

Utah Forest Health Highlights 2008



The Forest Resource

Utah forests are as diverse as the landscape itself. Forest visitors from around the world, and those that live in the

state, visit Utah's renowned canyon lands and alpine getaways to enjoy the great outdoors. While Utah is only 29% forested, Utah's forests have high scenic, recreation, wildlife and other forest use values, so it is important to be aware of overall forest health. Healthy and resilient forests provide outdoor experiences for future generations. 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 2000 to 2007. Over 15.1* million acres of forests are administered by federal, state, and local agencies. Another 3 million acres are privately owned. Principle forest types in the state are pinyon-juniper (56%), hardwoods such as aspen, birch and oaks (20%), fir and spruce (8%), lodgepole-ponderosa (5%) and Douglas-fir (4%). 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.

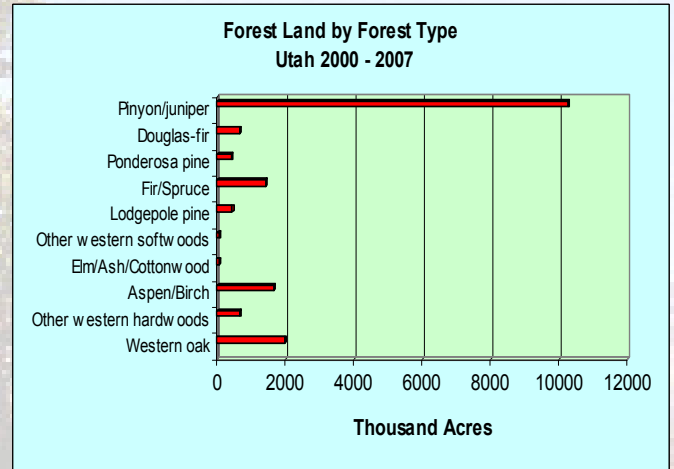


Figure 1. Forest Land by Forest Type

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 amounts of woody debris accumulate. Because of these alterations, many lower elevation forested landscapes are now susceptible to more severe wildfire as a result of an increase in down woody debris. 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 declined significantly in 2008 from 629,000

acres burned in 2007 to 28,490 acres, a decrease in wildfire affected acreage of 95 percent (Figure 2). In 2008 approximately 21 Wildland Fire Use fires were allowed to burn over 3,060 acres to meet resource objectives. 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.

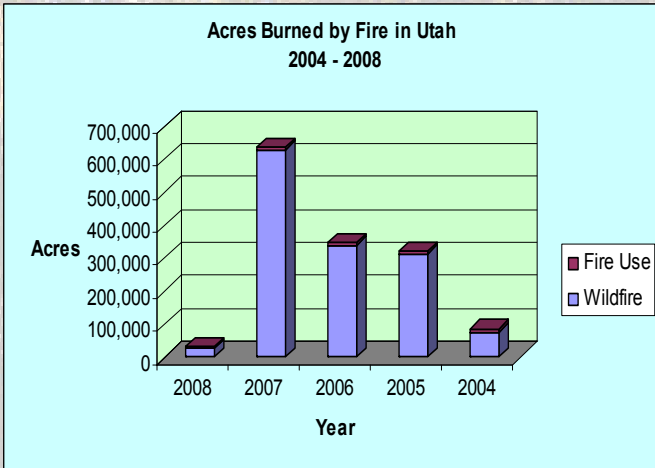


Figure 2. Acres Burned by Fire in Utah

Figure 3, shows average annual net growth from 2000 through 2007 of all live trees on forested lands has averaged 35,578 thousand cubic feet per year. Figure 4, includes tree mortality which has averaged 117,482 thousand cubic feet per year. Net growth and growth loss estimates are based on the most recent 8 years of FIA inventory. However, it is not a complete representation of the state, and numbers will change as additional annual surveys are completed.

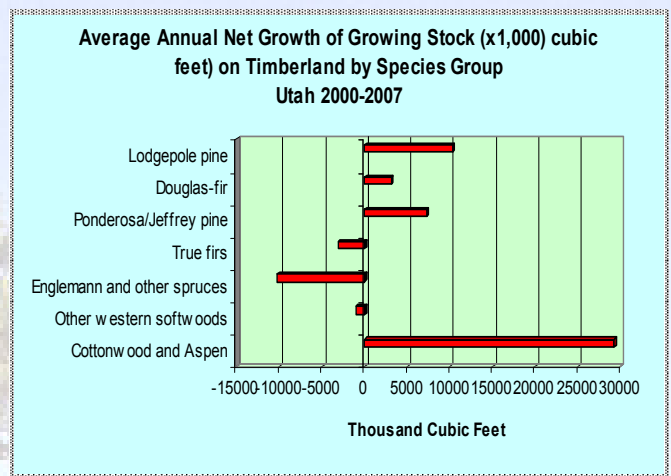


Figure 3. Average Annual Net Growth of Growing Stock

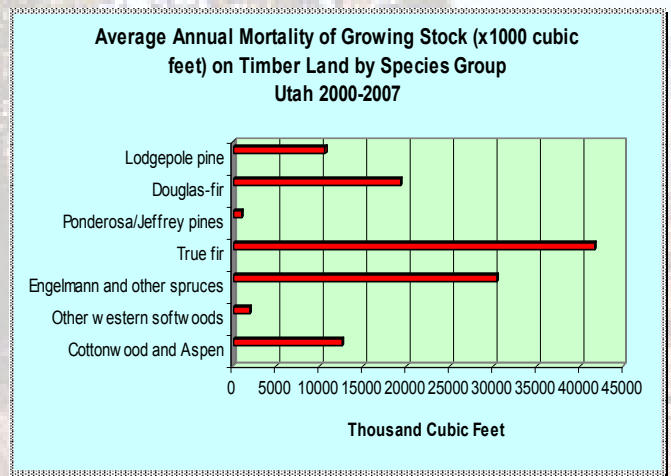


Figure 4. Average Annual Mortality of Growing Stock

Forest Health Issues

Figure 5, summarizes 2008 aerial survey collected data for insect and disease agents causing tree mortality or decline in Utah's forests. Overall, aerial observation of damaging insect/disease agents decreased in 2008. **Mountain pine beetle** caused mortality remained static with 276,885 acres affected in 2008 compared to 273,080 acres in 2007. Acres affected by **Douglas-fir beetle** and **spruce beetle** decreased approximately 36 and 32 percent respectively, compared to 2007 acres affected by these insects. **Aspen** insect/disease affected acreage declined in 2008 to approximately 70,298 acres affected from 126,091 recorded acres

in 2007. Another dramatic change from 2007 was a 68% decline in **fir engraver** beetle affected acres in 2008 to approximately 3,405 acres. Acres affected by **western spruce budworm** and **Ips in pinyon pine** declined 94 and 93% respectively. The decline in forest pest affected acres could be a result of a much improved water year in 2008. The average snow pack total for the state was 88% percent of normal for 2008 compared to 23% in 2007. Total annual precipitation for 2008 averaged 95% of normal compared to 83% in 2007.

Figure 6 - Utah Gypsy Moth Detection Trap Densities

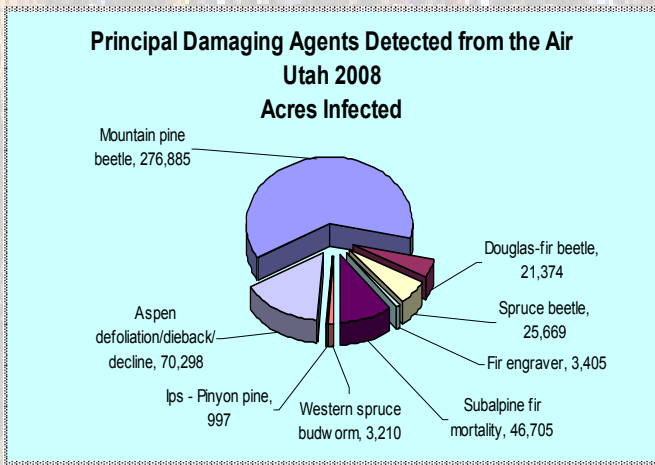
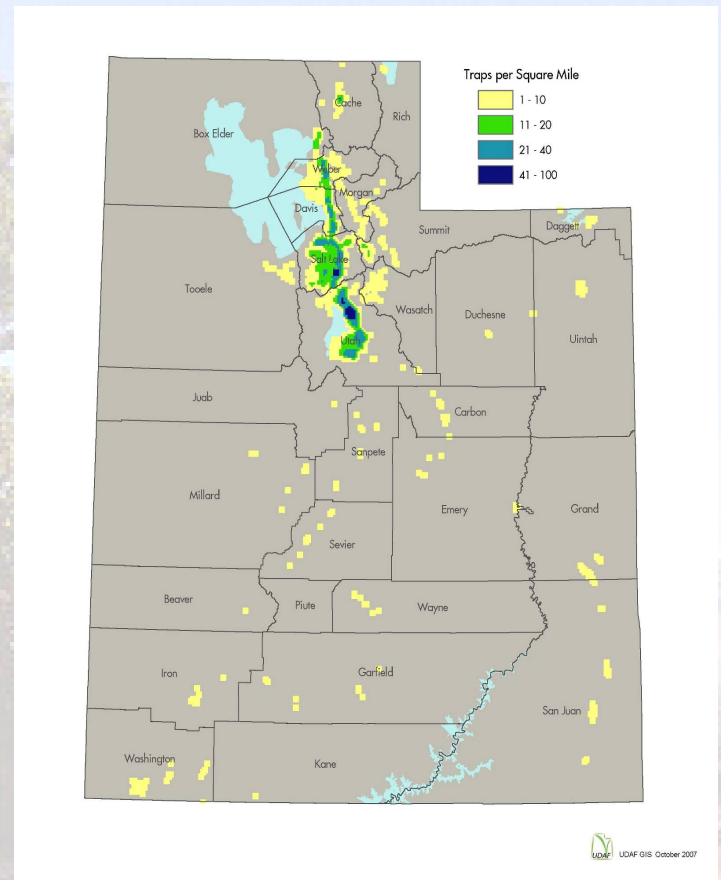


Figure 5. Principal Damaging Agents Detected from the Air in Utah

The **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 2008 trapped two single male gypsy moths, one captured in an urban site and the other in a rural area. Two urban catches were recorded in 2007. Subsequent delimitation surveys in 2008 for each of the 2007 positive trap captures resulted in no additional male moths trapped in either site.

Non-native invasive plants are increasing in Utah's forests and rangelands. Eighteen plants are currently identified by the state as noxious weeds (<http://www.utahweed.org>). The distribution of several of these plants currently impacting forest and range land are captured in Figures 7-10. Others, such as spotted knapweed and Canada thistle, are found throughout the state. The state has 15 cooperative weed management areas working together to address noxious weed issues within the state. In 2007, state and private land owners treated approximately 3,400 acres for noxious weeds while federal agencies treated over 25,000 acres.

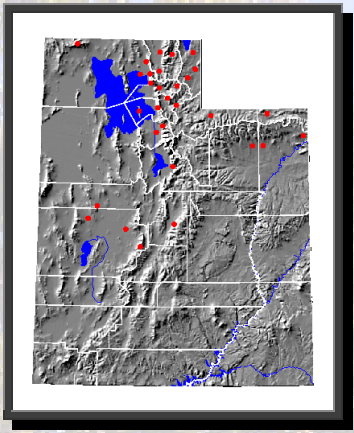


Figure 7 - Dyer's Woad

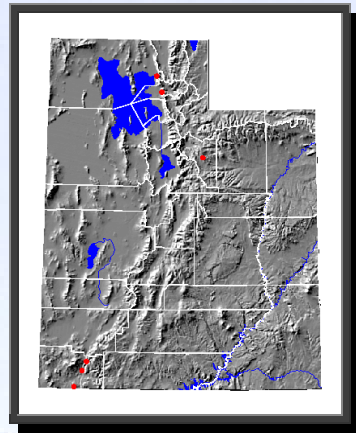


Figure 9 - Yellow Starthistle

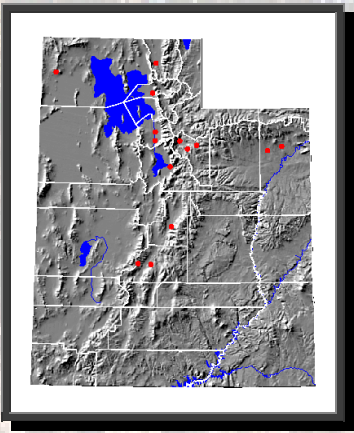


Figure 8 - Leafy Spurge

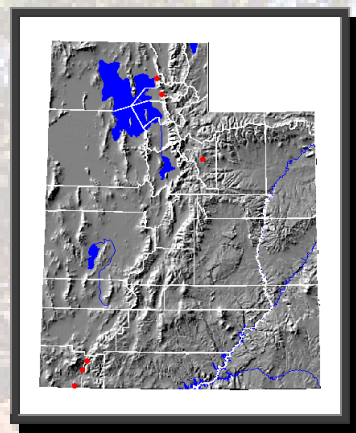


Figure 10 - Russian Knapweed

(From Utah State University, Remote Sensing Laboratory <http://extension.usu.edu/weedweb/nweeds/NW.ht>)

For More Information:

Forest Health Monitoring Program

USDA Forest Service
324 25th Street
Ogden, UT 84401
(801) 625-5162

Interior West Forest Inventory & Analysis

USDA Forest Service
507 25th St
Ogden, UT 84401
(801) 625-5388

Utah Forestry, Fire and State Lands

1594 W. North Temple - St
Salt Lake City, UT 84114
(801) 538-5555

