2004 WASHINGTON FOREST HEALTH HIGHLIGHTS

General Forest Conditions

The USDA Forest Service regularly monitors Washington's forests. Their Forest Inventory and Analysis and Forest Health Monitoring groups measure a statewide grid of permanent plots and various remotely sensed data for current forest condition, trend information and analysis.

The following information came from federal surveys completed between 1988 and 1997 (figures 4&5 also contain 2002 information).

Washington has approximately 22 million acres of forest land which are mostly dominated by conifer species such as Douglas-fir, western hemlock and ponderosa pine. Forests are classified by "forest type" named for the dominant tree on the site. Red alder, bigleaf maple and cottonwood are the most prevalent broadleaf species.

Table 1: Number of acres of forest land by forest type. 1

Douglas-fir	8,414,038
Western hemlock	2,685,372
Ponderosa pine	2,073,058
Red alder	1,403,420
Pacific silver fir	1,116,463
Nonstocked	1,102,992
Mountain hemlock	928,213
Lodgepole pine	754,878
Grand fir	531,803
Subalpine fir	515,754
Western redcedar	508,696
Englemann spruce	348,331
Misc. softwoods	333,990
Western larch	304,468
Bigleaf maple	287,584
Misc. hardwoods	244,152
Unknown	203,394
Cottonwood	118,409
Total	**21,875,015**

Figure 1. **Washington forest area in acres by forest type** 2

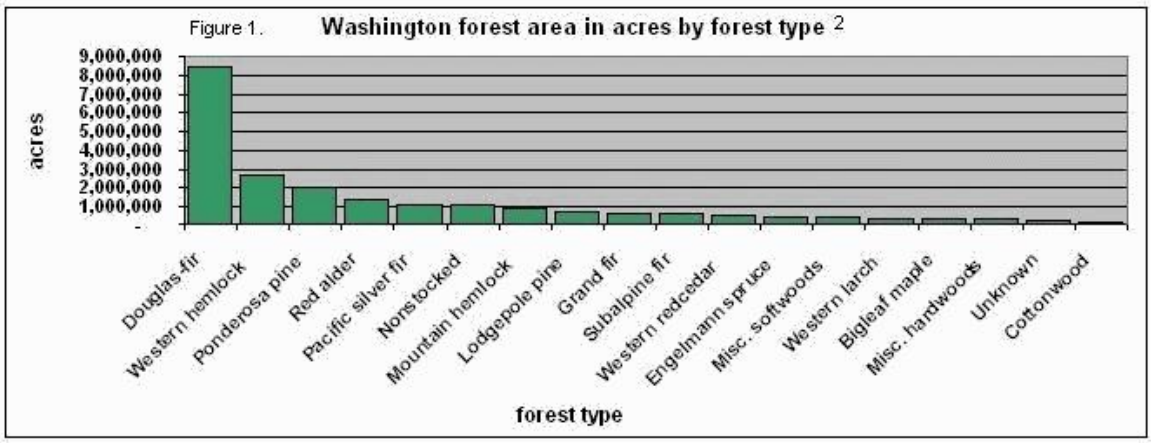


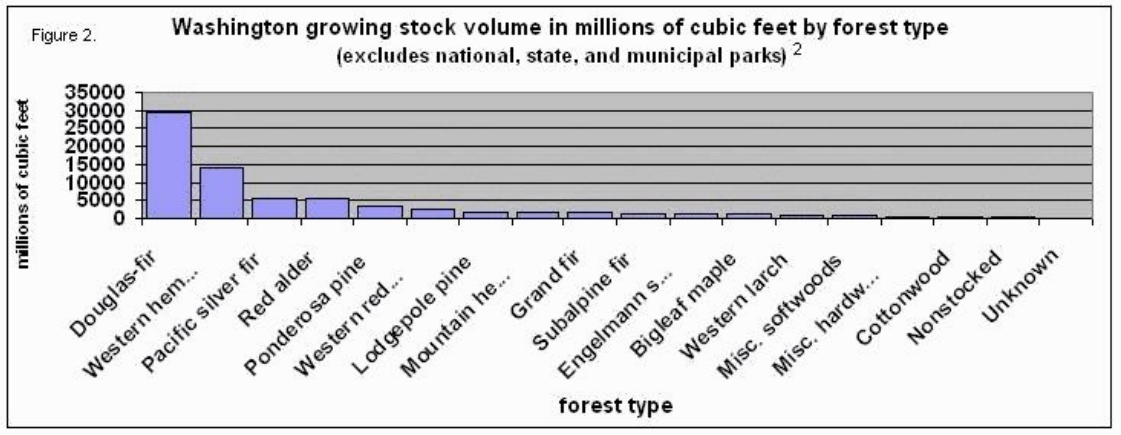
Table 2: Wood Volume in Washington Forest Types. 1

Douglas-fir	29,514
Engelmann spruce	1,293
Grand fir	1,711
Lodgepole pine	1,868
Misc. softwoods	793
Mountain hemlock	1,787
Pacific silver fir	5,606
Ponderosa pine	3,275
Subalpine fir	1,380
Western hemlock	13,904
Western larch	880
Western redcedar	2,646
Bigleaf maple	1,113
Cottonwood	280
Misc. hardwood	488
Red alder	5,404
Nonstocked	239
Unknown	74
Total	**72,256**

In addition to the number of acres covered, forests are also measured in the volume of wood present. A “cubic foot” of wood represents a piece of wood that is one foot tall, one foot wide, and one foot thick. For example, an eight-inch diameter log that is ten feet long contains about 3.5 cubic feet of wood.

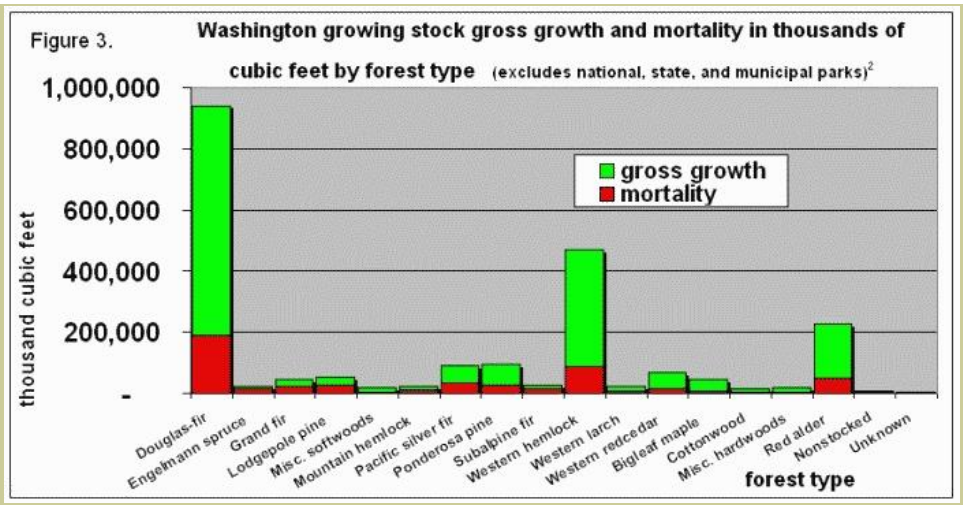
The live trees in Washington’s forests total approximately 72,256 million cubic feet of wood. Sixty percent of this wood is Douglas-fir (29,514 million cubic feet, 40.8%) and western hemlock (13,904 cubic feet, 19.2%). The major eastern Washington conifers are ponderosa pine, grand fir and western larch. Eastern Washington forests contain much less wood because the relatively dry eastern Washington forests have fewer trees, smaller trees and cover less land area.

Figure 2.

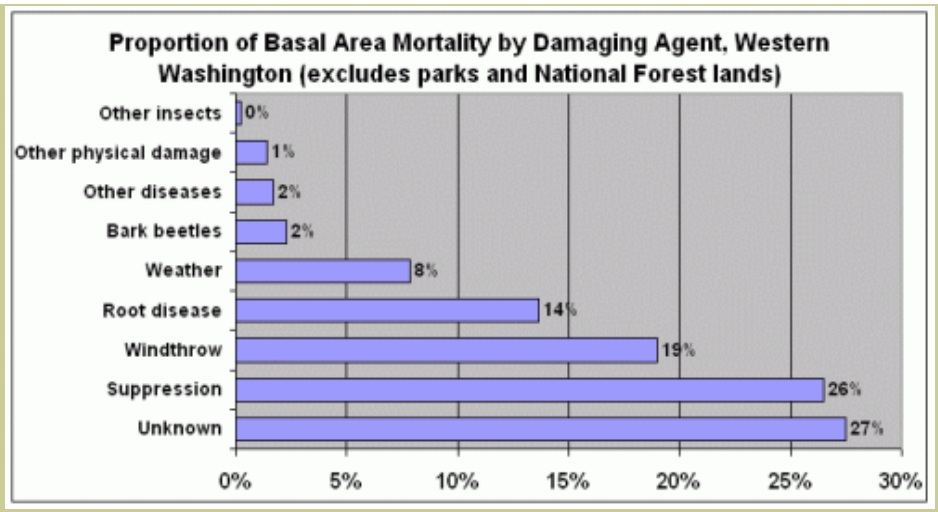


As most forest trees continue to grow, a few also die. The ratio of mortality (death) to growth provides information on whether forests are increasing or decreasing in different ways. If growth is greater than mortality then this ratio is greater than one and the forest volume is increasing. If growth equals mortality then this ratio equals one, and the forest volume is unchanged. If mortality is greater than growth then this ratio is less than one, more trees are dying and the forest live volume is decreasing.

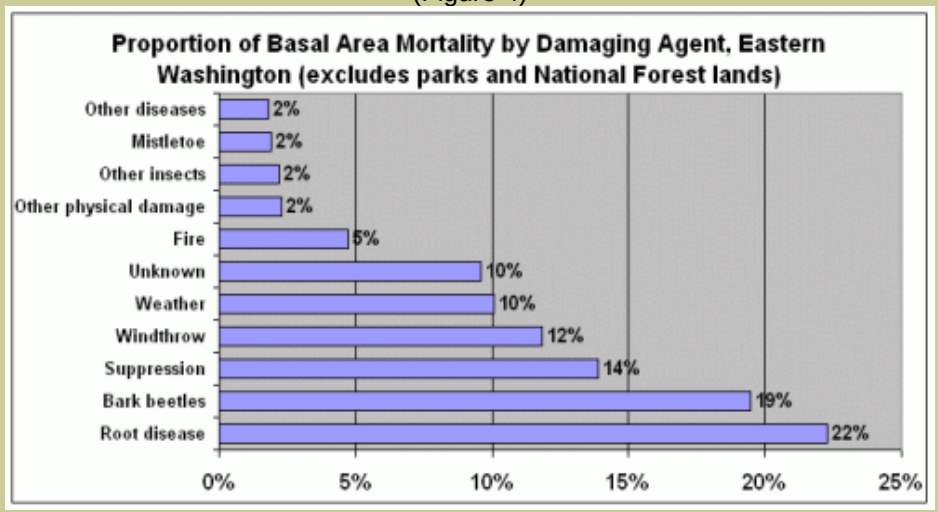
The data in Figure 3 indicate that some forest types are increasing in volume and some are declining. The average ratio of mortality to net growth in Washington, outside national, state, and municipal parks is 2.68, indicating that growth is more than twice as large as mortality. In Douglas-fir, western hemlock, western redcedar and bigleaf maple forests, growth is about four times mortality. Lodgepole pine, grand fir and mountain hemlock forests have growth that is about equal to mortality. Mortality exceeds growth in Engelmann spruce and subalpine fir forests



In addition to trees removed by logging and land clearing, insects, diseases, fire, wind and a variety of other agents cause tree death. In western Washington (Figure 4), when the cause of death could be determined, it was most often attributed to physical damage or fire, weather damage, and root disease. In eastern Washington (Figure 5) trees were most often killed by physical damage or fire, bark beetles, and root disease.



(Figure 4)



(Figure 5)

1. Hiserote, B. and K.L. Waddell. 2003. The PNW – FIA Integrated Database User Guide: Version 1.3. Internal Publication: Forest Inventory and Analysis program, Pacific Northwest Research Station. Portland, Oregon.

2. Prepared by Paul Dunham, Forest Inventory and Analysis program, Pacific Northwest Research Station. Portland, Oregon. Re-formatted by Jeff Moore, Washington Department of Natural Resources. Olympia, Washington.

Aerial Survey

Overview

The Washington Department of Natural Resources and USDA Forest Service strive to help landowners identify and manage forest insect and disease problems.

An annual, aerial sketch mapping survey is key to monitoring forest insect and disease activity levels across the state. The survey is flown at 90-120 mph, about 1,500 feet above ground level.

Two observers (one on each side of the plane) look out over a two-mile swath of forestland and mark either on a digital touch screen or on a paper map groups of recently killed or defoliated trees.

They then record a code for the agent that likely caused the damage (usually inferred from the size and species of trees and the pattern or “signature” of the damage) and the number of trees affected. No photos are taken.

The results are then made available to interested landowners as maps, electronic data, and summary reports. Covering nearly all of Washington’s forests with the aerial survey costs only about 1/3 of a cent per acre (that’s three acres for a penny!).

These maps and reports produce excellent trend information and historical data. Moreover, they represent a great tool for a quick look at what could be going on in your neck of the woods.

Survey maps are now available almost as soon as they are flown! Just go to http://www.fs.fed.us/r6/nr/fid/as/quad/index.shtml and click on the map you want to view. These pages can take one to several minutes (depending on your connection speed) to load because they are memory intensive. From there you can plot out the entire map or you can zoom in and view an area of particular interest. To print just the scene showing on your computer screen, Alt+Print Screen, open up a graphics friendly program such as Paint or Word, paste it in and print it on a field-handy sheet of paper. This resource can provide timely information for current season pest evaluations and forest management work. For cartographers or GIS users, this data set is available at:

http://www3.wadnr.gov/dnrapp6/dataweb/dmmatrix.html,under "Forest Disturbance".

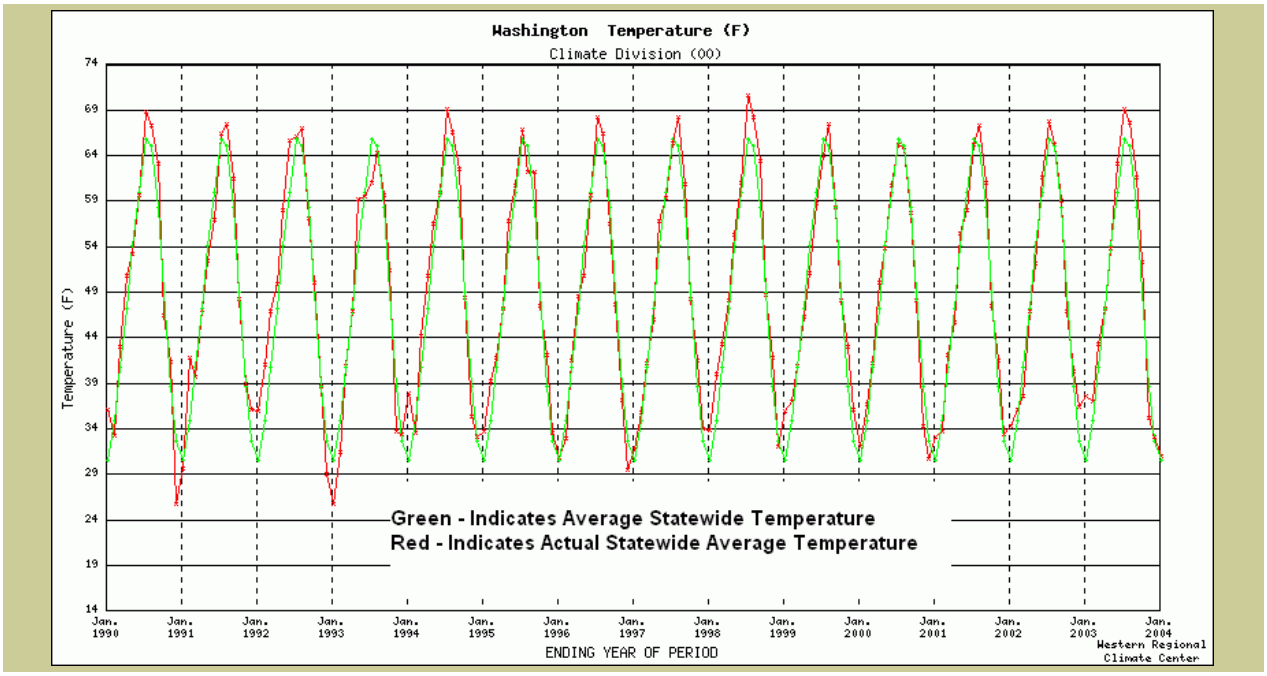
It is also available for employees of the Department of Natural Resources at:

- bugzncrudXX at /database/covers on UNIX or at
- Snarf/database/covers from the Citrix Server

Historical data going back to 1980 are also available.

Some Speculation

Several key factors will influence forest susceptibility to insects and diseases in the next few years in eastern Washington. Forests are generally overstocked with too much fir and not enough drought tolerant pine. These conditions stress host trees and make them more susceptible to pathogens. Additionally, the mild winter weather of the last several years increases the winter survival rate of many insect pests.



- Populations of bark beetles thrive in drought years.
- Incidence and severity of root disease increases in drought years.
- Populations of the western spruce budworm appear to be rising in some of eastern Washington's forests.
- Populations of the Douglas-fir tussock moth will likely remain low statewide.

Disclaimer

Aerial observers are familiar with forest trees, insects and diseases. They are trained to recognize various pest signatures. There is always at least one observer in the plane who has three or more years of sketch mapping experience. Observers attend several training sessions, including one just prior to the start of the season, where observations made by each observer are compared with those of other observers and then checked on the ground. Additionally, observers talk about what they are seeing with each other and the pilot as they go along.

However, it is very challenging to quickly and accurately identify and record damage observations. Aerial survey does not allow much time for second-guessing or second chances. Mistakes occur. Sometimes the wrong pest is identified. Sometimes the mark on the map is off target. Sometimes damage is missed. Our goal is to correctly identify and accurately map within ¼ mile of the actual location at least 70% of the time. Ground checking and landowner feedback generally indicate excellent success at detecting major occurrences of insect and disease activity. Please provide us feedback if you encounter errors or have problems obtaining the maps or data.

Survey Results

Washington has about 21 million acres of forestland. In 2004, over 1.9 million acres of this land contained elevated levels of tree mortality, tree defoliation or foliar diseases. This is virtually unchanged from 2003 as elevated levels of forest disturbance continue.

- Almost 3.8 million trees were recorded as recently killed, up from about three million trees in 2003 and over 1.8 million trees in 2002.
- Western spruce budworm activity again increased in eastern Washington.
- The hemlock looper outbreak in the Mt. Baker area has mostly subsided.
- Tent caterpillar has again defoliated substantial amounts of hardwood trees in the Puget Sound lowlands.

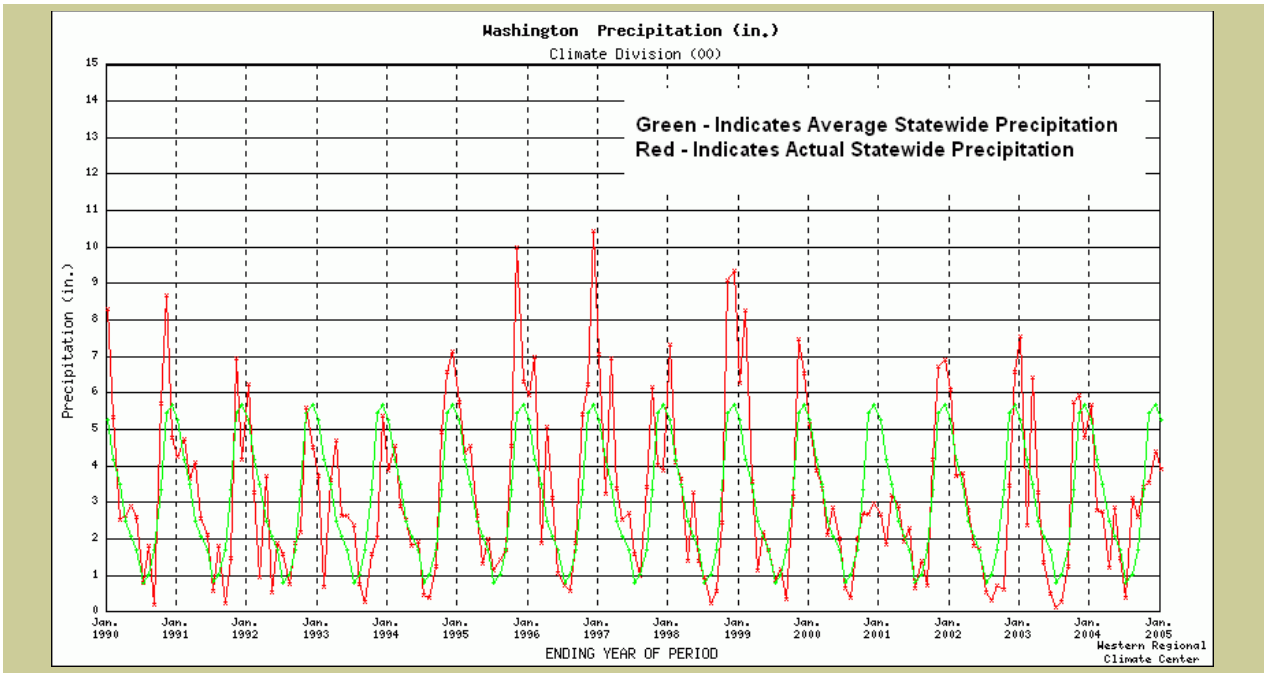
The warm, sunny spring weather allowed us to start surveying eastern Washington weeks earlier than usual, but we were quickly chased us out as fires, with their associated flight restrictions and poor visibility, erupted up and down the eastern slopes of the Cascades. Then, in mid August, a series of rain

events ended the fire season early, but we were still unable to survey due to cloudy and rainy conditions. All of this together meant a fair amount of frustration for the survey crew as well as a late finish to the survey.

Animal and Abiotic

Drought

The summer of 2004 started as one of the driest ever. Defoliating insects such as the Western spruce budworm completed their lifecycle much earlier than usual and the dried, red, partially eaten foliage they left behind was visible from the air weeks earlier than normal.



The west side was also incredibly dry with every area (other than the coast) at or below any previous low precipitation records dating back to the late 1800's! The fire season started very early and by August there were several forest fires along the east slopes of Cascades.

Map courtesy of FAA

Then, in mid August, a series of rain events brought a sudden and early end to the fire season and drought-stressed trees throughout the state received needed relief. It is not yet known if this was enough

to provide trees enough resources to resist the massive population levels of bark beetles that have been building over the past several years. It was not early enough to affect defoliating insects, which had already mostly completed their development.

Landscape levels of tree defoliation (and perhaps mortality) are likely to continue.

How drought conditions correlate with historical activity of key disturbance agents:

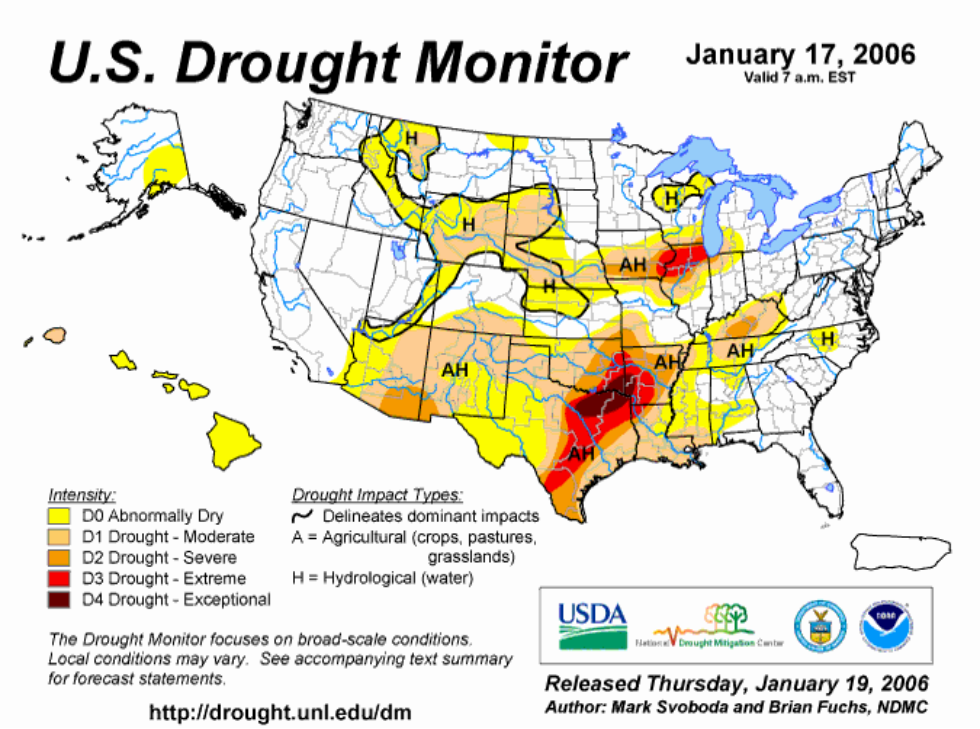
For Douglas-fir beetle go to: http://www.wadnr.gov:81/htdocs/rp/forhealth/2004highlights/wadrdfb04.gif

For pine bark beetles go to: http://www.wadnr.gov:81/htdocs/rp/forhealth/2004highlights/wadrpb04.gif

For fir engraver go to: http://www.wadnr.gov:81/htdocs/rp/forhealth/2004highlights/wadrfen04.gif

For western hemlock looper go to:
http://www.wadnr.gov:81/htdocs/rp/forhealth/2004highlights/wadrhl04.gif

For western spruce budworm go to:
http://www.wadnr.gov:81/htdocs/rp/forhealth/2004highlights/wawsb04.gif



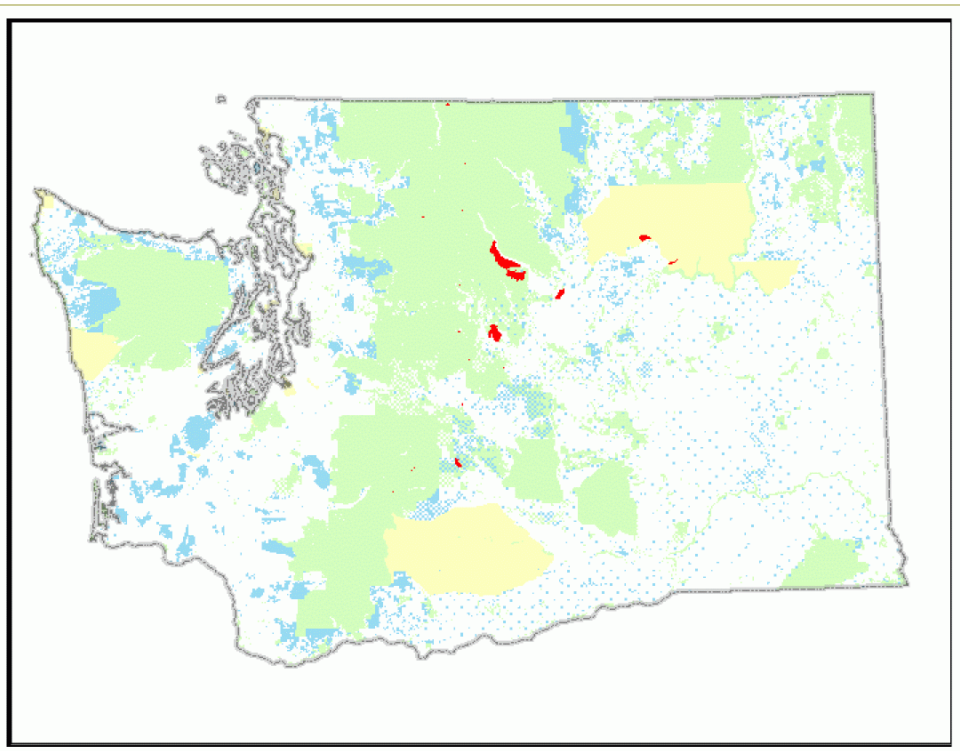
Current Loop of Washington Drought Conditions

Fire

In 2004, Washington came out of the winter in a water deficit condition. This situation was exacerbated by one of the driest springs on record throughout most of Washington.

Ample amounts of lightning ignited a series of fires along the east slopes of the Cascades and by the end of July, the fire season was well underway, and it looked as though the years of summer drought would lengthen and intensify.

However, a series of rain events starting in mid August brought an early and abrupt end to the fire season. Our survey challenges switched from avoiding smoke and flight restrictions to avoiding rain and clouds.



Aerial view of the Fawn Creek fire complex as seen from the 2003 aerial survey. Flight restrictions and poor visibility make for challenging survey conditions.

For additional information go to: http://www.wadnr.gov:81/base/fire.html

Bear Damage
Ursus americanus (Pallus)/*Phellinus weiri* (Murr.) Gilb.

Black bears in western Washington will often feed on the inner bark of pole sized trees in the spring before other food sources become available. A single bear can damage and kill hundreds of young trees each season.

Young plantation trees killed by either spring bear feeding or root disease as seen from the air

Almost 145,000 acres of young plantations were mapped by the aerial survey in 2004 as having some recent mortality. This is down from over 260,000 acres recorded in 2003. One possible reason for this may be that Washington experienced a warm, dry spring which resulted in an early green up of many plant species and could have afforded bears alternative forage sources earlier than normal.

WADNR Forest Health is currently conducting a study of dead trees mapped as "bear damage". Early results indicate that root disease is present in most areas surveyed and can be the sole disturbance agent in many areas.

We will continue to evaluate whether it is appropriate to label scattered mortality as depicted in the image above as "bear damage" when "bear damage and/or root disease" might be more accurate.

For additional information go to: http://www.wdfw.wa.gov/wlm/game/blkbear/blkbear6.htm

Diseases

Sudden Oak Death (SOD)
Phytophthora ramorum

This newly discovered, non-native disease caused by the fungus-like-organism *Phytophthora ramorum* was recently discovered in California and southern Oregon.

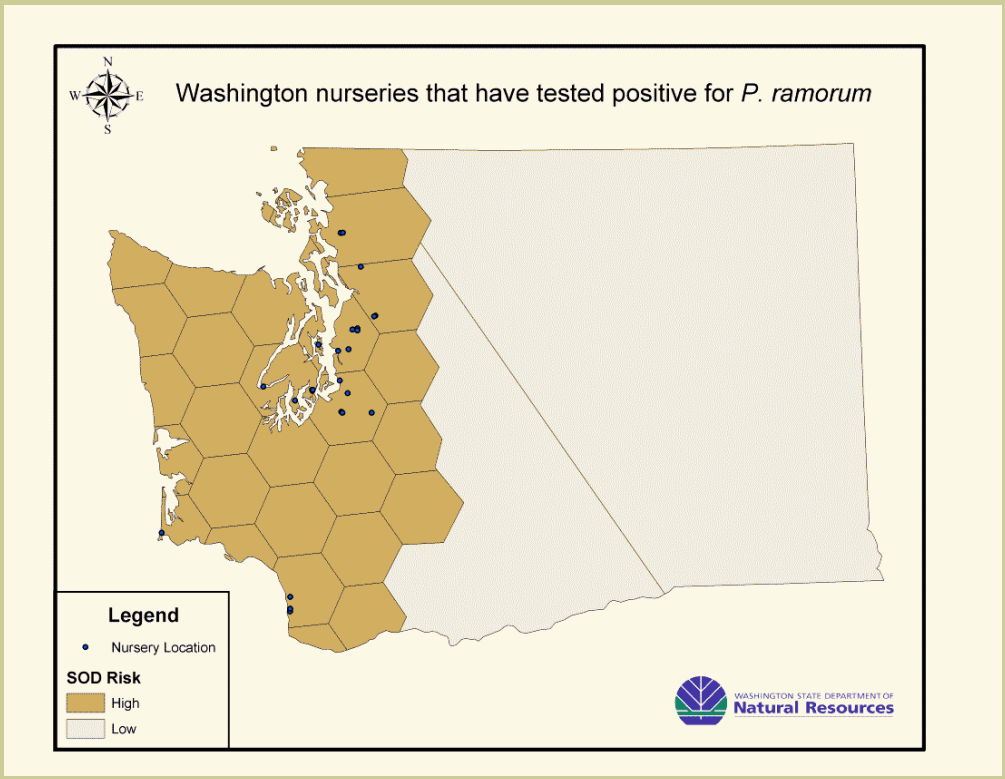
Phytophthora ramorum has a large and growing host list including several oak species. While our only native oak species, Oregon white oak, is not susceptible to this disease, native hosts include:

- rhododendron
- big leaf maple
- vine maple
- Douglas-fir
- evergreen huckleberry
- Pacific madrone
- manzanita
- wood rose

For a complete host list go to:
http://www.suddenoakdeath.org/

Shoot die-back on Douglas-fir caused by *Phytopthora ramorum* on Douglas-fir in California. Notice how it looks much like frost damage.

By 2004, SOD was discovered in 25 different nurseries in western Washington mostly from infected stock purchased from a large wholesale nursery in southern California. All detected infected plant material was destroyed. So far, there is no evidence that this disease has spread to or become established in the natural environment of Washington.



Location information obtained from Washington Dept. of Agriculture

In 2004, DNR conducted surveys of 60 nursery perimeters and 21 general forest sites in western Washington. Samples were analyzed at the Washington State Department of Agriculture's plant pathology laboratory. All of these samples tested negative for *Phytophthora ramorum.*

For additional information go to: http://www.fs.fed.us/r6/nr/fid/widweb/wid-rd.shtml#rd-7

Swiss Needle Cast (SNC)
Phaeocryptopus gaumanni (Rohde) Petrak

Swiss needle cast is a fungus with small fruiting bodies that, in large quantities, look like soot on the underside of Douglas-fir needles. In severe cases, the needles become chlorotic (yellow) and fall off prematurely. This slows the growth of the tree and gives it a sparse appearance.

Swiss needle cast was found along the coastal areas of Washington again this year, but in the last few seasons, the disease has not seemed to be as severe as in previous years.

Several factors influence the potential severity of Swiss needle cast for any given site. These include:

- Proximity to the coast
- South facing slopes
- Valley bottoms

Swiss needle cast causes yellowing and early needle drop. Notice the absence of older interior needles and the chlorotic appearance of new foliage on these young saplings near Mount Pilchuck.

In areas at risk of high levels of SNC, it is crucial to select local tree sources and to diversify forest plantations with alternate species such as western hemlock, western redcedar, Sitka spruce or red alder.

For additional information go to: http://www.fs.fed.us/r6/nr/fid/mgmtnote/swissnc.pdf

White Pine Blister Rust (WPBR)
Cronartium ribicola (J. C. Fisch.)

White pine blister rust is the most destructive disease of 5-needle (white) pines in North America. Since its introduction into Washington, it has caused widespread mortality throughout the range of its hosts. White pine blister rust infects all 5-needle pines, including western white pine and whitebark pine, and requires Ribes spp. as an alternate host.

White pine blister rust causes cankers on branches and eventually the main stem of infected pines. Cankers on smooth-barked trees will often have a rough center surrounded by a diamond-shaped orange lesion of infected bark. On older trees with rough bark, the leading edge of infection is not apparent. Older cankers are rough and blistered in appearance.

Girdling cankers are often resinous, especially main stem cankers, which eventually result in topkill or whole tree mortality.

Branch flagging (retention of red needles on dead branches) is the most obvious symptom of white pine blister rust and is caused by girdling cankers that kill branches rapidly.

This exotic disease has already depleted western white pine across much of its range. The surviving widely scattered western white pines are still dying, but are not well recorded by aerial survey because they often do not meet the threshold of groups of five or more trees.

Washington's other five-needle susceptible host whitebark pine, grows in high elevation alpine areas. These trees provide a critical role in watershed protection and wildlife habitat. White pine blister rust has been slower to spread into these areas, but widespread infection is now occurring. Drought and blister rust have weakened whitebark pine to the point that mountain pine beetle is causing widespread mortality.

Recent surveys of the western white pine resource in Washington revealed infection levels of up to 100% in some geographical regions. The Washington DNR is currently studying WPBR in juvenile white pine (less than 5 years old) with increased genetic resistance to WPBR.

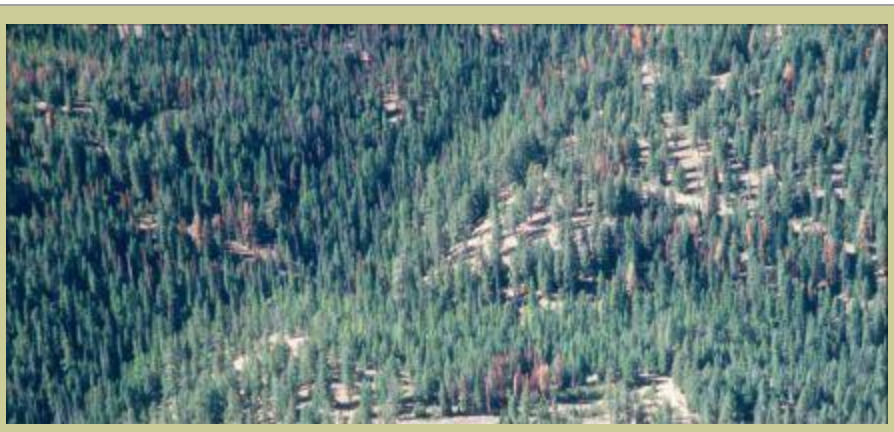
For additional information go to: http://www.fs.fed.us/r6/dorena/rust/

Insects

Fir Engraver
Scolytus ventralis (LeConte)

Fir engraver beetle is a native bark beetle that attacks and kills, or strip kills, weakened true fir trees.

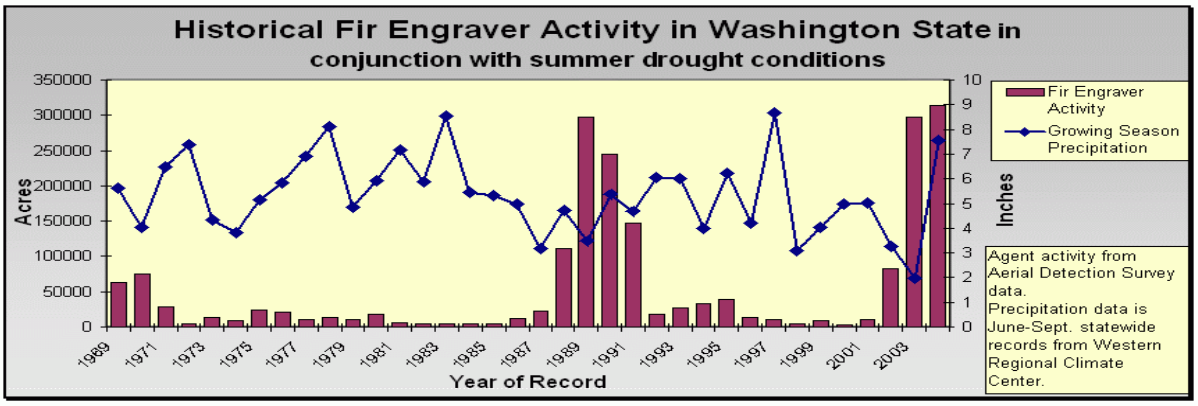
Over 313,000 acres with scattered true fir mortality were mapped throughout Eastern Washington in 2004, up from almost 300,000 acres in 2003 and 82,750 acres in 2002.



This photo was taken during the 2003 aerial survey Southwest of Yakima. The red and yellow trees are recent mortality. Most of the riparian trees are true fir and the trees further upslope are mostly lodgepole pine and ponderosa pine.

Droughty conditions likely precipitated this event. Most of the affected trees were not in the overstory, but larger trees were also affected.

For additional information got to: http://www.fs.fed.us/r6/rogue/swofidsc/beetles/firengraver.html



Historical Activity and Drought Correlation

Pine Bark Beetles
Dendroctonus ponderosae (Hopkins) and others

Pine bark beetle populations continue at epidemic levels with more than 430,000 acres with mortality mapped statewide. This is up substantially from the 330,000 acres recorded in 2003.

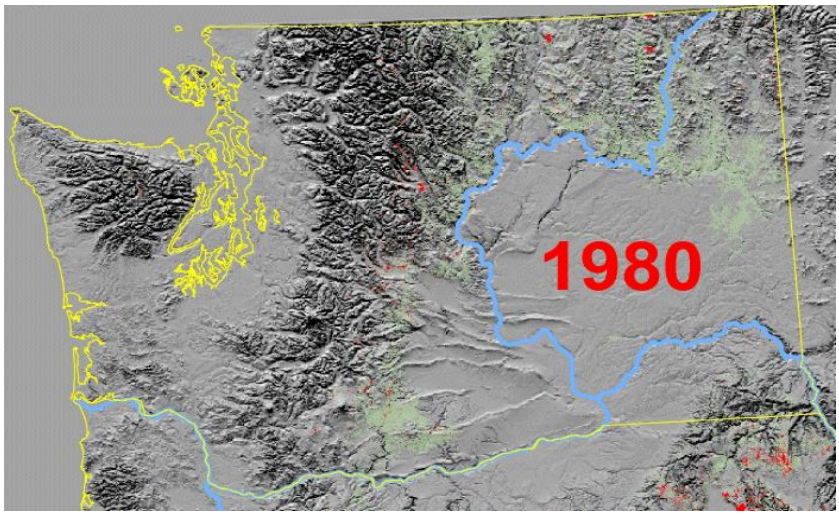
Extensive areas of scattered overstory ponderosa pine mortality were mapped north and west of Spokane at somewhat higher intensities than in 2003.

Mountain pine beetle continues to kill lodgepole pine even up to its western extent in the North Cascades. In particular, areas around Ross Lake, within the North Cascades National Park, were heavily affected.

Furthermore, in the Cascades there was again substantial levels of mountain pine beetle activity in whitebark pine. Almost 7,000 acres with elevated mortality were mapped, down from the 30,000 acres in 2003, but up from about 1,700 acres in 2002 and almost none in years prior.

These trees have been weakened by white pine blister rust for many years. Current droughty conditions, high populations of mountain pine beetle in nearby lodgepole pine and mild winter temperatures have increased the susceptibility of whitebark pine to mountain pine beetle.

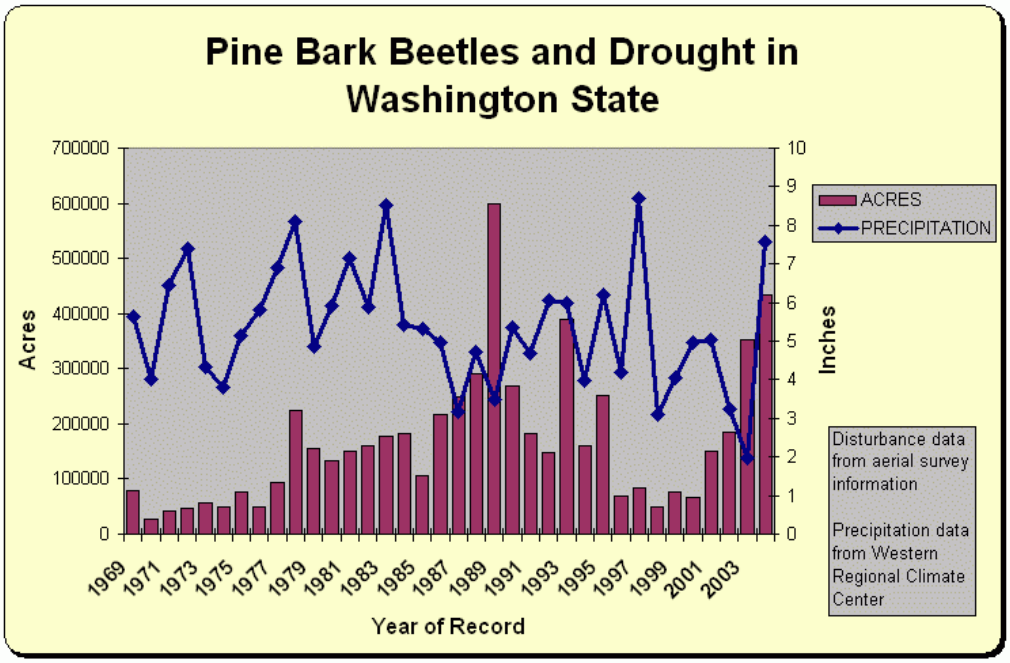
Loop of mountain pine beetle activity in Washington since 1980



Tree Mortality caused by Mountain Pine Beetle

For additional information go to: http://www.ext.colostate.edu/pubs/insect/05528.html

Historical Activity in WA correlated with Drought Correlation



Citrus Long-horned Beetle (CLB)
Anoplophora chinensis

The Citrus Long-horned beetle is a wood-boring insect native to Asia where it is a major pest. It is a close relative of the Asian Long-horned beetle (ALB), which is having a huge impact in New York, Chicago, Jersey City and most recently Toronto. There were no sightings of ALB in Chicago in 2004 so it is hoped that this eradication effort has been successful. To date, more than 138 million dollars have been spent and more than ten thousand valuable urban trees have been removed in efforts to eradicate this pest.

The Citrus-longhorned Beetle was found in two different locations in Washington in 2001. In Tukwila, where some beetles were actually seen escaping into the surrounding greenbelt, a massive tree removal, inspection, quarantine program was initiated.

More than 20,000 trees were again inspected in 2004 for signs of the woodboring pest with completely negative results! Monitoring efforts and other precautions are still ongoing as part of a five year monitoring commitment. If this wood-boring pest were to become established here with no natural controls such as predators, parasites or diseases, many hardwood trees such as bigleaf maple, cottonwood, ash and horse chestnut would be damaged.

An adult CLB. Notice the speckled pattern on its back vs. the banded pattern of our native banded alder borer, which only attacks weakened and dead trees.

Western Spruce Budworm (WSBW)
Choristoneura occidentalis (Freeman)

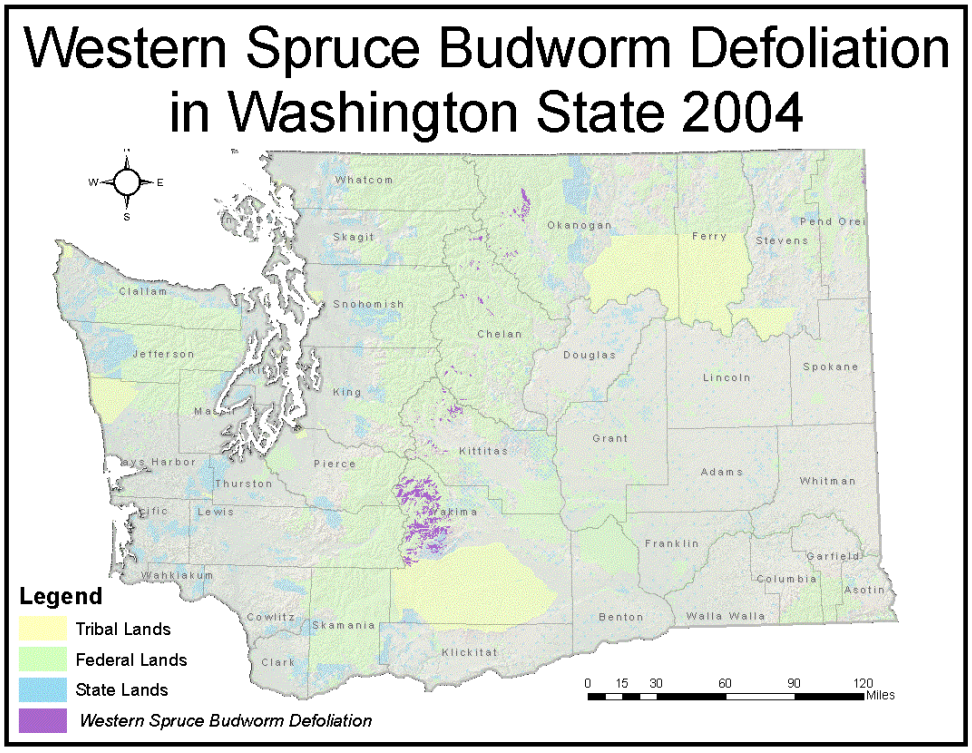
Western spruce budworm showed increased activity in 2004. Activity was again mostly concentrated in Eastern Yakima County, with about 136,500 acres mapped. There was also ongoing activity in Pend Oreille County along the Idaho border.

For the first time in several years, sporadic defoliation occurred along the eastern slopes of the north Cascades with almost 2,300 acres with defoliation recorded.

Areas around Bumping Lake and Rimrock Lake showed continued activity with yet another impressive spread to the west and north from previous years.

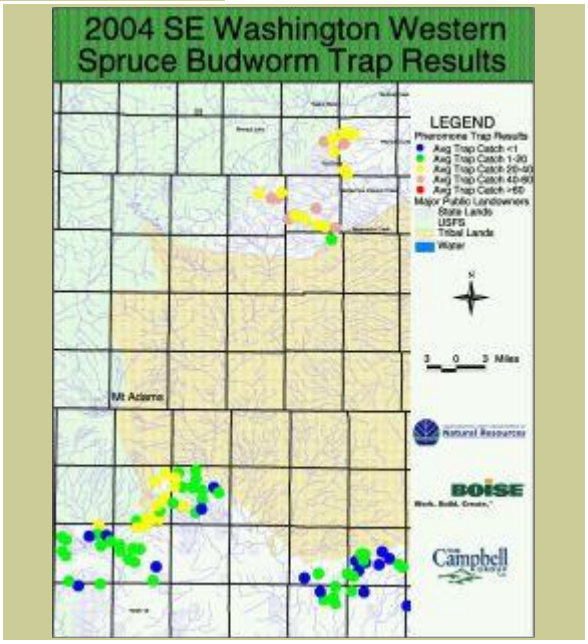
The total number of affected acres mapped in Washington over the last several years are as follows:

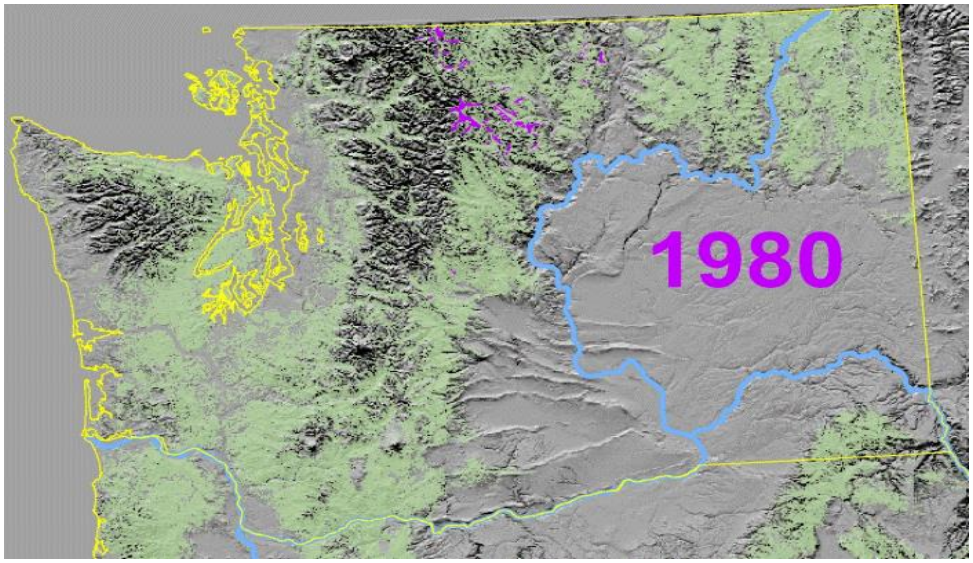
- 1999: 189,700
- 2000: 383,000
- 2001: 236,000
- 2002: 56,567
- 2003: 138,797
- 2004: 193,191



This photo, taken during the 2003 aerial survey, shows WSBW defoliation near the Goat Peaks Wilderness Area.

Additional areas of light defoliation were likely not mapped because it is very difficult to detect lightly defoliated trees from the air in smoky conditions. Moreover, Douglas-fir beetle is active in many areas where repeated defoliation has weakened trees. This bark beetle activity often goes undetected since these trees are denuded of foliage and die without being readily visible to aerial observers.

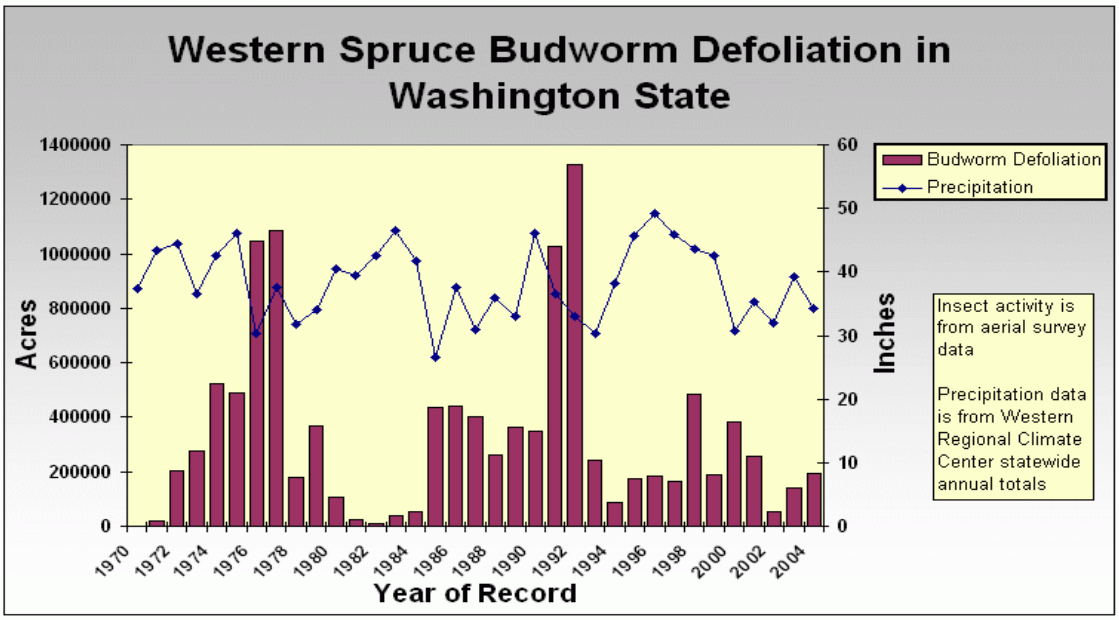




Loop of WSBW activity in Washington since 1980

Defoliation caused by Western Spruce Budworm

Historical Activity and Drought Correlation



For additional information got to:
http://www.forestry.ubc.ca/fetch21/FRST308/lab5/choristoneura_occidentalis/budworm.html

Douglas-fir Beetle
Dendroctonus pseudotsugae (Hopkins)

Outbreaks of Douglas-fir beetle have been ongoing for the last several years, but the amount of tree mortality has been declining. Overstocked, drought-stressed, mature trees allow populations of beetles to persist at epidemic levels in some local areas.

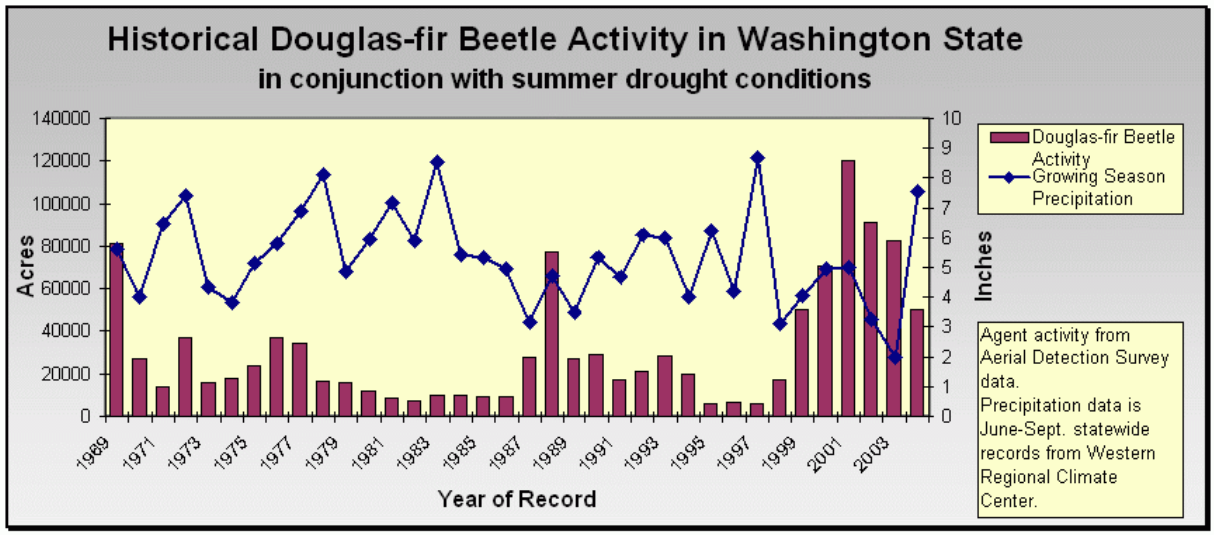
Almost 50,000 acres with elevated Douglas-fir mortality were recorded in 2004, down from almost 74,000 acres in 2003.

Once again, the area most affected was northeastern Washington, with over 36,000 acres mapped. Tree damage from the ice storm of 1996-1997, followed by prolonged summer droughty conditions and additional storm damage in 2001 have kept this outbreak from subsiding.

In the southeastern Cascades, forests previously defoliated by the western spruce budworm are now experiencing mortality due to the Douglas-fir beetle.

Aerial view near Omak, WA. The yellow/red trees are recent mortality and the gray trees were killed in previous years

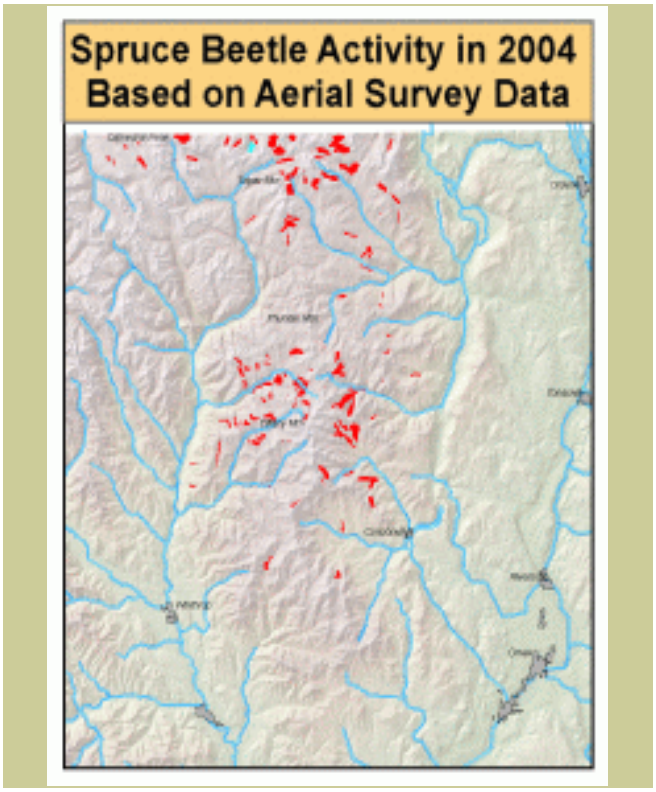
Historical Activity and Drought Correlation



For additional information go to: http://www.fs.fed.us/r6/rogue/swofidsc/beetles/douglasfir.html

Spruce Beetle
Dendroctonus rufipennis (Kirby)

The spruce bark beetle is usually present in small numbers in weakened and wind-thrown spruce trees. However, periodic outbreaks can occur where extensive windthrow events or large areas of overmature spruce exist. They typically need two years to complete their life cycle, but can mature in one year if conditions are mild.



The spruce beetle outbreak of the last few years in the northeast Cascades near Tiffany Mountain continues at a decreasing intensity. This is because most of the suitable host trees have already been killed. However, there were several new areas of activity north of Tiffany Mountain to the Canadian border and beyond.

The recent statewide acres with spruce beetle-caused mortality are:

2001: 24,272
2002: 27,527
2003: 19,106
2004: 23,207

When spruce beetle populations reach epidemic levels, wholesale mortality occurs rapidly.

For additional information go to: http://www.na.fs.fed.us/spfo/pubs/fidls/sprucebeetle/sprucebeetle.htm

Douglas-fir Tussock Moth (DFTM)
Orgyia pseudotsugata (McDunnough)

Douglas-fir tussock moth is a native defoliator of Douglas-fir and true fir trees. It typically exists at low numbers, but periodically irrupts into huge populations which can completely defoliate trees in a single season producing widespread mortality and top kill.

Area of defoliation from DFTM on Tekoe Mountain south of Spokane 2002.

DNR monitors about 190 DFTM pheromone trap sites in Washington.

These trapping results are compiled with those of other landowners to provide early warning of rising DFTM populations. Overall, 2004 trap catches were very low, indicating stable, low populations.

DFTM outbreaks throughout the northwest have mostly subsided from 2000-2002.

For additional information go to: http://www.fs.fed.us/r6/nr/fid/dftmweb/index.shtml

Western Hemlock Looper
Lambdina fiscellaria lugubrosa (Hulst)

The western hemlock looper is a native defoliator of hemlock and interspersed conifers.

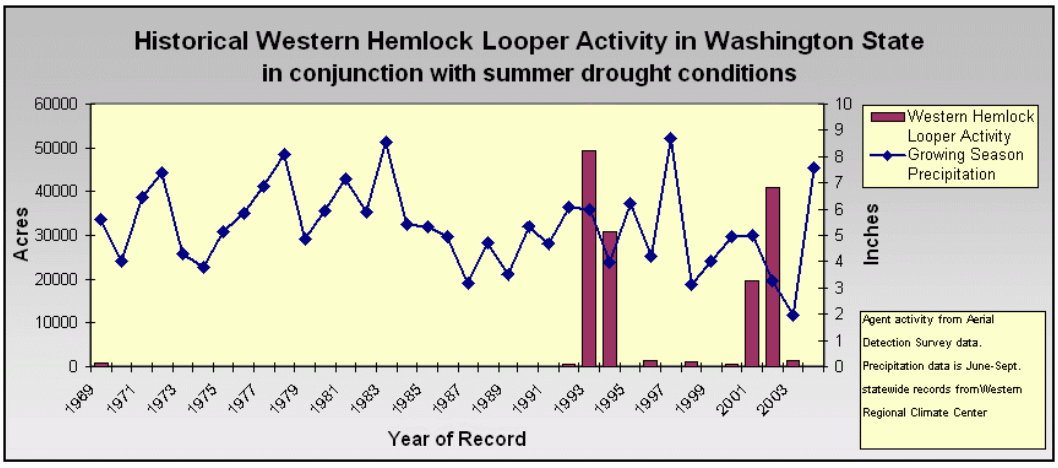
The outbreak north and east of Mt. Baker has mostly subsided! Only 2200 acres were mapped in 2004, slightly higher than the 1,411 acres in 2003, but down from approximately 35,000 in 2002 and 17,000 acres in 2001.

Scattered hemlock mortality was mapped where hemlock looper defoliation has occurred in recent years.

Bark beetles and root diseases combined with the direct effects of defoliation likely contributed to tree death.

No current hemlock looper damage was observed in the vicinity of Granite Falls again this year. This defoliation event appears to have collapsed. Since hemlock looper is primarily a defoliator of older forests with a complex multi-layered structure of western hemlock, this area of second growth hemlock, uniformly 55-60 years of age, with little understory was unlikely to sustain a prolonged outbreak.

Historical Activity with Drought Correlation



For additional information go to:
http://www.pfc.cfs.nrcan.gc.ca/entomology/defoliators/loopers/west_hemlock_e.html

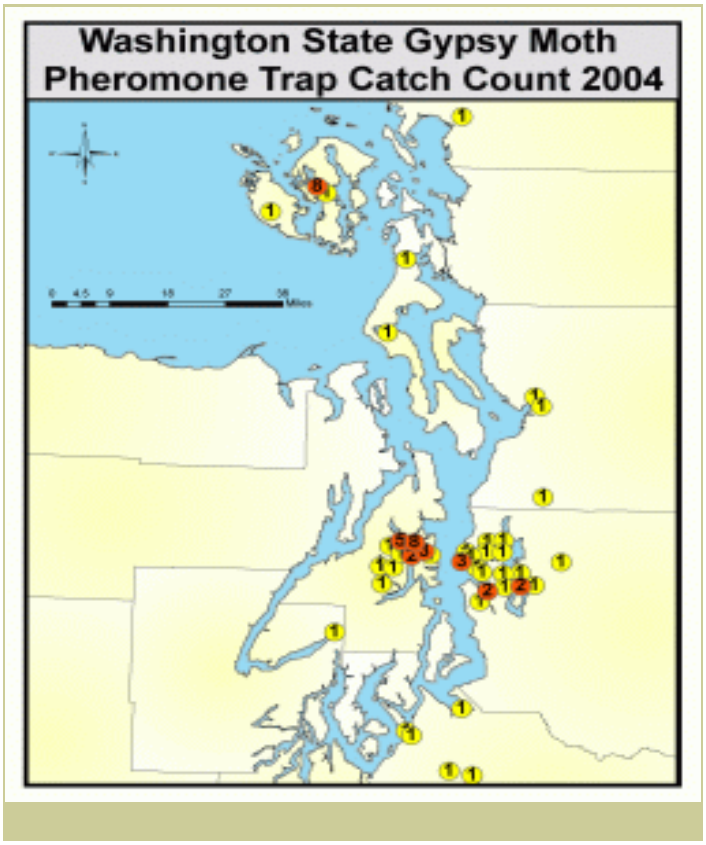
Gypsy Moth
Lymantria dispar (L.) (Goodwin)

Gypsy moth is a non-native defoliator of many broadleaf trees and shrubs. The Asian variety can also significantly damage conifers.

Gypsy moth is not established in Washington. Each year the Washington State Department of Agriculture deploys pheromone traps to detect new introductions. Eradication efforts follow if populations appear to be breeding.

The European gypsy moth has become established in the eastern US where it continues to spread and cause extensive damage. The Asian gypsy moth, an even greater threat, has yet to become established in North America. In 2004, an adult male Asian gypsy moth was trapped in Idaho along the I-90 corridor near the Washington border. Six hundred and fifty acres will be sprayed in an attempt to eradicate this pest even though other life stages were not found. However, no spraying will occur in Washington as a result of this incident. Intensive trapping in 2005 and 2006 will include adjacent areas on the Washington side of the border.

Sixty-eight moths were trapped statewide in 2004. This number is higher than the fifty-nine moths trapped last year, but still below the average of 77 moths caught annually over the previous ten years. All catches were in western Washington.



Multiple moth catches occurred in Bellevue, Port Ludlow, Mayfield Dam (Lewis County), Seattle and Fife. These areas were inspected for other life stages of gypsy moth and will be more intensively trapped in 2005.

Additional life stages (egg masses) were found at Bellevue, Port Ludlow and Mayfield Dam where the Washington Department of Agriculture is proposing eradication projects for 2005.

No moths were caught for the second year in a row in Vader where eradication projects occurred in 2002 and 2001. One moth was trapped in the Crown Hill neighborhood of Seattle where an eradication project was conducted in 2002. Both of these areas will continue to be monitored.

For additional information got to:
http://www.forestry.ubc.ca/fetch21/FRST308/lab5/lymantria_dispar/gypsy.html

Other Defoliators

Almost 25,500 acres with western tent caterpillar, *Malacosoma californicum* (Packard), defoliation were mapped around the Puget Sound lowlands and the San Juan Islands this year and significant alder topkill has occurred in some areas. More activity was recorded this year than in recent years, but the outbreak is declining.

Western tent caterpillar nest. Notice the diseased and parasitized larvae.

Many suburban areas that were the most intensely affected by this outbreak and have been heavily defoliated are not flown due to various flight restrictions in central Puget Sound.

For additional information go to:

http://www.forestry.ubc.ca/fetch21/FRST308/lab5/malacosoma_disstria/tent.html