

2021 Forest Health Update

Reporting on the 2020 activity



Aly McAlexander, Forest Health Specialist
Arizona Department of Forestry and Fire Management

Background

- The DFFM conducts an annual aerial survey of dead and dying trees.
- DFFM certified arborists, entomologists, and service foresters ground truth data and provide land managers and the public with information.
- In times of significant drought, trees become increasingly stressed and thus more susceptible to insect and disease infestation.
 - Specifically, bark beetle caused tree mortality increases following times of drought.



Forest Health Conditions in 2020 - RECAP

- There was a decrease in total acres of bark beetle caused tree mortality
 - The majority of bark beetle damage occurred in ponderosa pine forests
- There was an increase in damage caused by forest insect defoliators and sap feeding insects
- Due to the lack of monsoonal moisture and the La Niña winter there was an increase in abiotic stress caused by drought.



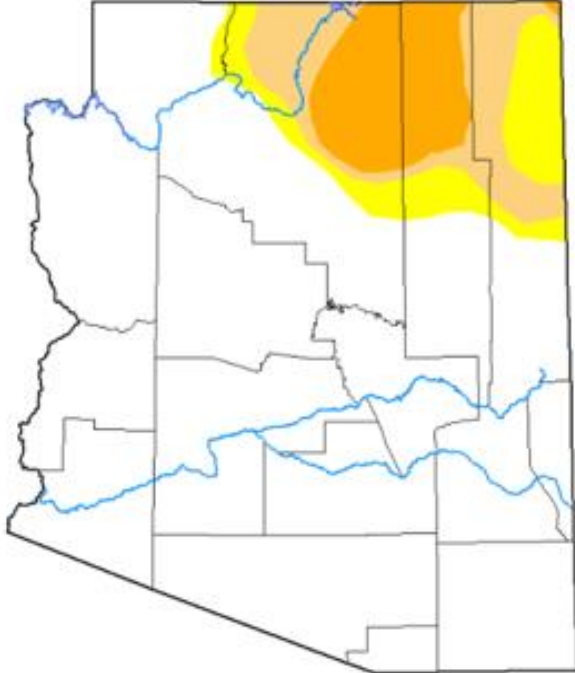
Forest Health Conditions in the FALL of 2020 - RECAP

- There was a lack in monsoonal moisture, along with La Niña winter conditions, which increased abiotic stress caused by drought
- Due to this lack in moisture and increased drought stress, forest health professionals around the state began noticing an increase in mortality from bark beetles in the fall and winter of 2020.



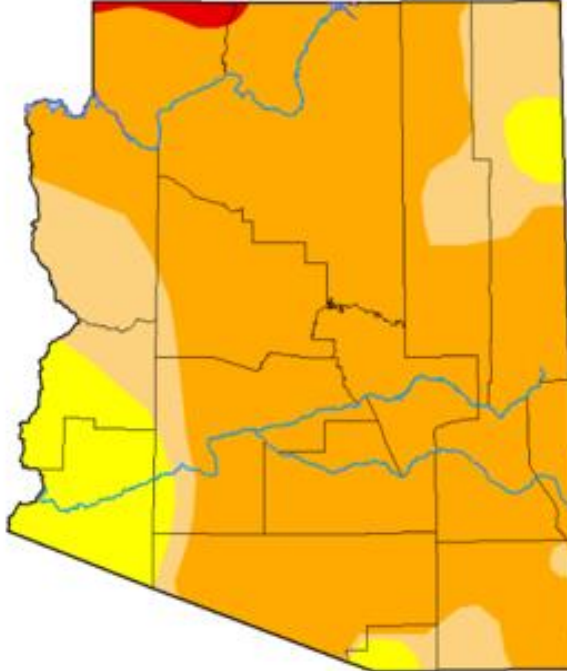
U.S. Drought Monitor Arizona

April 14, 2020



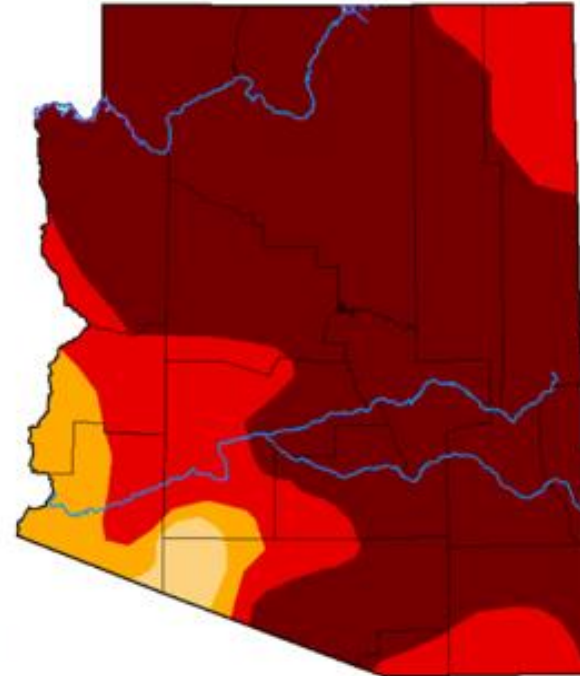
Author:
Brian Fuchs
National Drought Mitigation Center

August 18, 2020



Author:
David Simeral
Western Regional Climate Center

November 24, 2020



Author:
Richard Heim
NCEI/NOAA

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



droughtmonitor.unl.edu

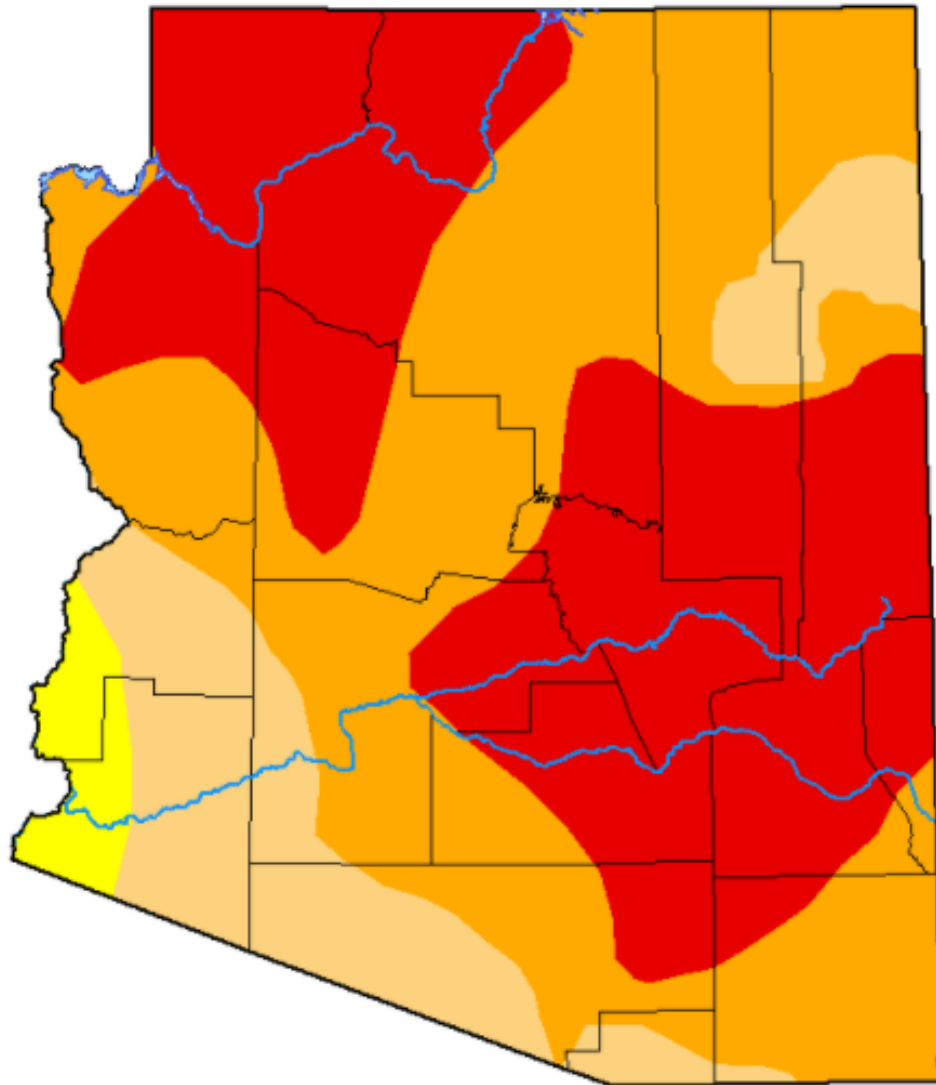


Forest Health Conditions in 2020 - RECAP

- **81,031 acres with** bark beetle caused tree mortality (survey season July-September)
- This was an **82% decrease** in bark beetle cause tree mortality from 459,239 acres in 2019
- However, bark beetle caused tree mortality increased after the survey season, and we will inevitably see an increase in damage for the 2021 season

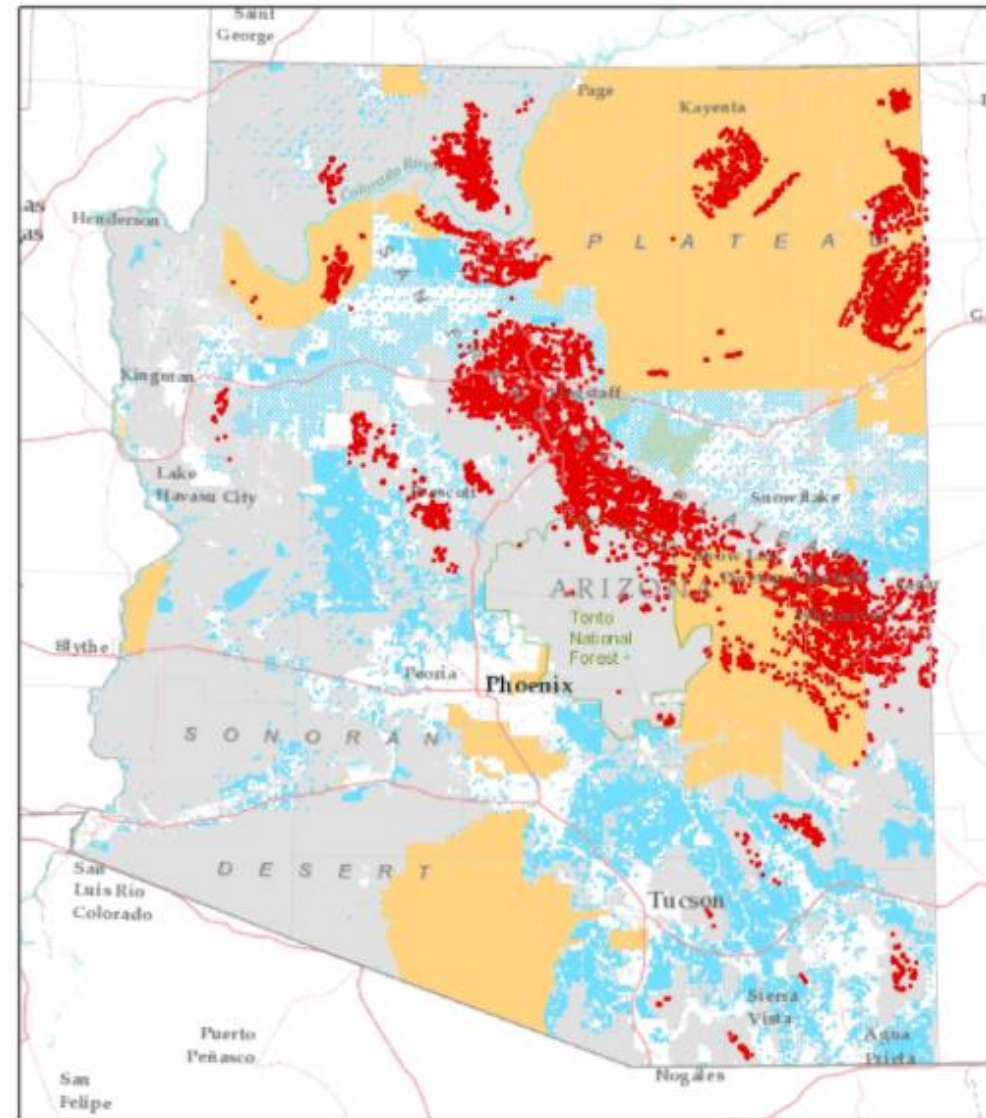


Summer - 2020



<https://droughtmonitor.unl.edu/>

ADS Insect and Disease Locations - 2020



Forest Health Conditions in 2020

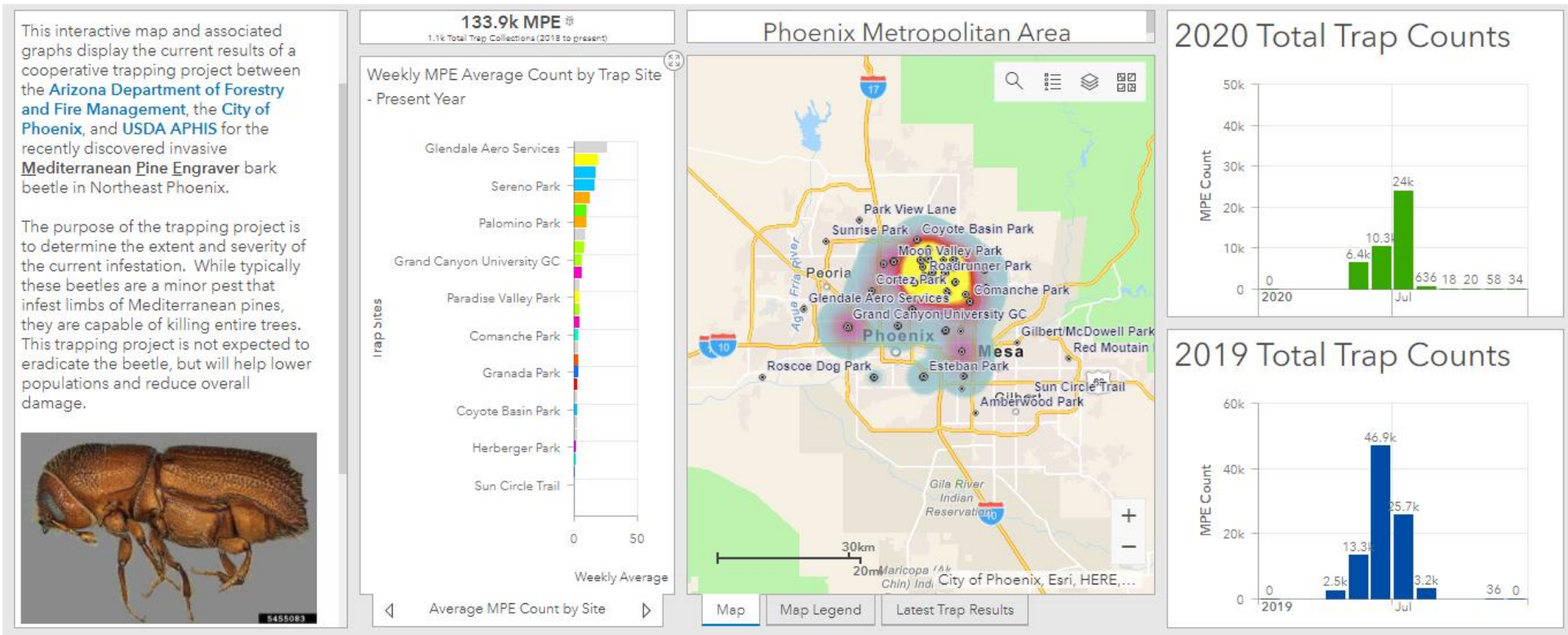


- Forest and woodland vegetation are showing signs of improvement.
 - But due to latent drought stress after the survey season, we are anticipating a significant increase in insect and disease mortality in the 2021 survey season.
- Moisture improves tree health, and therefore lets hope for a better monsoon season.



Urban Forest Health Conditions – Summer 2020

- There was an increase in Mediterranean pine mortality caused by the Mediterranean Pine Engraver bark beetle throughout the Phoenix Metropolitan area



Urban Forest Health Conditions – Summer 2020

- Also an increase in Aleppo Pine Blight activity was seen throughout the Phoenix Metropolitan area.



Tree Number	RPP35	Picture taken in 2019
Combined Crown Rating	5	
Mite Condition	Light	
DBH	12	



Tree Number	RPP35	Picture taken in 2020
Combined Crown Rating	2	
Mite Condition	Light	
DBH	12	



Thank You

Aly McAlexander
Forest Health Specialist
amcalexander@dffm.az.gov
602-290-9644



Over 17 million acres surveyed by air

81,000 acres of bark beetle-caused tree mortality

ARIZONA FOREST HEALTH CONDITIONS 2020

A publication by the Forest Health Program of the Arizona Department of Forestry and Fire Management

Arizona has an incredibly diverse landscape. From the lower Sonoran desert scrub and pinyon-juniper woodland to the high elevation spruce-fir forests.

Forests cover approximately 27% of the state, which is over 19 million acres. These forests are comprised of 37 species of coniferous and hardwood trees. The majority of forestland is located above the Mogollon Rim. Juniper (*Juniperus* spp.) and pinyon juniper (*Pinus edulis-Juniperus* spp.) woodlands are the most abundant forest type in Arizona, occupying approximately 14.8 million acres, or 20.3% of the state. The rarest and most significant in ecological terms is riparian forest, which occupies less than one-half of 1% of Arizona's land.

In urban areas, we experience urban forests that are typically composed

15,000 acres of tree damage from sap feeders

13,000 acres of tree damage from defoliators