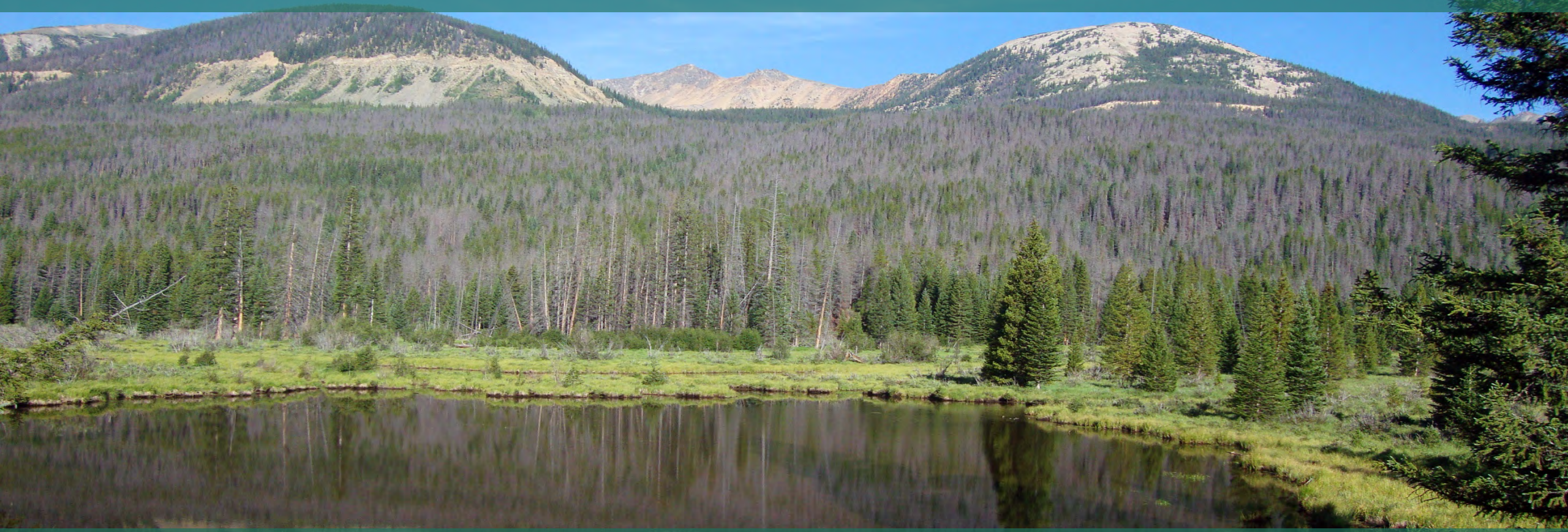
15th Continental Dialogue on Non-Native Forest Insects and Diseases

Cleveland, Ohio



USDA Forest Service

Forest Health Protection, Program Updates 2019

Rick Cooksey, Director

What we do in Forest Health Protection?

- FHP is a cohesive National program
- We partner with states, tribal and local governments, other federal agencies, rural communities, and private entities, for protection of the nation's forests.
- We provide Technical Assistance
- Survey & Monitoring
- Treatments
- Technology Development

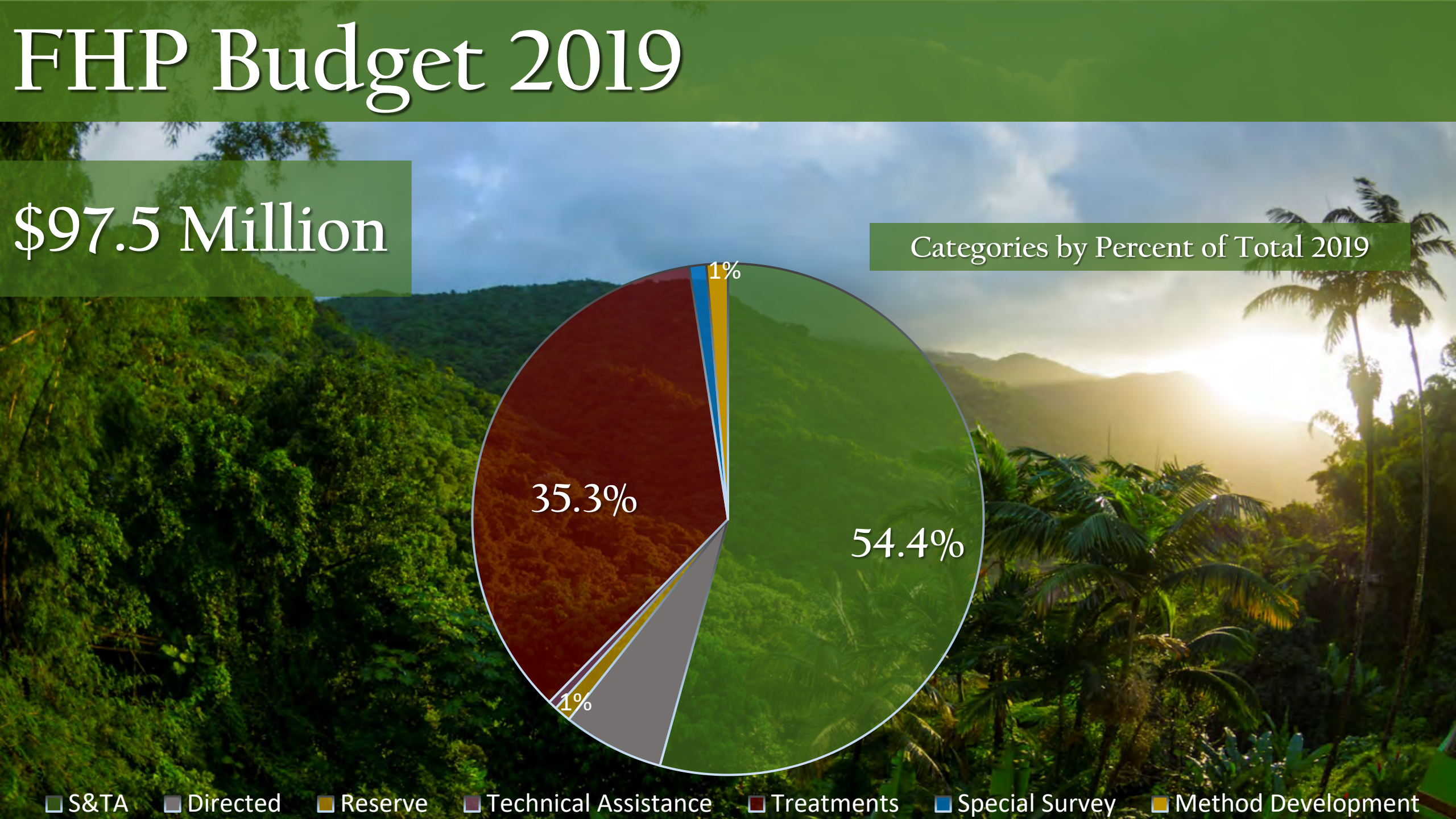
Outline

Forest Health Program

- Budgets
- Priorities
- Program Updates

FHP Budget 2019

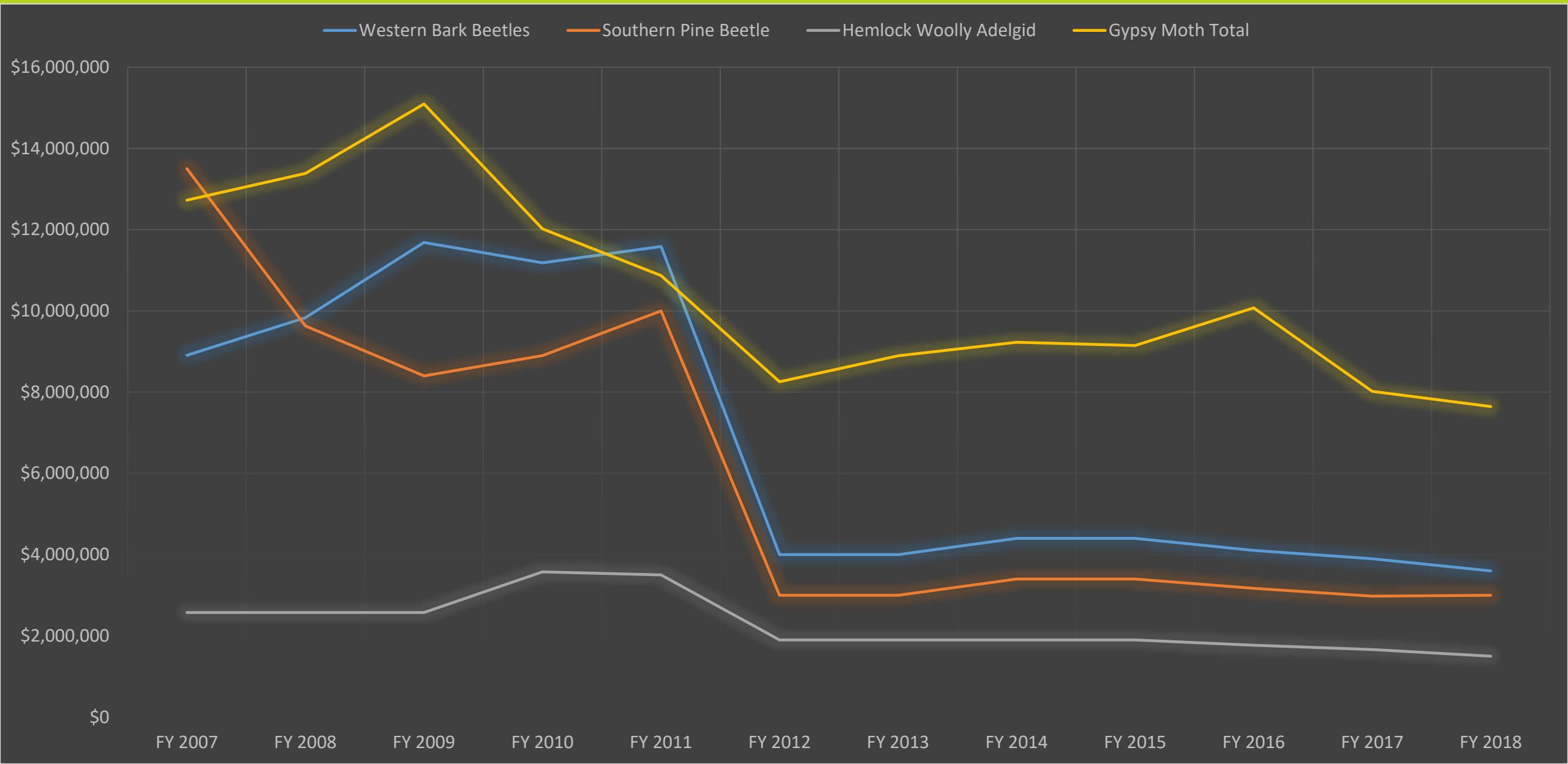
$97.5 Million



Budget 2010-2019

(Dollars in Thousands)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Federal Lands	57,282	56,737	47,425	44,944	58,922	58,922	58,922	55,500	55,500	55,500
Coop Lands	48,573	48,821	39,999	36,894	45,655	45,655	40,678	39,000	39,000	42,000
Total	105,855	105,558	87,424	81,839	104,577	104,577	99,600	94,500	94,500	97,500

Forest Health Protection, 2004-2018



Increasing

Pre 1990's:

- Gypsy Moth
- Western Bark Beetles
- Southern Pine Beetle

1990's:

- Asian Long-horned Beetle
- Hemlock Woolly Adelgid
- Sudden Oak Death

2000's:

- Emerald Ash Borer
- Laurel Wilt
- Thousand Cankers Disease
- Gold-Spotted Oak Borer
- Sirex Wood Wasp
- Winter Moth
- Shot-Hole Borers
- Coconut Rhinoceros Beetle
- Rapid ʻŌhiʻa Death

Major Insects and Pathogens Impacting US Forests

- Gypsy Moth
- Mountain Pine Beetle
- Spruce beetle
- Engraver beetles
- Western Pine Beetle
- Douglas-fir Beetle
- Southern Pine Beetle
- Emerald Ash Borer
- Polyphagous Shothole Borer
- Sudden Oak Death
- Asian-Longhorned Beetle
- Hemlock Woolly Adelgid
- Laurel Wilt
- Winter Moth
- Ohia Wilt
- Forest Tent Caterpillar
- Spruce Budworm
- Western Spruce Budworm
- Western Balsam Bark Beetle
- Coconut Rhinoceros Beetle
- White Pine Blister Rust
- Oak Wilt
- Yellow Cedar Decline
- Gold–spotted Oak Borer
- Sirex Woodwasp
- Beech Bark Disease
- Thousand Cankers Disease
- Yellow Poplar Weevil
- Spotted Lantern Fly
- Rapid Ohia Death

Top Damage Causing Agents, 2018 & 2019

Damage Causing Agent	2018	2019
Emerald Ash Borer	35 States	35 States
Fir Engraver	1,941,210	2,684,029
Spruce Beetle	946,761	324,514
Western Pine Beetle	285,873	86,958
Mountain Pine Beetle	306,994	394,603
Eastern Larch Beetle	182,056	246,543
Douglas-fir Beetle	139,342	168,891
Jeffrey Pine Beetle	99,111	105,149
Western Balsam BB	40,604	55,366

FHP Funding for Projects on Native and Invasive Species

Including: treatments, methods development, special surveys and outreach.

Native Species

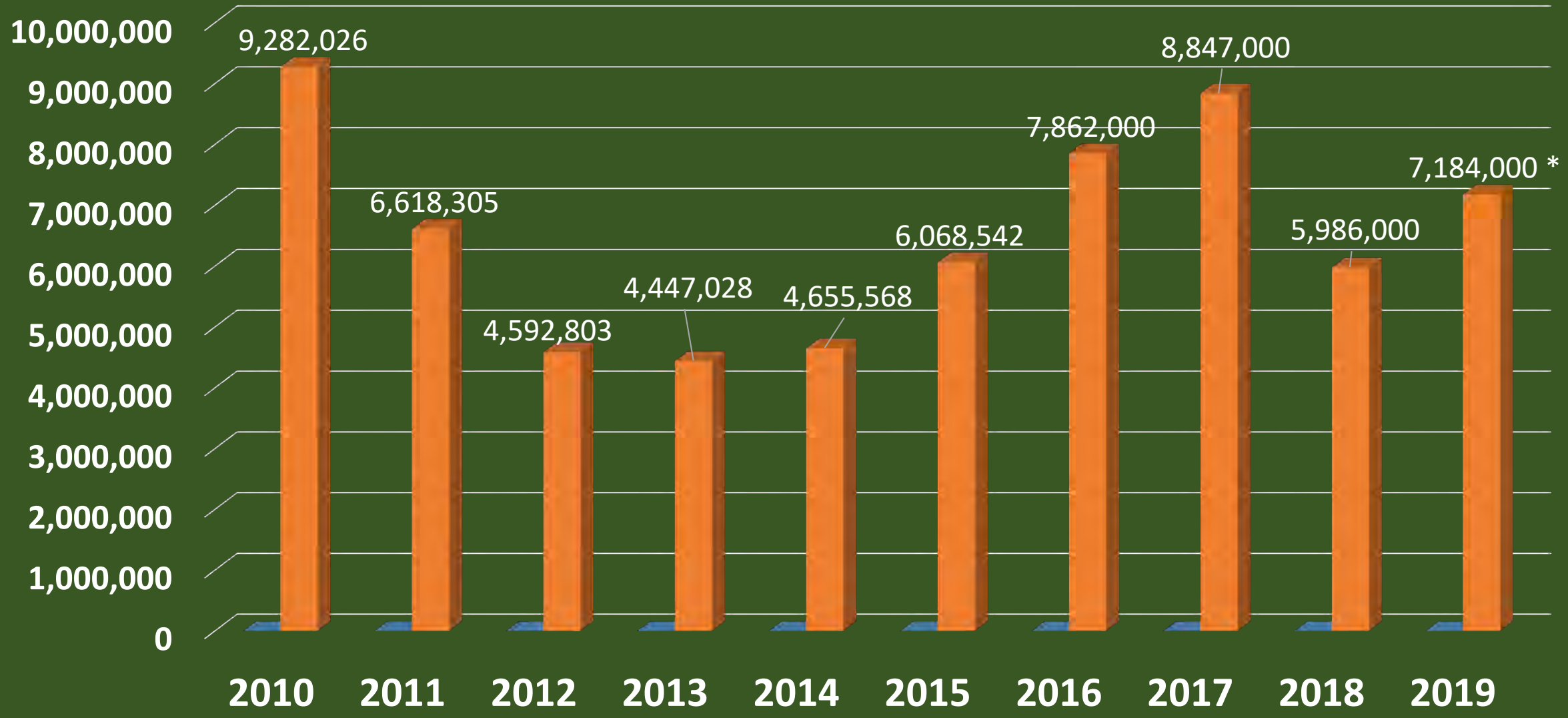
- Mountain Pine Beetle
- Spruce Beetle
- Western Pine Beetle
- Douglas-fir Beetle
- Southern Pine Beetle
- Oak Wilt
- TCD/WTB

Invasive Species

- Gypsy Moth
- Emerald Ash Borer
- Yellow Cedar Decline
- Shothole Borer
- Gold-spotted Oak Borer
- Sudden Oak Death
- Sirex Woodwasp
- Asian-Longhorned Beetle
- Hemlock Woolly Adelgid
- Laurel Wilt
- Winter Moth
- Rapid Ohia Death
- Coconut Rhino. Beetle
- White Pine Blister Rust

Acres with mortality, 2010 - 2019

7.1 million acres of tree mortality in 2019



Strategic Communication

National Insect and Disease Forest Risk Assessment – To be updated

Forest Insect and Disease Conditions in the United States report

Strategic Communication

Infographics, Story Maps, posts, blogs & More

FHP Web Site – ***Completely updated***

Partnership

Corazon Latino: Forest Health/Human Health Community Engagement Program.

APGA, Botanic Gardens International, Center for Plant Conservation, and the Plant Conservation Alliance

American Forests Foundation -5Needle Pines And Whitebark Restoration

American Public Garden Association

FHP International Cooperation

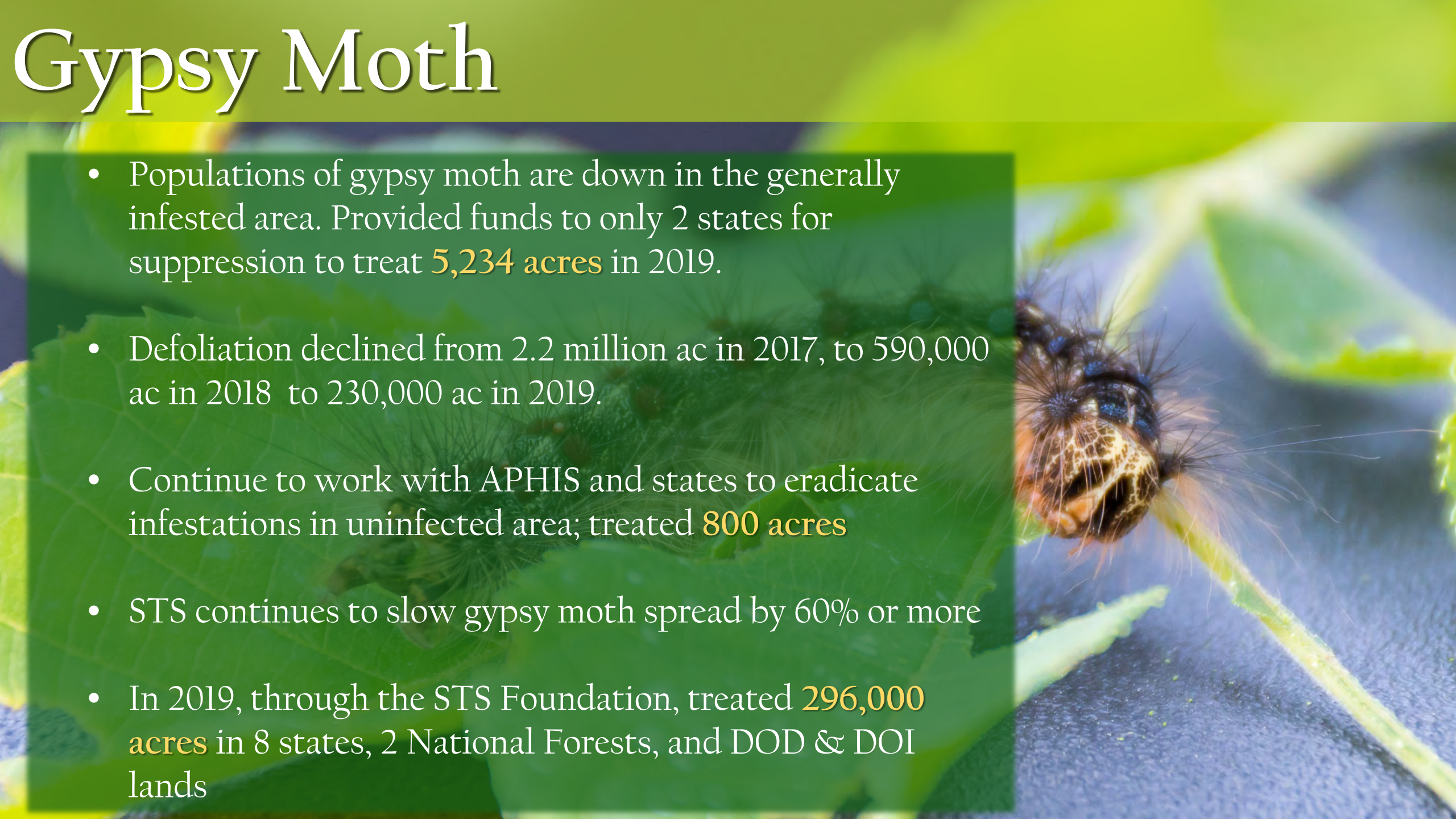
The Forest Service has been actively engaged with the **Asia and the pacific** Forest Invasive Species Network (APFSIN) since its inception in 2004 and the National Forestry Commission of **Mexico.**

Program Updates

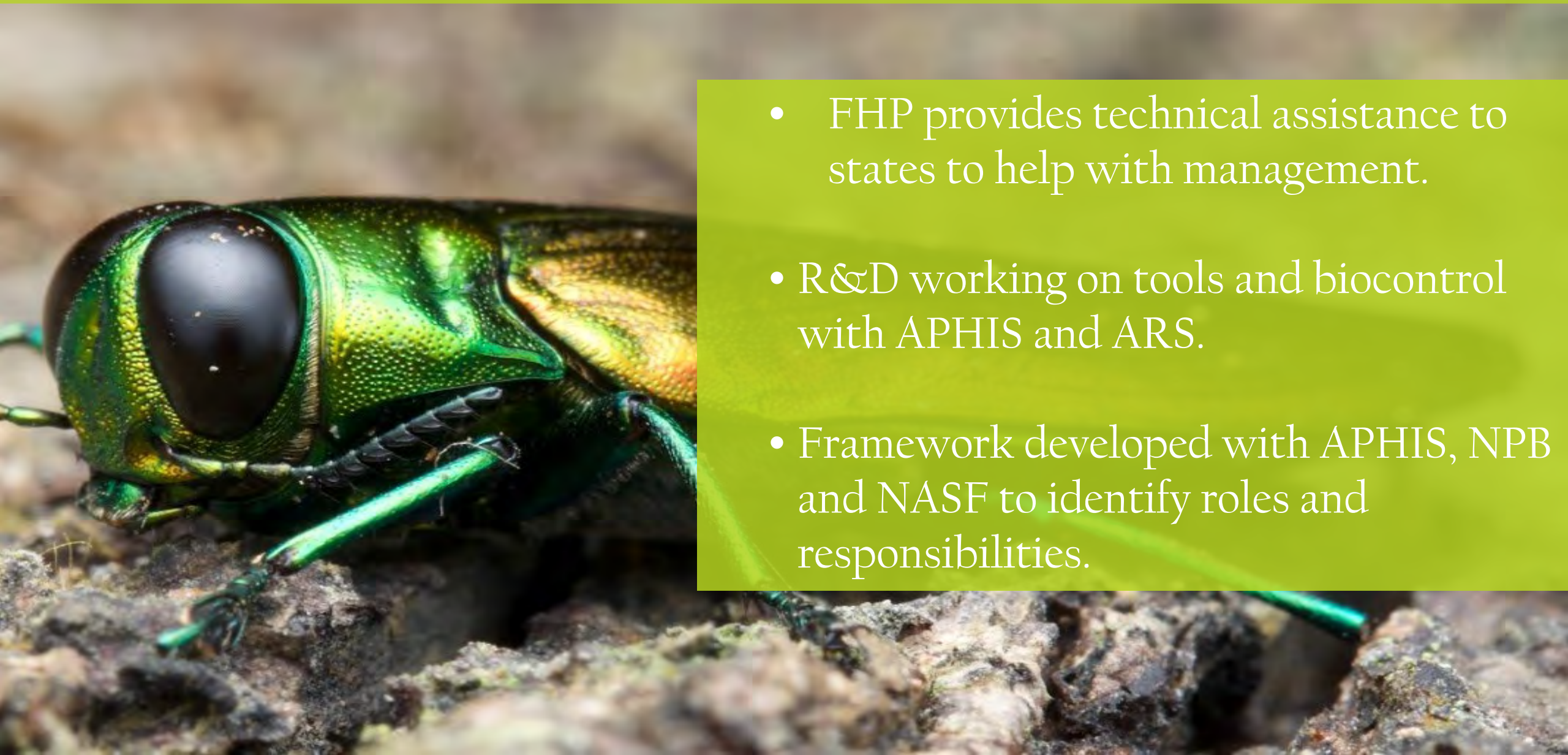
- Gypsy Moth
- Emerald Ash Borer
- Sudden Oak Death
- White pine blister rust
- Polyphagous and Kuroshio Shothole Borers
- Laurel Wilt
- Rapid Ohia Death
- Beech Leaf Disease

Gypsy Moth

- Populations of gypsy moth are down in the generally infested area. Provided funds to only 2 states for suppression to treat 5,234 acres in 2019.
- Defoliation declined from 2.2 million ac in 2017, to 590,000 ac in 2018 to 230,000 ac in 2019.
- Continue to work with APHIS and states to eradicate infestations in uninfected area; treated 800 acres
- STS continues to slow gypsy moth spread by 60% or more
- In 2019, through the STS Foundation, treated 296,000 acres in 8 states, 2 National Forests, and DOD & DOI lands



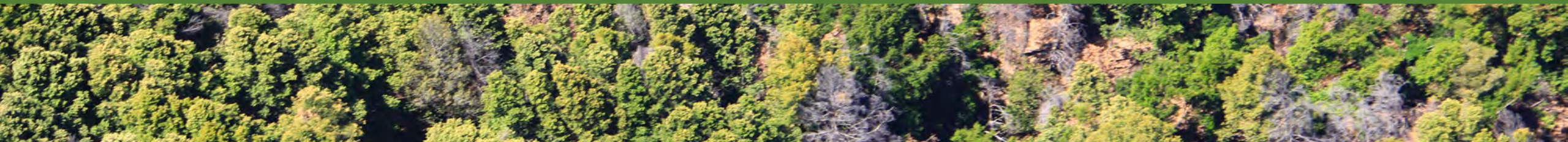
Emerald Ash Borer



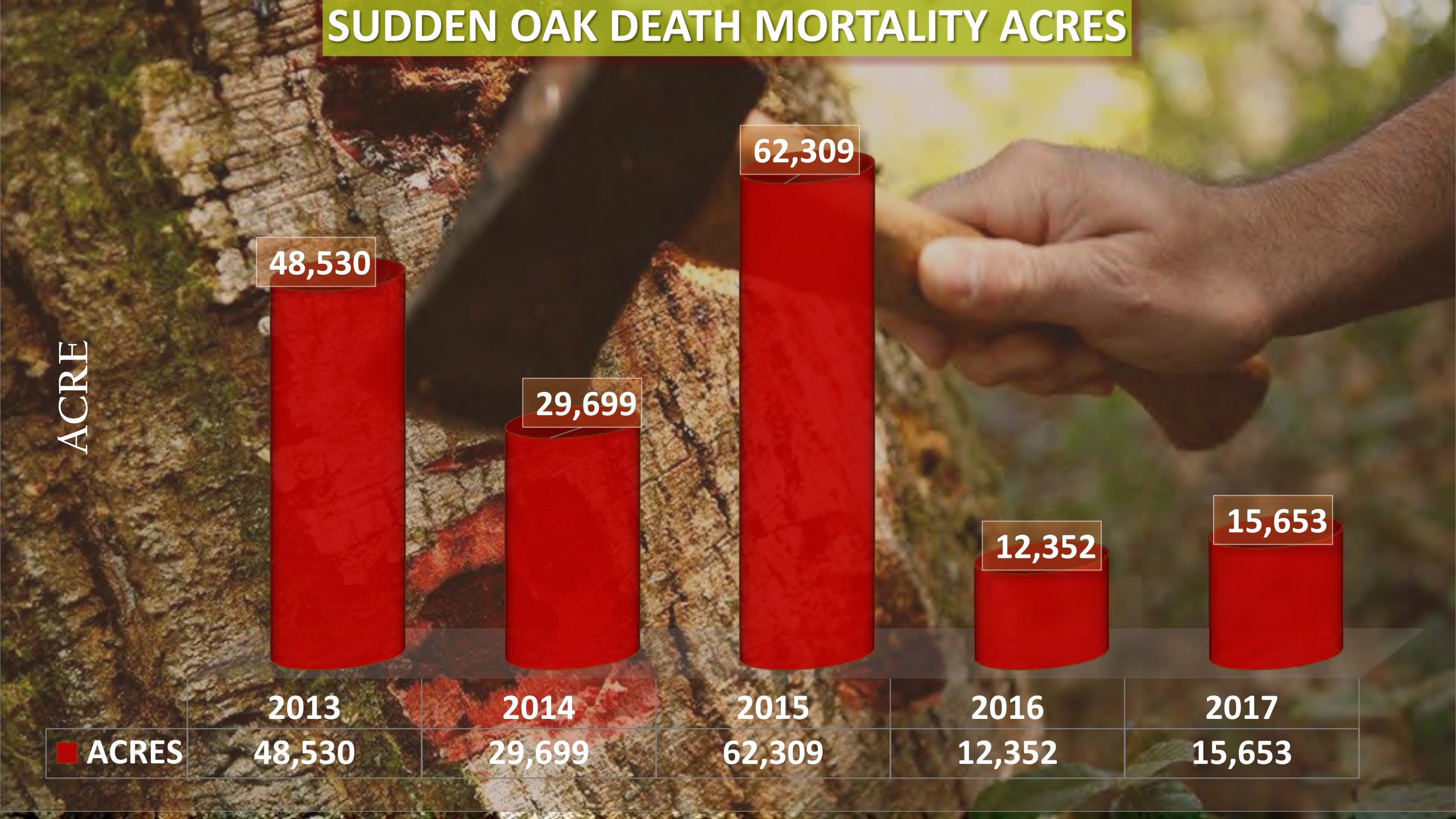
- FHP provides technical assistance to states to help with management.
- R&D working on tools and biocontrol with APHIS and ARS.
- Framework developed with APHIS, NPB and NASF to identify roles and responsibilities.

Sudden Oak Death

- SOD is found in 15 counties in CA /OR, and now WA
- FHP has identified 110 acres in 2017-2018 for SOD treatment.
- Treatment costs range from $2500 to $5000/acre
- FHP works collaboratively with BLM, NPS, and the BIA, and the states by supporting their slow-the-spread sanitation projects to reduce spread.
- FHP is working with APHIS/ARS on National SOD Stream Baiting protocols and surveys.
- EU1 found and is highest priority
- Extensive mortality of tanoak, coast live oak, and CA black oak since 1995
- National surveys of forests have not found infestations outside CA, OR and WA
- Eastern Oaks may be at risk

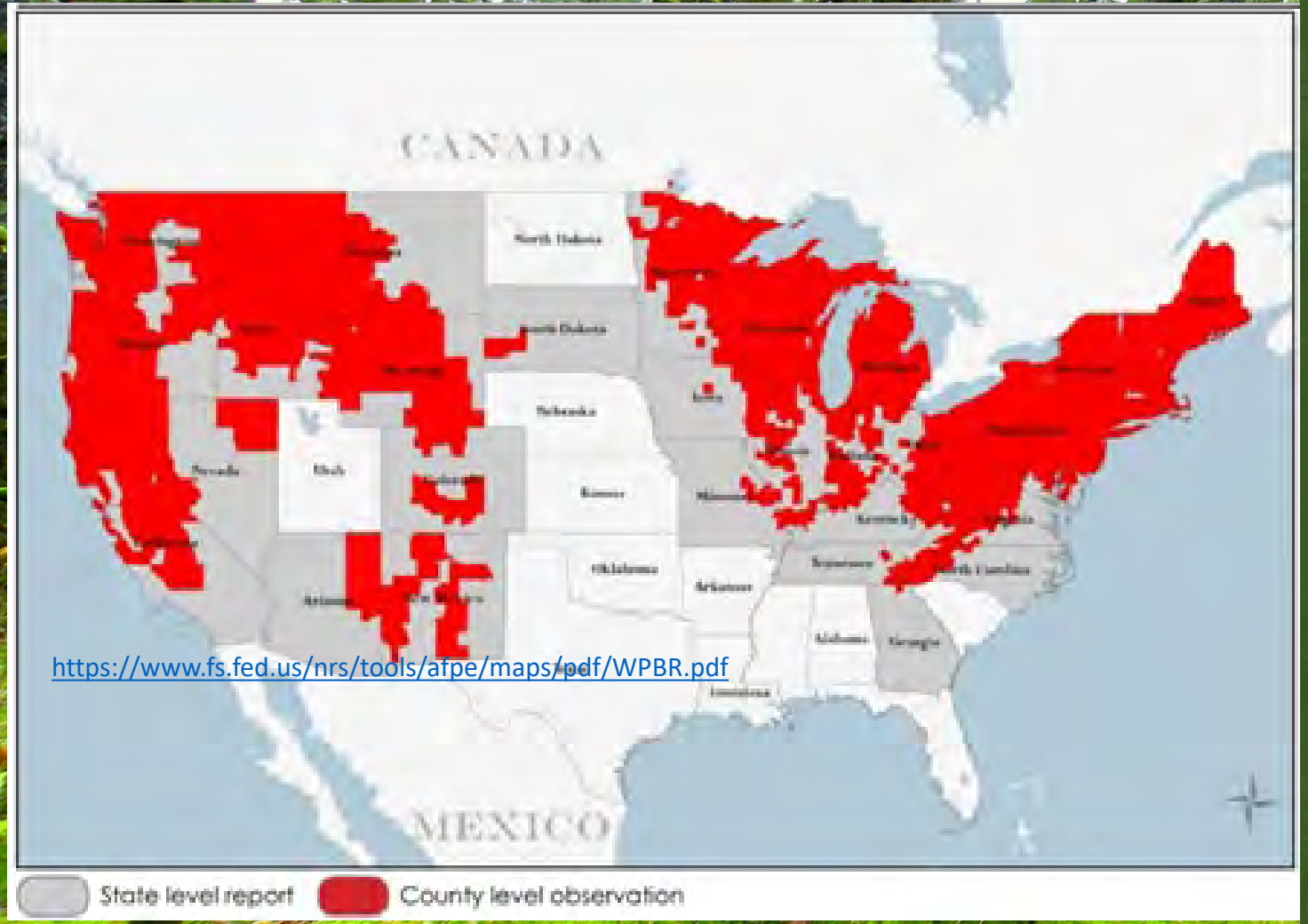


SUDDEN OAK DEATH MORTALITY ACRES



	2013	2014	2015	2016	2017
ACRES	48,530	29,699	62,309	12,352	15,653

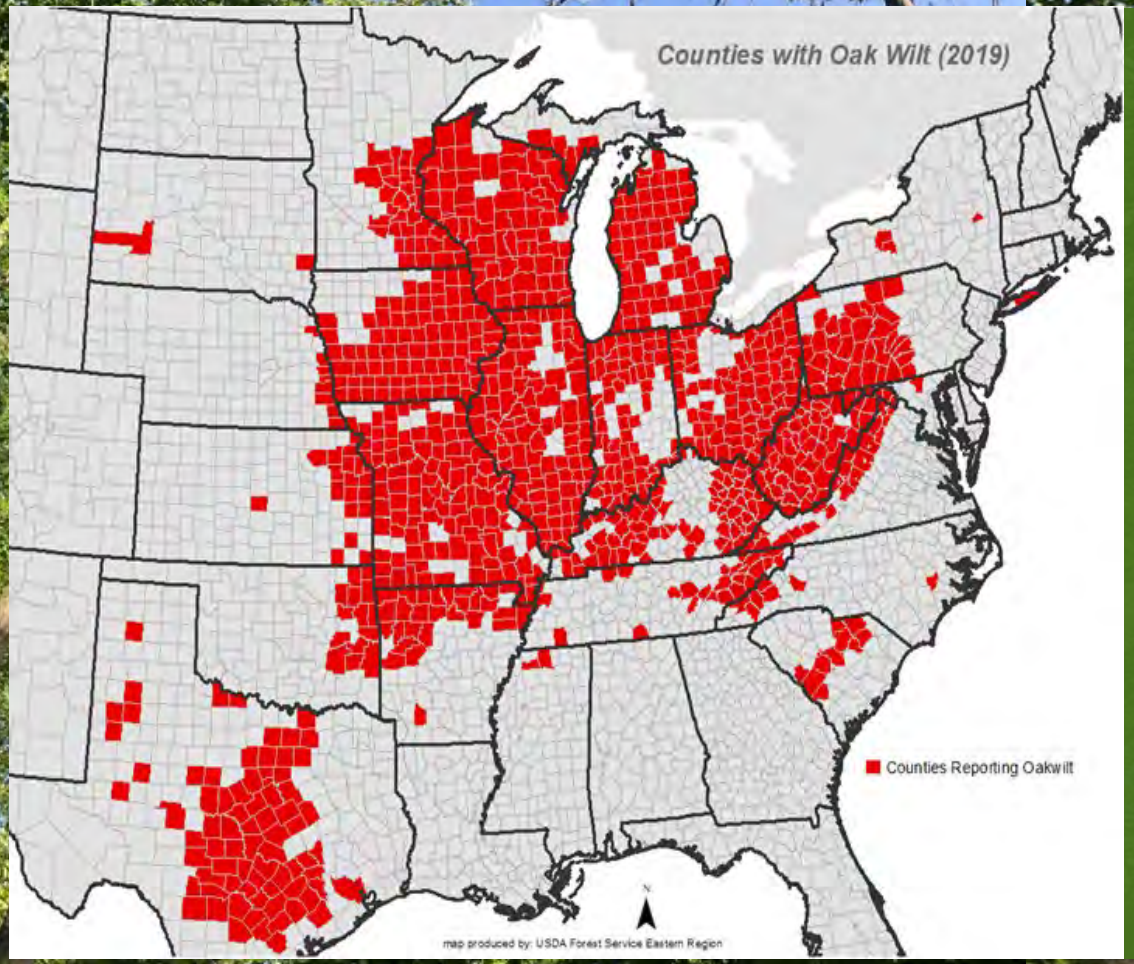
White pine blister rust



https://www.fs.fed.us/nrs/tools/afpe/maps/pdf/WPBR.pdf

- Continues to expand its range in populations of high elevation pines
- FHP collaborate with partners to develop disease resistant pines, enhance recruitment, and improve silvicultural techniques & management tools to conserve high elevation pines
- USFS partners with American Forests and the Whitebark Pine Ecosystem Foundation to develop a range-wide Whitebark Pine Recovery Plan

Oak wilt



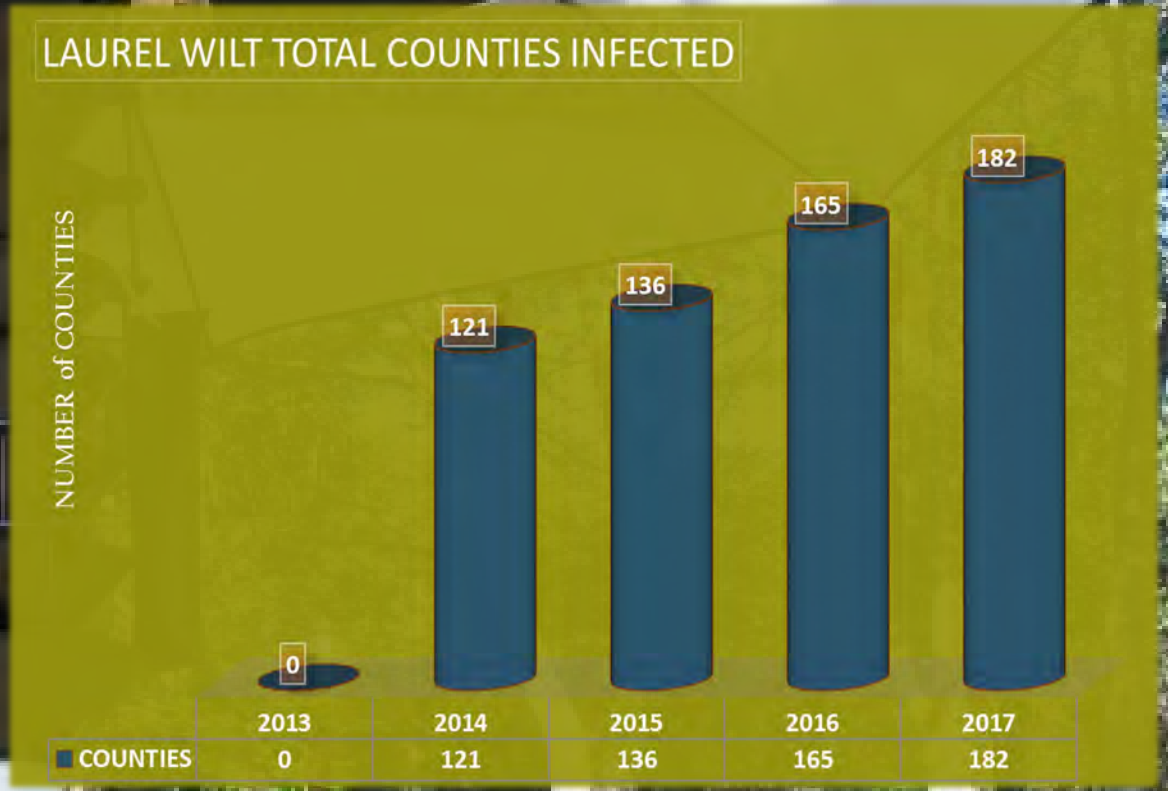
- Range continues to expand, new counties in northern WI and central NY detected in 2019
- States at the edge of range expansion increased outreach and monitoring efforts with Landscape Scale Restoration (LSR) grant
- Northeast and Great Lakes Fire Protection Compacts permitted resource managers from 11 States and 2 Canadian provinces to recognize disease symptoms, diagnostics, and management strategies

Polyphagous and Kuroshio Shothole Borers

- Two invasive species of ambrosia beetles have caused extensive mortality in southern California (especially in riparian areas)
- Both species have a wide host range, potentially impacting 100 or more species of trees.
- Forest Service is working with CDFA, FWS and NPS to develop an integrated management strategy
- An effective trap and lure are now available to help with early detection of these species
- Through Forest Service support, scientific names are now being associated with the cryptic species in this complex

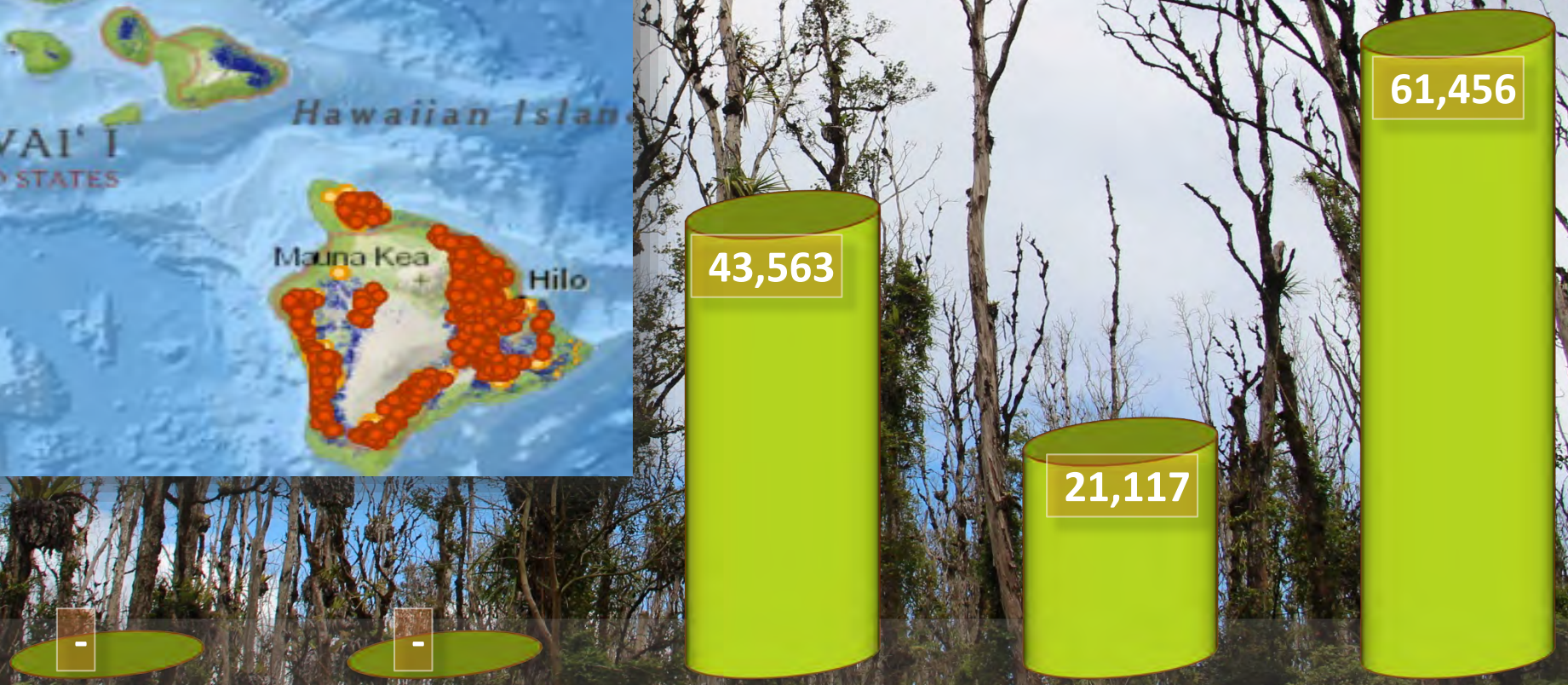
Laurel Wilt

- Invasive pathogen found in Georgia in 2004.
- Extensive mortality of Red Bay and now Avocado in Florida
- Also affects sassafras and other Lauraceous plants
- $54 Million avocado industry at risk, 9000 trees killed thus far…



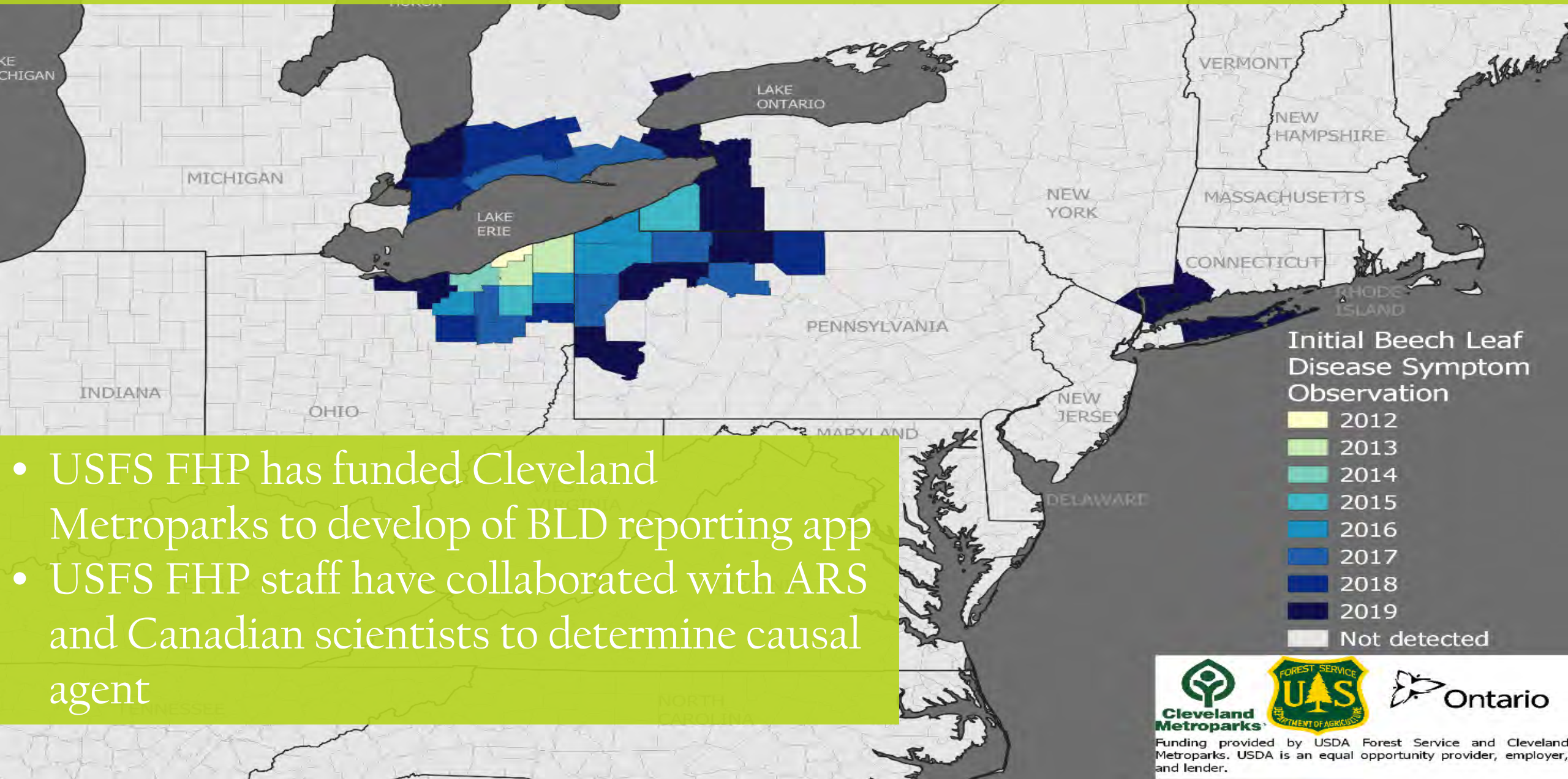
Rapid Ohia Death

MORTALITY ACRES



	2013	2014	2015	2016	2017
ACRES	-	-	43,563	21,117	61,456

Beech Leaf Disease



- USFS FHP has funded Cleveland Metroparks to develop of BLD reporting app
- USFS FHP staff have collaborated with ARS and Canadian scientists to determine causal agent

Cleveland Metroparks

Ontario

Funding provided by USDA Forest Service and Cleveland Metroparks. USDA is an equal opportunity provider, employer, and lender.

Questions?

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www.fs.fed.us/foresthealth/