New Mexico Forest Health Conditions

2025

NEW MEXICO

emnrd

Energy, Minerals and Natural Resources Department

NEW MEXICO FORESTRY DIVISION

GREAT SEAL OF THE STATE OF NEW MEXICO 1912

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2025 FOREST HEALTH SUMMARY

The New Mexico Forestry Division cooperates with the U.S. Forest Service's Forest Health Protection Program, New Mexico Zone, to conduct aerial surveys to map insect and disease activity across state, private, Tribal, and federal forests and woodlands. The total number of forest and woodlands mapped in 2025 with damage from insects, disease and abiotic conditions was 382,000 acres on all landownership types in New Mexico, a *decrease* of 23,000 acres or 6% compared to 2024. There was a *decrease* of 72,000 acres mapped with damage to state and privately-owned forests and woodlands compared to 2024 levels. Mortality to conifer trees by all species of bark beetles was mapped on 209,000 acres in 2025, compared to 67,000 acres mapped in 2024. Most of the mortality was mapped on national forests (192,000 acres). There was significant mortality of ponderosa pine (155,000 acres) and piñon pine (33,000 acres) contributing to the total number of acres mapped with mortality. Statewide defoliation *decreased* by 168,000 acres or 51% where 160,000 acres were mapped defoliation in 2025, compared to the 327,000 acres mapped with defoliation in 2024. Defoliation in mixed conifer from western spruce budworm was mapped on 55,000 acres in 2025 compared to 249,000 acres mapped with defoliation in 2024. Caterpillars of the Douglas-fir tussock moth defoliated 42,000 acres of mixed conifer forests, an *increase* from the 18,000 acres defoliated in 2024. Piñon needle scale defoliated 39,000 acres in 2025 compared to 16,000 acres in 2024. Forest and woodland acres impacted by drought and heat *increased* by 66% statewide.

2025 FOREST HEALTH CONDITIONS AT A GLANCE

Acres with bark beetle-killed trees	**Acres with defoliation**	**Climate**
State and private lands: 18,000	State and private lands 34,000	Mean temperature 56.2 °F
National forest lands 192,000	National forest lands 113,000	Mean precipitation 12.52"
Tribal lands 8,000	Tribal lands 16,000	Second warmest year on record
Total: 209,000	**Total: 160,000**	Drought-stressed forest and woodland up 66%

AERIAL DETECTION SURVEY

The New Mexico Forestry Division's Forest Health Program Coordinator works with the U.S. Forest Service's Forest Health Protection Zone 3 personnel to survey New Mexico's forests and woodlands. Approximately 14 million acres of forests and woodlands were surveyed in 2024 by Aerial Detection Survey (ADS) methods. Most of the information and data in this report were collected through ADS flights over forests and woodlands. In addition to ADS, ground surveys are conducted to determine unknown conditions mapped by aerial observations. Annual ADS flight lines are similar, allowing for consistent areas to be surveyed and evaluated for trends in forest health conditions. The information in this report is not a complete picture of forest health because not every acre of forest and woodland in New Mexico is surveyed, especially on state and private lands.

Figure 1: *Aerial view of Church Mountain in Lincoln County. Note the red faded condition of bark beetle-attacked piñon and ponderosa pine trees. Photo by Greg Reynolds, USFS.*

INTERACTIVE MAP

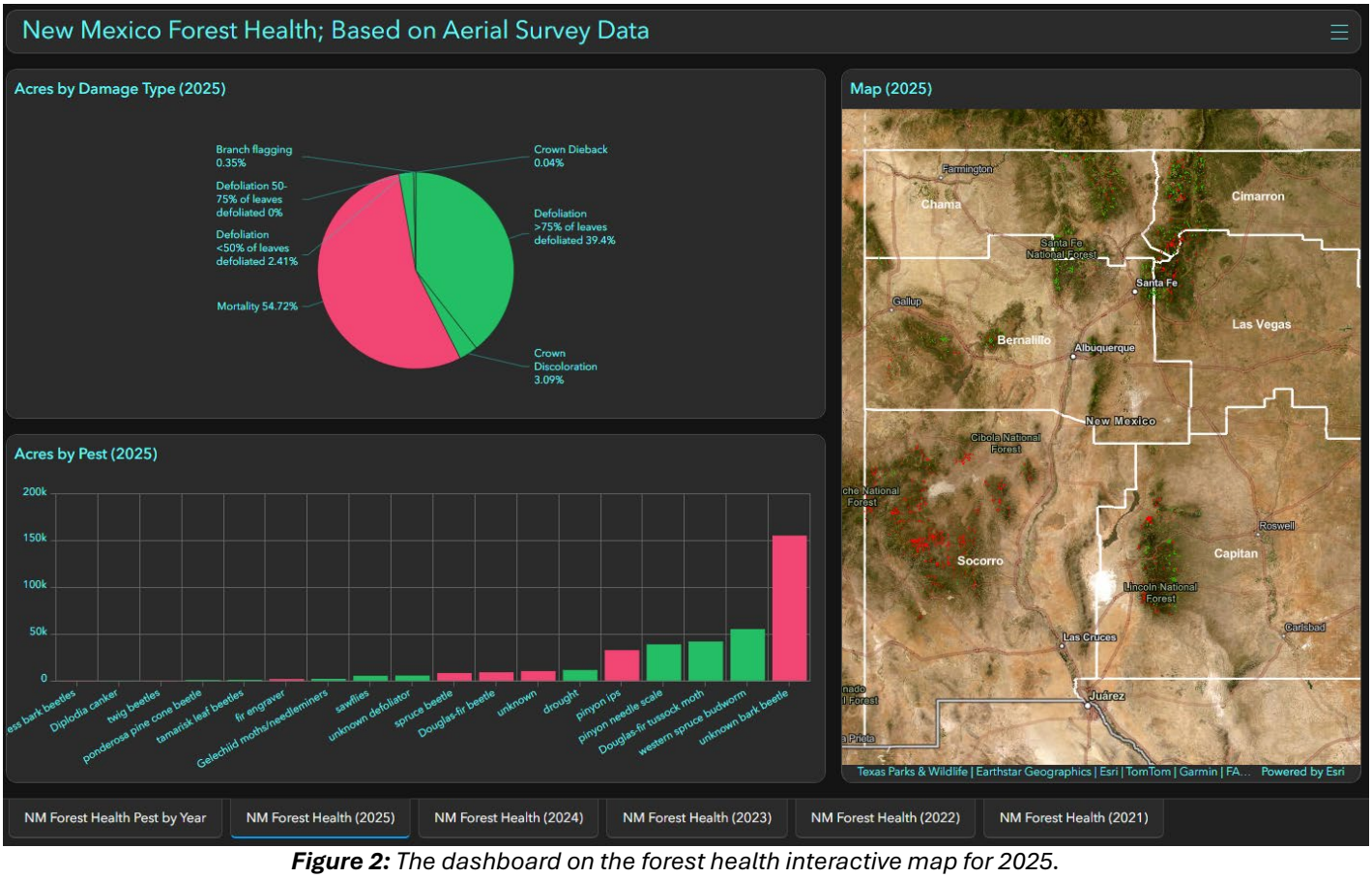


Figure 2: *The dashboard on the forest health interactive map for 2025.*

Quickly access, search and query the New Mexico aerial survey data on our New Mexico Forest Health Conditions Data Dashboard. **Click here or scan the QR code.**

DROUGHT AND WARMING

Drought conditions worsened during 2025. For example, 35% of the state was in moderate drought (D1) and 20% of the state was in severe drought (D2) at the beginning of January 2025. By the end of December 2025, 71% of the state was in moderate drought and 52% of the state was in severe drought. The average statewide temperature was 56.2 degrees Fahrenheit, making 2025 the second warmest year on record. The average statewide precipitation was 12.52 inches, making 2025 the 38th driest year on record.

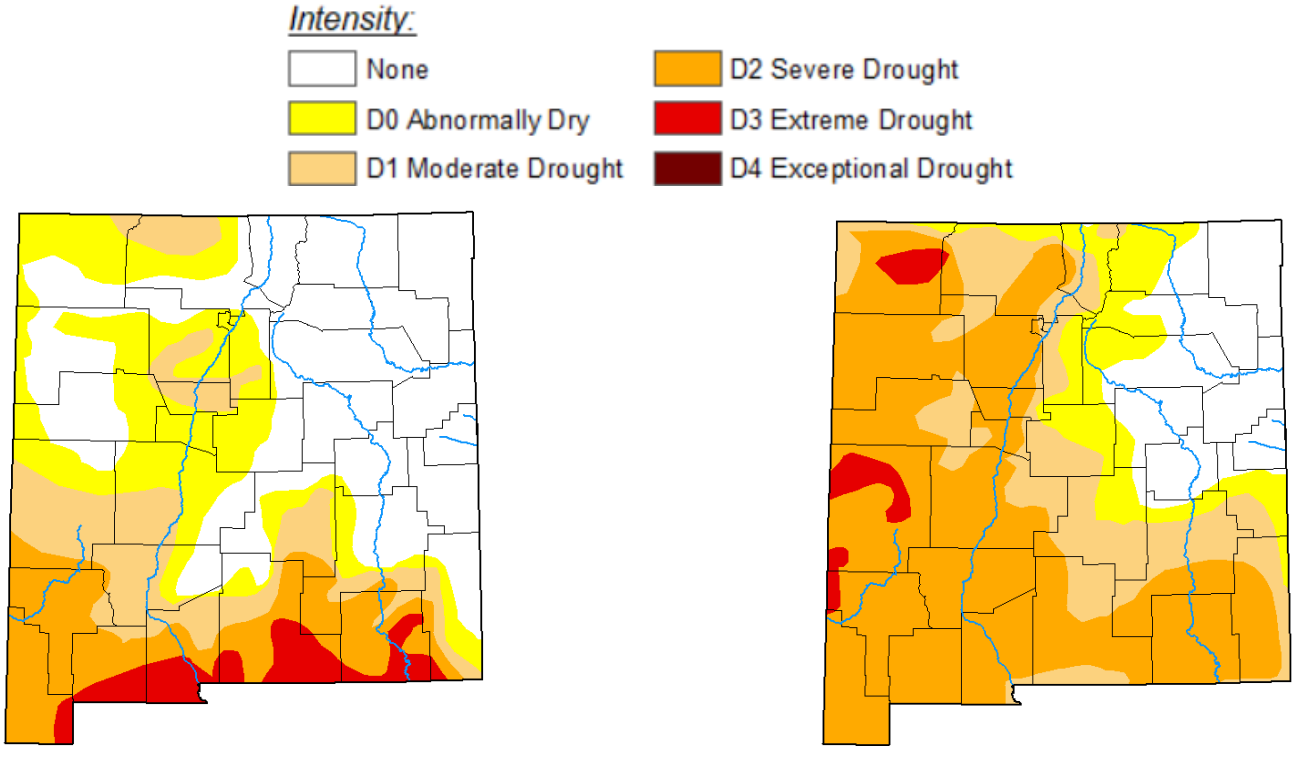
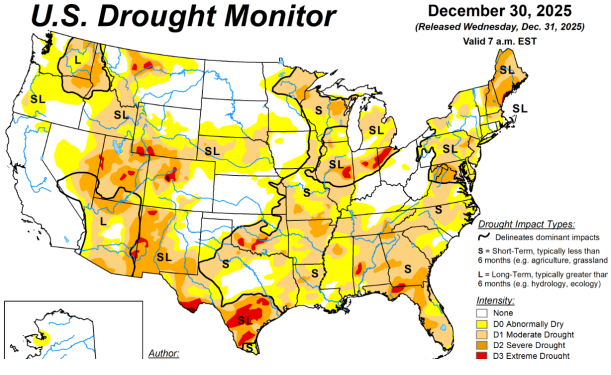


Figure 3: *Comparison of drought at the beginning and end of 2025.*



View the current U.S Drought Monitor map: [Current Map | U.S. Drought Monitor]

The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration. Map courtesy of NDMC.

PEST HIGHLIGHTS

The following sections highlight the major pests that caused damage to New Mexico's forest and woodlands in 2025.

MORTALITY AGENTS

Native bark beetles are an important part of the forest and woodland ecosystems of New Mexico. In most cases, bark beetles selectively attack stressed trees when forest and woodland stands are unhealthy as the result of overstocked conditions, root disease, drought or other stress-related factors. Bark beetle-killed trees are eventually replaced by juvenile trees that resist disturbance, recover more quickly, and maintain structure and function better than forest stands with old trees. Furthermore, canopy structure disturbance from bark beetle-caused tree mortality can increase the amount of sunlight reaching the forest floor and increase the number of snags and woody debris. This, in turn, can increase species richness of flora and fauna in an area.

The number of acres mapped in 2025 with insect related mortality in New Mexico was 209,000 acres, an increase of 142,000 acres compared to 67,000 acres mapped with insect related mortality in 2024.

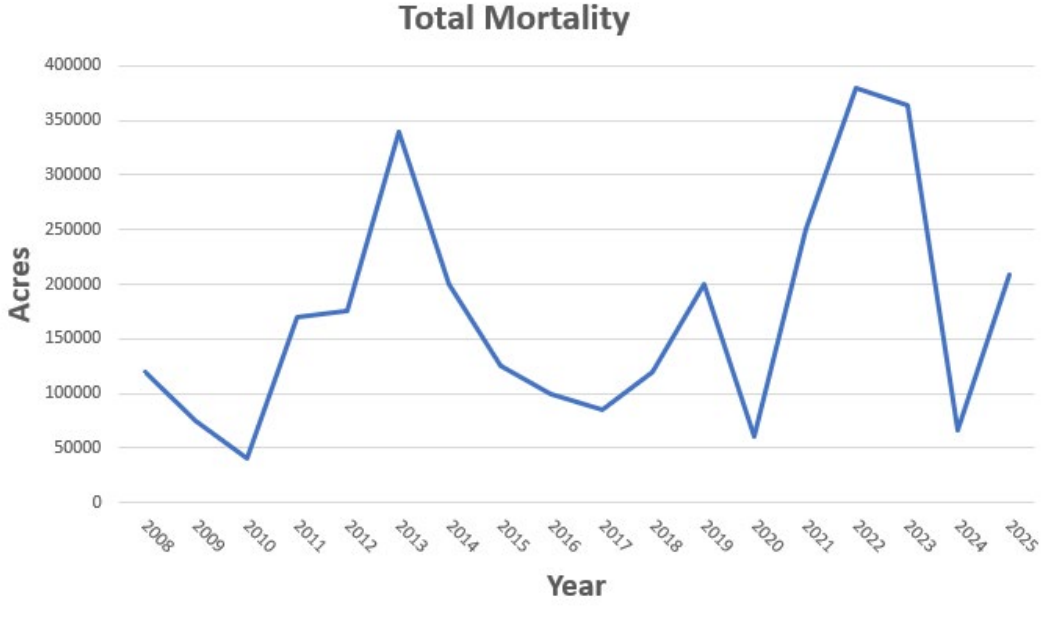


Figure 4: *Trend of statewide forest mortality mapped on all types in New Mexico from 2008-2025.* ***Since 2015, 1.6 million acres have been mapped with bark beetle-killed trees.***

Spruce beetle (*Dendroctonus rufipennis*)

Approximately 8,300 acres of high-elevation Engelmann spruce forests in New Mexico were mapped with spruce beetle-related tree mortality in 2025 (Fig. 3) resulting in a 15% decrease from 2024 (9,900 acres). Most of the spruce mortality occurred on the Santa Fe (3,300 acres) and Carson (4,700 acres) national forests. Spruce mortality was not detected on Tribal lands. Three hundred acres of spruce mortality was detected on private lands in northern Rio Arriba County. It is important to note that high elevation large diameter stands of Engelmann spruce, the preferred host of spruce beetles, have been significantly reduced by spruce beetle attacks and wildfires.

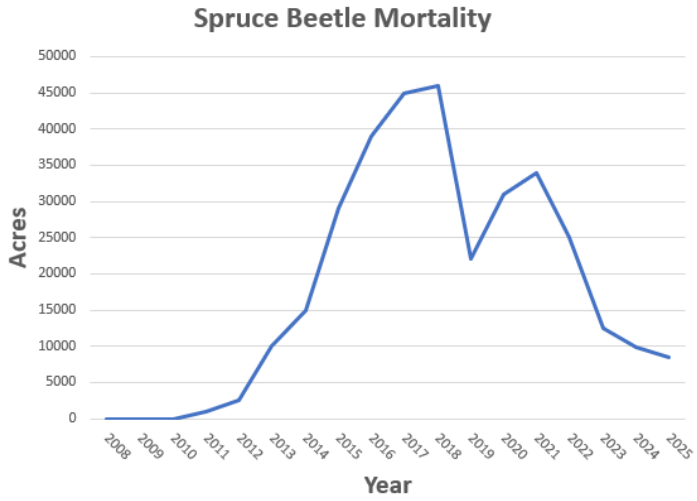


Figure 5: *Trend of statewide spruce mortality mapped on all land types in New Mexico from 2008–2025.*

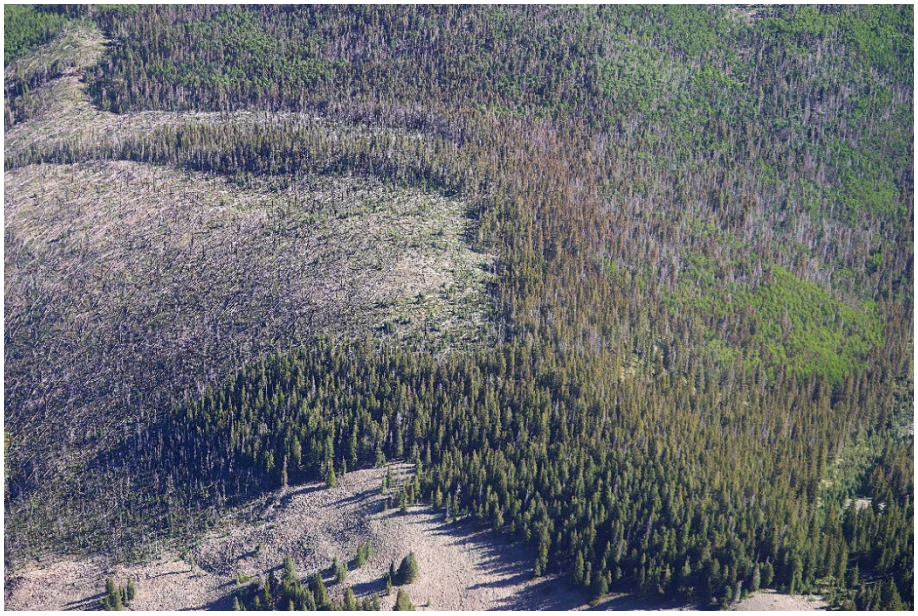


Figure 6: *Spruce beetle-killed trees near blowdown in the Carson. Photo by Crystal Tischler, USFS.* ***Over the last decade, 291,000 acres with spruce beetle-killed trees have been mapped in New Mexico.***

Ponderosa pine bark beetles

(southwestern pine beetle; *Dendroctonus* barberi), (roundheaded pine beetle; *D. adjunctus*) (red turpentine beetle; *D. valens*), (pine engraver; *Ips pini*), (sixspined ips; *I. calligraphus*)

There were approximately 155,000 acres of forests in the state mapped with ponderosa pine mortality caused by bark beetles, a significant increase from the 32,000 acres mapped in 2024 (Fig. 4). The majority (149,000 acres) of mapped acres with ponderosa mortality was on national forests with 123,000 acres in the Gila, 6,000 acres in the Cibola, 20,000 acres in the Lincoln, 370 acres in the Santa Fe, and 150 acres on the Carson. Ponderosa mortality mapped on state and private lands decreased from 9,000 acres in 2024 to 6,300 acres in 2025. Ponderosa pine mortality on Tribal lands increased from 1,200 acres in 2024 to 4,300 acres in 2025, the majority (4,200 acres) on the Mescalero Apache Tribal lands.

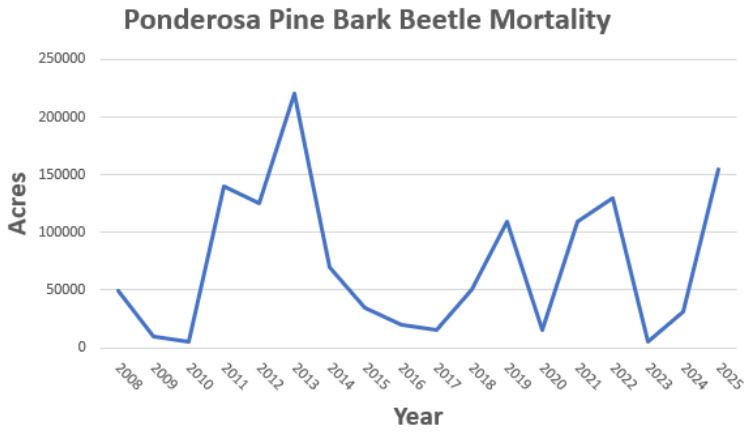


Figure 7: Trend of statewide ponderosa pine mortality on all land types in New Mexico from 2008–2025.

Figure 8: *Bark beetle-killed ponderosa stands in the Gila National Forest.* ***Over the last decade, 605,000 acres have been mapped with bark-beetle killed ponderosa.***

Mixed conifer bark beetles

(Douglas-fir beetle; *Dendroctonus pseudotsugae*), (fir engraver; S*colytus ventralis*)

Approximately 11,000 acres of mixed conifer forests in New Mexico were mapped with mortality from Douglas-fir beetle and fir engraver beetle, a 41% decrease from 2024 (19,000 acres). Mixed conifer mortality on state and private lands decreased in 2025 (3,200 acres) compared to 2024 levels (3,800 acres). Tribal lands mapped with mixed conifer mortality decreased by 71% in 2025 (180 acres) compared to 2024 (650 acres). Most of the mixed conifer mortality was mapped on National Forests (8,600 acres) especially near burn scars from 2022 wildfires. Douglas-fir beetles were the primary damage causing agent in 2025 contributing to 9,200 acres of mortality, a decrease of 32% from 2024 (13,500 acres). Fir engraver beetles caused 1,970 acres of mortality in 2025 compared to 5,200 acres in 2024, a decrease of 63%.

Figure 9: *Douglas-fir mortality near the Hermit's Peak-Calf Canyon burn scar. Photo: Crystal Tishler, USFS.* ***Over the last decade, 211,00 acres have been mapped with bark beetle-killed mixed conifer trees.***

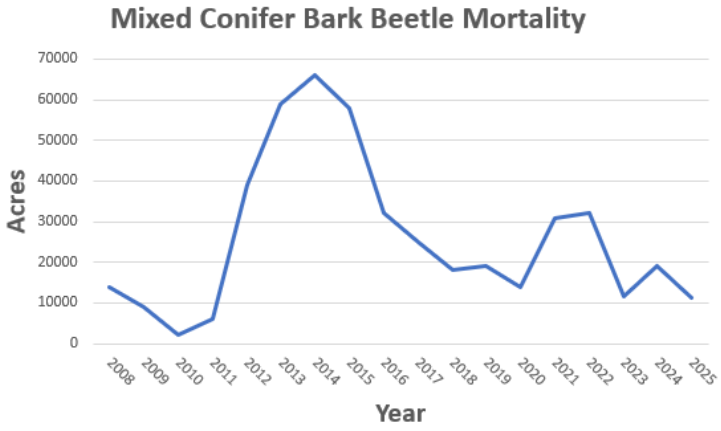


Figure 10: *Trend of statewide mixed conifer bark beetle mortality on all land types in New Mexico from 2008–2024.*

Piñon ips (*Ips confusus*)

Approximately 33,000 acres were mapped with bark beetle-killed piñon trees in 2025, a significant increase from 800 acres mapped in 2024. Mortality mapped on state and private lands was 7,900 acres and 24,400 acres on national forests. Piñon mortality was mapped on 3,400 acres of Tribal lands in 2025.

Figure 11: *Trend of statewide bark beetle-induced pinon mortality on all land types in New Mexico from 2008-2024.* ***Over last decade, 344,000 acres have been mapped with beetle-killed piñon trees.***

Figure 12: *Overwintering adult piñon ips beetles on the inner bark of piñon trees in Datil.*

DEFOLIATION AGENTS

Over the last decade, defoliation agents (western spruce budworm, Douglas-fir tussock moth, western tent caterpillar, needleminers, scale insects) have damaged nearly 3 million acres of forests and woodlands throughout New Mexico. In 2025, there was a 51% decrease of defoliation (Fig.7) across all land types, where 160,000 acres were mapped statewide compared to 327,000 acres mapped with defoliation in 2024. Douglas-fir tussock moth defoliated 42,000 acres of mixed conifer forests in 2025 compared to 18,000 acres mapped in 2024. Aspen defoliation decreased by 67% (5,700 acres) in 2025 compared to 18,000 acres mapped in 2024. Piñon needle scale was mapped on 39,000 acres on all land types.

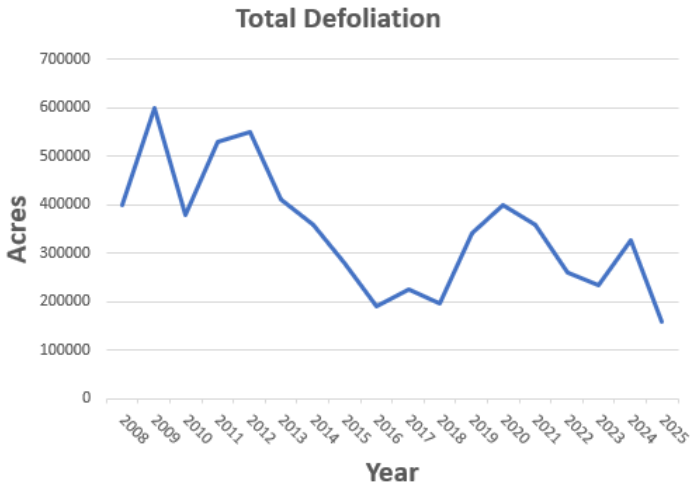


Figure 13: T*rend of statewide forest defoliation mapped on all land types in New Mexico from 2008-2025.*

Figure 14: *Thin canopy of piñon pine caused by chronic infestation of piñon needle scale. Photo by Crystal Tishler, USFS.*

Western spruce budworm (*Choristoneura freemani*)

Western spruce budworm (WSBW) caterpillar activity was mapped on approximately 55,000 acres of forests in 2025. There was a 77% decrease of WSBW on all land types between 2024 and 2025 (Fig. 8). Defoliation by WSBW was mapped on 21,000 acres on state and private lands, a decrease of 77% from the 92,000 acres mapped in 2024. There were 1,200 acres mapped with WSBW defoliation on Tribal lands in 2025, a decrease of 80% compared to 2024 (6,500 acres). All national forests saw a combined 34,000 acres mapped with WSBW defoliation, a decrease of 119,000 acres from 2024, with most of the activity occurring on the Santa Fe and Carson national forests. Overstocked conditions in the mixed conifer forests throughout the state continue to favor WSBW populations.

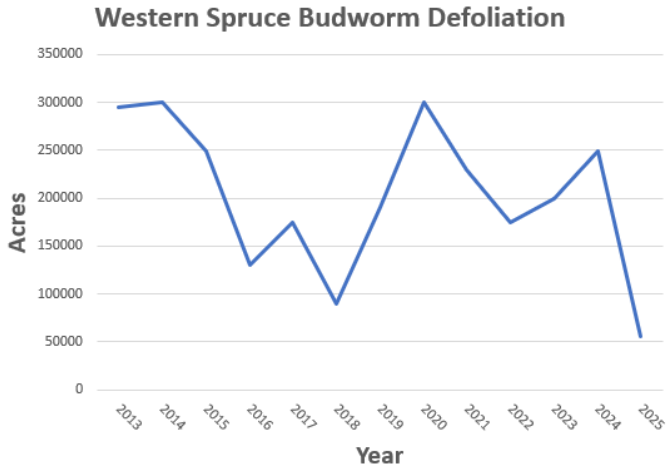


Figure 15: *Trend of statewide WSBW activity on all land types in New from 2008–2025.*

Figure 16: *Near view of WSBW caterpillar defoliation to Douglas-fir in Tres Piedras.*

Douglas-fir tussock moth (*Orgyia pseudotsugata*)

Defoliation of mixed conifer forests by caterpillars of the Douglas-fir tussock moth (DFTM) was mapped on approximately 42,000 acres in New Mexico in 2025, an increase from 18,000 acres mapped in 2024. Most of the defoliation occurred on the Cibola, Santa Fe, and Carson national forests, where 40,000 acres were mapped with heavy defoliation compared to 16,000 acres mapped in 2024. Defoliation by DFTM on state and private lands was mapped on approximately 1,800 acres compared to 2,000 acres mapped in 2024. DFTM was mapped on 930 acres of Tribal lands in 2025, mostly on the Jemez Pueblo Tribal lands. Trees defoliated by DFTM may re-foliate in the spring, however severely defoliated trees may be entirely killed or attacked by bark beetles. Egg mass sampling in 2025 indicates that many of the DFTM populations in New Mexico have collapsed mainly due to an endemic nuclear polyhedrosis virus (NPV).

Figure 17: *Mixed conifer trees in the Pecos Canyon defoliated by DFTM caterpillars.*

Figure 18: *A V-shaped DFTM caterpillar infected with NPV hanging by two prolegs.*

Piñon needle scale (*Matsucoccus acalyptus*)

Piñon needle scale (PNS) is a sap-sucking insect that kills needles of piñon pine causing defoliation and thinning of the trees canopy. 2025 saw increased activity of PNS with approximately 39,000 acres of piñon woodlands mapped on all land ownership compared to 16,000 acres defoliated in 2024. Most of the acreage mapped with PNS defoliation was south of I-40 on national forests, (23,700 acres). Approximately 5,000 acres of PNS were mapped on state and private lands and 11,700 acres mapped on Tribal lands. Defoliated trees may become stressed and attacked by piñon ips bark beetles. The canopy of piñon trees has a grayish appearance as the canopy becomes thinned due to defoliation by PNS.

Figure 19 (left): *Aerial view of PNS defoliated piñon trees appear grayish in color. Photo by Crystal Tishler, USFS.* ***Figure 20 (right):*** *Piñon needle scale egg masses are deposited on the mainstem, branches and base of piñon trees.*

Aspen defoliators

(western tent caterpillar; *Malacosoma californicum*)
(large aspen tortrix; *Choristoneura conflictana*)

Aspen defoliation decreased by 67% across all land types in 2025, where approximately 5,700 acres were mapped, compared to 18,000 acres mapped in 2024. Approximately 4,600 acres of defoliation in 2025 were mapped on national forests with the majority on the Santa Fe and Carson national forests. Aspen defoliation on state and private lands was mapped on approximately 900 acres in 2025 compared to 3,700 acres mapped in 2024. Tribal lands with aspen defoliation were mapped on approximately 200 acres in 2025, a 70% decrease from 2024. Nine hundred acres of aspen defoliation were mapped on state and private lands in 2025 compared to 3,700 acres mapped in 2024. Aspen trees can survive an early season defoliation event as they are able to regenerate leaves before the end of the growing season, allowing carbohydrate reserves to replenish.

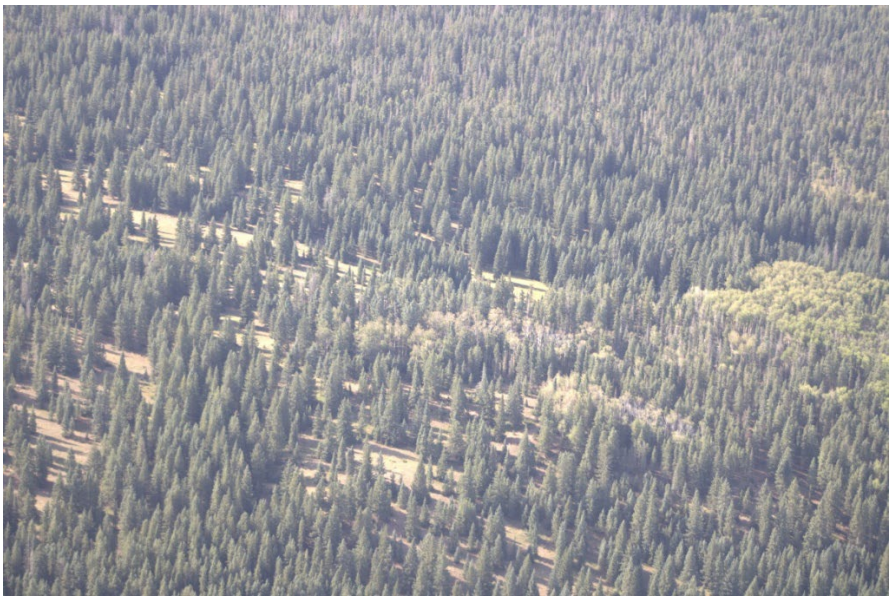


Figure 21: *Aspen defoliation in the Jemez Mountains of the Santa Fe National Forest.*

Figure 22: *Western tent caterpillar hosts include aspen, cottonwood, willows and chokecherry.*

ABIOTIC DISTURBANCE

Drought and heat

In the fall (September-October) of each year, the older interior canopy needles of ponderosa pine trees begin to turn yellow and are shed naturally from the tree. Trees that experience drought-heat stress, however, begin to display discolored yellow needles months before the needles shed naturally in the fall. Ponderosa pine forests impacted by drought and heat in 2025 increased by 66%, where approximately 12,000 acres were mapped across all land types. Approximately 11,000 acres of drought-heat discolored ponderosa pine were mapped on all national forests in 2025 compared to 3,800 acres mapped in 2024. Approximately 950 acres of drought-heat discolored ponderosa pine were mapped on state and private lands in 2025, a decrease from 3,000 acres mapped in 2024. 250 acres of drought-heat ponderosa pine were mapped on Tribal lands in 2025, a decrease of 34% from 2024 (380 acres). Ponderosa pines stressed by drought and heat may be more susceptible to attack from native bark beetles and twig beetles, especially in overstocked forests, due to soil moisture depletion that inhibits trees from producing resin, the trees' natural defense against bark beetle attack.

Figure 23: *A stand of ponderosa pine discolored by drought and heat in the Capitan Mountains. Photo by Crystal Tischler, USFS.*

CONCLUSIONS

Both temperature and precipitation impact the health of New Mexico's forests and woodlands. Because insects are cold-blooded animals, warmer conditions generally increase insect activity. Prolonged dry conditions often stress and weaken trees, predisposing them to infestation from insects and infection to disease and pathogens. 2025 was the second warmest year and 38th driest year on record for New Mexico. Fall and winter temperatures remained warmer and drier, allowing bark beetles to remain active late in the season. Large areas of ponderosa and piñon forests saw significant mortality from bark beetles, especially in the southern part of the state. Areas near burn scars from large wildfires continue to experience bark beetle attack on residual trees. 2025 conditions were especially favorable for Douglas-fir tussock moth caterpillars to defoliate mixed conifer forests, however, caterpillar populations in many areas of the state collapsed due to a naturally occurring nuclear polyhedrosis virus. Western spruce budworm defoliation in mixed conifer forests decreased significantly in 2025 but continues to be the most significant defoliator of mixed conifer forests in New Mexico.

Figure 24: *Heavy defoliation of mixed conifer forest stand in the Carson National Forest, 2025.*