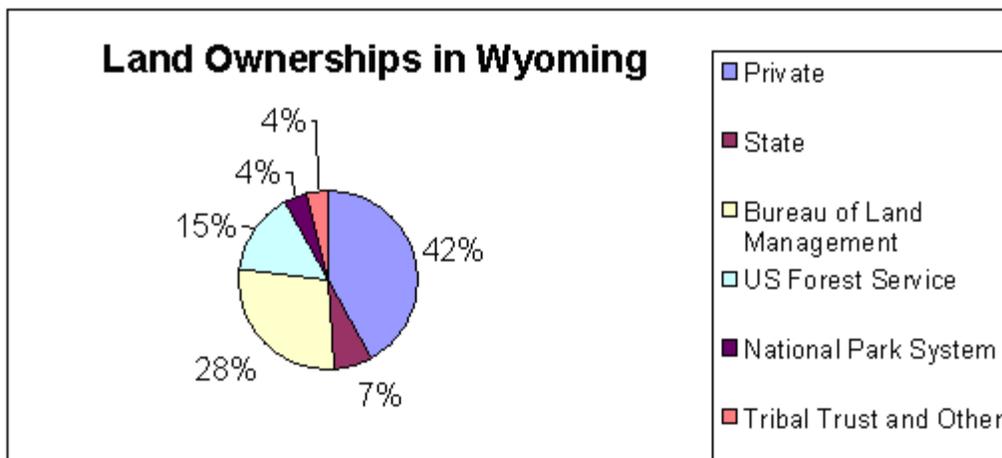
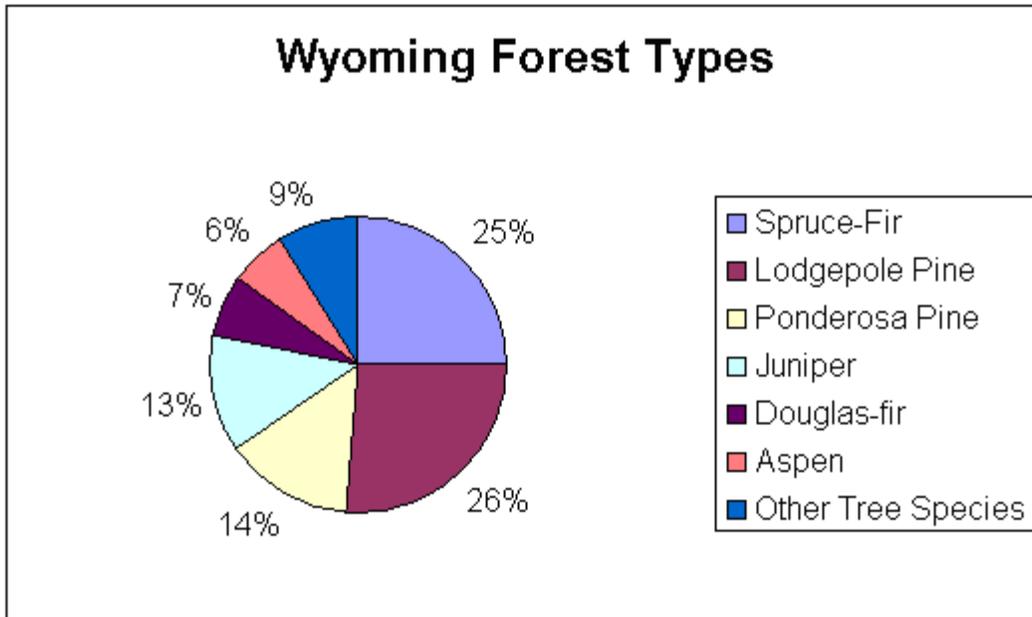


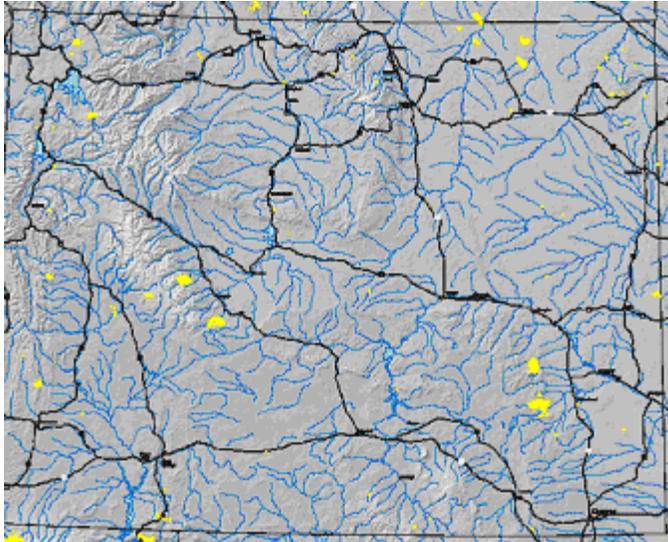
The Forest Resource

Wyoming contains 9.8 million acres of forested lands. These forests provide many valuable resources including wood fiber, recreation, tourism, wildlife and fish habitat, cattle/sheep grazing, mineral resources, and water production. Approximately 4.3 million acres are used commercially for wood fiber production. Over 17,000 forested acres were harvested in 2002. Water from forested lands provides 19,437 miles of streams and 427,219 surface acres of lakes in Wyoming.



Special Issues

Wildfires - Four years of extensive, severe drought promoted a busy wildfire season in 2002 for Wyoming. Over 270 wildfires started in Wyoming during the year and burned over 56,000 acres of forest and range lands.



| Largest Wildfires - Wyoming 2002 | Location (nearby towns) | Dates Started - Ended | # of acres burned |
|---|--------------------------------|------------------------------|--------------------------|
| Daley Complex | Gillette | June 28 - July 16 | 37,000 |
| Reese Mountain | Wheatland | June 29 - July 11 | 19,334 |
| South Fork II | Lander | June 30 - July 20 | 15,000 |
| Hensel | Wheatland | June 7 - Aug.5 | 14,730 |
| Pass Creek | Lander | Aug.24 - Sept.9 | 13,433 |

Forest Health - "It's not a good time to be a conifer in WY," said an observer who was extensively traveling Wyoming's forests in 2002. In recent years, many bark beetle populations increased to outbreak and epidemic levels in these forests. The various bark beetle infestations are dramatically killing thousands of conifers throughout the forests in Wyoming. Adding to the beetle problems are disease problems affecting limber and whitebark pines, and subalpine firs.

Mountain pine beetle, *Dendroctonus ponderosae*, attacks lodgepole, ponderosa, limber, and whitebark pines in Wyoming. This beetle is killing an estimated 200,000 pines in Wyoming.

Yellowstone National Park, the Bridger-Teton and Shoshone National Forests experienced thousands of whitebark pines and limber pines dying due to activities of this beetle. Mountain pine beetle, along with some forest diseases, are playing a significant role in limber pine and whitebark pine decline on over 58,000 acres of white pines in western Wyoming.

This beetle is also causing considerable damage in ponderosa pine in the lower foothills of the Bighorn Mountains from Johnson County and north into Sheridan County on state, private, and federal lands. With populations in this area of the Bighorns increasing, tree mortality caused by this beetle will be greatly visible in 2003.

Mountain pine beetle continues to infest large areas of the Wyoming side of the Black Hills. Crook and Weston Counties contained mountain pine beetle infestations with over 15,000 trees killed in this area. Populations in this area increased from 2001 to 2002 with pockets of 20-50 dead ponderosa pines common in north-eastern Wyoming.

Small pockets of dead lodgepole and ponderosa pines, killed by mountain pine beetle, were

characteristic in the Laramie Mountain, Sierra Madre, and Snowy Mountain Ranges of south-central and south-eastern Wyoming. Many of these pockets contained over 150 dead trees.



Mountain pine beetle infestations along the eastern foothills of the Bighorn Mountains.

Spruce beetle, *Dendroctonus rufipennis*, attacked hundreds of Englemann spruce in Wyoming. In the Bighorn Mountains, Shell Reservoir and Ten Sleep Canyon areas are experiencing epidemic levels of spruce beetle. Following small blowdown events in 1997-1999, spruce beetle populations are increasing in the Sierra Madre and Snowy Mountain Ranges of the Medicine Bow National Forest. Several large spruce beetle infestations were detected along stream bottoms in the Sierra Madre mountain range.

Large pockets of spruce tree mortality caused by this beetle were observed in Yellowstone National Park east of Yellowstone Lake and in the Teton and Absaroka Mountain Wilderness Areas in western Wyoming. These infestations started in the wilderness areas and national park, and now have moved out to impact large areas of state, BLM and other national forest lands. Spruce beetle populations increased in the Wind River Range, partly in conjunction with fires that occurred in the area over the past few years.

Spruce beetle mortality on the Shoshone National Forest.



Douglas-fir bark beetle, *Dendroctonus pseudotsugae*, kills large Douglas-fir trees and is causing extensive damage in Wyoming forests. Douglas-fir beetle infestations frequently result from disturbance events that create large volumes of weakened Douglas-fir trees in the vicinity of susceptible stands. In 1988, extensive wildfires occurred in Yellowstone National Park and the Shoshone National Forest. Populations of Douglas-fir beetle increased in the fire-scorched trees. Subsequent generations of the beetles moved from these injured trees to undamaged trees in nearby forest stands (Schaupp et. al 2002).

Significant Douglas-fir mortality is occurring throughout river corridors in western Wyoming. There was an increase in Douglas-fir beetle activity during 2002 with over 11,000 trees killed along the Snake River and Greys River on the Bridger-Teton National Forest. Significant mortality is also occurring throughout the North and South Forks of the Shoshone River. Impacts are being felt as trees die in campgrounds and around summer cabins and resorts and these scenic corridors are impacted. There is also a growing concern over fire hazard with the accumulation of dead trees in these areas. Douglas-fir beetle is also on the increase on the southern end of the Shoshone near Dubois. In all of these areas, the beetle populations are expected to rise and cause even more mortality in the coming year. Suppression and control efforts to minimize impacts to these high value recreation areas are ongoing on both the Shoshone and Bridger-Teton National Forests.

The west and east fronts of the Bighorn Mountains are experiencing outbreaks of Douglas-fir beetle. On the west side populations have significantly increased in both Shell and Tensleep Canyons. These areas are expected to continue to suffer further mortality in 2003.



Douglas-fir beetle infestations along the North Fork of the Shoshone River.

White pine blister rust disease, caused by the fungus, *Cronartium ribicola*, infects Wyoming's white pines (limber and whitebark) and Ribes plants (currants and gooseberries).

White pine blister rust ranges from low to severe infection levels in whitebark and limber pine stands throughout Wyoming forests. Some stands have high disease levels with more than 60% of the trees infected and dying due to the rust. Forest Service aerial surveys show white pine blister rust, along with other damaging agents of mountain pine beetle, dwarf mistletoe disease, and needle blights damaged more than 46,000 acres of white pine in northern Wyoming.

White pine blister rust caused marked decline in limber pines in the Laramie, Pole, and Snowy Mountain Ranges in south-central and south-eastern Wyoming. Limber pine is a major tree species throughout this area, often growing on harsh sites where no other tree vegetation can grow. Extensive studies and monitoring are ongoing in all of these white pines sites to better understand this disease and its impact in Wyoming.

Rust disease blisters on whitebark pine.



Subalpine fir decline, caused by the Western balsam bark beetle *Dryocoetes confusus*, and root rotting diseases such as *Armillaria ostoyae*, has been a serious forest health concern of forest managers working with subalpine fir sites in Wyoming.

There has been an outbreak of *Dryocoetes* continuing in the northern Bighorns causing subalpine fir decline for over 5 years. Much of the outbreak has been associated with blowdown events that occurred in the middle 1990's. This outbreak appears to be going down slightly because much of the suitable host material has been destroyed.

Many stands of subalpine fir are declining on private and state properties in central Wyoming, particularly on Casper Mountain in Natrona county. In 2002 aerial detection surveys, most of the mortality of subalpine fir occurred in the North Laramie Range where over 1600 trees were killed. Large pockets of subalpine fir are declining on Little and Pine Mountains south of Rock Springs, and in the Medicine Bow and Sierra Madre Mountains in Wyoming.

Insect and disease agents continue to cause significant subalpine fir mortality on the Bridger-Teton and Shoshone National Forests. Recently, over 57,000 trees were killed on the Bridger-Teton National forest and over 19,000 on the Shoshone National Forest.

Other Insects, Diseases, and Abiotic Damages of Concern and Monitoring in Wyoming:

- Western spruce budworm
- Pine engraver beetle
- Gypsy moth
- Dwarf mistletoes
- Root Diseases
- Comandra blister rust and Western gall rust diseases
- Needlecast and needle blight diseases
- Strong wind and blow-down damages
- Fire and drought damages

For Forest Health Assistance in Wyoming:

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