

# ARIZONA FOREST HEALTH CONDITIONS

2025

**Over 12 million  
acres surveyed  
by air**

**Over 92,000  
acres observed  
with drought  
damage**

**Over 119,000 acres  
observed with  
bark beetle  
damage**



A publication by the Forest Health Program of the Arizona Department of Forestry and Fire Management. Assembled by Viri Quinonez with support from Aly McAlexander. Data analysis done by Elana Berlin with support from Sepideh Dadashi.

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Photo Credit: DFFM,  
Bark beetle mortality  
on Huachuca  
mountains.

# Introduction

Arizona has incredible landscape diversity that ranges from the lower Sonoran Desert scrub and pinyon juniper woodlands to the high elevation spruce-fir forests. The majority of forestland is located above the Mogollon Rim with distinct forested areas scattered throughout the rest of the state. Forests in the southern part of the state are often referred to as the "Sky Islands", as they are completely surrounded by lowland deserts, providing habitat for species found at higher elevations unable to survive the harsh desert climate. The rarest and most significant in ecological terms is riparian forest, which occupy less than 0.5% of

Arizona's land. Urban areas include forests that are typically composed of a mix of native and introduced tree species that require various management techniques. This report includes information on the insects and diseases having significant impacts on Arizona's forested landscapes.

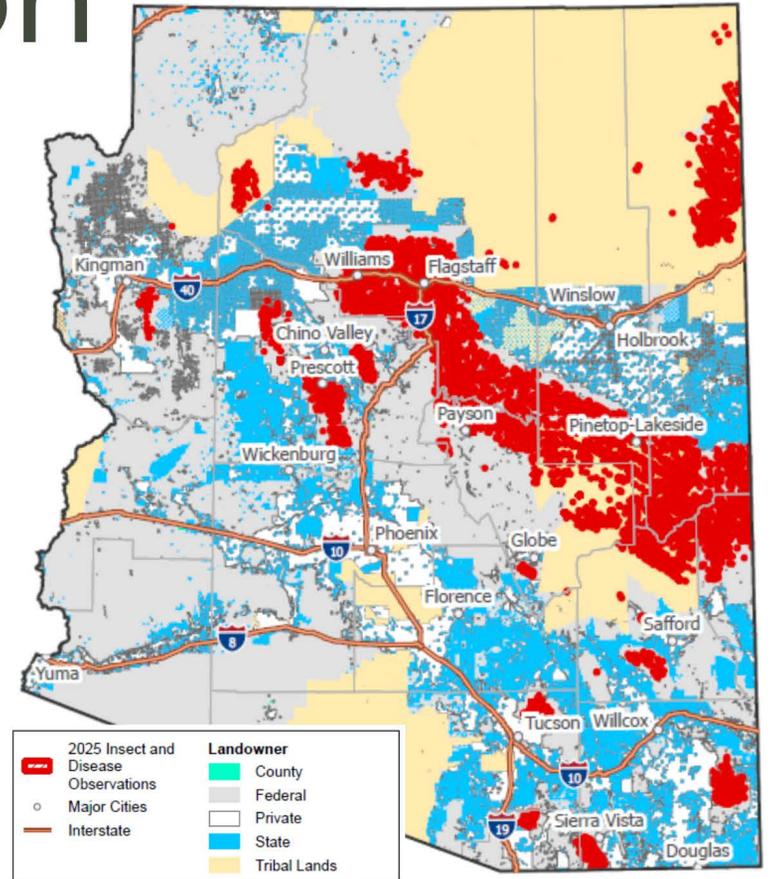


Figure 1. All Insect and Disease Observations in the State of Arizona - 2025

## 27%

of the state is forested and occupies **19.4 million acres.**

These forests are comprised of **37** species of coniferous and hardwood trees.

## 14.8 million acres

of the state is occupied by juniper (*Juniperus* spp.) and pinyon juniper (*Pinus edulis-juniperus* spp.) woodlands. These are the most abundant forest types in Arizona, which is **20.3%** of the state.

## 90%

of Arizona's residents live in an urban forest, which provides numerous environmental, economic and social benefits.

# Aerial Survey Summary

Annually, the Arizona Department of Forestry and Fire Management (AZDFFM) partners with the USDA Forest Service-Forest Health Protection (FHP) Team to survey millions of acres of forest and woodland resources from the air. The Aerial Detection Survey (ADS) Program provides land managers and the public with information about landscape-level forest and woodland health conditions. This report summarizes the 2025 ADS Program findings and Arizona's most recent forest and woodland health issues. Throughout the ADS season and the rest of the year, USDA Forest Service, DFFM Forest Health professionals, and District staff verify ADS data by conducting ground surveys and providing landowners with technical assistance.

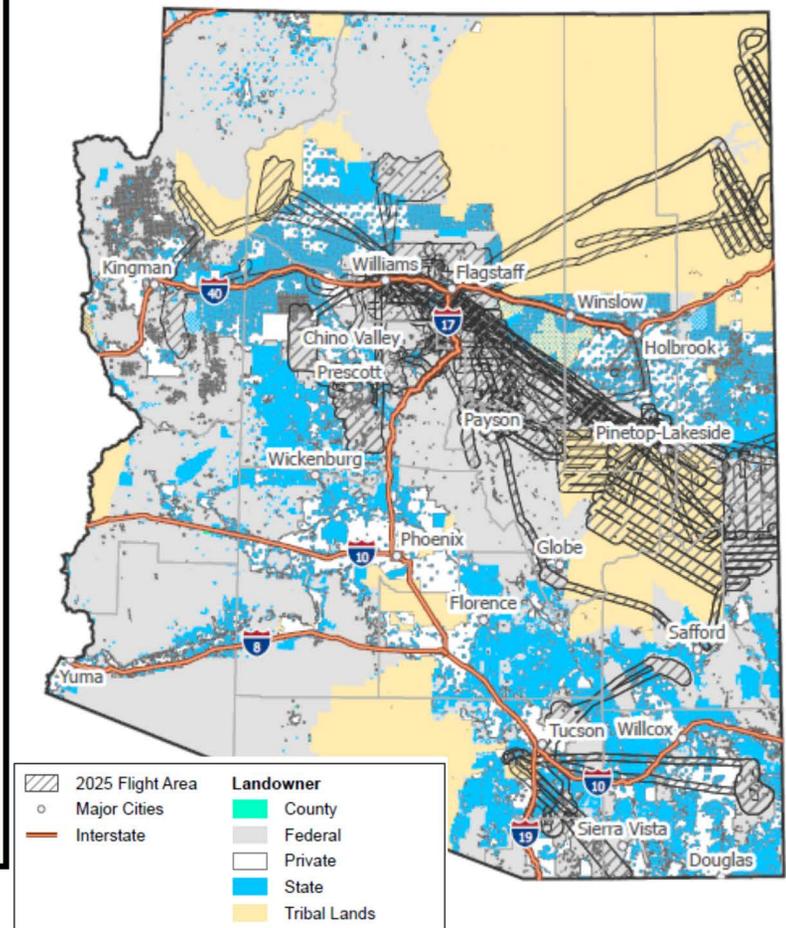


Figure 2. All Surveyed Areas in the State of Arizona - 2025

**12,850,054.6 million acres**

were flown in the summer of 2025, to identify dead, dying, or declining trees (Figure 2).

**50.14%**

of the area surveyed was over Federal Lands with

**6,443,566.3 million acres.**

**30.69%**

of the area surveyed was Tribal Land and **12.67%** private lands.

**6.46%**

of the area surveyed was State Land and **.03%** County Land.

# Climatic Overview

## RELEVANCE

It is important to understand the climatic conditions occurring throughout Arizona, as precipitation and temperature are two of the biggest environmental factors influencing forest health. When trees are drought stressed from a lack of precipitation, and stressed from increased average temperatures, they become increasingly susceptible to infection and infestation from diseases and insects. In severe drought conditions, the lack of water can lead to decreased overall tree health and direct drought-related tree mortality.

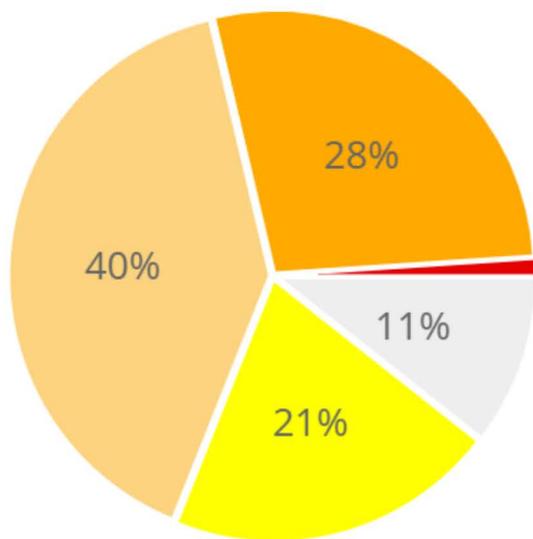
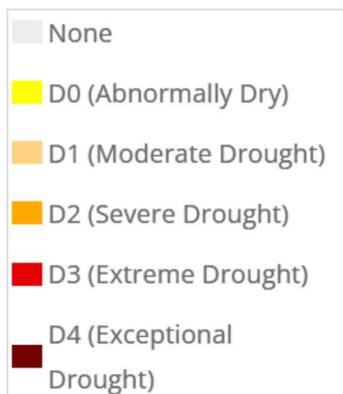


Figure 3.  
Arizona  
percent  
area in US  
Drought  
Monitor  
categories  
December  
2025



## REVIEW OF AZ DROUGHT CONDITIONS



The start of 2025 began with the 5<sup>th</sup> driest January on record.



February ended warm and dry which continued through March developing exceptional drought conditions throughout the state.



April saw temperature rise 6-12 degrees above normal.



July through August was very hot with 37% of the state experiencing severe drought and 35% with extreme drought conditions.



Heavy precipitation began in September throughout AZ which led to improvements across western to southern Arizona.



Ended the year with improved drought conditions from October through December however still seeing moderate drought conditions in 40% of the state (Figure 3).

# Status of Insects

## Bark Beetle Update

Bark beetle damage will be broken down by AZDFFM District, with details provided on each bark beetle species.

One type of bark beetle mortality identified in every district is observed “Unknown Bark Beetle” damage, which represents all ponderosa pine bark beetles. As there are more than a dozen bark beetles that attack and kill ponderosa pine trees in Arizona, there is often more than one species within a single tree. In the Southeast (A3S) and Central Districts (A4S), this “Unknown Bark Beetle” category also includes the Southern pine beetle (*Dendroctonus frontalis*) and Mexican Pine Beetle (*Dendroctonus mexicanus*) as they attack Chihuahua and Apache pines that are found in this part of Arizona.

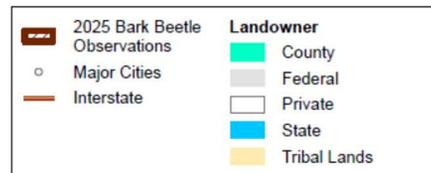
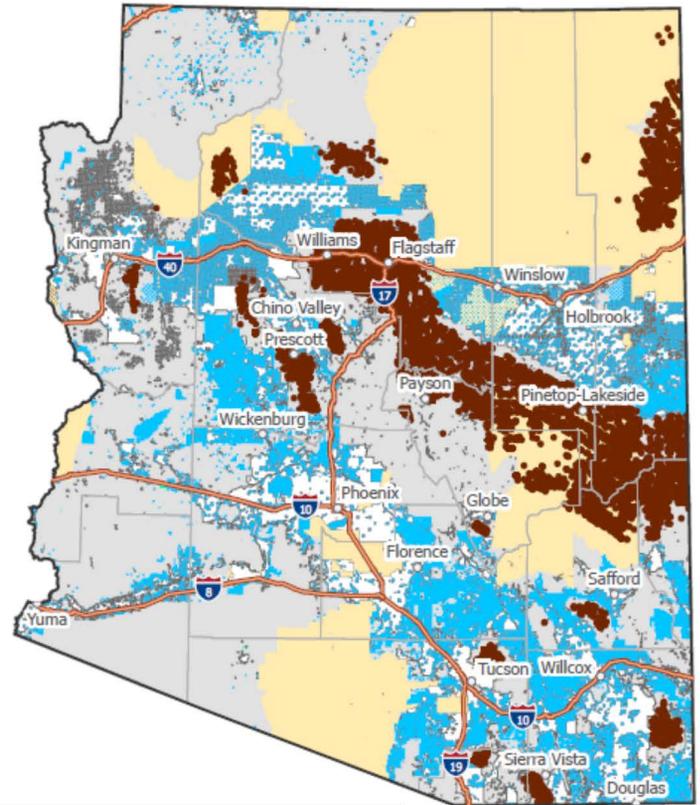


Figure 4. All ADS Bark Beetle Observations within Arizona - 2025

Arizona 2025 ADS: Observed Bark Beetle Species and Land Ownership						
Bark Beetle Damage Causal Agent	County	Federal	Private	State	Tribal Lands	Grand Total
Blue Spruce Engraver					1.50	1.50
Cedar & Cypress Bark Beetles		113.82	2.56	0.50	88.75	205.63
Douglas-Fir Beetle		303.50			25.67	329.17
Fir Engraver		546.89			406.57	953.46
Pinyon Ips		11,281.61	431.69	1.89	988.76	12,703.94
Spruce Beetle		1.50			2.25	3.75
Unknown Bark Beetle	0.50	70,049.93	3,542.21	259.40	31,623.27	105,475.31
Western Balsam Bark Beetle		2.75			156.37	159.12
<b>Grand Total</b>	<b>0.50</b>	<b>82,300.00</b>	<b>3,976.45</b>	<b>261.79</b>	<b>33,293.14</b>	<b>119,831.87</b>

Table 1. Estimated Acres with Observed Bark Beetle Damage by Land Ownership for the State of Arizona - 2025

# Noninfectious Disorders

## Abiotic Damage

Abiotic disorders and damages can become entry points for pathogens, while also increasing the tree's overall stress, making it more susceptible to other insect and disease infestation. In this report, abiotic damage falls into three categories: Drought, Human Activities, or Unknown. Drought refers to a water deficit that develops when there is a lack of precipitation or changes to the watering schedule. When the water loss exceeds the rate of water absorption from the soil, chronic injury within the plant host can occur. This injury is expressed through symptoms such as a lack of growth, wilting, discoloration of the foliage, and premature leaf drop. The progression of decline in the tree will typically begin from the top down and from the outside in; the roots are usually the last part of the tree to die. The symptoms associated with chronic drought stress and drought damage can look very similar to root disease symptoms.

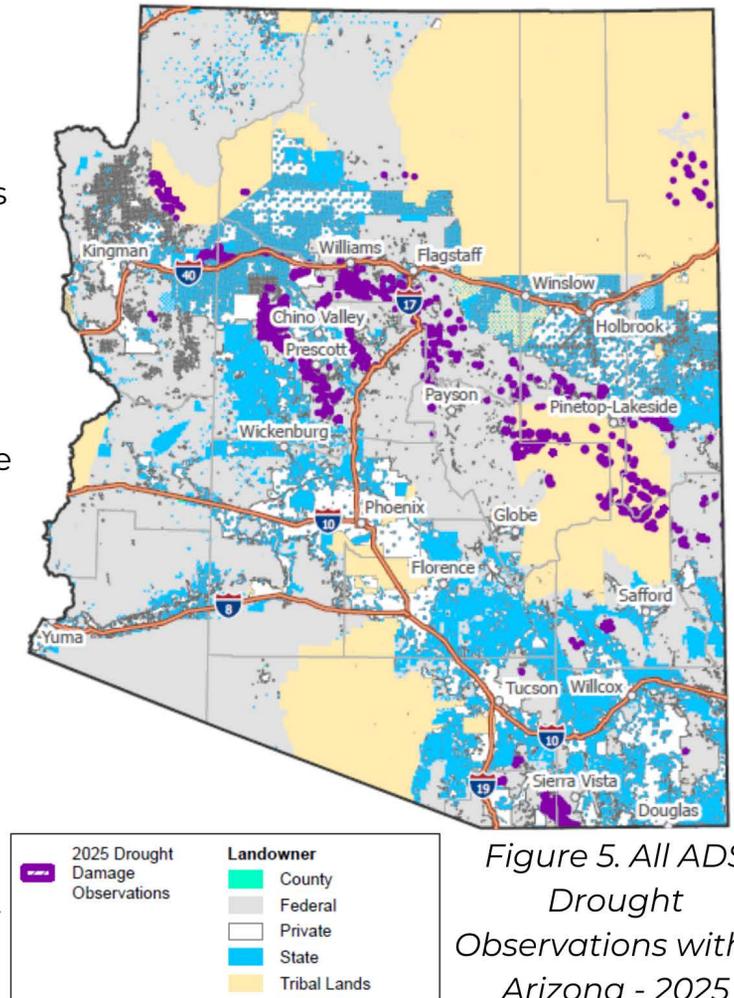


Figure 5. All ADS Drought Observations within Arizona - 2025

Southwest winter drought is particularly harmful to forests and can render large areas more susceptible to bark beetles and wildfire.

## 92,117.39 acres

of drought damage was observed in 2025. This was an increase from **9,241** acres in 2024. The majority of drought damage was observed in northern Arizona.

Human Activity is another group of noninfectious disorders dedicated to observed salt and de-icer damage along roadways. The salt uptake by roots is a common issue where sodium chloride, calcium chloride, and magnesium chloride are applied to de-ice highways in winter or for dust abatement on dirt roads.

# Status of Diseases

Tree diseases are typically one of four categories (fungal, bacterial, viral, or oomycetes). Plant diseases often thrive in warm and damp conditions not commonly seen in Arizona, making diseases less of a concern within the state. Many of the signs and symptoms associated with tree diseases can be difficult to identify from the air, as the aerial signatures can look very similar to insect activity. For this reason, USDA Forest Service and AZ DFFM forestry professionals ground truth to verify that the damage observed from the air is the same agent that is causing the damage on the ground.

The majority of observed disease damage is found on the ground by forestry professionals working in the field.

Foresters in the Southeast District (A3S) continue to observe *Biscogniauxia* canker disease in native oaks.

There was an increase in branch flagging in ponderosa pine in various parts of northern Arizona. Due to limited resources and staff, not all sites were visited but some samples confirmed this was in part due to diplodia needle blight, Prescott scale, and/or drought.



Photo Credit: DFFM  
Charles Hassler,  
*Biscogniauxia*  
canker in oak A3S.

# Status of Urban Forests

## Mediterranean pine engraver (MPE) (*Orthotomicus erosus*)

Recent surveys from our state-wide invasive insect monitoring program have confirmed new occurrences of Mediterranean pine engraver (MPE) in Buckeye, Anthem, Casa Grande, and Miami, expanding its known range in Arizona. While this spread is concerning, populations in these new locations remain relatively low. Monitoring and detection efforts are ongoing, and we will continue to expand our state-wide invasive insect monitoring to include new locations in 2026.

## Asian Citrus Psyllid (ACP) (*Diaphorina citri*)

In January 2025 Huanglongbing (HLB) was confirmed in residential citrus trees in Nogales, Arizona for the first time. This is an aphid-like insect, a major pest of citrus trees that spreads citrus greening disease, also known as Huanglongbing (HLB). HLB is a bacterial disease vectored by ACP and is the most destructive citrus disease in the world. ACP has spread to all citrus-growing areas in AZ, resulting in a statewide quarantine. AZ's citrus industry is at great risk of decline if infected with HLB.

Please contact your nearest AZ Department of Agriculture office below if you suspect ACP:  
 AZDA Tucson Operations Office (Pima, Cochise, Graham, Greenlee, and Santa Cruz Counties) at 520-628-6314.  
 AZDA Phoenix Operations Office (Maricopa, Apache, Coconino, Gila, Navajo, Pinal, and Yavapai Counties) at 602-542-7184.

AZDA Yuma Operations Office (Yuma, La Paz, and Mohave Counties) at 928-341-1680.



Photo Credit: Ann Audrey, Tucson. ACP on citrus leaf

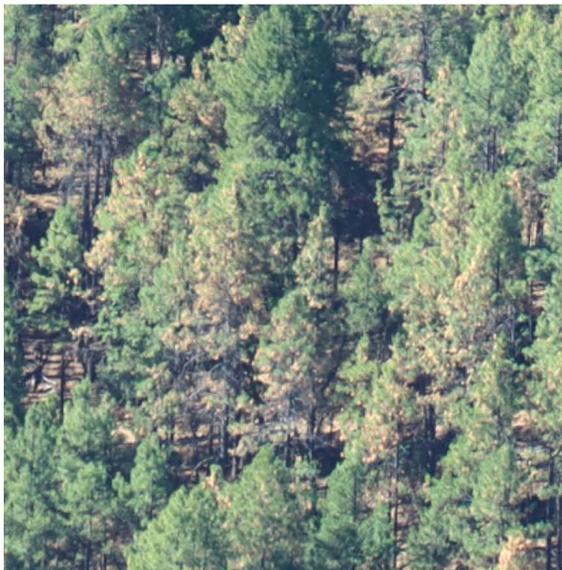
# Arizona's Five Districts



The Arizona Department of Forestry and Fire Management divides the state into five (5) distinct Districts (Appendix I). Each District shares similar forest and woodland health issues while experiencing a varying degree of tree damage from insects and disease. Each District will be reviewed individually to more accurately show which insects and diseases are impacting the state, and where their damage can be found throughout the state.

**It is important to note that the acreages for each District may look inflated due to the fact that some acres are counted twice because more than one damage causal agent was found on those acres.**





*Photo Credit: DFFM, Coconino National Forest. Top to bottom: bark beetle in Douglas-fir, bark beetle damage, branch flagging in ponderosa pine.*

# Northern District AIS

The Northern District (AIS) is composed of the Kaibab National Forest, Coconino National Forest, Grand Canyon National Park, and Navajo, Hualapai, Havasupai, and Kaibab Reservations; these areas are surrounded by scattered county, state, and military reservation lands (Appendix I).

**13,785.38 acres** with bark beetle damage

**11,780.51 acres** with drought related tree mortality

**3,737.85 acres** with branch flagging

**1,291.36 acres** with sap feeder damage

**566.70 acres** with defoliator damage

# Northern District A1S

The bark beetle mortality observed (Figure 6) was caused by multiple bark beetle species (Table 2 ) attacking multiple species of pine, fir, spruce, and juniper. The great majority was observed on ponderosa pine on federal lands.

**44% increase** in bark beetle related tree mortality compared to 2024.

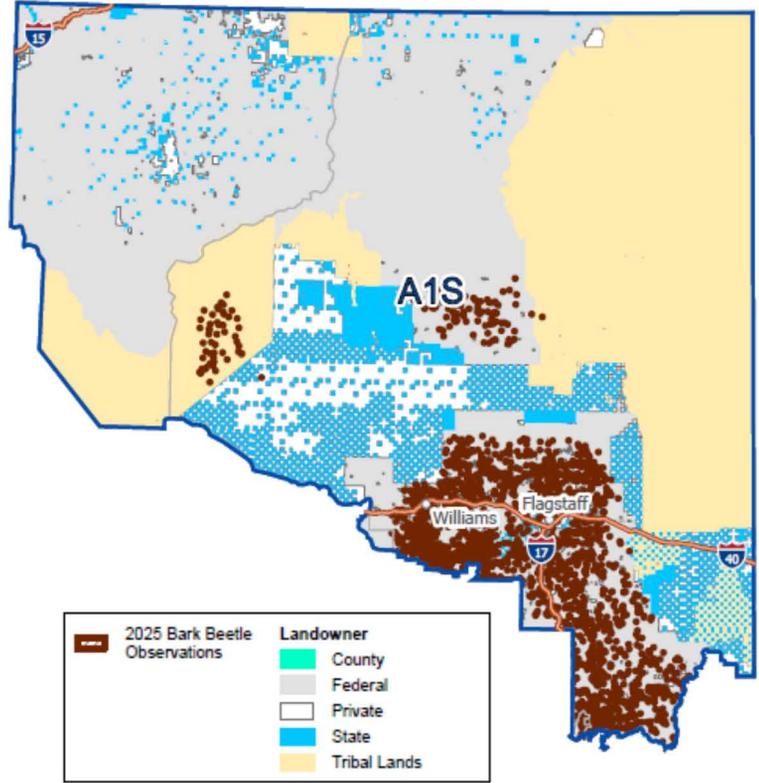


Figure 6. All Insect and Disease observations within the Northern District (A1S) - 2025

A1S - Estimated Acres with Observed Insect Agents by Land Ownership						
Insect Damage Causal Agent	County	Federal	Private	State	Tribal Lands	Grand Total
Cedar & Cypress Bark Beetles		96.13	0.50	0.50		97.13
Douglas-Fir Beetle		148.31				148.31
Fir Engraver		60.92				60.92
Alder Flea Beetle		99.34	33.91			133.25
Pinyon Ips		111.72	1.23		3.00	115.95
Pinyon Needle Scale		1,291.36				1,291.36
Tamarisk Leaf Beetles					433.45	433.45
Unknown Bark Beetle	0.50	13,072.93	57.46	208.43	23.01	13,362.33
Western Balsam Bark Beetle		0.75				0.75
<b>Grand Total</b>	<b>0.50</b>	<b>14,881.45</b>	<b>93.10</b>	<b>208.93</b>	<b>459.47</b>	<b>15,643.44</b>

Table 2. Estimated acres with Observed Insect Damage by Land Ownership for the Northern District (A1S) - 2025

# Northern District A1S

This year, roughly **11,780 acres** with observed drought damage were identified (Table 3). Most of these observed acres were on federal and tribal lands within pinyon-juniper woodlands (Figure 7).

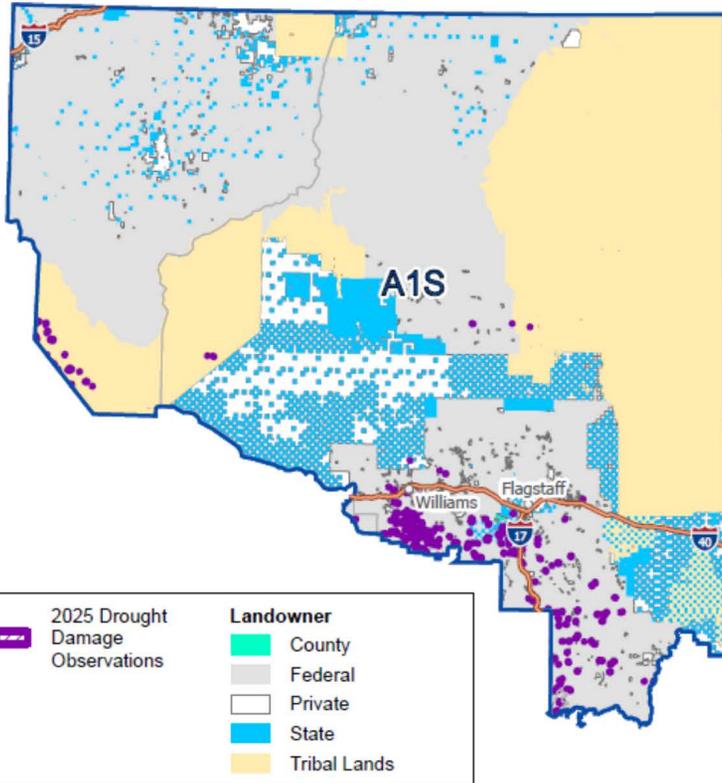


Figure 7. All ADS Drought Damage Observations within the Northern District (A1S) – 2025

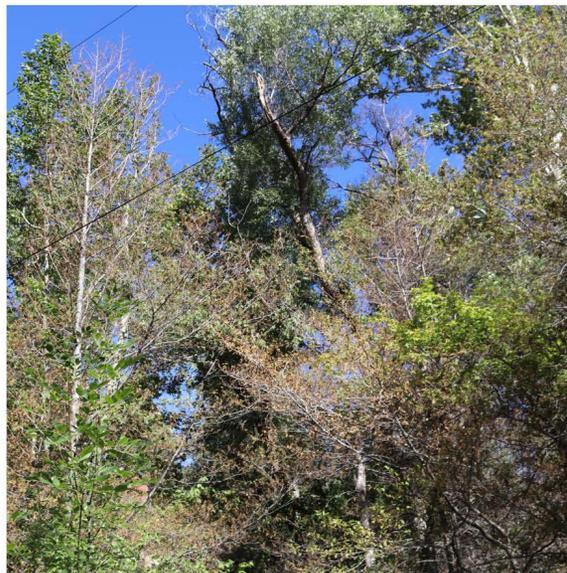
**203% increase** in drought damage compared to 2024.

**3737.85 acres** with the “unknown” category was due to branch flagging observed in ponderosa pine.

**97.27 acres** with salt damage along roadways.

A1S - Estimated Acres of Observed Damage by Land Ownership						
Causal Agent	County	Federal	Private	State	Tribal Lands	Grand Total
Abiotic Agents		10,363.27	72.03	397.49	947.72	11,780.51
Bark Beetles	0.50	13,490.75	59.19	208.93	26.01	13,785.38
Defoliators		99.34	33.91		433.45	566.70
Human Activities		77.48	18.49	1.29		97.27
Sap Feeders		1,291.36				1,291.36
Unknown		3,750.87	35.07	203.42		3,989.37
<b>Grand Total</b>	<b>0.50</b>	<b>29,073.07</b>	<b>218.69</b>	<b>811.13</b>	<b>1,407.19</b>	<b>31,510.58</b>

Table 3. Estimated acres with Observed Damage by Land Ownership for the Northern District (A1S) - 2025



*Photo Credit: DFFM, Coconino National Forest. Top to bottom: Adult alder flea beetles, defoliated AZ alder, skeletonized alder leaf.*

# Northern District

# AIS

This summer, alder flea beetle was the cause of the heavy defoliation of the Arizona alders between Page Springs and Oak Creek in Sedona.

Alder flea beetle larvae feed on the tissue between the veins of the leaf and results in a skeletonized appearance, pictured on the bottom left. Adult beetles are a dark and metallic blue, and about 5 mm long, pictured on the upper left. Mature larvae are slightly longer than the beetles and are brown to black. Historically no long-term effects from the defoliation have been noted. Outbreaks are generally short-lived and sporadic. Trees tend to recover quickly and management is usually not needed (Appendix II).

**133.25 acres**

**Observed with alder flea beetle damage in AIS**

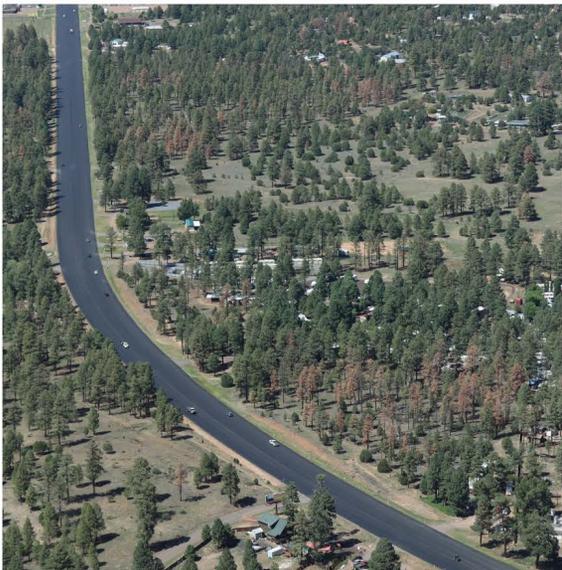


Photo Credit: DFFM, Apache Sitgreaves National Forest. Top to bottom: bark beetle mortality, branch flagging, bark beetle mortality along Highway 260.

# Northeast District A2S

The Northeast District is composed of Navajo, Apache, Fort Apache, and Hopi Reservation lands, as well as the Apache-Sitgreaves National Forest; these lands are surrounded by scattered county and state lands (Appendix I).

**56,027.62 total acres** with bark beetle damage

**22,595.56 total acres** with drought related tree mortality

**11,394.93 acres** with drought damage specifically in ponderosa pine

**1,983.08 acres** with branch flagging

**3,430.03 acres** with pinyon ips damage

# Northeast District A2S



The bark beetle mortality observed (Figure 8) was caused by multiple bark beetle species (Table 4) attacking multiple species of pine, fir, spruce, and juniper. The great majority was observed on ponderosa pine on federal lands with over **51,000 acres** observed with damage. Of the different insects observed causing mortality in the northeastern district, there was **considerable amount of damage in pinyon pine** caused by pinyon ips and pinyon needle scale.



Figure 8. All Insect and Disease observations within the Northeast District (A2S) - 2025

Increase in observed bark beetle damage compared to 2024

# 134%

A2S - Estimated Acres with Observed Insect Damage by Land Ownership					
Insect Causal Agent	Federal	Private	State	Tribal Lands	Grand Total
Blue Spruce Engraver				1.50	1.50
Cedar & Cypress Bark Beetles	2.50				2.50
Douglas-Fir Beetle	153.69			25.67	179.36
Fir Engraver	365.70			406.32	772.01
Nantucket Pine Tip Moth	22.86				22.86
Pinyon Ips	2,411.51	76.55	0.50	941.48	3,430.03
Pinyon Needle Scale	362.53	0.66		1,250.93	1,614.12
Spruce Aphid				37.14	37.14
Spruce Beetle	1.50			2.25	3.75
Tamarisk Leaf Beetles	70.90			52.43	123.32
Unknown Bark Beetle	33,726.08	2,618.52	20.70	15,115.31	51,480.60
Unknown Defoliator	36.40			151.85	188.25
Western Balsam Bark Beetle	1.50			156.37	157.87
<b>Grand Total</b>	<b>37,155.15</b>	<b>2,695.73</b>	<b>21.20</b>	<b>18,141.24</b>	<b>58,013.32</b>

Table 4. Estimated acres with Observed Insect Damage by Land Ownership for the Northeast District (A2S) - 2025

# Northeast District A2S

This year all **22,595.56 acres** with abiotic damage were attributed to drought, the great majority was observed on tribal lands (table). A portion of the 2,577.64 acres with “unknown” damage was attributed to branch flagging. **1,983.08 acres were observed with branch flagging in ponderosa pine.**

**593%** Increase in observed drought damage compared to 2024

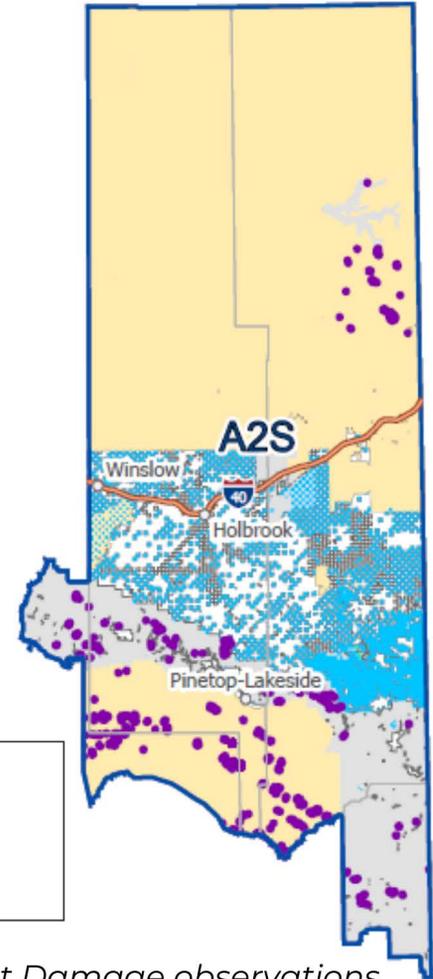
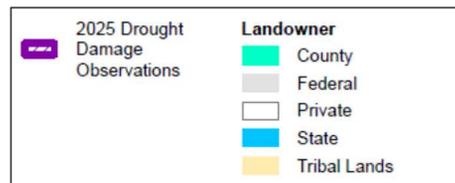


Figure 9. All ADS Drought Damage observations within the Northeast District (A2S) - 2025

A2S - Estimated Acres of Observed Damage by Land Ownership					
Damage Causal Agent	Federal	Private	State	Tribal Lands	Grand Total
Abiotic Agents	7,215.81	609.81	120.46	14,649.49	22,595.56
Bark Beetles	36,662.47	2,695.07	21.20	16,648.89	56,027.62
Defoliators	107.29			204.28	311.58
Sap Feeders	362.53	0.66		1,288.07	1,651.26
Terminal Shoot, Twig, and Root Feeders	22.86				22.86
Unknown	2,009.84	67.24		500.57	2,577.64
<b>Grand Total</b>	<b>46,380.80</b>	<b>3,372.77</b>	<b>141.65</b>	<b>33,291.31</b>	<b>83,186.52</b>

Table 5. Estimated acres with Observed Damage by Land Ownership for the Northeast District (A2S) - 2025



Photo Credit: DFFM, Apache Sitgreaves National Forest. Stunted needles of ponderosa pine due to Nantucket pine tip moth.

# Northeast District A2S

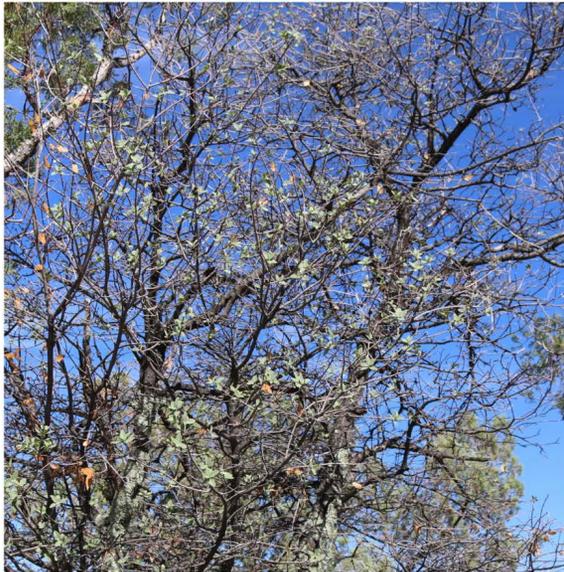
This year, occurrences of severely stunted ponderosa pine were observed in A2S. This was due to Nantucket pine tip moth (*Rhyacionia frustrana*). The larvae mine in the phloem of lateral and sometimes terminal shoots leaving trees severely stunted. Small trees are most susceptible and repeated attacks cause slow growth and forks or multiple stems. Tip moths rarely kill established trees, but attacks can affect survival of young planted seedlings. The outbreak is severe in Overgaard and extends to Show Low with lower severity.

Adults are about  $\frac{1}{4}$  inch long with a  $\frac{1}{2}$  inch wing span. They are a mix of copper/orange and grey/white irregular markings.



**133.25 acres**

**With observed Nantucket pine tip moth damage in A2S**



# Southeast District A3S

The Southeast District is composed of the Ak-Chin, Tohono O' Odham, and San Xavier reservation lands, as well as the Coronado National Forest Sky Islands, the Cabeza Prieta National Wildlife Refuge, Organ Pipe Cactus National Monument, Saguaro National Park, and Chiricahua National Monument. These areas are surrounded by scattered county and state lands, with some military reservation lands as well (Appendix I).

**25,579.67 acres** with bark beetle damage

**23,242.80 acres** with drought damage

**15,121.69 acres** with juniper crown dieback (drought damage)

**8,672.21 acres** with pinyon ips damage

**1,179.71 acres** with drought damage in oak

*Photo Credit: DFFM Coronado National Forest.  
Top to bottom: juniper dieback, oak defoliation,  
bark beetle damage on Huachuca mountains.*

# Southeast District A3S

This year, 25,579.67 acres were observed with bark beetle damage in A3S. The “Unknown Bark Beetle” category included all the bark beetles that attack ponderosa pines. As more than one species often contributes to the decline and death of ponderosa pines, we combine all ponderosa pine bark beetles into this one category. It is worth mentioning this includes the Southern Pine beetle (*Dendroctonus frontalis*) and Mexican Pine Beetle (*Dendroctonus mexicanus*) as they attack Chihuahua and Apache pines that are found in this part of Arizona.

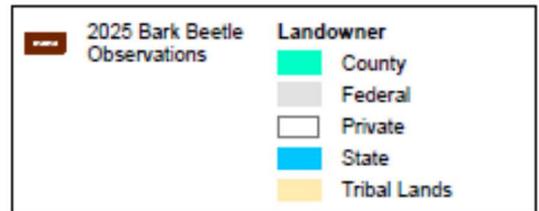
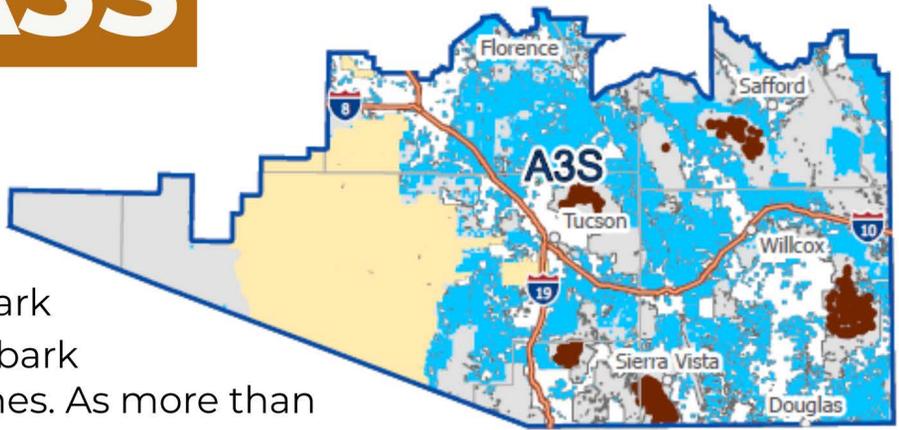


Figure 10. All insect and disease observations within the Southeast District (A3S) - 2025

A3S - Estimated Acres with Observed Insect Agents by Land Ownership				
Insect Damage Causal Agent	Federal	Private	Tribal Lands	Grand Total
Douglas-Fir Beetle	1.50			1.50
Fir Engraver	97.63			97.63
Pinyon Ips	8,527.77	144.44		8,672.21
Pinyon Needle Scale	2,878.43	44.27		2,922.70
Tamarisk Leaf Beetles	12.38	481.23	0.01	493.62
Unknown Bark Beetle	16,673.62	134.21		16,807.83
Western Balsam Bark Beetle	0.50			0.50
<b>Grand Total</b>	<b>28,191.83</b>	<b>804.14</b>	<b>0.01</b>	<b>28,995.99</b>

Table 6. Estimated acres with Observed Insect Damage by Land Ownership for the Southeast District (A3S) - 2025

**16,807.83 acres**

with bark beetle damage in ponderosa, chihuahua, apache pines.

**3,511.93 acres**

with defoliation damage observed mostly by tamarisk leaf beetle and pinyon needle scale.

**Decrease in TLB acres**

compared to 2024. Due to limited resources, we did not survey the same areas

# Southeast District A3S



This year roughly **23,000 acres with observed drought damage** were identified in the southeast district (Table 7). Most of these observed acres were on federal and private lands. There was over **95 acres** with observed unknown defoliation damage (Table 7). These areas were not able to be confirmed on the ground, thus their damage causal agent remains as unknown damage.

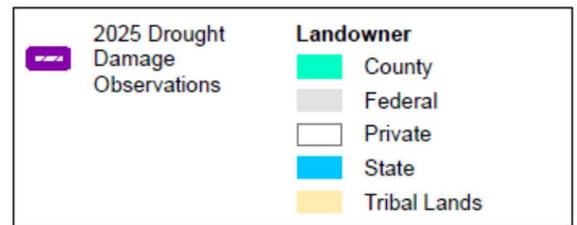
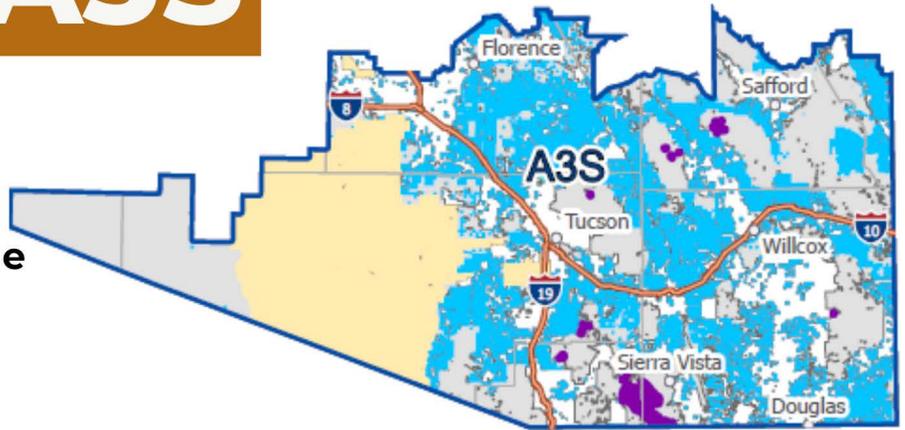


Figure 11. All drought observations within the Southeast District (A3S)-2025

A3S - Estimated Acres of Observed Damage by Land Ownership				
Causal Agent	Federal	Private	Tribal Lands	Grand Total
Abiotic Agents	22,768.18	474.62		23,242.80
Bark Beetles	25,301.02	278.65		25,579.67
Defoliators	12.38	481.23	0.01	493.62
Sap Feeders	2,878.43	44.27		2,922.70
Unknown	95.62			95.62
<b>Grand Total</b>	<b>51,055.63</b>	<b>1,278.76</b>	<b>0.01</b>	<b>52,334.40</b>

Table 7. Estimated acres with Observed Damage by Land Ownership for the Southeast District (A3S) - 2025

**493.62  
acres**

with defoliation damage in salt cedar from tamarisk leaf beetle.

**2,922.70  
acres**

with sap feeder damage observed attributed to pinyon needle scale.

**15,121.69  
acres**

with crown dieback in juniper due to drought.

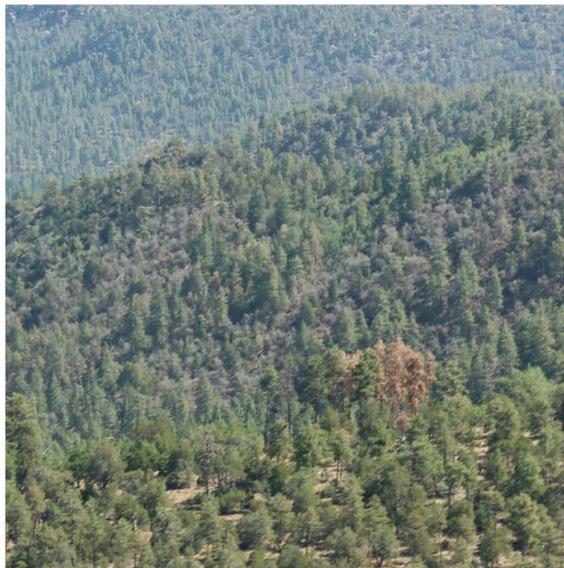


Photo Credit: DFFM, Tonto National Forest. Top to bottom: Tamarisk leaf beetle larva on salt cedar, cottonwood defoliation, bark beetle damage

# Central District A4S

The Central District is composed of the Tonto National Forest, San Carlos, Gila River, Salt River, and Fort Howell Reservation lands, and the Kofa National Wildlife Refuge; these areas are surrounded by scattered county and state lands, with some military reservation lands as well (Appendix I).

**21,025.46 acres** with bark beetle damage

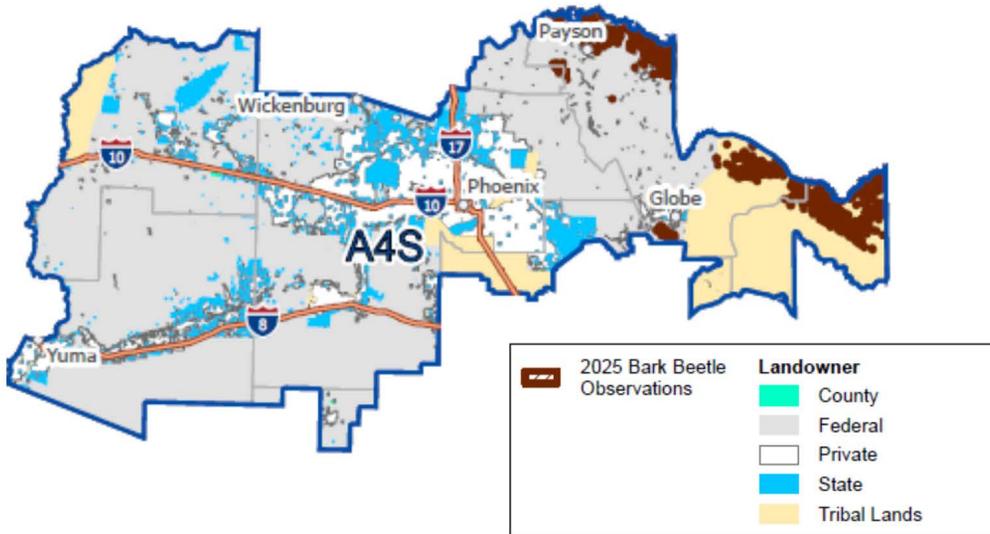
**4,992.96 acres** with drought related tree mortality

**371.49 acres** with branch flagging

**2,401.55 acres** with sap feeder damage

**318.96 acres** with defoliator damage

# Central District A4S



The majority of insect observations occurred on federal and tribal lands (Table 8) in the higher elevation areas in and around the Tonto National Forest of the central district. Aside from bark beetle damage, pinyon needle scale caused a significant amount of damage on pinyon.

Figure 12. All bark beetle observations within the Central District (A4S)- 2025

A4S - Estimated Acres with Observed Insect Agents by Land Ownership					
Insect Damage Causal Agent	Federal	Private	State	Tribal Lands	Grand Total
Cedar & Cypress Bark Beetles				88.75	88.75
Fir Engraver	19.40			0.25	19.65
Pinyon Ips	73.27	31.90	1.39	44.28	150.84
Pinyon Needle Scale	2,286.80	35.61		79.14	2,401.55
Tamarisk Leaf Beetles	0.81			318.14	318.96
Unknown Bark Beetle	4,277.11	4.15		16,484.95	20,766.22
<b>Grand Total</b>	<b>6,657.40</b>	<b>71.66</b>	<b>1.39</b>	<b>17,015.52</b>	<b>23,745.97</b>

Table 8. Estimated acres with Observed Insect Damage by Land Ownership for the Central District (A4S) - 2025

**233% increase**

in bark beetle damage compared to 2024.

**20,766.22 acres**

with bark beetle damage observed in ponderosa pine.

**257 acres**

with unknown defoliation.

# Central District A4S

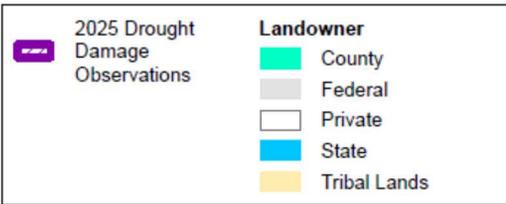
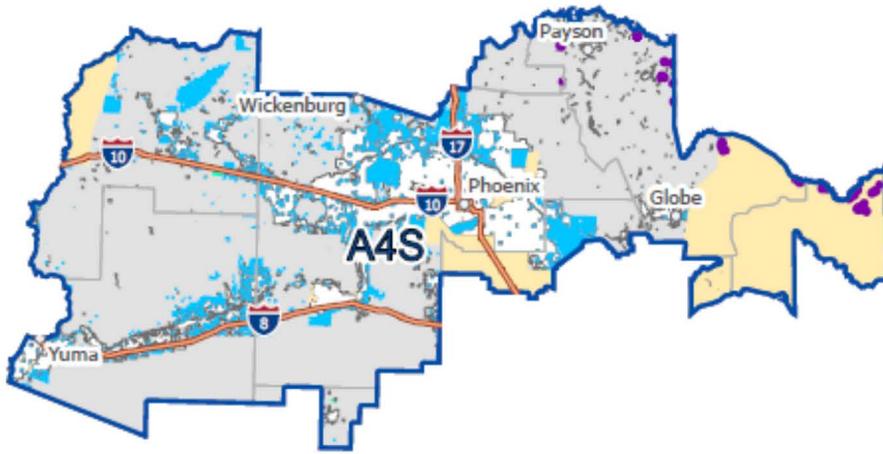


Figure 13. All drought observations within the Central District (A4S) - 2025

There were 4,992.96 acres with drought damage seen in various species of oak, pine and juniper. Of the **628.76 acres with unknown damage**, 371.49 acres were attributed to branch flagging in ponderosa pine. 257.26 acres were due to unknown defoliator in trees such as cottonwood.

A4S - Estimated Acres of Observed Damage by Land Ownership					
Causal Agent	Federal	Private	State	Tribal Lands	Grand Total
Abiotic Agents	1,283.41			3,709.55	4,992.96
Bark Beetles	4,369.78	36.05	1.39	16,618.24	21,025.46
Cankers	0.25				0.25
Defoliators	0.81			318.14	318.96
Sap Feeders	2,286.80	35.61		79.14	2,401.55
Unknown	232.90	24.36		371.49	628.76
<b>Grand Total</b>	<b>8,173.96</b>	<b>96.02</b>	<b>1.39</b>	<b>21,096.57</b>	<b>29,367.94</b>

Table 9. Estimated acres with Observed Damage by Land Ownership for the Central District (A4S) - 2025

**371.49 acres**

with branch flagging in ponderosa pine.

**3,267.43 acres**

with crown dieback in juniper due to drought.

**.25 acres**

found with cankers in oak on the Tonto National Forest.

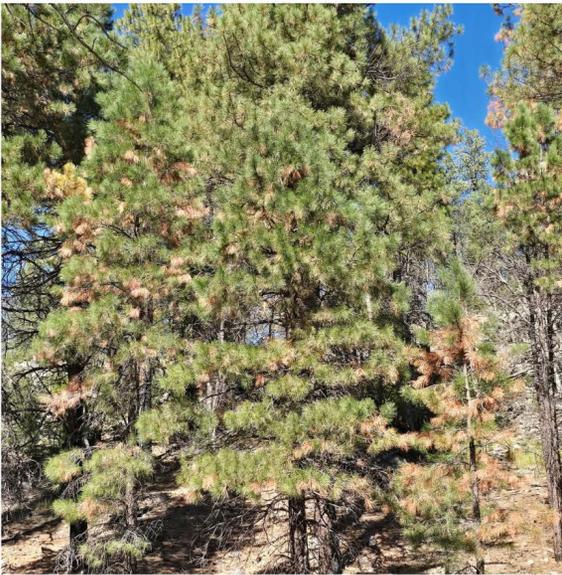


Photo Credit: DFFM, Prescott National Forest. Top to bottom: juniper dieback, branch flagging in ponderosa pine, bark beetle damage in the Bradshaws.

# Northwest District A5S

The Northwest District (A5S) is composed of the Prescott National Forest, Lake Mead National Recreation Area, Fort Mohave Reservation, and the Havasu National Wildlife Refuge; these areas are surrounded by scattered county and state lands, with some military reservation lands as well (Appendix I).

**29,505.57 acres** with drought damage, the most of any district.

**3,413.73 acres** with bark beetle damage

**1,083.7 acres** with defoliation damage

**994.87 acres** with sap feeder damage

**646.08 acres** with branch flagging

# NORTHWEST District A5S



The bark beetle mortality observed (Figure ) was caused by multiple bark beetle species (Table ) attacking multiple species of pine, fir, spruce, and juniper. The great majority was observed on ponderosa pine on federal lands in the Prescott NF. Of the different insects observed causing mortality in the northeastern district, there was **considerable amount of damage in pinyon pine** caused by pinyon ips and pinyon needle scale.

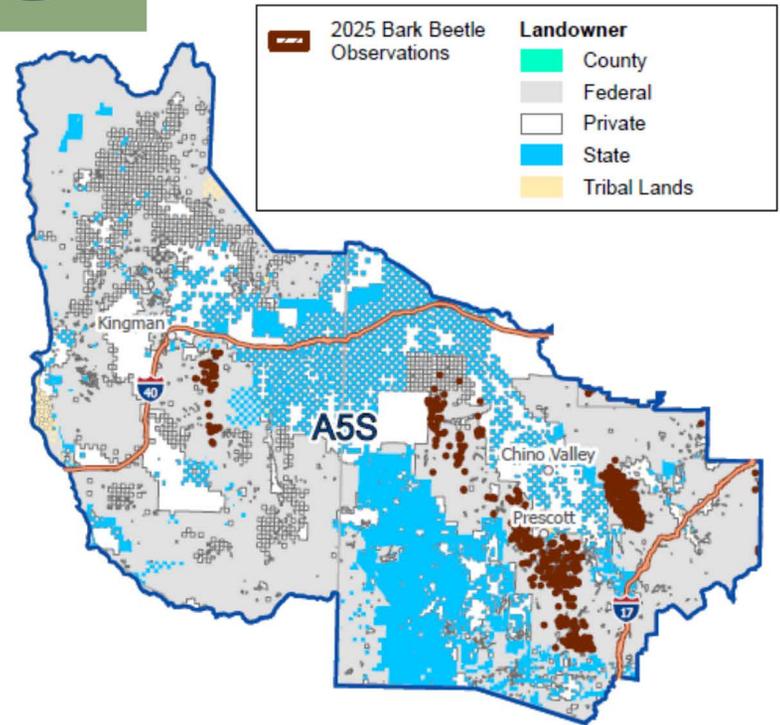


Figure 14. All bark beetle observations within the Northwest District (A5S) - 2025

A5S - Estimated Acres with Observed Insect Agents by Land Ownership				
Insect Damage Causal Agent	Federal	Private	State	Grand Total
Cedar & Cypress Bark Beetles	15.19	2.06		17.25
Fir Engraver	3.25			3.25
Pinyon Ips	157.34	177.56		334.90
Pinyon Needle Scale	510.18	363.28	121.42	994.87
Roundheaded Borer		0.25		0.25
Tamarisk Leaf Beetles		3.68		3.68
Unknown Bark Beetle	2,300.19	727.86	30.28	3,058.33
<b>Grand Total</b>	<b>2,986.15</b>	<b>1,274.69</b>	<b>151.69</b>	<b>4,412.54</b>

Table 10. Estimated acres with Observed Insect Damage by Land Ownership for the Northwest District (A5S) - 2025

**81% Increase**

in bark beetle damage compared to 2024.

**3058.33 acres**

with bark beetle damage observed in ponderosa pine.

**994.87 acres**

with sap feeder damage attributed to pinyon needle scale in pinyon pine.

# NORTHWEST District A5S



This year all **29,505.57 acres** with abiotic damage was attributed to drought, the great majority was observed on juniper with 27,139.29 acres. A portion of the 731.03 acres of “unknown” damage was attributed to branch flagging and unknown defoliation. Due to limited resources and staff, not all occurrences were inspected but some samples confirmed this was in part due to diplodia needle blight, Prescott scale, and/or drought.

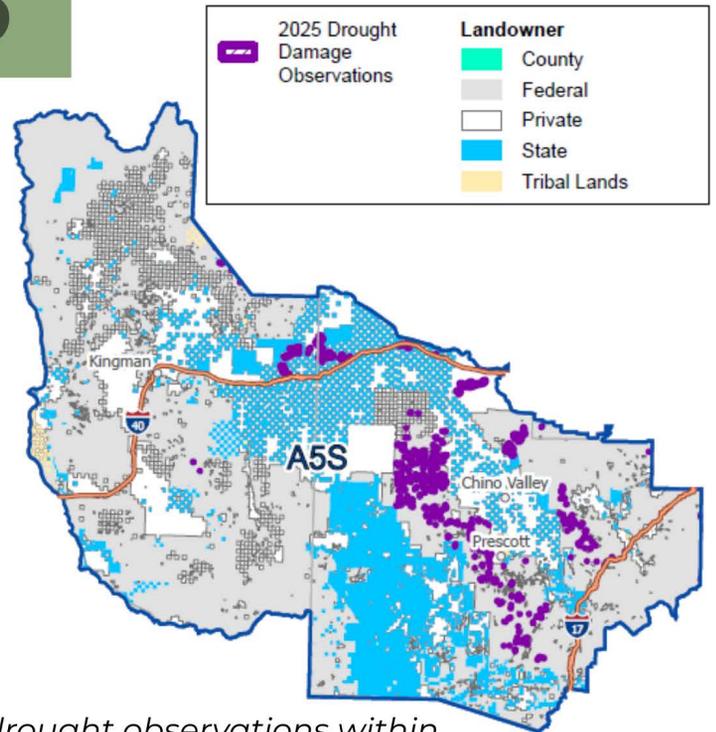


Figure 15. All drought observations within the Northwest District (A5S) in 2025

A5S - Estimated Acres of Observed Damage by Land Ownership				
Causal Agent	Federal	Private	State	Grand Total
Abiotic Agents	15,764.30	9,608.24	4,133.03	29,505.57
Bark Beetles	2,475.97	907.48	30.28	3,413.73
Cankers	2.20	1.80		4.00
Defoliators		3.68		3.68
Sap Feeders	510.18	363.28	121.42	994.87
Unknown	630.55	100.48		731.03
Wood Borers		0.25		0.25
<b>Grand Total</b>	<b>19,383.20</b>	<b>10,985.21</b>	<b>4,284.72</b>	<b>34,653.13</b>

Table 11. Estimated acres with Observed Damage by Land Ownership for the Northwest District (A5S) - 2025

**1,602.17 acres**  
with drought damage in ponderosa pine.

**27,139.29 acres**  
with drought damage in juniper, most of any district.

**645.83 acres**  
with branch flagging in ponderosa pine.



Photo Credit: DFFM, Prescott. Top to bottom: PNS causing yellowing needles in pinyon pine. PNS adults, pinyon pine needle damage.

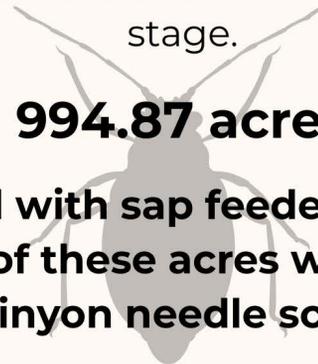
## Northwest District A5S

Pinyon needle scale (PNS) (*Matsucoccus acalyptus*) is a sap sucking insect that attacks pinyon pines. PNS can cause needles to yellow and drop early. Repeated attacks can cause reduced growth, and stunted needles. Severe outbreaks may kill small trees, while larger trees can become more susceptible to bark beetle attacks.

Pinyon needle scale completes one generation per year, overwintering as immobile, black, bean-shaped nymphs on needles. In spring, nymphs mature into adults, mate, and lay eggs in cottony, white wax masses at the base of the tree, on branch crotches, or on the bark. Crawlers hatch in mid-May, move to new needles, and settle to feed. During the fall and winter, adult scales look like small black beans on the needles. Scales are immobile at this stage.

**994.87 acres**

**Observed with sap feeder damage in A5S, all of these acres were due to pinyon needle scale.**



# Department of Forestry and Fire Management

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## Arizona Forest Health Alert



### Alder Flea Beetle Defoliating Alder along Oak Creek and surrounding areas

As you drive through Oak Creek Canyon you may notice many trees with brown leaves or thin crowns. This is due to an alder flea beetle outbreak occurring in this area. Reports of damage and beetles are occurring from as far south as Peach Springs. This event has led to severe defoliation of alder trees (Figure 1).

Alder leaf beetle larvae feed on the tissue between the veins of the leaf resulting in a skeletonized appearance. The adult beetles will also chew holes in the leaves. Adult beetles are dark, shiny blue, and about 5 mm long (Figure 2). Mature larvae are slightly longer than the beetles and are brown to black (Figure 3). Adult beetles may aggregate in the spring when emerging from hibernation.

Although damage can be quite widespread, historically no long-term effects from the defoliation have been noted. Outbreaks are generally short-lived and sporadic. Trees tend to recover quickly, and management is usually not needed.

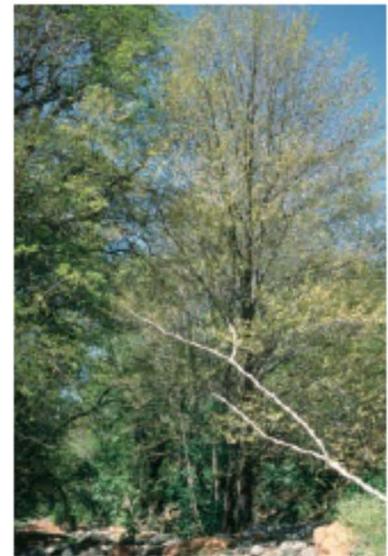


Figure 1: Defoliated alder caused by alder flea beetle.



Figure 2: Adult flea beetle.



Figure 3: Mature larvae feeding on alder.