Invasive Ambrosia Beetle Conference
The Situation in California
August 12 – 14, 2012

Meeting sponsored by:

The Hofshi Foundation

University of California, Riverside

UC Center for Invasive Pest Research

The Huntington Botanical Gardens

The Los Angeles Arboretum

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Session 6

Invasion Epidemiology

Forest Health Protection's response to the invasion of the tea shot hole borer

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Tea shot hole borer

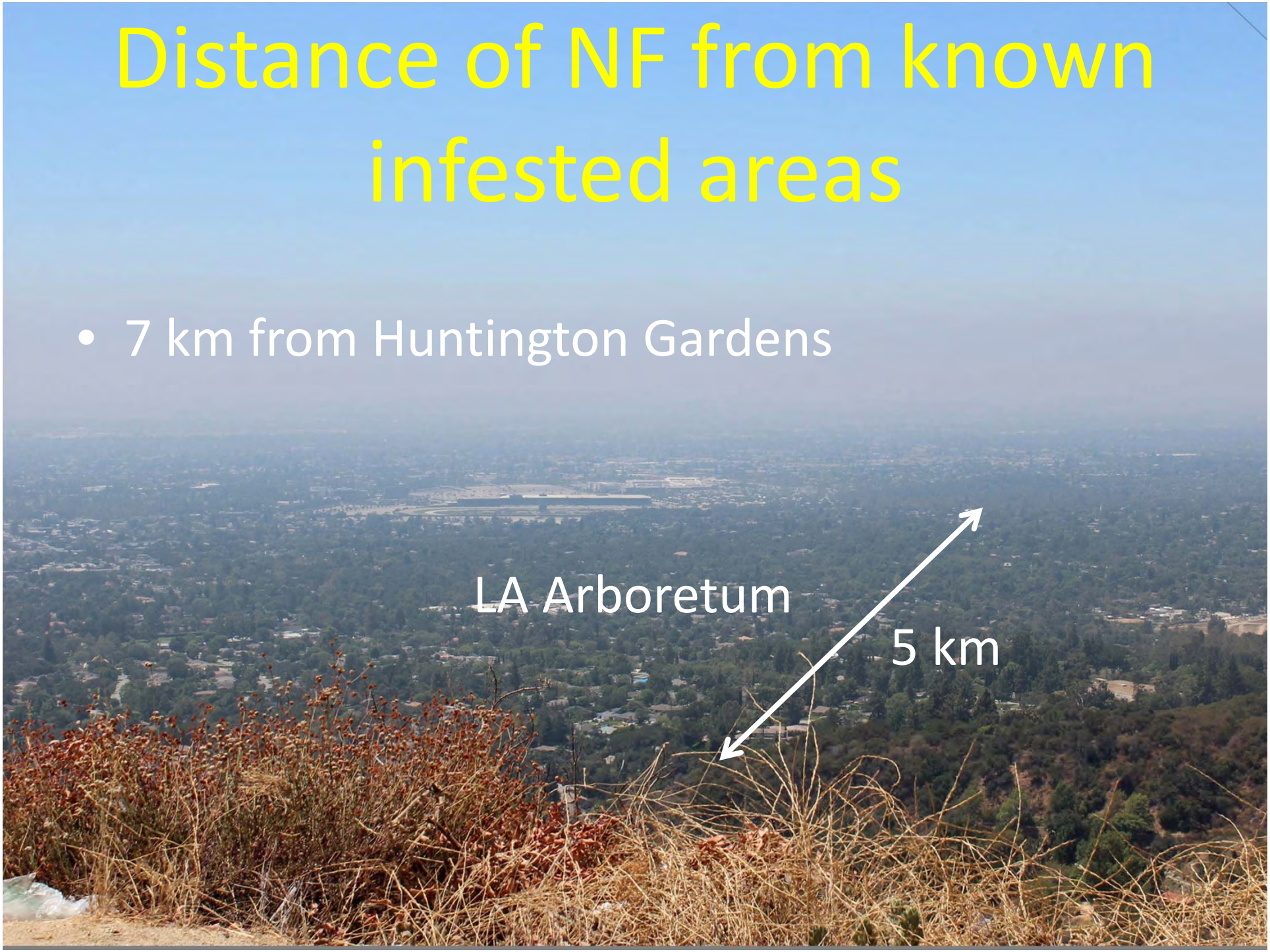
- Where is it?
- What is it doing?
- How do we manage it?

FHP's response

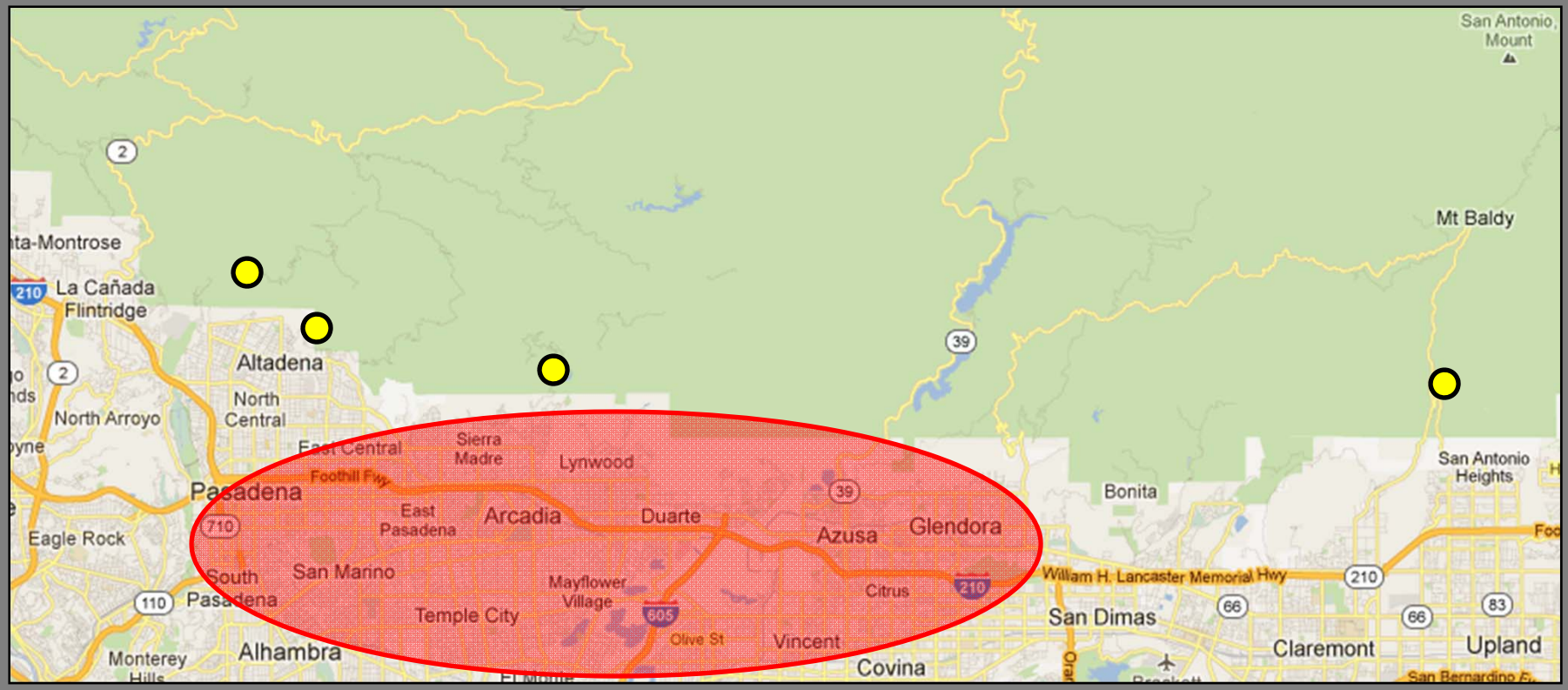
- Detection
  - Ground surveys
  - Susceptible areas and hosts
  - Aerial surveys
  - Trapping
- Education
- Collaborate with research

Distance of NF from known infested areas

- 7 km from Huntington Gardens



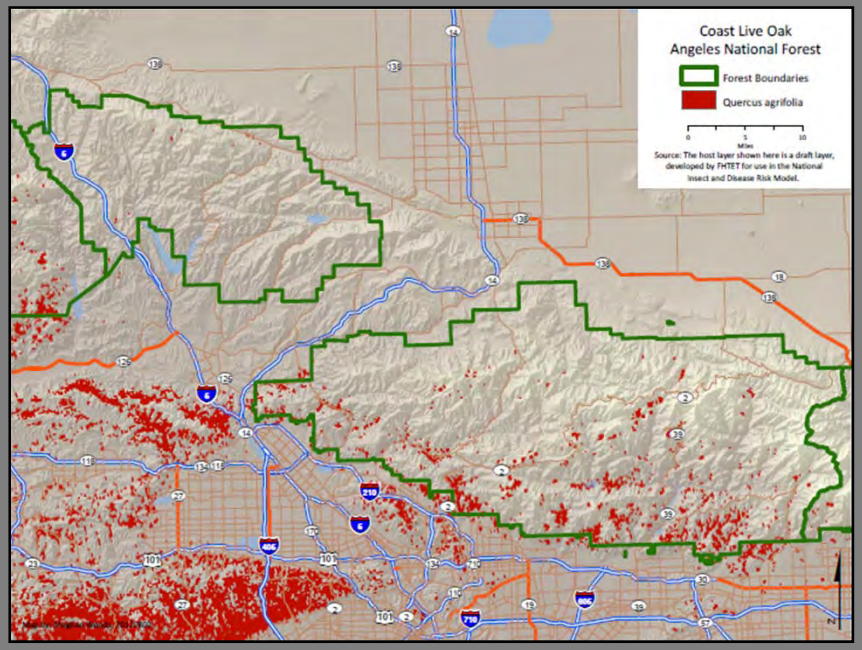
Ground surveys

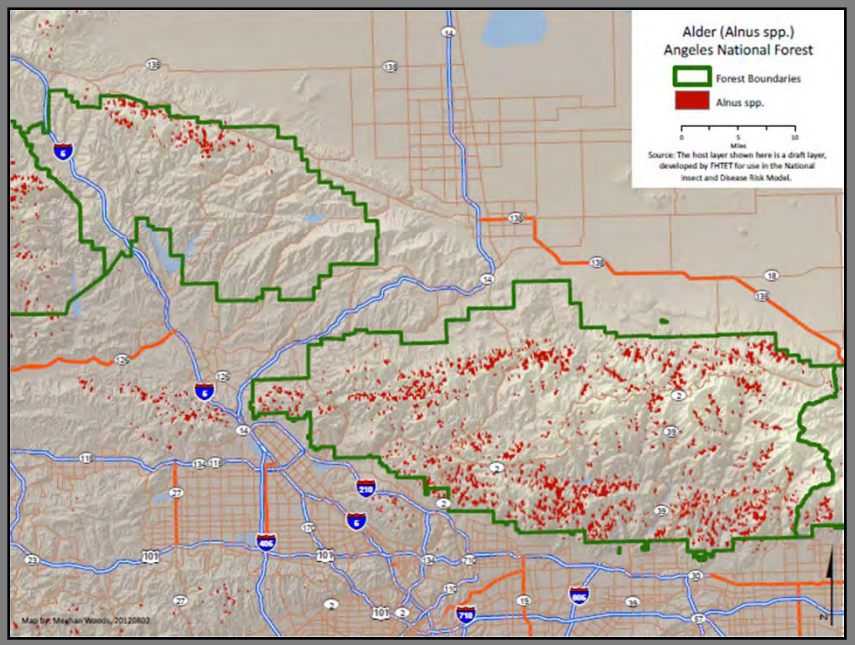


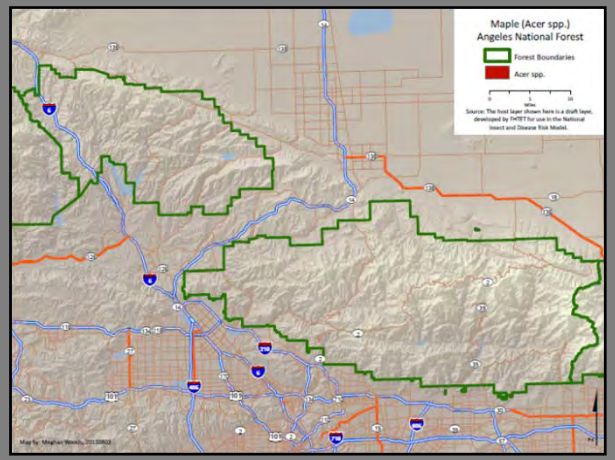
- Collect baseline data
- Angeles National Forest
  - Millard Canyon
  - Eaton County Park
  - Chantry Flat
  - Mt. Baldy

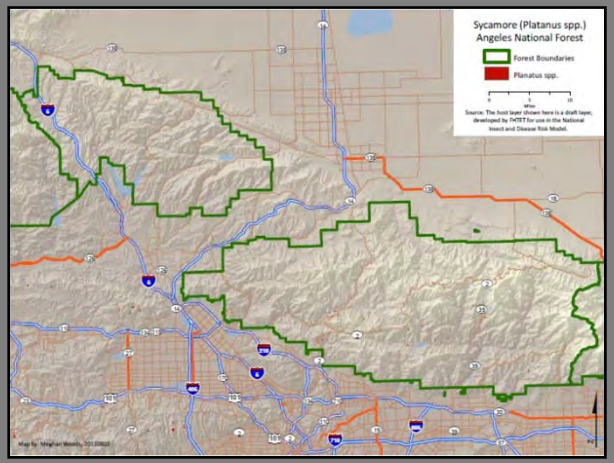
- Known infested areas

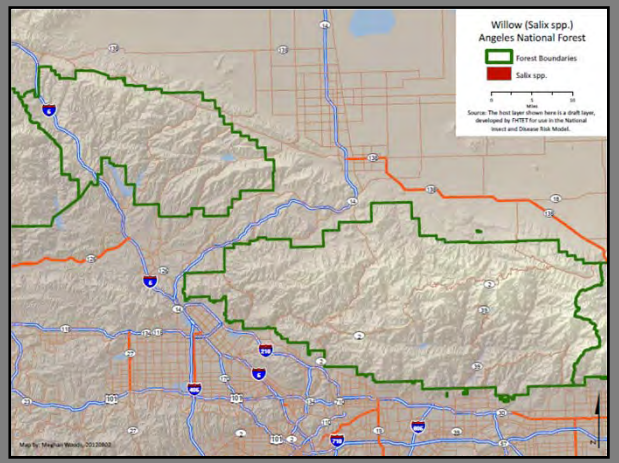
Potential host species at risk











Millard Canyon Trailhead

Eaton County Park

Chantry Flats picnic area

Mt. Baldy Canyon

Injury symptoms

- Crown thinning/dieback
- Boring dust
- Entry holes

Injury symptoms

- Cankering
- Gumming
- Sugar
- Recent tree mortality

Common hardwood species on the NF

- California sycamore
  - *Platanus racemosa*
- White alder
  - *Alnus rhombifolia*
- Coast live oak
  - *Quercus agrifolia*
- California bay laurel
  - *Umbellularia californica*
- Bigleaf maple
  - *Acer macrophyllum*
- Willow
  - *Salix* spp.

Common hardwood species on the NF

- No evidence of the tea shot borer was found on ANF

- Most dominant species surveyed in the canyons:
  - 1) Bigleaf maple: 22.4 (±2.41) cm DBH
  - 2) White alder: 21.9 (±3.33) cm DBH
  - 3) Coast live oak: 47.5 (±4.92) cm DBH
  - 4) California sycamore: 36.5 (±4.54) cm DBH

Defoliation

- White alder
  - Alder flea beetle

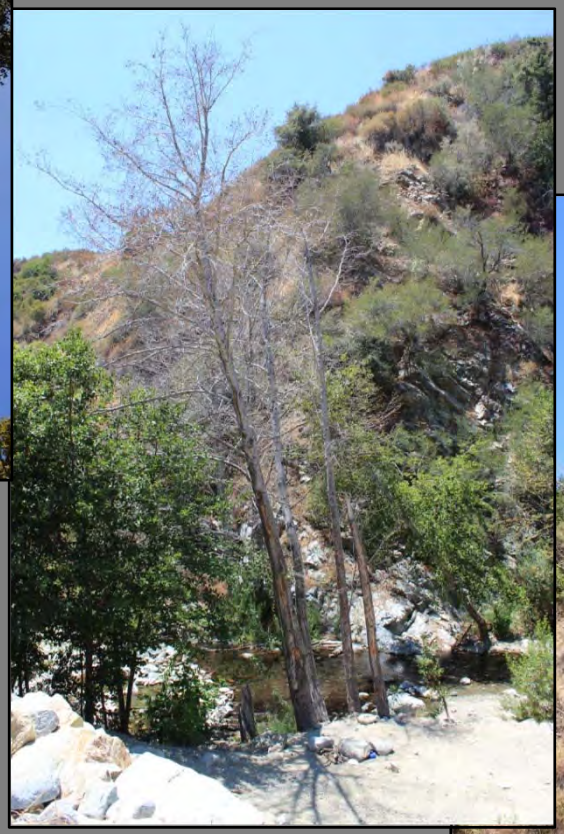
Cankering

- Stem canker on white alder at two sites
- Not associated with ambrosia beetle injury

Insect injury

- Wood borer larval feeding
  - Limited injury to tree

Tree mortality

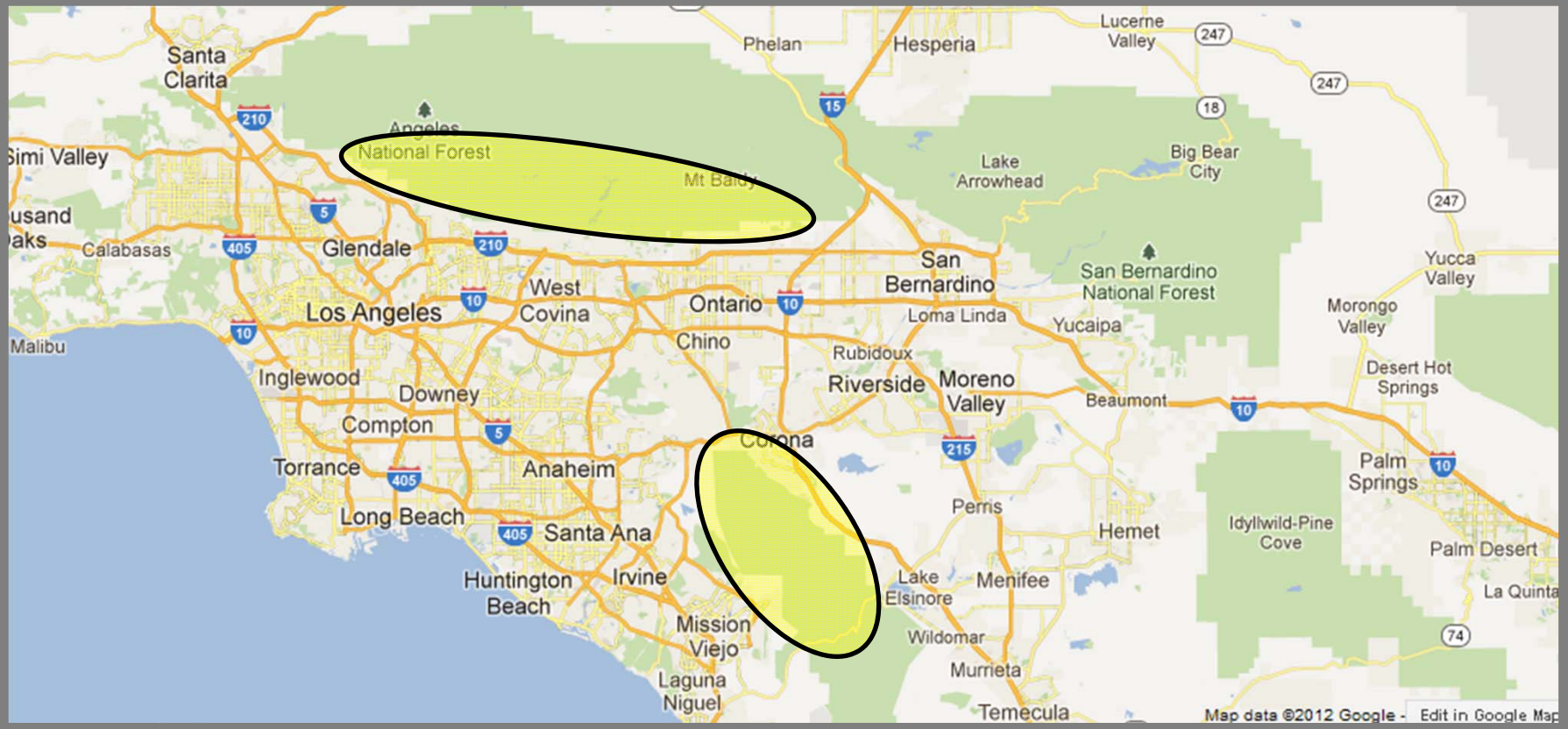


- Bigleaf maple
- White alder
- Low levels of recent tree mortality

Aerial survey data

- Tree mortality in mapped in August 2012 in southern California
- No significant hardwood mortality was mapped on the ANF
  - Defoliation

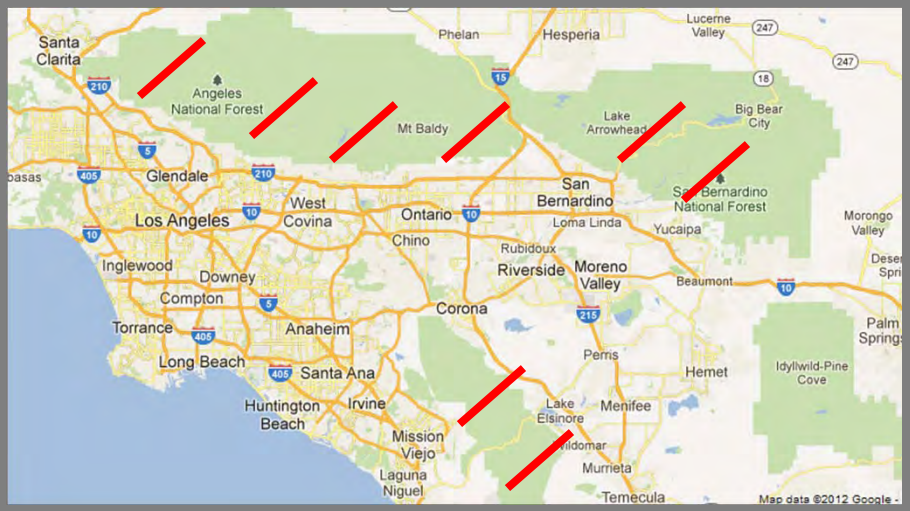
Continue monitoring



- Angeles NF and Cleveland NF
- Tribal land

Activities in 2013

- Continue taking baseline data of riparian stands on NF and tribal land
  - Expand surveys to the Cleveland NF
  - Follow progression of tree injury if the beetle is found on NF and tribal land
- Run traps and establish trap trees on NF land
- Distribute education to my collaborators on the NF
- Collaborate with UCR on surveys
  - Evaluation monitoring (NF and private land)



National Forest's Response

- If the injury becomes severe:
  - Prevention and suppression activities around trailheads, administration sites, campgrounds, and picnic areas
    - Insecticide and tree removal (if research supports these activities)
  - Impacts to watershed
  - Concern for wildlife