



**Homeland
Security**

National Protection and Programs Directorate
Office of Cyber and Infrastructure Analysis (OCIA)
May 2016

2016 WILDLAND FIRES AND POTENTIAL IMPACTS TO CRITICAL INFRASTRUCTURE

SCOPE

This product provides an overview of the National Interagency Fire Center (NIFC) Predictive Services Unit's National Significant Wildland Fire Potential Outlook for May through August 2016. It examines the potential impacts to U.S. critical infrastructure and is an update to the OCIA 2015 Wildland Fires and Critical Infrastructure Security and Resilience Note, released July 9, 2015. This update supports DHS leadership, DHS Protective Security Advisors, and other federal, state, and local agencies. This product was developed in coordination with the DHS National Protection and Programs Directorate/Office of Infrastructure Protection/Sector Outreach and Programs Division, DHS Federal Emergency Management Agency (FEMA)/U.S. Fire Administration, the Department of the Interior/Office of Wildland Fire, and the NIFC. OCIA will continue to monitor conditions and produce additional analysis as significant wildland fires occur.

KEY FINDINGS

- For May through August 2016, above normal fire potential will expand in the Southwest, Southern Plains, Great Basin, and lower elevations in California as fine fuels (twigs, needles, and grasses that ignite and burn rapidly) become available to burn.
- Wildland fire occurrence in the United States is cyclical and is largely driven by the amount of vegetative growth, dryness of that vegetation, and broad-scale weather patterns.
- OCIA assesses the Sectors most vulnerable to wildland fires are Transportation Systems, Energy (Electric Power), Water and Wastewater Systems, Communications, and Emergency Services.
- Economic impacts associated with wildland fires consist largely of residential and commercial property losses (homes, personal belongings, commercial structures, and inventory). These impacts can be offset by small business and personal hardship grants and loans available from FEMA, the Small Business Administration, the Farm Services Agency, and state governments.

2016 WILDLAND FIRES OUTLOOK

The NIFC Predictive Services Unit makes 4-month forecasts for significant wildland fire potential on the first of each month. The most current predictions, as of May 1, 2016, are for the period of May through August 2016.

Significant precipitation across the western and southern states has led to increased growth of grasses, which can lead to occasional periods of above normal significant wildland fire activity. Heavy fine fuel loadings are expected across the Southwest and Great Basin, and lower elevation areas of southern and central California. This will likely increase fire activity in these areas throughout fire season especially when associated with dry and windy periods. Fire activity will begin in May and June across the Southwest and transition northward as usual throughout June and July. Prevalent mountain snowpack is likely to lead to a normal or possibly slightly delayed timber fire season, especially in the northwestern United States. June and July are typically the beginning of the western timber fire season.

Warm April conditions depleted some of the mountain snowpack. Remaining snowpack should continue to melt off but remain long enough for a normal to slightly delayed onset of higher elevation fire activity. Nearly all higher elevation timbered areas are expected to see normal fire activity throughout the outlook period.

Poor seasonal snowpack and early snowmelt in South Central Alaska will likely lead to above normal wildland fire conditions in May, especially in the populated corridors. As seen on the map, the June prediction of the fire potential is normal.

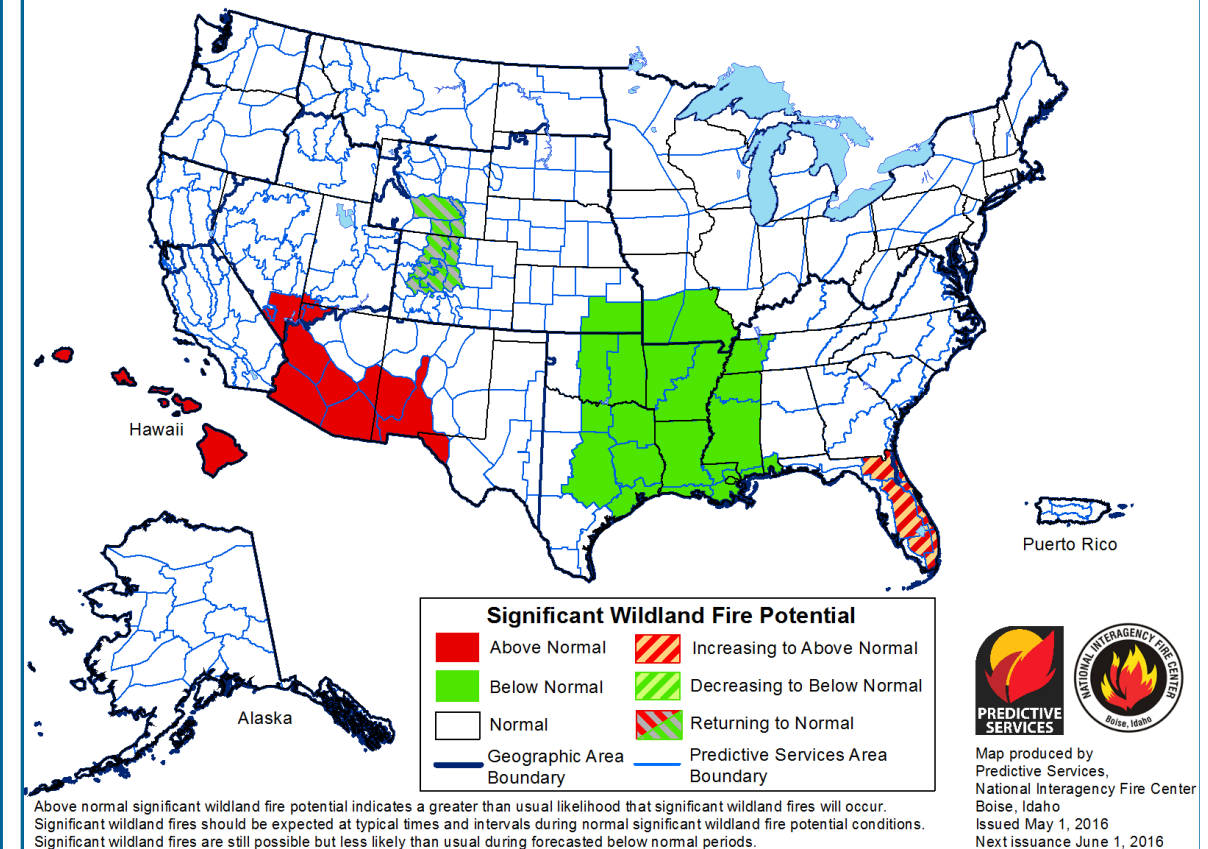
Significant moisture across the Central U.S. is expected to produce below normal significant fire potential, especially coupled with green-up occurring throughout this area.

Most other areas of the U.S. are expected to see normal significant fire potential throughout the summer fire season. It is important to note that normal fire activity still represents a number of significant fires occurring and acres burned.

- The 2014 and 2015 fire seasons were below normal for the amount of wildland fires reported nationally. In 2014, there were 63,612 wildland fires (87 percent of the 10-year annual average). In 2015, there were 68,151 wildland fires (93 percent of the 10-year annual average).
- 2015 was active with 10,125,149 acres burned (145 percent of the national 10-year average) compared with 3,595,613 acres burned in 2014 (53 percent of the national 10-year average). Alaska led the nation with 5.1 million acres burned (420 percent of its 10-year average).
- There were 1,052 large or significant wildfires reported in 2015. Significant wildfires is defined as a fire(s) that requires mobilization of additional resources from outside the fire(s) area.

SIGNIFICANT WILDLAND FIRE POTENTIAL OUTLOOK

June 2016



POTENTIAL IMPACTS BY INFRASTRUCTURE SECTOR

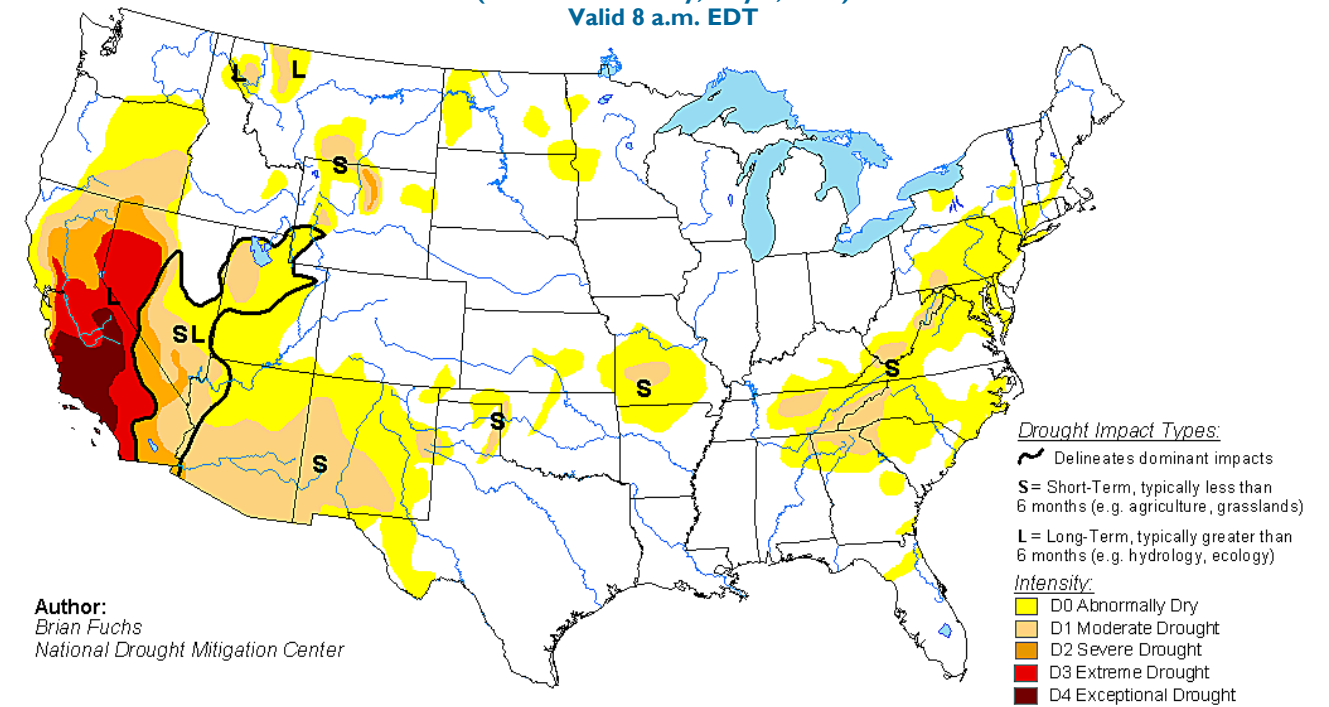
Infrastructure	Local /Regional Impact Level	National Impact Level	Impact L Low M Medium H High
Food and Agriculture	M	L	Impacts to the Food and Agriculture Sector may result from damage and destruction of crops, livestock, and production facilities. Additionally, damaged transportation resources such as roads, bridges, and rail lines can result in negative cascading impacts, since this Sector relies heavily on these assets to get its products to market.
Financial Services	M	L	Fire damage to electric and communication assets may result in outages or disruptions. Electric and communication outages are likely to have negative local or regional effects on the Financial Services Sector.
Chemical: Plants	L	L	Regional or national impacts to the Chemical Sector are unlikely because an overwhelming majority of chemical production and storage facilities are located outside of wildland fire prone areas.
Dams	M	L	Wildland fires can damage the surface of dams or spillways, especially grass cover on embankment slopes, or grass-lined spillway channels. After a fire, the ground surface of earthen dams can be more vulnerable to erosion, leading to the possible failure of small dams on public and private reservoirs used for irrigation purposes.
Commercial Facilities	M	L	Local businesses are most likely to experience wildland fire impacts in the form of damage to facilities, shipping delays caused by blocked or damaged transportation assets, loss of electric power, loss of water and waste water services, and interruptions in employee productivity.
Emergency Services	H	L	A lack of available water sources may complicate firefighting efforts in municipal areas encompassed or adjacent to a wildland fire where standard wildland fire firefighting tactics, such as the use of chemical retardants and controlled burns, are less suitable. Any extensive damage to roadways can slow response time. For remote regions, aerial operations may be required to move firefighting personnel and the injured into and out of these locations.
Energy: Electric Power	H	L	Electric power assets most likely damaged by a fire include aboveground transmission and distribution systems, poles, substations, and transformers. However, transmission circuits that may be affected by wildfire are normally taken out of service prior to wildfire encroachment. Redundancies built into the power systems often compensate for any outages.
Energy: Petroleum	L	L	Regional or national-level impacts to the Petroleum Subsector are unlikely because of an overwhelming majority of petroleum refineries and storage facilities are located outside of wildland fire prone areas.
Information Technology	L	L	Fire damage to power and communication assets may result in outages or disruptions. Electricity and communication outages are likely to result in negative impacts to the Information Technology Sector at local or regional levels.
Healthcare and Public Health: Hospitals	M	L	Hospitals and related healthcare facilities will likely be affected by the cascading impacts from electric power disruption, water and wastewater service disruptions, and the closure of roadways caused by wildland fires. Healthcare facilities generally have backup generation capacity to maintain essential functions in the event of short-term power outages, but may still have to evacuate if facilities cannot resupply because road closures. Staffing may also become an issue because of road closures.
Communications: Wireline and Wireless	M	L	Wildland fires can disable landlines and wireless towers. Large numbers of emergency response personnel entering a wildland fire area create spikes in demand on networks. Wildland fires often occur in remote areas where wireless networks are weakest. When a wildland fire occurs, communications companies can deploy portable cell towers and network repeaters to boost wireless and data transmission coverage and capacity.
Transportation Systems: Road and Rail	H	L	Roadways and rail lines may close due to fire damage, fires blocking access, or poor visibility caused by smoke and ash in the air. Road and railway bridges may be damaged or destroyed. The closing of transportation assets can result in cascading impacts across a number of other critical infrastructure sectors, e.g. Food and Agriculture, Critical Manufacturing, Emergency Services, and the Petroleum Subsector, which relies, to a limited extent, on rail.
Transportation Systems: Airports	M	L	Airports may close and reroute air traffic because of visibility problems (smoke, haze), unstable air currents caused by the fires, or damage to aviation facilities and runways.
Transportation Systems: Maritime	L	L	Regional or national-level impacts to the Maritime Subsector are unlikely because an overwhelming majority of maritime ports are located outside of wildland fire prone areas.
Water and Wastewater Systems: Drinking Water	M	L	Damage to electric power assets may result in drinking water service disruptions. Increased turbidity and pollutants caused by the fire and fire retardants can cause qualitative impacts on watersheds and reservoirs.
Water and Wastewater Systems: Wastewater	M	L	Damage to electric power assets may result in the interruption of waste water treatment.

CURRENT DROUGHT CONDITIONS

According to NOAA, above-average winter precipitation was observed across parts of the Northwest, Central Plains, and Midwest, and along the East Coast, which diminished drought conditions in these areas. California, western Nevada, and southeast Oregon continue to experience extreme to exceptional drought, but to a lesser extent than 2015.

U.S. DROUGHT MONITOR

May 3, 2016
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The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu/>