Forest Health Protection

Who are we and
What can we do for you?

Amanda Grady
Entomologist, Defoliator Specialist

Intertribal Agriculture Council Conference
September 21, 2016
Where is FHP within the Forest Service?

- Washington Office
  - National Forest System
  - Research & Development
  - State and Private Forestry
  - International Program
Our primary responsibilities

- Technical assistance – Insect & disease ground surveys, impact evaluations and management advice
- Training – formal and informal training sessions
- Prevention & suppression – oversee prevention (NFS lands only) & suppression projects
- Forest Health Monitoring – Aerial Detection Survey special evaluations of insect and disease impacts
- Technology development & transfer – improve techniques for managing insects & disease
Technical Assistance to Tohono O’odham

• Training on mapping hardware and software
• Buffelgrass aerial surveys
Interagency Buffelgrass Mapping Training

Draft Agenda

Dates: July 26-28, 2016

Location: Southern Arizona Rescue Association Building at the Sabino Canyon Fed Complex

July 26th Full training day 8:15-4:45

AM: Welcome and housekeeping, introductions project overview, roles and responsibilities, training requirements (agency specific).
   Introduction to aerial mapping, review of 2012 implementation.
   Discussion on agency objectives (grasses to map) attribution/keypad.
   GeoLink and equipment basics, getting new licenses installed or updating software to the correct version.

PM: Sabino Canyon project building: File structure, background imagery, keypad and GPS/COM port connections, data collection (walking exercise).

July 27th Full training day 8:15-4:45

AM: Recap and QA on project building and data collection walking exercise.
   Data collection on tram up the canyon.

PM: Post processing the data and post flight data clean up. Discussions on patch sizes mapping attributions.
   Begin agency specific project building. Running/stitching imagery gor files together overnight.

July 28th Final training day

AM: Survey protocol discussion and decisions.
   Continued survey area imagery processing and project building if necessary.
   Questions & answer session.
Spruce aphid: *Elatobium abietinum*
Hosts: Engelmann & Blue spruce

Technical Assistance to White Mountain Fort Apache BIA & Tribal Forestry

August 2015

April 2015
Spruce aphid, *Elatobium abietinum*

**Symptoms:**
- Brown/chlorotic crown
- Needle drop under sparse canopy
- Only current years needles in tact

**Signs:**
- Small soft bodied green aphids
- Populations highest in fall
Results

Spruce Aphid Activity

The spruce aphid caused more damage on White Mountain Apache lands than any other damage agents detected during the 2015 aerial surveys. Defoliated spruce trees were mapped on 8,278 acres (Figure 1). Most of the damage is located on the slopes of Mount Baldy (Figure 2). The consecutive mild winters have allowed the populations to build and now the aphid is causing severe damage across the White Mountains. During past outbreaks more than 100,000 acres have been impacted in a single year.

Aspen Defoliation

The number of acres affected by aspen defoliation decreased in 2015. Surveyors mapped 2,976 acres compared to 4,467 acres in 2014 (Figure 3). Agents that may have contributed to aspen defoliation include: the western tent caterpillar, large aspen tortrix and foliar disease such as Melampsora rust and Marssonina (Black leaf spot). Additionally, 680 acres of aspen decline were mapped on White Mountain Fort Apache tribal lands in 2015.

Other Mortality Agents

- Salt Damage was observed on 10 acres in 2015. The damage occurred in Black Canyon along Highway 73.
- White fir mortality was significantly lower in 2015 with 2,023 acres mapped. Down from the 16,327 acres recorded in 2014.
- Mountain Pine Beetle activity, which typically impacts southwestern white pines, decreased in 2015. Only nine acres were mapped compared to 881 acres in 2014.
- Western Balsam Bark Beetle attacks on true firs decreased from 679 acres in 2014 to 237 acres recorded in 2015.

Defoliators

- Douglas-fir defoliation was observed on 120 acres of White Mountain Apache tribal land in 2015 compared to 376 acres in 2014. Possible damage agents include western spruce budworm or Douglas-fir tussock moth.

• In 2015, 8,278 acres of spruce aphid damage detected.
• Fall 2015 BIA, Tribal Forestry FHP and Rocky Mountain Research Station applied for Evaluation Monitoring (EM) funds to monitor severity and extent of the spruce aphid outbreak.
• Awarded funds in August 2016
• Hired NAU students to collect defoliation and mortality data in permanent plots looking specifically at regeneration in 25h plots.

TITLE: Monitoring spruce aphid damage in high elevation, Southwest forests

LOCATION: Arizona, NFS and tribal lands
DURATION: 5/15/2016-5/14/2019
DURATION: Year 1 of 3
PROJECT LEADER: Amanda Grady, FHP Region 3, AZ Zone, Flagstaff, AZ, agrady@fs.fed.us
COOPERATORS: Ann Lynch, Rocky Mountain Research Station, Tucson AZ, alynch@fs.fed.us; Ron Miller, Bureau of Indian Affairs, Fort Apache, Whiteriver, AZ, Ron.Rich Miller@bia.gov; Elizabeth Graham, FHP Region 10, Juneau AK, eegraham@fs.fed.us
Rich Hofstetter, Northern AZ University, Flagstaff, AZ, Rich.Hofstetter@nau.edu
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PROJECT OBJECTIVES:
1. Monitor effects of the invasive spruce aphid in montane ecosystems, to incorporate effects into stand- and forest-level vegetation planning projects, and to project the effects of climate change on forest health and resiliency in fragile montane systems.
2. Provide scientific information to refine the Engelmann spruce model in R3 to include spruce aphid as an agent contributing to mortality in the next National Insect and Disease Risk Map. Including maximum mortality thresholds, and rank and weight of criteria constraining the R3 Engelmann spruce model.
3. Sample spruce aphid populations from Arizona, New Mexico, Pacific Northwest, Alaska and British Columbia to understand generic origin of the Arizona populations, providing sequencing data to potentially identify loci that are genetically linked to traits of interest (or genes associated with adaptation to another climate/region) to inform risk of geographical spread.
Participants and instructors of the 2012 forest insect and disease training on White Mountain and San Carlos tribal lands.
2015 Forest Insect and Disease Workshop
USDA Forest Service, Southwestern Region, Forest Health Protection

Identification, Effects, and Management of Forest Insects and Diseases
October 27-29, 2015
Sandia Ranger District, Cibola National Forest
11776 New Mexico 337
Tijeras, NM 87059

Tuesday, October 27th
9:30 District Introduction, Acting Ranger, Sandia Ranger District
9:45 Welcome, Introductions, Overview of Forest Health Protection, John Anhold, USFS
10:15 Bark Beetles, Andy Graves, USFS
11:15 Mistletoes, James Jacobs, USFS
12:00 Field Trip, Lunch at the Crest (Bring your own)
Visit field sites to look at insect and disease damage along the Sandia Crest Highway (NM-536)
4:30 Return to District Office
5:00 Adjourn

Wednesday, October 28th
8:00 Review and Discussion, Group
8:15 Root and Stem Decay, James Jacobs, USFS
9:00 Defoliators, Amanda Grady, USFS
10:00 Break
10:15 Stem Rusts, James Jacobs, USFS
11:00 Cankers, Tom Zegler, NM State Forestry
11:30 Lunch location TBD (Bring your own)
12:30 Field Trip

Insect and Disease Identification & Management And Hazard Tree Training

October 25-28, 2016
Safford Ranger District, Coronado National Forest
Forest Health Aerial Detection Surveys

Annually 20 million acres surveyed in AZ & NM

Annually 5-7 million acres of tribal lands surveyed

Detect major outbreaks bark beetles and defoliators
Acres surveyed in 2013
10.6 mil (NM) 14.0 mil (AZ)

Tribal acres surveyed in 2013
1 mil (NM) 5.7 mil (AZ)
Forest Health Protection- Southwestern Region

http://www.fs.usda.gov/goto/r3/foresthealth
How to get aerial survey data

http://foresthealth.fs.usda.gov/portal/Flex/IDS
National Insect & Disease Risk Map

http://foresthealth.fs.usda.gov/portal/Flex/IDS
BIA Suppression Funding in the Southwestern Region

**FY 2012** | **FY 2013**
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AZ | 122,000 | AZ | 115,300
NM | 375,000 | NM | 197,729
Total | 497,000 | Total | 313,029

Tribes receiving funds in FY 2013
- Jicarilla Apache (Mistletoe Reduction 96 acres)
- San Carlos (Mistletoe and thinning 389 acres)
- Southern Pueblos (Mistletoe and hand-thinning 44 acres)
- Mescalero Apache (Mistletoe and thinning PIPO/DF 210 acres)
Mr. Neil Kornze
Director - Bureau of Land Management
U.S. Department of the Interior
Main Interior Building, Mailstop 5612
1849 C Street, NW
Washington, DC 20240-0002

Dear Mr. Kornze:

Each year the U.S. Forest Service provides technical assistance and funding for the suppression of forest insects and diseases on Federal lands. Forest Health Protection (FHP) field staffs work closely with the U.S. Department of Interior (DOI) staffs to identify facilities that have insect or disease outbreaks, and need suppression treatments. The deadline for funding requests for Fiscal Year (FY) 2017 forest insect and disease suppression projects is October 28, 2016.

Each bureau must enter project proposal information directly into the Forest Service, FHP database found at: http://svinetfc8.fs.fed.us/fad/. Please reference Forest Service publication, FS-3400, found at: http://www.fs.fed.us/foresthealth/docs/pest_project_proposal_fs_3400_2.doc for required information needed to submit a proposal. We also request all DOI accomplishments for FY 2016 be entered into the same database by October 28, 2016. It is important that funding and accomplishments are entered into the database for tracking the success of projects and addressing any future needs.

When considering project selection we look at the purpose and need for the project (funding provided for insect and disease suppression treatments only), a completed biological evaluation by our field staff and DOI priorities. To initiate this process, bureau staffs should contact FHP field offices; a directory can be found at: http://www.fs.fed.us/foresthealth/publications/FHP_Staff_Directory_final.pdf. As discussed with bureau representatives, we plan to meet with DOI and other Federal representatives to discuss our proposed funding allocations once all projects have been reviewed.

We have worked directly with the following bureau coordinators to keep them informed of the FY 2017 proposal process:

James Howard, National Park Service, james_c_howard@nps.gov
Cindy Hall, Fish and Wildlife Service, cindy_hall@fws.gov
Wade Salverse, Bureau of Land Management, wsalverse@blm.gov
David Koch, Bureau of Indian Affairs, david.koch@bia.gov