



Wildfire Issues

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What's covered

- Wildfires are increasing in the western states because of hotter, dryer weather. Will almost certainly get worse.
- Potential impacts on the N. Olympic Peninsula.
- Are we meeting the challenges?

We're just warming up

- In the Pacific Northwest, annual temperature rose 1.5°F between 1920 and 2003
- Future projections: Average annual temperature in the Northwest is projected to increase (relative to 1970-1999) approximately:
 - 2°F by the 2020s (range of 1.1 to 3.4°F)
 - 3.2°F by the 2040s (range of 1.6 to 5.2°F)
 - 5.3°F by the 2080s (range of 2.8 to 9.7°F)
- The fire season (June-September) will be dryer.
- The snowpack will shrink (less vegetative moisture and more susceptibility to lightning strikes).

Causes of wildfire will increase

- More rain in winter (instead of snow) = melting glaciers and less snowpack.
- Snowpack recedes to higher elevation, exposing more land to lightning strikes, and less runoff reduces vegetative moisture.
- Drier, hotter summers reduce vegetative moisture and may support more bugs that kill/injure trees, making them more vulnerable to blowdowns and fire.
- More violent storms increase blowdowns and can deter firefighting efforts.

Dramatic increase in wildfires with temperature

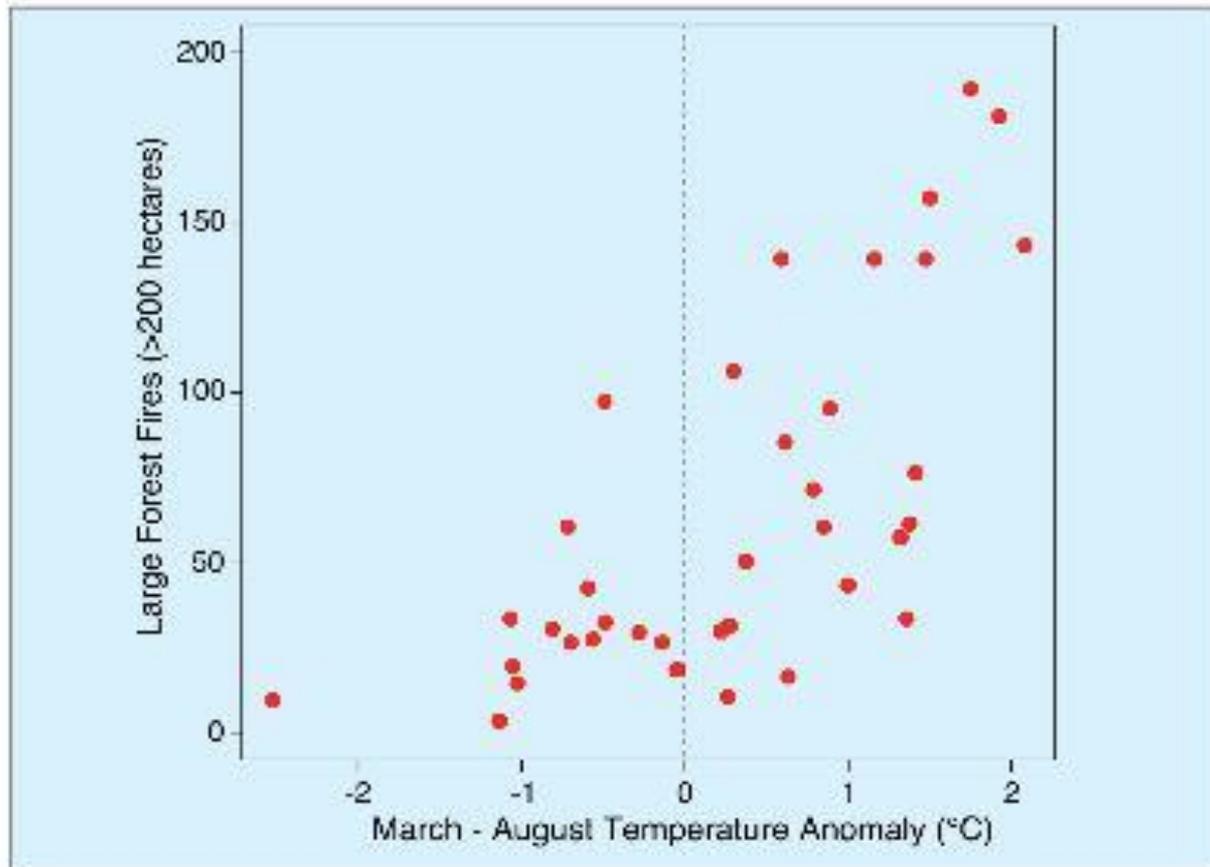


Figure 1: The number of large forest wildfires (vertical axis) versus average March through August temperature anomalies (horizontal axis) for 1972-2008 in Western US forests. Anomalies were constructed subtracting the long-term mean for 1972-1990. Fires are all large (> 200 ha) fires reported by the United States' Bureau of Indian Affairs, National Park Service, and Forest Service as burning in forests. All fires were classified as "action" fires on which suppression was attempted (fires used to manage vegetation were excluded). See Westerling et al. 2006 and Westerling et al 2011 for data and methodology.

Consensus of experts

- Wildfires will increase, but it's complicated enough that the scientific community hasn't made definitive projections of just how much increase. (Too many variables of just how much temperature will increase, how and when precipitation will change, the moisture retention and vegetative density in every area, bug reactions, increased storm intensity.)
- What we can say with near certainty: wildfires will significantly increase in Clallam and Jefferson counties.

Historic Fires on the Peninsula

- 1308: half the Peninsula forests
- Mid 1400s until about 1538: numerous major fires
- 1668 – 1701: more than 1 million acres eastern and northern slopes
- 1890-91: Dungeness fire - 30,000 acres (46.875 square miles)
- 1907: Sol Duc - 13,000 acres (20.31 sq. miles)
- 1951: Forks - 33,000 acres almost destroyed town of Forks (51.56 sq. miles)

Are we exposed in Clallam County?

A recent study found that Clallam County has **the highest existing risk of catastrophic losses in the event of a major wildfire in all of Washington** and is fifth highest amongst all 413 counties of the 11 states of the western United States.



Potential Impacts

- Increased loss of life and property
- Lost jobs
 - Timber industry
 - Tourism
 - Real estate
- Cultural resources
- Wildlife and vegetation

So, are we taking steps to address the problems?

Clallam County Plan



Clallam County

Community Wildfire Protection Plan

December 2009



Developed by Peninsula College
Center of Excellence.

**Contributions and
developmental assistance:**

- Western Washington University-Peninsulas
- Washington Department of Natural Resources
- Clallam County Fire District 3
- Clallam County Fire District 2
- Clallam County Fire District 1
- USDA-NRCS
- US Forest Service

Findings



A combination of:

- Driest climate in western Washington
- Heavy fuel load
- Dispersed population in the “Wildland Urban Interface” (WUI)* (13,000+ homes are located within Clallam County's wildland-urban interface, or property in and around natural areas.)

• Result = We are a high-risk area – and that’s before accounting for increasing temperatures.

***WUI is the area where development meets wildlands. The federal definition of a wildland-interface community is an area where development densities are at least three residential, business, or public building structures* per acre. For less developed areas, the wildland-intermix community has development densities of at least one structure per 40 acres.**

Excerpts from the study



“The potential for a major wildfire disaster is extremely high due to the combination of having the driest climate in western Washington and some of the highest vegetative fuel loads on the planet—all it would take is an ignition under the right weather conditions.

Currently, many residents new to the region are developing homes in interface areas, particularly around the rainshadow of northeastern Clallam County. New residents often assume that wildfire isn’t a problem on the western slopes of the Pacific Northwest, though research has determined that forests in our rainshadow area are more similar to those in central Oregon and northern California than those on the Pacific coast. Many new residents of Clallam County are also unaware of the concept of defensible space or are unaware that the concept is directly applicable to their lands, adding to the potential for severe WUI incidents in the near future.

The combination of high existing and future potential risk is a sobering set of statistics for those of us concerned with the lives and livelihoods of ourselves and our fellow residents. Should we face a major wildfire it is more than likely we will become a major disaster zone, with heavy property losses and potential loss of human life. With careful planning and collaboration among public agencies and communities, it is possible to minimize the losses that can result from wildfire.”

Recommendations

- Hazardous Fuel Reduction
- Reduction of Structural Ignitability
- Improvements in Emergency Response
- Education/Outreach



Not discussed: Changes to Comprehensive Plan to discourage building in highly vulnerable areas. (e.g., historical fire prone areas, south facing, wooded areas with difficult access, low precipitation)

Are we taking this seriously in Clallam County?

- No program to implement the study's recommendations.
- No recognition of wildfire potential from climate change in County's Comprehensive Plan.

Preparing for major forest fires

Adapting to Climate Change at Olympic National Forest and Olympic National Park, United States Department of Agriculture, General Technical Report PNW-GTR-844, August 2011

Recommendations:

In young-growth forest stands over age 40, thinning could be used to increase structural stability, individual tree vigor, and variability in overstory and understory growing conditions.

- ONP will focus on managing wildland fire in wilderness to create gaps and reduce stand density.
- Both ONF and ONP: girdling and prescribed burns could be used to reduce stand density and thus drought stress.
- To improve wildlife habitat, girdled, thinned, and fire-killed trees can be left as structure rather than being removed.
- Increased monitoring to detect changes and develop responses.

Quote from study: **“Climate change adaptation in vegetation management is essentially a long-term management experiment.”**

Recommendations

- Implement education programs for residents in high wildfire-prone areas to reduce exposure.
- Discourage forest conversion to development.
- Consider changes to County's Comprehensive Plan to discourage building in high wildfire-prone areas.
- Ensure that federal and state agencies implement programs to reduce the frequency and intensity of wildfires.