National Weather Service, Spokane Fire Weather Operating Plan 2024

NEW For 2024:

1) Staff changes
    - Andrew Brown (Promotion to Meteorologist in Charge)
    - Several vacancies from transfers/retirement
2) Fire weather chat room available for fire partners
3) Potential use of "Extreme" fire weather conditions during live briefings

LOCATION:

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

HOURS:

Office hours at NWS Spokane for Fire Weather will be as follows:

Daily with 24 hour forecast and briefing coverage

PHONE NUMBERS and E-Mail:

Public	(509) 244-6395
FAX	(509) 244-0554

andrew.brown@noaa.gov
stephen.bodnar@noaa.gov

STAFF:

Name	Position
Andrew Brown	Meteorologist in Charge
vacant	Science and Operations Officer
vacant	Warning Coordination Meteorologist
Todd Carter	ITO/IMET
Steve Bodnar	Senior Forecaster/Fire Weather Program Leader/IMET
Jeremy Wolf	Senior Forecaster
Greg Koch	Senior Forecaster
Char Dewey	Senior Forecaster
Jon Fox	Forecaster/IMET
Miranda Solveig Cote	Forecaster
Robin Fox	Hydrologist/BAER Team/Forecaster
Laurie Nisbet	Forecaster
Rocco Pelatti	Forecaster

Steven Van Horn	Forecaster/IMET
Joey Clevenger	Forecaster
Ken Daniel	Forecaster
Valerie Thaler	Forecaster
Krista Carrothers	Forecaster/IMET Trainee

COMMUNICATIONS:

All forecasts are available on WIMS, and Spokane's home page. Customers who do not have access to WIMS, or Internet can still have forecasts faxed to them.

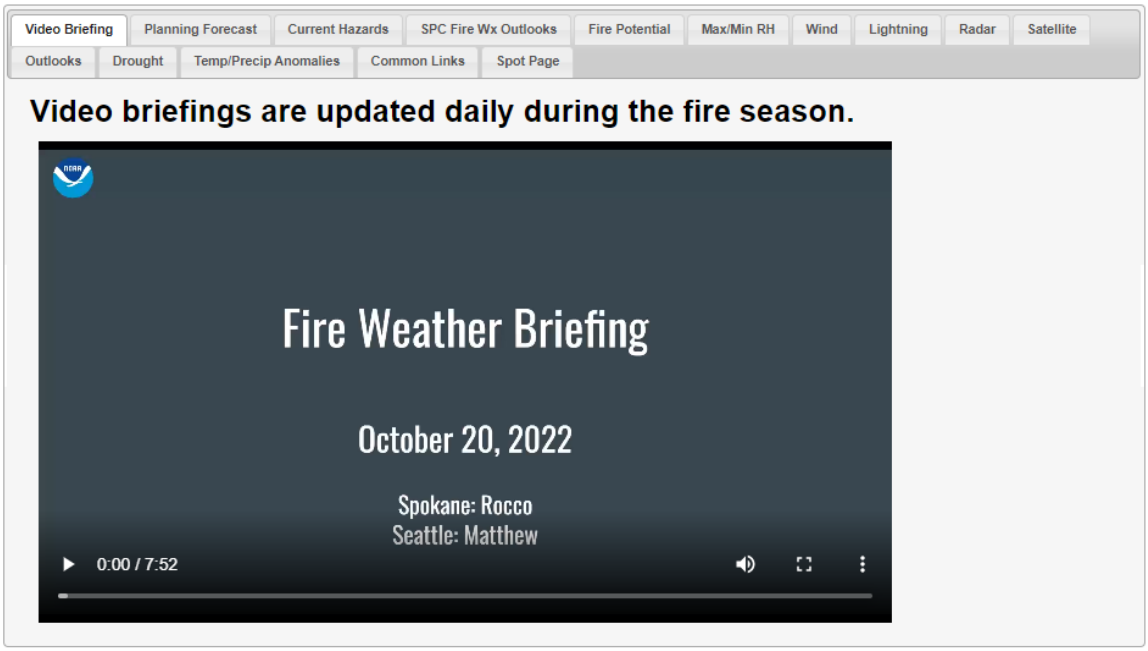
Internet Address:
http://www.wrh.noaa.gov/otx
http://www.weather.gov/spokane
https://www.weather.gov/wrh/fire?wfo=otx

FIRE WEATHER CHAT ROOM:

NWSChat, powered by Slack, is used by NWS operational personnel to deliver Impact-based Decision Support Services (IDSS) and exchange hydrometeorological or other hazards information with our Core Partners. This information aids in the efficacy of local, state, regional and national emergency response and recovery efforts, thereby aligning with the agency's mission of protecting life and property. The private channel **#otx-fire** will be utilized for exchanging fire weather and other related information to IMETs and fire partners. For registration information, please contact valerie.thaler@noaa.gov.

SPOKANE FIRE WEATHER DASHBOARD:

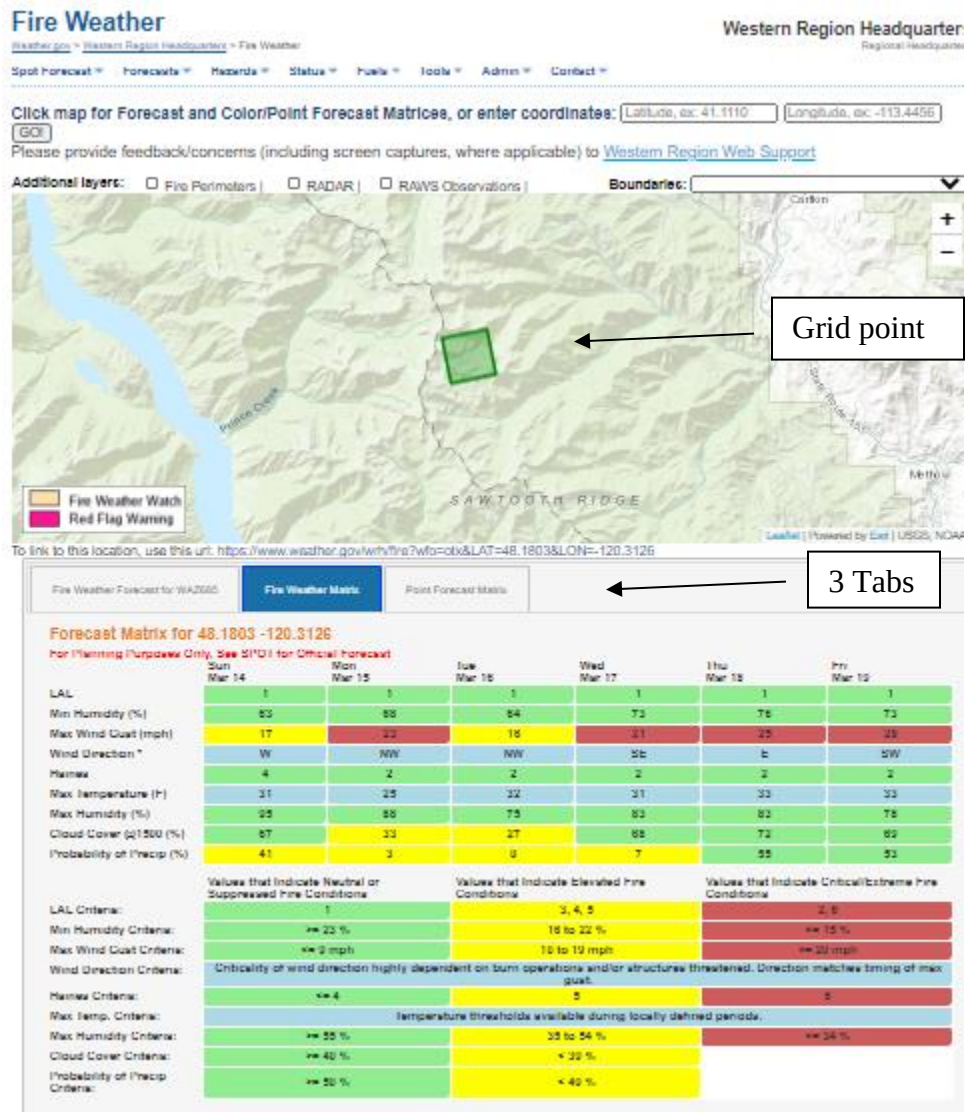
https://www.weather.gov/otx/firedashboard



A fire weather dashboard is available. The dashboard houses resources related to fire weather from the Spokane National Weather Service, regional coordination centers, Storm Prediction Center, and more. Graphs including temperature and precipitation anomalies as well as the latest drought status can be found on the resource. Any suggestions for additional products, please email stephen.bodnar@noaa.gov

FIRE WEATHER WEBPAGE

https://www.weather.gov/wrh/fire?wfo=otx&layer=fwx



Three tabs found on the bottom of the map for a selected gridpoint. Gridpoint is defined as a 2.5km by 2.5km forecast point (ie, the green box illustrated on map)

Tab 1: Fire Weather Zone Forecast for the specified gridpoint
Tab 2: Color coded Fire Weather Matrix for the specified gridpoint.
Tab 3: Point Forecast Matrix for the specified gridpoint. (elevation listed)

TRAINING PROVIDED

Spokane Fire Weather Forecasters are available for training courses, workshops, seminars and other meetings requiring meteorological expertise. Training includes local and regional courses such as S-290 and S-390, as well as pre-season refreshers for Hotshot crews, Smokejumpers, burn bosses, general firefighters, lookout personnel, etc. Please give as much advance notification as possible to ensure the availability of a forecaster. Please send all training requests to stephen.bodnar@noaa.gov.

WEATHER BRIEFINGS

Internet based weather briefings are available from the Spokane office as needed. During peak fire season, normally mid June-early October briefings will be daily at 0900 PDT. These briefings will be recorded and posted online by 1000 PDT.

New for 2024, forecasters will have the ability to brief our customers of potentially extreme fire weather conditions. This descriptor will only be utilized in the fire weather briefing on the weather matrix and problem of the week graphics. Below is a break-down for the color scale used:

- Elevated – Fire weather conditions are critical or near critical but fuels have not been declared ready for fire weather highlights. Elevated could also be used when fuels are ready but weather conditions are marginal. In the event of lightning events with dry fuels, elevated could imply moderate to high uncertainty in a zone or isolated coverage.

- Critical – Fire weather conditions are critical and fuels have been declared ready. Fire weather watches or red flag warnings have been issued or are anticipated.

- Extreme – Reserved for critical fire weather events that are extremely rare and have a combination of historic winds, humidity levels, and fuel dryness. Previous events for reference include 1991 Fire Storm, 2015 Okanogan Wind Storm, 2020 Labor Day Storm, and 2023 August Fires of Spokane County.

During Land Management season briefings are available by customer request and are usually once to twice per week for planning purposes. To register for the webinars, please contact stephen.bodnar@noaa.gov to be added to the seasonal list or call 509-244-5031 to inquiry about registering. Phone briefings are available 24 hours per day by calling 509-244-5031.

SOCIAL MEDIA

NWS Spokane has a Facebook page, Twitter account, and a YouTube channel. Information about current Fire Weather may be included in these social media feeds, but such information is intended as supplemental information for the general public; it is not intended to meet the specialized needs of the wildland firefighting community.
www.twitter.com/NWSSpokane,
https://www.facebook.com/NWSSpokane/
https://www.youtube.com/user/nwsspokane

FORECAST DISTRICT:

NWS Spokane has fire weather forecast responsibility for a large portion of protected lands in eastern Washington. Exceptions are the Blue Mountains, 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.

WFO Spokane's eastern Washington fire weather area is divided into five districts. In addition, these forecast districts are subdivided into fifteen 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. In 2022, new fire weather zones were established in Eastern Washington. These zones are in better alignment with fire danger rating areas.

NWS Spokane has forecast responsibility for the Central and Northern Idaho Panhandle. This district has one 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 Okanogan-Wenatchee NF Idaho Panhandle NF
BLM....	Spokane District Coeur d'Alene District
BIA....	Confederated Tribes of the Colville Reservation Spokane Tribe of Indians Coeur d'Alene Tribe of Indians

	Kalispel Tribe of Indians
NWR...	Turnbull National Wildlife Refuge Columbia National Wildlife Refuge Kootenai National Wildlife Refuge Lake Pend Oreille Wildlife Refuge Sinlahekin Wildlife Refuge
Washington DNR...	Northeast Area Resource Protection Division Southeast Area Resource Protection Division
Idaho...	Department of State Lands
NPS...	Lake Roosevelt National Recreation Area Lake Chelan National Recreation Area

FORECAST SERVICES:

Fire Weather Watches and Red Flag Warnings

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) ERC or BI values meeting climatologically significant percentiles or
  2) Land management declaration

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

  - 15% in the Columbia Basin (zone 706 and 707)
  - 20% in the lower valley zones (zone 703, 704, 705, 708 and 709)
  - 25% in the mountainous areas (696, 697, 698, 699, 700, 701, 702, 101)

  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 observation 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.

- **Hot, Dry, Unstable:** High Haines Index of 6 combined with low relative humidity, typically 15% or below.

- **Strong winds:** Winds that will overcome the environment no matter what the relative humidity.

- **An Unusually Unstable Atmosphere:** This would be associated with a strong thermal trough which typically forms along the east slopes of the Washington Cascades in conjunction with 850-700 vertical temperature change greater than 15°C. This Watch or Warning criteria is only good for PSA C1 which is the Central Cascade zones 696, 697, 698, and Cascade valley zones 704, 705.

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% and Live Fuels at or below 120%.

SPOT FORECASTS

Detailed instructions for completing the Spot Request Form and access links are available on our Fire Weather Web page in the upper left hand corner or at:

https://www.wrh.noaa.gov/wrh/UsersSpotGuide2019_2.0.pdf

Valid times for spot forecasts will be twelve hours from forecast issuance.

The spot forecast request web page available on the Spokane fire weather web page at:

https://www.weather.gov/spot/request/

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 five districts. In addition, these forecast districts are subdivided into fifteen fire weather zones. See the map for general locations of districts and zones for eastern Washington.

Central District:

This district has three zones. Zone 696, Zone 697, and Zone 705. This district extends from Mission Ridge north to Sawtooth Ridge, and from the Cascade crest east to the Columbia River. It includes the northern part of the Wenatchee NF and Lake Chelan National Recreation Area. Lightning frequency averages around 10-15 storm-days per season. The Cascade rain shadow is very pronounced across this district with annual rainfall totals near 100 inches along the crest to 10 inches or less along the Columbia River. Winds tend to be stronger and more persistent with more pronounced day to day weather changes. These zones are typically impacted by marine pushes. This district contains some of the highest fire hazard areas in the Pacific Northwest.

Northern District:

This district has five zones. Zone 698 is the higher elevations of the North Cascades. Zones 699 and 702 make up the Okanogan Highlands and zones 703 and 704 are lower elevations zones within the Okanogan and Methow Valleys. This district extends across the north part of eastern Washington from the Cascade crest to the Columbia River on the east. It includes the Okanogan NF and three ranger districts from the Colville NF (Tonasket, Republic, and Three-Rivers). The district also contains land under the protection of Northeast Department of Natural Resources and Confederated Tribe of the Colville Indians. The marine influence is minimal in this district compared to the central districts due to its more continental location. Winds are generally lighter than central districts due to the complex topography. The exception is the Okanogan River Valley and Methow Valley. These valleys experience more pronounced diurnal wind cycles. Frontal systems will also channel strong winds through these valleys when aligned. Lightning activity though is greater, averaging about 15 storm-days per season. Annual rainfall varies from over 60 inches along the Cascade crest to less than 15 inches in the Okanogan Valley.

Northeast District:

This district has two zones: 700 and 701. The northeast district extends from the Columbia River to the Idaho border, and south to the Spokane and Little Spokane rivers. It covers the

remainder of the Colville NF (Three Rivers and Newport-Sullivan districts) and The Spokane Tribes of Indians, as well as lands under the jurisdiction of Northeast DNR. This district is normally wetter than the other districts since it extends into the western foothills of the Rocky Mountains. The southern portion closer to the Spokane River and in the vicinity of Deer Park is slightly drier and typically windier with receptive fuels earlier in the fire season. Lightning frequency is the greatest of any of the districts averaging 15-20 storm-days per season. Annual rainfall varies from over 60 inches per year near the Canadian Border to less than 20 inches on the south boundary.

Northern Columbia Basin District:

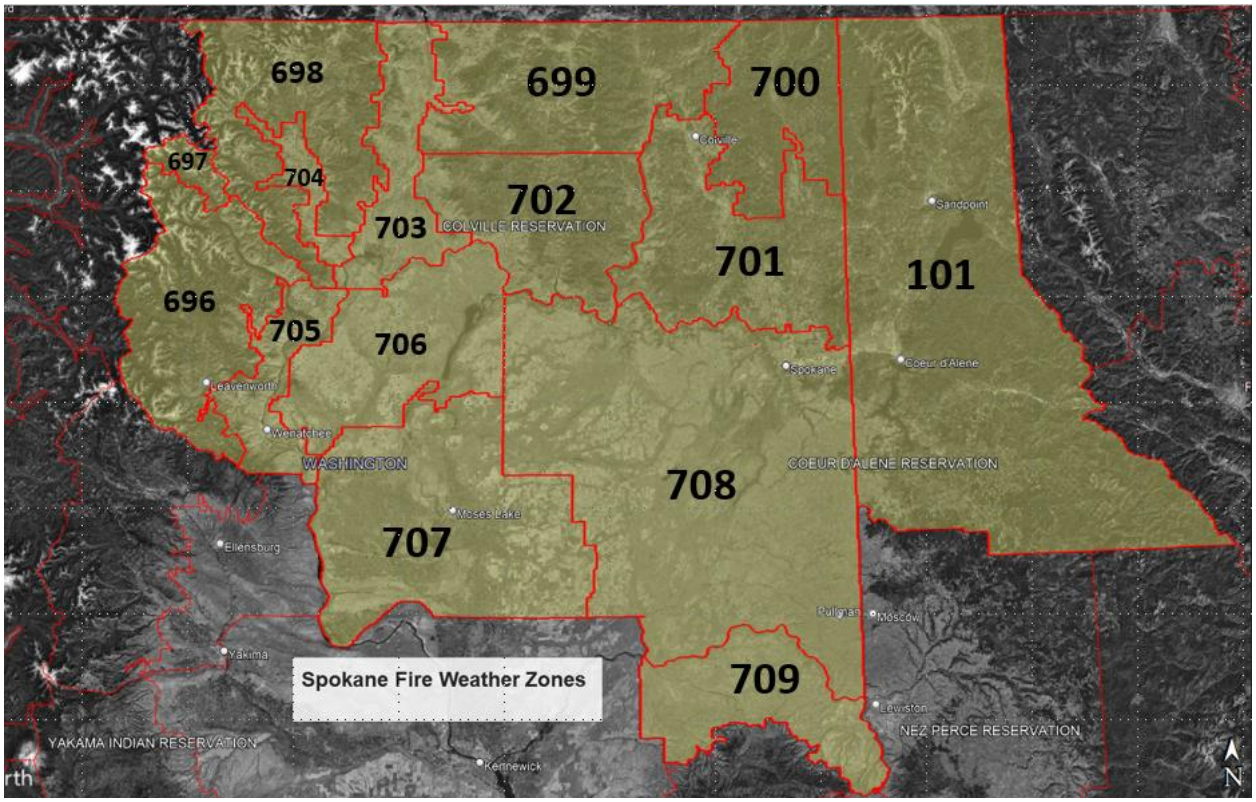
This district has four zones: 706, 707, 708, and 709. Pendleton weather office has responsibility for a large portion of Washington State DNR Southeast Region lands, Yakama IA, and DOE Hanford. The southern boundary follows county lines west to east across Grant and Adams Counties then bends south into the foothills of the Blue Mountains including eastern portions of Columbia County and finally through northern Garfield and Asotin Counties. The western part of the district boundary is the Columbia River following the Grant and Douglas County lines then wraps around Douglas County and traces back east along the Columbia River to the Spokane and Little Spokane Rivers to Idaho state line. Fuels in this district consist of mainly grass and sage with areas of mixed conifer developing for the northeast portion of zone 708 around Spokane and Davenport. Zone 706 mainly consists of the Waterville Plateau and extends east into northern Grant County including Banks Lake. This zone contains low ridges and coulees along with dry land farming. Zone 707 is also a mix of grass and sage along with a heavy concentration of irrigated farming. Zone 708 spans from dry grass and sage in the heart of the Columbia Basin to the onset of timber around Davenport, Spokane, and Mica Peak. This zone also includes the Washington Palouse to the south. Dry land farming is common throughout this zone. Zone 709 stretches west to east from Columbia County to Asotin County with the northern boundary following along the Snake River and southern boundary north of the Blue Mountains. The zone is primarily made up of grass with a heavy concentration of graze land and dry land farming. Most of the district is at fairly low elevations between 900 and 2,000 ft. The terrain rises near 3,000 ft or higher in eastern Zone 708 and southern 709. The highest point at Mica Peak is over 5000 feet. Higher elevations also exist on the Waterville Plateau. For example, Badger Mountain near Waterville is at 4,221 feet. Annual rainfall ranges from less than 10 inches in zone 707 to over 20 inches in eastern portions of 708. These are the some of the warmest and driest districts. 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 Tribes of Indians, 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. The valleys receive over 20 inches of

annual rainfall while over 60 inches can fall on the peaks. This area averages 12-15 thunderstorm days per season.

Spokane Fire Weather Forecast Zones



ZONE #	ZONE NAME
696	East Washington Central Cascades
697	East Portion of North Cascades National Park/Lake Chelan National Recreation Area
698	East Washington North Cascades
699	Okanogan Highlands & Kettle Mountains
700	Selkirk Mountains of Northeast Washington
701	Foothills of Northeast Washington
702	Colville Reservation
703	Okanogan Valley
704	Methow Valley
705	Foothills of Central Washington Cascades
706	Waterville Plateau
707	Western Columbia Basin
708	Eastern Columbia Basin - Palouse - Spokane Area
709	Lower Palouse - Snake River

NWS Spokane NFDRS Station Index

ZONE	NAME	TYPE	WIMS ID	OWNER	LAT	LON	ELEV
696	Viewpoint	R	452128	USFS	47.85	-120.87	3760
696	Camp 4	R	452132	USFS	48.02	-120.23	3773
696	Dry Creek	R	452134	USFS	47.73	-120.54	3661
697	Stehekin	R	452121	NPS	48.34	-120.72	1230
698	Leecher	R	452020	USFS	48.25	-120	5019
698	First Butte	R	452006	USFS	48.62	-120.11	5500
698	Douglas Ingram Rdg	R	452035	USFS	48.12	-120.1	3460
699	Iron Mountain	R	452512	USFS	48.56	-118.62	4325
699	Lost Lake	R	452029	USFS	48.87	-119.06	3760
699	Peony	R	452038	USFS	48.59	-119.21	3600
699	Brown Mountain Ochd	R	452514	USFS	48.54	-118.69	3210
699	Owl Mountain	R	452513	USFS	48.94	-118.3	4400
699	Lane Creek	R	452511	USFS	48.61	-118.28	4500
700	Pal Moore Orchard	R	452915	USFS	48.39	-117.43	3120
700	Tacoma Creek	R	453413	USFS	48.49	-117.43	3300
700	Little Pend Oreille	R	453416	FWS	48.27	-117.43	2020
700	Deer Mountain	R	453412	USFS	48.8	-117.45	3300
700	Flowery Trail	R	453145	USFS	48.3	-117.41	2680
700	Teepee Seed Orchard	R	453414	USFS	48.66	-117.48	3280
701	Kettle Falls	R	452916	NPS	48.61	-118.12	1310
701	Wellpinit	R	452918	BIA	47.88	-118.1	2240
701	Big Blue	R	452919	BLM	48.01	-118.02	3400
701	Arcadia Orchards	R	453507	BLM	47.91	-117.39	2050
702	Nespelem	R	452009	BIA	48.21	-119.02	1782
702	Gold Mountain	R	452510	BIA	48.18	-118.49	4636
703	Oroville	R	452039	BLM	48.96	-119.49	1360
703	Kramer	R	452040	BIA	48.27	-119.52	2720
703	Spectacle Lake	R	452043	BLM	48.83	-119.51	1825
703	Aeneas	R	452001	DNR	48.74	-119.62	5185
704	NCSB	R	452030	USFS	48.43	-120.14	1650
705	Entiat	R	452138	USFS	47.73	-120.24	2825

706	Douglas	R	452601	BLM	47.62	-119.9	2530
707	Saddle Mtn	R	452701	FWS	46.69	-119.69	650
707	Othello (Columia NWR)	R	453102	BLM	46.88	-119.32	855
708	Spokane BLM QD#1	R		BLM	47.54	-118.56	2100
708	Spring Canyon	R	453002	NPS	47.93	-118.93	1340
708	Escure	R	453601	BLM	47.07	-117.98	1725
708	Turnbull Wildlife	R	453506	FWS	47.41	-117.53	2250
709							
101	Bonners Ferry	R	100101	USFS	48.72	-116.29	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	-116.79	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	48.6	-116.96	2600
101	Saddle Pass	R	100107	USFS	48.98	-116.79	5120