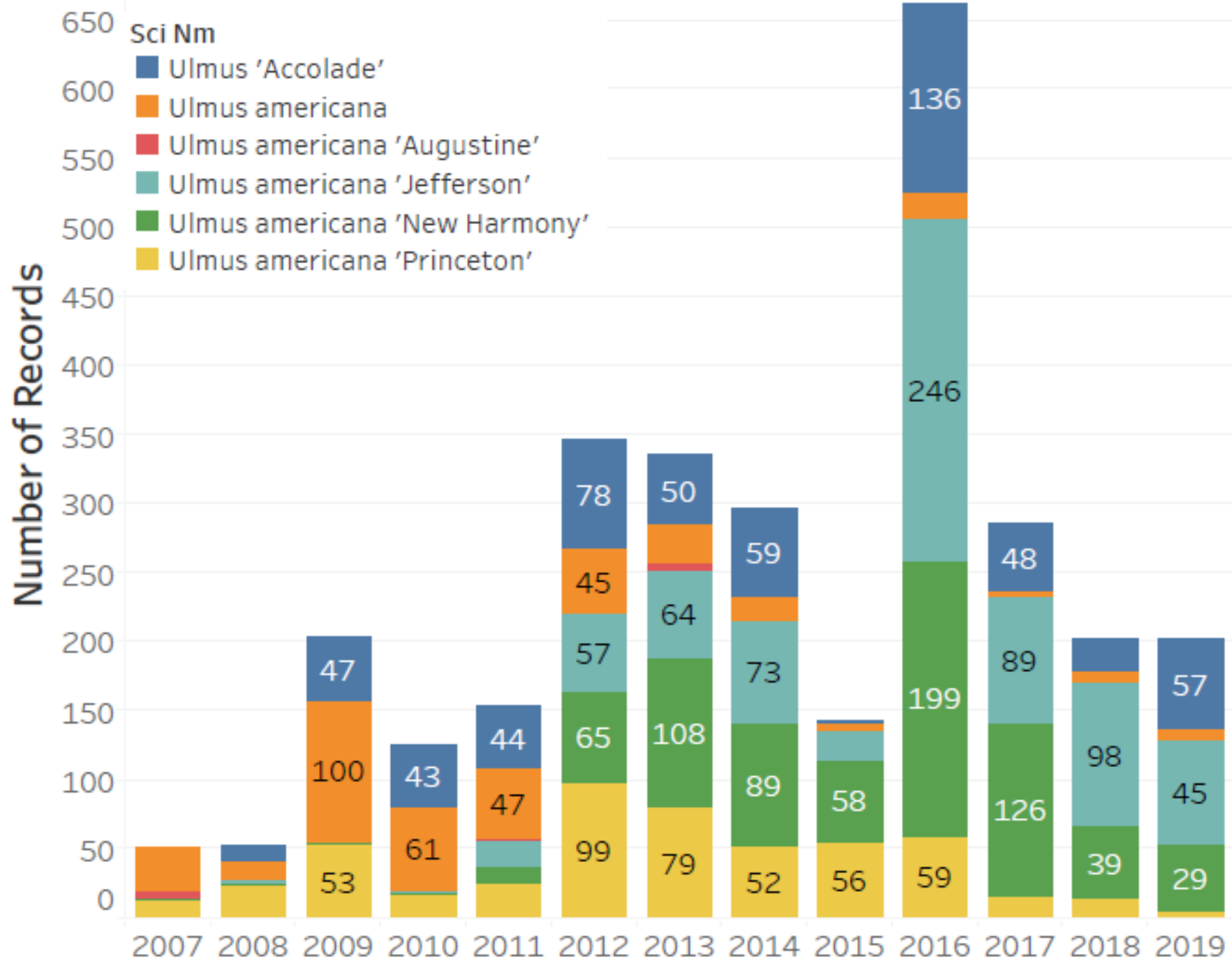


DED management

- Sanitation
- Plant DED resistant/tolerant elms
- Fungicide treatment
- Pruning restriction

Elm inventory





Pest vulnerability matrix

- Project led by Dr. Sunshine Brosi, Frostburg State University
- Excel-based tool
- Based on relative overall abundance of tree species and their risk to pests and pathogens

Tree species

	Pinus 2	Pistacia	Platanus	Platanus old	Platanus occidentalis	Populus	Prunus	Quercus	Robinia	
	Pine: scotch, sugar, brutia, etc.	Chinese pistache (Pistacia chinensis), Pistache	Sycamore - London plane, new cultivars	Sycamore (Platanus spp.), London plane, Plane tree	Arborvitae (Platycladus occidentalis); Western red-cedar (Thuja plicata)	Poplar, Cottonwood, Aspen (Populus spp.)	Cherry (Prunus spp.)	Callery pear (Pyrus calleryana)	Oak (Quercus spp.)	Locust (Robinia spp.), Black locust
Probable Cause	17%	11%	11%	8%	18%	14%	3%	27%	8%	
Pest overland	17	8	11	11	18	14	3	29	8	
Pest count	17	8	11	11	18	14	3	29	8	
Genus CODE	38	39	40	41	42	43	44			
Proportion of all trees	1	0.002	0.0485	1	1	0.0004	0.0032	0.0164	0.2931	0.0009
YELLOW	14	6	7	6	7	15	9	2	22	7
ORANGE	3	2	3	4	1	2	5	0	4	1
RED	0	0	1	1	0	2	1	1	3	0
butlton mosaic virus.										
Anthraxnose: piognomonis; Cylindrosporium; Harzonia; Glomerella.										
Armillaria root rot or Oak root fungus.										
ash dieback on Raywood sh.										
Bacterial blight and canker on bacterial blast.										
Bacterial leaf scorch Xylella fastidiosa.										

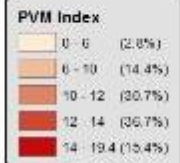
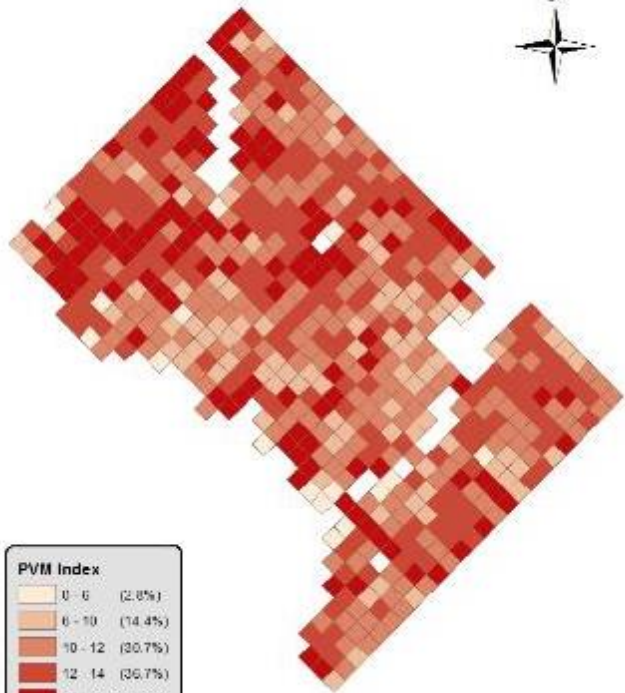
Pests and pathogens

Interaction

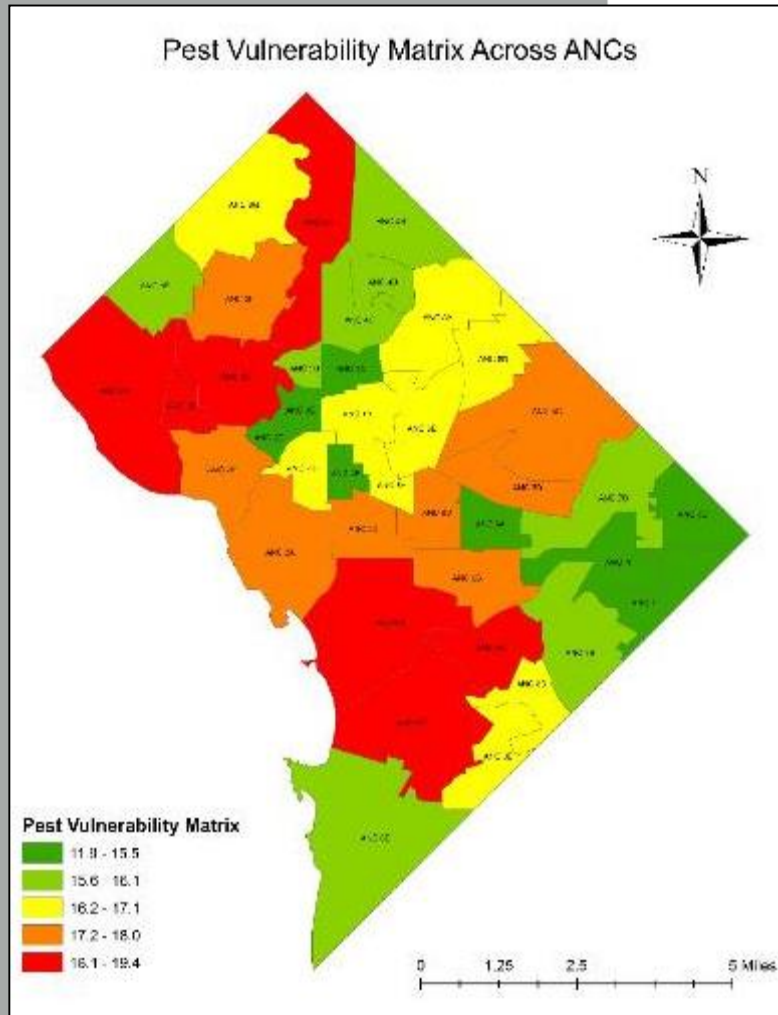
(Laćan and McBride 2008)

Localized Pest Vulnerability

Sum of all weighted PVM scores in each cell indicating general risk associated with cell's general assemblage



2015 PVM results



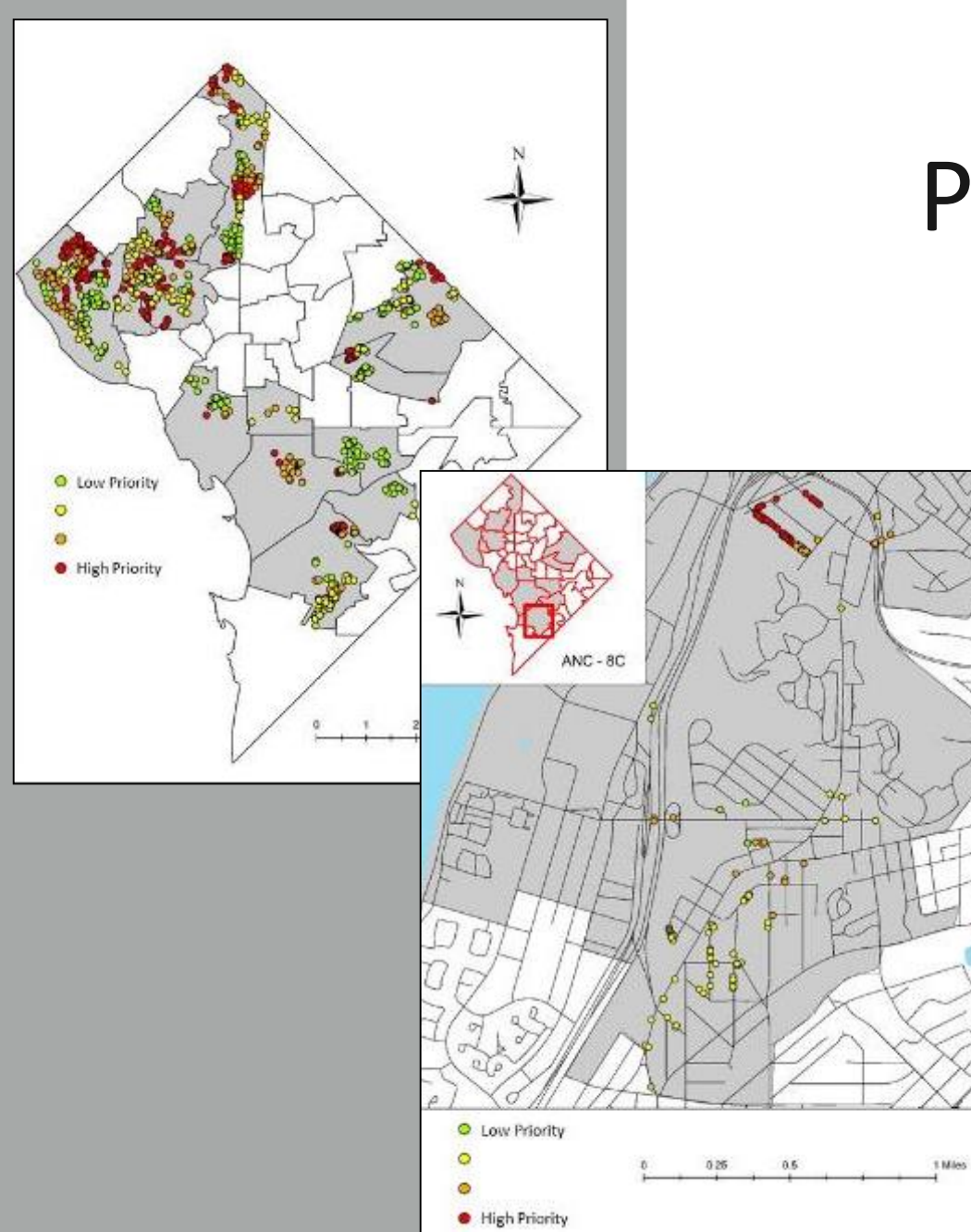
- Preliminary PVM report of District-wide score 11.88
- PVM index that can be used over time and compared spatially
- Use information visually to help residents understand how we apply data to management decisions

PVM applications

- PVM used to identify high priority (low tree diversity and high PVM) ANC
- Within high priority ANCs, apply PVM to identify and prioritize tree planting

Future applications

- Apply PVM to street tree inventory pre and post planting season



Emerging pests and pathogens

- 2018 sweetgum dieback
 - Anthracnose
 - Other fungi
 - Record precipitation
- Spotted lanternfly, *Lycorma delicatula*
- Closest infestations
 - Frederick Co, VA
 - Cecil Co, MD
- General survey at high risk location in DC, Summer 2019



Emerging pests and pathogens

- 2018 sweetgum dieback
 - Anthracnose
 - Other fungi
 - Record precipitation
- Spotted lanternfly, *Lycorma delicatula*
- Closest infestations
 - Frederick Co, VA
 - Cecil Co, MD
- General survey at high risk locations in DC, Summer 2019 in coordination with APHIS

Spotted lanternfly known distribution, May 15 2019

