

Utah Forest Health Highlights

2017

Forest Resources

Utah landscapes are diverse, and visitors from around the world, together with Utah locals, enjoy Utah's forests, which extends from deserts and canyons to the alpine zone.

While Utah is only 34% forested, these forests have high scenic, recreation, wildlife and other forest use values. In Utah's dry climate, healthy forests protect and enhance water quality and quantity, for a growing population.

In Utah, over 15.3 million acres of forests are administered by federal, state, and local agencies. Another 2.9 million acres are privately owned.

Detailed information on Utah's forest vegetation is available from Interior West Forest Inventory and Analysis (FIA). <http://www.fs.fed.us/rm/ogden/publications/utah.shtml>

Tree net growth and tree mortality estimates are based on FIA inventory 2006-2016 average. Tree mortality, averaged 24,389.4 thousand cubic feet. The averaged annual net growth of all live tree species on forested lands is -27,900.8 thousand cubic feet, which suggests that there has been more tree mortality, on average, than growth. The mortality that has contributed to this negative net growth is likely due to: drought, disease, past/current bark beetle outbreaks, and wildfire.



Components of Change

Several factors have contributed to the poor state of forest health; including drought, bark beetle outbreaks, large wildfires, and invasive weeds.

In 2017; 1,132 fires that burned 239,548 acres. There were four fires, greater than 10,000 acres, the largest was the Brian head fire, which burned 71,675 acres. The Brian Head fire was the fourth largest wildfire in state history and the most expensive, costing just under \$36 million. These costs do not include costs to rehabilitate the burn area.

Large fire consequences include; sterilization of soils when fires burn hot, spread of invasive weed species and potential loss of high elevation tree components, such as subalpine fir and Engelmann Spruce which may take a few hundred years to restore to mature Engelmann spruce stands.



Brian head fire smoke column
Photo by Buck Ehler (FFSL)

Forest Health Issues

Hundreds of Utah communities are at risk to catastrophic bark beetle induced mortality. In 1997, approximately 2.2 million acres of Utah's forests were rated moderate to highly susceptible to bark beetle attack. Over the past 20+ years, many of the acres rated susceptible have been affected by bark beetle.

Insect induced tree mortality is described in terms of acres affected, however, not all trees on these acres are

dead. Not all forested lands are surveyed, and not all the same acres are surveyed every year.

Spruce beetle caused mortality reduced by 40% from 2016 where 124,370 acres were affected, but is still at outbreak levels with 83,348 acres affected statewide in 2017. The largest number of acres affected in 2017 occurred in Duchesne and Summit counties. It should be noted that much of the mature Engelmann spruce throughout the state has been killed by the spruce beetle.

Western spruce budworm defoliation was notable in 2017, with 65,565 acres affected. Most damage was mapped in Beaver, Sevier, Garfield and Piute counties.

Aspen leaf blight (*Marssonina*) was noted statewide in 2017, with a total of 4,419 acres affected. This disease is more pronounced in years when spring weather is cool and wet, during initial leaf formation.

Invasive Species

Invasive species are non-native insects, diseases, or plants, which may become established, spreading rapidly, causing significant economic and ecological impacts to forest and urban trees.

Balsam woolly adelgid, *Adelges piceae* (Ratzeburg) (Hemiptera: Adelgidae) (BWA), is a tiny sucking insect that was introduced to North America from Europe and is a damaging insect of true fir. In Utah, subalpine fir (*Abies lasiocarpa*) is a highly susceptible host tree; white fir (*A. concolor*) is also a host, but is more tolerant.



BWA caused gouting on Subalpine fir branch

BWA white woolly masses on Subalpine fir trunk

In September 2017, balsam woolly adelgid (BWA) was confirmed in Utah. It has now been confirmed in Box Elder, Cache, Rich, Weber, Davis, Morgan, Salt Lake and Summit counties, with more counties likely added to the list in 2018.

Gypsy moth is a non-native insect defoliator, which if established in Utah, would alter our hardwood forest landscapes, adversely affecting our high-value watersheds. Utah continues an aggressive monitoring program statewide, to catch potential infestations before they become established. Gypsy moth has not been detected in Utah since 2008.

Emerald ash borer (EAB) is an invasive beetle that attacks only ash trees. It may be one of the most destructive forest insects to invade the United States.

EAB was first detected in Michigan. It is thought to have been in wood packing material, imported from its native Asia. Since then, EAB has been found in more than 20 mid-western and eastern states, killing more than 50 million ash trees.



Emerald ash borer photo: State.sc.us

In September of 2013, EAB was found in and around Boulder, Colorado. Since then, it has expanded outside of the city of Boulder, and perhaps throughout Boulder County.

To date, EAB has not yet been discovered in Utah. The transport of firewood or other woody materials, made of ash, may introduce it in the future. Evidence suggests EAB is generally established in an area for several years before it is detected (see USDA's EAB Pest Alert for more information).

Noxious weeds are a continuing problem for all Western states. They have the ability to aggressively colonize disturbed habitats, displacing native plant species, and alter ecosystems.

As of 2013, approximately 338 species of exotic aquatic and terrestrial plants infest lands in the State of Utah. Currently, Utah has declared 54 of these species as noxious weeds.



Puncture Vine
Photo Courtesy of Salt Lake County

The exact acreage of lands infested by noxious weeds is unknown; however, every county in Utah is infested by at least ten noxious weed species. Many species of exotic aquatic and terrestrial plants infest the State.



Zion Narrows: photo by Danon Hulet (FFSL)

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