

# Utah Forest Health Highlights

2011

## Forest Resources

Utah forests are as diverse as the landscape itself. Visitors from around the world, together with Utah locals, enjoy Utah's renowned forests that span from canyon lands to the alpine zone. While Utah is only 29% forested, these forests have high scenic, recreation, wildlife and other forest use values that make forest health very important. In Utah's dry climate, healthy forests protect and enhance water quality and quantity for Utah's growing population.

Figure 1 presents a summary of forest cover, or forest type, on all land ownerships using the latest annualized FIA surveys from 2002 to 2011. Over 15.1\* million acres of forests are administered by federal, state, and local agencies. Another 3 million acres are privately owned. Detailed information on Utah's forest vegetation is available from the [Interior West FIA](#).

*\* acres of forest type decreased slightly from the 2006 forest health highlight report because FIA annual reports were based on 10% forest cover rather than 5% forest cover used previously.*

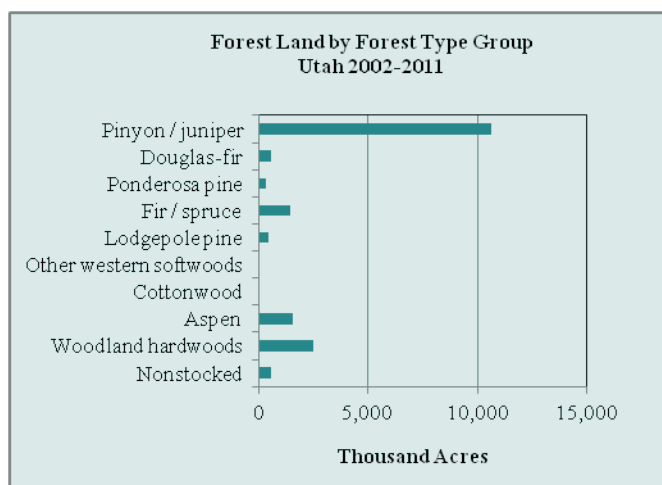


Figure 1



## Components of Change

Several factors have contributed to the decline in forest health including historic logging, grazing patterns, and fire exclusion. Drought conditions can detrimentally affect forest health causing significant changes in vegetative conditions, particularly if combined with these other human-caused practices. Forest conditions throughout much of Utah are composed of dense stands that are relatively uniform in age. As species or age class composition changes due to large-scale insect outbreaks, large



Fire in Pinyon-juniper

amounts of woody debris accumulate. Because of these alterations, many lower elevation forested landscapes are now susceptible to more severe wildfire. Although abundant spruce mortality occurs in many spruce-fir high elevation sites, stand replacing wildfire intervals are much more infrequent than lower elevation sites and often driven by suitable fire weather. Fire activity in 2011 included 1102 fires that burned 62,783 acres. Approximately 42,000 acres was attributed to the Twitchel fire on the Fishlake National Forest. For more information visit <http://www.nifc.gov/nicc/index.htm> Approximately 2.2 million acres of Utah's forests are rated moderate to highly susceptible to bark beetle attack. Abundant downed woody debris created by bark beetle outbreaks could lead to more severe wildfires, particularly at lower elevation sites.

Figure 2 shows average annual net growth from 2002 through 2011. All live trees on forested lands has averaged -4,556 thousand cubic feet per year, which suggests that there has been more mortality on average than growth. Figure 3 includes tree

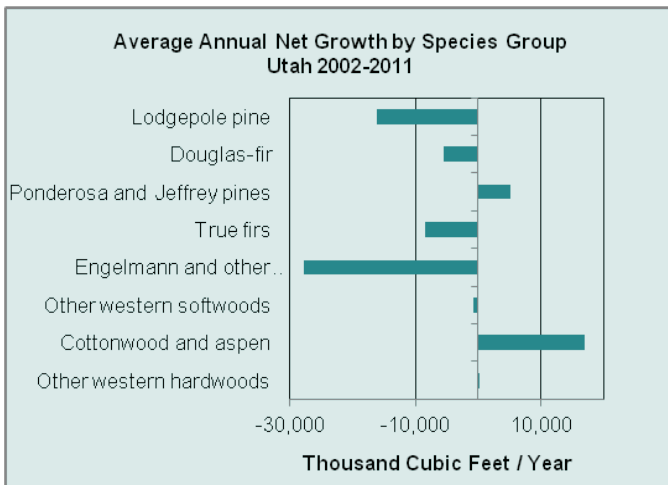


Figure 2

mortality, which has averaged 23,341 thousand cubic feet per year. Net growth and growth loss estimates are based on the most recent 10 years of FIA inventory. However, it is not a complete representation of the state, and numbers will change as additional annual surveys are completed.

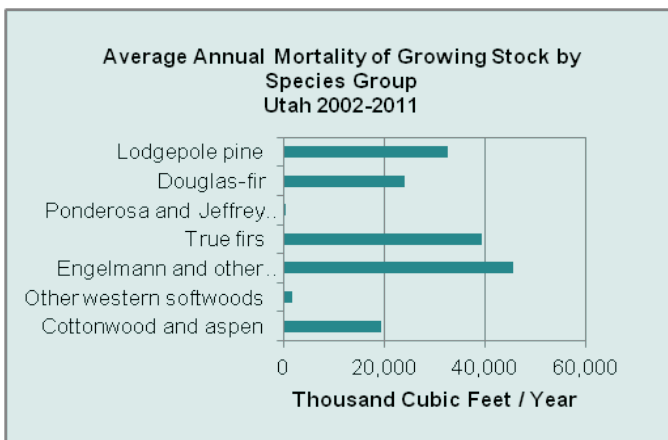


Figure 3

## Forest Health Issues

With nearly all Utah forestland at moderate to high risk from catastrophic wildfire, and approximately 2.2 million acres also at moderate to high risk for bark beetle attack, the urgency for action has never been greater. Hundreds of Utah communities and lives are at risk from fire and catastrophic bark beetle induced mortality.

Mortality trends are described in terms of acres affected, however, not all trees on these acres are dead. Thus, an estimate of the number of trees killed is also provided. Not all forested lands are surveyed, and not all the same acres are surveyed every year.

In 2011, insect and disease-caused tree mortality generally decreased from 2010. Mountain pine beetle in lodgepole pine decreased 70%. Western spruce budworm and Douglas-fir beetle decreased 80%. Subalpine-fir mortality decreased by 50%. The decrease in insect mortality can be attributed to the depletion of suitable host type and the cool and moist weather conditions, which are not conducive to insect brood establishment, development, and survival. Figure 4 summarizes 2011 aerial survey collected data for insect and disease agents causing

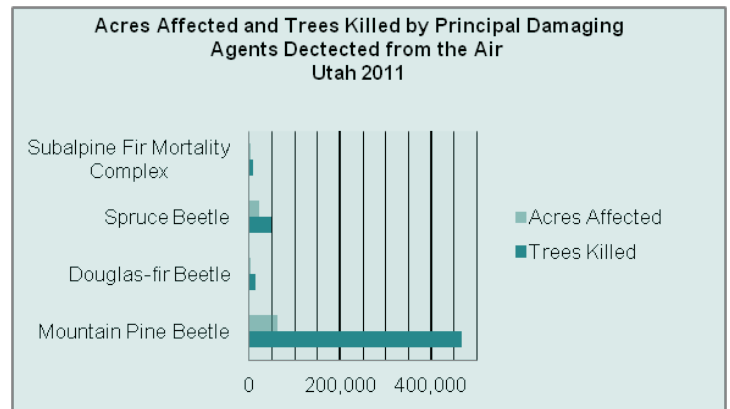


Figure 4

tree mortality or decline in Utah's forests. Increasing aspen decline and dieback due to insect and disease has been mapped since 2003. Damage peaked in 2007 at 126,000 acres, and then decreased every year since, with only 10,000 acres in 2011. Damage was largely caused by a complex of canker diseases and insect borers, but defoliators played a role in some areas.



Scattered Douglas fir beetle induced mortality

**Gypsy moth** is a non-native insect defoliator that, if established, would alter our hardwood forest landscapes adversely affecting our high-value watersheds. Utah continues an aggressive monitoring program to delineate potential infestations before they become established in Utah. Delimiting and monitoring activities in 2011 trapped no male gypsy moths; the last male gypsy moth to be captured during Utah surveys was in 2008.

**Noxious weeds** are a continuing problem for all Western states. They have the ability to aggressively colonize disturbed habitats thus displacing native plant species and altering ecosystems. Several state and federal agencies have the responsibility for monitoring and controlling noxious weeds. As of 2011, approximately 338 species of exotic aquatic and terrestrial plants infest lands in the State of Utah. Utah has declared 27 of these species as noxious weeds.

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. Counties with the most noxious weed species reported include Cache, Box Elder, Utah, Weber, and Salt Lake. Counties with the least noxious weed species reported include Garfield, Piute, Wayne, Kane, and Washington.

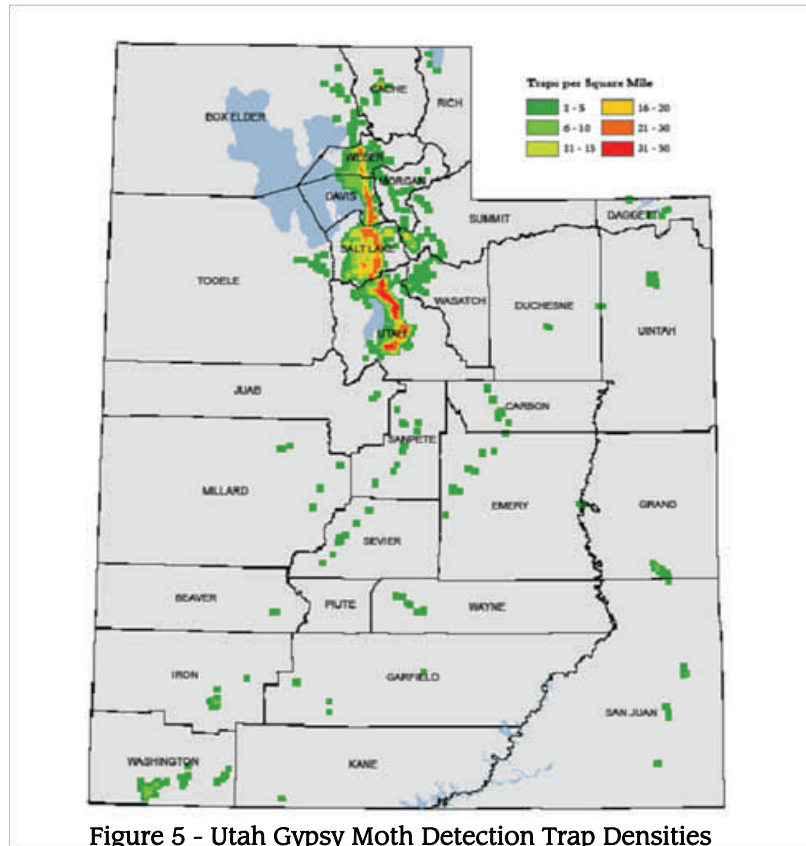




Figure 5 - Utah Gypsy Moth Detection Trap Densities

**For More Information:**

	<p><b>Forestry, Fire &amp; State Lands</b>          1594 W North Temple          Salt Lake City, UT          84114-5703          801-538-5555</p>		<p><b>Forest Health Monitoring Program</b>          USDA Forest Service          324 25<sup>th</sup> Street          Ogden, UT 84401          801-625-5162</p>	<p><b>Interior West Forest Inventory &amp; Analysis</b>          USDA Forest Service          507 25<sup>th</sup> St          Ogden, UT 84401          801-625-5388</p>
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