



# Drought Status Update #23

## August 21, 2015

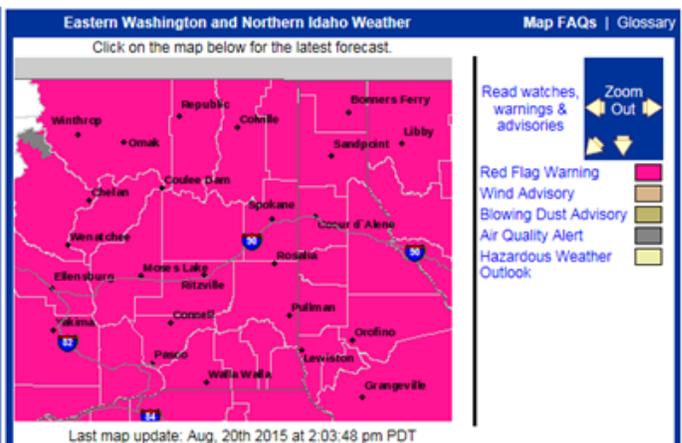
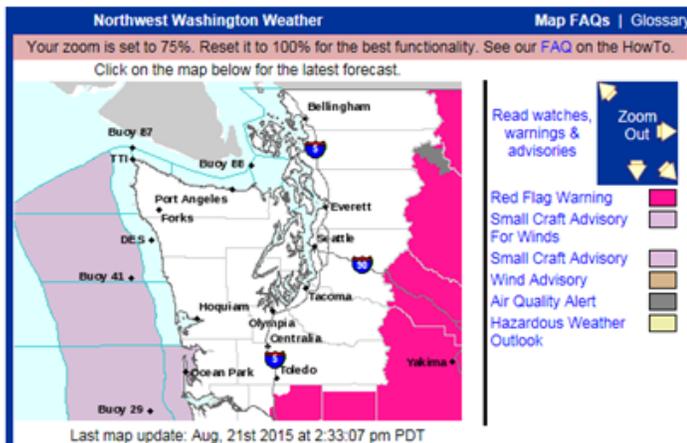
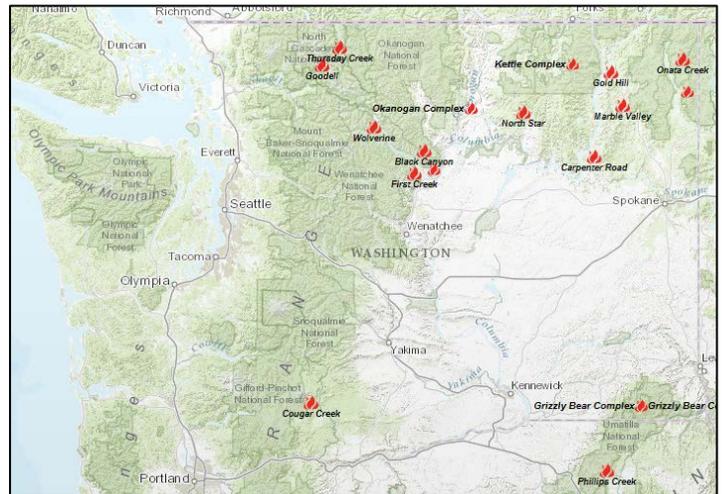
Note: This material is intended for, and contains elements of special interest to, WDFW agency staff. Non-agency readers or anyone having questions about the context, clarity, or content for items in this update should contact the author, WDFW Drought Coordinator Teresa Scott at (360) 902-2713 [teresa.scott@dfw.wa.gov](mailto:teresa.scott@dfw.wa.gov)

August lightning and thundershowers in Olympia have always been more delightful than frightful, but that’s not true elsewhere in the state. The destruction and loss of life this week and this summer from wildfires affects us all. I’m sure there are numerous tales of valor from within WDFW. I want to take a moment to honor the staff at Chelan, Wells and all that area’s hatcheries who are keeping fish alive amid the devastation of the fire sweeping that area.

Check out the [weekly update by the Office of the State Climatologist](#), which summarizes conditions and climate milestones to-date.

### Extreme Weather and Wildfire

Governor Jay Inslee has a web page titled [Washington Wildfire Resources](#) with links to wildfire status updates, shelter and housing resources, updates from the State, state and federal resources, etc. Social media updates are available on #waWILDFIRE . This map from the [Northwest Interagency Coordination Center](#) shows the major fires in Washington, but misses a lot of smaller fires. For example, the Paradise fire in the Olympic Mountains is still burning, as are five other blazes on the Olympic Peninsula alone. [Inciweb](#) shows 24 fires in Washington – again, this site underrepresents new or small fires being fought using local resources.

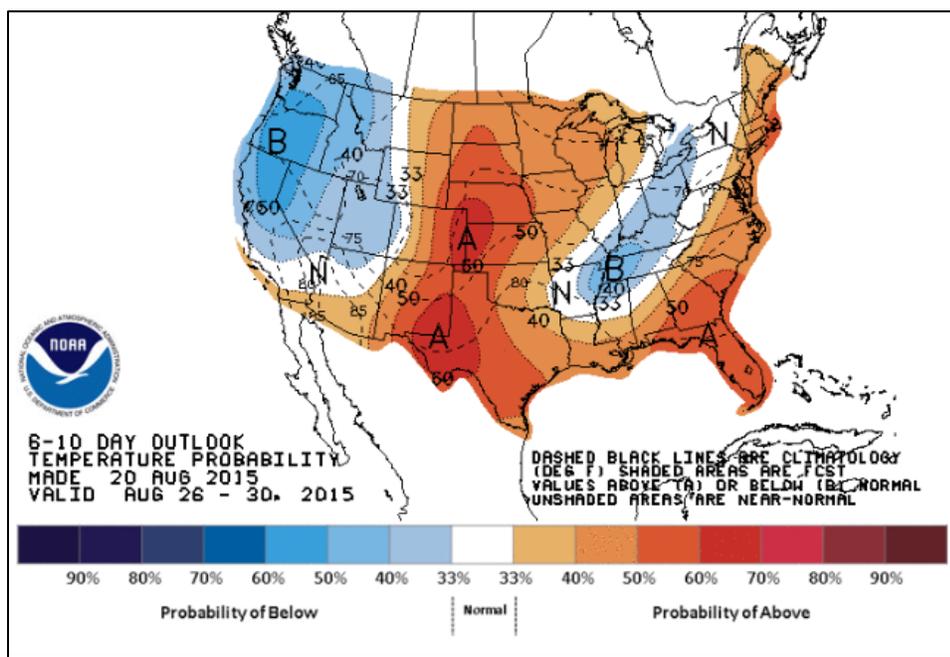
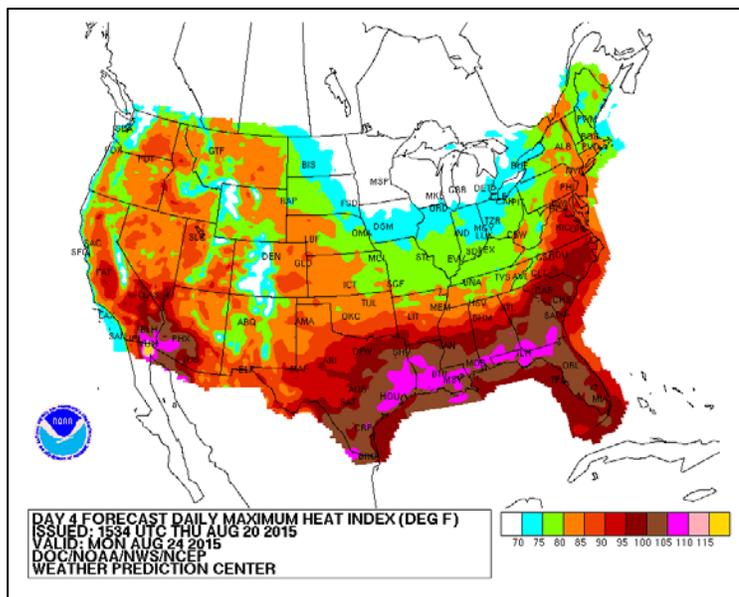


[NWS Severe Weather Hazards](#) for Friday are above. That bright pink/red color indicates a NWS Red Flag warning, which is a term used by fire-weather forecasters to call attention to weather conditions that may result in extreme burning conditions. Conditions include sustained high wind, low relative humidity, and high air temperatures. The current warning remains in effect through Friday evening in the Spokane and Pendleton NWS forecast areas.

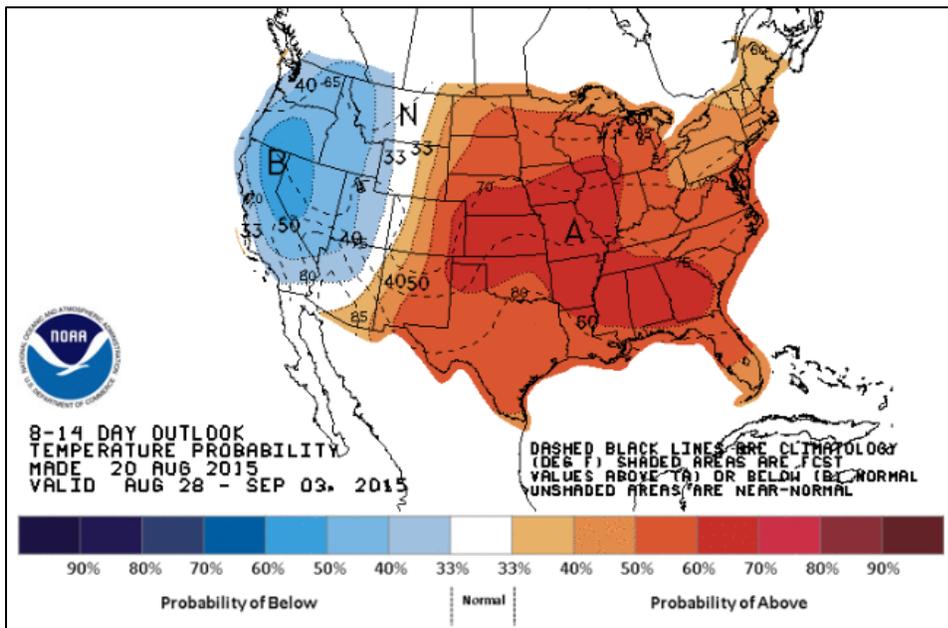
## Temperature Forecasts

At right is the “[Maximum Heat Index](#)” (in degrees F) for Monday August 24<sup>th</sup>, as forecast 8/20. Monday appears to be forecasted with the warmest conditions in Washington in the upcoming week. Daily weather forecast maps are [available from NWS](#) that show maximum temperature and other useful tools.

The [6-10 day temperature outlook](#) shows the forecaster’s confidence (probability) that the observed temperature will be in the range of one of three possible categories - below (B), normal (N), or above (A) based on the 30-year climatology record of 1981-2010. The 6-10 day (8/26-30) temperature outlook (below) is for **below-normal** temperatures throughout Washington (and California)!

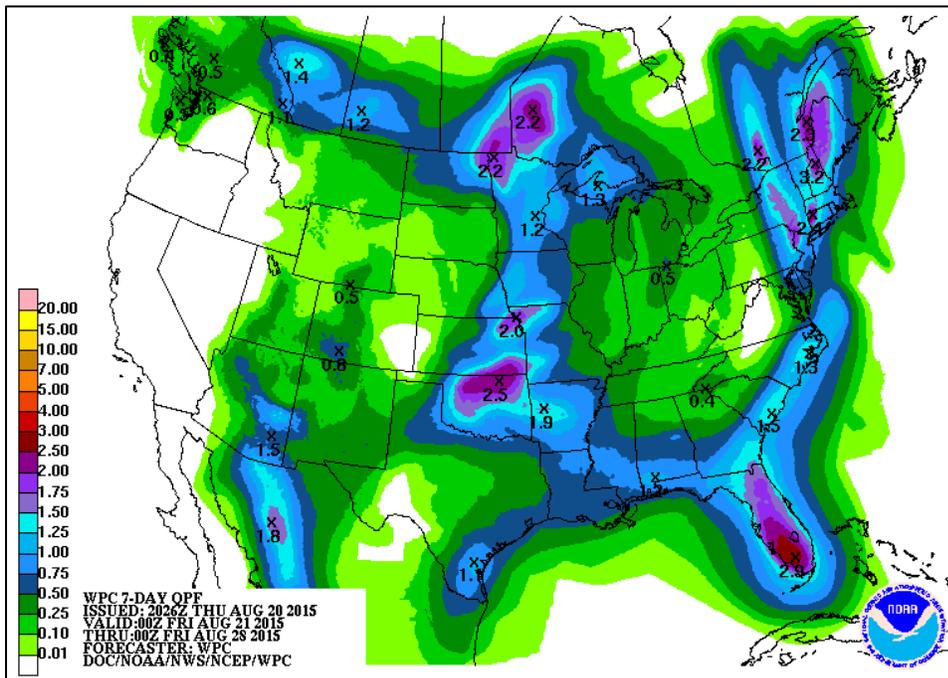


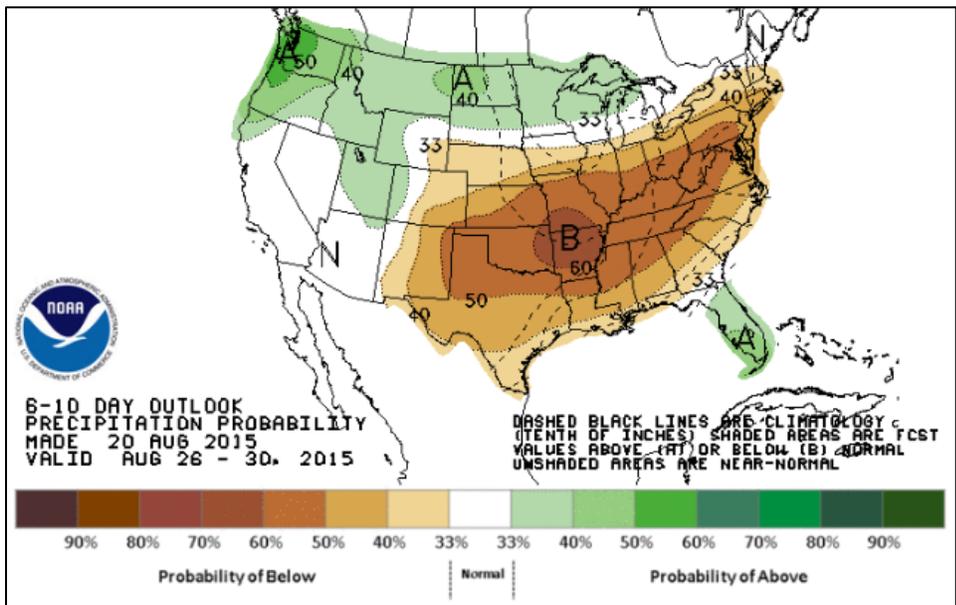
The [8-to-14 day temperature outlook](#) (below) (8/28-9/3) looks similar to the 6-10 day forecast: Cool and cooler (relatively speaking).



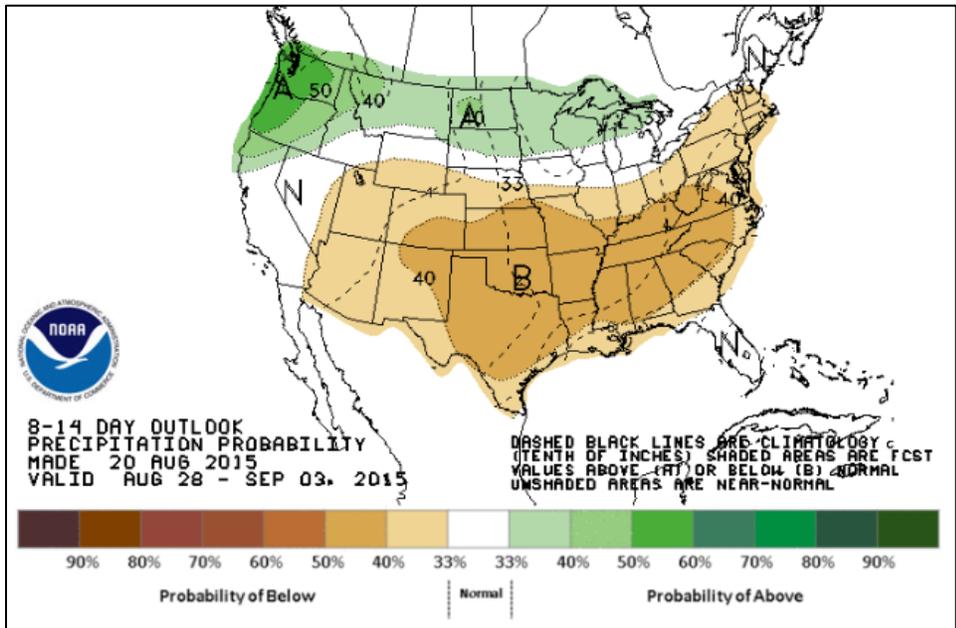
### Precipitation Forecasts

Up to a half-inch of [precipitation](#) is expected again in northern Puget Sound and Olympic Peninsula over the next seven days (below), slightly less (1/10 to 1/100) farther south; no precipitation is forecasted for Eastern Washington except very northeast.





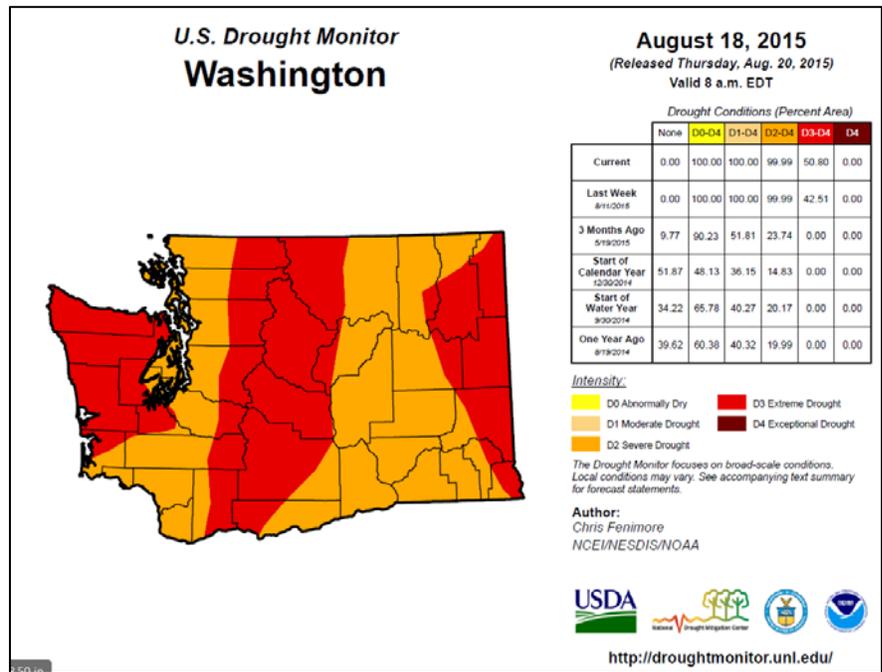
The [6-to-10 day probability of precipitation](#) for 8/26-30 is above-normal statewide (above), and this carries through to the [8-to-14-day precipitation probability outlook](#) (below) for 8/28-9/3.



**Federal Drought Status**

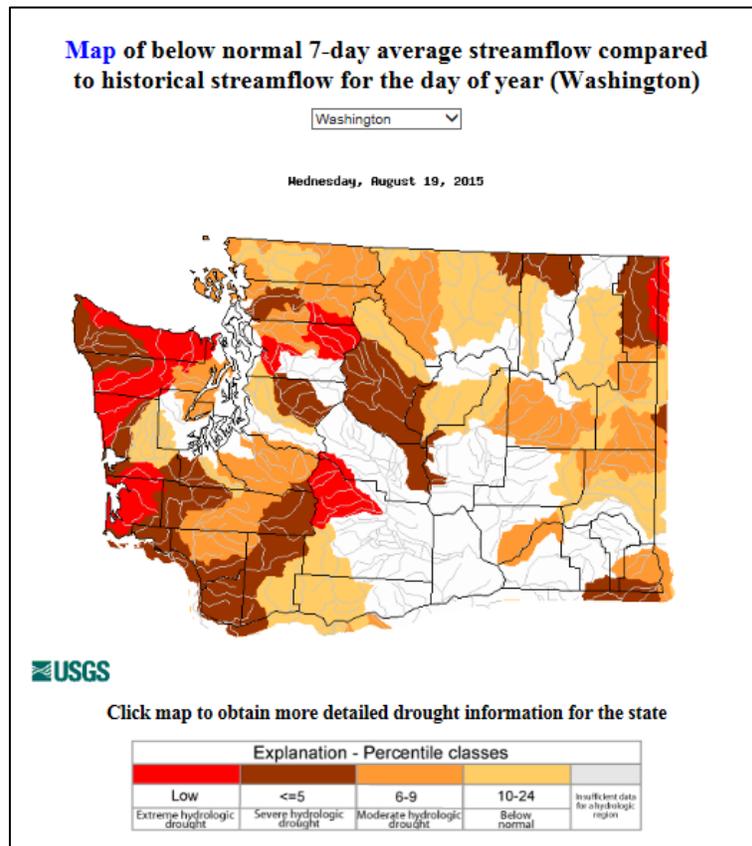
The [U.S. Drought Portal](#) provides the weekly drought status for the nation (below). Find out more about U.S. Department of Agriculture disaster status and relief programs at the [USDA Disaster Assistance](#) web page. The total area of Washington in Extreme Drought Category D-3 expanded eight percent this week.

Farmers in 38 of 39 Washington counties suffering crop losses in the statewide drought are now eligible for low interest emergency loans from the U.S. Department of Agriculture. [2015 United States Department of Agriculture Drought Disaster Updates](#)



### Stream Flows

This USGS figure showing [stream gauges with below normal streamflow](#) for 7 days or more provides the best overview of Washington conditions this week. Looks like the proportion of the state experiencing more than moderate drought conditions (based on streamflows) is reducing.



## Selected Washington Streamflows Table

The table gives a quick visual reference for daily flows as a percent of normal for this date in the historic record. We selected 43 out of a total of 254 flow gauges in Washington as a subjectively representative sample of Washington conditions. The first column shows the gauge location, the second column shows today's stream flow readings, the third column shows today's flows as a percentage of average flows for this date throughout the period of record, column four shows the (previous) minimum flow for this date, and the fifth column shows in what year that minimum occurred.

Fifteen of our select set of 43 locations set record lows on August 20, 2015. Low flow records are occurring marginally less frequently as we move into the traditional low-flow periods for Washington streams. [Statewide streamflows](#) are available from USGS.

<b>SELECTED WASHINGTON STREAMFLOWS FOR 43 OUT OF 254 GAUGES IN WASHINGTON 8/20/2015</b>	<b>TODAY'S MIN FLOW (CFS)</b>	<b>% OF AVERAG E FOR THIS DATE IN THE RECORD</b>	<b>MIN FLOW (CFS)</b>	<b>YR OF MIN</b>
MF Nooksack River Near Deming, Wa	249	77%	118	1996
Nooksack River At Ferndale, Wa	1,490	81%	1,180	1998
Skagit River Near Concrete, Wa	7,100	72%	5,210	1979
Sauk River At Darrington, Wa	463	45%	515	1931
Cascade River At Marblemount, Wa	433	55%	473	2006
NF Stillaguamish River Near Arlington, Wa	182	48%	180	1938
Snoqualmie River Near Carnation, Wa	438	45%	471	1941
Skykomish River Near Gold Bar, Wa	342	30%	498	2003
Issaquah Creek Near Mouth Near Issaquah, Wa	17	59%	12	2004
Cedar River Below Diversion Near Landsburg, Wa	87	61%	105	2006
Cedar River At Renton, Wa	117	65%	41	1958
Big Soos Creek Above Hatchery Near Auburn, Wa	29	88%	21	1994
Green River Near Auburn, Wa	250	84%	216	1994
South Prairie Creek At South Prairie, Wa	26	47%	28	1958
Puyallup River At Puyallup, Wa	1,640	85%	737	1973
Nisqually River At Mckenna, Wa	488	109%	32	1961
Deschutes River Near Rainier, Wa	22	59%	21	1992
NF Skokomish R Bl Staircase Rpds Nr Hoodspport, Wa	32	25%	53	1992
Dungeness River Near Sequim, Wa	95	39%	116	2005
Hoko River Near Sekiu, Wa	8	27%	13	1967
Calawah River Near Forks, Wa	50	51%	51	2004
Hoh River At Us Highway 101 Near Forks, Wa	759	71%	664	1994
Satsop River Near Satsop, Wa	151	50%	183	1994
Chehalis River Near Grand Mound, Wa	101	45%	100	1967

Naselle River Near Naselle, Wa	14	33%	20	1970
Cowlitz River Below Mayfield Dam, Wa	2,640	101%	1,310	1940
Cowlitz River At Packwood, Wa	338	46%	411	1944
Lewis River At Ariel, Wa	857	68%	275	1931
White Salmon River Near Underwood, Wa	493	72%	410	1994
Klickitat River Above West Fork Near Glenwood, Wa	71	57%	58	1992
Walla Walla River Near Touchet, Wa	5	28%	2	1992
Tucannon River Near Starbuck, Wa	48	80%	21	1931
Grande Ronde River At Troy, Or	399	52%	353	1977
Yakima River At Kiona, Wa	2,890		662	1979
American River Near Nile, Wa	36	45%	35	1977
Crab Creek At Irby, Wa	2	16%	1	1992
Wenatchee River At Plain, Wa	385	38%	401	2005
Methow River Near Pateros, Wa	244	41%	258	1977
Okanogan River At Malott, Wa	601	41%	359	2003
Okanogan River At Oroville, Wa	226	37%	89	1992
Spokane River At Spokane, Wa	700	44%	483	1994
Colville River At Kettle Falls, Wa	31	37%	5	1977
Pend Oreille River Below Box Canyon Near Lone, Wa	5,410	46%	4,900	1988

## ***Real-Time Water Temperature from USGS and Ecology***

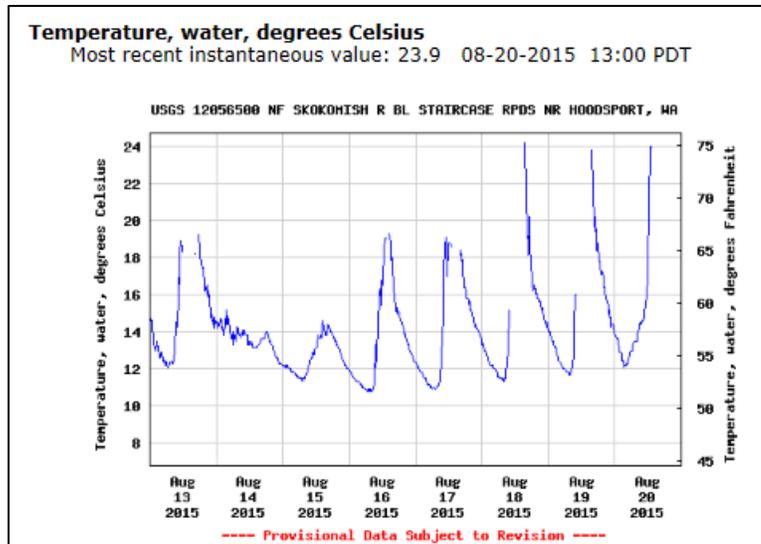
USGS Real Time temperature stations in Washington are not as numerous as their streamflow cousins, but are still helpful to stream watchers and fish managers.. Follow this link to see the [Real Time Temperature Stations map](#) for Washington. Below is a table showing today's [water temperature at all Washington gauges](#) having that attribute, in degrees C. Colors represent relative value with darkest green being coldest and darkest orange being highest within this set of data. Twenty-nine of 65 temperature gauges in Washington are registering at or higher than the lethal threshold for salmon.

<b>WATER TEMPERATURE FOR 65 GAUGES IN WASHINGTON ON AUGUST 20, 2015</b>	<b>DEGREES C</b>
NF Skokomish R Bl Staircase Rpds Nr Hoodspport, Wa	23.9
White River At Headworks Ab Flume Nr Buckley, Wa	14.6
White River At R Street Near Auburn, Wa	19.4
Lake Tapps Diversion At Dieringer, Wa	16.5
Ysi 6920v2-2 At Wsu 2 At Puyallup, Wa	10.6
Duwamish River At Golf Course At Tukwila, Wa	20.3
Cedar River Near Cedar Falls, Wa	12.2
Cedar River At Cedar Falls, Wa	19.4
Cedar River Below Diversion Near Landsburg, Wa	13.5
Cedar River At Renton, Wa	18.3
South Fork Sultan River Near Sultan, Wa	14.3
Sultan River Below Diversion Dam Near Sultan, Wa	12.8
North Fork Tolt River Near Carnation, Wa	12

South Fork Tolt River Near Index, Wa	14.4
South Fork Tolt River Near Carnation, Wa	15.2
Sf Tolt River Bl Regulating Basin Nr Carnation, Wa	14.9
Nf Stillaguamish East Pooled Slide Area Nr Oso, Wa	6.4
Skagit River At Newhalem, Wa	12.9
Skagit River At Marblemount, Wa	14.4
Nf Nooksack River Bl Cascade Creek Nr Glacier, Wa	11.7
Sf Nooksack River At Saxon Bridge, Wa	18.5
Nooksack River At North Cedarville, Wa	13
Boundary Reservoir At Forebay Nr Metaline Falls	22.3
Pend Oreille River At International Boundary	22.3
Columbia River At Bridgeport, Wa	19.7
Ninemile Creek Near Oroville, Wa	
Osoyoos Lake Near Oroville, Wa	25.5
Okanogan River At Oroville, Wa	25.2
Similkameen River Near Nighthawk, Wa	20.5
Okanogan River Near Tonasket, Wa	23.4
Okanogan River At Malott, Wa	23.8
Okanogan River Nr Wakefield Br South Of Malott, Wa	22.4
Andrews Creek Near Mazama, Wa	16.1
Methow River Near Mouth Near Pateros, Wa	21
Wells Powerplant Headwater Near Pateros, Wa	19.6
Wells Powerplant Headwater Near Pateros, Wa	19.2
Wells Powerplant Headwater Near Pateros, Wa	19.2
Columbia River Below Hwy 395 Bridge At Pasco, Wa	21.5
Snake River Bl Mcduff Rapids At China Gardens, Id	23.2
Snake River Near Anatone, Wa	23.2
North Fork Clearwater River At Ahsahka, Id	7.6
Clearwater River Nr Peck Id	10.4
Clearwater River Nr Peck Id	10.1
Clearwater River Near Lewiston, Id	12.3
Lower Granite Lk Forebay At Lower Granite Dam, Wa	20.5
Snake River (Right Bank) Bl Lower Granite Dam, Wa	19.7
Lake Bryan Forebay At Little Goose Dam, Wa	20.2
Snake River Below Little Goose Dam, Wa	20.5
Lake H G West Forebay At Lower Monumental Dam, Wa	20.7
Snake River Below Lower Monumental Dam, Wa	20.6
Lake Sacajawea Forebay At Ice Harbor Dam, Wa	20.9
Snake River Bl Goose Island Bl Ice Harbor Dam, Wa	21.6
Columbia River At McNary Dam Lock Nr Umatilla, Or	21.2
Columbia River Below McNary Dam Near Umatilla, Or	21.5
Columbia River At The Dalles, Or	22.4
Columbia River, Right Bank, At Washougal, Wa	22.3
Columbia River At The Dalles Dam Forebay, Wa	22.3
Columbia River At Bonneville Dam Forebay, Wa	22.2
Columbia River At Cascade Island, Wa	22.2

Columbia River, Right Bank, Near Cliffs, Wa	22
Columbia River At John Day Dam Navigation Lock, Wa	21.9

Note that this sample of gauges is heavily weighted by stations at Columbia-Snake hydropower facilities, so statistics like *percent-of-Washington-gauges* would not be representative of overall status in Washington. I also want to admit that these data are the instantaneous real-time values and so are sensitive to the time of day they are downloaded. I didn't think of this until I noticed that last week's Skokomish temperature was 13.9 (downloaded last Friday morning); this week's is 23.9 (downloaded Thursday afternoon). Indeed, there is a daily fluctuation of up to 10 degrees (right) for the NF Skokomish below Staircase. So, OK, lesson learned. I'm still going to check into the Skokomish data situation, just in case.



Most Puget Sound streams are still cool, with the White, Green, Cedar, and SF Nooksack as the main exceptions. Temperatures above 20 degrees C are still occurring along the mainstem Columbia and Snake Rivers and the Okanogan and Pend Oreille.

I am continuing this contest for readers for one more week: respond to me with the name or number of any Ecology or USGS gauges for which you would like to see real-time daily **water temperature** data every year as part of Washington's Drought Early Warning System! Some of my favorites are the selected flow stations we monitor in the previous table.

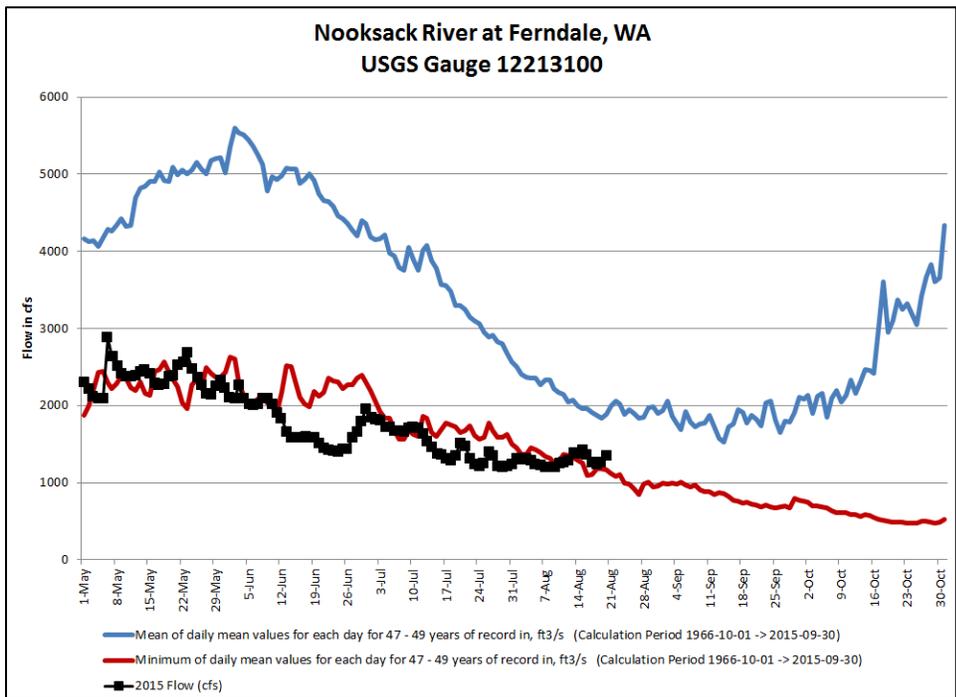
Also, respond to me with the name or number of the Ecology flow gauges for which you would like to see **daily real-time flow and/or water temperature data** on the **USGS website**. I will pass along these suggestions to Ecology and USGS!!

Ecology's [Flow Monitoring Network](#) provides water temperature monitoring at several Ecology and co-op stations. Definitely check out whether there is an Ecology gauge in your area and spend a little time looking at the information. Data for the Lake Washington Ship Canal can be found [here](#).

## ***Drought Impacts to Fish and Wildlife***

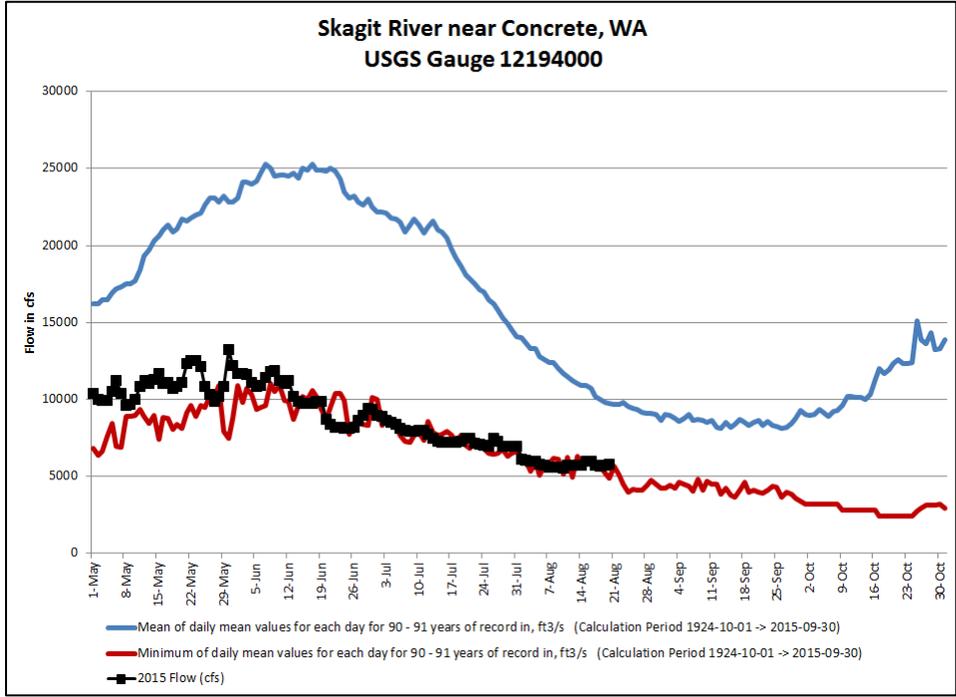
### **Nooksack River**

Looks like recent rain perked flows a bit in the Nooksack. On the Nooksack, Ecology has actively curtailed 9 water rights as of the end of June 2015.



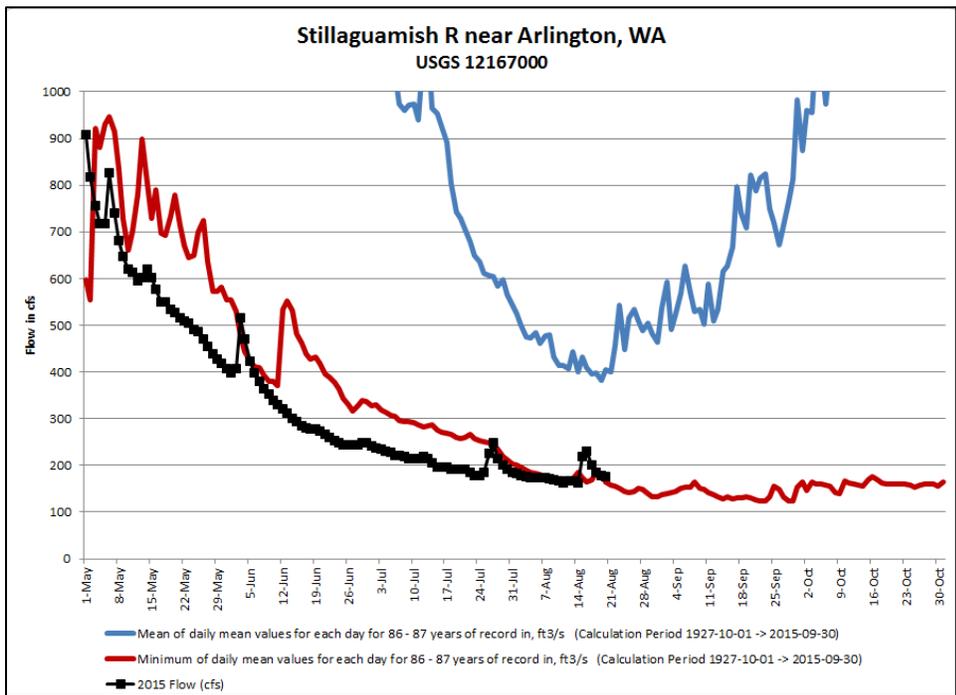
### Skagit River

Skagit flows reflect continued compliance with FERC license outflows for the Baker and Ross projects. Ecology has sent 3 letters warning water users of potential for curtailment.



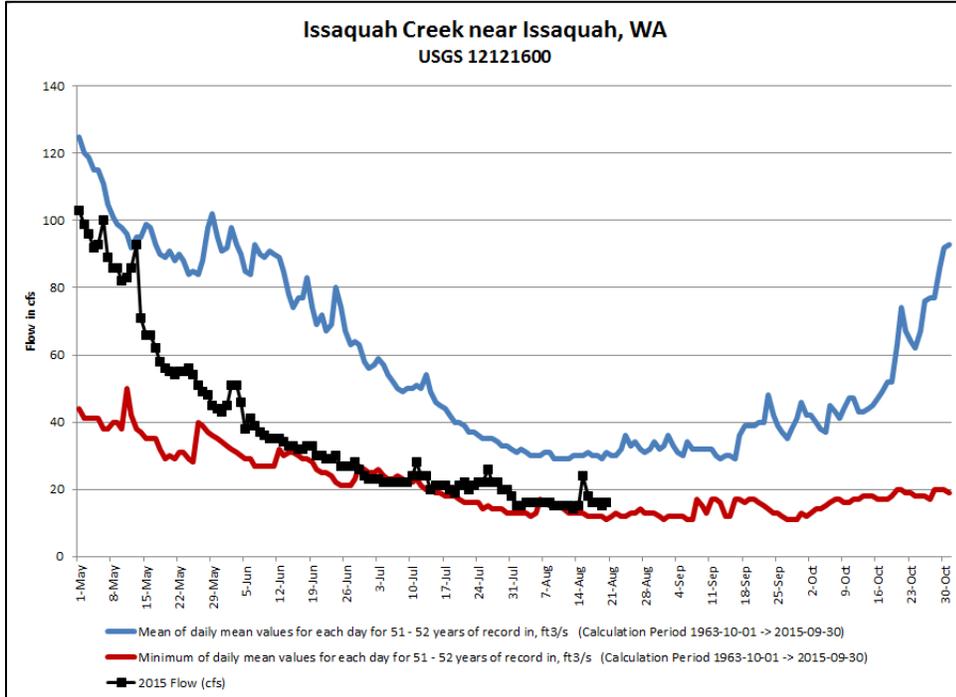
### Stillaguamish

Again, recent rains provided a small increase in flow.



**Lake Washington/Cedar**

Issaquah Creek continues with above-expected (and above-historic-minimum) flows. Conditions at the hatchery are holding.



**King County Flow and Temperature Conditions August 10-16**

Following are excerpts from correspondents Curtis DeGasperi and Jim Simmonds from King County Department of Natural Resources and Parks. King County presents weekly summaries

on King County river and creek flow and temperatures. Request data and/or get on Jim's distribution list at [Jim.Simmonds@kingcounty.gov](mailto:Jim.Simmonds@kingcounty.gov)

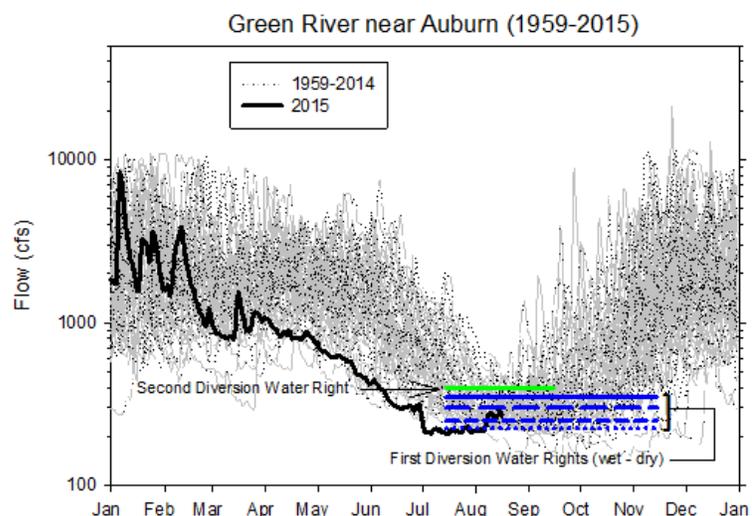
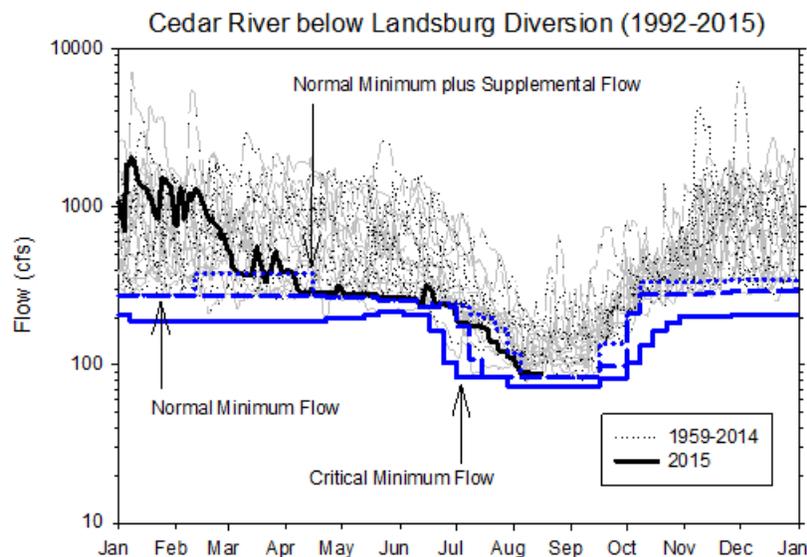
### WATER SUPPLY STATUS

- On August 11, Seattle, Everett, Tacoma, and the Cascade Water Alliance moved to the second stage – voluntary reduction – of their water shortage response plans and are now asking customers to help by voluntarily reducing water use by 10 percent. More information available [here](#)

<http://www.seattle.gov/util/MyServices/Water/AbouttheWaterSystem/WaterSupply/index.htm> and here

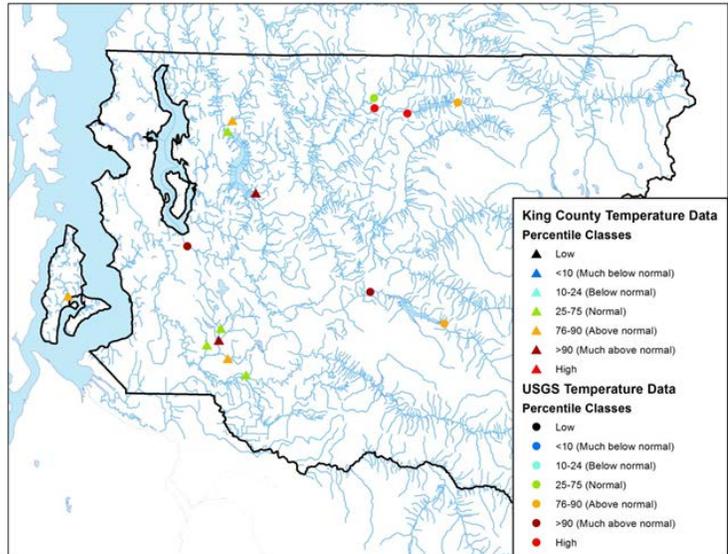
<http://www.savingwater.org/>.

- As of August 10, Seattle Public Utilities (SPU) reports that the combined reservoir storage of Chester Morse Lake, Masonry Pool, Lake Youngs and South Fork Tolt Reservoir is below the long term average for this time of the year.
- Cascade Water Alliance has been adding water to Lake Tapps from water stored behind Mud Mountain Dam as part of a capital repair project (see <http://cascadewater.org/2015/08/06/reservoir-fill-update/> for more information). The lake is now within the agreed-upon recreation level and minimum instream flows in the White River below the diversion to Lake Tapps are currently being met.



## FLOW AND TEMPERATURE STATUS

- 8 of 16 rivers and 6 of 23 creeks with over 15 years of flow data and real-time data delivery had the lowest flows ever recorded for the week. Conversely and unexpectedly, 16 of these same 23 creeks had flows that were typical or higher-than-typical for the week.
- 1 of 12 rivers/streams with over 15 years of temperature data and real-time data delivery had the highest temperatures ever recorded for the week, and another 8 of these 12 were higher than typical for the week.



Maximum daily temperatures in the Cedar River (below the reservoir and at Renton), Little Soos, and Bear Creek were between 20 degrees C and 22 degrees C.

- Following the storm on Friday (8/14), the level of Lakes Washington/Union increased by approximately 1.2 inches (3 cm) between August 14 at 8 am and August 15 at 8 am. The elevation for the past week is the third lowest, surpassing 1965 levels. Temperatures at the fish ladder did not show a discernable response to the rain event, and the temperatures for the past week were the warmest on record (2004-2015).
- Lake Sammamish mean daily elevation increased by a half-inch (1.2 cm) between August 13 and 15. Lake level for the past week has been the lowest on record (1999-2015).

## ECOLOGICAL IMPACTS

- Data collected by the Muckleshoot Tribe show that 1,737 adult Chinook salmon and almost 34,000 sockeye salmon had migrated past the Ballard Locks into the Lake Washington watershed as of August 9. This is about 48% of the 10-year average Chinook return by August 17 and about 27% of the 10-year average sockeye return by August 17. Over the past 10 years, an average of 99% of the sockeye run had passed the Ballard Locks by August 17.
- Low flows and high temperatures may hinder adult salmon from reaching upstream spawning grounds. Temperatures above 20 to 21 degrees C are generally considered to be a migratory barrier to migration. Pink salmon in Alaska have shown increased mortality above 17 degrees C combined with lower than typical dissolved oxygen. Temperatures between 20 degrees C and 23 degrees C can cause thermal stress to many salmonids and increase disease outbreaks and infection, while temperatures above 23 degrees C can cause substantial health impacts or mortality to many salmonids. Low flows also decrease available wetted habitat for spawning and rearing, limit food availability, and increase predation.

- Starting in mid-August, over 600,000 pink salmon are projected to return to the Green/Duwamish and over 1.6 million pink salmon are projected to return to the Snohomish River.

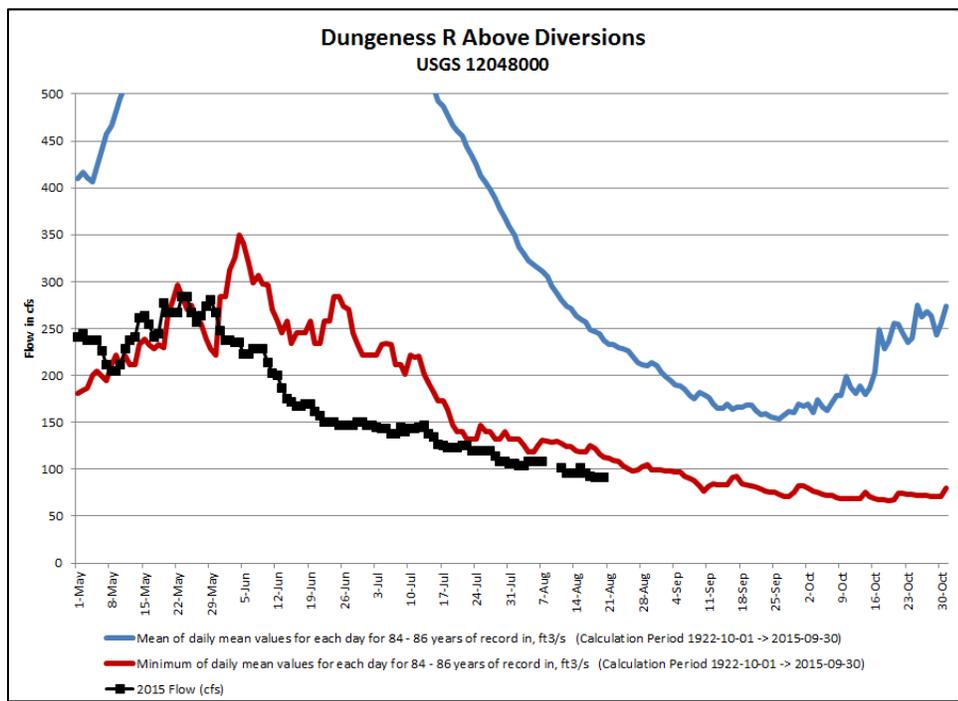
### REGULATORY AND LEGAL CONSIDERATIONS

- Flow in the Snoqualmie River is lower than the minimum instream flow established by Washington Administrative Code, which allows the state to curtail withdrawals by holders of junior water rights.
- Flows in the Green River are higher than instream flows required during drought years for Tacoma Public Utilities to withdraw water from the Green River using its primary water right claim under agreements with the Muckleshoot Tribe, but are below the minimum instream flow for Tacoma Public Utilities to withdraw water from the Green River with its second diversion water right claim.
- Flows in the Cedar River are higher than the normal minimum flow required by the Habitat Conservation Plan to be maintained by Seattle Public Utilities during normal years.

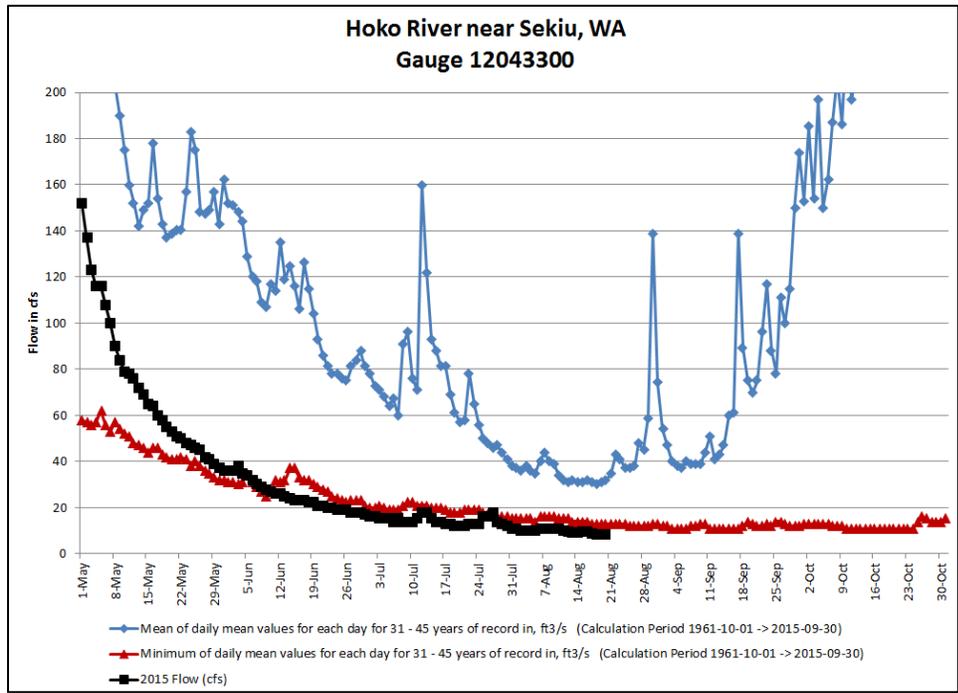
Flow and temperatures summary tables and figures are available from Jim/Curtis, or let me know and I will forward their report and spreadsheet to you. Many thanks to Jim and Curtis for sharing this information with us!

### Dungeness

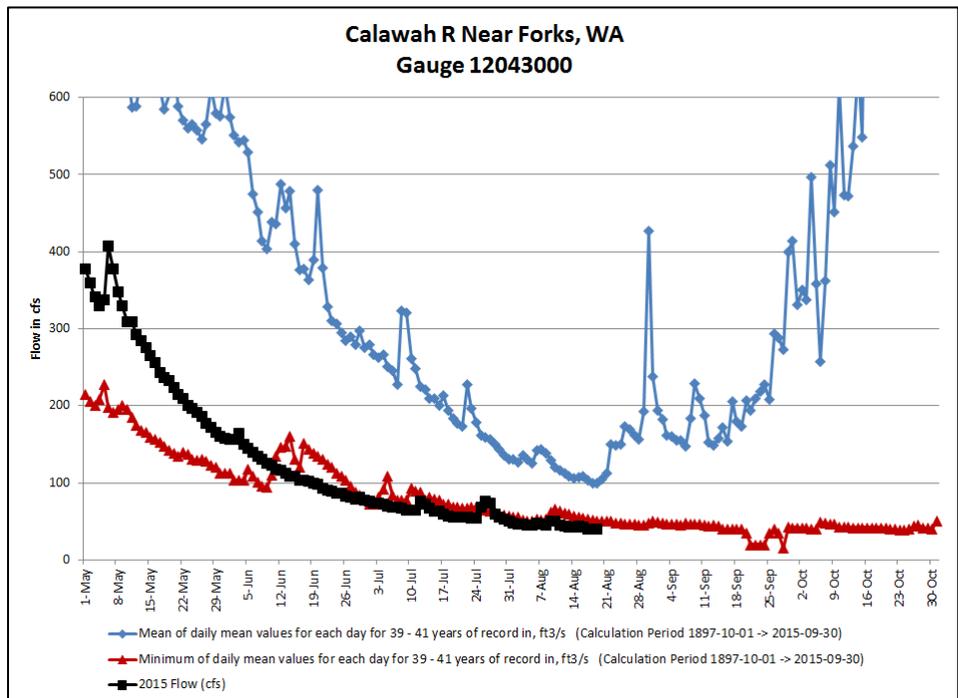
Partners received great media coverage for last week’s work on the Dungeness. All rock weirs constructed by WDFW/partners for the purpose of improving fish migration are posted with signs identifying them as such. Not to be confused with recreational rock dams. Flows show a continued downward trend, though slight.



Hoko continues to show record low flows.



Calawah R values give us an indication of conditions in the Bogachiel, Dickey, Sol Duc, and Quillayute Rivers.

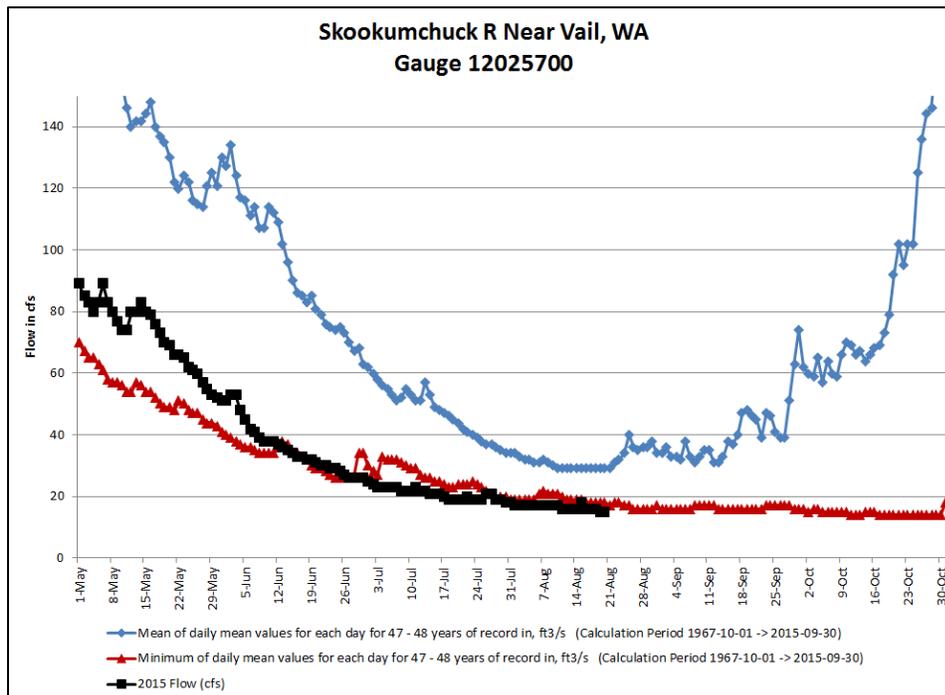


## Chehalis Basin

Ecology has actively curtailed 93 water users and issued one compliance order as of June 30, 2015.

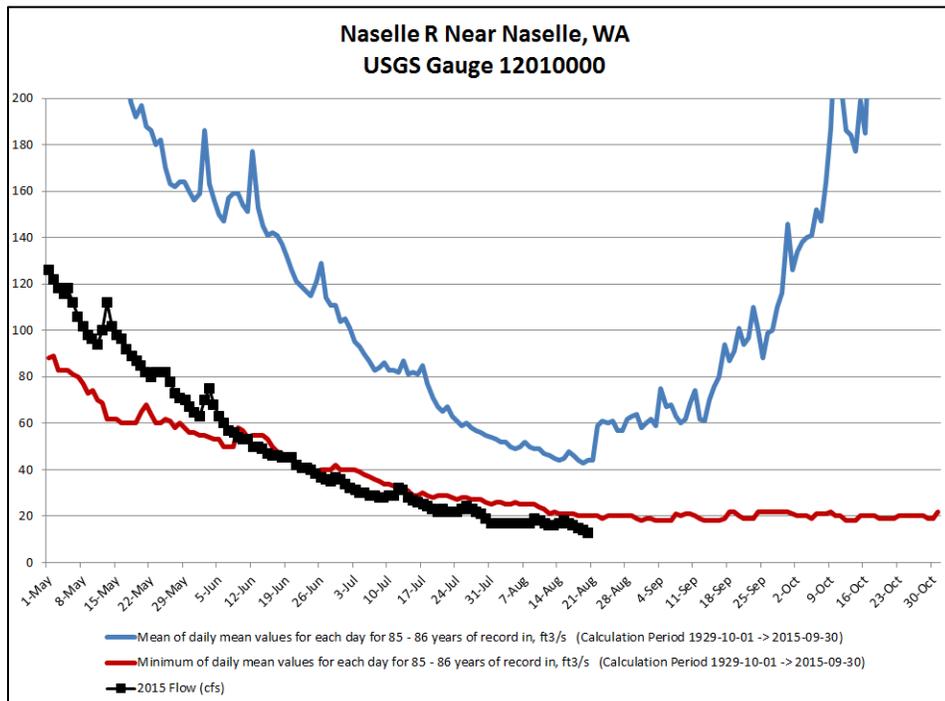
## Skookumchuck:

Flows in the figure below represent inflow to the Skookumchuck Reservoir. Records low flows continue.

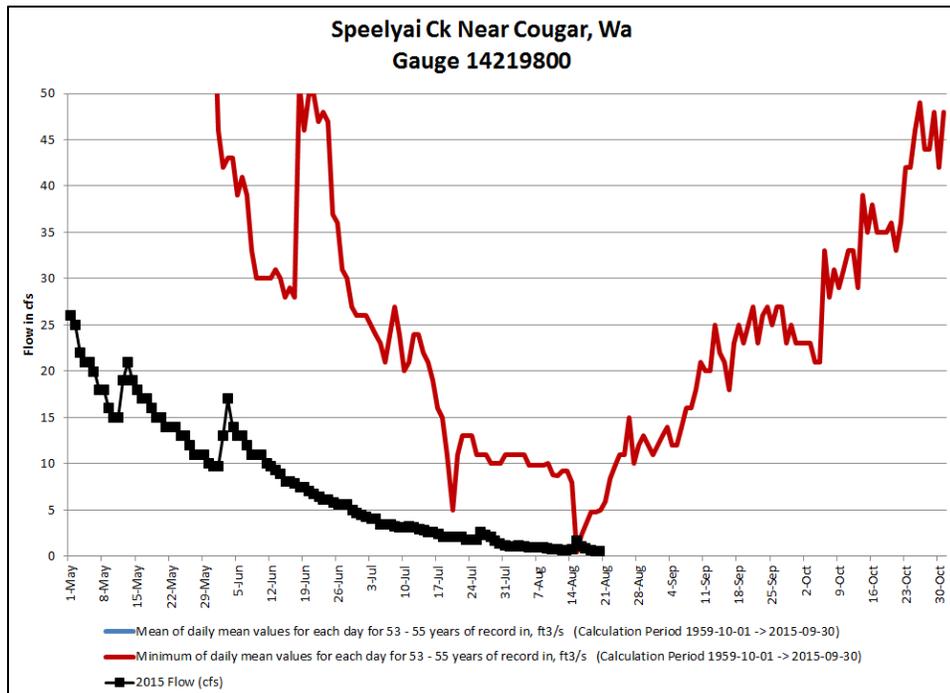


## Southwest Region

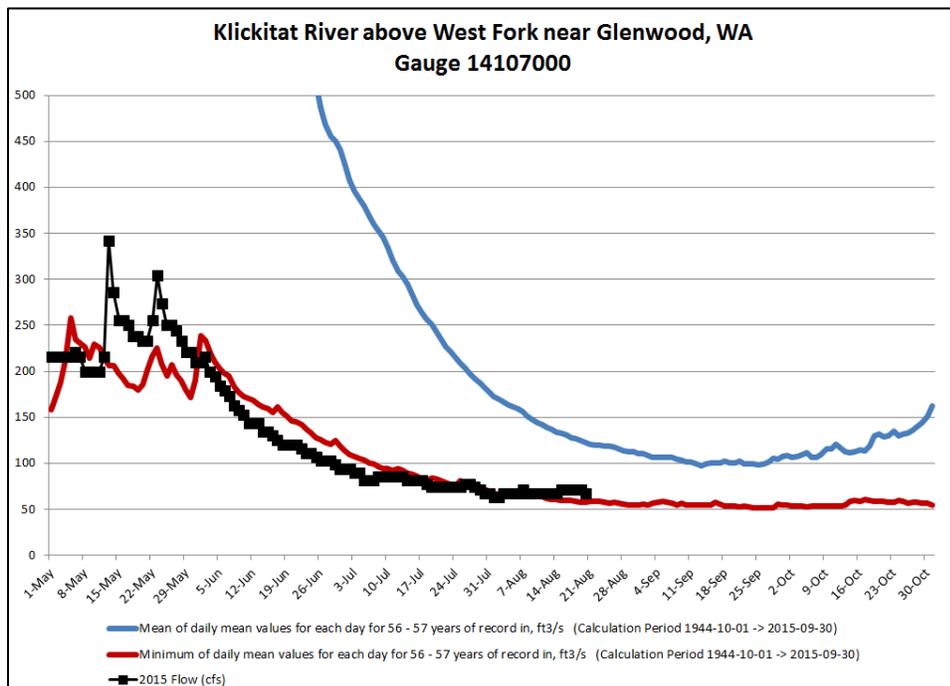
Naselle R continues to show record low flows.



Skeelyai Creek rate of decline is slowing and total flow is down to less than 1 cfs. It's a little hard to see on this chart, though.



I'll be brave and call Upper Klickitat "bottomed out;" only time will tell.



## Yakima

The Reclamation Teacup Diagram for Yakima Basin shows Lake Keechelus volume down to 20%, Kachess down to 54%, and Cle Elum down to 15%. Bumping is at 64% of full, and Rimrock is 79% full. Storage is 70% of average (1981-2010).

Flows in the Cle Elum River will be ramped down to about 100cfs/day beginning August 24th. Flows in the Easton reach will remain high until September 1st. Keechelus outflow will be reduced to spawning flows around September 1st. Flows in the

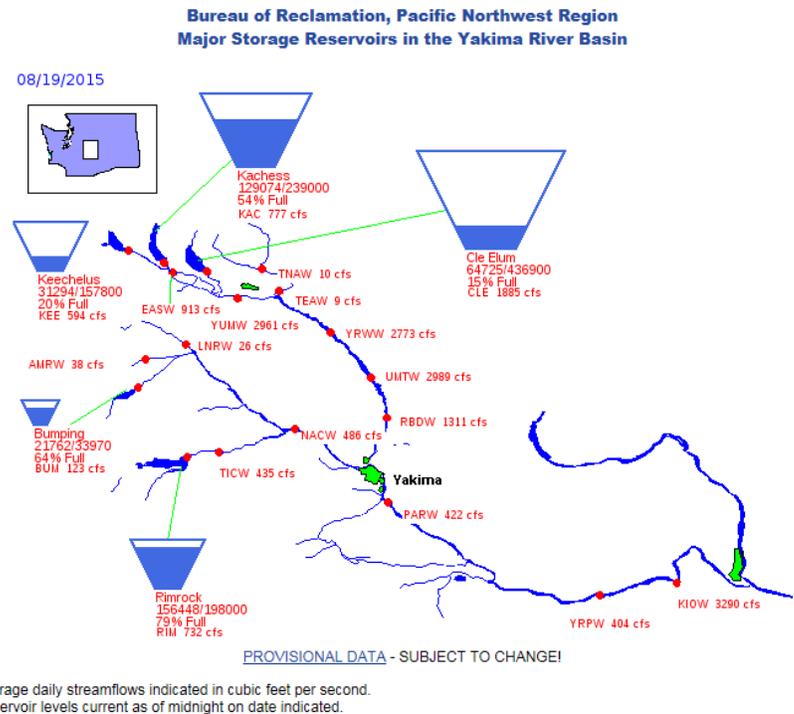
Tieton River will be increased as necessary to offset the upper Yakima flow reductions and meet system demands. Inflow to the five reservoirs is 71%, releases from the five are 78% and major canal diversions are 71% of average for August 20.

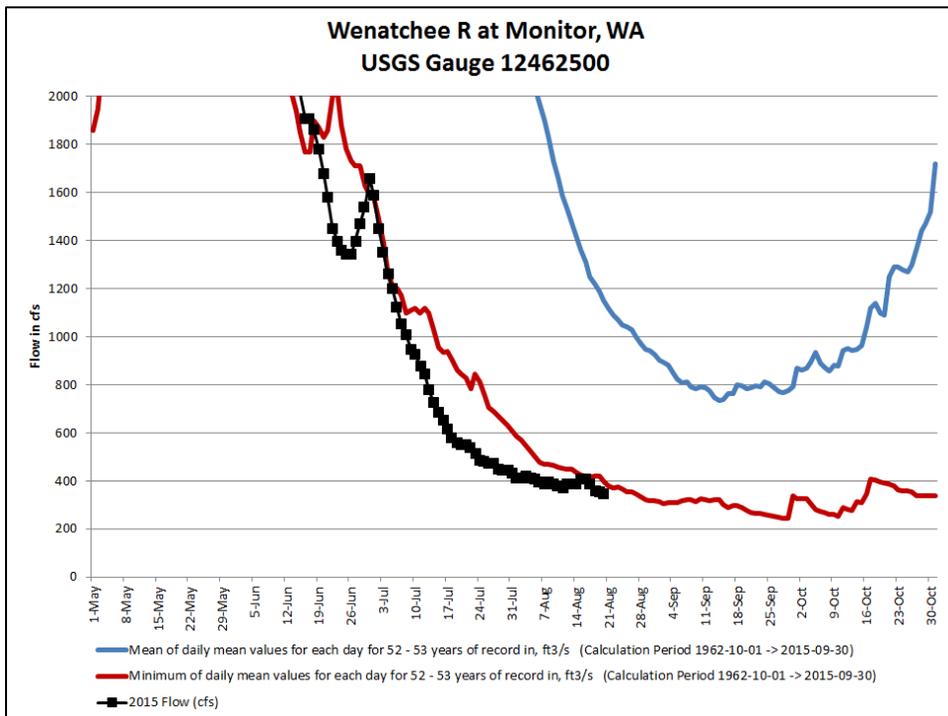
Mid-Columbia Fisheries Enhancement Group and Benton Conservation District along with WCC crews are pulling starweed, which is choking the lower Yakima River. The team received significant [press coverage here](#) and [here](#) for this work. Thanks again to Mike Ritter for making these connections to get this project going!

Yakima water right curtailments by Ecology total 18 post-1805 rights, 55 Teanaway users, and 74 users on the Cowiche as of end of July.

## North Central Washington

I've been watching Wenatchee River flows for several years and the July-August flows this year have been dropping in an alarmingly precipitous manner. Could someone send me a photo of the Wenatchee at Monitor right now? Ecology has curtailed 91 Wenatchee basin water users.

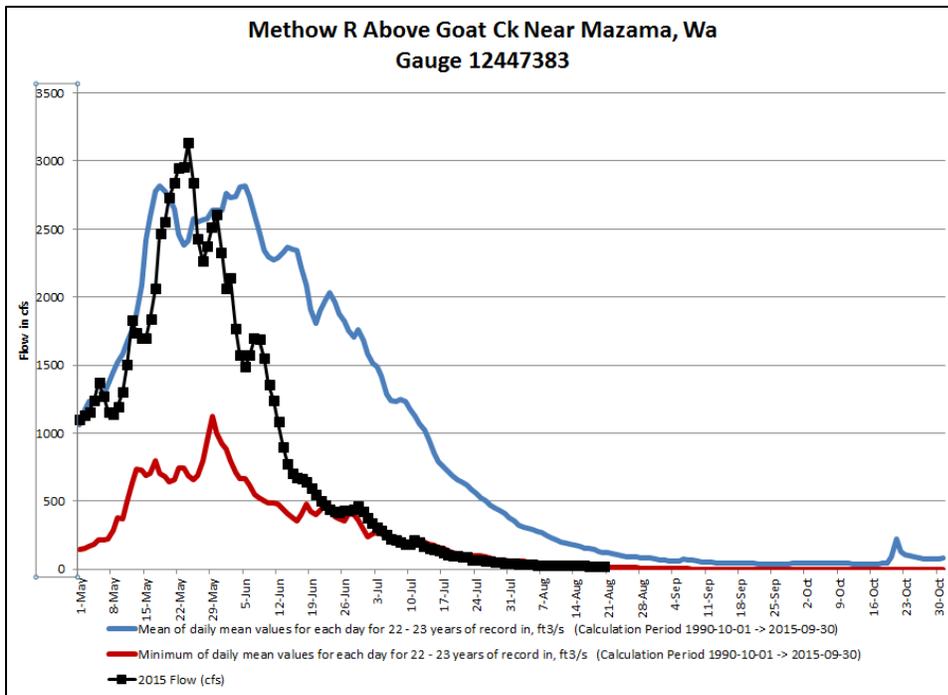




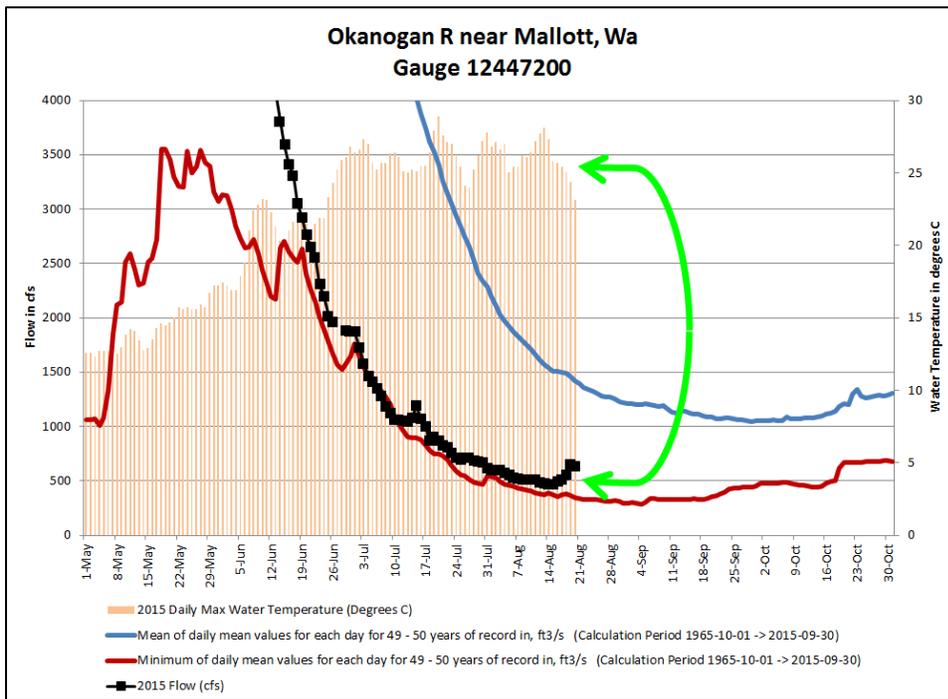
Above is a snapshot of a pond at Chelan Hatchery taken yesterday after fire swept the area. The bird netting melted, but there are clearly still fish in the pond, judging by that Labrador's smile. Pretty frightening (the fire, not the Labrador)! Here's another scary picture (below) showing the irrigated landscape that saved the Wells Hatchery from serious damage. Thoughts are with staff at Methow and Twisp facilities and any others that are at risk right now.



Methow River flow is tracking with its historic hydrograph and low base flows; we will see what a downstream gauge tells us starting next week. This one has provided an interesting look into one place that followed its normal hydrograph early on (i.e. actually showed snow melt), then dove quickly to near-record minimums about a month earlier than normal. Ecology has curtailed 70 water users in the Methow.



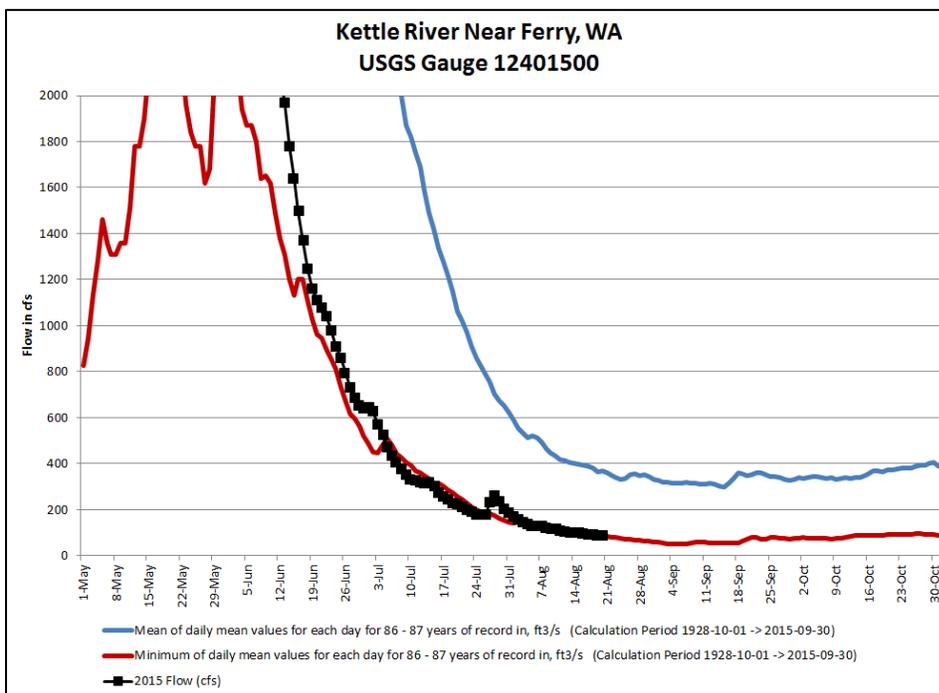
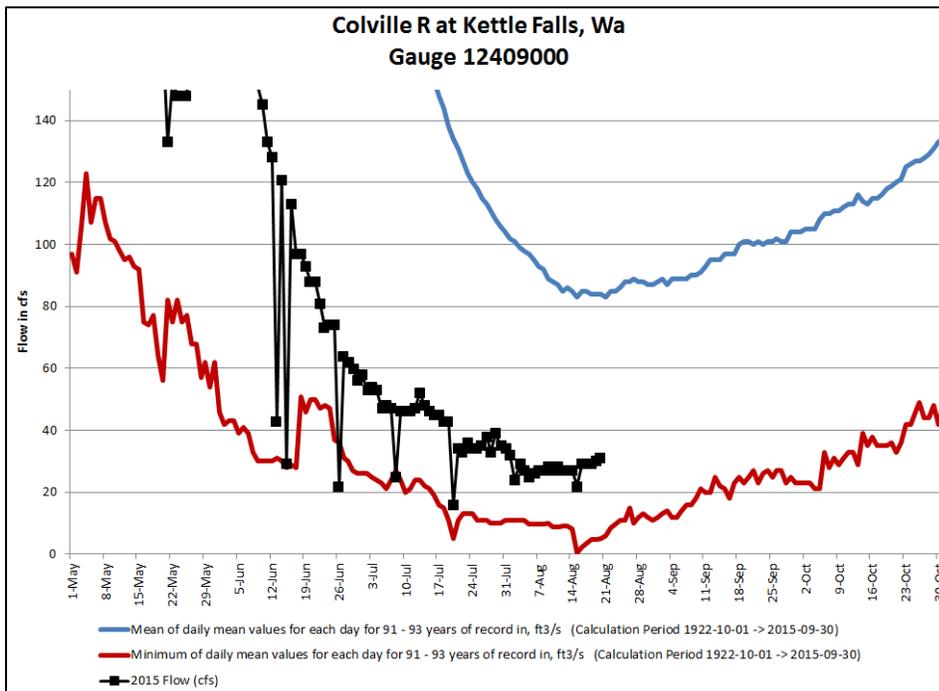
I doubt we have a true cause-and-effect here (green arrows, below), but I choose to be cheered that temps are declining and flows are perking up. Okanogan is still hurting temperature-wise. Ecology has curtailed 101 water users in the Okanogan/Similkameen basins.



## Spokane, Northeast, and Southeast Washington

In the Walla Walla basin this week, the Washington Department of Ecology has fined the Touchet Eastside Westside Irrigation district \$73,530 for illegal use of water intended to augment the river’s flow in late fall. Ecology has also issued an order requiring the district to provide the state access to real-time water use data. During the 2014 irrigation season, the Touchet Eastside Westside Irrigation District illegally diverted water that was placed into trust to protect critical stream flows for threatened steelhead in the Touchet River. The district agreed to place water into state trust in 2009 in exchange for public funds to help upgrade the water delivery system and improve efficiency. Many thanks to Jonathan Kohr and Robert Granger for their work relating to the trust water deficit, and to Watermaster Eric Hartwig of Ecology.

Both Colville and Kettle River flows (below) are low and appear to be leveling off. I find some comfort in the slight up-tick we see in Colville flows. Ecology has curtailed 55 water users in the Colville Basin, 140 in the Little Spokane Basin, 84 in the Walla Walla/Touchet basins, 15 in Tucannon/Asotin basins, and 41 elsewhere in the eastern region. There are also 14 compliance orders active in this region.



## Snake & Columbia Rivers

No FCRPS Fish Passage Advisory Committee meeting this week, so no report available.

## WDFW Headquarters Drought Response Activity

New guidance documents have been posted to the “S” drive. In particular, a new “frequently-asked questions” type document informs staff about drought response elements previously mysterious and confusing. Staff should look for guidance material at <S:\All Agency\Shared Projects\DROUGHT 2015>. Material posted there includes:

- Agency water use during drought
- “Let ‘em Pass” rock dam Signs
- “Helping Fish Survive Drought” tri-fold brochures
- Low Flow Blockage Remediation Program and Drought HPA
- WDFW Drought Response Roles and Responsibilities,
- Guidance for writing drought HPAs and implementing the new HPA emergency rules
- Images from 2015 drought
- These “update” messages
- Drought slides and talking points
- WDFW Drought Response Staff Guidance, and more...

### Drought-related Hatchery Actions for the week of August 14-August 20

REGION	FACILITY (SPECIES)	MORTALITY (% PRODUCTION)	COMMENTS
4	Bellingham (Rainbow Trout)	0 this week; 5,760 cum. (80% cum.)	
4	Icy Creek (Chinook)	0 this week; 0 cum. (0% cum.)	Water continues to drop, currently at 1050 gallons per minute, but water temps and fish health are both good.
4	Issaquah (Coho)	0 this week; 6,728 cum. (1%) cum.	
4	Soos Creek (Summer Steelhead)	0 this week; 41,308 cum. (60% cum.)	
4	Soos Creek (Coho)	0 this week; 172,963 cum. (21% cum.)	
5	Fallert Creek (Steelhead)	0 this week; 0 cum. (0% cum.)	Currently being treated for columnaris.
5	Grays River (Chinook)	0 this week; 0 cum. (0% cum.)	
5	Grays River (Juvenile Coho)	0 this week; 0 cum. (0% cum.)	
5	Grays River (Steelhead)	0 this week; 150,300 cum. (93% cum.)	
5	Kalama Falls (Steelhead)	0 this week; 0 cum. (0% cum)	
5	Mossyrock	0 this week; 0 cum. (0% cum)	
5	North Toutle (Coho)	0 this week; 101,746 (76% cum.)	
5	Washougal (Coho)	0 this week; 37,000 cum. (2% cum.)	
6	Forks Creek (Steelhead)	0 this week; 14,489 cum. (24% cum.)	
6	Lake Aberdeen (Steelhead)	0 this week; 64,903 cum. (22% cum.)	
6	Naselle (Steelhead)	0 New; 64,989 cum. (22% cum.)	
6	Naselle (Coho)	0 New; 639,646 cum. (44% cum.)	
6	Voights Creek (Coho)	0 New; 347,000 cum. (44% cum.)	

## Drought-related fishery actions for the week of 8/14-8/20

- Effective July 18: Sturgeon fisheries, including catch-and-release, closed Bonneville Dam upstream in the Columbia River, the lower Snake River, and adjacent tributaries.
- Effective July 18: “Hoot-Owl” restrictions put in place in 8 rivers in Region 1, 2 rivers in Region 3, 4 rivers in Region 4, and 2 rivers in Region 5.
- Trout, salmon, and steelhead fishery closures in table below (**new closures this week in bold red**):

REGION	RIVER	CURRENT FISHERY	RULE	RATIONALE
1	North Fork Touchet above Spangler Creek (7/18)	Trout	Closed	Extreme low flows. Protect adult spring Chinook and juvenile steelhead
1	South Fork Touchet (7/18)	Trout	Closed	
1	Wolf Fork (Touchet) (7/18)	Trout	Closed	
1	Asotin Creek and tributaries (7/18)	Trout	Closed	
1	Kettle River (7/18)	Redband Trout	Closed	Extreme low flows and high temperatures; reports of fish mortality. Protect redband trout.
<b>1</b>	<b>Mill Creek (Walla Walla Co.) from Bennington Dam to State Line midnight (8/14)</b>	<b>All species</b>	<b>closed 2:00 p.m. to midnight</b>	<b>Low water flows and higher than normal water temperatures</b>
2	Wenatchee River from mouth to Icicle River Road Bridge (7/18)	Spring Chinook	Closed	Low flow and high temperature; protect ESA-listed steelhead and Chinook; allow passage of sockeye to Lake Wenatchee for escapement.
2	Icicle River from mouth to 500' downstream of Leavenworth Hatchery (7/18)	Spring Chinook	Closed	Protect ESA-listed steelhead and Chinook.
<b>2</b>	Lake Wenatchee (7/18) Open to sockeye (7/30) <b>Lake Wenatchee closed to sockeye (8/12)</b>	<b>Sockeye</b>	Closed to Chinook, steelhead, bull trout.	<b>Protect ESA-listed Chinook.</b>
2	Columbia River from Rocky Reach Dam upstream to Chief Joseph Dam (7/27)	Summer Chinook, Sockeye, Gamefish	No Sockeye Retention	Ensure adequate sockeye spawners.
2	Okanogan River from the Hwy 97 bridge upstream to Zosel Dam (7/18)	Summer Chinook, Sockeye, Gamefish	Salmon Closed Gamefish Open	High temperature. Protect ESA- listed steelhead and wild summer Chinook
2	Similkameen River mouth upstream to Enloe Dam	Summer Chinook, Sockeye	Closed	

	(7/18)			
3	Ahtanum Creek (7/18)	Trout	Closed	Extreme low flow and high temperature. Protect ESA-listed juvenile steelhead and ESA-listed bull trout.
3	Little Naches River (7/18)	Trout	Closed	Extreme low flow and high temperature. Protect isolated adult spring Chinook and ESA-listed juvenile steelhead.
3	Teanaway River (7/18)	Trout	Closed	Extreme low flow and high temperature. Protect isolated adult spring Chinook, ESA-listed bull trout, and ESA-listed juvenile steelhead.
3	<b>Yakima River from I-82 Bridge at Union Gap to the South Cle Elum Bridge (8/14)</b>	<b>All game fish</b>	<b>Closed 2:00 p.m. until midnight</b>	<b>Low water flows and higher than normal water temperatures</b>
3	<b>Swauk Creek and all tributaries downstream of Williams Creek (8/14)</b>	<b>All game fish</b>	<b>Closed 2:00 p.m. until midnight</b>	<b>Low water flows and higher than normal water temperatures</b>
3	<b>Swauk Creek and all tributaries upstream of Williams Creek (8/14)</b>	<b>All game fish</b>	<b>Closed</b>	<b>Low water flows and higher than normal water temperatures</b>
3	<b>Williams Creek and all tributaries (8/14)</b>	<b>All game fish</b>	<b>Closed</b>	<b>Low water flows and higher than normal water temperatures</b>
3	<b>American River from mouth to Hwy. 410 Bridge downstream of the USFS Hell's Crossing Campground &amp; upstream of the Mesatchee Creek Trail crossing at river mile 15.8 (8/14)</b>	<b>All game fish</b>	<b>Closed</b>	<b>Low water flows and higher than normal water temperatures</b>
4	Raging River (7/18)	Trout	Closed	Extreme low flow and high temperature. Protect ESA-listed juvenile steelhead.
4	Skykomish River (7/18)	Summer Steelhead, Trout	Closed, except Near Reiter Ponds Hatchery	Extreme low flow and high temperature. Protect isolated and concentrated ESA-listed

				adult Chinook, juvenile and adult steelhead.
4	Wallace River (7/18)	Trout	Closed	Extreme low flow and high temperature. Meet adult Chinook broodstock needs at hatchery.
4	Stillaguamish River upstream of Marine Drive (7/18)	Summer Steelhead, Trout	Closed	Extreme low flow and high temperature. Protect isolated and concentrated ESA-listed adult Chinook, juvenile and adult steelhead, and bull trout.
4	South Fork Nooksack (7/18)	Trout	Closed	Extreme low flow and high temperature. Protect isolated and concentrated ESA-listed adult Chinook, juvenile and adult steelhead, and bull trout
4	Buck, Downey, and Sulpher creeks (tributaries to Suiattle River) (7/18)	Trout	Closed	Extreme low flow. Protect isolated and concentrated ESA-listed adult Chinook,
5	East Fork Lewis River from Lewisville Park downstream (7/18)	Steelhead, Trout	Closed	High temperature. Protect ESA-listed adult summer steelhead.
5	Washougal River from Mt. Norway Bridge downstream (7/18)	Steelhead, Trout	Closed	High temperature. Protect ESA-listed adult summer steelhead.
6	Bogachiel River (Clallam Co.) and all tributaries outside Olympic National Park (8/1)	All species	Closed	Low water and higher than normal water temperatures are causing a delay in migration and increased stress on wild salmon returning to the Quillayute system, making them more vulnerable to fishing pressure. The Quileute Tribe has also closed its fishery for two weeks, and will re-assess the situation at that time. These closures are needed to protect wild Chinook and coho salmon.
6	Calawah River (Clallam Co.) and all tributaries outside Olympic National Park (8/1)	All species	Closed	
6	Dickey River (Clallam Co.) and all tributaries outside Olympic National Park	All species	Closed	
6	Sol Duc River (Clallam Co.) and all tributaries outside Olympic National Park (8/1)	All species	Closed	
6	Quillayute River (Clallam Co.) from the confluence of the Sol Duc and Bogachiel Rivers downstream 475 yards to fluorescent orange paint on rocks (8/1)	All species	Closed	

6	Big Quilcene effective Aug. 16 From the mouth to Highway 101 (8/16)	Salmon	Closed	Low water flows and higher than normal water temperatures
6	Newaukum and all tributaries (8/11)	All species	Closed	Low water flows and higher than normal water temperatures
6	Clearwater River and all tributaries. (8/10)	All species	Closed	Low water flows and higher than normal water temperatures
6	Tributaries of the Queets River (Matheny Creek and the Salmon River outside Olympic National Park and the Quinault Reservation. (8/10)	All species	Closed	Low water flows and higher than normal water temperatures
6	Black River – All species From the mouth upstream to Black Lake (8/12)	All species	Closed	Low water flows and higher than normal water temperatures
6	<b>Nisqually River from the mouth to Military Tank Crossing Bridge. (8/20)</b>	<b>All species</b>	<b>Closed 2:00 p.m. to one hour before official sunrise</b>	<b>Higher than normal water temperatures</b>

## News Clips

[Twisp blaze kills three firefighters as towns evacuate](#)

Spokesman Review - August 20, 2015

[Thursday update: Expect 'extreme fire activity'](#)

Seattle Times - August 20, 2015

[Feeling the heat: Earth in July was hottest month on record](#)

The Olympian - August 20, 2015

[Toxic Algal Bloom Off Coast Is Vast](#)

OPB - August 19, 2015

[Sen. Cantwell meets with panel to consider future cost of wildfires](#)

Yakima Herald - August 20, 2015

[Several Whatcom creeks offer chance to see spawning salmon](#)

The Bellingham Herald - August 20, 2015

[Washington DNR shuts down some industrial forest activities due to fire danger](#)

Capital Press - August 19, 2015

[Drought could be a preview of things to come](#)

Goskagit.com - August 19, 2015

[Megafires are a warning, even on the 'wet-side'](#)

Chinook Observer - August 19, 2015

[Many fish die in Washington state creek as vegetable oil enters water after warehouse fire](#)

Daily Reporter - August 18, 2015

King 5 - August 19, 2015  
[Despite progress, Chelan-area fires still growing](#)  
The Spokesman-Review - August 19, 2015  
[Kalama fish sorting station up and running](#)  
The Daily News - August 18, 2015  
[Drought conditions prompt WDFW to limit suction dredging, other activities in rivers](#)  
Port Townsend & Jefferson County Leader - August 18, 2015  
[Progress reported in Chelan wildfire fight](#)  
King 5 - August 18, 2015  
[Crews weed Yakima River to clear stargrass, help salmon find gravel](#)  
Tri-City Herald - August 17, 2015  
[Citizens use smartphones to boost moose research](#)  
Spokesman Review - August 18, 2015  
[Spare the water for fish; brown lawns will come back](#)  
The Daily News - August 18, 2015  
[Chelan wildfires surpass 100,000 acres](#)  
Spokesman Review - August 18, 2015  
[Plant threatens wildlife in Yakima River](#)  
Kvew Tv - August 17, 2015  
[Lewis-McChord deploys troops to battle Wash. wildfires](#)  
KOMO News - August 18, 2015  
[Crews deepen channels to help struggling salmon amid drought](#)  
The Seattle Times - August 15, 2015  
[Seed plan aims to protect land after natural disasters](#)  
Seattle Times - August 17, 2015  
[Wash. wildfires leave path of destruction, Nat'l Guard called up](#)  
KOMO News - August 17, 2015  
[More Drought-related Fishing Restrictions Hit Washington Rivers](#)  
NW Sportsman - August 17, 2015  
[Strong pink salmon run expected in Skagit River](#)  
Goskagit.com - August 16, 2015  
[Damage unclear as wildfires sweep region](#)  
The Spokesman-Review - August 16, 2015  
[Excavators demolish dam to boost salmon migration](#)  
The Columbian - August 14, 2015  
[Learning to live with fire](#)  
The Daily World - August 15, 2015  
[Columbia River: B.C. residents want stable reservoir levels](#)  
The Bellingham Herald - August 15, 2015  
[Crews work to clear way for migrating salmon in shallow Dungeness River \(Corrected\)](#)  
Peninsula Daily News (AP) - August 16, 2015  
[New Roza reservoir under construction aims to improve irrigation efficiency](#)  
Yakima Herald Republic - August 14, 2015  
[Fishing hours on Nisqually River will be restricted starting Aug. 20](#)  
The Olympian - August 14, 2015  
[More Clallam County Strait beaches closed to recreational shellfish harvest](#)  
Peninsula Daily News (AP) - August 14, 2015  
[Lagging Ross rainbows prompt rule changes](#)  
The Bellingham Herald - August 14, 2015  
[Warm Water, Disease Spurs Action To Save Salmon Fingerlings At Leavenworth Hatchery](#)  
Columbia Basin Fish and Wildlife Bulletin - August 14, 2015  
[Study sees dying wildlife, bigger fires if drought lasts](#)  
Capital Press - August 21, 2015

[Thousands in state wrestle to tame relentless infernos](#)

Seattle Times - August 21, 2015

[Water temperatures ease, but drought persists](#)

The Columbian - August 20, 2015

[Since May, 30 whales have died off the Alaskan coast. Scientists are racing to find out why.](#)

Washington Post - August 21, 2015

[Why the U.S. just summoned firefighters from Australia and New Zealand](#)

The Washington Post - August 21, 2015

[Washington state residents and officials are worried about fires and the money to fight them](#)

Los Angeles Times - August 21, 2015

[Feds Pressure Obama Administration for Emergency Funds](#)

NW Public Radio - August 21, 2015

[Irrigation district near Walla Walla fined for illegal water use](#)

Tri-City Herald - August 20, 2015

[State asks for volunteer fire help, a first for Wash.](#)

Northwest Cable News - August 20, 2015

## ***Links***

[Ecology's "Washington Drought 2015"](#)

Ecology Dam Safety web page [Wildfire Impacts on Dams](#)

Washington State Climatologist [weekly drought update for Washington State.](#)

Drought web pages for State departments of [Health](#) and [Agriculture](#)

National Integrated Drought Information System [Pacific Northwest Drought Portal](#)

NOAA [El Nino Portal](#)

[NOAA's Climate Prediction Center](#)

[Northwest River Forecast Center Water Supply](#)

USGS [Real time stream data for Washington](#)

U.S. Army Corps of Engineers [Seattle District Reservoir Control Center](#)

[Rich Landers Outdoors Blog](#) Spokesman Review – ongoing

[Concerns mount as drought deepens](#) Columbian Special Project July 11, 2015

## ***For Further Information:***

Drought-related staff resources are available on the "S" drive at [S:\All Agency\Shared Projects\DROUGHT 2015](#). Contact WDFW Drought Coordinator Teresa Scott at [teresa.scott@dfw.wa.gov](mailto:teresa.scott@dfw.wa.gov) or (360) 902-2713 with questions and suggestions.