



Southern Pine Beetle

Coming to YOUR
local pine forest!!!

SPB Life History

Multiple generations each year in same area



SPB Adult (left), rice grain, turpentine beetle



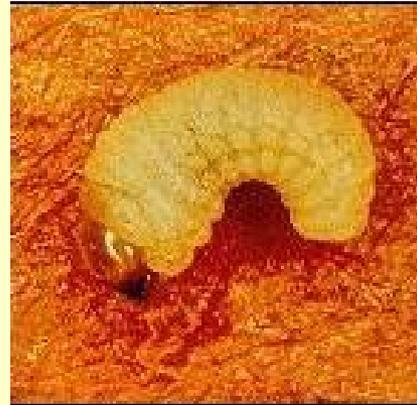
Most of the larvae are concealed within bark

SPB Life Cycle

Egg (1)



Larva (2)



Pupa (2)



Adult (3)



- 1 Photo provided by the USFS
- 2 Photo provided by Bugwood.org
- 3 Photo provided by Gerald Lenhard

History



Dendroctonus frontalis

- Active populations for decades in Southeastern U.S.
- Discovered in South Jersey in 2001
- Likely migrated to NJ via wind and/or interstate commerce.





Southern Pine Beetle

Take PINES out of
Pine Barrens!!!!

Indian Mounds Wilderness in Texas – July 1992



Indian Mounds Wilderness in Texas February 1993



11-year old pine plantation

Indian Mounds Wilderness in Texas – June 1993



11-year old pine plantation

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Indian Mounds Wilderness in Texas – August 1993



11-year old pine plantation

7,500 acres killed by SPB

W

Southern Pine Beetle Outbreak on Indian Mounds Wilderness

July 1992



February 1993



June 1993



August 1993



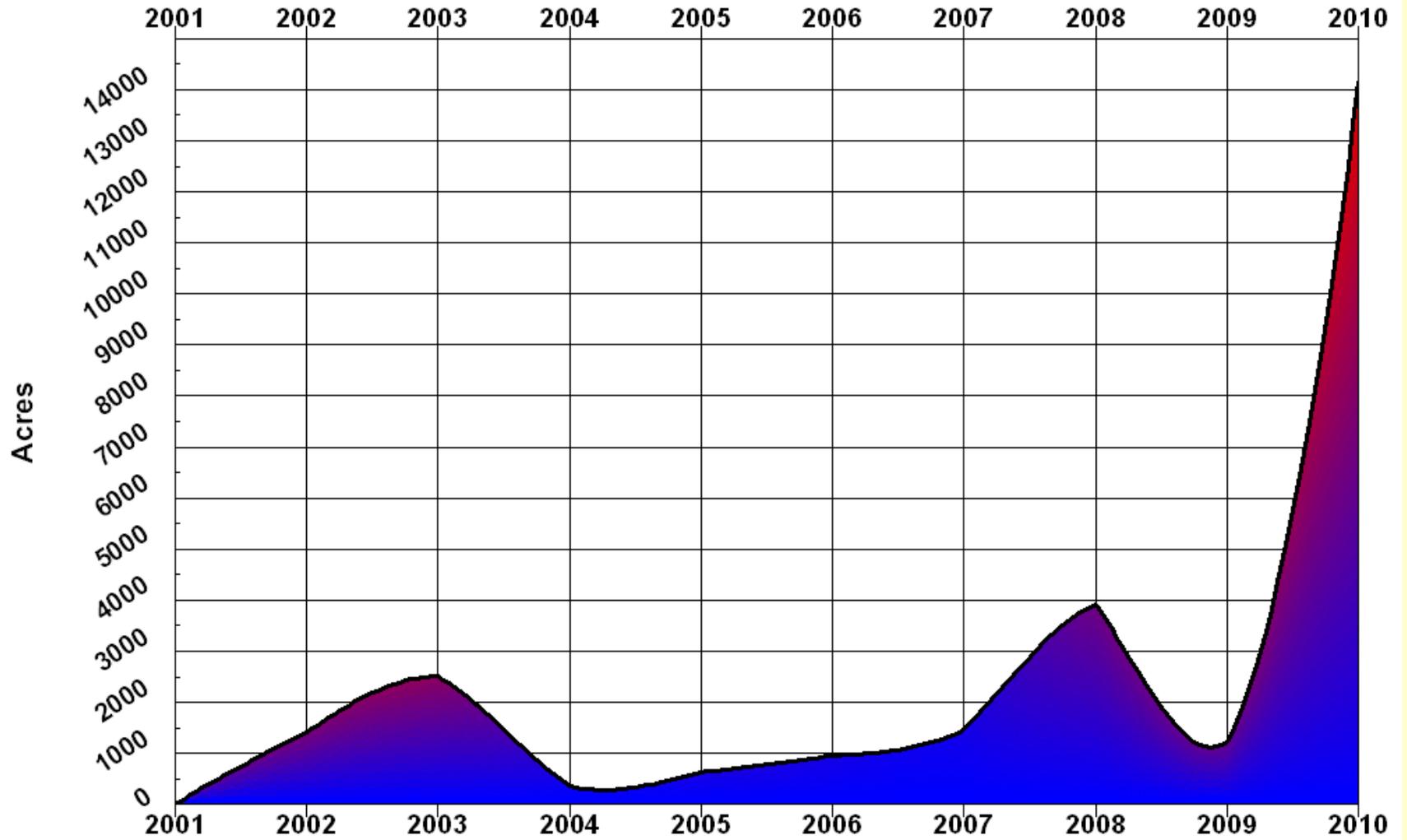
7,500 acres killed



SPB severe outbreak (Tennessee)



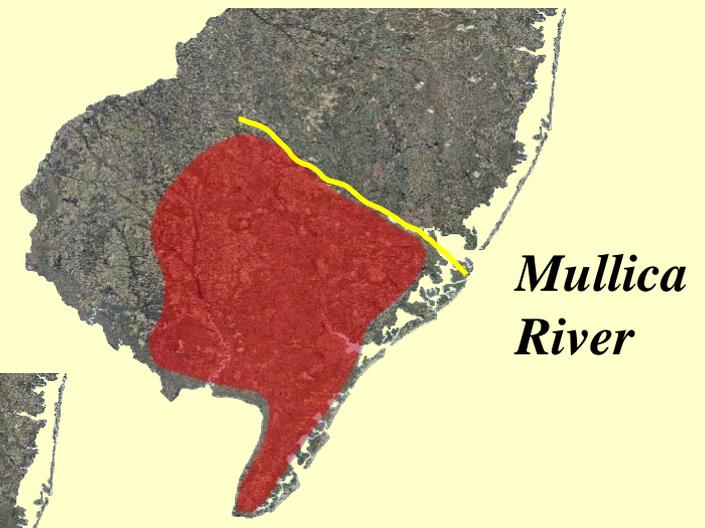
Potential Southern Pine Beetle Infestations



Source: NJ Forest Service 2010

SPB General Movement

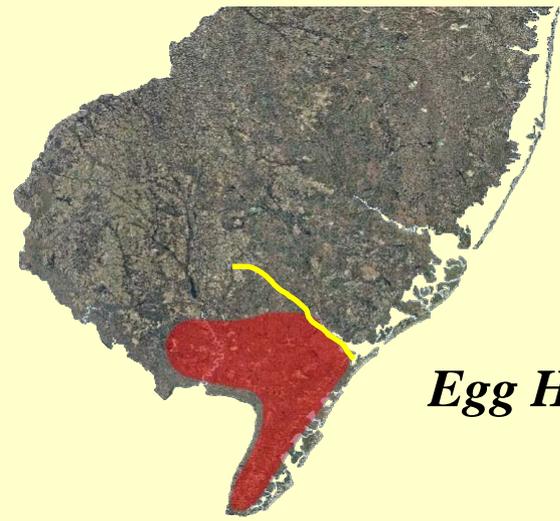
2010



2009

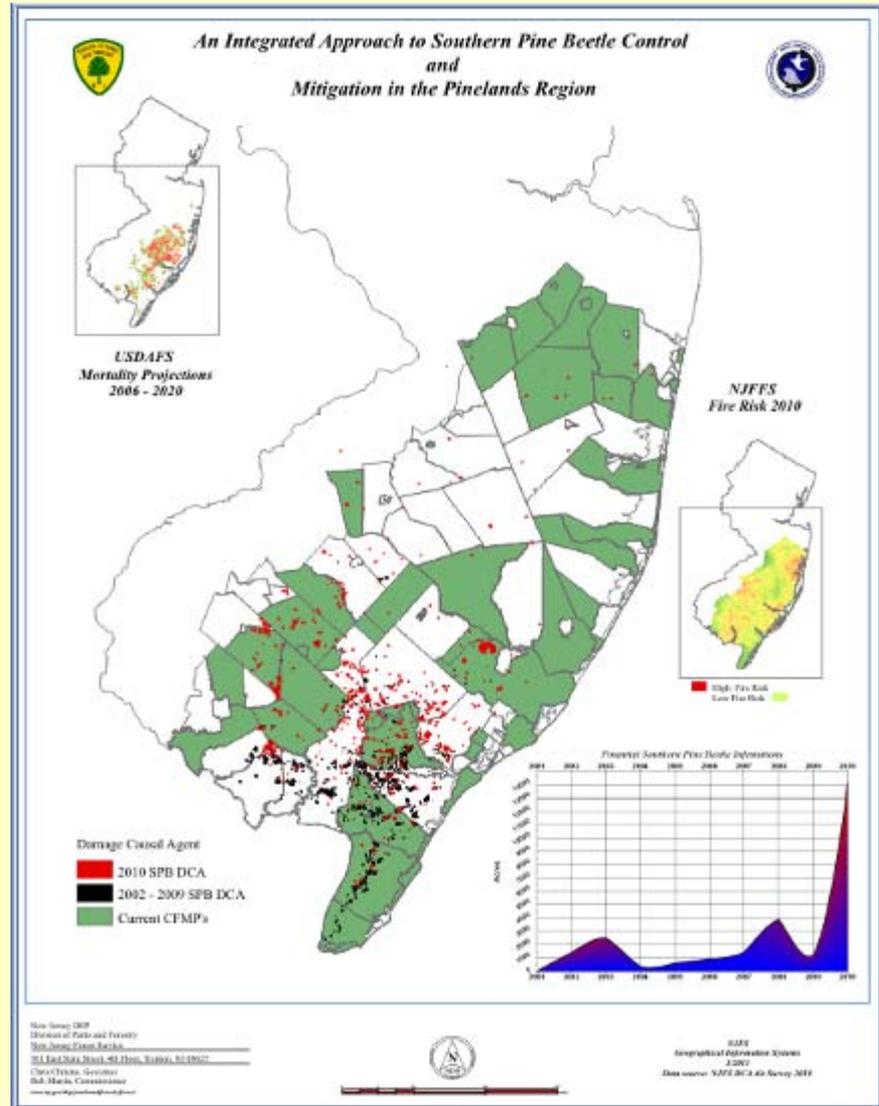


2002 -2007

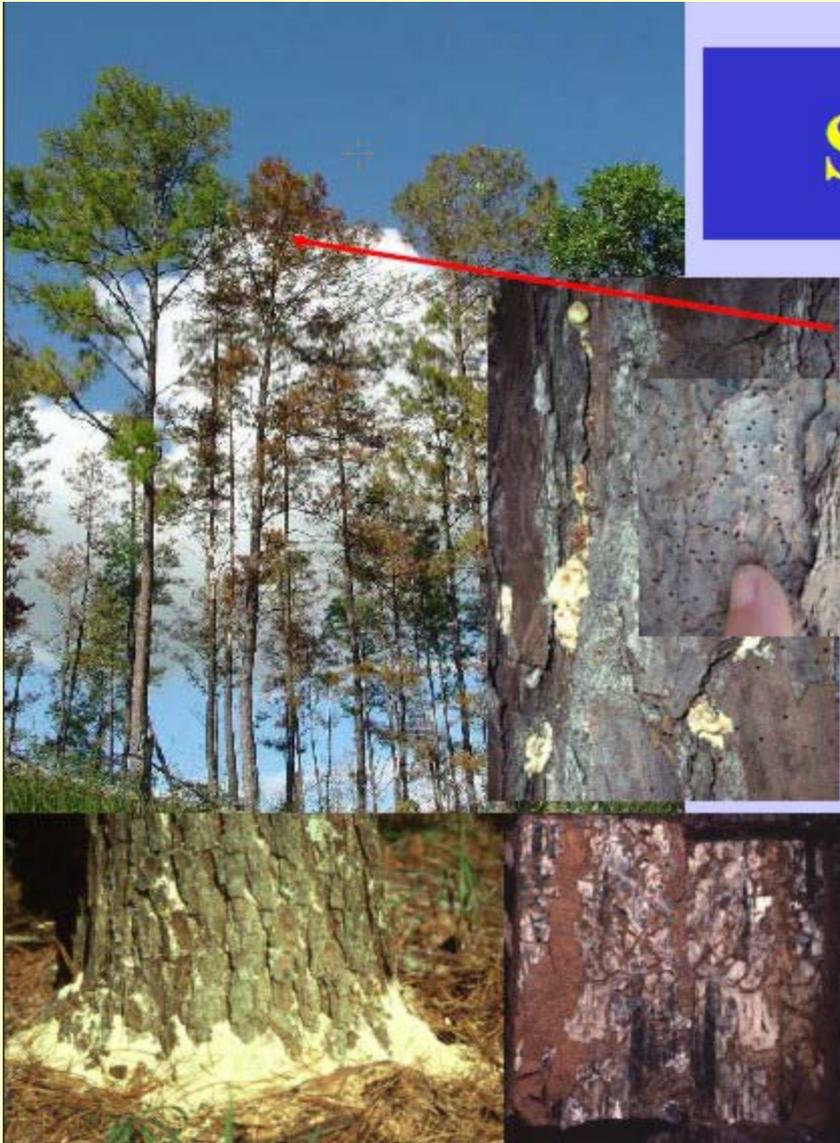


8 Years of SPB Mortality

Approximately 389 recorded infestations (14,100 acres) in the NJ Pinelands region in 2010



Stage 3 = Vacated



- **Crown red or without foliage**
- **Many exit holes in bark**
- **Bark loose, with blue stain, sawyers**
- **Lots of ambrosia beetle dust at base**
- **No SPB brood in outer bark**
- **May see clerid larvae, pupae**

Stage 2 = Brood trees

- Crowns green – yellow (faders)
- Pitch tubes hardened
- Galleries well developed with larvae, pupae or new adults
- No checkered beetles on bark



Stage 1 = Fresh attacks



- Fresh pitch tubes or reddish boring dust in bark crevices
- Green crown
- Bark difficult to remove
- Inner bark white, without galleries
- Adult clerids on bark
- No exit holes in bark
- No white sawdust at base of tree



Characteristic pitch tubes from adult Southern Pine Beetle attack



If I suspect
SPB?

Verification by Foresters, Tree Experts, Researchers

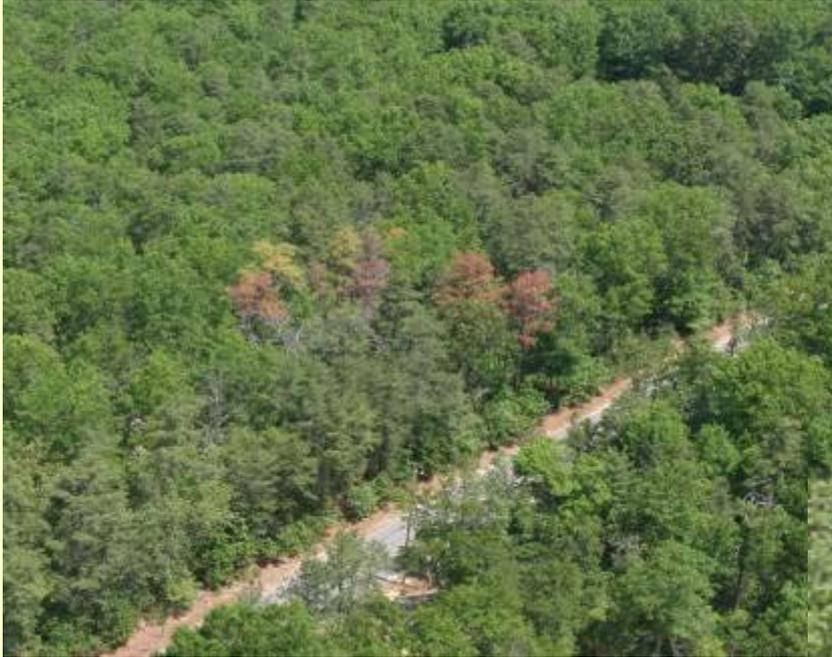
Cut and Remove

Treatment



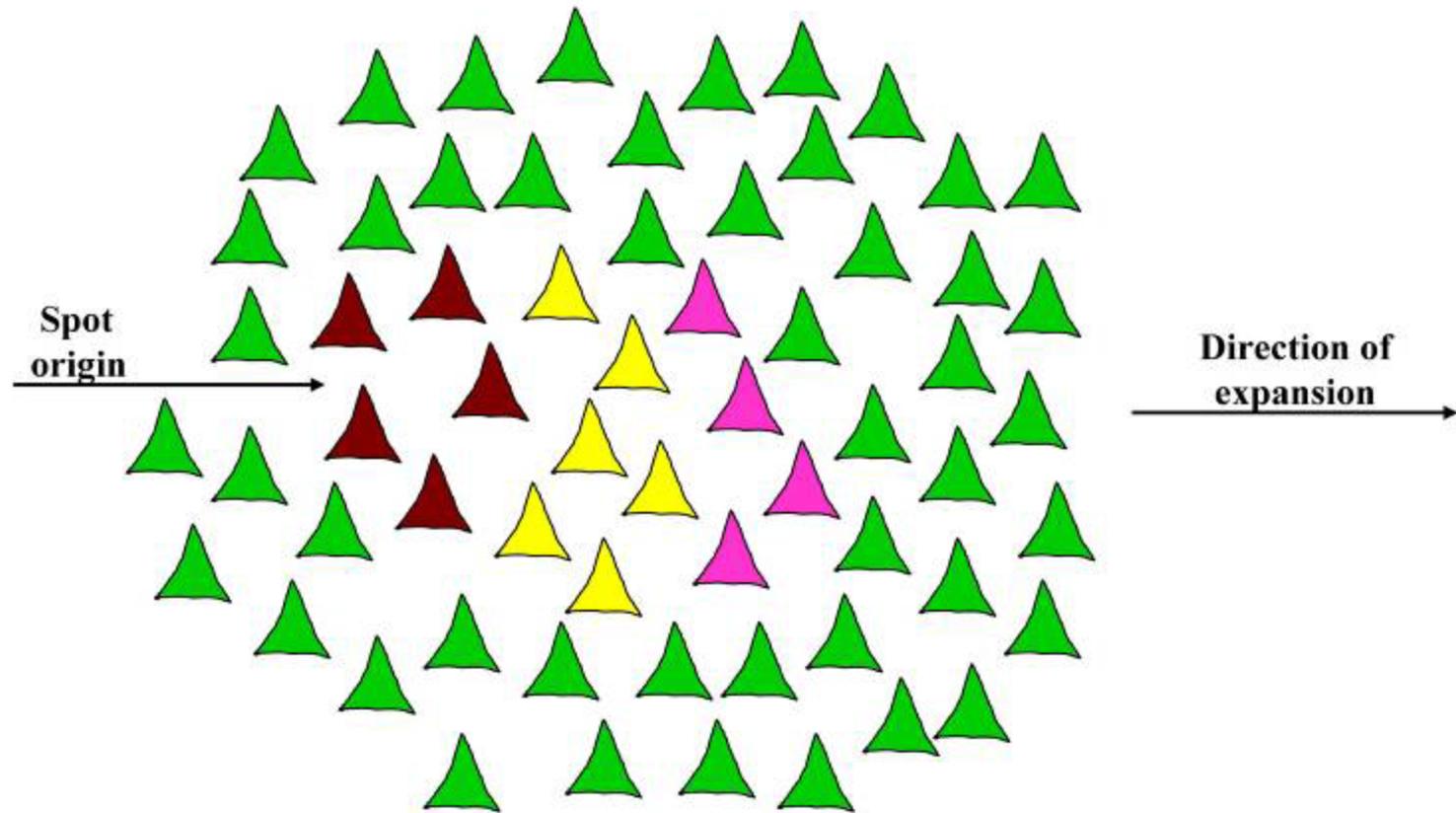
Small Spot Treatment

- Limited number of trees
- Generally located around lightning strikes or stressed trees



- Minimal environmental impact

Expanding Southern Pine Beetle Infestation



Uninfested pine



Stage 3 (dead and vacated)

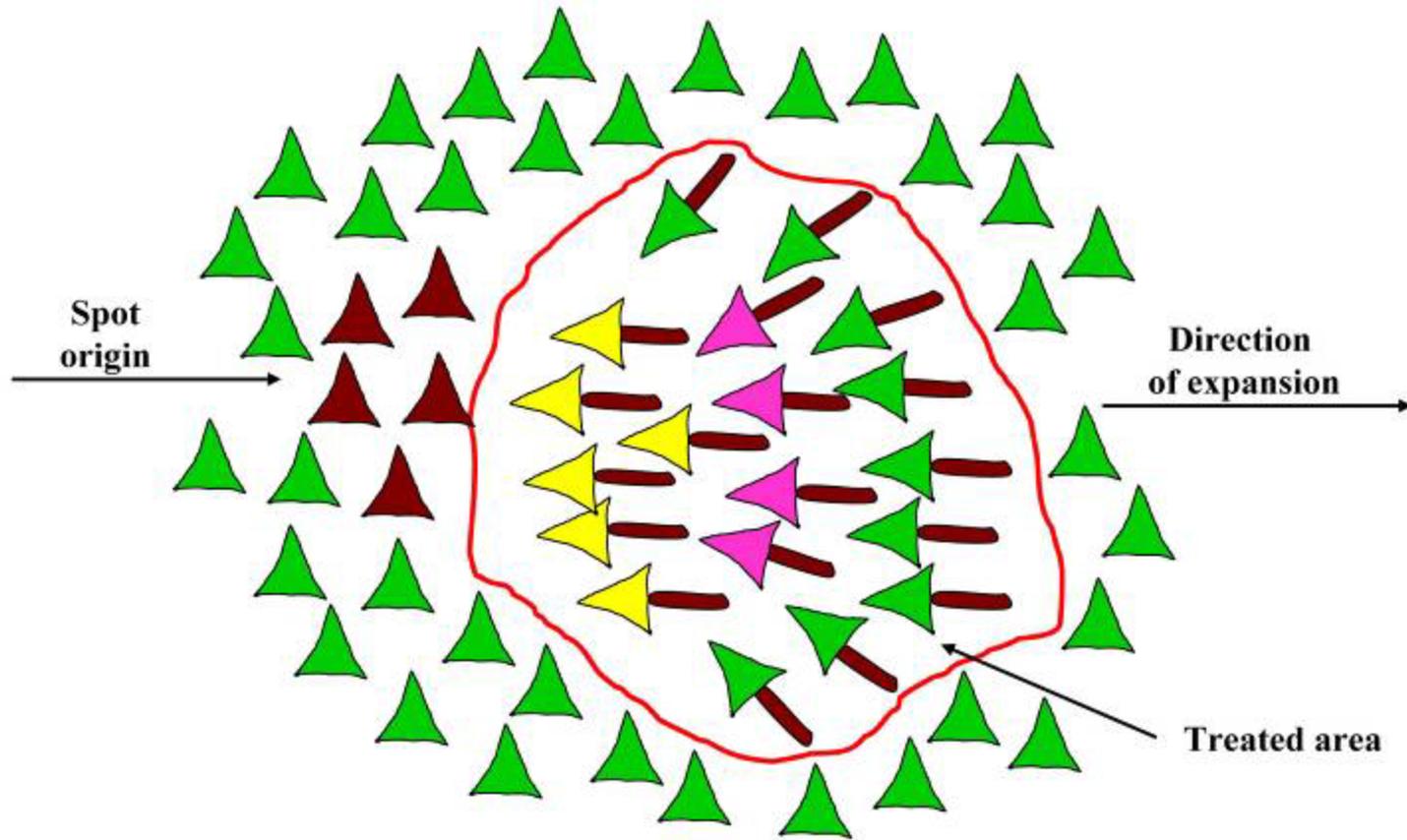


Stage 2 (with brood)



Stage 1 (fresh attack)

How to Apply Cut-and-leave




Uninfested pine
standing


Stage 3
standing


Stage 2 felled


Stage 1 felled


Uninfested pine
felled



SPB suppression activities by State Forest Fire Service certified sawyer crews.

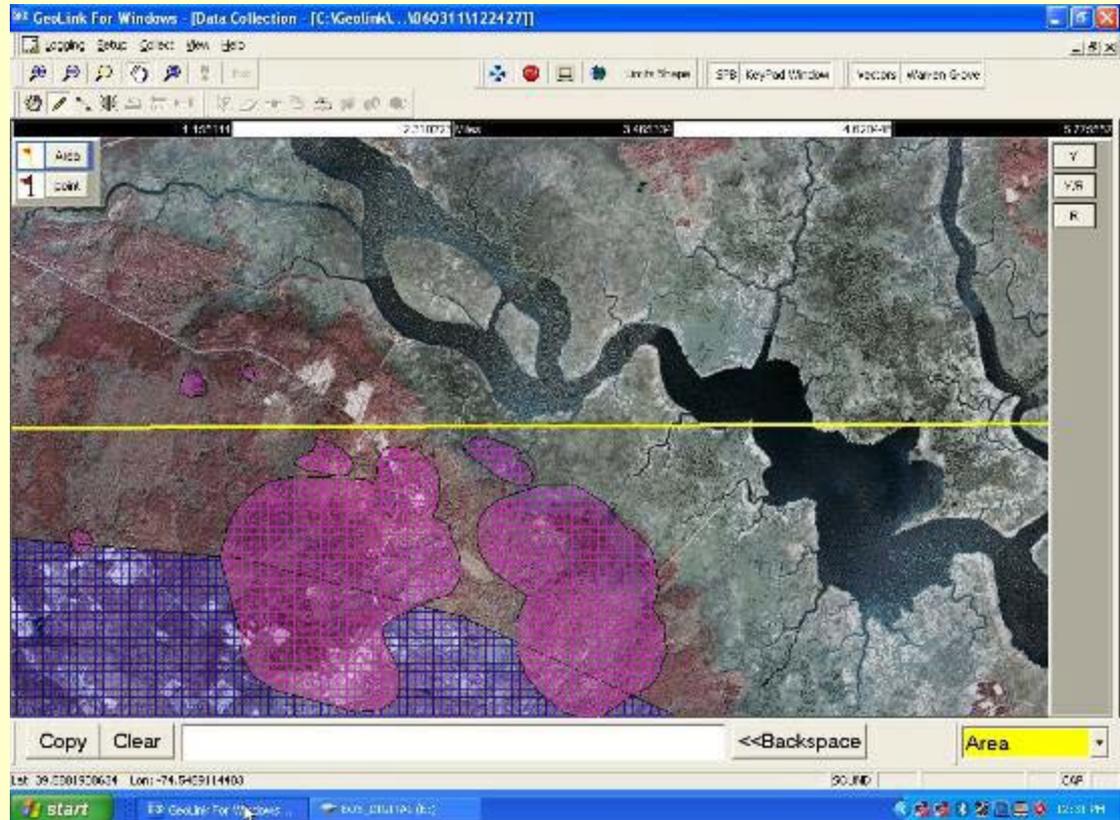
SPB trapping program monitors SPB populations



Data and Mapping

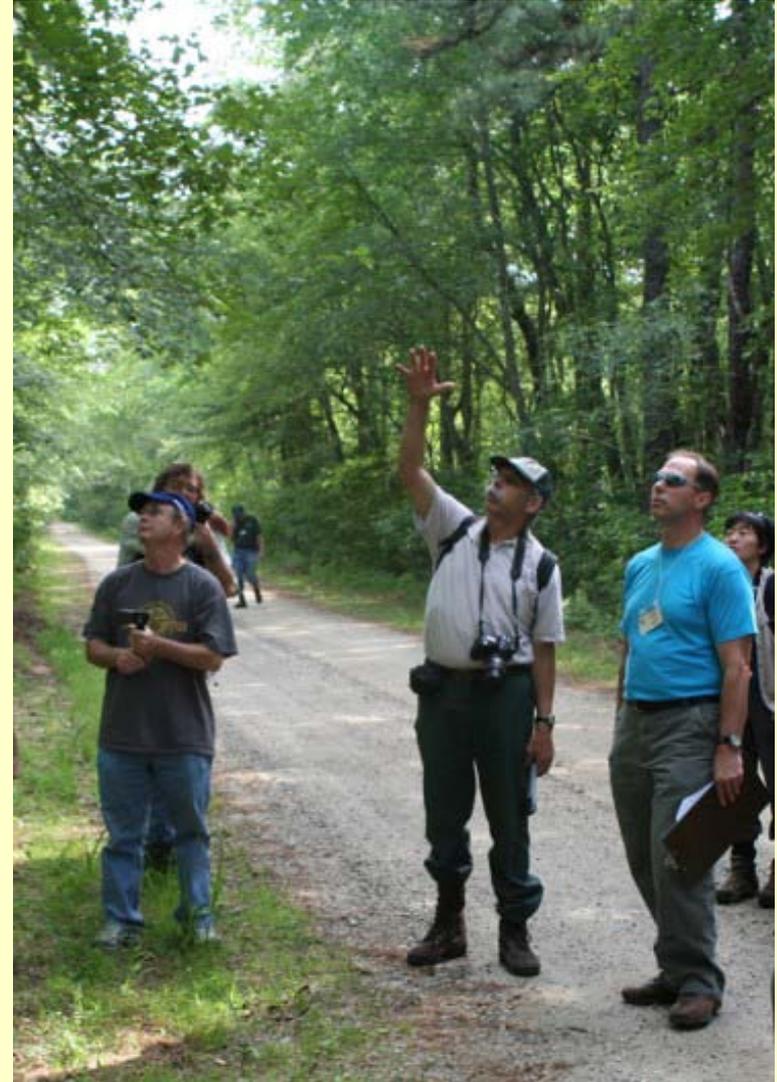
Digital Aerial Mapping Systems

- Aerial surveys every week
- GPS tracking over aerial imagery.
- 85% of all suspected SPB infestations detected through aerial flights are confirmed through ground verification as SPB.

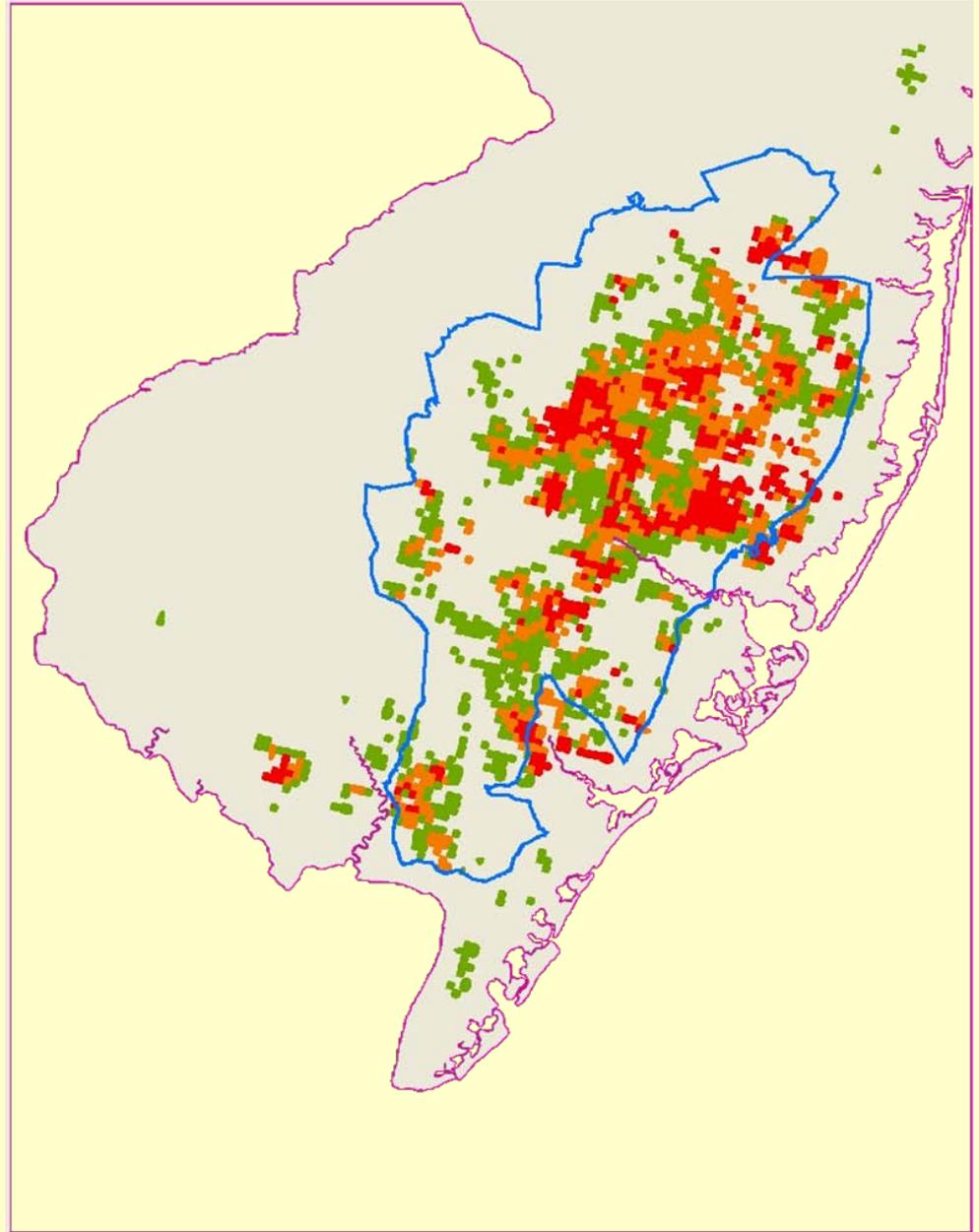


Ad Hoc Advisory Committee

- Emile DeVito - NJ Conservation Foundation
- John Bunnell– Pinelands Commission
- Kim Laidig - Pinelands Commission
- Troy Ettel - NJ Audubon
- George Zimmermann – Stockton College
- Mark Vodak – Rutgers University
- Matthew Ayres - Dartmouth College
- Ronald Billings - Texas Forest Service
- Bill Oldland - USFS
- Stephen Clarke - USFS
- James Meeker – USFS
- Bob Williams - Land Dimensions
- Mayor Pikolycky of Woodbine Borough
- Thomas Bullock – NJ Forestry Association
- Brad Rosenthal – Cape May County
- Tom Hirshblond - Industry Representative
- Matt Simons - Atlantic City Electric
- Richard Reenstra – Ocean County
- Ken Taaffe - NRCS
- Roger Smith - Fort Dix



U. S. Forest Service
Percent Mortality
Projections
2006-2020



Impacts to the Pinelands

- Rapid conversion of pine forests to hardwoods.
- Loss of critical habitat for T & E species.
- Watershed and riparian deterioration.
- Loss of aesthetics and recreational opportunities.
- Increased wildfire risk to lives and property.
- Increased danger from hazard tree failure.



Public Information Sessions



www.southernpinebeetle.nj.gov