Spokane Fire Weather 2010

New for 2010:

Red Flag Warnings and Fire Weather Watches – RFW- will use a bulleted format for 2010.

LOCATION:

National Weather Service Office
2601 North Rambo Road
Spokane, WA 99224-9164.

HOURS:

Office hours at WFO Spokane for Fire Weather will be as follows: Daily 24 Hour forecast and briefing coverage.

The Fire Desk is staffed daily 0700-1500 Mid April - Early November

PHONE NUMBERS and E-Mail:

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STAFF:

Name	Position
John Livingston	Meteorologist in Charge
Ron Miller	Science and Operations Officer
Anthony Cavallucci	Warning Coordination Meteorologist
Bob Tobin	Fire Weather Program Leader/IMET
Todd Carter	ITO/IMET
Jeremy Wolf	Forecaster/IMET
John Fox	Senior Forecaster/IMET Trainee
Paul Bos	Senior Forecaster
Matt Fugazzi	Senior Forecaster
Greg Koch	Senior Forecaster
Jeffrey Cote	Forecaster
Robin Fox	Forecaster
Mike Fries	Forecaster
Laurie Nisbet	Forecaster
Rocco Pelatti	Forecaster
Ellie Kelch	Forecaster
Steve Bodnar	Forecaster

COMMUNICATIONS:

All forecasts and spot forecasts are input into AWIPS (Advanced Weather Integrated Processing System), WIMS, and on Spokane's Internet home page. Customers who do not have access to WIMS, or Internet can still have forecasts faxed to them.

Internet Address:

http://www.wrh.noaa.gov/firewx/?wfo=otx
http://www.wrh.noaa.gov/otx
http://www.weather.gov/spokane

WEATHER BRIEFINGS

Internet based weather briefings are available from the Spokane office as needed. During peak fire season, normally mid June-October briefings will be daily at 0900 PDT. During Land Management season briefings are available by customer request and are usually held twice per week for planning purposes. The phone number is 877-783-9070. The passcode is available by calling our office. Phone briefings are available 24 hours per day by calling 509-244-5031.

FORECAST DISTRICT:

The Spokane Fire Weather Office has weather forecast responsibility for a large portion of protected lands in eastern Washington. Exceptions are the Blue Mountains area, the Yakama Indian Nation lands, the DOE Hanford Site, and portions of the Southeast Department of Natural Resources (DNR) land. These protected lands are the forecast responsibility of the National Weather Service Office Pendleton Fire Weather program.

Spokane Fire Weather's area of responsibility for Eastern Washington is divided into six districts for fire weather forecasting. In addition, these forecast districts are further sub-divided into ten fire weather zones. See the map for general locations of districts and zones for eastern Washington. The weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

WFO Spokane has forecast responsibility for the Central and Northern Idaho Panhandle. This district has one (1) zone (101) covering the Idaho Panhandle National Forests, Idaho State Lands, and Coeur d'Alene Indian Agency lands.

Agencies Served:

Land management agencies served by the Spokane Fire Weather Office include:

USFS....	Colville NF Wenatchee NF Okanagan NF Idaho Panhandle NF
BLM....	Spokane District Coeur D Alene District
BIA....	Colville Indian Agency Spokane Indian Agency Coeur D' Alene Indian Agency
NWR...	Turnbull National Wildlife Refuge Columbia National Wildlife Refuge Kootenai National Wildlife Refuge Lake Pend Oreille Wildlife Refuge
Washington DNR...	Northeast Area Resource Protection Division
Idaho...	Department of State Lands
Other Public Agencies...	Coulee Dam National Recreation Area Lake Chelan National Recreation Area

FORECAST SERVICES:

Fire Weather Watches and Red Flag Warnings

General Fire Weather Watch and Red Flag Warning criteria continues to be under review. Until formal changes have been agreed upon by the Land Management agencies and the National Weather Service we will continue with the present criteria. Red Flag criteria for eastern Washington and Northern Idaho are as follows:

- **"dry thunderstorm" Red Flag criteria is defined as follows:**

  Abundant lightning in conjunction with sufficiently dry fuels.

  "Abundant" and "Sufficient" are locally defined and verified by NWS offices and their fire agency customers using the following GACC AOP-wide guidelines:

  Abundant Lightning:

1) Number of lightning strikes that meet climatologically significant criteria, or
2) Areal coverage of lightning such as "Scattered" or ≥ 25%

Sufficiently Dry Fuels:
1) GACC dryness levels remaining out of the 'green' category on the day of and the day following a thunderstorm event, or
2) ERC or BI values meeting climatologically significant percentiles or
3) Land management declaration

- Sustained surface winds exceeding a 10 minute average of 15 mph combined with relative humidity less than:

  - 15% in the Columbia Basin (zone 673)
  - 25% in the mountainous areas
  - 20% in the lower valley zones

This is typically (but not always) associated with a dry cold front passage.

These conditions must be verified by at least 2 observation sites (RAWS, METAR, DOT, Agrimet etc) for 2 consecutive hours. **For Idaho Zone 101 the criteria will be at least 2 observations sites for any 3 hours in an 8 hour period.** When using observation sites other than RAWS sites wind speeds will be converted to 10 minute averages.

Special consideration will be given whenever very hot temperatures are combined with very low relative humidity.

- Haines Index of 6 when combined with low relative humidity, typically 15% or below.
- An unusually unstable atmosphere This would be associated with a strong thermal trough which typically forms along the east slopes of the Washington Cascades.

The issuance of Red Flag Warnings will take into account fuel conditions, and will be coordinated with land management agencies and other applicable fire weather offices. Typically when 1000 hour fuels are at or below 11%, 100 hour fuels are at or below 8-10% and Live Fuels at or below 120%. In 2010 the NWSFO Spokane will be utilizing the NWCC dryness levels as input into the decision making process for issuing fire weather watches and red flag warnings.

Red Flag Warning Verification Points: Any observation point in the Fire District can be used for verification. The following will be key stations for monitoring purposes.

Zone 673
- Douglas Raws, Escure Raws, Saddle Mountain Raws

Zone 676-677
- Camp Four Raws , Dry Creek Raws , Entiat Raws

Zone 686 Spokane County portion

- Wellpinit Raws , Midnight Mine Raws, TurnBull Wildlife Refuge Raws

Zones 680, 682, 685

- NCSB , Raws, Leecher Raws , Signal Peak Raws,
  Peoh Point Raws

Zone 684

- Nespelem Raws , Kramer Raws , Douglas Ingram Raws , Oroville Raws…*****If Kramer Raws and Oroville Raws are used to meet red flag conditions at least one other RAWS in the fire zone will need to meet the criteria for at least one hour*****

Zones 686-687

- Kettle Falls Raws , Midnite Mine Raws , Gold Mountain Raws,
  Deer Mt. Raws

Zone 101

- Bonners Ferry Raws, Hoodoo Raws, Fish Hook Raws
  Magee Peak Raws , Line Creek Raws , Nuckols Raws
  Priest Lake Raws , Saddle Pass Raws

*****For Idaho Zone 101 the criteria will be at least 2 observations sites for any 3 hours in an 8 hour period.*****

Spot Forecasts

Official spot forecasts will be prepared and disseminated 24 hours a day. All prescribed fire spot forecast requests **MUST BE** accompanied by a recent weather observation that is representative of the burn site. More observations from the burn area will generally result in better spot forecasts. Feedback is imperative to increase the accuracy of spot forecasts. **In addition valid times for spot forecasts will be twelve hours from issuance**. If a fire has a longer duration, a new spot forecast should be requested.

"Spot forecasts are available year-round to all Federal, State and Local government entities for wildfire suppression, prescribed burns (for hazardous fuel reduction), search and rescue missions, HAZMAT incidents, or for any other land management activity that directly supports federal resources or the safety of civilians and forests. Spot forecasts cannot be provided to Local and State governments for non-fire/range management activities such as spray projects, road building, tree planting, recreational events, and prescribed burns (other than for hazardous fuel reduction) that do not have the potential to escape and threaten life and property."

Planning Forecasts

The issuance of planning forecasts are seasonal. Routine issuance of the morning and afternoon planning forecasts seven days a week normally begins in early spring. For 2010 it will be around Monday March 29th continuing through late October or early November. Specific start and stop dates are coordinated with customer agencies. Morning forecasts will be available at 07:00 a.m., while afternoon forecasts will be available by 3:00 p.m.

NFDRS Trend Forecasts

A numerical zone trend forecast is prepared and disseminated to WIMS by 1540 local time each afternoon from early to mid May through early October. The trend forecasts are used to compute the expected NFDRS indices valid for the following day. The number of NFDRS indices forecast by the weather office depends only on the number of NFDRS observations input into WIMS by the fire agencies. If observations are not entered into WIMS by 1500, a forecast will not be produced for the zone(s).

Farsite Data:

For the 2010 fire season, NWS Spokane will offer automated 7-day FARSITE weather data support. FARSITE data is now available from an interactive map identical to that used for the experimental digital Fire Weather Point Forecast Matrix. Ant user will be able to generate weather guidance for FARSITE at any time or place from this map.
Weather:

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ENGLISH
03 06 12 0700 1600 30 54 59 30 5620
03 07 63 0700 1600 27 44 84 63 5620
03 08 14 0700 1600 23 43 81 47 5620
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etc., through seven days

Wind:

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ENGLISH
03 06 0000 11 200 79
03 06 0300 12 200 84
03 06 0600 14 200 95
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etc., through seven days

IMETS (Incident Meteorologists)

Spokane Fire Weather Office will have a minimum of two certified IMET'S on staff with at least one available at all times during the high summer fire season.

NON-FORECAST SERVICES:

There are several duties that fall into the non-forecast services including, but not limited to teaching assignments, customer meetings, customer consultations, preparation of annual reports, preparation of annual operating plans, program management, research and in-house training of personnel.

There is a need for advanced notice for teaching assignments, customer meetings and consultations. The NWS-NWSEO Collective Bargaining Agreement provides rules for scheduling of bargaining unit employees. NWS management has limitations regarding modification of the work schedule after it has become “fixed” without paying overtime.

All requests for teaching assignments, customers meetings and consultations will be honored provided they are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Spokane will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. Shifts will be scheduled to complete the Annual Operating Plan and other Fire Weather commitments. Program management, research and training time will be provided to ALL employees based on the needs of the office.

Fire Weather Program Leader - The NWS Spokane Fire Weather Program Leader is Bob Tobin. High primary focus will be customer outreach, training, program development, IMET dispatches, and fire weather operational shifts.

Meeting Proficiency and Currency Standards - All forecasters will complete required proficiency prior to working alone on any real time Fire Weather products and services.

FORECAST VERIFICATION

Routine verification will be made on Red Flag Warnings and Spot Forecast turnaround times. In addition selected NFDRS trend forecasts for temperature, relative humidity, and wind will be verified. Results of the verification will be published in the Fire Weather Annual Summary. The National Weather Service will work with local fire agencies and the Pacific Northwest Coordination Group to develop a baseline for product verification.

GEOGRAPHICAL AREA DESCRIPTIONS

The National Weather Service Office in Spokane has fire weather forecast responsibility for protected lands in the northern and central part of eastern Washington and the northern and central Idaho Panhandle. Exceptions are the Blue Mountains area, the Yakama Indian Reservation, and portion of the Southeast Department of Natural Resources (DNR) protected lands. Forecasts for these areas are handled out of the National Weather Service office in Pendleton (see zone descriptions below).

WFO Spokane's eastern Washington fire weather area is divided into six districts. In addition, these forecast districts are further sub-divided into ten fire weather zones. See the map for general locations of districts and zones for eastern Washington. The fire weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

South Central District:

This district consists of two zones. Zone 676 lower elevations and Zone 680 higher elevations. The south central district covers those areas of the southern Washington Cascades north of the Yakama Indian Reservation to Mission Ridge. The district boundary also runs west to east from the Cascade crest to Interstate 82. This includes the Naches and Cle Elum Ranger Districts of the Wenatchee National Forest. This district has pronounced climate differences, from the marine air influence near the Cascade crest, to the dry arid climate of the valleys. This district has a relatively low frequency of lightning, and averages about 7-10 storm-days per season from June through September.

Central District:

This district has two zones. Zone 677 lower elevations and Zone 682 are the two zones in this district. This district extends from Mission Ridge north to the Sawtooth Ridge, and from the Cascade crest east to the Columbia River. It includes the northern part of the Wenatchee NF. Lightning frequency averages around 10-15 storm-days per season. The summer climate is similar to the South Central District, but winds tend to be stronger and more persistent, and day to day weather changes are more pronounced. This district contains some of the highest fire hazard areas in the Pacific Northwest.

Northern District:

This district has three zones. Zone 687 is the Okanogan Highland zone. Zone 684 lower elevations, mainly the Okanogan River Valley, and zone 685 higher elevations of the North Cascades. This district extends across the north part of eastern Washington from the Cascade crest to the Kettle River Ranger District on the east. It includes the Okanogan NF, the Republic Ranger district of the Colville NF, land under the protection of Northeast Department of Natural Resources, and the western and central parts of the Colville Indian Agency. The marine influence is minimal in this district compared to the south central and central districts due to its more continental location. Winds are generally lighter than central and south central districts. Lightning activity though is greater, averaging about 15 storm-days per season.

Northeast District:

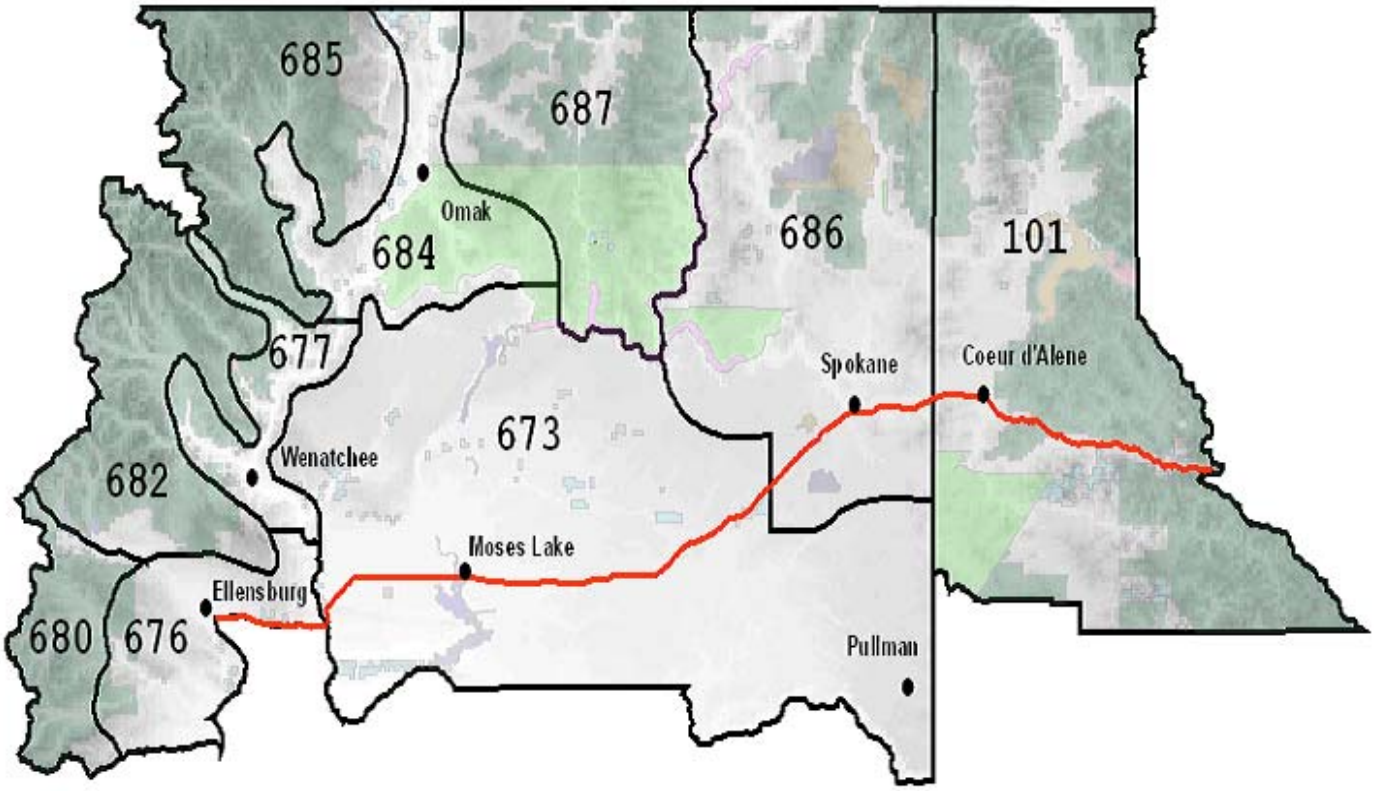
Zone 686. The northeast district extends from the Kettle River to the Idaho border, and south to the vicinity of Spokane. It covers the remainder of the Colville NF and Colville Indian Agency, as well as lands under the jurisdiction of Northeast DNR and the Spokane Indian Agency. This district is normally a bit wetter than the other districts since it extends into the western foothills of the Rocky Mountains. The southern portion around Spokane is the drier, windier section of this district. Lightning frequency is the greatest of any of the districts averaging 15-20 storm-days per season.

Northern Columbia Basin District:

Has one zone. Zone 673. Pendleton weather office has responsibility for a large portion of Washington State DNR Southeast Region lands, Yakama IA, and DOE Hanford. The southern boundary is I-90 for that part of the Yakima Firing Center in Kittitas County then follows county lines west to east across Grant, Adams, and Whitman Counties. The western part of the district boundary is the Columbia River at the Grant County line. The northern boundary is the same as previous years following the Columbia River to the eastern Ferry County then south across the northeast part of Lincoln County to Highway-2 near Davenport then east to the Spokane County line. Fuels in this district consist of mainly grass and sage. Zone 673 includes the Waterville Plateau which contains low ridges and coulees. Most of the district is at fairly low elevations between 900 and 3,000 ft...the exception being Badger Mountain near Waterville at 4,221 feet. Due to the relatively low elevations and locations, this is the warmest and driest district. Winds in some areas can be very strong. Lightning activity is the least of the districts, averaging about 6 storm-days per season.

Northern and Central Idaho Panhandle District:

This District is part of Region 1 and has one zone. Northern and Central Idaho Panhandle Zone 101 - Northern and Central Idaho Panhandle. This zone includes...Idaho Panhandle National Forests, Coeur d'Alene Indian Agency lands, and Idaho State protected lands in the following counties: Boundary, Bonner, Kootenai, Benewah, Shoshone, and the northern part of Latah county where a part of the St. Joe District resides. Zone 101 is broken into three (3) separate zones the Northern zone, Central zone and Southern zone. This area averages 12-15 thunderstorm days per season.



Spokane Fire Weather Forecast Zones in Washington

2010 NWS Spokane NFDRS Station Index

ZONE	NAME	Type	NUMBER	OWNER	LAT	LON	ELEV
673	Escure	R	453601	BLM	47.07	-117.98	1725
673	Columbia NWR	R	453102	FWS	46.87	-119.33	890
673	Spring Canyon	R	453002	NPS	47.93	-118.93	1340
673	Saddle Mtn	R	452701	FWS	46.69	-119.69	650
673	Douglas	R	452601	BLM	47.62	-119.90	2530
676	Ellensburg	M	452203	DNR	47.03	-120.54	1560
677	Dry Creek	R	452134	USFS	47.72	-120.53	3480
677	Camp 4	R	452132	USFS	48.02	-120.23	3773
677	Entiat	R	452136	USFS	47.67	-120.21	796
680	Peoh Point	R	452206	DNR	47.15	-120.95	4020
680	Sawmill Flats	R	452221	USFS	46.98	-121.08	3500

680	Sedge Ridge	R	452306	DNR	46.58	-120.90	4300
682	Viewpoint	R	452128	USFS	47.85	-120.87	3760
682	Swauk	R	452219	USFS	47.25	-120.67	3773
682	Alpine Lookout	M	452127	USFS	47.80	-120.85	6237
684	NCSB	R	452030	USFS	48.43	-120.14	1650
684	Oroville	R	452039	BLM	48.96	-119.49	1360
684	Nespelem	R	452009	BIA	48.21	-119.02	1782
684	Douglas Ingram Rdg	R	452035	USFS	48.12	-120.10	3460
684	Kramer	R	452040	BIA	48.27	-119.52	2720
685	83Monument	R	452036	USFS	49.00	-120.65	6500
685	Leecher	R	452020	USFS	48.25	-120.00	5019
685	First Butte	R	452006	USFS	48.62	-120.11	5500
685	Aeneas	R	452001	DNR	47.70	-119.60	5167
686	Turnbull Wildlife	R	453506	FWS	47.41	-117.53	2250
686	Midnite Mine	R	452913	BLM	47.94	-118.09	2693
686	Pal Moore Orchard	R	452915	USFS	48.39	-117.43	3120
686	Kettle Falls	R	452916	NPS	48.61	-118.12	1310
686	Tacoma Creek	R	453413	USFS	48.49	-117.43	3300
686	Little Pend Oreille	R	453416	FWS	48.27	-117.43	2020
686	Deer Mountain	R	453412	USFS	48.80	-117.45	3300
686	Wellpinit	R	452918	BIA	47.88	-118.10	2240
686	Spokane Airport	M	453505	NWS	47.60	-117.50	2365
687	Peony	R	452038	USFS	48.59	-119.21	3600
687	Brown Mountain Ochd	R	452514	USFS	48.54	-118.69	3210
687	Owl Mountain	R	452513	USFS	48.94	-118.30	4400
687	Lane Creek	R	452511	USFS	48.61	-118.28	4500
687	Gold Mountain	R	452510	BIA	48.18	-118.49	4636
687	Iron Mountain	R	452512	USFS	48.56	-118.62	4325
687	Lost Lake	R	452029	USFS	48.87	-119.06	3760
687	Peony	R	452038	USFS	48.59	-119.21	3600
101	Bonners Ferry	R	100101	USFS	48.72	-116.35	2310
101	Magee Peak	R	100425	USFS	47.89	-116.31	4856
101	Fish Hook	R	100421	USFS	47.86	-115.91	4700
101	Hoodoo	R	100208	USFS	48.05	-116.84	2270
101	Lines Creek	R	100424	USFS	48.15	-116.29	5120
101	Nuckols	R	100423	USFS	47.54	-115.97	4000
101	Priest Lake	R	100204	USFS	48.60	-116.96	2600
101	Saddle Pass	R	100107	USFS	48.98	-116.79	5120