



Drought Status Update #21

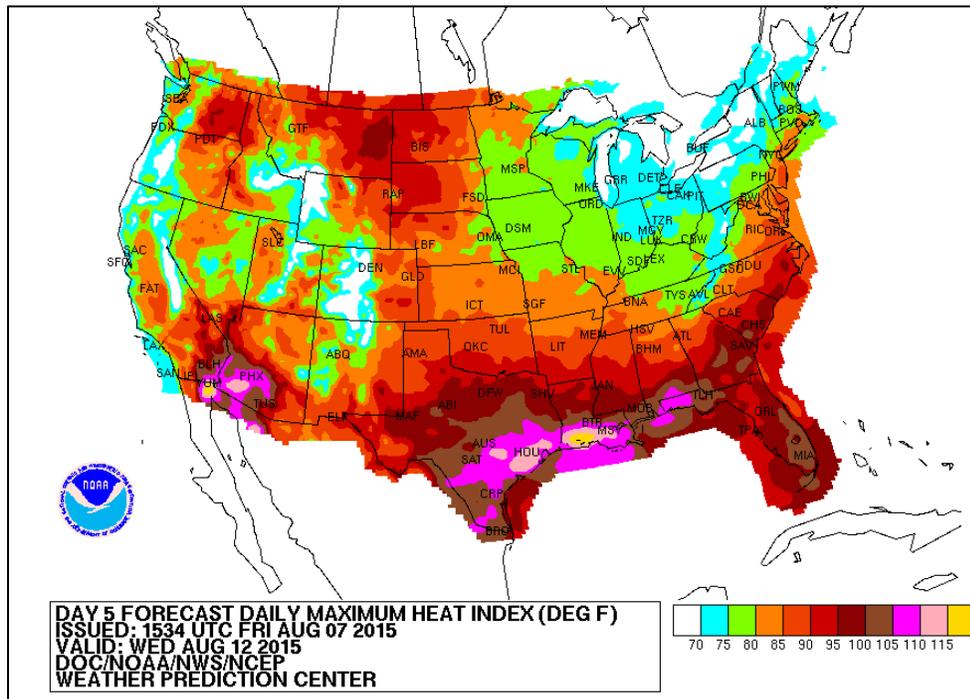
August 7, 2015

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

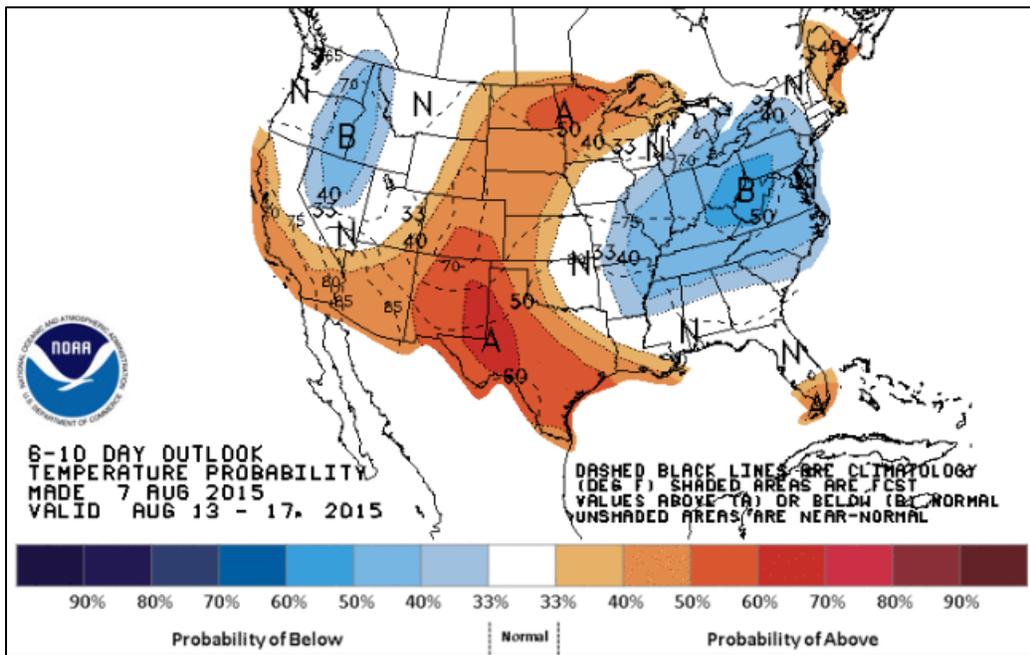
This week’s report will be a bit of a “light” version, providing charts, graphs, and resources but not as much interpretation and discussion. There is no lack of material to share, just lack of time to do it justice! Check out the [weekly update by the Office of the State Climatologist](#), which summarizes conditions and climate milestones to-date.

Temperature Forecasts

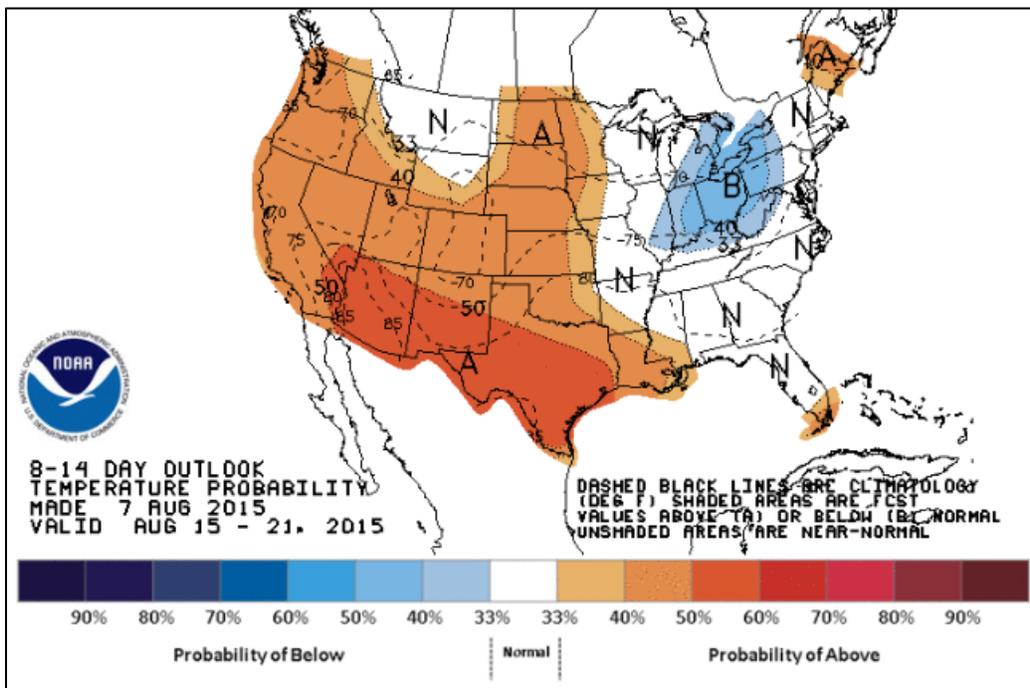
Temperatures have moderated statewide, but it’s still pretty warm in most areas. The outlook is for normal to below-normal temperatures in the next week (8/13-17), followed by a return to above-normal temperatures the following week (8/15-21). Below is the “[Maximum Heat Index](#)” (in degrees F) for Wednesday August 12 (potentially the hottest day next week), as forecast August 7th. Daily weather forecast maps are [available from NWS](#) that show maximum temperature and other useful tools.



The 6-10 day temperature outlook (below) is for NORMAL to below-normal temperatures in Washington starting 8/13 through 8/17. Note that below-normal temperatures extend across eastern Washington and dip up into the Canadian Rockies – a disappointment to some vacationers.

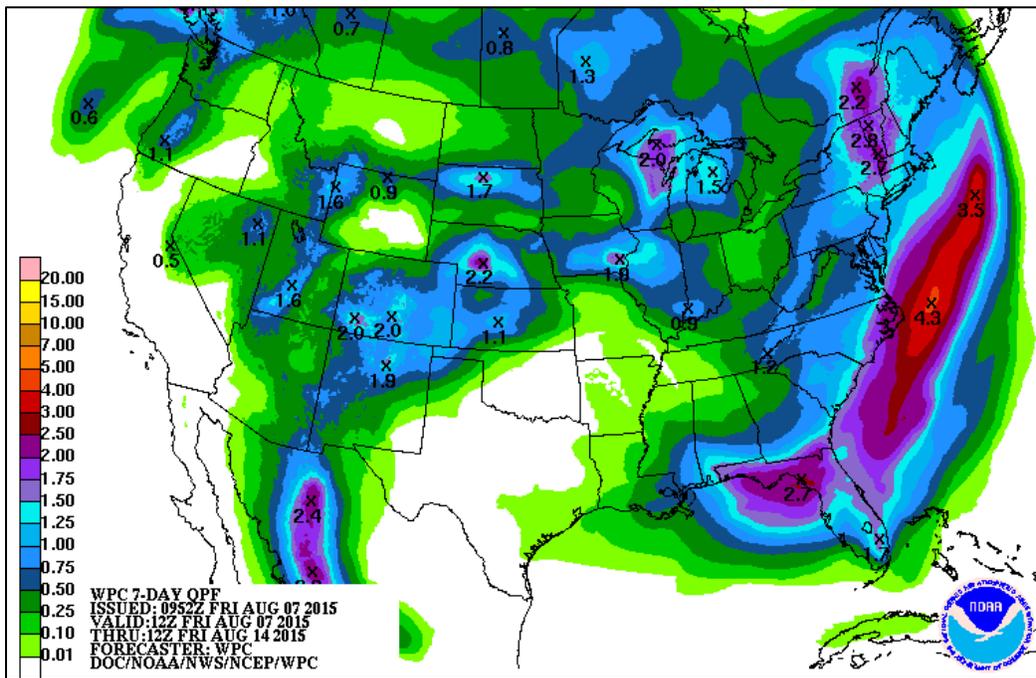


Temperatures for the 8-to-14 day period (below) turn toward higher-than-normal in Washington for the period from August 15 through August 21.

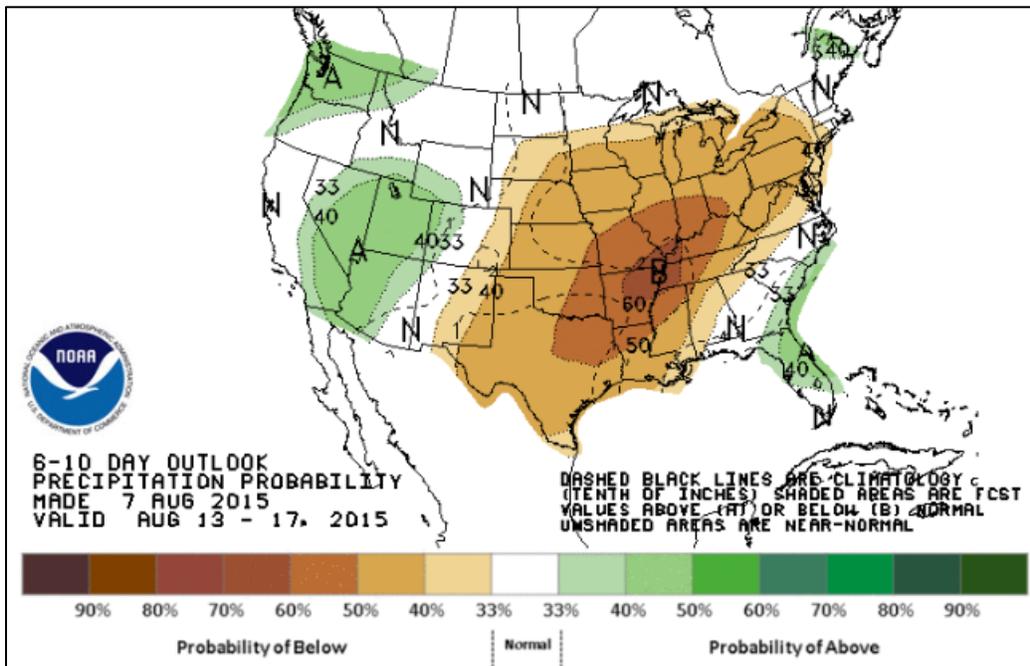


Precipitation Forecasts

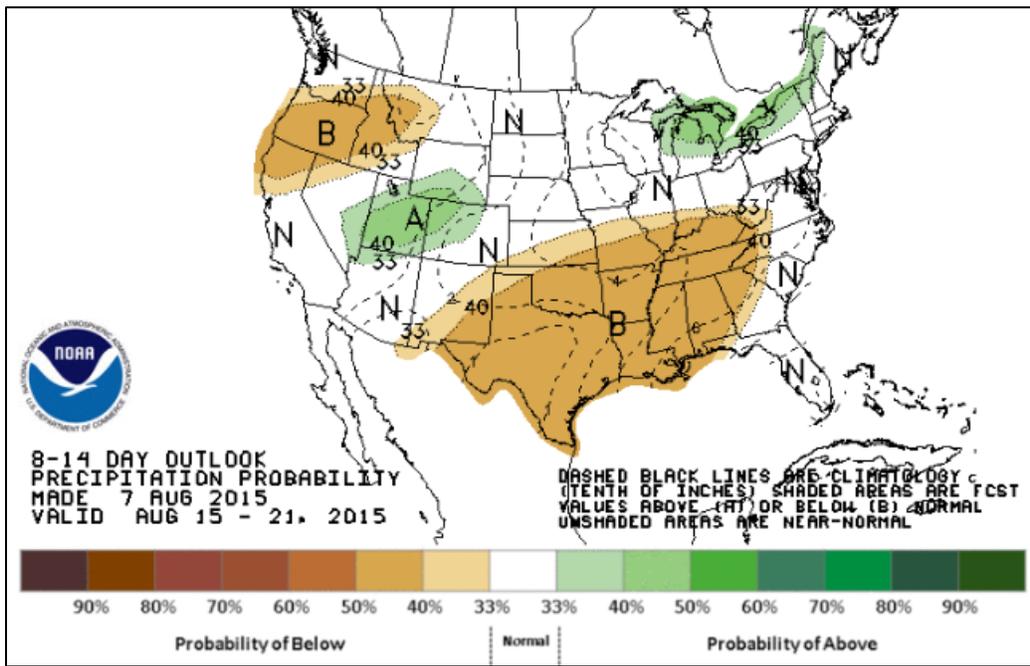
Here's the happy surprise for this week. Washington is expecting between a hundredth and three-quarters of an inch of [precipitation](#) during the next seven days (below).



The 6-to-10 day probability of precipitation (8/13-17) is greater than normal throughout Washington (below). Remember, a high probability for above-normal precipitation in Washington in August is still not very wet.

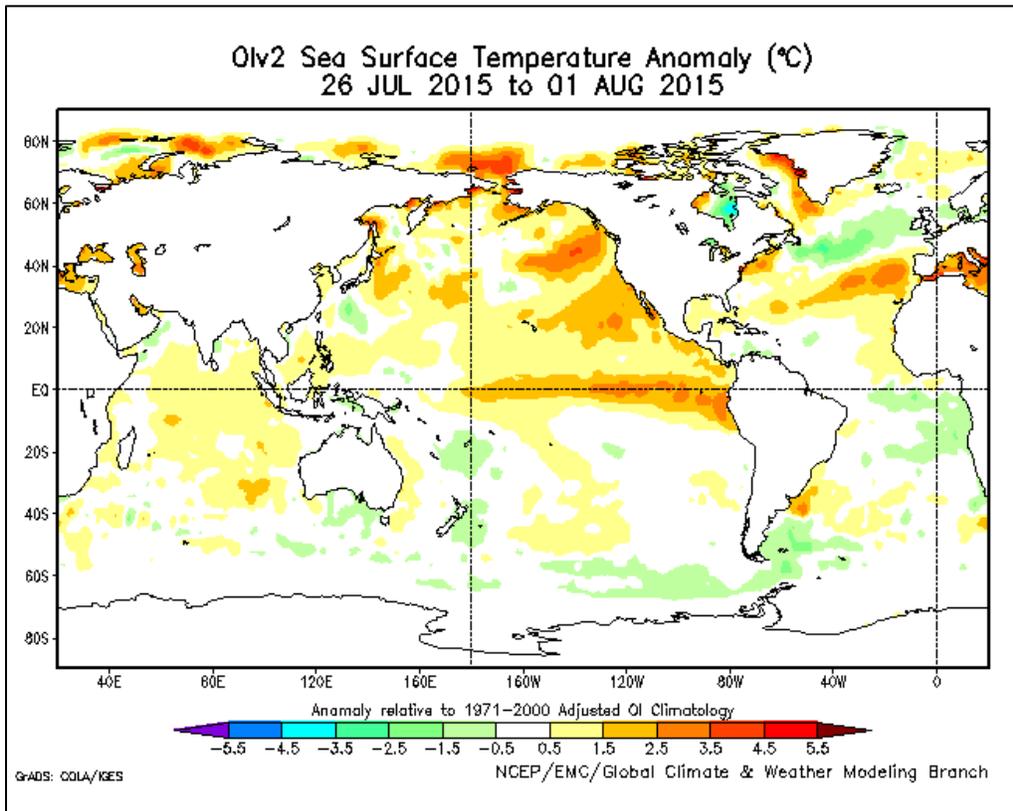


And below is the 8-to-14-day outlook (8/15-21), which shows normal to lower-than-normal precipitation to match our high temperatures during that period.



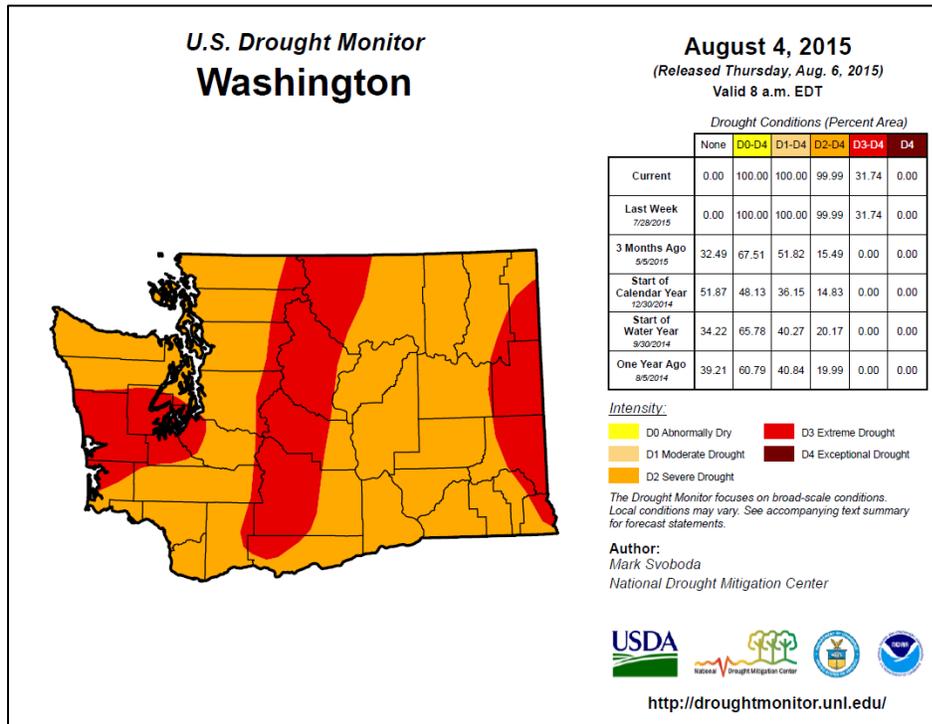
El Nino

The continuation of El Niño is almost certain through the remainder of 2015 into 2016. For details, visit the [Office of the State Climatologist](#) and the [El Niño Portal](#). Below is a representation of the most recent global sea surface temperature anomalies. I won't even try to interpret; just enjoy the pretty colors and we can watch as this situation evolves.



Federal Drought Status

This week's federal drought map is the same as last week's. Check out the [U.S. Drought Portal](#) and [USDA Disaster Assistance](#) for more information.

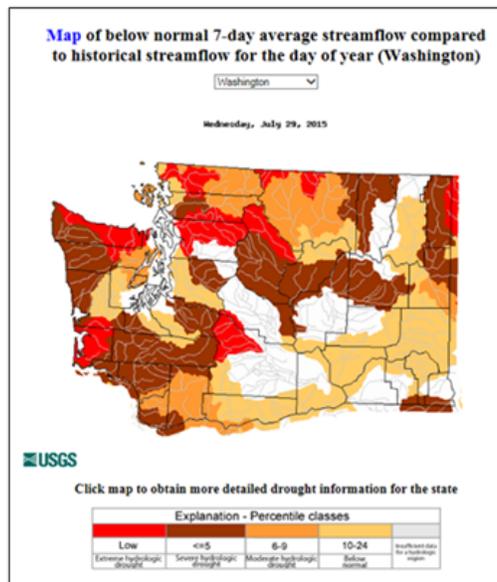
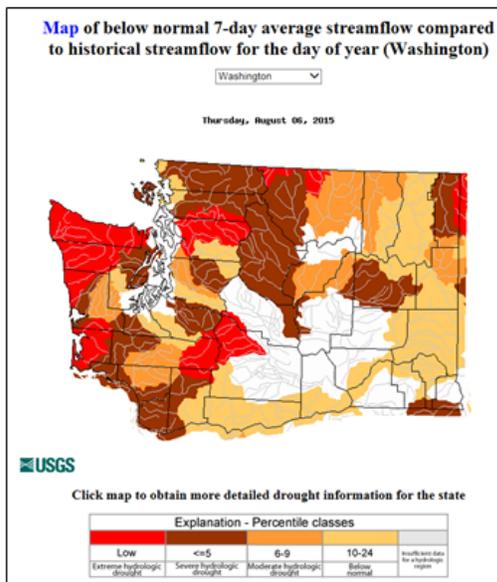


Stream Flows

The figure showing [stream gauges with below normal streamflow](#) for 7 days or more shows Olympic coastal streams in worse condition; many other Washington streams have gone from bad to worse. The white areas are places with insufficient information.

This week: August 6

Last Week: July 29



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. 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. We have selected 43 of the 253 streamflow gauges in Washington as providing broad geographic coverage with long periods of record to give us the most helpful statewide overview.

Twenty of our 43 locations set record lows on August 7, 2015. We are moving into the traditional low-flow periods for Washington streams. [Statewide streamflows](#) are available from USGS.

Selected Washington Streamflows	Today's Flow (cfs)	Percent of average for this date in the record	Min Flow (cfs)	Min Yr
MF NOOKSACK RIVER NEAR DEMING, WA	199	56%	163	1969
NOOKSACK RIVER AT FERNDALE, WA	1,380	61%	1,390	2009
SKAGIT RIVER NEAR CONCRETE, WA	5,960	47%	5,740	1941
SAUK RIVER AT DARRINGTON, WA	528	44%	615	1926
CASCADE RIVER AT MARBLEMOUNT, WA	471	42%	546	2006
NF STILLAGUAMISH RIVER NEAR ARLINGTON, WA	174	38%	180	1938
SNOQUALMIE RIVER NEAR CARNATION, WA	449	37%	480	1931
SKYKOMISH RIVER NEAR GOLD BAR, WA	393	24%	560	1992
ISSAQUAH CREEK NEAR MOUTH NEAR ISSAQUAH, WA	22	73%	17	1994
CEDAR RIVER BELOW DIVERSION NEAR LANDSBURG, WA	87	67%	90	1995
CEDAR RIVER AT RENTON, WA	81	41%	41	1958
BIG SOOS CREEK ABOVE HATCHERY NEAR AUBURN, WA	28	82%	22	2003
GREEN RIVER NEAR AUBURN, WA	230	73%	223	2003
SOUTH PRAIRIE CREEK AT SOUTH PRAIRIE, WA	28	47%	33	2003
PUYALLUP RIVER AT PUYALLUP, WA	1,540	67%	1,280	1996
NISQUALLY RIVER AT MCKENNA, WA	509		38	1965
DESCHUTES RIVER NEAR RAINIER, WA	26	65%	23	2003
NF SKOKOMISH R BL STAIRCASE RPDS NR HOODSPORT, WA	33	18%	53	1926
DUNGENESS RIVER NEAR SEQUIM, WA	108	34%	125	1926
HOKO RIVER NEAR SEKIU, WA	11	28%	16	1967
CALAWAH RIVER NEAR FORKS, WA	48	34%	53	2009
HOH RIVER AT US HIGHWAY 101 NEAR FORKS, WA	707	54%	759	2009
SATSOP RIVER NEAR SATSOP, WA	195	58%	220	1994
CHEHALIS RIVER NEAR GRAND MOUND, WA	108	44%	131	1967
NASELLE RIVER NEAR NASELLE, WA	17	34%	25	1970
COWLITZ RIVER BELOW MAYFIELD DAM, WA	3,050		1,300	1941
COWLITZ RIVER AT PACKWOOD, WA	367	37%	476	1992
LEWIS RIVER AT ARIEL, WA	857	64%	142	1931

WHITE SALMON RIVER NEAR UNDERWOOD, WA	504	68%	394	1944
KLICKITAT RIVER ABOVE WEST FORK NEAR GLENWOOD, WA	75	47%	67	1992
WALLA WALLA RIVER NEAR TOUCHET, WA	1	7%	-	1968
TUCANNON RIVER NEAR STARBUCK, WA	52	85%	19	1931
GRANDE RONDE RIVER AT TROY, OR	446	50%	418	1977
YAKIMA RIVER AT KIONA, WA	2,690		574	1994
AMERICAN RIVER NEAR NILE, WA	37	31%	42	1941
CRAB CREEK AT IRBY, WA	2	13%	1	1990
WENATCHEE RIVER AT PLAIN, WA	399	26%	432	2005
METHOW RIVER NEAR PATEROS, WA	304	35%	325	1979
OKANOGAN RIVER AT MALOTT, WA	539	29%	448	2003
OKANOGAN RIVER AT OROVILLE, WA	222	33%	91	1992
SPOKANE RIVER AT SPOKANE, WA	645	35%	582	1994
COLVILLE RIVER AT KETTLE FALLS, WA	28	29%	10	1973
PEND OREILLE RIVER BELOW BOX CANYON NEAR IONE, WA	6,730	48%	6,640	1968

Note that gauge reports in the Walla Walla River are spurious at best right now. Aquatic vegetation density is affecting readings, and some low readings are occurring when firefighters draw water from streams.

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. Thirty-two of 65 temperature gauges in Washington are registering at or higher than the lethal threshold for salmon. 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.

Gauge Station Name	8/7/2015
Nf Skokomish R Bl Staircase Rpds Nr Hoodsport, Wa	11.1
White River At Headworks Ab Flume Nr Buckley, Wa	14.4
White River At R Street Near Auburn, Wa	13.6
Lake Tapps Diversion At Dieringer, Wa	14
Ysi 6920v2-2 At Wsu 2 At Puyallup, Wa	10.6
Duwamish River At Golf Course At Tukwila, Wa	18.7
Cedar River Near Cedar Falls, Wa	10.2
Cedar River At Cedar Falls, Wa	17.8
Cedar River Below Diversion Near Landsburg, Wa	11.5
Cedar River At Renton, Wa	14.8
South Fork Sultan River Near Sultan, Wa	12.2
Sultan River Below Diversion Dam Near Sultan, Wa	12.6
North Fork Tolt River Near Carnation, Wa	10.7
South Fork Tolt River Near Index, Wa	12.2

South Fork Tolt River Near Carnation, Wa	14.7
Sf Tolt River Bl Regulating Basin Nr Carnation, Wa	13
Nf Stillaguamish East Pooled Slide Area Nr Oso, Wa	6.4
Skagit River At Newhalem, Wa	11.2
Skagit River At Marblemount, Wa	11.2
Nf Nooksack River Bl Cascade Creek Nr Glacier, Wa	9.1
Sf Nooksack River At Saxon Bridge, Wa	15.2
Nooksack River At North Cedarville, Wa	12.1
Boundary Reservoir At Forebay Nr Metaline Falls	22.1
Pend Oreille River At International Boundary	21.6
Columbia River At Bridgeport, Wa	19.3
Ninemile Creek Near Oroville, Wa	na
Osoyoos Lake Near Oroville, Wa	24
Okanogan River At Oroville, Wa	23.2
Similkameen River Near Nighthawk, Wa	18.9
Okanogan River Near Tonasket, Wa	20.8
Okanogan River At Malott, Wa	21.8
Okanogan River Nr Wakefield Br South Of Malott, Wa	22.3
Andrews Creek Near Mazama, Wa	9.5
Methow River Near Mouth Near Pateros, Wa	16.8
Wells Powerplant Headwater Near Pateros, Wa	19
Wells Powerplant Headwater Near Pateros, Wa	18.7
Columbia River Below Hwy 395 Bridge At Pasco, Wa	20.4
Snake River Bl McDuff Rapids At China Gardens, Id	22.6
Snake River Near Anatone, Wa	22.4
North Fork Clearwater River At Ahsahka, Id	6.6
Clearwater River Nr Peck Id	9.9
Clearwater River Nr Peck Id	9.7
Clearwater River Near Lewiston, Id	10
Lower Granite Lk Forebay At Lower Granite Dam, Wa	20.3
Snake River (Right Bank) Bl Lower Granite Dam, Wa	19.3
Lake Bryan Forebay At Little Goose Dam, Wa	20.5
Snake River Below Little Goose Dam, Wa	20.2
Lake H G West Forebay At Lower Monumental Dam, Wa	20.8
Snake River Below Lower Monumental Dam, Wa	20.6
Lake Sacajawea Forebay At Ice Harbor Dam, Wa	21.2
Snake River Bl Goose Island Bl Ice Harbor Dam, Wa	21.5
Columbia River At McNary Dam Lock Nr Umatilla, Or	21.4
Columbia River Below McNary Dam Near Umatilla, Or	21.4
Columbia River At The Dalles, Or	21.6
Columbia River, Right Bank, At Washougal, Wa	21.2
Columbia River At The Dalles Dam Forebay, Wa	21.8
Columbia River At Bonneville Dam Forebay, Wa	21
Columbia River At Cascade Island, Wa	21
Columbia River, Right Bank, Near Cliffs, Wa	22
Columbia River At John Day Dam Navigation Lock, Wa	22

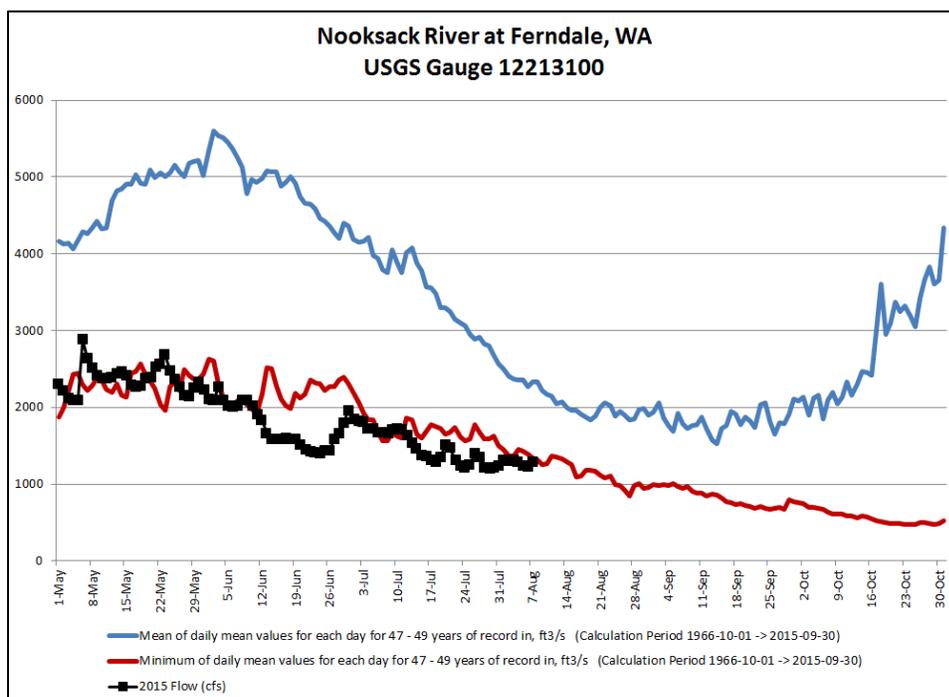
Temperatures above 20 degrees C are still occurring along the mainstem Columbia and Snake Rivers and the Okanogan and Pend Oreille Rivers. In the high teens are Duwamish, Cedar, and South Fork Nooksack Rivers.

Ecology’s [Flow Monitoring Network](#) provides water temperature monitoring at several Ecology and co-op stations, but these data are too difficult to download and display in a summary format. 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](#). Temperatures at the Fish Ladder ranged from about 63 to 72 degrees F this week; temperatures at 8 feet depth of the Ship Canal at University bridge range near 73-75 degrees; temperatures at 21 feet are 72 to 74 degrees; temperatures at 35-foot range from 67 to 70 with several spikes up to 73.

Drought Impacts to Fish and Wildlife

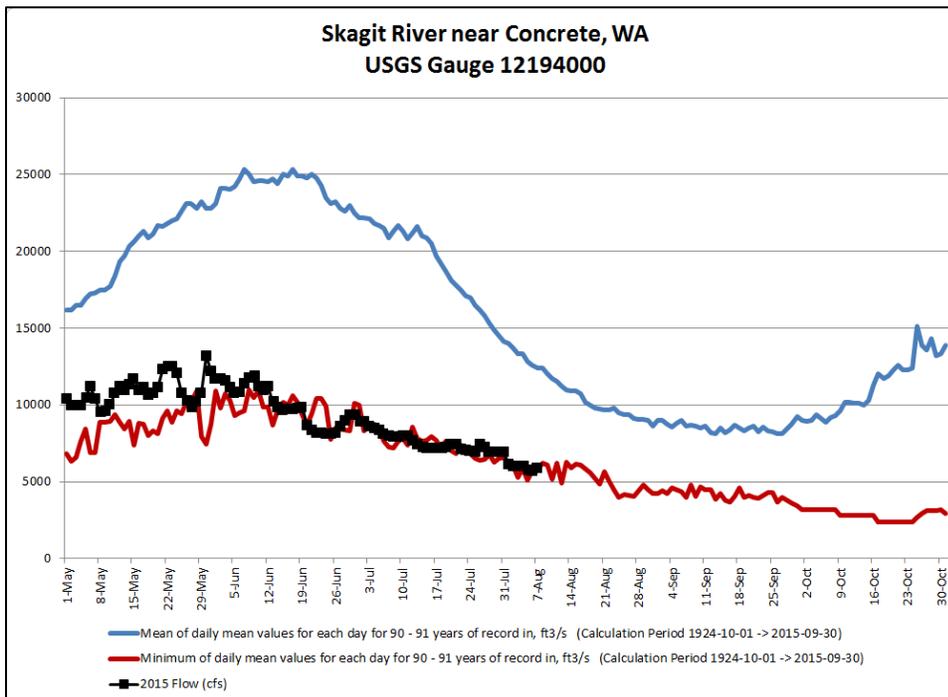
Nooksack

Introducing information for the Nooksack River, just for Alan! I might have to flip the months around on this one eventually to get a better sense of how low that minimum curve can go. Looks like Nooksack is tracking a *nearly*-perfect record of daily low flow records since about the start of June. Which everyone from that neck of the woods could have told us.



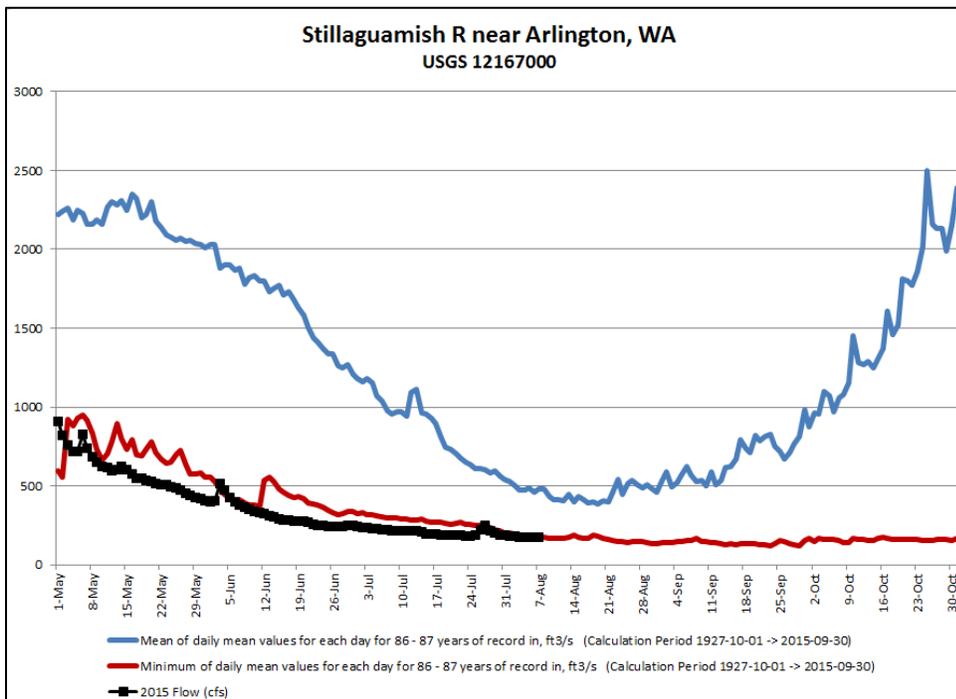
Skagit

It was difficult to pick gauges to report for both the Skagit and the Nooksack. This mainstem gauge doesn’t begin to tell the complex story of natural flows in the Skagit because of the dominant influence of reservoir outflows. Still, this gauge near Concrete provides an overall perspective on the Skagit situation. Chart shows not-quite-record-low flows with a “curve” tracking the norm. For fun, compare these with the Methow and Wenatchee to the east.



Stillaguamish

Stillaguamish looks just about as expected for unregulated streams in this neighborhood. There's a nice little bump in flow to correspond to those late-July sprinkles.

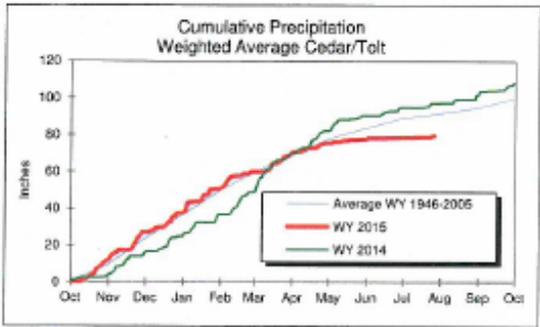


City of Seattle Public Utilities

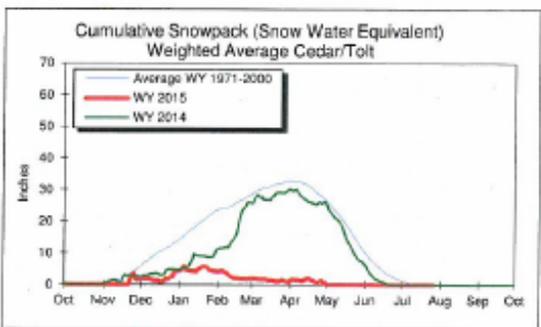
Seattle Public Utilities convened a Water Shortage Advisory Committee meeting on Wednesday August 5 to discuss sequencing and messaging of water conservation actions. Combined Cedar-Tolt reservoir statistics are summarized below. Water consumption was high in late-June and

early July, but what strikes me is how much less water the city's customers are using than pre-1991 (lower right)!

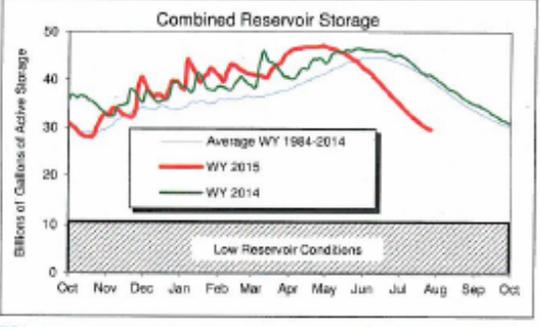
Seattle Public Utilities Water System Synopsis as of July 27, 2015



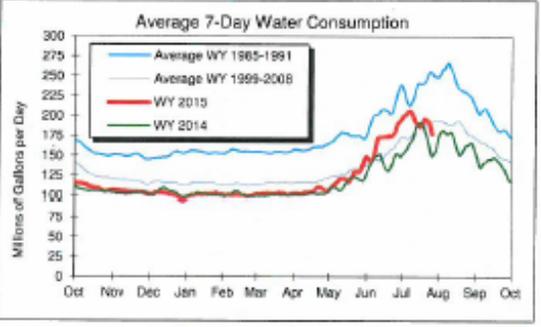
Little precipitation was recorded in the Cedar River and South Fork Tolt River Watersheds over the past week.



The average snow accumulation across the sites that we monitor is estimated to be about 0.0 inches snow water equivalent which is at the long term average for this time of the year.



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.

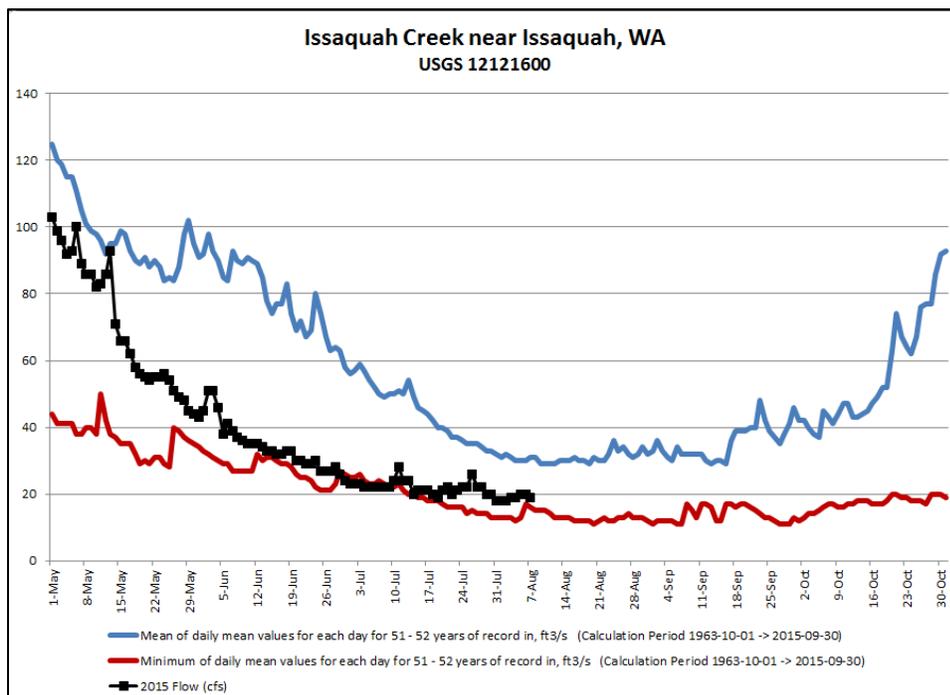


Water use over the past week averaged about 178 million gallons per day (mgd), which is less than the 193 mgd used during the same period over the years 1999-2008.

All data is provisional and subject to revision.

Lake Washington/Cedar/Sammamish

Lake Washington elevation is low, and Cedar River flows are low, so there might be trouble for fish trying to get up and out of the lake. Issaquah Creek flow is slightly above minimums. Sammamish Slough continues to have appalling high temperatures.



King County Flow and Temperature Conditions

Below are excerpts from a weekly summary of flow and temperature in King County rivers and creeks for the week of July 27 to August 2. This review looks at King County, USGS and USACOE sites with real-time data delivery and 15 years of data in order to assess weekly flows and temperatures relative to historic conditions.

NEW SINCE LAST REPORT

- Seattle air temperatures have hit 90 degrees on 12 different days this summer, which is a record number of hot days. The previous record was nine days over 90 degrees in 1958. In addition, Seattle had its warmest June and its warmest July since record keeping began last century.
- In the three month period of May, June, and July, only 0.9 inches of precipitation fell at SeaTac Airport. This is 3.3 inches less than the typical rainfall during this period.
- A review of Lake Sammamish elevation data from USGS shows that Lake Sammamish levels are the lowest recorded for the week since the Marymoor weir was modified in 1999 to improve anadromous fish passage at low flows. Between 1939 and 1964, when the weir was constructed, about 10 percent of the years had lower lake elevations for the week, and between 1965 and 1998, over one-third of the years had lower lake elevations for the week.
- As of July 30, 13 returning adult Chinook salmon had been found in the Duwamish turning basin and two adults were found in lower Soos Creek, suggesting that their return migration was beginning. Most Chinook are expected to remain in saltwater for now, with fisheries biologists tracking movement.
- Cascade Water Alliance added water to Lake Tapps from water stored behind Mud Mountain Dam as part of a capital repair project. More than 10 feet of water was added to the reservoir during three phases of the repair project (see <http://cascadewater.org/> for more information).

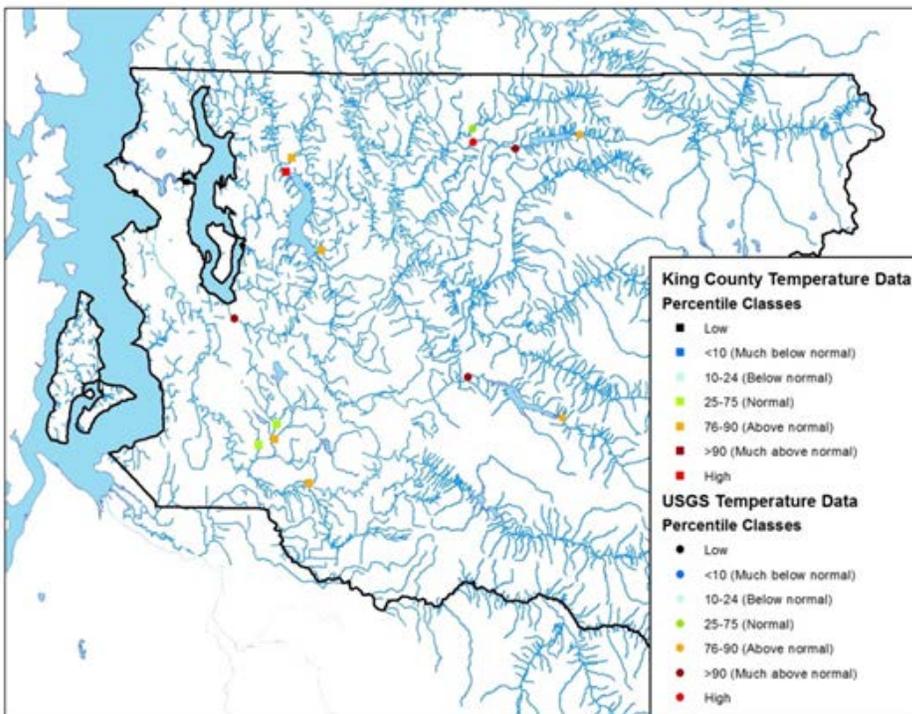
WATER SUPPLY STATUS

- Water shortage response plans for Seattle, Tacoma, Everett, and Cascade Water Alliance remain activated; Seattle Public Utilities is in the “advisory” phase; click [here](#) for more information.

FLOW AND TEMPERATURE STATUS

- 9 out of 17 rivers and 6 out of 22 creeks with over 15 years of flow data and real-time data delivery had the lowest flows ever recorded for the week. Conversely, 7 out of these same 22 creeks had flows that were typical or higher-than-typical for the week, and 2 of these 22 creeks (Crisp and Laughing Jacobs) recording their *highest ever* flows for the week.
- With more typical air temperatures last week, only 2 out of 13 rivers/streams with over 15 years of temperature data and real-time data delivery had the highest temperatures ever recorded for the week, though all 9 out of 13 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 23 degrees C. Maximum daily temperatures in the **Sammamish River** at the Sammamish weir reached **32.9 degrees C**, which is likely the temperature of the surface of Lake Sammamish at the outlet to the river.
- Lake Washington water levels are the second lowest ever recorded for the week based on U.S. Army Corps of Engineer records that go back to 1940, above the 1958 minimum. Temperature data at the fish ladder at the locks were the highest for the week since record-keeping began in 2004.

TEMPERATURE



ECOLOGICAL IMPACTS

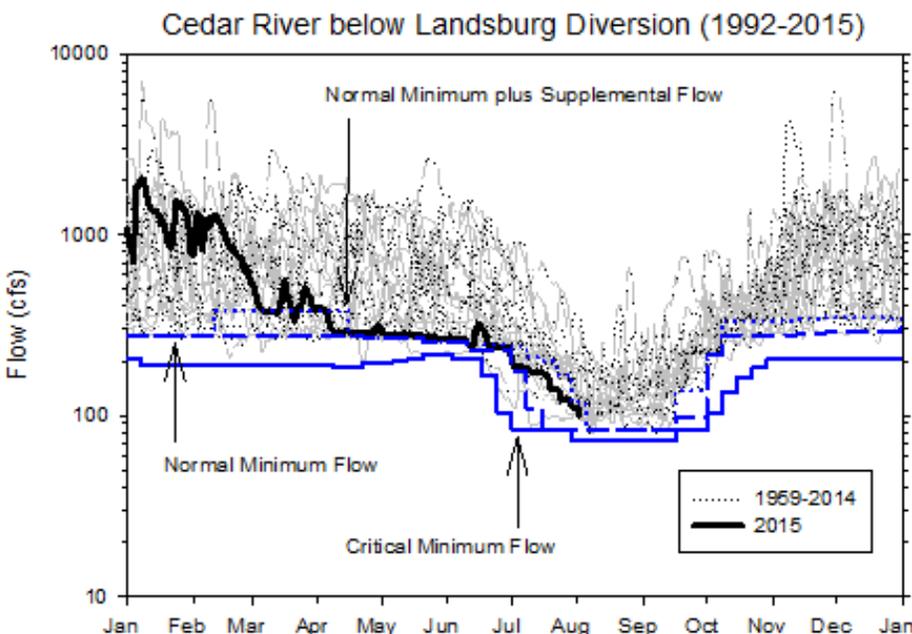
- Low flows and high temperatures may hinder adult salmon from reaching upstream spawning grounds. Temperatures above 20 to 21 degrees C are generally considered to be a migratory barrier to migration. Pink salmon in Alaska have shown increased mortality above 17 degrees C combined

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.

- As of July 21, only about 27,500 sockeye salmon had passed the locks and entered the Lake Washington system, substantially fewer than the preseason forecast of 150,000. 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. Summer/fall Chinook will also start returning to local rivers in August, with preseason forecasts of about 7,400, 3,400, and 12,000 Chinook returning to the Snohomish River, Lake Washington, and Green River, respectively.

REGULATORY AND LEGAL CONSIDERATIONS

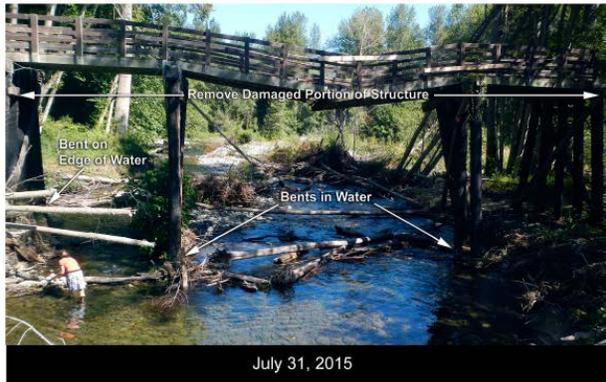
- Flow in the Snoqualmie River is lower than the minimum instream flow established by Washington Administrative Code, which allows the state to curtail withdrawals by holders of junior water rights.
- Flows in the Green River are higher than instream flows required during drought years for Tacoma Public 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 established by Washington Administrative Code for Tacoma Public Utilities to withdraw water from the Green River with its second diversion water right.
- 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.



Request data and/or get on Jim's distribution list at Jim.Simmonds@kingcounty.gov. Many thanks to correspondents Jim Simmonds and Curtis DeGasperi from King County Department of Natural Resources and Parks.

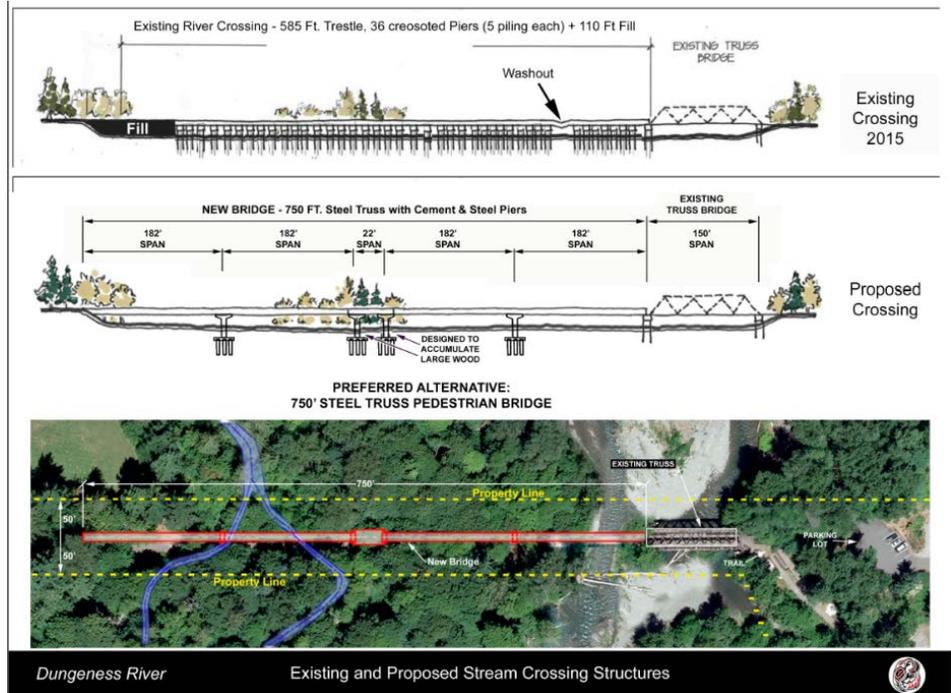
Dungeness

The removal of a short section of the Dungeness River trestle by Jamestown s’Klallam Tribe and partners last weekend went really well! This was part of the larger project to remove the entire

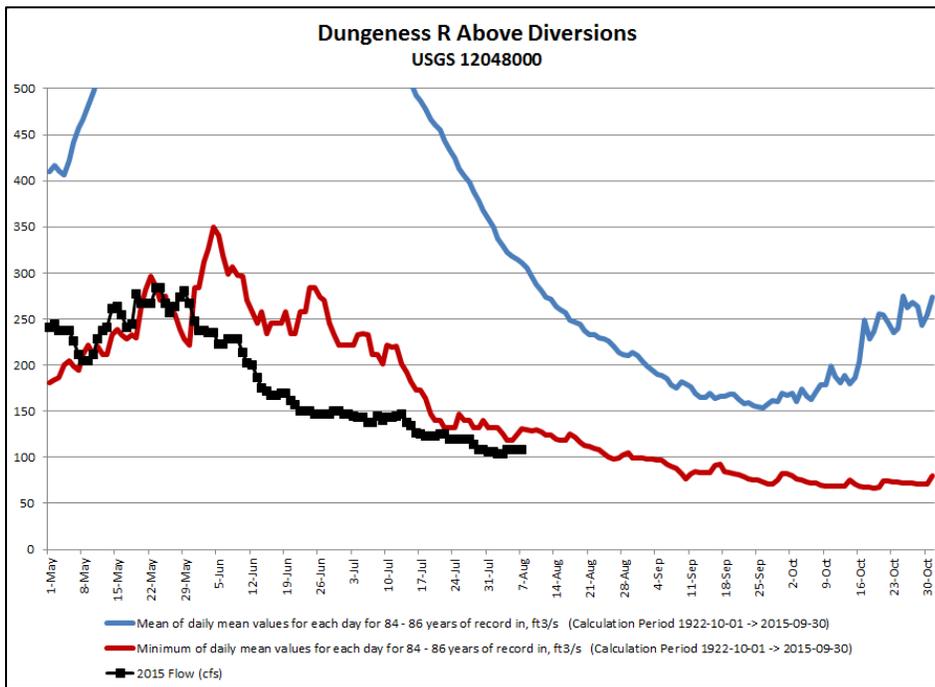


585-foot trestle (36 piers) and replace it with a 750-foot pedestrian bridge (4 piers). The 90-foot portion of trestle that was removed (above, left) constitutes the only in-water work that is contemplated for the entire project and it was important to complete it before fish begin spawning. 105 pinks were counted migrating through the construction site during 90 minutes in the middle of the day, and they didn’t appear unduly troubled by the work.

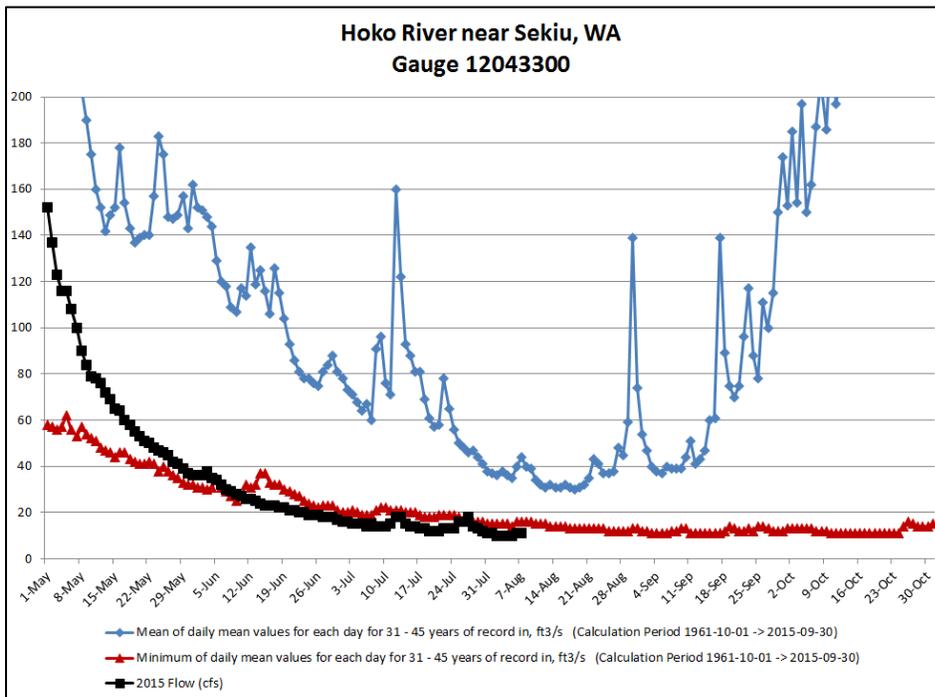
At right is a schematic for the replacement structure. (Randy Johnson, Jamestown s’Klallam Tribe)

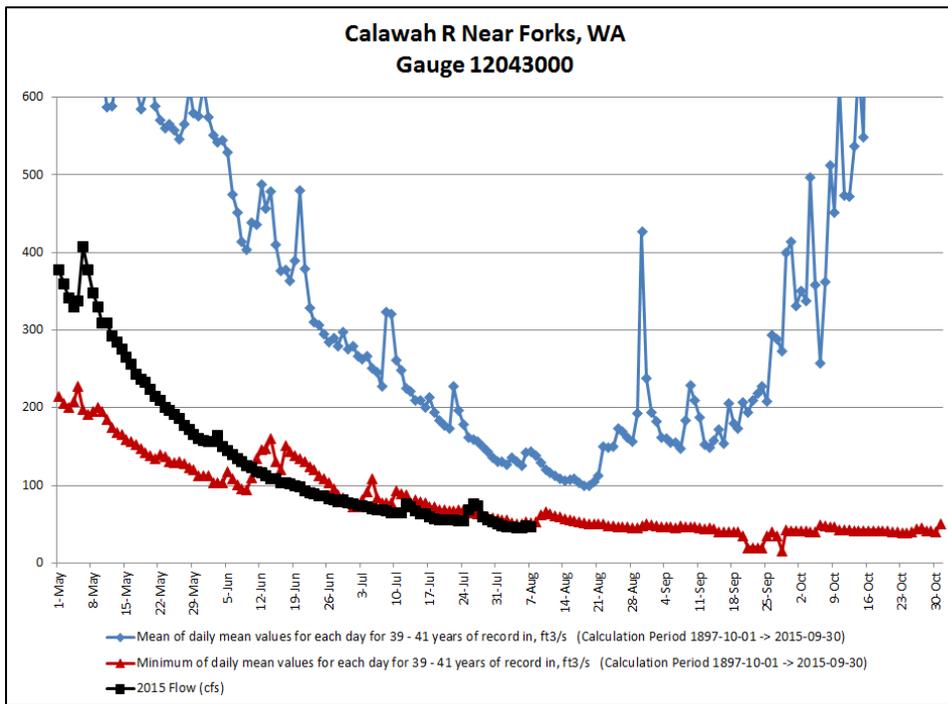


Dungeness is in poor flow condition, but pinks are still able to get into the river and move upstream. Staff from Jamestown, WDFW, and two WCC crews will be working during the week of August 10 to free blocked fish and install structures to constrict and deepen flows, providing better fish migrations for returning chinook, pink, and coho salmon.



Hoko and Calawah are plugging along at record low flows. Let's get some temperature data loggers in these streams!

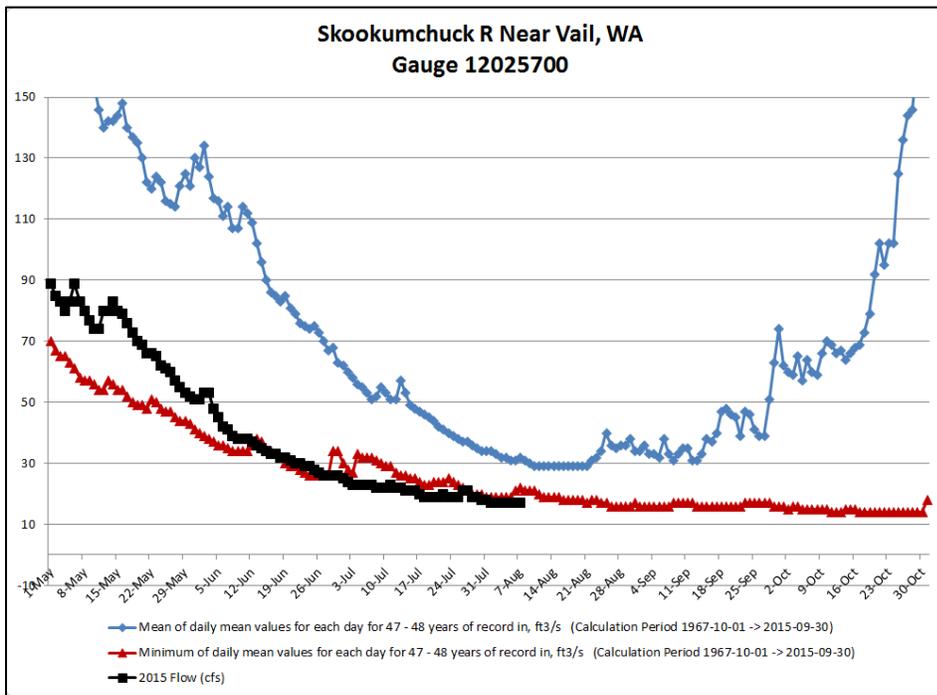




Chehalis Basin

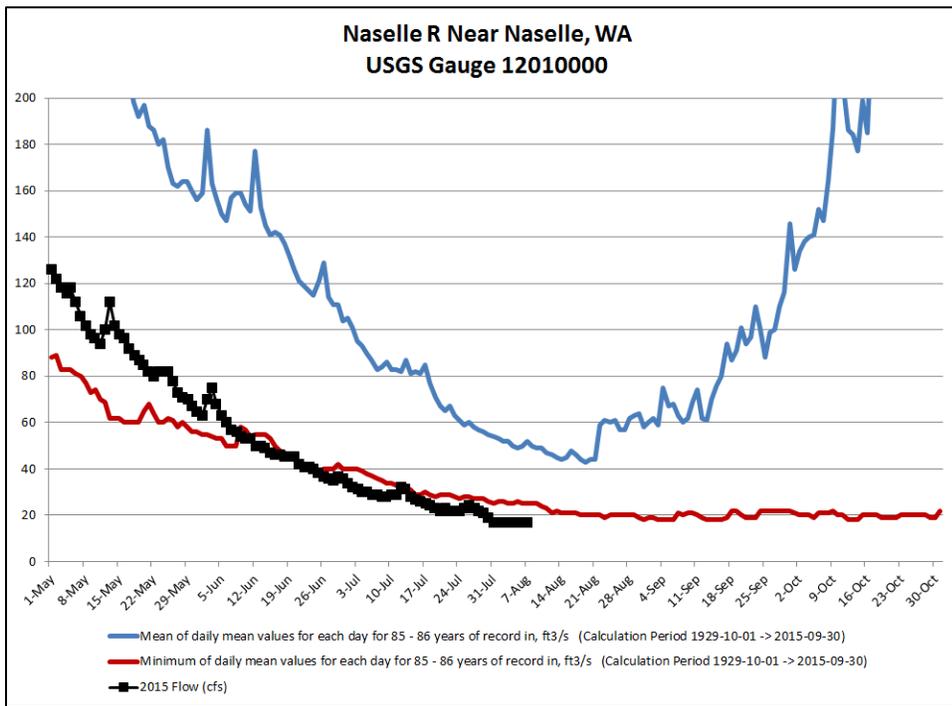
Skookumchuck:

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

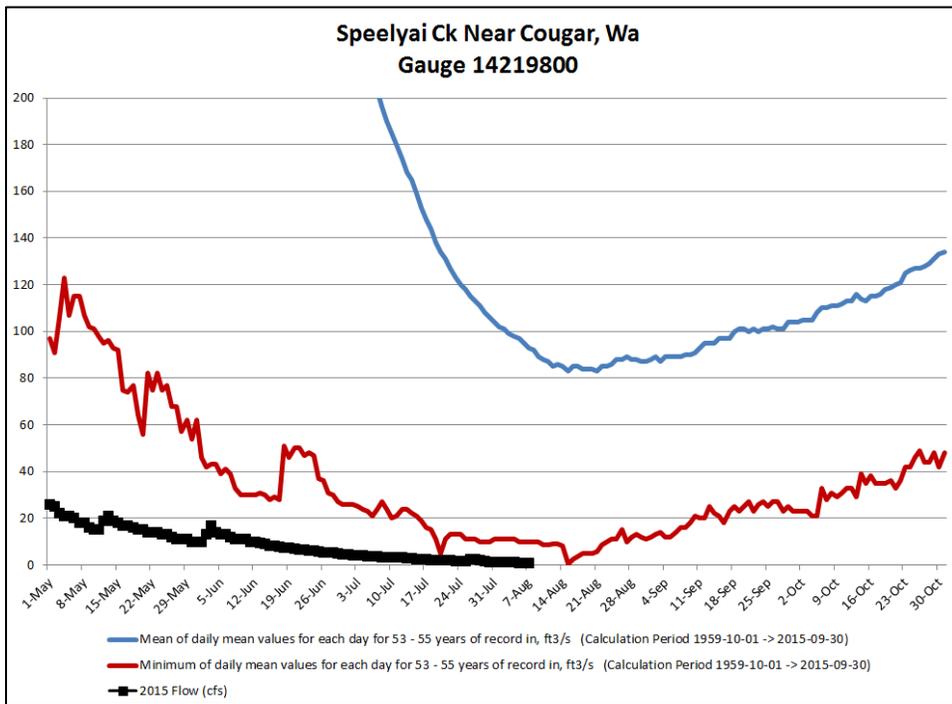


Southwest Washington & South Cascades

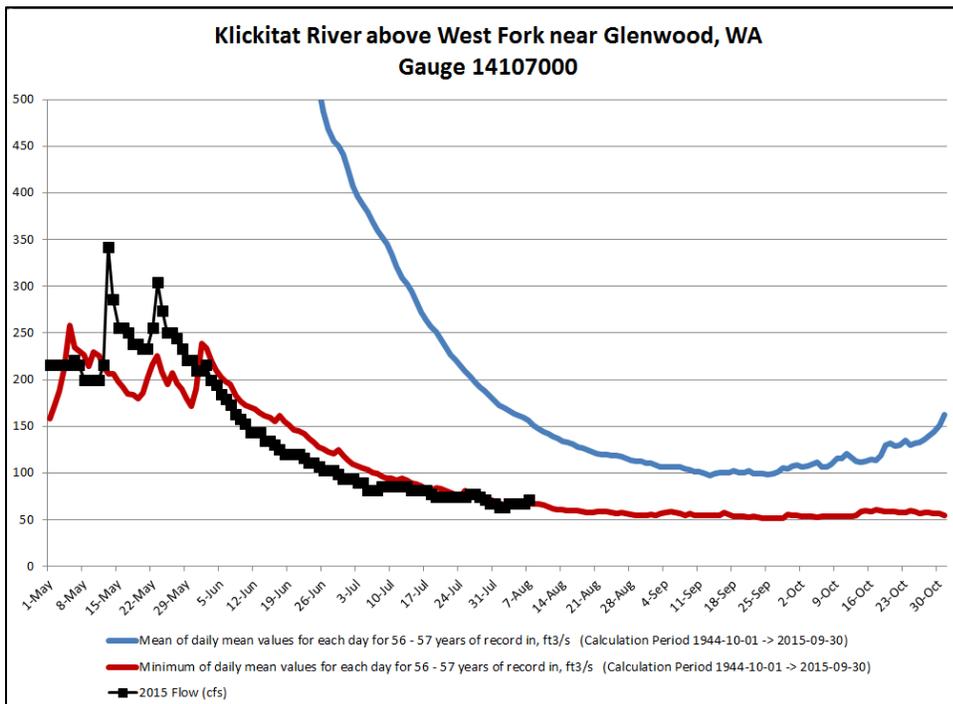
Naselle R continues to show record low flows.



Skeelyai Creek rate of decline is slowing and total flow is down to less than 1 cfs.

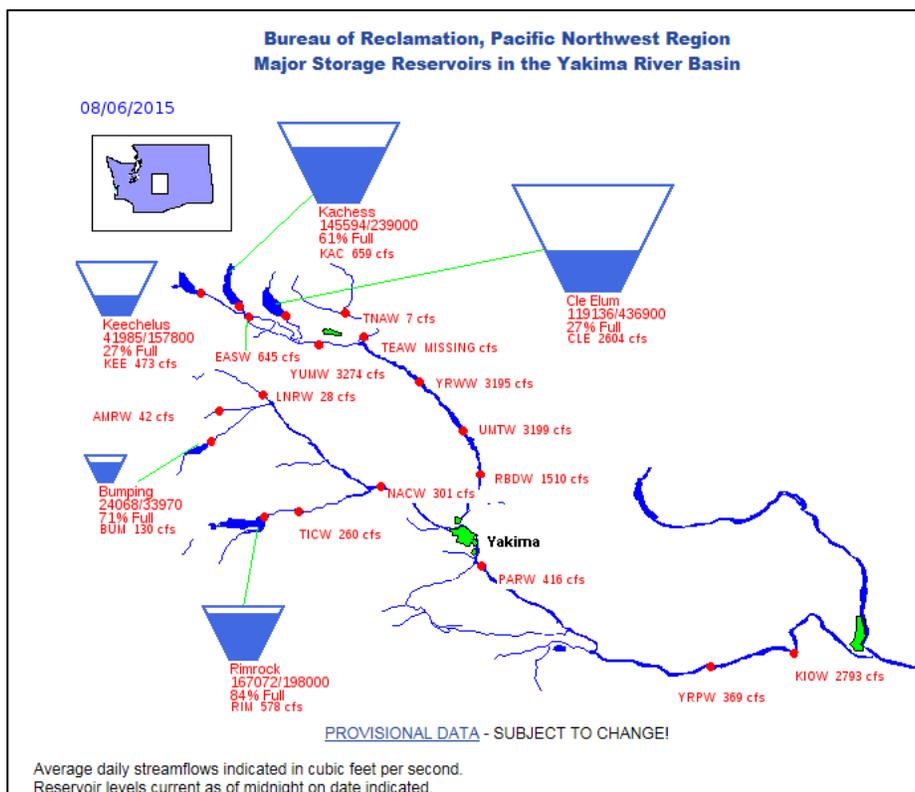


Upper Klickitat seems to be bottoming out.

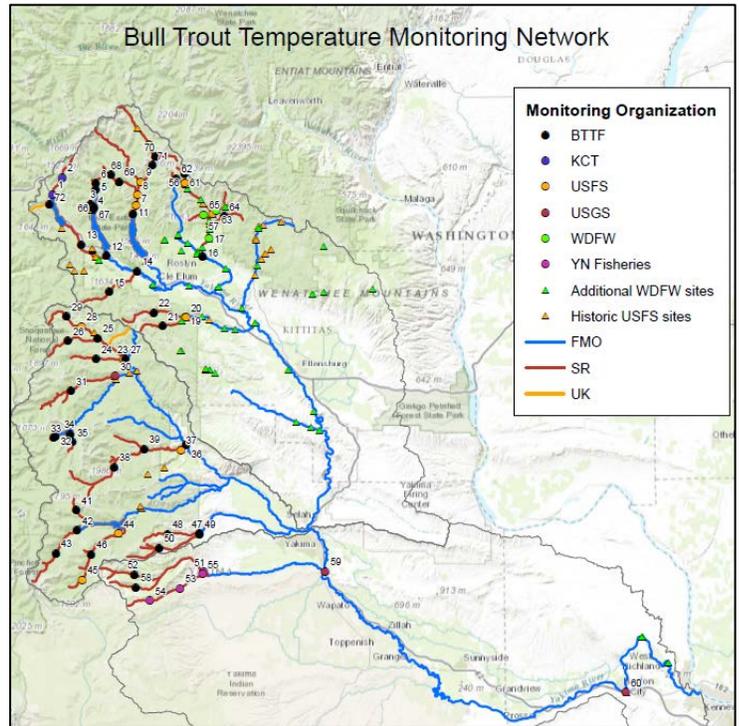


Yakima

The Reclamation Teacup Diagram (below) for Yakima Basin shows Lake Keechelus volume down to 27%, Kachess down to 61%, and Cle Elum down to 27%. Bumping is at 71% of full, and Rimrock is 84% full. Storage is 71.9% of average (1981-2010). Inflow to the five reservoirs is 46%, releases from the five are 80% and major canal diversions are 73% of average for August 7. The next river operations meeting will occur September 3rd.



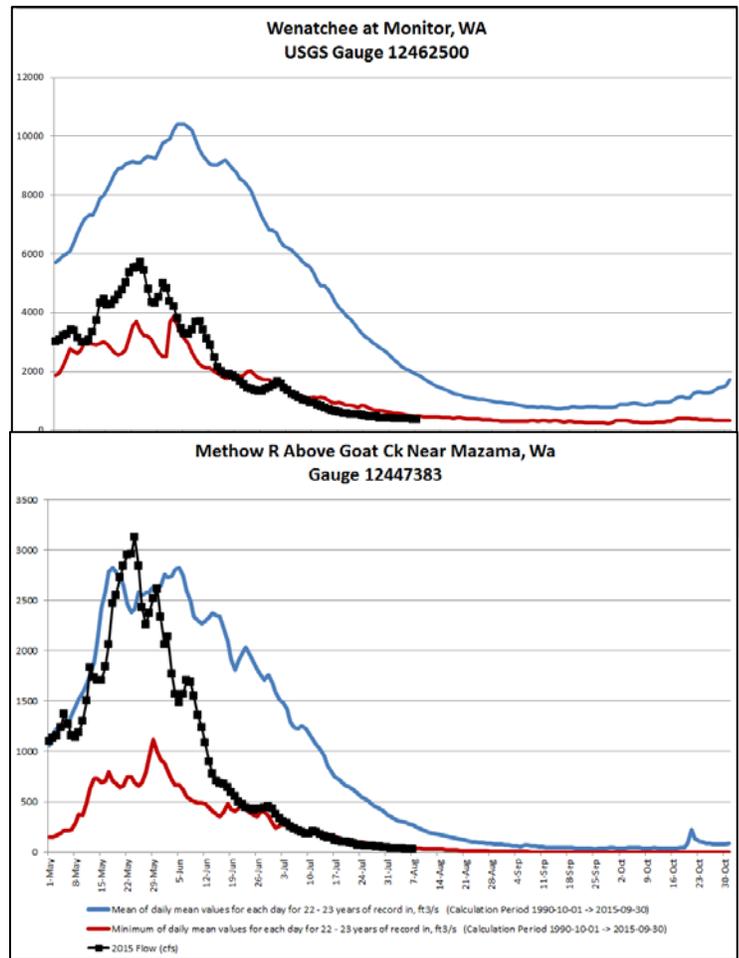
At right is a map showing existing water temperature monitoring locations in the Yakima Basin. Data from multiple agencies and entities are being compiled and shared to help us track where fish might be stressed by high temperatures, and to which streams it is safe to relocate stranded fish.



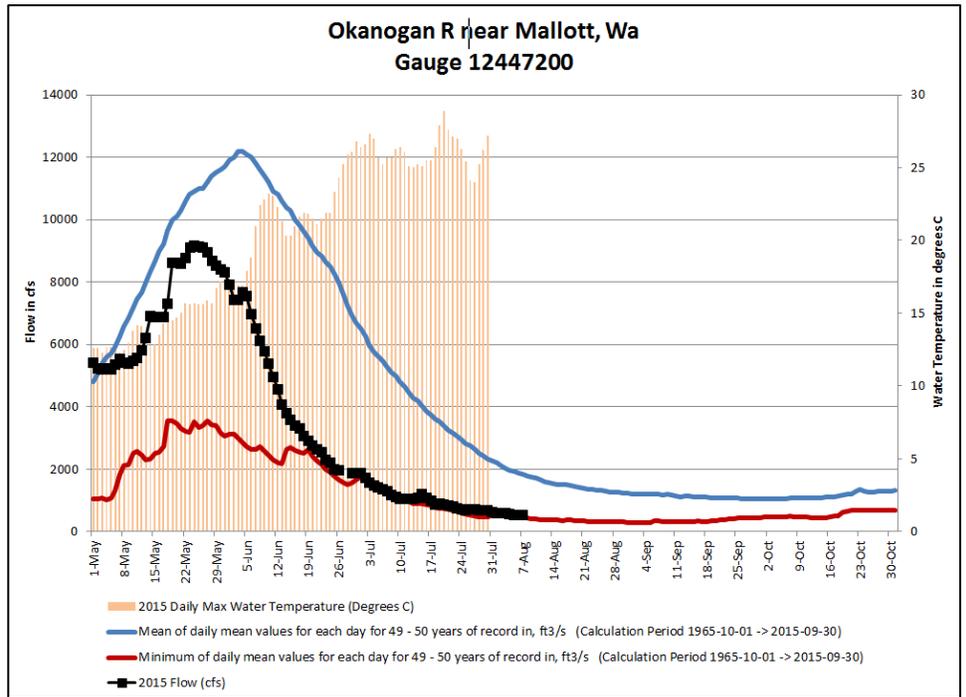
North Central Washington

New this week is this chart (right) of the Wenatchee River at Monitor. Again, this lower mainstem gauge does little to help us understand the complexities of natural flows in the Wenatchee basin, but it does help to convey the stunning, record-setting low flows.

Methow is tracking with its historic low base flows. Comparing these two charts tells the story of north Cascades/Canadian “normal” snowpack runoff for the Methow, versus low-snowpack runoff from the more central Cascades for the Wenatchee. Don’t get tripped up in the different scales: Wenatchee flows are more than twice the Methow flows normally.



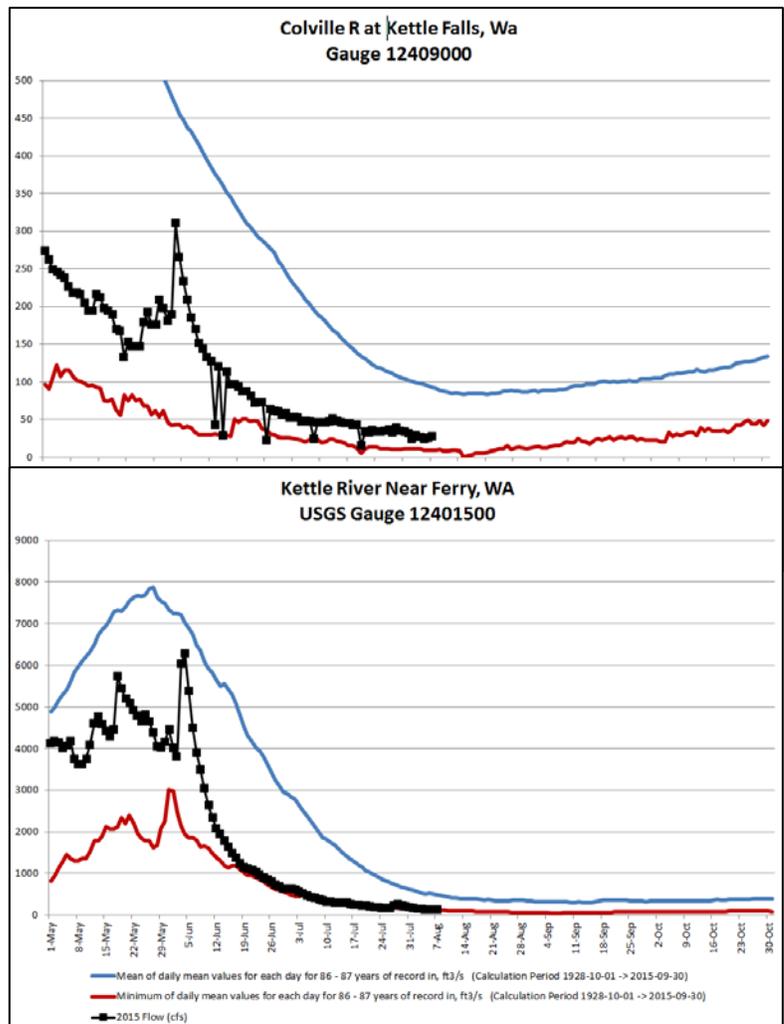
Okanogan is still hurting temperature-wise. At some point I'll chart the temperature averages so we compare this year's temperatures with the norm.



Spokane and northeast Washington

Both Colville and Kettle are low and appear to be leveling off.

Here's a funny story (or one of sheer incompetence): The Kettle River charts before today have been showing Kettle River 2015 and mean values with the Colville River minimum values. The Kettle River story makes a lot more sense when we are looking at the right data!



Snake & Columbia Rivers

Dworshak and Brownlee reservoirs (Snake River) continue to draft significantly: Dworshak elevation fell 7.0 feet, Brownlee 5.3. Dworshak contributes cool-water flows to the Snake. Outflows at Grand Coulee ranged from 91 Kcfs to 111 kcfs. Lake Roosevelt drafted 1.4 feet. Snake summer BiOp flow objectives are 50 Kcfs; actual flow averaged 29.5 Kcfs at Lower Granite last week. Columbia at McNary summer BiOp flow objective is 200 Kcfs; flows at McNary averaged 141-144 Kcfs. Water temperatures at many Columbia and Snake facilities are reported on the USGS table starting on page 7.

WDFW Headquarters Drought Response Activity

Let 'em Pass Signs: More of these signs are being printed; contact [Angella Ward](#) in the WDFW Habitat Program to receive signs to post. Remember to obtain landowner permission prior to posting signs on public or private land.

Report your observations – Contact [Katrina Simmons](#) with your drought observations! We have noted a dearth of observations on the sharepoint table and are trying another approach. The absolute easiest way to report drought issues is to **snap a photo** with your cell phone or tablet and [email your photo to Katrina](#) along with some clues about the **location**. If your device is set up to geotag photos, then that's all we need. Turn on your device's "location services" to geotag your photos - Here are a few links to instructions for doing this.

<http://www.cultofmac.com/266849/see-took-photos-iphone-ios-tips/>

<http://www.imore.com/how-to-turn-off-photo-geotagging-protect-privacy-iphone-ipad>

For Android, look in "settings." If you haven't a clue what any of this means, but think it might be important to you, contact [Jake Shapley](#).

Rescue stranded fish – Report ALL fish handled on WDFW's sharepoint spreadsheet! Go to the WDFW intranet, click on "New 2013 SharePoint site", choose "Fish" (across the top), drop down to "Fish Management" and click (don't choose from the subsequent drop-down), choose "documents" (2nd down, left side), and the spreadsheet is entitled "**SalvageRescueReport.template**". When you click on the template, it will open and prompt you (in yellow bar) to click on the "edit" button to enter your data. It will prompt you to "save" when you close it out. Don't forget to include your name so Val Tribble can contact you with any questions or clarifications needed. Remember, we are recording **all species** encountered or handled, not just ESA fish. For more information, contact [Val Tribble](#).

Get new/replacement nets and buckets: contact [Angella Ward](#).

Remove Rock Dams – Right now, reports of rock dams that make their way to Drought Central are dispatched to the local enforcement officers and/or the District Fish Biologist and/or the Habitat Biologist. In the near future, the plan is to engage RFEs, conservation districts, and other local partners in organizing and removing rock dams. Skilled labor will be provided by WCC crews assigned either to WDFW/tribal staff or to the local response group. Every crew conducting this work must carry a copy of the WDFW Drought HPA # 1004 to show concerned citizens and enforcement officers. Landowner permission must be obtained prior to the scheduled work day. Copies of the permit, landowner permission form, and other supporting information are available on the shared drive.

Ecology Drought Relief Funds: Drought funding is coming to WDFW through Ecology, and spending has already begun. Any questions staff has about WDFW's drought funding can be directed to [Drought Coordinator Scott](#). Ecology has also asked WDFW to work with tribal comanagers to fund drought projects.

Drought-related Hatchery Actions through August 6

Region	Facility (Species)	Mortality (% production)	Comments
3	Naches		We have secured a permit from DOE that allows for a change in point of diversion and well development. We continue to move forward with installing a re-use system. There is a meeting on Monday 8/10/15 to discuss potential electrical upgrades to support the new well and re-use systems..
4	Bellingham (Rainbow Trout)	0 this week 5,760 cum. (80% cum.)	
4	Issaquah (Coho)	0 this week 6,728 cum. (1% cum.)	
4	Soos Creek (Summer Steelhead)	0 this week 41,208 cum. (60% cum.)	
4	Soos Creek (Coho)	0 this week 172,570 cum. (20% cum.)	
5	Fallert Creek (Steelhead)	0 this week 0 cum. (0% cum.)	Fallert has 11,900 Wild Winter steelhead on hand. No mortality yet. Treatments have started for Columnaris today. Looks like bad losses to come. This is 24.4% of that program. This group was kept at Fallert because they are IHN positive as eggs. The rest of the program is at Mossyrock. The pop. there is 36,800 or 75.6% of the program. This group is NOT IHN positive. These fish have no losses.
5	Grays River (Chinook)	0 this week 0 cum. (0% cum.)	Frunculosis treatments were switched to Aquaflox for better results. Formalin treatments on going with success for Ich.
5	Grays River (Juvenile Coho)	0 this week 0 cum. (0% cum.)	450k type S coho were moved to Cowlitz Trout Hatchery on July 28th and 29th.
5	Grays River (Steelhead)	200 this week 150,200 cum. (93% cum.)	Treating with formalin externally for ICH
5	Lewis River (Chinook)	0 this week 0 cum. (0% cum.)	On Mon. Aug. 3rd 500k Spring were released. This is ~38% of the Lewis Spring program. These fish were programmed for an Oct. release. Smoltification and BKD have caused this early release to meet optimal fish health and river conditions. On Sat Aug. 1st the Lewis River was dropped to 800 cfs from 1250 cfs in an attempt to keep Yale and Merwin Res. full enough for fall adult spawning in the river below Merwin Dam.
5	North Toutle (Coho)	0 this week 101,746 (76% cum.)	On July 14 th , 33,600 Type S coho were shipped to Cowlitz Trout Hatchery. So far Cowlitz has only seen a loss of an additional 961 which leaves a live total at Cowlitz of 32,639. This stock is doing well.

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)	2,448 this week 66,225 cum. (23% cum.)	Loss is due to Ich.
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 through August 7

- 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. **Hoot owl restrictions were added for the Methow River on August 4th.**
- Trout, salmon, and steelhead fishery closures in table below:

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.
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.
2	Lake Wenatchee Open to sockeye (7/30)	Sockeye	Closed to Chinook, steelhead, bull trout.	Harvestable numbers are available while ensuring adequate sockeye spawners.

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 (7/18)	Summer Chinook, Sockeye	Closed	
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.
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 Sulphur 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.

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](#)

For Further Information:

Drought-related staff resources are available on the shared drive (S:\All Agency\Shared Projects\DROUGHT 2015) and WDFW SharePoint under Habitat Program, Drought 2015.

Contact WDFW Drought Coordinator Teresa Scott at teresa.scott@dfw.wa.gov or (360) 902-2713 with questions and suggestions.

Hydrograph Sampler Chart Links

Nooksack @ Ferndale	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12213100
Skagit near Concrete	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12194000
Stilly	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12167000
Issaquah	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12121600
Dungeness	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12048000
Hoko	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12043300
Calawah	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12043000
Skookumchuck	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12025700
Naselle	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12010000
Speelyai	http://waterdata.usgs.gov/wa/nwis/uv?site_no=14219800
Klickitat	http://waterdata.usgs.gov/wa/nwis/uv?site_no=14107000
Wenatchee @ Monitor	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12462500
Walla Walla	http://waterdata.usgs.gov/wa/nwis/uv?site_no=14018500
Methow	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12447383
Okanogan	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12447200
Colville	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12409000
Kettle	http://waterdata.usgs.gov/wa/nwis/uv?site_no=12401500

Happy weekend!