

2019 Water Year Report

Summary of Thurston County Precipitation, Groundwater, Stream and
Lake Data from October 2018 to September 2019

**Thurston County Community Planning and Economic Development
Water Planning**



February 2020

Acknowledgements

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Monitoring Stations and their Basin Codes

Stream and Lake	Precipitation	Groundwater
10a: Eaton Creek @ Yelm Hwy	01u: Nisqually near National USGS ¹	DP1: 5013 Donnelly Dr SE
10b: Lake St. Clair	05u: Yelm WRF	DP2: 3986 Woodlawn Dr SE
14a: Spurgeon Creek	10u: Meridian Rd	DP3: 5535 Donnelly Dr SE
17a: Chambers Creek @ Rich Road Bridge	11u: NOAA Olympia Airport ²	ECY1: 5143 Windermere Dr SE
17b: Chambers Ditch @ Wilderness	<i>11y: Deschutes Falls Park</i>	ECY2: 5535 Donnelly Dr SE
18a: Woodland Creek @ Pleasant Glade Rd.	11z: Rainier Fire Station 4	ET1: 8538 9th Way SE
18b: Long Lake Level	13u: Lake Lawrence	HFB-01: 628 Hidden Forest Dr SE
18c: Hicks Lake ³	18u: Lacey Fire Dist. 3 Fire Station	HFB-02: 524 Hidden Forest Dr SE
20a: Woodard Creek @ 36th Ave.	18w: WARC TC	HFB-03: 8836 6th Way SE
<i>24a: McLane Creek</i>	20u: Southbay Firestation	LS11a: 9605 Tilley Rd S
32b: Green Cove Creek @ Butler Cove FS	23u: Percival Creek, Bldg 4	LS7a: 3804 93rd Ave SW
44a: Black Lake Ditch @ Belmore Rd	24u: McLane FS Wx	LS8a: 8925 Walter Court SW
45a: Black River @ 110th Ave	27u: Boston Harbor	MW1: 10415 Littlerock Rd SW
52a: Salmon Creek @ Littlerock Rd.	33x: Griffin FS 13-2	MW2: 10415 Littlerock Rd SW
<i>53a: Scott Lake Culvert⁴</i>	<i>44u: Black Lake FD-95</i>	MW3a: 3623 104TH Ave SW (Jones)
54a: Beaver Creek	45u: Littlerock	MW5: 800 93rd Ave SE
55a: Scatter Creek @ James Rd.	45w: Rochester Drop Box	SCMW_1: Leon St. SW
65a: Prairie Creek @ Old Highway 99	55u: Tenino	SCMW_2: Pendleton and 180th
	<i>59u: Bloody Run USGS</i>	SCMW_3: 201st and Old HW 99
	<i>60u: Bucoda USGS</i>	SCMW_4: Edinger Morris and Florence
	<i>60v: Bucoda</i>	SCMW_5: 183rd Ave
	65u: Grand Mound	SCMW_6: Loganberry
	69u: Summit Lake	SCMW_7: Leitner and 180th
		SCMW_8: Old HW 99 and Violet Prairie
		<i>SCMW_9: Old HW 99 and Billie Mills</i>
		SLB-1: Scott Lake, Trevue Ave SW & Scott Creek Dr SW
		SLB-2: Scott Lake, 11746 Scott Creek Dr SW
		SSW1: Stuart St Well
		TWB1: Huskey Way SE & Carpenter Rd SE
		TWB10: Choker Ct & Bobcat Dr SE
		TWB11: 315 Ranger Dr SE
		TWB2: 6731 Kinwood St SE
		TWB3: 7309 Husky Way SE
		TWB4: 7653 Husky Way SE
		TWB5: 404 Choker St SE
		TWB6: Husky Way SE & Wildcat St SE
		TWB7: 454 Cougar St SE
		TWB8: 455 Bulldog St SE

Brown Italic = Site Retired in 2019

Green Italic = Site Added in 2019

Gray Background = ILMA Site

Lines to Left = Telemetered

¹ USGS runs the National, Bloody Run, and Bucoda USGS weather station; TC Water Planning records the data and uses them in analyses.

² NOAA runs the Olympia Airport weather station; TC Water Planning records the data and uses them in analyses.

³ The level on Hicks Lake is monitored by volunteer Dolly Yates.

⁴ Scott Lake Culvert is intermittently monitored upon request by the Scott Lake Association.

Executive Summary- Water Year 2019

Activities

In Water Year 2019 (October 1, 2018 through September 30, 2019) Thurston County Water Planning maintained a total of 74 monitoring stations.

Table 1: WY 2018 Station Summary

Type	Count
Weather and Atmosphere ⁵	19
Surface Water (Stream and Lake) ⁶	17
Groundwater	38
Total (2019)	74

Three new weather stations were installed (Deschutes Falls Park, Black Lake Fire District 95, and Bucoda) and two were discontinued (Bloody Run USGS and Bucoda USGS). Stream monitoring was discontinued at McLane Creek, and there was no monitoring at the outlet of Scott Lake this year. One existing monitoring well was refurbished and monitoring resumed (Scatter Creek basin at Old Highway 99 and Billie Mills).

Much of 2019 was occupied by the installation of telemetry equipment at 7 precipitations stations (Deschutes Falls Park, Lake Lawrence, Littlerock, Rochester, Tenino, the new Bucoda site, and Grand Mound) and 4 stream gauges (Black River, and Salmon, Scatter, and Prairie creeks) under the grant provided by the Chehalis River Basin Flood Authority (CRBFA). The grant also funded the creation of an automated electronic data transfer from Thurston County to CRBFA.

2019 saw the finalization of the updated groundwater monitoring program created by the County Hydrogeologist, Kevin Hansen. In water years 2020 through 2022 new wells will be drilled and old wells shut down, resulting in little net change in the total number of wells monitored, but better county-wide coverage of groundwater monitoring.

Year In Review

Cold, then Normal

Normal fall temperatures in 2018 were followed by a winter of extremes, with abnormally warm weather in December 2018 and January 2019 followed by an extremely cold February and March. Temperatures in the spring and summer returned to normal, which was a departure from last year's high summer temperatures.

⁵ In addition to the 19 stations maintained by TC Water Planning, two USGS precipitation stations were funded by TC Water Planning in 2019, and data were retrieved from the Olympia Airport and Nisqually near National gauges every month, for a total of 23 stations.

⁶ In addition to the 17 stream and lake monitoring stations maintained by TC Water Planning in 2018, there was one volunteer station (Hicks Lake), and the Thurston County Environmental Health program, funded by TC Water Planning, monitored additional streams and lakes as described in their Annual Report.

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Very Dry

Where 2016 and 2017 were wet years and 2018 was a year with average precipitation, 2019 was very dry; in some parts of the county it was the driest since 2001, the last major drought. The County was shielded from the worst effects of drought for two reasons. First, groundwater levels began the water year in the normal range in most aquifers, so there were significant volumes of water already stored. Second, while winter rainfall was much lower than average, summer rainfall was approximately normal, and it was unusually well spaced throughout the season, which kept some moisture in surface soils. This intermittent precipitation pattern and cooler summer temperatures and moderate humidity also played a major role in reducing local wildfires during the summer of 2019.

Streams during WY 2019 were very low. Chambers, Green Cover, Salmon, Scatter, Spurgeon, and Woodard creeks all ended the year with their lowest cumulative discharge measured since at least 2008. While Eaton and Woodland creeks have seen lower cumulative discharges in recent years, WY 2019 was still well below normal for them.

Groundwater levels in WY 2019 started around average, but in some wells, particularly in the Salmon Creek basin, they declined to their lowest recorded levels by the end of the year. The Scatter Creek basin has only two complete water years of data; some wells ended WY 2019 lower than they ended WY 2018, but others were about the same, possibly due to the influence of the Chehalis River. All Scatter Creek basin wells were significantly lower in WY 2019 than WY 2018 throughout most of the year.

Background and Introduction

The Thurston County Community Planning and Economic Development Water Planning group is responsible for installing, maintaining and collecting data from 74 monitoring stations placed throughout Thurston County to measure atmospheric conditions, streamflow, and groundwater and lake levels. This report contains mostly data relating to volumes and quantities of water; it does not discuss chemical, physical, or biological parameters of the waters of the County. The Thurston County Environmental Health Division (TCEH) collects and presents chemical and biological parameter data as their major contribution to this annual report. Those data are available as a supplemental report in conjunction with this document.

Of the 74 stations mentioned above, six are part of an Inter-local Monitoring Agreement (ILMA) between Thurston County and the Cities of Lacey, Tumwater, and Olympia (TCEH monitors several stream sites that are not part of this report for water quality parameters under the ILMA). Monitoring under the ILMA began in the early 1990s and has provided our partnership with millions of data records since its inception. The data are used to gauge the condition of our water resources in the northern part of Thurston County and within the jurisdictions of the cooperative partners. The cost of the ILMA is divided between the partners based on the number and type of equipment that is located within their respective boundaries. These data are useful not only for evaluating the general health of our systems, but also for engineering and flow modeling for basin and critical areas planning and regulatory issues.

In addition to the ILMA, Thurston County also maintains a larger program called the General Environmental Monitoring (GEM) Program. This concurrent program contains the majority of the stations that are deployed throughout Thurston County. This program has grown steadily since its founding in 2000. The purpose of the wider GEM program is to evaluate *all* aspects of the water cycle countywide to include atmospheric conditions, streamflow stages and volumes, and groundwater and lake levels. The data collected from both the ILMA and the GEM are maintained by Thurston County and provided to our partners and the public online.

This report is prepared to provide a summary of findings for Water Year 2019. Thurston County has elected to include both the ILMA data and the GEM data together in this summary report to provide a complete picture of the water cycle in Thurston County from the clouds to the Sound and what the water does on its journey.

This report is a summary of WY 2018. It also contains long term records where the period of record provides a wider perspective on the subject water year. Running averages and daily summaries are used as comparison values for many sites to compare and contrast this water year with historic values. The data presented in this report, as well as all other, more detailed datasets, are available upon request.

The Environmental Monitoring Program maintains a dashboard of current and historical data at <https://www.thurstoncountywa.gov/sw/Pages/monitoring-dashboard.aspx>. This dashboard contains long term records of daily averages, and the latest data from the County's five telemetered sites.

General

In WY 2019 (October 1, 2018 – September 30, 2019), Community Planning and Economic Development Water Planning collected data from 74 monitoring sites across Thurston County.

Below is a map of the locations and type of monitoring stations currently active in the field as of January 1, 2019. [Table 1](#) identifies the type and number of each station.

Figure 1: Streams, Lakes, and Weather Monitoring

Monitoring in Thurston County

Lake, Stream, and Weather Monitoring, WY 2019

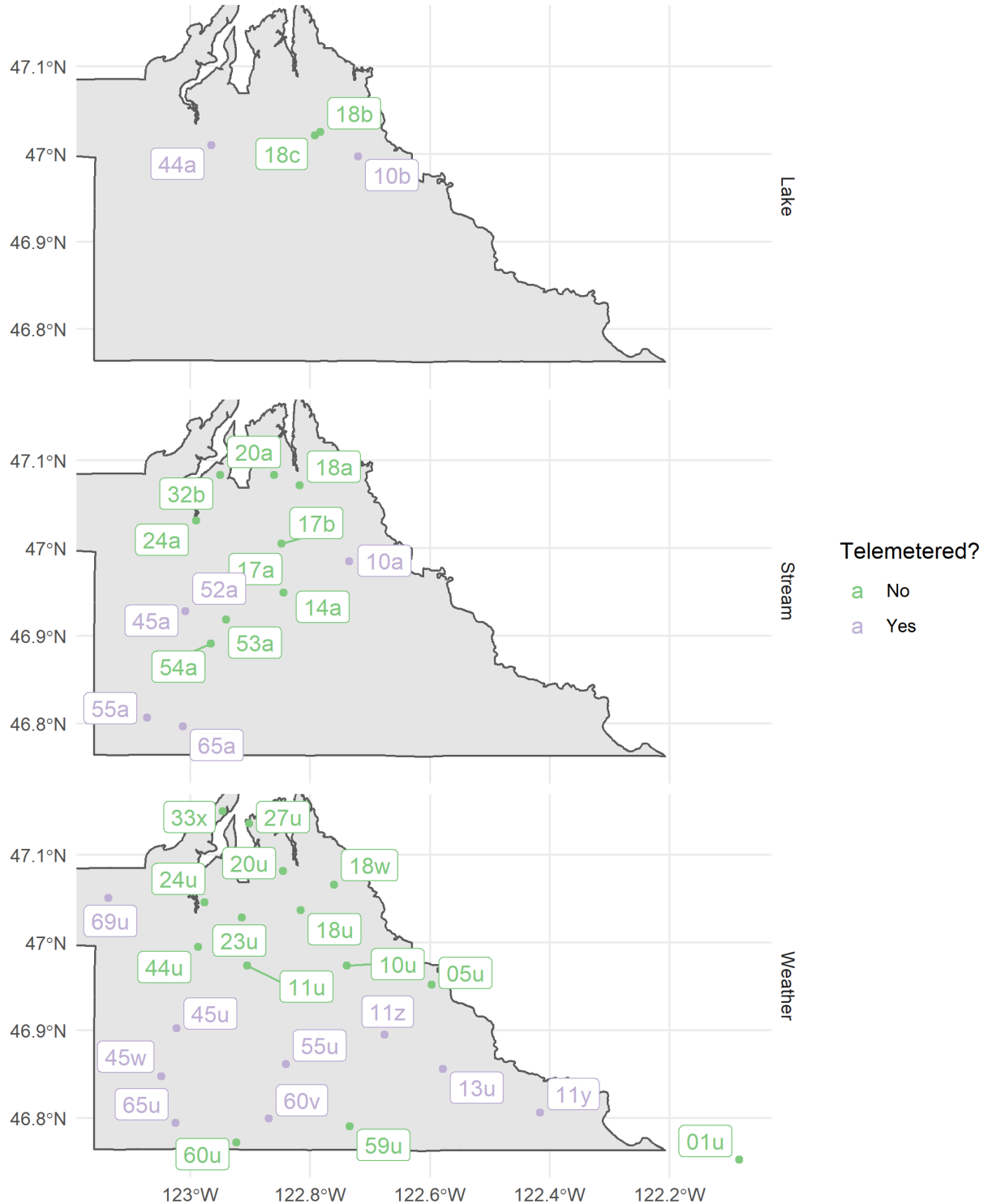
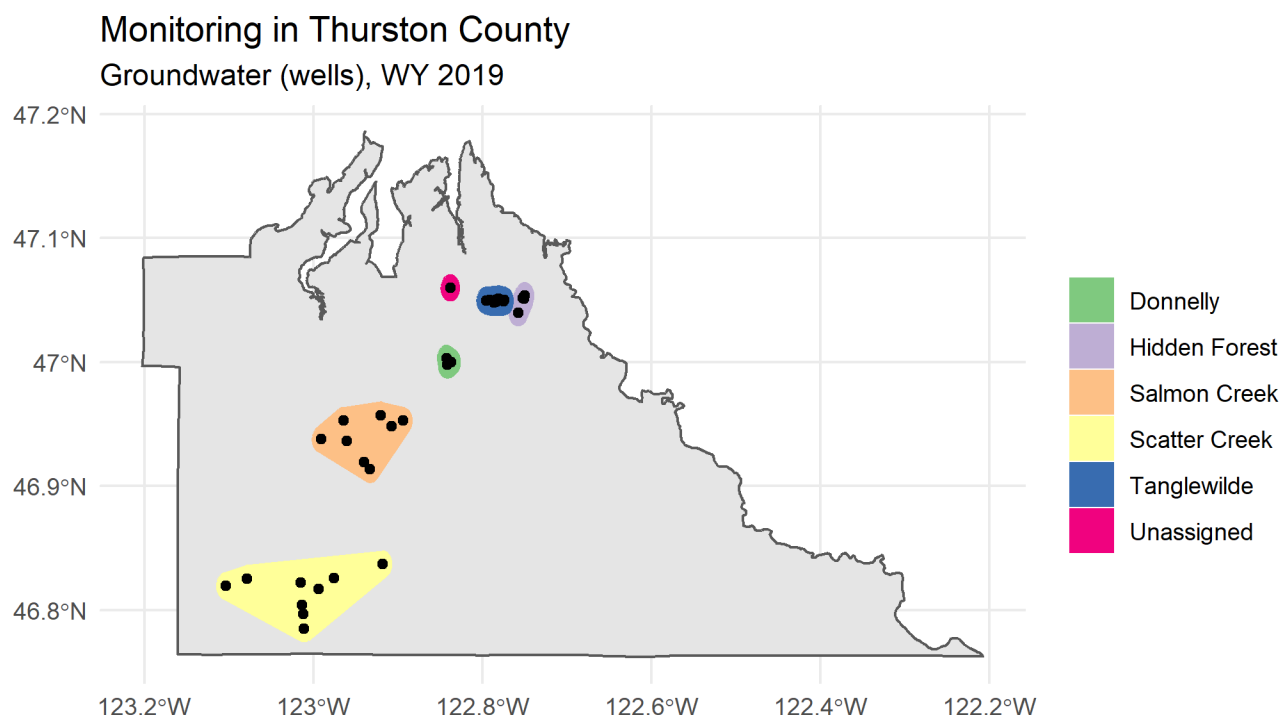


Figure 2 : Groundwater (Wells)



By late 2019 seventeen sites were telemetered – six stream sites, one well, and ten weather stations. Sixteen of the sites transmit over the cellular network, and one weather station transmits via GOES satellite (Deschutes Falls Park).

Table 2: WY 2018 Station Summary

Type	Count
Weather and Atmosphere ⁷	19
Surface Water (Stream and Lake) ⁸	17
Groundwater	38
Total (2019)	74

⁷ In addition to the 19 stations maintained by TC Water Planning, data are regularly collected from four stations not maintained by Thurston County. Two USGS precipitation stations were funded by TC Water Planning in 2019. Data were retrieved from the Olympia Airport and Nisqually near National gauges every month (funded by NOAA and Tacoma Power, respectively), for a total of 23 stations.

⁸ In addition to the 17 stream and lake monitoring stations maintained by TC Water Planning in 2019, there was one volunteer station (Hicks Lake), and the Thurston County Environmental Health program, funded by TC Water Planning, monitored additional streams and lakes as described in their Annual Report.

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Chehalis Basin Telemetry Project

In 2018 the Chehalis River Basin Flood Authority approved an approximately \$50,000 grant to Thurston County for telemetry upgrades at 7 weather stations and 4 stream stations, plus the IT work required to push those data into their computer systems. The work for the grant was completed at the end of September, and all eleven stations were installed and operating and data was and is being transmitted to the Flood Authority's computer system.

Weather and Atmospheric Monitoring

Stations and Equipment

Thurston County monitors weather at 19 sites, and in 2019 collected data from 4 additional NOAA and USGS sites. The newest sites are less than a year old; others have data extending back to 1988. NOAA has maintained records at the Olympia airport since 1955. The oldest precipitation records date back to 1898 from Priest Point Park in Olympia. Water Planning employs several types of sensors to collect a multitude of atmospheric parameters. The most common type of precipitation station collects rainfall and temperature. Some stations also collect humidity, wind, barometric pressure, and solar radiation data, as summarized in Table 3 below.

Table 3: Weather Parameters by Site

	Precipitation	Temperature	Humidity	Wind	Barometer	Solar Radiation
01u: Nisqually near National USGS	✓	✓				
05u: Yelm WRF	✓	✓	✓	✓		✓
10u: Meridian Rd	✓	✓				
11u: NOAA Olympia Airport	✓	✓	✓	✓	✓	
11y: Deschutes Falls Park ⁹	✓	✓	✓	✓	✓	
11z: Rainier Fire Station 4	✓	✓				
13u: Lake Lawrence	✓	✓	✓	✓	✓	✓
18u: Lacey Fire Dist. 3 Fire Station	✓	✓				
18w: WARC TC	✓	✓				
20u: South Bay Fire Station	✓	✓				
23u: Percival Creek, Bldg 4	✓	✓	✓	✓	✓	✓
24u: McLane FS Wx	✓	✓		✓		
27u: Boston Harbor	✓	✓				
33x: Griffin FS 13-2	✓	✓				
44u: Black Lake FD-95	✓	✓	✓			
45u: Littlerock	✓	✓	✓	✓	✓	✓
45w: Rochester Drop Box	✓	✓	✓	✓	✓	✓
55u: Tenino	✓	✓	✓	✓	✓	✓
59u: Bloody Run USGS	✓					
60u: Bucoda USGS	✓					
60v: Bucoda	✓	✓	✓	✓	✓	✓
65u: Grand Mound	✓	✓	✓	✓	✓	✓
69u: Summit Lake	✓	✓				

⁹ Sites shaded in blue are telemetered.

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All data are collected in 15 minute intervals, except for Deschutes Falls Park where data are collected in 5 minute intervals (because of sensor/logger compatibility issues). All of the sites that collect all six parameters use Campbell Scientific CR300 dataloggers and ClimaVue 50 sensors. The remaining sites use a mix of Onset U30 loggers with tipping buckets and sensors, and Campbell Scientific CR300 loggers with tipping buckets and sensors.

As of October 2019 ten weather stations are equipped with telemetry, a feature that allows the station to transmit data back to the office without a site visit. Nine of the stations use cellular telemetry and one (Deschutes Falls Park) uses the GOES satellite system. Most of these telemetry upgrades (excluding Summit Lake and Rainier) were completed in 2019 as a part of the CRBFA grant to upgrade and interconnect our data systems.

In WY 2019 three new monitoring stations were installed. Deschutes Falls Park was technically installed in 2018, but some challenges with the equipment and the timing of the installation led to data recording starting very late in the water year. The Black Lake Fire District 95 site has been a site of meteorological interest for a long time; it was finally installed using equipment freed up from other stations during the telemetry upgrade. The third new site at Bucoda was the only new site installed as part of the CRBFA grant. This weather station will replace two USGS operated stations that have been financially supported by the County – Bloody Run (59u) and Bucoda (60u).

Temperature

Warm January, Colder March, Normal Remainder of Year

Temperatures from October and November of 2018 were unremarkable, staying near normal values, although there were an unusually high number of days with frost in November. December was unusually warm with mean temperatures well above normal. In mid-January temperatures dropped, with mean temperatures below normal and more days than normal with sub-freezing temperatures through March.

Temperatures for the rest of the year were unremarkable, with mean daily temperatures closely mimicking a normal yearly pattern.

Figure 3: Mean Temperatures at Olympia Airport

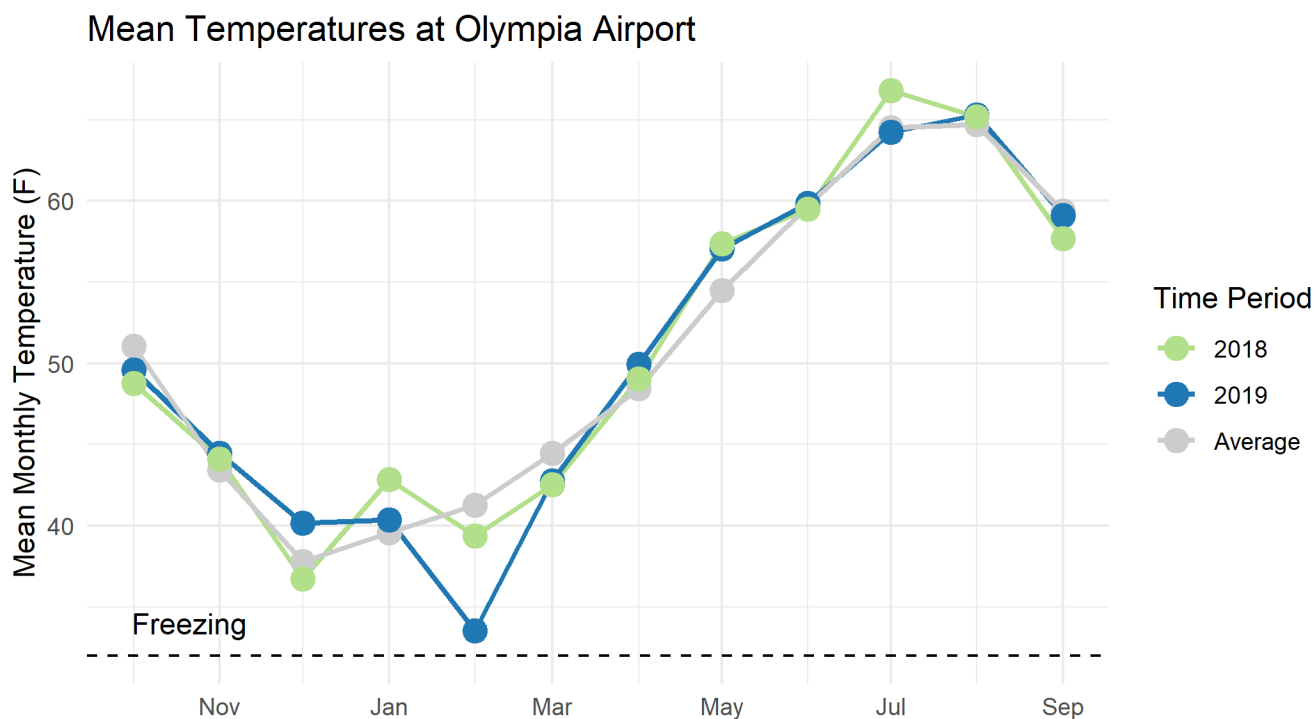
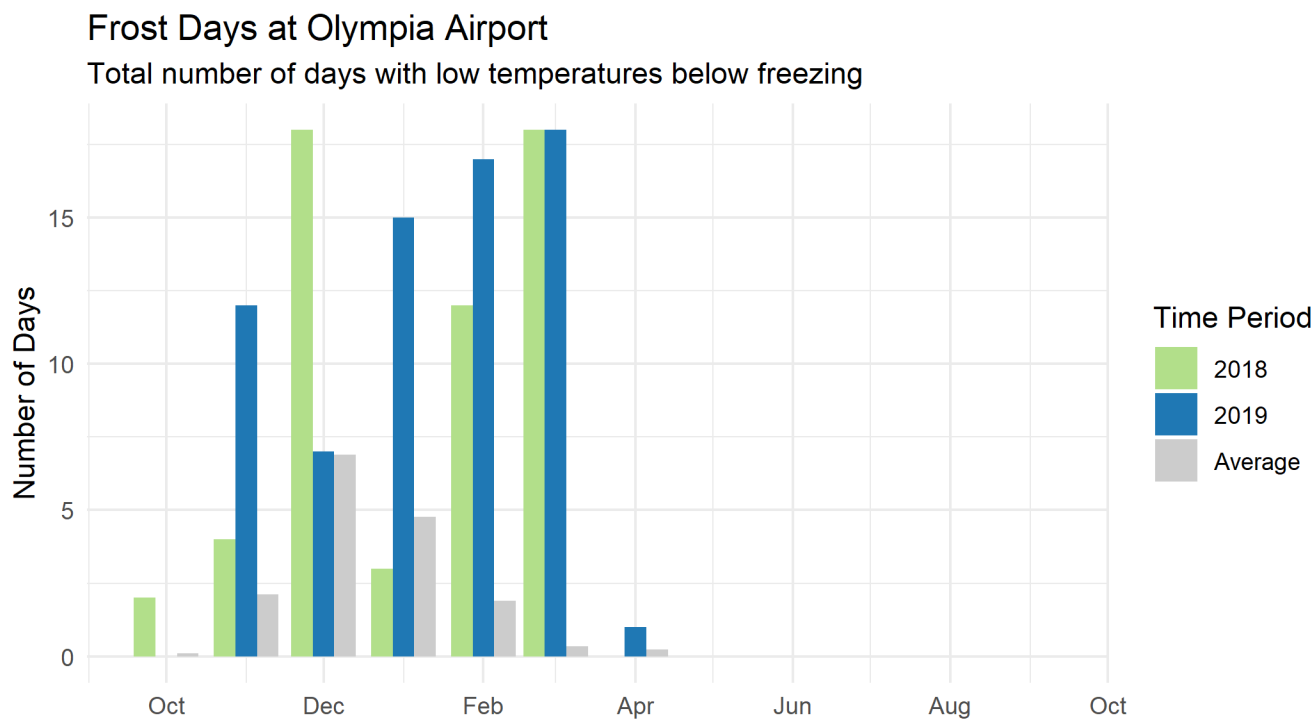


Figure 4: Frost Days at Olympia Airport



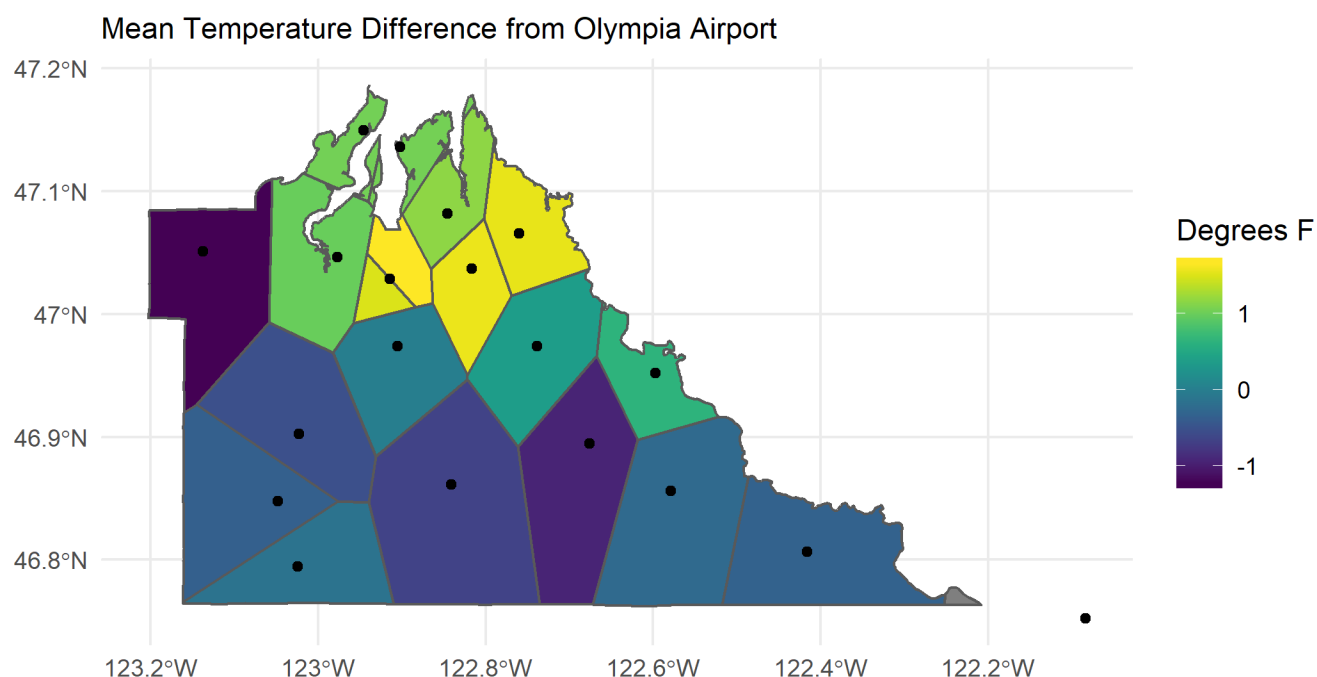
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Table 4: Air Temperature Summaries (Fahrenheit)

Weather Station	Mean	Minimum	Maximum
01u: Nisqually Rvr nr National USGS	46.9	11.8	93.6
05u: Yelm WRF_Rain	51.3	9.4	93.5
10u: Meridian Rd_Rain	51.1	15.5	91.7
11u: NOAA Olympia Airport	50.6	6.0	92.0
11y: Deschutes Falls Park	50.4	18.1	90.3
11z: Rainier FS-4 Rain	50.5	11.9	91.7
13u: Lake Lawrence_Rain	50.4	12.8	90.3
18u: Lacey Fire Dist. 3 Fire Station_Rain	52.3	15.4	92.9
18w: WARC TC_Rain	52.2	13.8	93.9
20u: Southbay Firestation_Rain	51.9	15.0	94.5
23u: Percival Creek, Bldg 4_Rain	52.3	18.7	93.1
24u: McLane FS Wx	51.7	14.8	93.6
27u: Boston Harbor_Rain	51.7	19.9	94.2
33x: Griffin FS 13-2	51.7	21.0	94.7
45u: Littlerock_Rain	50.2	9.6	93.2
45w: Rochester Drop Box_Rain	50.3	13.0	93.7
55u: Tenino_Rain	50.0	11.6	89.7
65u: Grand Mound_Rain	50.7	11.4	92.4
69u: Summit Lake_Rain	48.2	12.6	92.6

The coldest temperature recorded at the Olympia airport was 6 degrees F above zero; around the county, minimum temperatures ranged from 9 degrees F (Yelm) to 21 degrees F (Griffin Fire Station). These temperatures range from just below for USDA Zone 8a (down to 10 degrees Fahrenheit), which covers most of Thurston County, to warm even for USDA Zone 8b (down to 15 degrees Fahrenheit), which covers just the northernmost Puget Sound coastline.

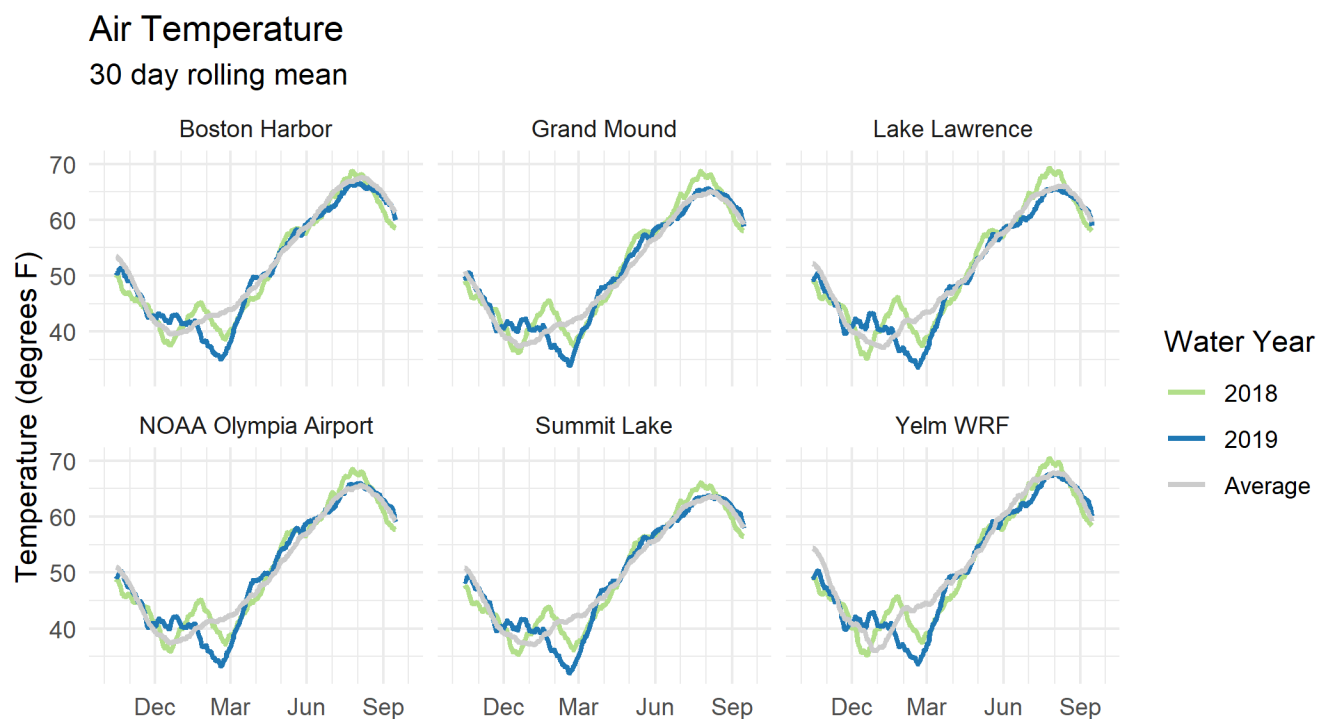
Figure 5: Map of Mean Temperatures



The portions of the county in costal (northern), urban, and low elevation locations all tended to be warmer, which is the expected impact from sea, elevation, and urban heat island effects. Normal to warm temperatures tend to protect plants from frost damage, but may also lead to increased insect predation.

Maximum temperatures were lower in water year 2019 compared to 2018. Temperatures peaked in the low 90s in June and again in August around the County. Lower maximum temperatures cause less stress on plants and reduce water consumption from irrigation and evapotranspiration.

Figure 6: Air Temperatures at Select Weather Stations



Precipitation

2019 was a dry year. Every weather station recorded less cumulative rainfall in 2019 than in 2018, and every weather station recorded cumulative rainfall well below long term averages.

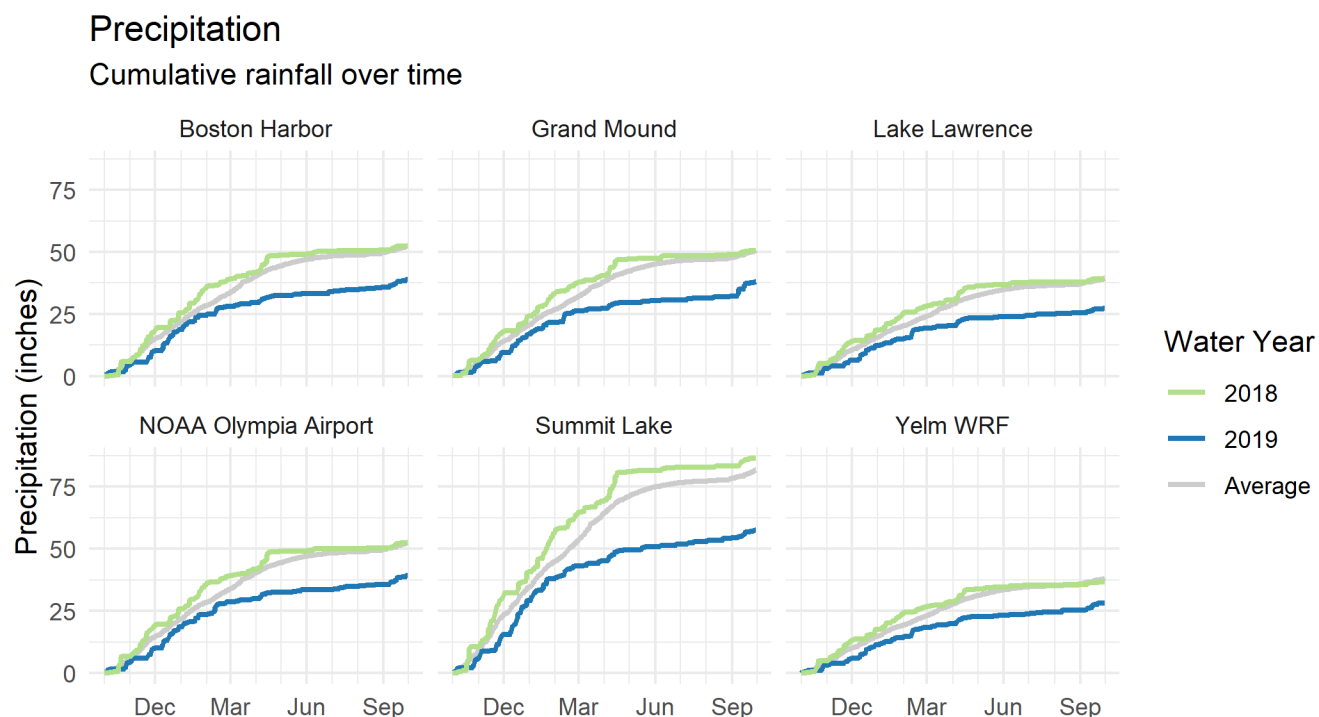
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Table 5: WY 2018 Total Rainfall

Site Name	Rain (inches)
05u: Yelm WRF	36.63
10u: Meridian Road	45.80
11u: NOAA Olympia Airport	52.39
13u: Lake Lawrence	39.35
18u: Lacey Fire Dist. 3	49.91
18w: WARC TC	43.73
20u: South Bay Firestation	45.79
23u: Percival Creek, Bldg. 4	53.62
24u: McLane Firestation	67.71
27u: Boston Harbor	52.36
33x: Griffin Firestation 13-2	50.35
45u: Littlerock	67.30
45w: Rochester Drop Box	51.00
55u: Tenino	51.21
59u: Bloody Run USGS	42.55
65u: Grand Mound	50.59
69u: Summit Lake	86.62

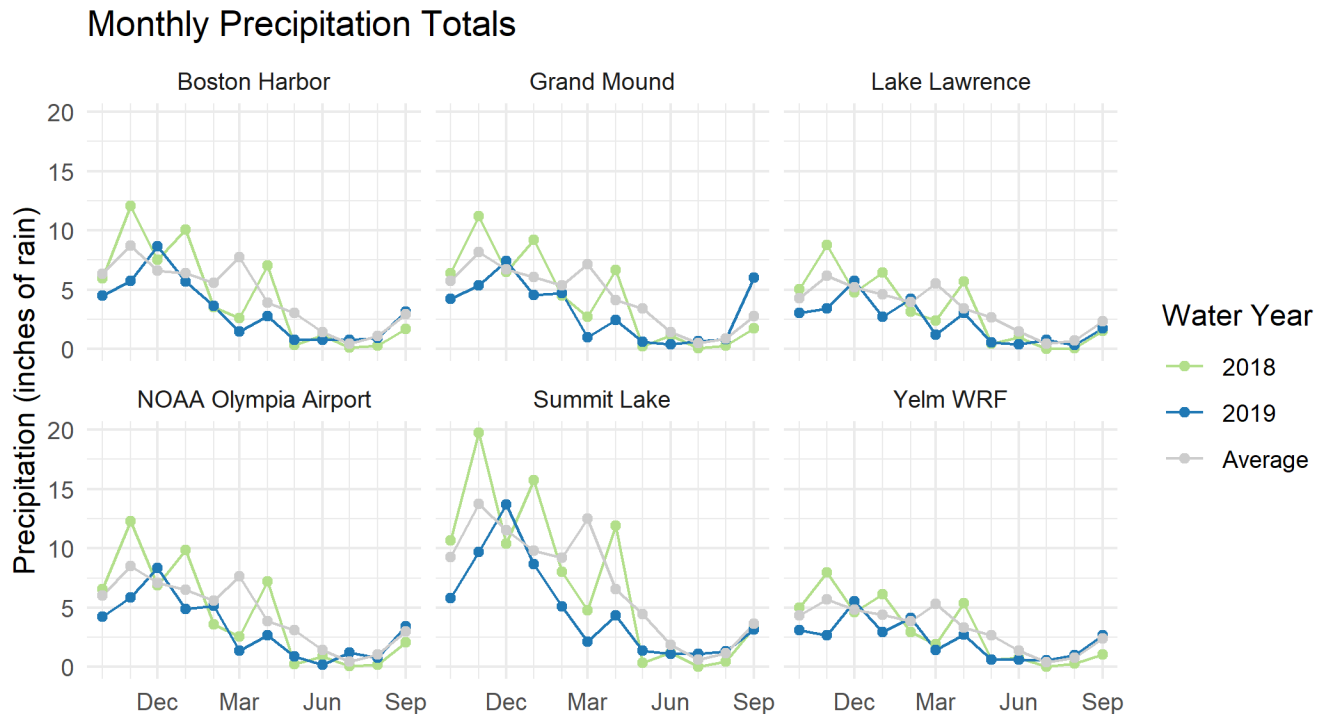
As with most water years, the south and east of the county was generally drier than the north and west. 69u, the Summit Lake gauge, was much wetter than most other gauges throughout the county (86 inches in WY 2018), representing the southern extent of the wet Olympic Mountain rain pattern. The Summit Lake gauge has historically been the highest recorded rainfall station in the County. By the time storms arrive near Yelm (05u) and Rainier (11w), much of the water has already precipitated, leaving those areas drier than the rest of the county. Station 45u (Littlerock) has significantly more precipitation than station 45w (Rochester), despite a distance of only 5.5 miles between them, demonstrating the complexity of the precipitation patterns around the Black Hills and the Chehalis River gap on the west side of the county.

Figure 7: Cumulative Precipitation at Select Weather Stations



WY 2019 began dry, with rainfall accumulation already below average by the end of October 2018. By mid-December every site around the county had several inches less than normal rainfall. Rainfall volumes from mid-December to mid-February were somewhat higher than normal and the cumulative rainfall began to approach normal volumes, but an extremely dry late winter and spring lead to very low total accumulation amounts.

Figure 8: Monthly Precipitation at Select Stations



The monthly graphs show that the months of December, February, and April were about as wet as the long term average. The remaining fall, winter, and spring months were all much drier than the long term average, leading to the driest water year the County has seen since 2001.

Drought Perception and Reality

On May 20 the Deschutes and Chehalis basins (covering central and southwest Thurston County) were formally added to a drought emergency declaration by Governor Jay Inslee, formally recognizing the unusually dry conditions. However, May also marked the last month of unusually dry conditions. Across the County the summer months were as wet or wetter than usual. Because of the regular, if light, rainfall during the normally dry summer months, the impact of the drought on surface conditions was muted – trees and crops were not as water-stressed, and streams were not as low, as they might have been if the summer was as proportionally dry as the rest of the year.

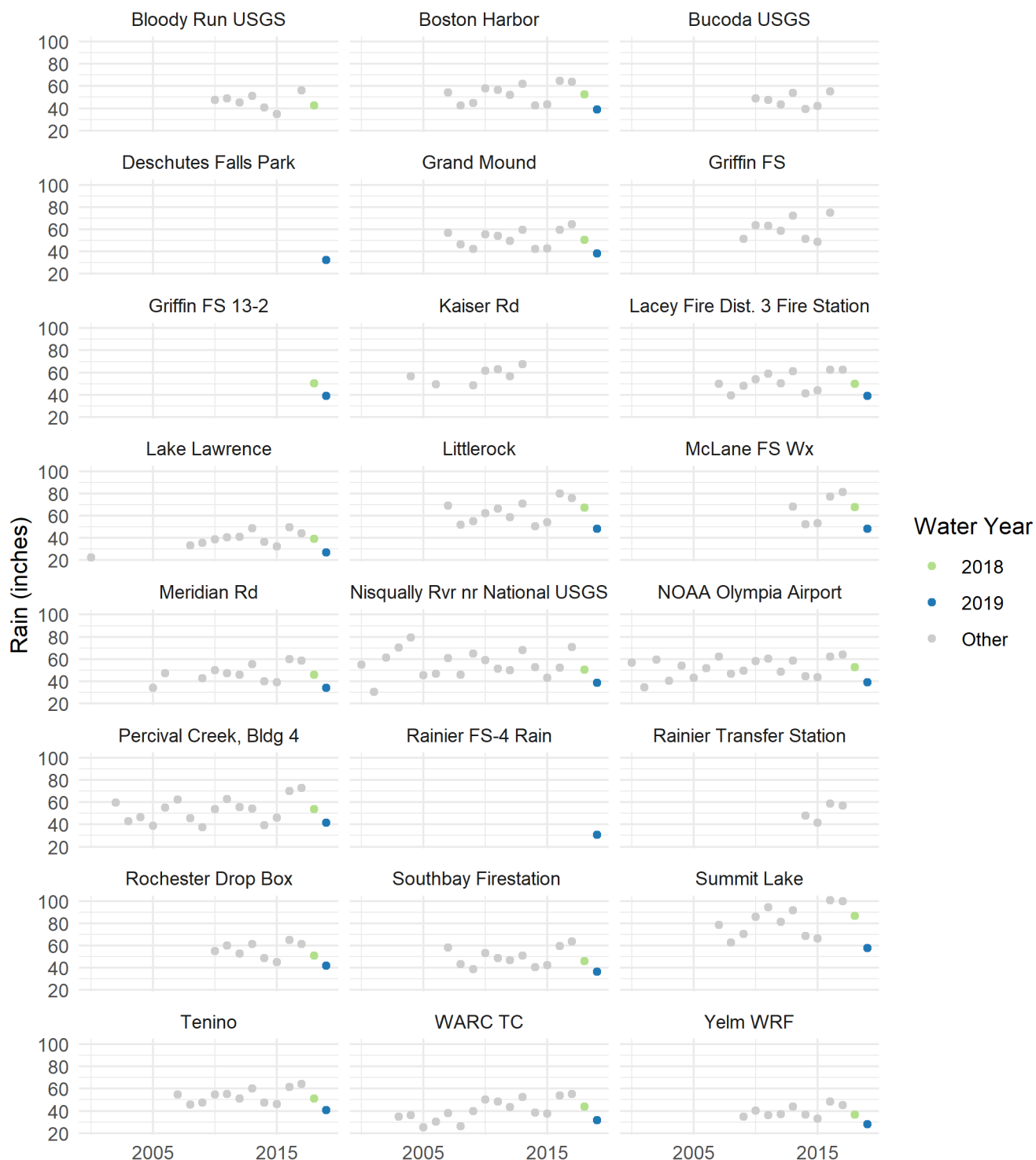
Trends

The drought of WY 2019 was significant, but within the normal annual variation of rainfall for Thurston County. 2001 was the only year in the past 20 years of data that was consistently drier across the county, but several other years came close; specifically, 2003, 2005, 2009, 2014, and 2015.

Figure 9: Total Historical Precipitation at All Stations

Total Precipitation

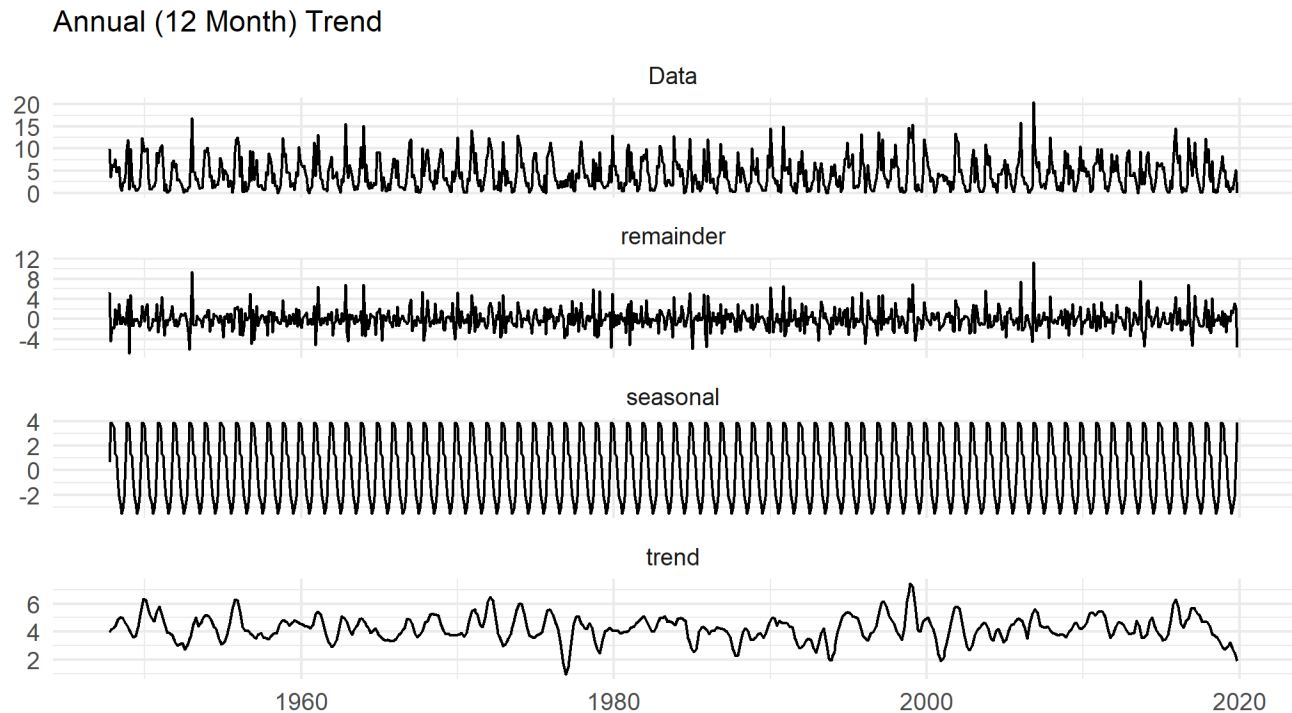
All Thurston County Sites, 2000-2019



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Monthly rainfall data can be decomposed into seasonal variation, longer term trends, and the remaining monthly variation. Figure 10 uses a yearly long-term trend.

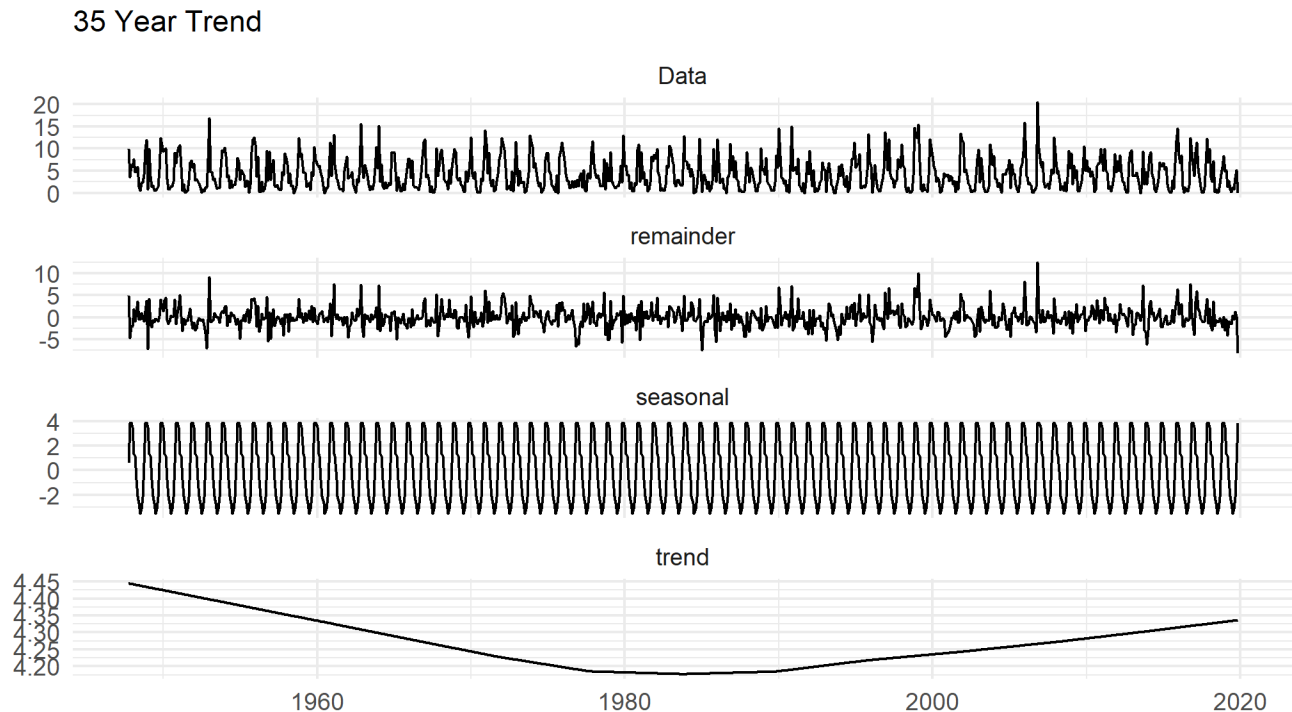
Figure 10: Decomposed Monthly Rainfall at Olympia Airport



As expected the seasonal signal is strong because of the Puget Sound’s wet winter/dry summer climate. The annual trend varies up and down by as much as four inches of rainfall. Because monthly average rainfall at the Olympia Airport is about 4.5 inches, in many months the combination of seasonal variability (wet season or dry season) and annual trend (wet year or drought year) almost completely explains the total rainfall.

Another way to examine long-term trends would be to decompose in the same way as Figure 10, except using half the range of the data (approximately half of 70 years, or 35) for the trend.

Figure 11: Decomposed Monthly Rainfall at Olympia Airport, Long Trend



The seasonal signal is the same, but the trend reflects much longer-term changes in total annual rainfall. In Figure 11 we see a gradual decrease in total rainfall until 1980, followed by a slow increase through 2019. The difference in the lowest to highest portion of the trend is 0.25 inches (compared to average monthly rainfall of about 4.5 inches), so the trend accounts for about 5% of the total variation.

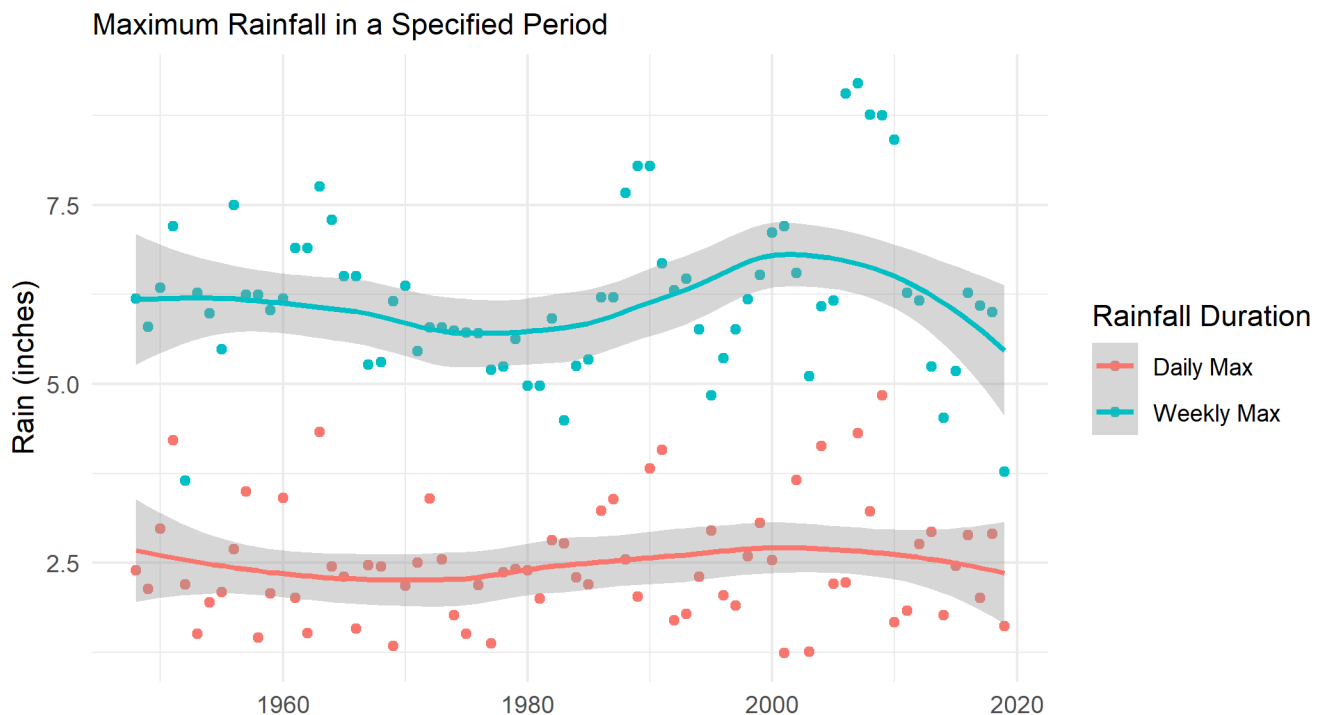
Taken together, Figure 10 and Figure 11 demonstrate that the two biggest contributors to monthly rainfall variability are seasonal variation and annual trends (wet or dry years). Long-term multi-year trends account for about 5% of monthly rainfall variability. Since about 1990 the overall trend is increasing, suggesting that the County is getting wetter, though the overall change is relatively small.

Recent work by the University of Washington’s Climate Impacts Group¹⁰ (UW CIG) suggests that as the climate changes over the next eighty years, the volume of rainfall during precipitation extremes will increase. This means that over time the inches of rain falling during the wettest days of the year will increase. Their work also suggests that the total volume of summer rainfall will decrease. Overall, this will mean more intense rainfall in the winter and drier summers.

The rainfall data for Thurston County do not yet demonstrate these trends. This is expected, because the UW CIG model predicts significant deviations from the current weather regime beginning in about 2040.

¹⁰ <https://cig.uw.edu/resources/analysis-tools/how-will-heavy-rains-change-in-western-washington/>. Projected rainfall was computed from an ensemble of downscaled climate models for the Thurston County region at all rainfall stations active as of 2019.

Figure 12: Maximum Daily and Weekly Rainfall by Water Year



The total rainfall in the annual maximum 24-hour and 7-day events over the past approximately 70 years has varied year by year. The 24-hour maximum event has a fairly flat trend over the entire period, while the 7-day maximum event has a recent downward trend starting in approximately 2010 (though still within the long-term range).

The UW CIG data suggests that significant changes to maximum rainfall events won't become apparent until mid-century, so the trends in Figure 12 above are entirely consistent with their work.

Atmospheric Rivers

An atmospheric River is a mode of water vapor transport from the tropics into the mid and upper latitudes. They can contain several times more water than is transported by the Amazon River in a given period of time. They occur on the west coast of most continents and are responsible for a large percentage of annual rainfall in many locations. The entire west coast of North America from Southern California to Alaska is within range of AR precipitation events.

Figure 12 shows (roughly) the frequency of AR events; a 24-hour event (red lines and dots) of greater than 3.5 inches or so is generally attributable to an AR. The last AR to reach Thurston County was in 2009 and was responsible for severe river flooding equivalent to the 1% annual chance (100 year) storm event. It also caused major landslide activity in Thurston County. In the past the frequency of AR events has gone in cycles; there were several in the 2000s and in the 1980s, but the 1970s, 1990s, and 2010s were all decades with minimal or no AR activity.

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The Table below summarizes the average monthly values for the parameters indicated as recorded at the Olympia Regional Airport between 1981 and 2010.

Table 6: Olympia Climate Averages

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F:	46	49	54	59	65	71
Average low in °F:	34	33	35	38	43	48
Av. precipitation in inch:	7.83	5.28	5.28	3.54	2.32	1.77
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-
Average snowfall in inch:	2	5	1	0	0	0
	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	77	78	72	60	50	44
Average low in °F:	51	51	46	40	36	33
Av. precipitation in inch:	0.63	0.94	1.69	4.61	8.62	7.44
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-
Average snowfall in inch:	0	0	0	0	1	3

Taken from www.usclimatedata.com January 2020

Streamflow

General

Streamflows respond quickly to seasonal rainfall. In contrast, groundwater or lake water levels respond more slowly to longer-term trends. The streams in Thurston County rely on baseflows from groundwater, and therefore do not see the rise in flows during the spring and summer months that are typical from snow pack fed streams. None of the streams that the County monitors rely on snow melt year-round.

The urbanized and sub urbanized basins that contain the ILMA streams derive their flows from both baseflow (groundwater) and surface runoff from precipitation. The dominant component of these streams depends on the time of year. In general, small streams are fed predominantly by groundwater between June and early October. After the first significant rain events occur, generally in early to mid-October, a combination of groundwater and surface water combine to produce seasonally higher flows that persist during the wet months.

Many of the ILMA streams are in the more urbanized areas of north Thurston County, and in many cases they react quite quickly to urban runoff. Streams that are located in less urbanized areas of the County show a much lower propensity for sharp distribution curves and show a much more metered reaction to rainfall because of the buffering effects of pervious surface such as fields and forests.

Figure 13: All GEM and ILMA Stream Monitoring Sites



Inter-Local Monitoring Agreement Streams

The 2015 – 2018 Interlocal Monitoring Agreement contained funding for five streamflow stations listed in Table 7: ILMA Streams below. These streams have been monitored almost continually since the late 1980s or early 1990s as part of the ILMA and its predecessor agreements.

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Table 7: ILMA Streams

Streamflow Station	2015 – 2018 Contributing ILMA Partners	Comments
17a - Chambers Creek	Thurston County	Nearly 20 yr record
18a - Woodland Creek	Lacey/Thurston County	20+ yr record
20a - Woodard Creek	Thurston County	20+ yr record
32b - Green Cove Creek	Thurston County	Nearly 20 yr record
44a – Black Lake Ditch outlet	Tumwater/Thurston County	Nearly 15 yr record

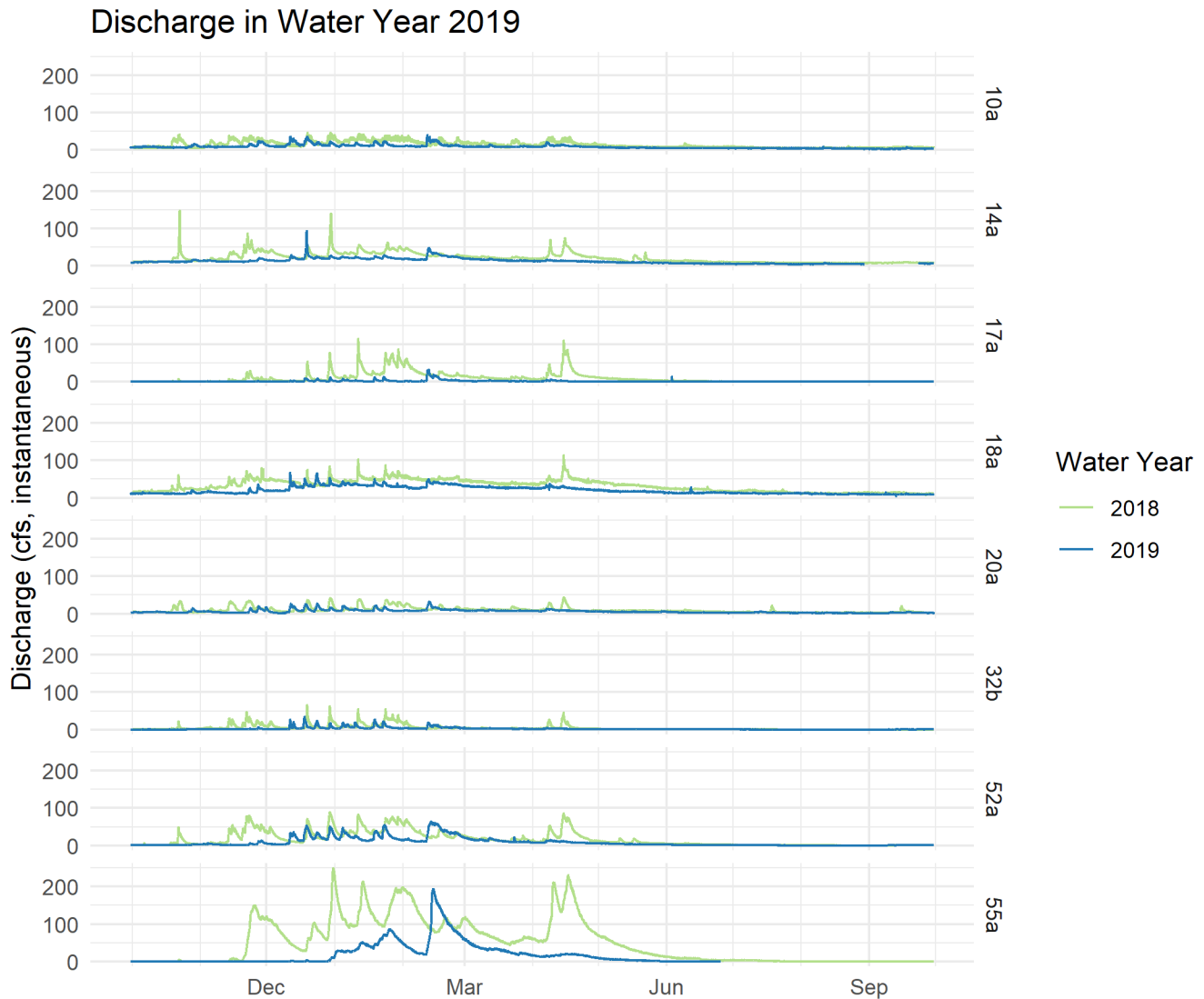
The ILMA expired at the end of 2018 and has not yet been renewed. Thurston County has continued to monitor all five ILMA sites through WY 2019.

Water Year 2019 Observations of Streamflow

Across the county discharges from streams peak at about the same time, and recede at about the same time, despite sometimes significant differences in total volumes. WY 2019 was a dry year, with just one major discharge event across the County in February.

Some streams exhibit anomalous behaviors along their hydrograph. Chambers Creek (17a) experiences intermittent blockages, which can disrupt the hydrograph, creating spikes in observed discharge where none exist in other streams. Spurgeon Creek at Rich Road (14a) also experiences spikes; recent evidence suggests that at most of those spikes are due to backwatering/flooding effects from the Deschutes River.

Figure 14: WY 2018 Stream Discharges

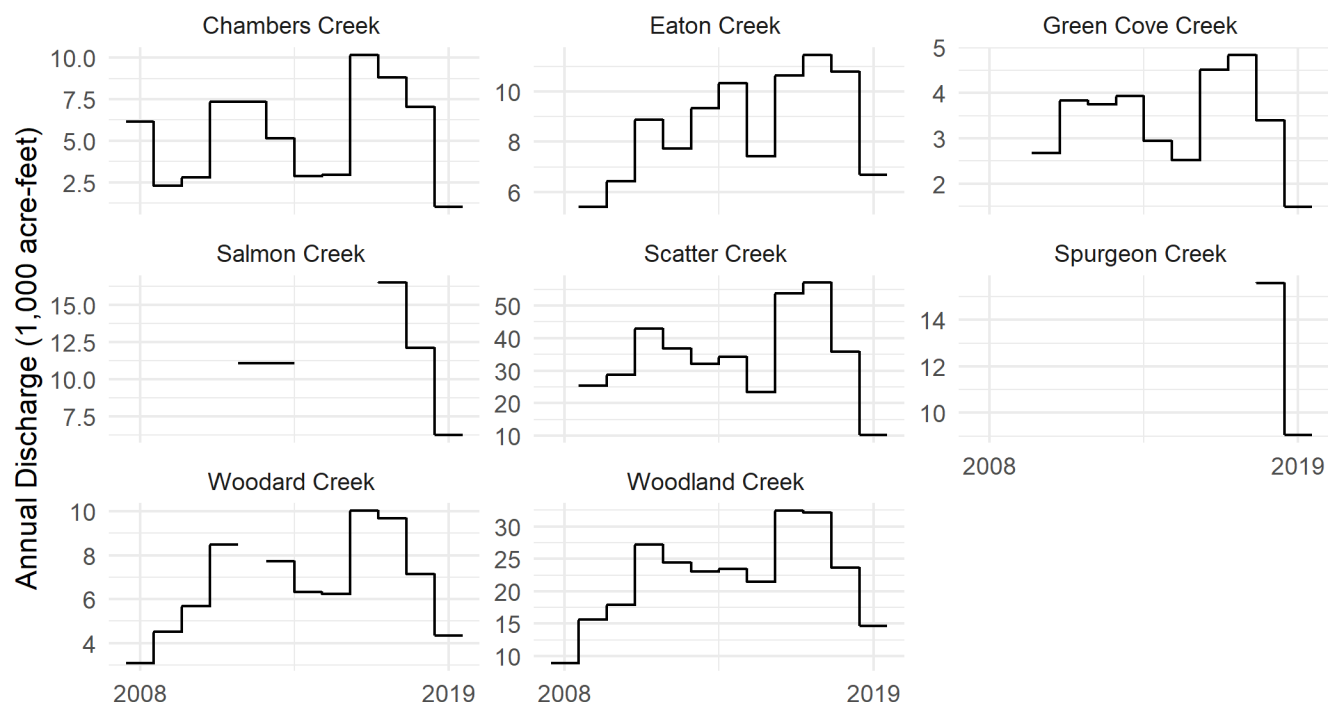


Stream discharges started much later in WY 2019 than in previous years. Most streams saw no significant increase in discharge until mid-December or early January, where in WY 2018 (a more normal water year) discharges increased in October or November.

Late increases in streamflow are harmful to salmon populations. As salmon approach the ends of their lives they seek spawning grounds to reproduce; if those spawning grounds are not accessible because of low flow before the fish die, annual spawning rates drop.

In WY 2019, as with most water years, Scatter Creek discharged significantly higher volumes of water than other monitored creeks around the county. All streams had reduced discharges in 2019 vs 2018; most of them only exceeded their comparable 2018 total daily flows for a few days in mid February. From March 1 onward a dearth of rainfall lead to very low seasonal discharges throughout the rest of the water year.

Figure 15: Total Annual Discharge Over Time



¹¹ Calculated by summing all estimated 15 minute discharges and converting from cubic feet to acre feet.

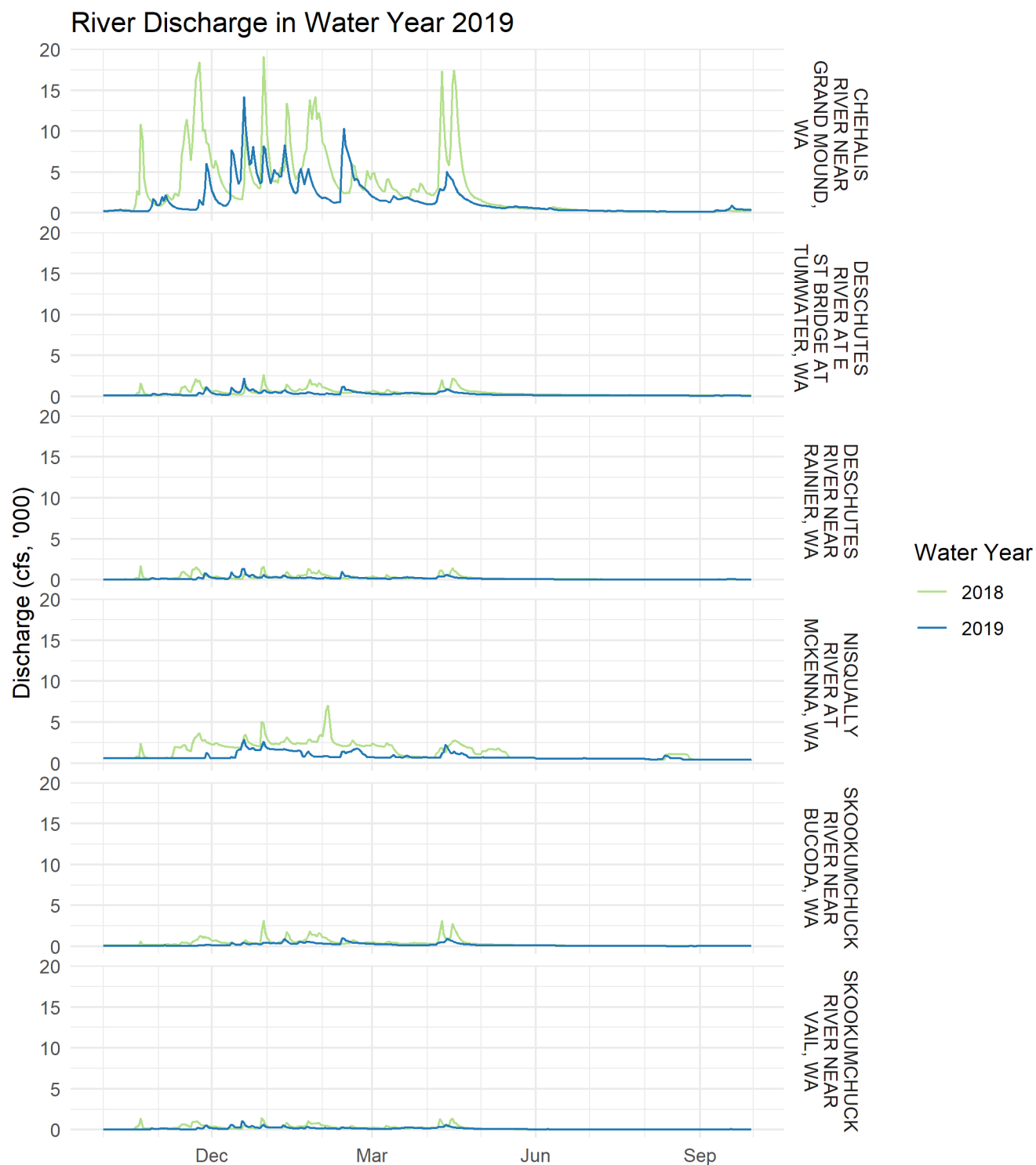
Rivers

Rivers have flows greater than 100 cubic feet per second, on average. The larger rivers observed or recorded by Thurston County include the Deschutes, Black, Skookumchuck, Chehalis, and Nisqually rivers. These rivers generally have flows over the threshold that is safe for our field staff to monitor, and therefore we report streamflow data from the U.S. Geological Survey. The Black River at Littlerock is the only exception to this case and is measured by field staff if safe to do so.

The Nisqually and Chehalis Rivers define the eastern and southwestern borders of the County respectively. The Nisqually River is the only Thurston County river that has consistent year-round input from snowpack, and therefore reflects snowmelt in its baseflow, especially in the summer months. The Chehalis River and its tributaries (mainly the Skookumchuck River) have generally low to medium elevation sources, and therefore groundwater or lake contributions are the primary baseflow constituents.

The Nisqually is also mostly controlled by two dams, the La Grande and Alder dams. In Figure 16 below the artificial restrictions are apparent in both the unusual rise and fall of the hydrograph over time, and the sustained minimum flow throughout the year. The Chehalis and Deschutes are mostly unrestricted, and the dam on the Skookumchuck is situated sufficiently far upstream that it has less obvious impacts on flow when compared to the Nisqually.

Figure 16: WY 2019 River Discharges



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As with streamflow, river discharges increased much later in WY 2019 than they did in WY 2018.

The extreme differences between the rivers in volume of water discharged makes it difficult to compare between them in Figure 16. The Chehalis River discharges a much greater volume of water than the Deschutes, Nisqually, and Skookumchuck. In the cumulative discharge graphs in Figure 17 below the y-axes are normalized, so it is easier to compare annual trends between rivers, but the total volumes of water differ between the subgraphs.

Figure 17: WY 2019 Cumulative River Discharge Curves

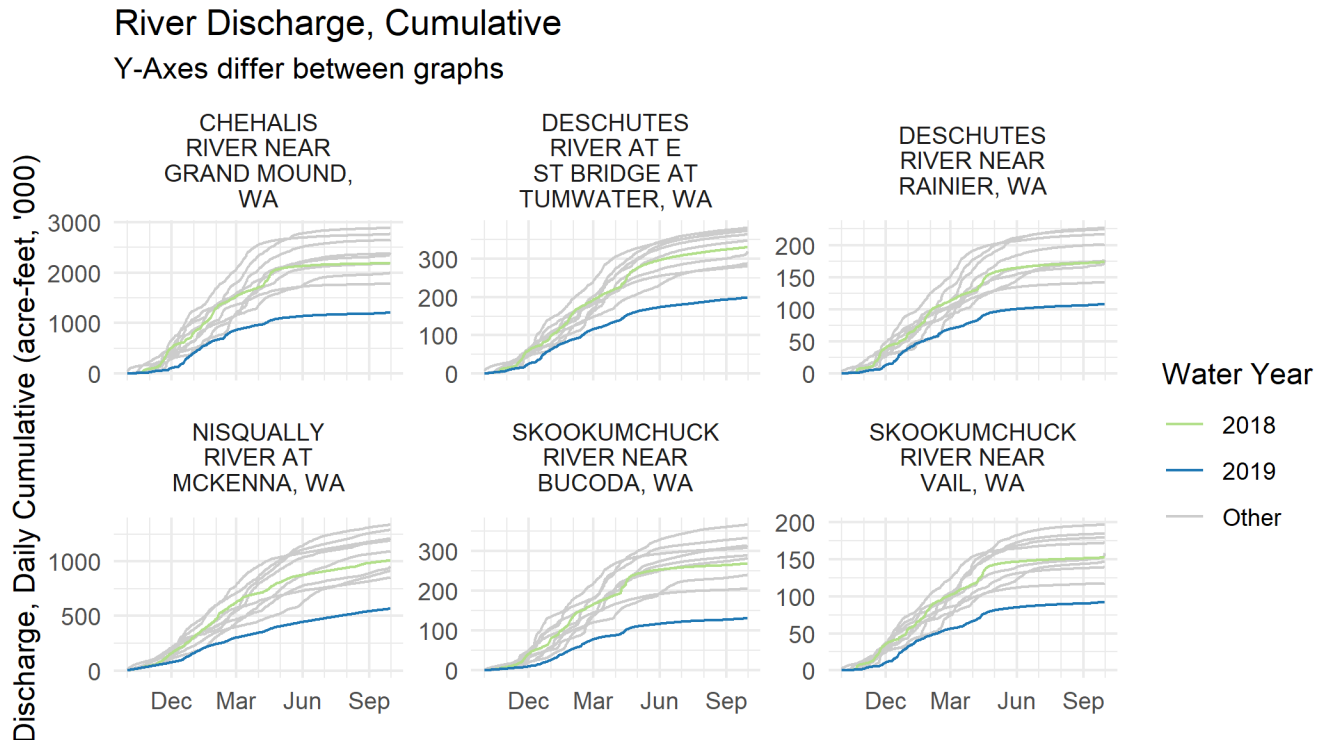
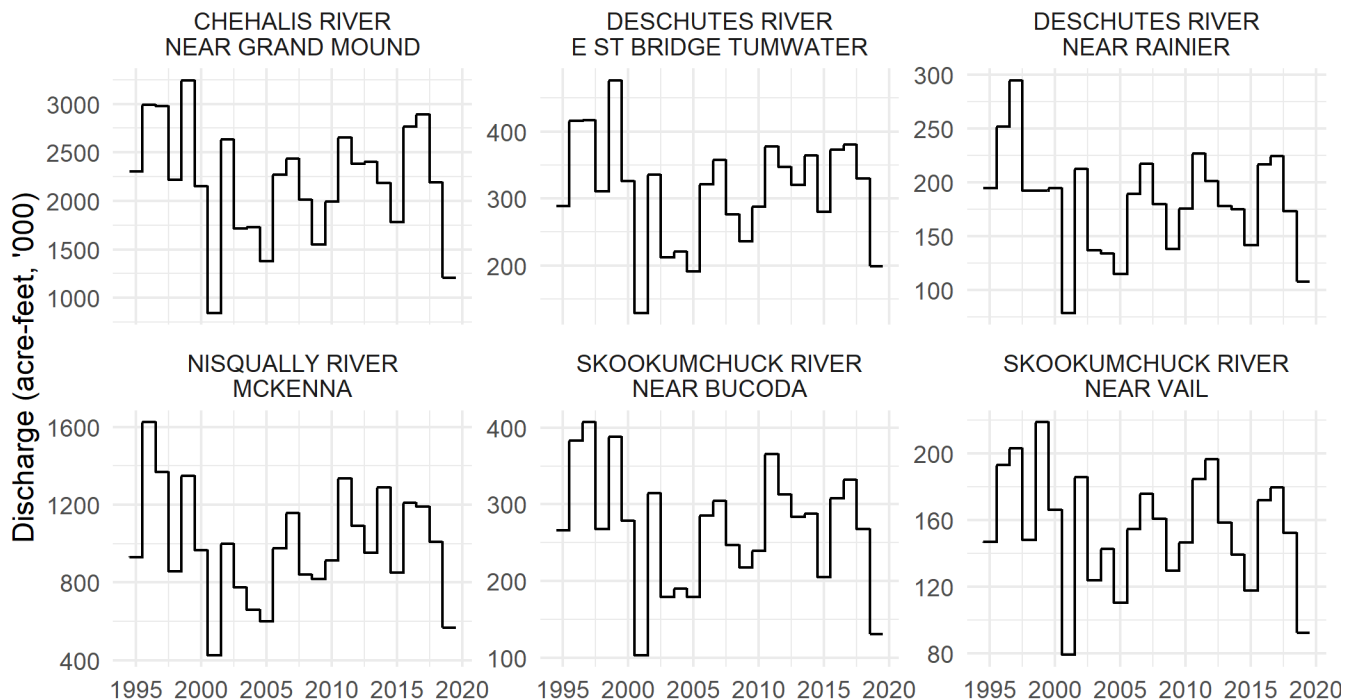


Figure 17 includes the ten water years starting with 2010. 2019 was the driest year of the ten by far, with just 2/3 to 1/2 of the median total discharge at all six river gauges. Even the Nisqually gauge, which measures a river with both snowpack baseflow and significant hydrologic controls (in the form of two dams), total cumulative discharge was much lower than average.

Figure 18: Total Annual River Discharges, Past 25 Years



At five of the six river gauges WY 2019 was the lowest discharge since 2001; at the Deschutes Tumwater gauge, 2019 was the lowest since 2005.

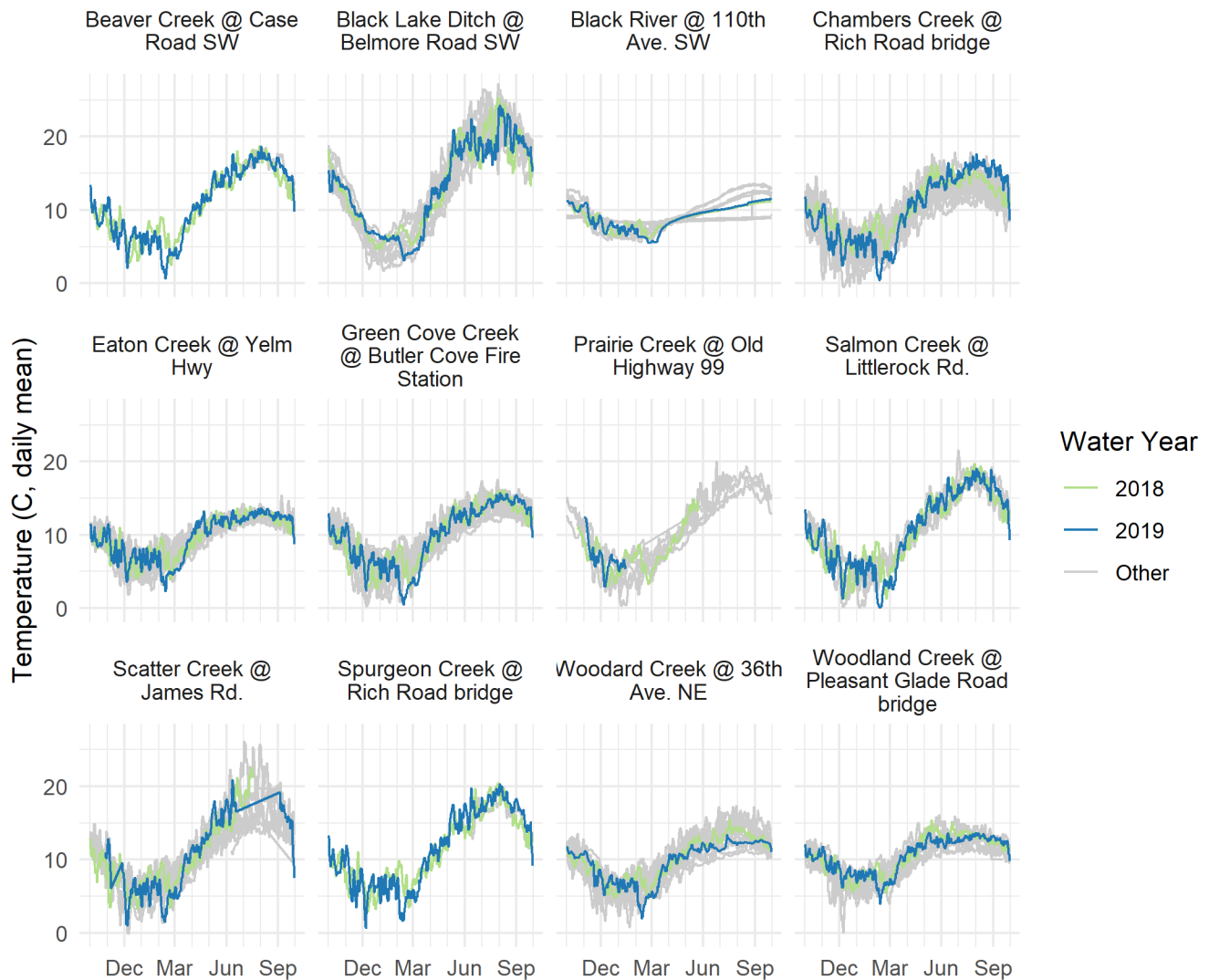
Water Temperature

At most stream sites Thurston County uses the same device to take 15 minute records of water stage and temperature; sometimes this means that the water temperature is recorded several feet below the surface. Because of this, the continuous water temperature data collected by Thurston County, while valuable, is not always comparable between streams or to regulations; sometimes it reflects near-surface temperatures, and sometimes it reflects temperatures several inches to a foot below the surface.

Trends

The range of water temperatures was similar in WY 2019 to WY 2018, and to previous WYs. One standout trend was a decrease in temperatures at all sites in February relative to average conditions. That corresponds with a decrease in air temperatures (Figure 6), which would be expected to drive stream temperatures down. It also coincides with a significant rain event (Figure 14) in February which also tends to drive water temperatures down (as winter rain tends to be colder than groundwater).

Figure 19: Stream Temperatures

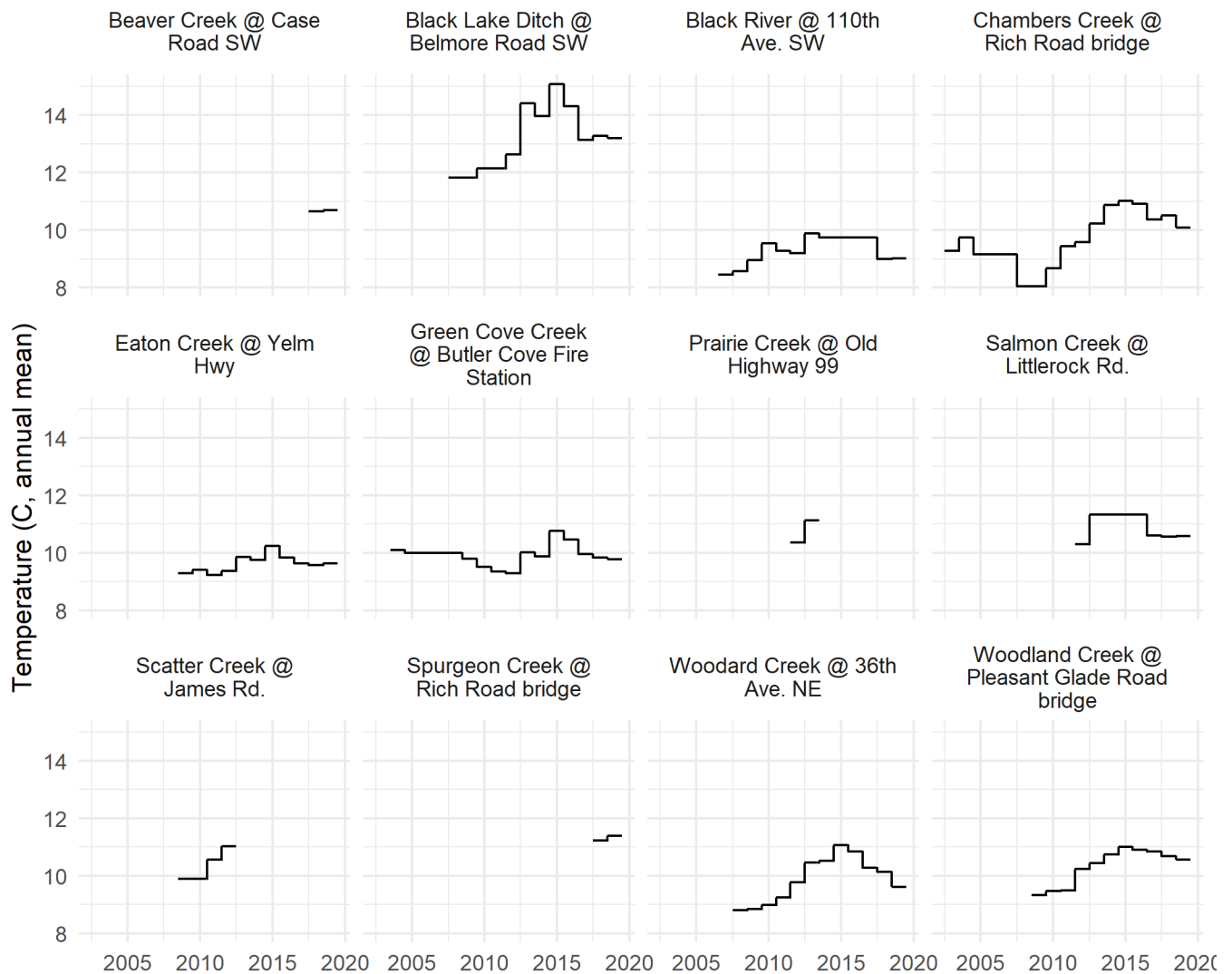


While stream temperature profiles are similar year after year, with temperatures rising in the spring and summer and falling in the fall and winter, there are some key differences in and amongst the sites. Eaton (10a), Woodard (20a), Green Cove (32b), Chambers (17a) and Woodland (18a) creeks all tend to have lower summer peak temperatures than Black Lake Ditch (44a), Salmon Creek (52a), Scatter Creek (55a) and Prairie (65a) creeks. Creeks with lower summer temperatures tend to be groundwater-dominated systems; creeks with higher temperatures are usually flashier and more dominated by surface runoff. Two additional possible influences are waterbodies immediately upstream, like lakes or wetlands, that warm the water before it discharges to the stream (Black Lake Ditch and Spurgeon Creek), and dried-out stilling wells in ephemeral streams that

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occasionally result in sensors recording the air, which is warmer¹², rather than water, which is cooler (Prairie Creek and Scatter Creek).

Figure 20: Annual Average Water Temperatures



In Figure 20 we see that average annual stream temperatures can vary by 2 to 3 degrees C over time. The record is too short to see long term trends, but some patterns are clear. 2015 was the hottest year measured at all streams with complete records for that year. 2016 was similarly hot, but 2017 was much cooler, and the cooling trend continued through 2019. Most streams with longer data records were cooler in 2008-2012 than 2014-2019. Only Chambers and Green Cove creeks have records extending earlier than 2008, but they both show warmer annual average temperatures in the 2003-2007 period as compared to the 2008-2012 period.

¹² Specifically, the air is warmer than water in the summer, which is when streams tend to dry out. In the winter, when the air is colder than the water, streams are generally flowing and sensors are submerged.

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Standards

While the 15-minute water temperature data is not appropriate for regulatory use (because the instruments were not installed according to a QAPP designed for that purpose), it can be valuable to compare them to regulatory standards to get a general sense of how well Thurston County streams are meeting water temperature targets.

There are three standards that apply to Thurston County streams.

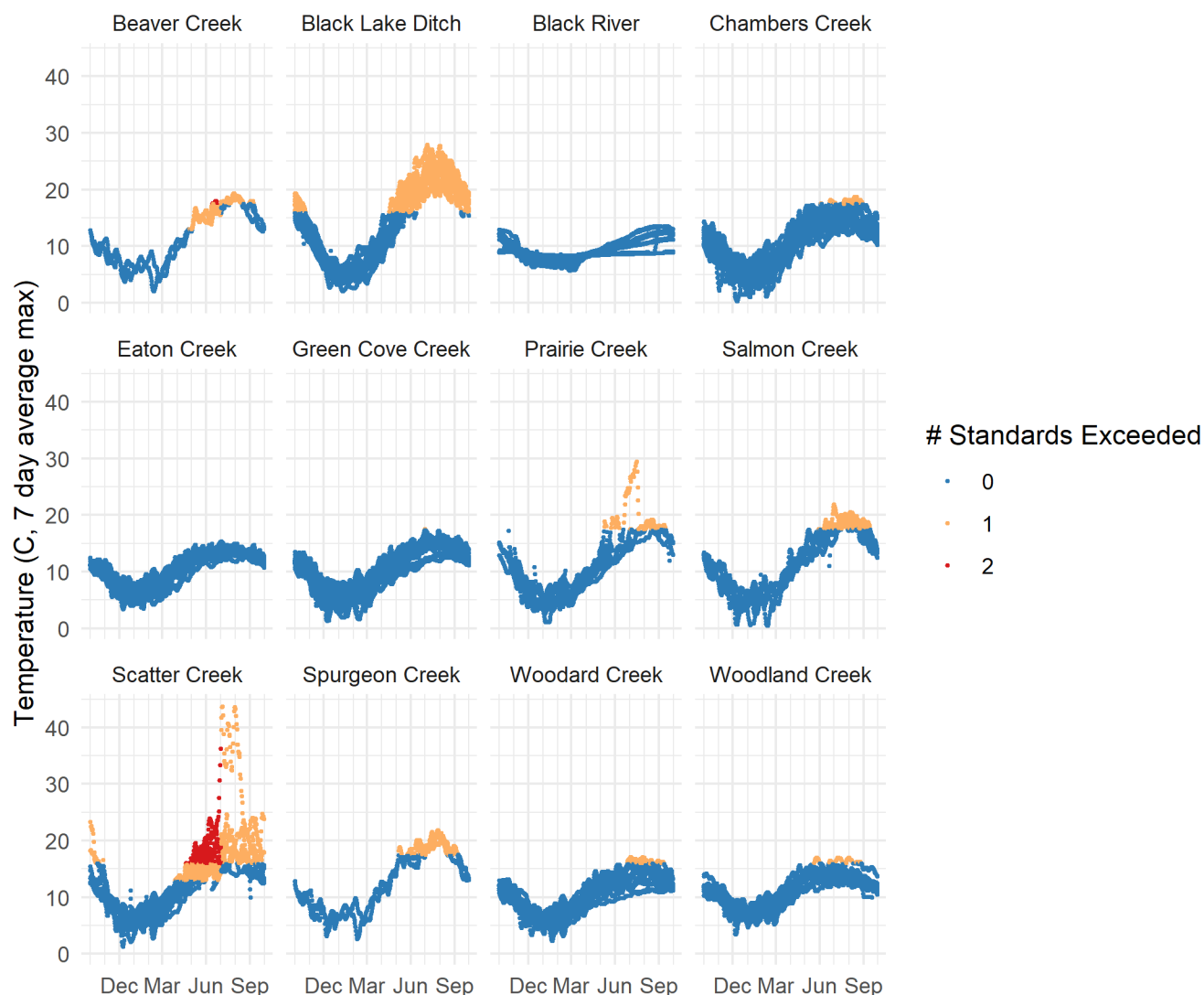
	Salmonid Spawning, Rearing, and Migration	Core Summer Habitat	Supplemental Spawning
Beaver Creek	X		X
Black Lake Ditch		X	
Black River	X		X
Chambers Creek	X		
Eaton Creek		X	
Green Cove Creek	X		
Prairie Creek	X		
Salmon Creek	X		
Scatter Creek		X	X
Spurgeon Creek	X		
Woodard Creek		X	
Woodland Creek		X	

Most streams have just one criterion, but Beaver, Black, and Scatter all have two criteria that apply. Supplemental Spawning can coincide with either Salmonid Spawning, Rearing, and Migration or Core Summer Habitat.

Each of these three standards has distinct criteria that refer to the seven day average daily maximum temperature (7DADMax; the average of the maximum temperature recorded on a particular day as well as the three days before and after). The criteria are:

- **Salmonid Spawning, Rearing, and Migration:** 7DADMax must not exceed 17.5° C. Applicable year-round.
- **Core Summer Habitat:** 7DADMax must not exceed 16° C. Applicable year-round.
- **Supplemental Spawning:** 7DADMax must not exceed 13° C. Applicable February 15 through July 1.

Figure 21: Potential Temperature Criteria Exceedences, All Water Years



The Black River, Eaton Creek, and Green Cove Creek never exceeded applicable criteria at their monitored locations. The remaining streams all had some potential exceedences. Beaver Creek and Scatter Creek were the only locations with days where two criteria were potentially exceeded simultaneously.

Scatter and Prairie creeks include some data from when the sensors were out of the water; these extremely high temperature measurements should be disregarded.

Black Lake Ditch consistently exceeds standards every year for at least two months. The warm water from Black Lake discharges through Black Lake Ditch, so that site more directly represents lake temperature than stream temperature.

Figure 22: Annual Potential Temperature Exceedences

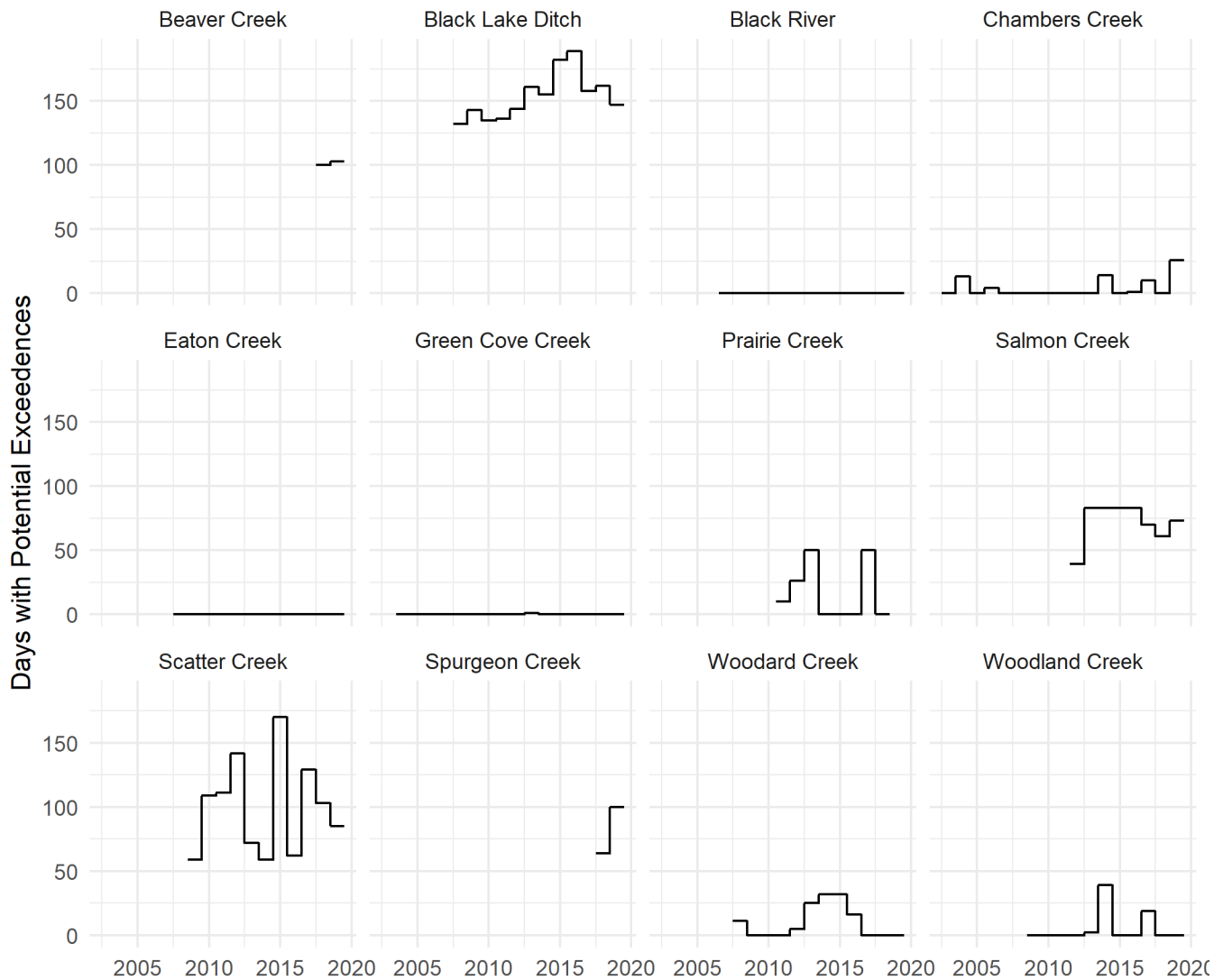


Figure 22 shows the number of potential exceedences per water year at each monitoring site. Scatter and Prairie creeks are highly variable, reflecting the less reliable data record at those sites. Black Lake Ditch has consistently high numbers of days with potential exceedences, due to the influence of Black Lake. There is no consistent pattern apparent across the county. Some years with high numbers of potential exceedences at some sites are normal or low years for other sites; 2014 and 2017 are two examples.

One important caveat to these data is that they reflect only the high-rate 15-minute monitoring performed by Water Planning; Thurston County Environmental Health has monthly data that extend back much further, and may reflect long-term trends that are not yet captured by the high-rate data.

Groundwater

General

Groundwater is an important driver of many surface water systems, including streams and lakes.

Peak groundwater elevations in WY 2019 were generally lower than in WY 2018, and lower than long term averages.

Groundwater Levels for the 2019 Water Year (Salmon Creek Basin)

Nine of the thirty-eight actively monitored Thurston County groundwater monitoring wells are located south of Tumwater in the Salmon Creek Basin.

Although the Salmon Creek area is affected by high groundwater throughout the winter months in most years, the dry weather in 2019 reduced the instances of high water to a minimum. There are some areas within the basin that experience flooding annually, and each year there has been an approximately 1 in 20 chance of the groundwater flooding basin wide.

The last widespread flood event occurred in March of 2009. The flood of record by which the Salmon Creek Basin Plan was implemented was based on a major flood event that occurred ten years before that event, in March 1999. Building and general development requirements within the Basin were modified in response to the 1999 flood. The groundwater data collected by Thurston County is used to calculate flood elevations on prospective parcels in relation to the 1999 flood elevations recorded at the indicator well locations. Figure 23 below is a current map of the location of the groundwater wells in the Salmon Creek Basin.

Figure 23: Salmon Creek Groundwater Wells Map

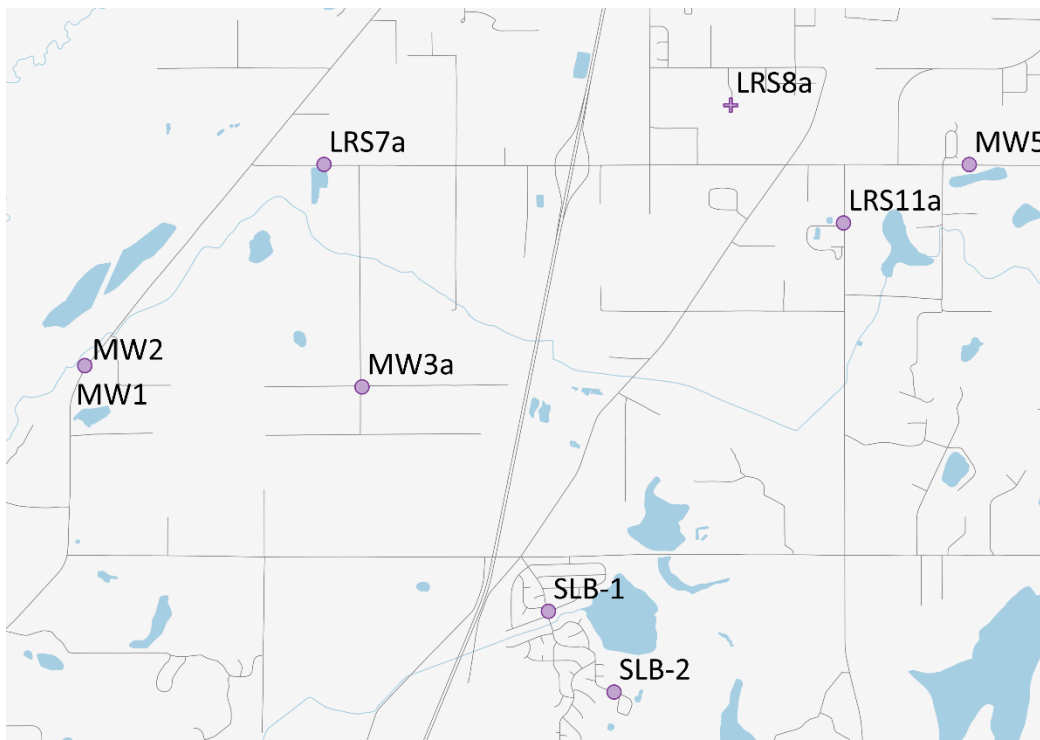
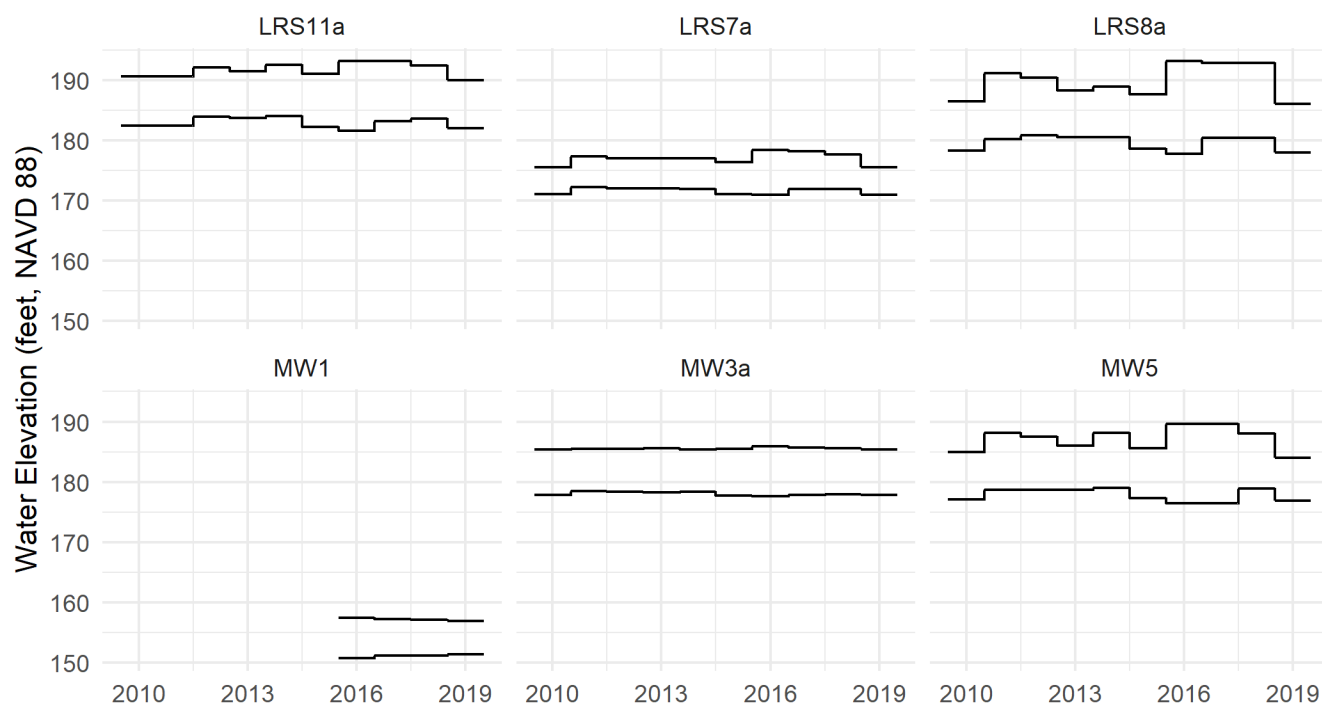


Figure 24: Salmon Creek Groundwater Maximum and Minimum Elevations



LRS11a, LRS8a, and MW5 are east of I-5; LRS7a, MW1, and MW3a are west of I-5. The geology and hydrology west of I-5 is different from the geology and hydrology east of I-5, and this difference is apparent in the well level record.

For LRS11a, LRS7a, LRS8a, and MW5 2019 was a dry water year with lower than normal water levels. MW1 and MW3a are different because annual maximum and minimum water levels in those wells do not vary much over time. MW3a is a very shallow well near a ditch which drains groundwater under wet conditions, so the annual maximum is generally the bottom of the ditch; MW1 is near Salmon Creek, which seems to strongly influence nearby groundwater levels.

Figure 25: Salmon Creek Groundwater Elevation, West

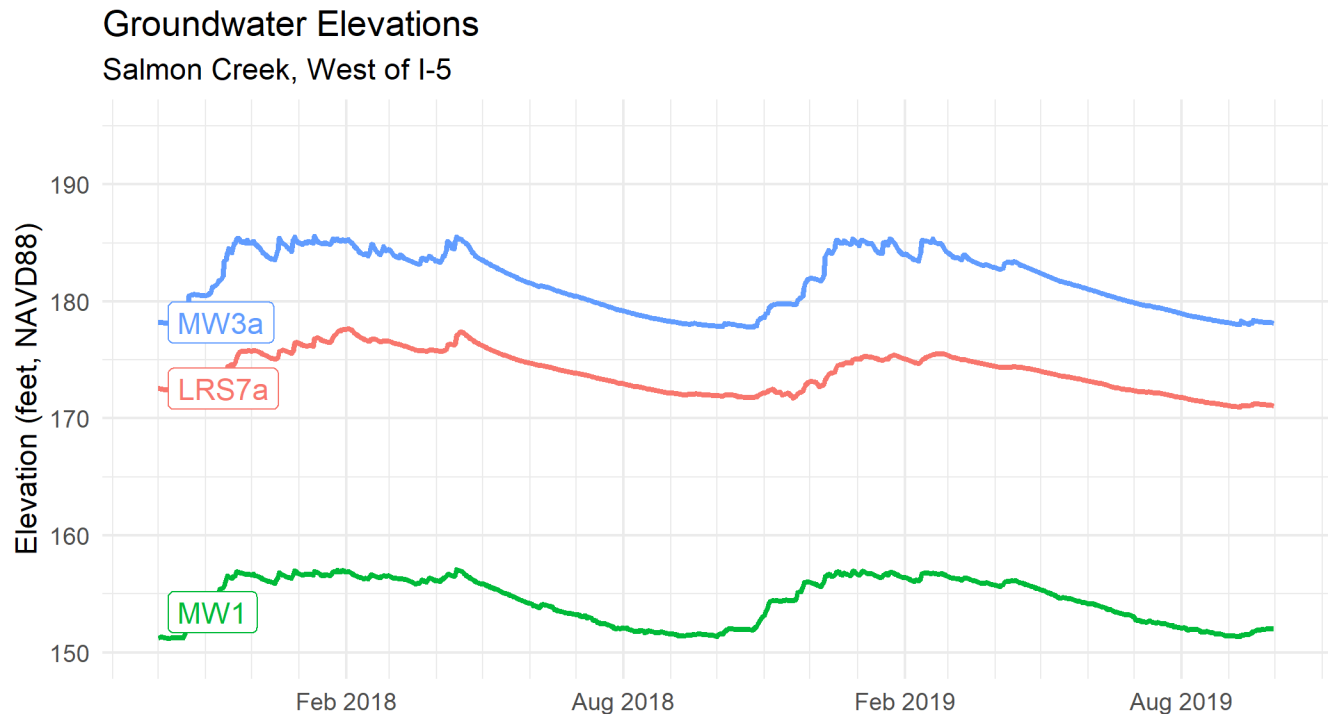
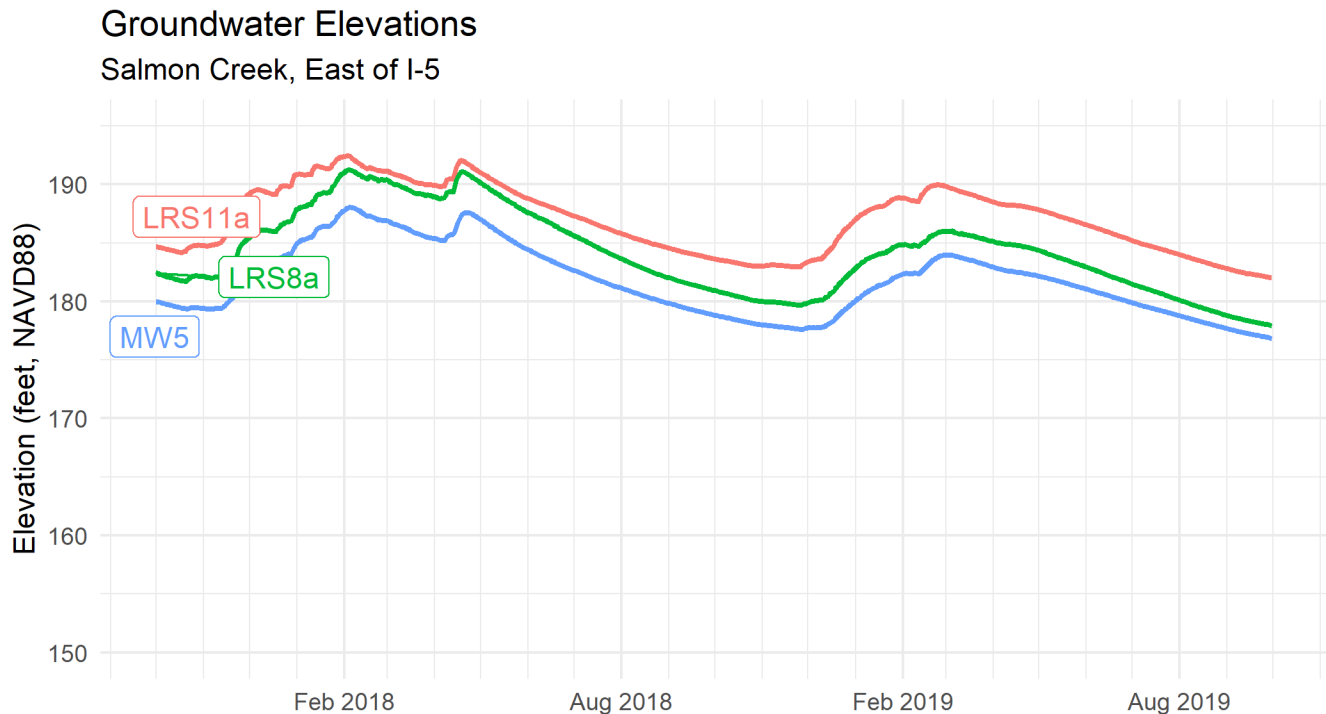


Figure 25 shows MW3a rising to about 185', then rising no higher, because at that elevation water begins to discharge very rapidly through the roadside ditch system. For that reason, even though there was significantly more rain in WY 2019 than in WY 2018, the maximum elevation in MW3a was about the same in both water years. What is noticeably different between those water years is the length of time over which that high water elevation was sustained. In WY 2018 high water lasted from approximately mid-November to May 1st, or about 5.5 months, whereas in WY 2019 high water lasted from mid-December to about March 1st, or 2.5 months. So while the annual maximum water level was about the same for those wells in both water years, there was less total water volume in WY 2019.

MW1 and LRS7a have similar patterns, but the elevation at which surface discharge begins is less obvious. Nevertheless, the same pattern, with the same timing, can be observed in those two wells.

The wells east of I-5, on the other hand, tend to be deeper and only discharge to the surface under significantly wetter conditions.

Figure 26: Salmon Creek Groundwater Elevation, East

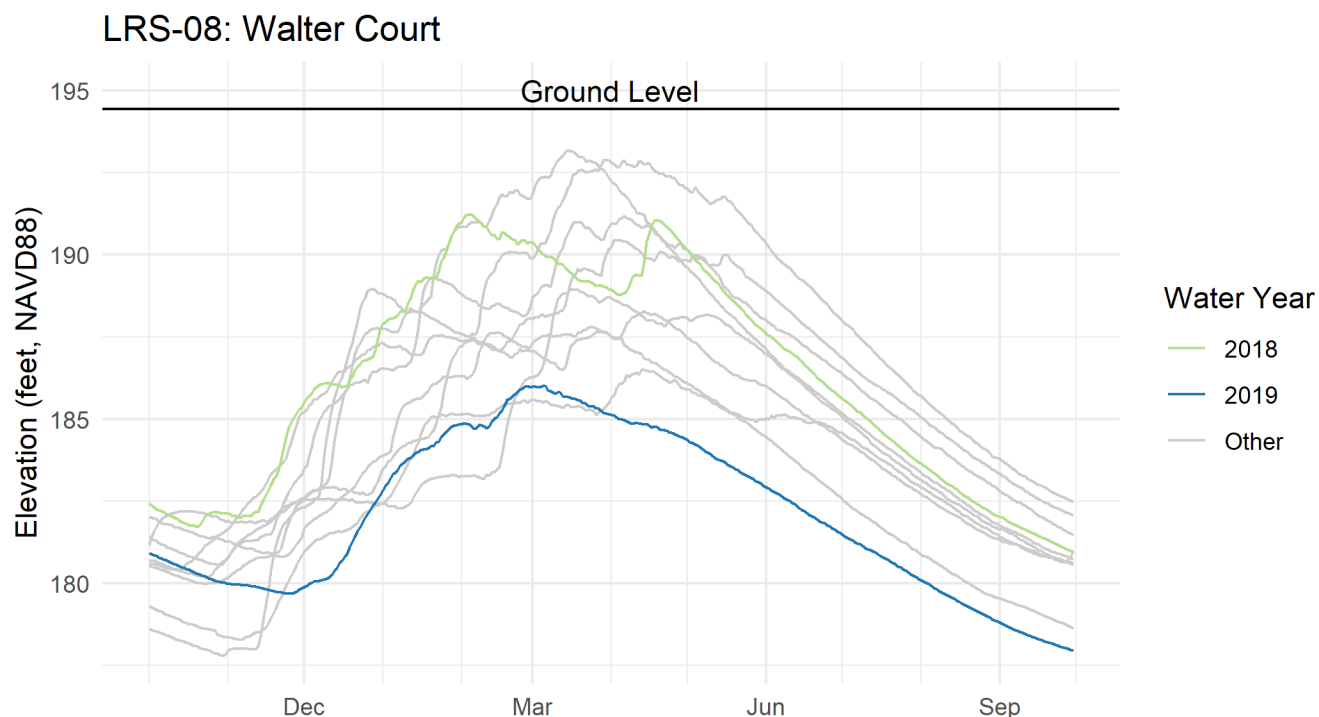


These wells have smoother hydrographs, because they are less directly influenced by each individual rain event. Because they do not discharge to surface water under most conditions, the maximum annual water level is strongly influenced by the total water year rainfall.

Peak water elevations east of I-5 were lower in WY 2019 than in WY 2018. The dry spell in March 2018 is particularly evident in the groundwater record in Figure 26. In WY 2018 water levels begin to rise about a month into the water year, in November 2017, whereas in WY 2019 water levels decline or stay flat until about December 2018.

LRS8a, located just off of Walter Court, is the well that best characterizes the overall condition of groundwater in the Salmon Creek basin. In October 2017 LRS-08a was installed, adjacent to the original LRS-08. The two wells were monitored simultaneously for WY 2018 and determined to be effectively identical. This report will sometimes refer to LRS-08 and sometimes to LRS-08a; the data from both wells can be used interchangeably.

Figure 27: LRS-08 Groundwater Elevation Detail



By overlaying multiple water years on the same graph in Figure 27, the differences and similarities between years become apparent.

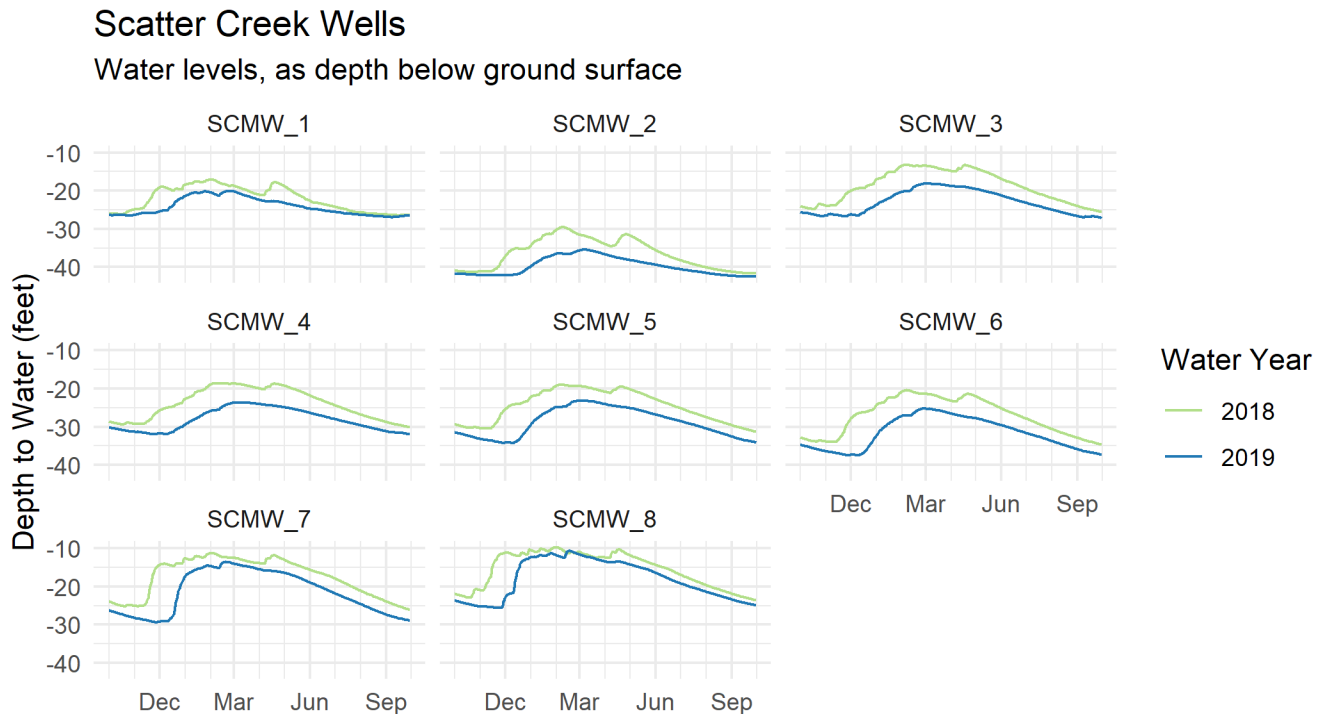
Groundwater in the Salmon Creek basin began WY 2019 at a normal elevation, in the middle of the historical record. A dry fall led to falling water levels, and by December the water was at the lowest level recorded for that time of year. The peak level in March was both early, and the lowest peak recorded at the well. A continuous decline in groundwater levels meant that LRS8a ended WY 2019 with the lowest levels recorded in ten years.

Groundwater Levels for the 2019 Water Year (Scatter Creek Basin)

In 2017 eight deep groundwater monitoring wells were installed in the Scatter Creek aquifer in southern Thurston County. Continuous monitoring of these wells began in summer 2017; WY 2019 is the second water year with a complete record.

In WY 2019 a sensor was added to SCMW9, a shallow well that had been decommissioned well before the other Scatter Creek wells were drilled.

Figure 28: Scatter Creek Groundwater Elevation



Just like with the Salmon Creek wells the Scatter Creek wells had lower levels in WY 2019 than in WY 2018. With two full years of data, some patterns are emerging in the aquifer and in the individual wells.

One difference between wells is the slope of water level decline at the end of the water year. SCMW 1 and 2, and to a lesser extent 3 and 4, have flatter year-end drawdown curves, whereas 5 through 8 continue to draw down at a constant rate. One possible explanation for this is the influence of the Chehalis River on wells 1 through 4.

Some wells respond more directly to precipitation than others. SCMW 8 responds strongly and quickly to any precipitation event. 7 has a similar response, though more muted. The remaining wells generally do not respond directly to individual events, but rise or fall based on longer-term trends (weeks or months).

Interestingly, some wells ended WY 2019 at nearly the same elevation where they ended WY 2018, whereas other wells ended the water year feet below the previous years' level. The Scatter Creek aquifer is a complex feature with disparate responses throughout its geographic extent.

Groundwater Levels for the 2019 Water Year (Other Basins)

The Salmon Creek and Scatter Creek basins are not the only locations where groundwater is monitored by Thurston County. Salmon Creek has the longest continuous record of groundwater data in the County, but other locations throughout Thurston County where groundwater data is recorded include Tanglewilde in Lacey, the Hidden Forest subdivision (also in Lacey), Scott Lake south of Tumwater, and some smaller sites for project-specific groundwater data requirements. These sites are mostly project specific sites and have data records of ten years or less.

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Thurston County is implementing a new groundwater monitoring program over the three-year period of 2019-2021. The intent of these changes is to create a more comprehensive groundwater monitoring program including high-growth areas in the County where no monitoring is currently performed.

The proposed program will use as many existing, project-specific wells as possible. Some wells in each project area have been abandoned where no longer needed or badly damaged. New wells will be drilled in high-growth parts of the county that are currently not monitored.

Lakes – St. Clair, Long, Black, and Hicks

General

In 2011 Thurston County Water Resources began collecting lake levels for three major lakes in Thurston County. The three lakes are:

1. **Lake St Clair** in North Eastern Thurston County between Yelm and Lacey
2. **Long Lake** in North Central Thurston County
3. **Black Lake** in North Western Thurston County

In 2018 Thurston County started recording lake level elevations reported by a volunteer on Hicks Lake as well.

4. **Hicks Lake** in North Central Thurston County (upstream of Long Lake)

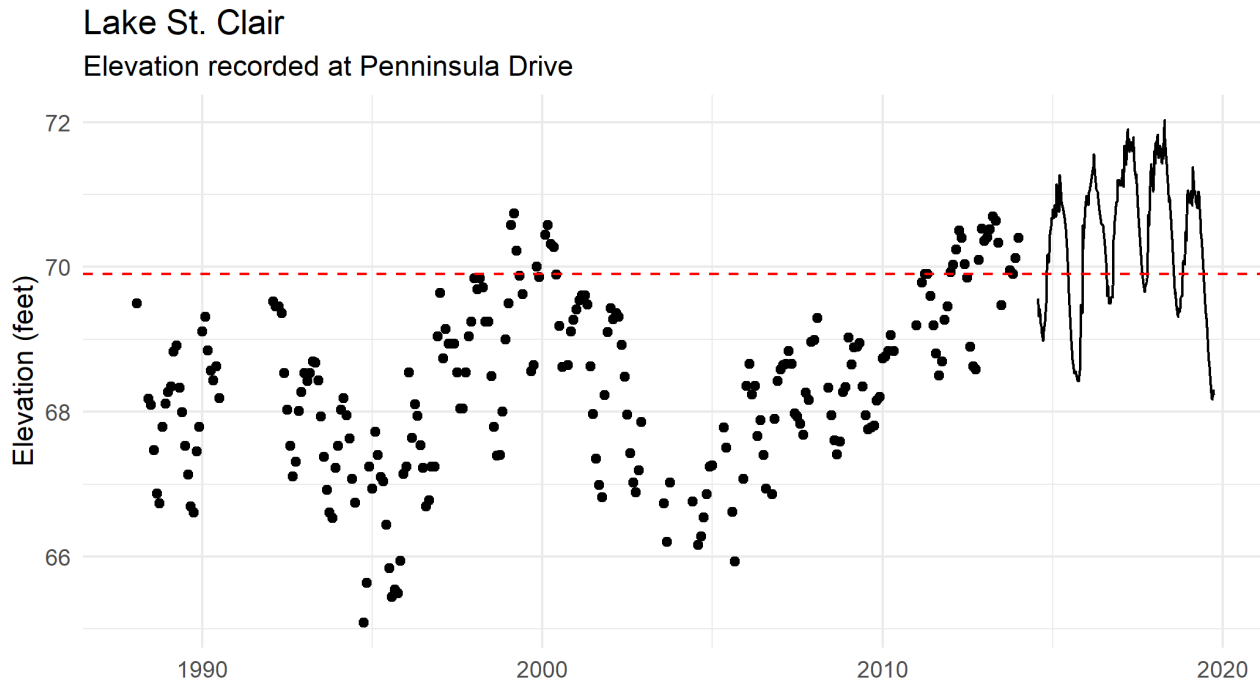
Although there are dozens of lakes in the County, the first three lakes were prioritized because they were the most densely populated and because they are entirely or predominantly within the County jurisdiction. Black Lake and Long Lake share boundaries with or include Urban Growth Areas for Tumwater and Lacey respectively. Lake Level data is also available in Appendix F, and online at <http://www.thurstoncountywa.gov/sw/Pages/monitoring-dashboard.aspx>.

There is also a Lakes Home Page maintained by Thurston County Public Works which oversees the County Lakes Program at http://www.co.thurston.wa.us/tcweeds/lakes/lakes-home_nw.html. The Lakes Home Page is for those lakes with an active Lake Management District (Long and Lawrence) or Lake Special District (Black Lake).

Lake St. Clair

Lake St. Clair is an isolated kettle lake left over from the continental ice sheet that occupied this region 13,000 years ago. It has no natural surface outlet, so water can only leave the basin by evaporation or groundwater seepage. Over the past 30 years, the level of the lake has varied by about 2 feet annually, through a range of about 7 feet total.

Figure 29: Lake St. Clair Elevation



Datum: NGVD 29' converted from MSL City of Olympia Datum

The red dotted line on the plot indicates the elevation 69.9', which is the water elevation at which the 5 MPH speed limit is enacted

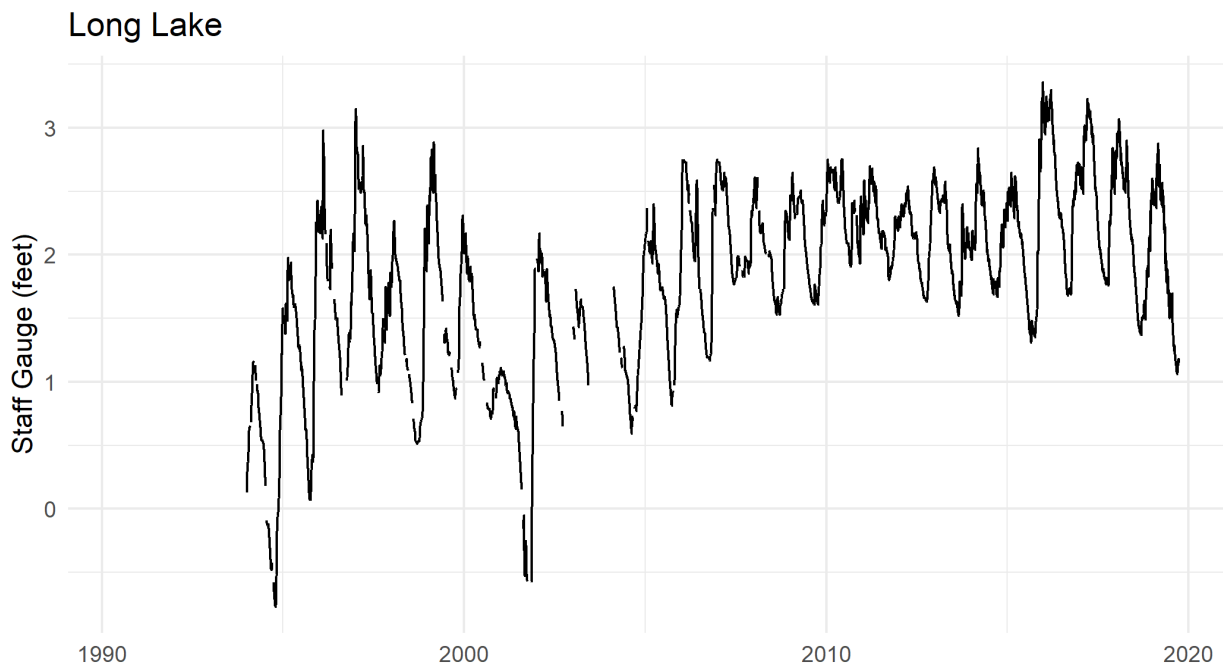
While Lake St. Clair had been trending upward since approximately 2004, in WY 2019 the lake dropped to its lowest level in about ten years. This decrease, combined with a change enacted by the County Board of Commissioners to raise the speed limit restriction elevation from 69.5' to 69.9', meant that the lake was open for high-speed recreation for almost the entire summer for the first time in several years.

Knowledge of the hydrogeology of Lake St. Clair has improved in the past several years, but there are still significant unanswered questions about the interaction of surface and groundwater in that region. Two of the groundwater wells planned for 2020-2021 will be drilled near the lake and will improve our knowledge even further.

Long Lake

Long Lake is in the southeastern Urban Growth Area of Lacey and is highly urbanized like most of the surrounding lakes. Long Lake is part of a three lake group that also includes Pattison Lake and Hicks Lake. These lakes are hydraulically connected through surface and subsurface flows. Unlike Lake St. Clair, Long Lake has a well-defined outlet that constitutes the headwaters of Woodland Creek.

Figure 30: Long Lake Staff Gauge

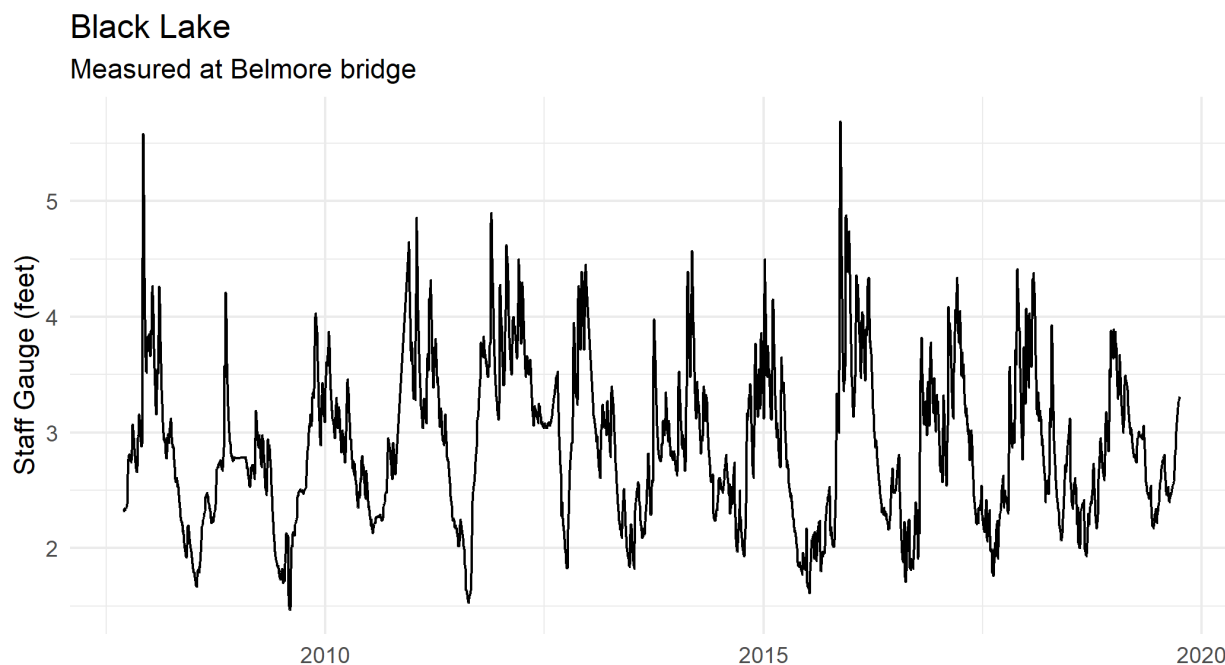


Like Lake St. Clair, Long Lake has been unusually high recently, although in the case of Long Lake the heightened water levels only extend back to 2016. WY 2019 represented the third year of declining water levels in Long Lake. The high water mark in the middle of the water year was in line with the long term average since 2005, but the low water mark at the end of the year was the lowest the lake has been since 2006.

Black Lake

Black Lake also responds to variations in precipitation in predictable ways. This lake, however, responds more quickly than most lakes. The Black Lake Basin is located west of Olympia, adjacent to the Urban Growth Area for the City of Tumwater. It is situated between the predominantly basaltic Black Hills and Somerset Hill in Tumwater. This basin has highly impermeable rock and glacial till underlying the surface layers. In addition, the topography is steep, and this basin receives approximately 25 percent higher precipitation than the Olympia airport only five miles to the east. Finally, beavers regularly block the outlet of the lake, and those dams are regularly removed, resulting in sudden jumps and falls in water levels. As a result of this combination of factors – geology, topography, intensified precipitation, and beaver activity - the lake rises and falls more like a river than a lake.

Figure 31: Black Lake Staff Gauge

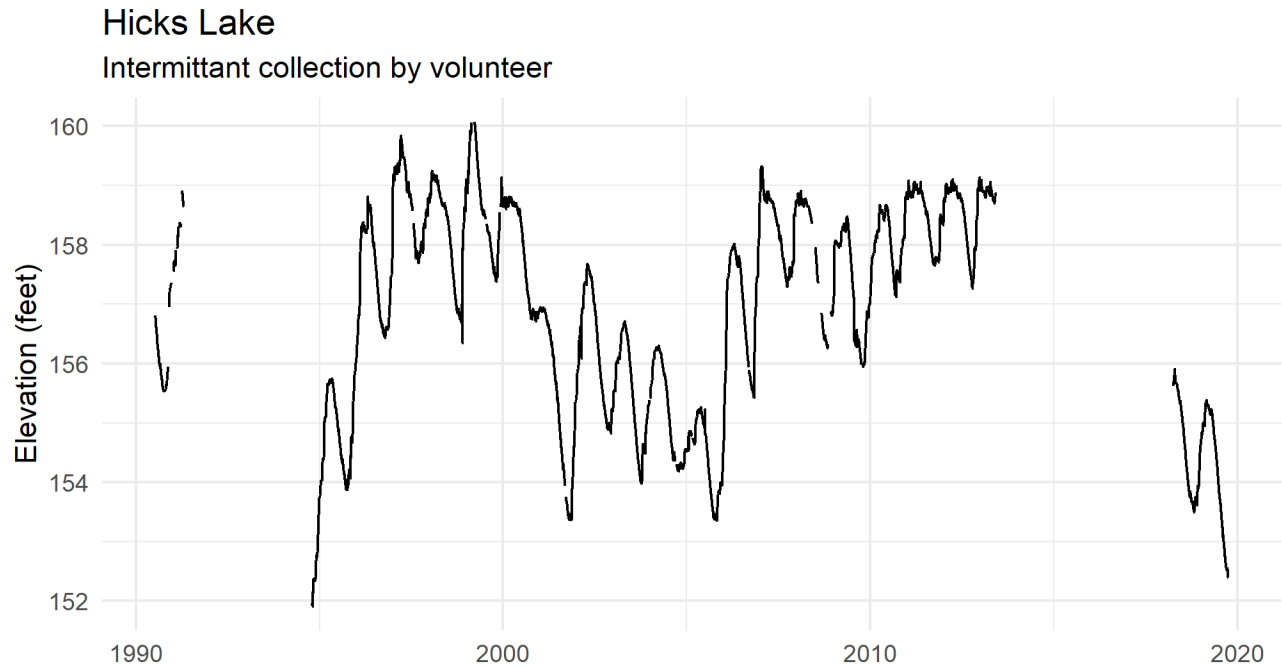


The hydrograph of Black Lake Ditch is much less regular than the hydrographs of other lakes in Thurston County, with many sudden peaks and falls for the reasons described above. Nevertheless, there is an apparent annual trend in the data, with peaks in the winter wet season and lows in the summer dry season. WY 2019 had a lower peak than WY 2018, though it also had a higher minimum, as well. The lower peak was probably influenced by lower rainfall, while the higher minimum likely had more to do with management practices (timing of beaver dam removals, for example).

Hicks Lake

Volunteers have monitored water levels at Hicks Lake for many years. Between WYs 2014 and 2017 Thurston County was not recording the collected data, but recording restarted in the middle of WY 2018.

Figure 32: Hicks Lake Elevation



Since recording restarted in 2018 Hicks Lake has been dropping. The lake ended WY 2019 lower than at any point in the data record since 1995. Since Hicks is the first lake in the three lake Hicks-Pattison-Long chain of lakes, changes in the Hicks Lake level will influence the other two lakes, and more than likely Woodland Creek as well.

Summary of Water Year 2019

2019 was a very dry year, with a cold snap in February and otherwise unremarkable temperatures.

More specifically, WY 2019 began with moderate groundwater levels and high lake levels from the 2016-2017 wet years and 2018 normal year of precipitation. October and November air temperatures were normal while rainfall was below long term averages. December was warm, January was about normal, and February was extremely cool. At the same time December was the only month in which precipitation exceeded long term averages for the entire water year, though February was near normal at some sites. By March temperatures had returned to seasonal normals, but rainfall was far below normal. The year closed out with moderate temperatures and normal summer rainfall volumes, but the preceding dry winter depressed groundwater, lake, stream, and river levels well below 2018 levels.

The program took significant actions in 2019. The standouts included:

- Increasing our telemetered sites from 5 to 17, a three-fold increase;
- Importing hundreds of groundwater sites and tens of thousands of associated water quality data into our central database; and
- Creating a connection to automatically share data from Thurston County with the Chehalis River Basin Flood Authority under a Washington Resource Conservation Office grant.

Closing

Thurston County Water Planning has continued to collect data for our Regional Interlocal Monitoring partners and our General Environmental Monitoring program for almost twenty years. Together with the Thurston County Environmental Health Division, we collect millions of data points per year for processing and modelling. All of the data collected by our programs is available electronically at no cost to the public and other government agencies, either at <http://monitoring.thurstonwater.org/> or by directly contacting Thurston County staff. The program is continuing to evolve with new technologies and analytical techniques. We will be striving to provide the highest quality data for quantifying our local water cycle and integrating it with our regional partners. We will be continuing to improve our data quality and services with new locations and using remote sensing technologies in the upcoming years. We will be providing additional services for groundwater, surface water flows and atmospheric monitoring and lake levels. We will continue to integrate our data and program elements with Thurston County Environmental Health through a shared database and other cooperative efforts. That in turn will provide a more complete picture of the health of our water resources in Thurston County.

The water cycle begins in the clouds and ends in Puget Sound or the Pacific Ocean, and we attempt to quantify it at every level from the raindrops, streams, ground, and lakes until it returns to its source.

Appendix A –Precipitation Data

01u--Nisqually Rvr nr National USGS

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.00	0.22	0.01	0.00	0.82	0.06	0.00	0.00	0.00	0.00	0.00	0.00
02	0.05	0.17	0.00	0.01	0.07	0.04	0.00	0.00	0.00	0.05	0.03	0.00
03	0.00	0.18	0.00	0.15	0.01	0.01	0.09	0.00	0.00	0.02	0.00	0.00
04	0.00	0.35	0.00	0.16	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
05	0.23	0.35	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00
06	0.03	0.11	0.00	0.24	0.00	0.00	0.24	0.00	0.05	0.00	0.00	0.00
07	0.03	0.02	0.01	0.11	0.00	0.11	0.26	0.00	0.55	0.00	0.00	0.37
08	0.48	0.00	0.00	0.21	0.00	0.06	0.36	0.00	0.06	0.00	0.00	0.20
09	0.70	0.05	0.36	0.13	0.00	0.00	0.84	0.00	0.00	0.09	0.05	0.91
10	0.00	0.00	0.20	0.13	0.00	0.00	0.62	0.00	0.00	0.04	0.09	0.34
11	0.00	0.00	0.98	0.00	0.00	0.11	0.77	0.00	0.00	0.06	0.33	0.01
12	0.00	0.00	0.10	0.00	0.00	0.86	0.19	0.00	0.00	0.00	0.00	0.19
13	0.00	0.00	0.14	0.00	0.02	0.09	0.43	0.00	0.00	0.00	0.01	0.12
14	0.00	0.08	0.21	0.00	0.06	0.01	0.27	0.08	0.00	0.00	0.00	0.00
15	0.00	0.00	0.08	0.00	0.06	0.00	0.02	0.00	0.00	0.09	0.00	0.85
16	0.00	0.11	0.25	0.02	0.14	0.00	0.11	0.83	0.00	0.03	0.00	0.22
17	0.00	0.00	0.53	0.33	0.06	0.00	0.04	0.36	0.00	0.05	0.00	0.46
18	0.00	0.00	1.55	0.27	0.02	0.00	0.02	0.00	0.00	0.06	0.00	0.08
19	0.00	0.00	0.24	0.13	0.03	0.00	0.41	0.12	0.00	0.00	0.00	0.02
20	0.00	0.00	0.47	0.00	0.08	0.00	0.01	0.15	0.14	0.00	0.00	0.00
21	0.00	0.03	0.01	0.00	0.03	0.00	0.00	0.10	0.00	0.00	0.27	0.00
22	0.00	0.59	0.20	0.27	0.00	0.01	0.11	0.01	0.00	0.00	0.03	0.41
23	0.01	0.60	0.77	0.39	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.01
24	0.00	0.00	0.02	0.03	0.05	0.01	0.00	0.02	0.00	0.00	0.00	0.00
25	0.31	0.00	0.01	0.01	0.05	0.07	0.00	0.16	0.00	0.00	0.00	0.00
26	0.08	0.96	0.25	0.00	0.01	0.02	0.00	0.05	0.93	0.00	0.00	0.21
27	1.16	1.04	0.12	0.00	0.02	0.01	0.00	0.00	0.39	0.00	0.00	0.04
28	0.93	0.14	0.65	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.04
29	0.19	0.01	0.50	0.00		0.02	0.00	0.00	0.00	0.00	0.11	0.10
30	0.02	0.16	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.01	0.00
31	0.83		0.00	0.00		0.00		0.00		0.00	0.00	
Total	5.05	5.17	7.68	2.59	1.62	1.50	5.09	1.88	2.13	0.49	0.93	4.58
Days	14	18	24	16	19	16	20	10	7	9	9	18

180 Precip Days

Total Rainfall for Water Year 2019: 38.71

Notes:

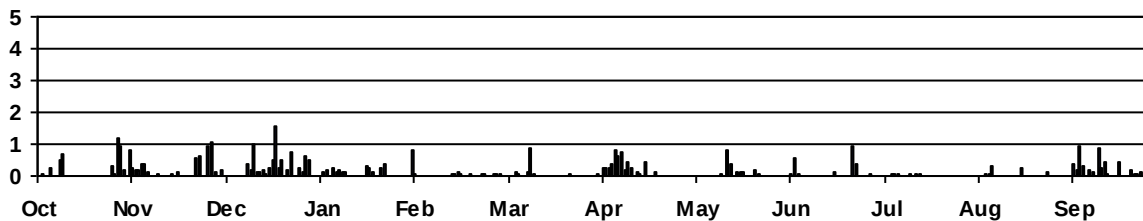
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



05u--Yelm WRF_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.06	0.01	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.09	0.20	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.16	0.01	0.00
03	0.01	0.11	0.00	0.30	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04	0.00	0.19	0.00	0.16	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
05	0.43	0.12	0.00	0.04	0.16	0.00	0.28	0.00	0.00	0.00	0.00	0.00
06	0.01	0.03	0.00	0.23	0.00	0.19	0.34	0.00	0.06	0.00	0.00	0.00
07	0.10	0.05	0.00	0.05	0.00	0.12	0.59	0.00	0.20	0.00	0.00	0.08
08	0.19	0.00	0.01	0.10	0.08	0.09	0.14	0.00	0.00	0.00	0.00	0.17
09	0.17	0.03	0.46	0.39	0.00	0.00	0.18	0.00	0.00	0.15	0.10	0.37
10	0.00	0.00	0.15	0.07	0.03	0.00	0.08	0.00	0.00	0.12	0.68	0.00
11	0.00	0.00	1.02	0.00	1.66	0.31	0.15	0.00	0.00	0.00	0.03	0.00
12	0.00	0.01	0.09	0.00	0.73	0.29	0.09	0.00	0.00	0.00	0.00	0.35
13	0.00	0.00	0.06	0.01	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.01
14	0.00	0.00	0.15	0.00	0.27	0.00	0.06	0.08	0.00	0.00	0.00	0.02
15	0.00	0.00	0.01	0.00	0.03	0.00	0.05	0.01	0.00	0.06	0.00	0.57
16	0.00	0.02	0.20	0.12	0.05	0.00	0.11	0.11	0.00	0.00	0.00	0.11
17	0.00	0.00	0.11	0.06	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.63
18	0.00	0.00	1.15	0.62	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01
19	0.00	0.00	0.21	0.25	0.13	0.00	0.18	0.22	0.00	0.00	0.00	0.00
20	0.00	0.00	0.30	0.01	0.03	0.00	0.01	0.03	0.00	0.00	0.00	0.00
21	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
22	0.01	0.48	0.17	0.31	0.22	0.01	0.08	0.00	0.00	0.00	0.00	0.28
23	0.01	0.22	0.42	0.21	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.02	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.26	0.00	0.00	0.00	0.01	0.23	0.00	0.14	0.05	0.00	0.00	0.00
26	0.12	0.34	0.20	0.00	0.00	0.02	0.00	0.01	0.25	0.00	0.00	0.04
27	0.74	0.41	0.01	0.00	0.00	0.16	0.00	0.00	0.07	0.01	0.00	0.00
28	0.80	0.41	0.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04
29	0.04	0.00	0.58	0.00		0.00	0.00	0.00	0.00	0.00	0.13	0.00
30	0.05	0.01	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.01		0.00	0.00		0.00		0.00		0.00	0.00	
Total	3.12	2.68	5.55	2.93	4.15	1.43	2.75	0.60	0.63	0.55	1.01	2.68
Days	18	17	19	16	17	10	17	7	5	6	6	13

151 Precip Days

Total Rainfall for Water Year 2019: 28.08

Notes:

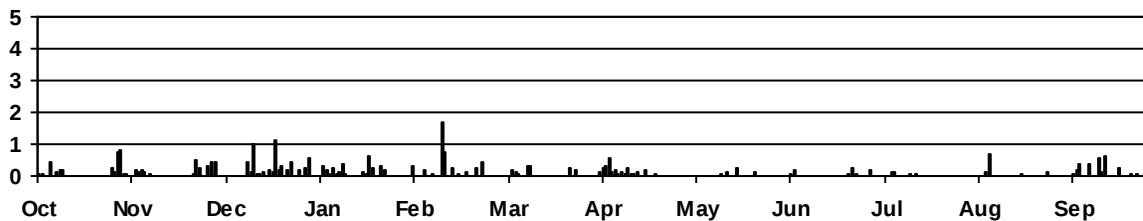
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



10u--Meridian Rd_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.47	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.12	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04	0.00
03	0.01	0.15	0.01	0.48	0.04	0.00	0.06	0.00	0.00	0.00	0.00	0.00
04	0.00	0.35	0.00	0.20	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
05	0.53	0.12	0.00	0.09	0.08	0.00	0.22	0.00	0.00	0.01	0.00	0.00
06	0.01	0.00	0.01	0.18	0.01	0.16	0.35	0.00	0.03	0.00	0.00	0.00
07	0.14	0.00	0.00	0.02	0.00	0.02	0.49	0.00	0.09	0.00	0.00	0.00
08	0.26	0.01	0.02	0.15	0.09	0.03	0.08	0.00	0.00	0.00	0.00	0.14
09	0.02	0.02	0.48	0.32	0.00	0.00	0.18	0.00	0.00	0.17	0.07	0.32
10	0.00	0.00	0.20	0.17	0.01	0.01	0.11	0.00	0.00	0.31	0.78	0.01
11	0.00	0.00	1.41	0.00	2.49	0.33	0.12	0.00	0.00	0.00	0.13	0.00
12	0.00	0.01	0.30	0.01	0.71	0.22	0.00	0.00	0.00	0.01	0.00	0.26
13	0.00	0.00	0.23	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.01
14	0.00	0.07	0.10	0.01	0.31	0.00	0.19	0.06	0.00	0.00	0.00	0.00
15	0.00	0.00	0.02	0.01	0.05	0.00	0.08	0.01	0.00	0.09	0.00	0.56
16	0.00	0.02	0.44	0.15	0.07	0.00	0.06	0.07	0.00	0.00	0.00	0.03
17	0.00	0.00	0.38	0.15	0.00	0.00	0.00	0.01	0.00	0.31	0.00	0.88
18	0.00	0.01	1.14	0.81	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01
19	0.00	0.00	0.32	0.14	0.16	0.00	0.25	0.30	0.00	0.00	0.00	0.01
20	0.01	0.00	0.24	0.00	0.04	0.00	0.00	0.09	0.00	0.00	0.00	0.00
21	0.01	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
22	0.02	0.74	0.29	0.58	0.24	0.03	0.06	0.00	0.00	0.00	0.00	0.24
23	0.04	0.25	0.56	0.14	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.01
24	0.01	0.00	0.01	0.00	0.21	0.00	0.00	0.00	0.02	0.00	0.00	0.00
25	0.29	0.01	0.00	0.01	0.00	0.35	0.00	0.16	0.00	0.00	0.00	0.00
26	0.20	0.77	0.23	0.00	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.03
27	0.83	0.66	0.01	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00
28	0.81	0.42	0.18	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.10
29	0.06	0.01	0.77	0.00		0.00	0.00	0.00	0.00	0.00	0.05	0.05
30	0.06	0.15	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.01		0.01	0.01		0.00		0.00		0.00	0.00	
Total	3.91	4.30	7.37	3.63	4.82	1.39	2.82	0.70	0.19	1.04	1.12	2.66
Days	20	19	24	19	16	12	17	7	4	7	6	15

166 Precip Days

Total Rainfall for Water Year 2019: 33.95

Notes:

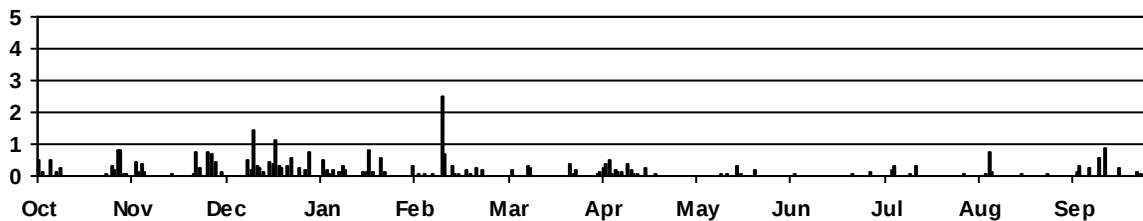
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



11u--NOAA Olympia Airport

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.24	0.02	0.01	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.16	0.00
03	0.00	0.15	0.00	0.61	0.05	0.00	0.02	0.00	0.00	0.00	0.00	0.00
04	0.00	0.64	0.00	0.66	0.17	0.00	0.12	0.00	0.00	0.00	0.00	0.00
05	0.90	0.14	0.00	0.11	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00
06	0.00	0.00	0.00	0.22	0.00	0.13	0.27	0.00	0.02	0.00	0.00	0.00
07	0.21	0.00	0.00	0.04	0.00	0.14	0.50	0.00	0.05	0.00	0.00	0.00
08	0.17	0.00	0.02	0.14	0.54	0.05	0.35	0.00	0.00	0.00	0.00	0.22
09	0.00	0.01	0.65	0.24	0.31	0.00	0.20	0.00	0.00	0.28	0.09	0.68
10	0.00	0.00	0.20	0.21	0.24	0.00	0.14	0.00	0.00	0.34	0.26	0.00
11	0.00	0.00	1.44	0.00	1.62	0.31	0.05	0.00	0.00	0.03	0.05	0.00
12	0.00	0.00	0.38	0.00	0.71	0.23	0.00	0.00	0.00	0.00	0.00	0.13
13	0.00	0.00	0.35	0.00	0.01	0.00	0.33	0.00	0.00	0.00	0.00	0.12
14	0.00	0.17	0.06	0.00	0.31	0.00	0.03	0.14	0.00	0.00	0.00	0.02
15	0.00	0.00	0.01	0.00	0.09	0.00	0.03	0.03	0.00	0.06	0.00	0.60
16	0.00	0.01	0.39	0.14	0.06	0.00	0.04	0.10	0.00	0.03	0.00	0.07
17	0.00	0.00	0.53	0.17	0.00	0.00	0.01	0.00	0.00	0.33	0.00	0.87
18	0.00	0.00	1.03	0.99	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.01
19	0.00	0.00	0.30	0.18	0.11	0.00	0.23	0.24	0.00	0.00	0.00	0.00
20	0.00	0.00	0.14	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00
21	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
22	0.00	0.90	0.49	0.93	0.25	0.03	0.06	0.00	0.00	0.00	0.01	0.21
23	0.06	0.49	0.83	0.23	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.03
24	0.01	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.46	0.02	0.02	0.00	0.00	0.27	0.00	0.34	0.00	0.00	0.00	0.00
26	0.19	1.14	0.32	0.00	0.00	0.06	0.00	0.00	0.03	0.00	0.00	0.10
27	0.92	0.79	0.00	0.00	0.00	0.16	0.00	0.00	0.07	0.03	0.00	0.00
28	0.82	0.43	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
29	0.15	0.00	0.86	0.00		0.00	0.00	0.00	0.00	0.00	0.12	0.01
30	0.05	0.21	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.01		0.00	0.01		0.00		0.00		0.00		
Total	4.25	5.88	8.35	4.88	5.16	1.39	2.68	0.90	0.17	1.23	0.80	3.43
Days	14	16	21	15	17	10	17	7	4	8	7	14

150 Precip Days

Total Rainfall for Water Year 2019: 39.12

Notes:

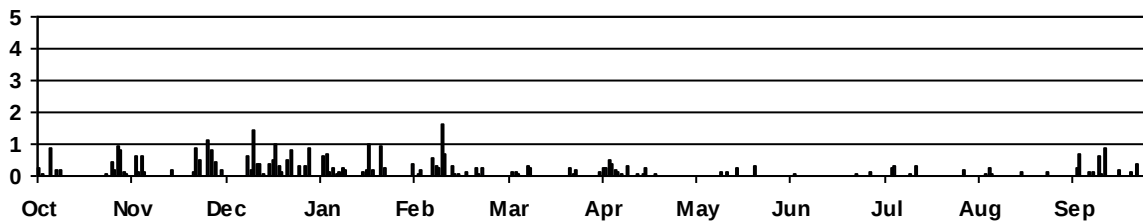
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



11y--Deschutes Falls Park

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.01	0.03	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.05	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00
03	0.00	0.26	0.00	0.36	0.15 s	0.00	0.03	0.00	0.00	0.00	0.00	0.00
04	0.00	0.47	0.00	0.17	0.09 s	0.00	0.18	0.00	0.00	0.00	0.00	0.00
05	0.45	0.09	0.00	0.01	0.00	0.00	0.44	0.00	0.02	0.00	0.00	0.00
06	0.00	0.03	0.00	0.50 s	0.00	0.21 s	0.43	0.00	0.16	0.00	0.00	0.04
07	0.03	0.04	0.00	0.01	0.00	0.11 s	0.35	0.00	0.11	0.00	0.00	0.21
08	0.04	0.00	0.00	0.10 s	0.25 s	0.09 s	0.19	0.00	0.00	0.00	0.00	0.26
09	0.24	0.05	0.46	0.53	0.00	0.00	0.21	0.00	0.00	0.19	0.76	0.56
10	0.00	0.00	0.06	0.07	0.13 s	0.00	0.37	0.00	0.00	0.21	0.09	0.00
11	0.00	0.00	1.05	0.00	0.95 s	0.16	0.41	0.00	0.00	0.01	0.02	0.00
12	0.00	0.00	0.05	0.00	0.38 s	0.32	0.10	0.00	0.00	0.00	0.00	0.36
13	0.00	0.00	0.11	0.00	0.02	0.03	0.25	0.00	0.00	0.00	0.00	0.00
14	0.00	0.01	0.23	0.00	0.23 s	0.00	0.08	0.05	0.00	0.00	0.00	0.01
15	0.00	0.00	0.07	0.00	0.04	0.00	0.02	0.00	0.00	0.34	0.00	0.63
16	0.00	0.00	0.53	0.02	0.04 s	0.00	0.06	0.33	0.00	0.00	0.00	0.04
17	0.00	0.00	0.43	0.03	0.00	0.00	0.00	0.05	0.00	0.06	0.00	0.45
18	0.00	0.00	1.37	0.35	0.01 s	0.00	0.08	0.00	0.00	0.00	0.00	0.16
19	0.00	0.00	0.08	0.03	0.07	0.00	0.30	0.32	0.00	0.00	0.00	0.00
20	0.00	0.00	0.33	0.00	0.06 s	0.00	0.00	0.08	0.01	0.00	0.00	0.00
21	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.05	0.00
22	0.00	0.76	0.31	0.32	0.09 s	0.05	0.13	0.00	0.00	0.00	0.00	0.20
23	0.02	0.35	0.32	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.04 s	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.27	0.00	0.00	0.00	0.00	0.21	0.00	0.20	0.15	0.00	0.00	0.00
26	0.05	0.82	0.09	0.00	0.00	0.04	0.00	0.01	0.41	0.00	0.00	0.04
27	0.80	0.68	0.00	0.00	0.00	0.06	0.03	0.00	0.04	0.00	0.00	0.09
28	1.22	0.41	0.38	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.24
29	0.01	0.00	0.67	0.00		0.00	0.00	0.00	0.00	0.00	0.12	0.07
30	0.01	0.10	0.02	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.07		0.00	0.00		0.00		0.00		0.00	0.02	
Total	3.27	4.40	6.56	2.51	3.08	1.31	3.66	1.08	0.90	1.16	1.06	3.36
Days	14	16	18	14	17	11	18	8	7	6	6	15

150 Precip Days

Total Rainfall for Water Year 2019: 32.35

Notes:

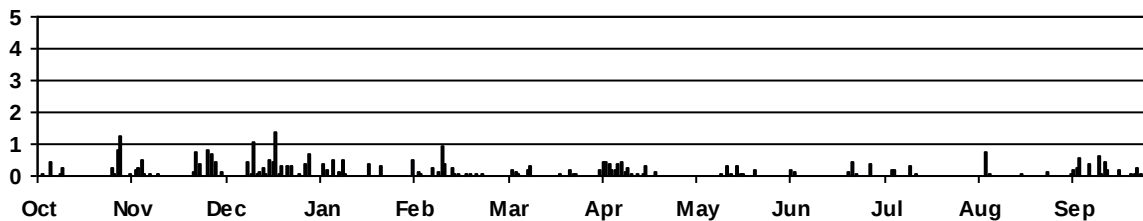
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



11z--Rainier FS-4 Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.15	0.03	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.35	0.00	0.00 e	0.00	0.00	0.00	0.00	0.00	0.15	0.03	0.00
03	0.00	0.13	0.01	0.29 e	0.08	0.00	0.01	0.00	0.00	0.01	0.00	0.00
04	0.00	0.34	0.00	0.05	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
05	0.54	0.13	0.00	0.01	0.01	0.00	0.34	0.00	0.01	0.00	0.00	0.00
06	0.02	0.02	0.00	0.11	0.00	0.16	0.41	0.00	0.10	0.00	0.00	0.00
07	0.14	0.00	0.00	0.02	0.00	0.11	0.64	0.00	0.24	0.00	0.00	0.00
08	0.23	0.01	0.00	0.02	0.07	0.05	0.33	0.00	0.00	0.00	0.00	0.63
09	0.18	0.00	0.43	0.63	0.09	0.00	0.14	0.00	0.00	0.11	0.15	0.53
10	0.00	0.00	0.25	0.16	0.15	0.01	0.23	0.00	0.00	0.04	0.78	0.00
11	0.00	0.00	1.68	0.00	0.04	0.36	0.25	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.32	0.00	0.09	0.15	0.01	0.00	0.00	0.00	0.00	0.35
13	0.00	0.00	0.22	0.00	0.01	0.00	0.33	0.00	0.00	0.00	0.00	0.01
14	0.00	0.00	0.19	0.00	0.31	0.00	0.13	0.23	0.00	0.00	0.00	0.00
15	0.00	0.00	0.03	0.01	0.05	0.00	0.08	0.01	0.00	0.06	0.00	0.55
16	0.00	0.00 e	0.37	0.12	0.07	0.00	0.17	0.12	0.00	0.01	0.00	0.00
17	0.00	0.00 e	0.31	0.06	0.00	0.00	0.00	0.04	0.00	0.10	0.00	0.64
18	0.00	0.00 e	1.08	0.65	0.00	0.00	0.04	0.00	0.00	0.01	0.00	0.11
19	0.00	0.00 e	0.17	0.39	0.18	0.00	0.28	0.24	0.00	0.00	0.00	0.00
20	0.00	0.00 e	0.33	0.00	0.04	0.00	0.01	0.02	0.00	0.00	0.00	0.00
21	0.00	0.06 e	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
22	0.00	0.50 e	0.33	0.43	0.19	0.03	0.07	0.00	0.00	0.00	0.00	0.14
23	0.03	0.46 e	0.49	0.36	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.02	0.00 e	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.20	0.02 e	0.00	0.00	0.00	0.25	0.00	0.26	0.00	0.00	0.00	0.00
26	0.23	0.39 e	0.16	0.00	0.00	0.03	0.00	0.00	0.04	0.00	0.00	0.02
27	0.80	0.46 e	0.01	0.00	0.00	0.15	0.00	0.00	0.02	0.02	0.00	0.00
28	0.96	0.46 e	0.21	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.16
29	0.04	0.02 e	0.71	0.00		0.00	0.00	0.00	0.00	0.00	0.09	0.00
30	0.06	0.04	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.04		0.00	0.00		0.00		0.00		0.00	0.00	
Total	3.70	3.42	7.32	3.31	1.99	1.31	3.61	0.93	0.41	0.51	1.07	3.14
Days	16	16	21	15	17	11	18	8	5	9	5	10

151 Precip Days

Total Rainfall for Water Year 2019: 30.72

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

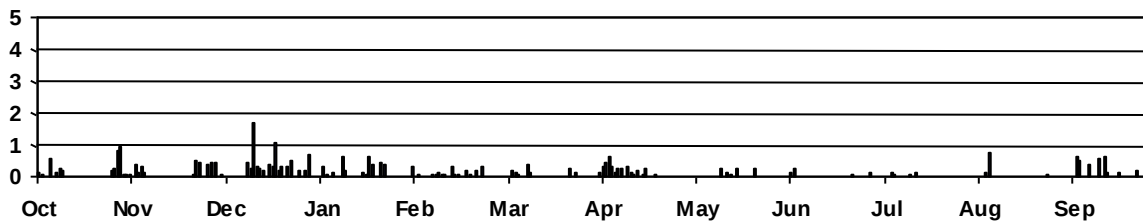
Thurston County

Notes:

e = Estimate: Missing data from battery loss of power from transmitting to CPED app and gage in shade during Fall/Winter months.

Visit our website at

Annual Hyetograph:



13u--Lake Lawrence_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.11	0.03	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.07	0.28	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.21	0.03	0.00
03	0.00	0.14	0.00	0.23	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04	0.00	0.31	0.01	0.13	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
05	0.44	0.14	0.00	0.04	0.07	0.00	0.30	0.00	0.05	0.00	0.00	0.00
06	0.03	0.06	0.00	0.26	0.08	0.15	0.37	0.00	0.00	0.00	0.00	0.00
07	0.11	0.03	0.00	0.03	0.05	0.10	0.60	0.01	0.04	0.00	0.00	0.04
08	0.19	0.00	0.01	0.06	0.09	0.04	0.32	0.00	0.00	0.00	0.00	0.17
09	0.14	0.03	0.31	0.39	0.00	0.01	0.12	0.00	0.00	0.08	0.06	0.30
10	0.00	0.00	0.14	0.04	0.01	0.00	0.18	0.00	0.00	0.27	0.07	0.00
11	0.00	0.00	1.28	0.00	2.23	0.33	0.22	0.00	0.00	0.00	0.05	0.00
12	0.00	0.01	0.18	0.00	0.54	0.22	0.07	0.00	0.00	0.00	0.00	0.28
13	0.00	0.00	0.17	0.00	0.02	0.00	0.26	0.00	0.00	0.00	0.00	0.00
14	0.00	0.02	0.29	0.01	0.31	0.00	0.13	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.01	0.00	0.01	0.00	0.05	0.00	0.00	0.12	0.00	0.41
16	0.00	0.05	0.21	0.07	0.08	0.00	0.09	0.06	0.00	0.00	0.00	0.00
17	0.00	0.00	0.17	0.02	0.00	0.00	0.00	0.04	0.00	0.08	0.00	0.31
18	0.00	0.00	1.02	0.62	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01
19	0.00	0.00	0.13	0.34	0.10	0.00	0.20	0.22	0.00	0.00	0.00	0.00
20	0.00	0.00	0.22	0.00	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00
21	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00
22	0.00	0.58	0.26	0.28	0.16	0.02	0.02	0.00	0.00	0.00	0.00	0.10
23	0.03	0.44	0.29	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.12	0.01	0.00	0.00	0.00	0.21	0.00	0.19	0.09	0.00	0.00	0.00
26	0.07	0.19	0.10	0.00	0.00	0.02	0.00	0.00	0.20	0.00	0.00	0.00
27	0.63	0.53	0.00	0.00	0.00	0.09	0.00	0.00	0.03	0.00	0.00	0.03
28	1.06	0.45	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
29	0.01	0.01	0.73	0.00		0.00	0.00	0.00	0.00	0.00	0.08	0.00
30	0.05	0.04	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00		0.00	0.00		0.00		0.00		0.00	0.00	
Total	3.06	3.41	5.74	2.72	4.24	1.19	3.02	0.53	0.41	0.76	0.34	1.75
Days	14	20	20	16	18	10	17	6	5	5	6	10

147 Precip Days

Total Rainfall for Water Year 2019: 27.17

Notes:

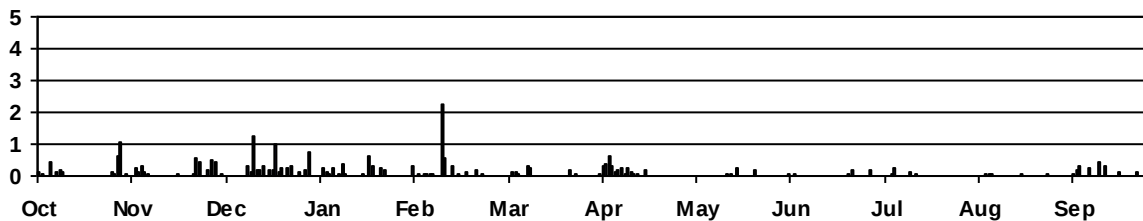
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



18u--Lacey Fire Dist. 3 Fire Station_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.17	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.05	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.14	0.00
03	0.01	0.22	0.00	0.70	0.03	0.00	0.08	0.00	0.00	0.00	0.00	0.00
04	0.00	0.43	0.00	0.58	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00
05	0.65	0.09	0.00	0.14	0.15	0.00	0.29	0.00	0.00	0.00	0.00	0.00
06	0.01	0.01	0.01	0.41	0.02	0.15	0.37	0.00	0.07	0.00	0.00	0.00
07	0.17	0.00	0.00	0.01	0.00	0.10	0.45	0.00	0.09	0.00	0.00	0.00
08	0.25	0.00	0.01	0.16	0.00	0.08	0.49	0.00	0.00	0.00	0.00	0.11
09	0.01	0.02	0.60	0.29	0.00	0.00	0.17	0.00	0.00	0.27	0.13	0.53
10	0.00	0.00	0.15	0.16	0.00	0.00	0.10	0.00	0.00	0.21	0.34	0.00
11	0.00	0.00	1.76	0.00	1.23	0.30	0.10	0.00	0.00	0.00	0.05	0.00
12	0.00	0.00	0.44	0.00	0.70	0.17	0.00	0.00	0.00	0.00	0.00	0.12
13	0.00	0.00	0.37	0.01	0.01	0.00	0.32	0.00	0.00	0.00	0.00	0.02
14	0.00	0.09	0.10	0.00	0.32	0.00	0.15	0.07	0.00	0.00	0.00	0.00
15	0.00	0.00	0.04	0.01	0.09	0.00	0.05	0.09	0.00	0.07	0.00	0.45
16	0.00	0.02	0.39	0.15	0.06	0.00	0.02	0.13	0.00	0.00	0.00	0.07
17	0.00	0.00	0.67	0.16	0.00	0.00	0.01	0.01	0.00	0.19	0.00	0.77
18	0.00	0.00	0.90	1.00	0.00	0.00	0.05	0.01	0.00	0.00	0.00	0.03
19	0.00	0.00	0.19	0.11	0.10	0.00	0.18	1.67	0.00	0.00	0.00	0.00
20	0.00	0.01	0.33	0.01	0.02	0.00	0.01	0.02	0.00	0.00	0.00	0.00
21	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
22	0.01	1.13	0.55	0.76	0.26	0.01	0.07	0.00	0.00	0.00	0.02	0.19
23	0.03	0.62	1.12	0.31	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.02
24	0.02	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.44	0.02	0.03	0.00	0.01	0.27	0.00	0.17	0.08	0.00	0.00	0.00
26	0.27	1.24	0.32	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.00	0.05
27	0.84	0.82	0.01	0.00	0.00	0.11	0.02	0.00	0.00	0.00	0.00	0.00
28	0.69	0.37	0.25	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.37
29	0.07	0.01	1.00	0.00		0.00	0.00	0.00	0.00	0.00	0.13	0.00
30	0.08	0.16	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.01	0.00
31	0.05		0.00	0.01		0.00		0.00		0.00	0.00	
Total	3.83	5.91	9.24	4.98	3.62	1.23	3.12	2.17	0.26	0.83	0.97	2.73
Days	19	18	21	18	16	10	19	8	4	5	8	12

158 Precip Days

Total Rainfall for Water Year 2019: 38.89

Notes:

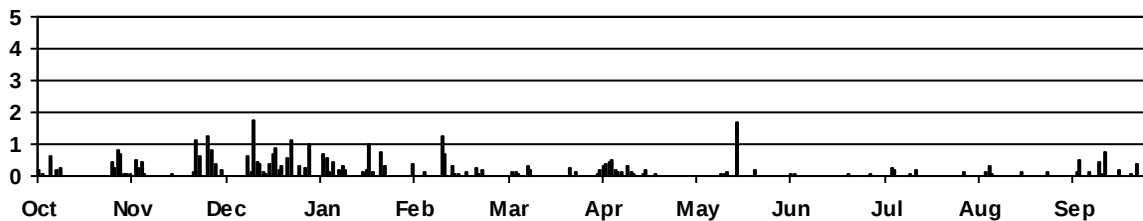
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

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Annual Hyetograph:



18w--WARC TC_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.15	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.05	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.11	0.00
03	0.00	0.14	0.00	0.49	0.05	0.00	0.06	0.00	0.00	0.00	0.00	0.00
04	0.00	0.29	0.00	0.46	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00
05	0.50	0.12	0.00	0.12	0.08	0.00	0.18	0.00	0.00	0.00	0.00	0.00
06	0.00	0.00	0.01	0.34	0.00	0.14	0.30	0.00	0.03	0.00	0.00	0.00
07	0.11	0.00	0.00	0.00	0.00	0.09	0.39	0.00	0.08	0.00	0.00	0.00
08	0.14	0.00	0.00	0.14	0.07	0.11	0.31	0.00	0.00	0.00	0.00	0.02
09	0.03	0.02	0.56	0.24	0.00	0.00	0.14	0.00	0.00	0.00	0.26	0.39
10	0.00	0.00	0.14	0.14	0.00	0.00	0.07	0.00	0.00	0.08	0.25	0.00
11	0.00	0.00	1.40	0.00	1.80	0.28	0.12	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.32	0.00	0.54	0.22	0.00	0.00	0.00	0.00	0.00	0.16
13	0.00	0.00	0.24	0.01	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00
14	0.00	0.03	0.09	0.00	0.30	0.00	0.16	0.05	0.00	0.00	0.00	0.00
15	0.00	0.00	0.03	0.01	0.07	0.00	0.03	0.06	0.00	0.07	0.00	0.36
16	0.00	0.02	0.32	0.12	0.02	0.00	0.03	0.11	0.00	0.00	0.00	0.02
17	0.00	0.00	0.49	0.11	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.78
18	0.00	0.00	0.72	0.87	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.14	0.09	0.08	0.00	0.06	0.11	0.00	0.00	0.00	0.00
20	0.00	0.00	0.26	0.00	0.04	0.00	0.01	0.05	0.00	0.00	0.00	0.00
21	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
22	0.00	1.10	0.51	0.54	0.23	0.00	0.05	0.00	0.00	0.00	0.01	0.24
23	0.03	0.57	1.29	0.29	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.01
24	0.01	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.37	0.01	0.06	0.00	0.00	0.21	0.00	0.20	0.00	0.00	0.00	0.00
26	0.16	1.01	0.32	0.00	0.00	0.06	0.00	0.00	0.01	0.00	0.00	0.03
27	0.75	0.74	0.01	0.00	0.00	0.13	0.02	0.00	0.00	0.00	0.00	0.00
28	0.67	0.33	0.17	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.21
29	0.04	0.01	0.78	0.00		0.00	0.00	0.00	0.00	0.00	0.07	0.00
30	0.12	0.12	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.02		0.00	0.00		0.00		0.00		0.00	0.00	
Total	3.16	5.00	7.86	3.97	3.80	1.26	2.46	0.58	0.12	0.43	0.80	2.22
Days	16	16	20	15	14	10	19	6	3	4	6	10

139 Precip Days

Total Rainfall for Water Year 2019: 31.66

Notes:

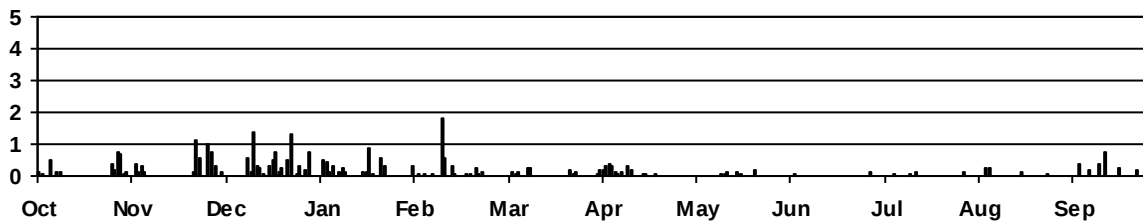
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

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Annual Hyetograph:



20u--South Bay Fire Station_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.17	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.07	0.38	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.15	0.12	0.00
03	0.00	0.18	0.00	0.54	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00
04	0.00	0.27	0.00	0.74	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00
05	0.69	0.21	0.00	0.15	0.12	0.00	0.26	0.00	0.00	0.00	0.00	0.00
06	0.01	0.00	0.00	0.45	0.00	0.13	0.44	0.00	0.01	0.00	0.00	0.00
07	0.16	0.00	0.00	0.01	0.00	0.12	0.36	0.00	0.07	0.00	0.00	0.00
08	0.20	0.00	0.00	0.21	0.08	0.11	0.23	0.00	0.00	0.00	0.00	0.01
09	0.00	0.02	0.56	0.37	0.00	0.00	0.18	0.00	0.00	0.29	0.01	0.67
10	0.01	0.00	0.16	0.19	0.00	0.00	0.07	0.00	0.00	0.34	0.23	0.00
11	0.00	0.00	1.52	0.00	1.22	0.31	0.12	0.00	0.00	0.00	0.09	0.00
12	0.00	0.00	0.43	0.00	1.35	0.19	0.00	0.00	0.00	0.00	0.00	0.32
13	0.00	0.00	0.28	0.01	0.04	0.00	0.36	0.00	0.00	0.00	0.00	0.01
14	0.00	0.03	0.06	0.00	0.27	0.00	0.11	0.07	0.00	0.00	0.00	0.03
15	0.00	0.00	0.06	0.01	0.09	0.01	0.04	0.09	0.00	0.05	0.00	0.51
16	0.00	0.00	0.43	0.15	0.07	0.00	0.03	0.10	0.00	0.00	0.00	0.10
17	0.00	0.00	0.83	0.28	0.00	0.00	0.00	0.04	0.00	0.07	0.00	0.57
18	0.00	0.00	0.73	1.02	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.01
19	0.00	0.01	0.08	0.24	0.10	0.00	0.05	0.10	0.00	0.00	0.00	0.00
20	0.01	0.00	0.27	0.00	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00
21	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00
22	0.01	0.85	0.63	0.62	0.23	0.01	0.06	0.00	0.00	0.00	0.01	0.22
23	0.04	0.68	1.18	0.20	0.05	0.01	0.10	0.00	0.00	0.00	0.00	0.01
24	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.44	0.01	0.03	0.00	0.00	0.25	0.00	0.22	0.02	0.00	0.00	0.00
26	0.19	1.26	0.29	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05
27	0.94	0.73	0.00	0.00	0.00	0.10	0.00	0.00	0.02	0.01	0.00	0.00
28	0.62	0.38	0.19	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.39
29	0.04	0.00	0.69	0.00		0.00	0.00	0.00	0.00	0.00	0.19	0.00
30	0.15	0.23	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.07		0.01	0.00		0.00		0.00		0.00	0.00	
Total	3.82	5.39	8.43	5.19	4.29	1.28	2.65	0.64	0.12	0.91	0.81	2.90
Days	17	15	19	16	16	12	18	8	4	6	7	13

151 Precip Days

Total Rainfall for Water Year 2019: 36.43

Notes:

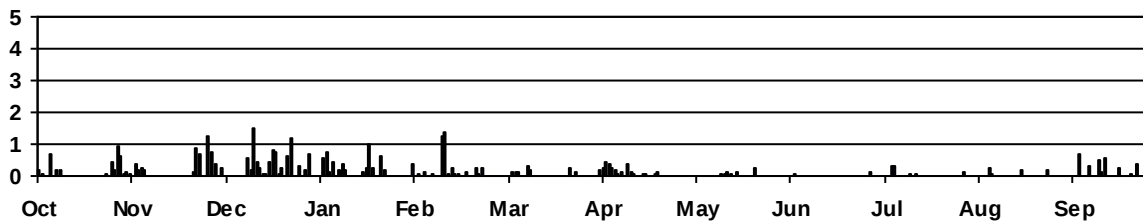
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

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Annual Hyetograph:



23u--Percival Creek, Bldg 4_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.17	0.02	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.00
03	0.00	0.27	0.00	0.86	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00
04	0.00	0.50	0.00	0.90	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
05	0.87	0.11	0.00	0.19	0.19	0.00	0.27	0.00	0.00	0.00	0.00	0.00
06	0.00	0.00	0.00	0.43	0.00	0.10	0.48	0.00	0.05	0.00	0.00	0.00
07	0.21	0.00	0.00	0.00	0.00	0.15	0.37	0.00	0.07	0.00	0.00	0.00
08	0.21	0.00	0.00	0.18	0.01	0.05	0.13	0.00	0.00	0.00	0.00	0.05
09	0.00	0.01	0.63	0.38	0.00	0.00	0.19	0.00	0.00	0.33	0.02	0.89
10	0.00	0.00	0.11	0.22	0.04	0.00	0.09	0.00	0.00	0.28	0.09	0.00
11	0.00	0.00	2.05	0.00	1.31	0.42	0.07	0.00	0.00	0.02	0.02	0.00
12	0.00	0.00	0.52	0.00	1.01	0.20	0.00	0.00	0.00	0.00	0.00	0.07
13	0.00	0.00	0.48	0.01	0.02	0.01	0.41	0.00	0.00	0.00	0.00	0.00
14	0.00	0.12	0.11	0.00	0.30	0.00	0.07	0.09	0.00	0.00	0.00	0.01
15	0.00	0.00	0.05	0.00	0.10	0.00	0.03	0.10	0.00	0.11	0.00	0.44
16	0.00	0.02	0.45	0.20	0.06	0.00	0.01	0.08	0.00	0.09	0.00	0.00
17	0.00	0.00	0.92	0.27	0.00	0.00	0.01	0.01	0.00	0.13	0.00	0.65
18	0.00	0.00	0.98	1.18	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01
19	0.00	0.00	0.14	0.12	0.08	0.00	0.05	0.16	0.00	0.00	0.00	0.00
20	0.00	0.00	0.27	0.00	0.02	0.00	0.01	0.02	0.00	0.00	0.00	0.00
21	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00
22	0.00	1.05	0.69	1.16	0.32	0.04	0.02	0.00	0.00	0.00	0.01	0.17
23	0.05	0.74	1.32	0.15	0.07	0.02	0.01	0.00	0.00	0.00	0.00	0.02
24	0.02	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.55	0.02	0.02	0.00	0.01	0.30	0.00	0.25	0.00	0.00	0.00	0.00
26	0.35	1.50	0.36	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02
27	1.04	0.97	0.00	0.00	0.00	0.12	0.01	0.00	0.00	0.00	0.00	0.00
28	0.68	0.42	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
29	0.05	0.00	1.14	0.00		0.00	0.00	0.00	0.00	0.00	0.26	0.00
30	0.12	0.23	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.12		0.00	0.00		0.00		0.00		0.00	0.00	
Total	4.50	6.74	10.63	6.25	4.23	1.42	2.37	0.71	0.13	1.14	0.75	2.50
Days	14	16	19	14	17	11	20	7	3	7	7	11

146 Precip Days

Total Rainfall for Water Year 2019: 41.37

Notes:

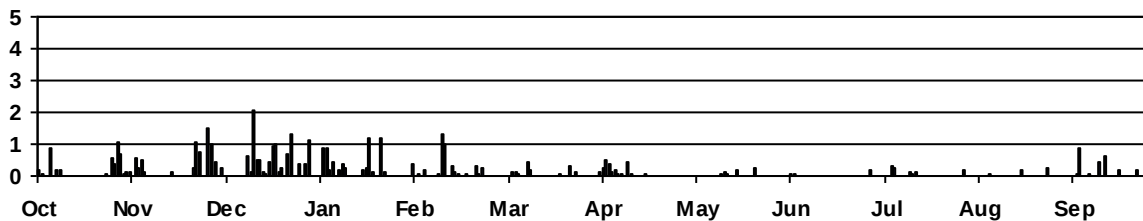
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

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Annual Hyetograph:



24u--McLane FS Wx

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.24	0.08	0.01	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.11	0.56	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.07	0.23	0.00
03	0.00	0.27	0.00	1.06	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00
04	0.00	0.57	0.00	0.86	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
05	1.13	0.10	0.00	0.27	0.18	0.00	0.37	0.00	0.00	0.00	0.00	0.00
06	0.01	0.00	0.01	0.77	0.06	0.10	0.47	0.00	0.06	0.00	0.00	0.00
07	0.24	0.00	0.00	0.01	0.00	0.19	0.40	0.00	0.07	0.00	0.00	0.00
08	0.13	0.00	0.00	0.26	0.00	0.06	0.13	0.00	0.00	0.00	0.00	0.08
09	0.01	0.02	0.71	0.57	0.00	0.00	0.16	0.00	0.00	0.30	0.06	0.86
10	0.00	0.00	0.18	0.39	0.01	0.00	0.10	0.00	0.00	0.28	0.16	0.00
11	0.00	0.00	2.47	0.00	1.82	0.44	0.10	0.00	0.00	0.00	0.09	0.00
12	0.00	0.00	0.75	0.00	0.87	0.19	0.00	0.00	0.00	0.00	0.00	0.18
13	0.00	0.00	0.80	0.01	0.03	0.00	0.43	0.00	0.00	0.00	0.00	0.00
14	0.00	0.09	0.18	0.00	0.30	0.00	0.06	0.23	0.00	0.00	0.00	0.11
15	0.00	0.00	0.05	0.00	0.12	0.00	0.03	0.12	0.00	0.05	0.00	0.59
16	0.00	0.02	0.64	0.22	0.08	0.00	0.04	0.13	0.00	0.00	0.00	0.05
17	0.00	0.00	1.38	0.64	0.00	0.00	0.00	0.02	0.00	0.21	0.00	0.85
18	0.00	0.00	1.33	1.29	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00
19	0.00	0.00	0.12	0.22	0.08	0.00	0.09	0.13	0.00	0.00	0.00	0.00
20	0.00	0.00	0.31	0.00	0.03	0.00	0.01	0.03	0.00	0.00	0.00	0.00
21	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00
22	0.01	0.97	0.81	1.25	0.31	0.08	0.03	0.00	0.00	0.00	0.00	0.23
23	0.05	0.72	1.36	0.11	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.03
24	0.03	0.00	0.01	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.72	0.01	0.03	0.00	0.00	0.32	0.00	0.34	0.00	0.00	0.00	0.00
26	0.33	1.51	0.43	0.00	0.00	0.01	0.00	0.00	0.27	0.00	0.00	0.07
27	1.40	1.20	0.00	0.00	0.00	0.11	0.01	0.00	0.01	0.00	0.00	0.01
28	0.42	0.38	0.26	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.12
29	0.03	0.00	1.05	0.00		0.00	0.00	0.00	0.00	0.00	0.14	0.00
30	0.13	0.43	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.16		0.00	0.01		0.00		0.00		0.00	0.00	
Total	5.15	7.21	12.89	7.94	4.66	1.53	2.58	1.01	0.41	0.91	0.90	3.18
Days	17	16	21	16	17	11	18	8	4	5	6	12

151 Precip Days

Total Rainfall for Water Year 2019: 48.37

Notes:

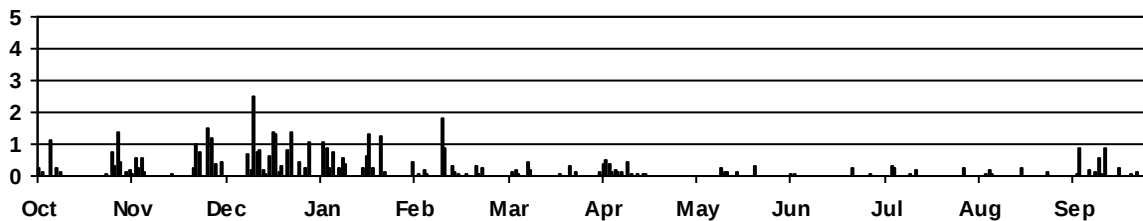
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



27u--Boston Harbor_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.37	0.02	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.11	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.22	0.00
03	0.00	0.23	0.00	0.74	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00
04	0.00	0.40	0.00	0.50	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00
05	0.75	0.03	0.00	0.21	0.09	0.00	0.26	0.00	0.00	0.00	0.00	0.00
06	0.00	0.01	0.00	0.61	0.00	0.13	0.39	0.00	0.00	0.00	0.00	0.00
07	0.21	0.00	0.00	0.01	0.00	0.15	0.31	0.00	0.04	0.00	0.00	0.00
08	0.16	0.00	0.02	0.22	0.00	0.07	0.15	0.00	0.00	0.00	0.00	0.28
09	0.00	0.03	0.58	0.50	0.00	0.00	0.17	0.00	0.00	0.00	0.02	0.67
10	0.00	0.00	0.21	0.25	0.00	0.00	0.13	0.00	0.00	0.20	0.20	0.00
11	0.00	0.00	1.67	0.00	0.49	0.39	0.11	0.00	0.00	0.00	0.02	0.00
12	0.00	0.00	0.33	0.00	1.39	0.23	0.00	0.00	0.00	0.00	0.00	0.08
13	0.00	0.00	0.20	0.01	0.06	0.00	0.35	0.00	0.00	0.00	0.00	0.01
14	0.00	0.05	0.04	0.00	0.32	0.00	0.06	0.23	0.00	0.00	0.00	0.24
15	0.00	0.00	0.03	0.00	0.08	0.00	0.03	0.10	0.00	0.04	0.00	0.44
16	0.00	0.02	0.64	0.15	0.09	0.00	0.20	0.12	0.00	0.00	0.00	0.09
17	0.00	0.00	0.99	0.29	0.00	0.00	0.01	0.00	0.00	0.32	0.00	0.49
18	0.00	0.00	0.81	1.07	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.04
19	0.00	0.00	0.05	0.17	0.09	0.00	0.22	0.10	0.00	0.00	0.00	0.00
20	0.00	0.00	0.29	0.00	0.07	0.00	0.02	0.04	0.00	0.00	0.00	0.00
21	0.00	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00
22	0.00	0.99	0.72	0.78	0.22	0.01	0.10	0.00	0.00	0.00	0.07	0.33
23	0.04	0.65	0.89	0.15	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.02
24	0.01	0.00	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.71	0.03	0.01	0.00	0.00	0.33	0.00	0.20	0.04	0.00	0.00	0.00
26	0.14	0.96	0.19	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.08
27	1.12	1.06	0.01	0.00	0.00	0.13	0.03	0.00	0.70	0.02	0.00	0.01
28	0.54	0.36	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.35
29	0.07	0.00	0.72	0.00		0.00	0.00	0.00	0.00	0.00	0.07	0.00
30	0.17	0.24	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.07		0.00	0.00		0.00		0.00		0.00	0.00	
Total	4.47	5.76	8.63	5.68	3.62	1.48	2.79	0.79	0.79	0.77	0.92	3.13
Days	14	17	21	17	14	11	21	6	4	5	7	14

151 Precip Days

Total Rainfall for Water Year 2019: 38.83

Notes:

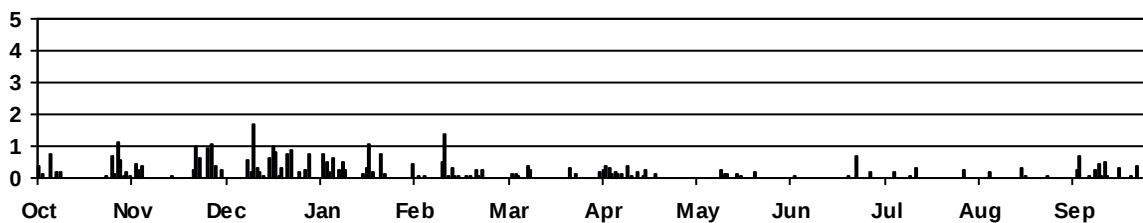
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



33x--Griffin FS 13-2

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.19	0.03	0.01	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.11	0.54	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.12	0.50	0.00
03	0.00	0.22	0.00	0.78	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04	0.00	0.38	0.00	0.27	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
05	0.80	0.06	0.00	0.25	0.06	0.00	0.28	0.00	0.00	0.00	0.00	0.00
06	0.00	0.01	0.00	0.74	0.00	0.10	0.54	0.02	0.02	0.00	0.00	0.00
07	0.22	0.01	0.00	0.01	0.00	0.12	0.32	0.00	0.03	0.00	0.00	0.00
08	0.11	0.00	0.03	0.27	0.00	0.08	0.26	0.00	0.00	0.00	0.00	0.07
09	0.00	0.02	0.60	0.37	0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.72
10	0.01	0.00	0.20	0.18	0.00	0.00	0.13	0.00	0.00	0.23	0.24	0.00
11	0.00	0.00	1.65	0.00	0.00	0.45	0.14	0.00	0.00	0.01	0.00	0.00
12	0.00	0.00	0.30	0.00	1.34	0.19	0.01	0.00	0.00	0.00	0.00	0.22
13	0.00	0.01	0.40	0.00	0.05	0.00	0.38	0.00	0.00	0.00	0.00	0.06
14	0.00	0.09	0.09	0.00	0.31	0.00	0.05	0.15	0.00	0.00	0.00	0.33
15	0.00	0.00	0.07	0.00	0.06	0.00	0.03	0.10	0.00	0.04	0.00	0.41
16	0.00	0.02	0.62	0.16	0.09	0.00	0.12	0.11	0.00	0.00	0.00	0.04
17	0.00	0.00	0.95	0.26	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.42
18	0.00	0.00	0.82	1.14	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.01
19	0.00	0.00	0.06	0.35	0.09	0.00	0.29	0.09	0.00	0.00	0.00	0.00
20	0.00	0.00	0.38	0.00	0.03	0.00	0.04	0.05	0.00	0.00	0.00	0.01
21	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00
22	0.00	1.01	0.65	1.09	0.24	0.01	0.07	0.00	0.00	0.00	0.01	0.40
23	0.03	0.62	1.02	0.16	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.05
24	0.01	0.00	0.00	0.05	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	1.08	0.02	0.02	0.00	0.00	0.31	0.00	0.17	0.00	0.00	0.00	0.00
26	0.17	0.74	0.12	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.08
27	1.26	1.11	0.01	0.00	0.00	0.10	0.05	0.00	0.10	0.02	0.00	0.00
28	0.56	0.26	0.18	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.08
29	0.08	0.00	0.72	0.00		0.00	0.00	0.00	0.00	0.00	0.13	0.01
30	0.23	0.27	0.00	0.01		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.08		0.00	0.00		0.00		0.00		0.00	0.00	
Total	4.94	5.68	8.90	6.09	3.04	1.38	3.00	0.70	0.22	0.81	1.37	2.91
Days	15	19	21	16	13	10	19	8	5	6	6	15

153 Precip Days

Total Rainfall for Water Year 2019: 39.04

Notes:

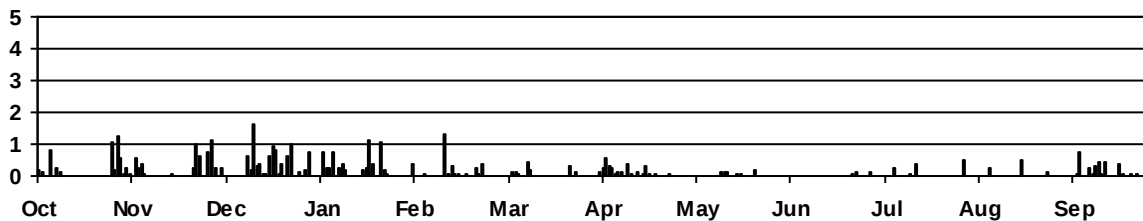
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



44u--Black Lake FD-95

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01						0.00	0.00	0.00	0.00	0.00	0.00	0.00
02						0.00	0.00	0.01	0.00	0.05	0.29	0.00
03						0.00	0.02	0.00	0.00	0.00	0.00	0.00
04						0.00	0.10	0.00	0.00	0.00	0.00	0.00
05						0.00	0.40	0.00	0.00	0.00	0.00	0.00
06						0.08	0.62	0.00	0.03	0.00	0.00	0.00
07						0.16	0.35	0.00	0.02	0.00	0.00	0.00
08						0.07	0.34	0.00	0.00	0.00	0.00	0.08
09						0.00	0.23	0.00	0.00	0.33	0.04	1.03
10						0.00	0.20	0.00	0.00	0.37	0.24	0.00
11						0.51	0.07	0.00	0.00	0.00	0.03	0.00
12						0.24	0.03	0.00	0.00	0.00	0.01	0.26
13						0.00	0.51	0.00	0.00	0.00	0.00	0.03
14						0.00	0.07	0.21	0.00	0.00	0.00	0.11
15						0.00	0.04	0.07	0.00	0.07	0.00	0.68
16						0.00	0.02	0.09	0.00	0.01	0.00	0.10
17						0.00	0.00	0.03	0.00	0.36	0.00	0.96
18						0.00	0.03	0.04	0.00	0.00	0.00	0.00
19						0.00	0.08	0.24	0.00	0.00	0.00	0.00
20						0.00	0.01	0.02	0.00	0.00	0.00	0.01
21						0.00	0.00	0.00	0.00	0.00	0.20	0.00
22						0.07	0.03	0.00	0.00	0.00	0.02	0.36
23						0.03	0.00	0.00	0.00	0.00	0.00	0.04
24						0.00	0.00	0.00	0.00	0.00	0.00	0.00
25						0.36	0.00	0.24	0.00	0.00	0.00	0.00
26						0.01	0.00	0.00	0.07	0.00	0.00	0.19
27					0.00	0.22	0.00	0.00	0.04	0.01	0.00	0.01
28					0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.11
29						0.00	0.00	0.00	0.00	0.00	0.18	0.06
30						0.00	0.00	0.00	0.00	0.00	0.00	0.00
31						0.00		0.00		0.00	0.00	
Total					0.00	1.76	3.15	0.95	0.16	1.20	1.01	4.03
Days						11	18	9	4	7	8	15

72 Precip Days

Total Rainfall for Water Year 2019: 12.26

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

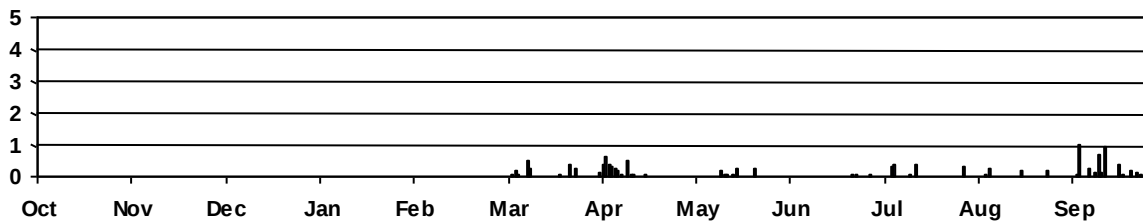
Thurston County

Notes:

Site was engaged 2/28/19.

Visit our website at

Annual Hyetograph:



45u--Littlerock_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.24	0.14	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.10	0.00
03	0.00	0.38	0.00	0.96	0.04	0.00	0.03	0.00	0.00	0.00	0.00	0.00
04	0.00	0.86	0.01	0.75	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
05	1.31	0.20	0.00	0.22	0.18	0.00	0.29	0.00	0.00	0.00	0.00	0.00
06	0.01	0.03	0.00	0.35	0.00	0.10	0.43	0.00	0.00	0.00	0.00	0.00
07	0.36	0.00	0.00	0.18	0.00	0.16	0.45	0.00	0.11	0.00	0.00	0.00
08	0.22	0.00	0.05	0.18	0.01	0.03	0.20	0.00	0.00	0.00	0.00	0.63
09	0.00	0.00	0.72	0.38	0.00	0.00	0.14	0.00	0.00	0.43	0.03	1.02
10	0.01	0.00	0.28	0.12	0.00	0.00	0.29	0.00	0.00	0.21	0.43	0.00
11	0.00	0.01	2.15	0.00	1.87	0.55	0.09	0.00	0.00	0.03	0.10	0.00
12	0.00	0.00	0.45	0.00	1.63	0.24	0.00	0.00	0.00	0.00	0.00	0.13
13	0.00	0.00	0.44	0.01	0.02	0.00	0.40	0.00	0.00	0.00	0.00	0.03
14	0.00	0.09	0.11	0.00	0.25	0.00	0.06	0.22	0.00	0.00	0.00	0.08
15	0.00	0.00	0.05	0.00	0.10	0.00	0.03	0.03	0.00	0.05	0.00	0.64
16	0.00	0.01	0.39	0.16	0.05	0.00	0.00	0.06	0.00	0.06	0.00	0.03
17	0.00	0.00	0.70	0.26	0.00	0.00	0.00	0.03	0.00	0.64	0.00	1.00
18	0.00	0.00	1.38	1.17	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00
19	0.00	0.00	0.30	0.09	0.28	0.00	0.04	0.08	0.00	0.00	0.00	0.00
20	0.00	0.01	0.16	0.01	0.02	0.00	0.05	0.01	0.00	0.00	0.00	0.00
21	0.00	0.21	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.18	0.00
22	0.00	0.81	0.49	1.59	0.31	0.03	0.02	0.00	0.00	0.00	0.00	0.41
23	0.05	0.55	0.67	0.17	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.01
24	0.03	0.00	0.01	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.71	0.06	0.01	0.00	0.00	0.42	0.00	0.05	0.02	0.00	0.00	0.00
26	0.29	0.90	0.28	0.00	0.00	0.01	0.00	0.00	0.20	0.00	0.00	0.24
27	1.02	0.60	0.00	0.00	0.00	0.13	0.00	0.00	0.13	0.05	0.00	0.13
28	1.10	0.46	0.72	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.10
29	0.18	0.01	1.42	0.01		0.00	0.00	0.00	0.00	0.00	0.07	0.18
30	0.11	0.24	0.09	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.54		0.01	0.00		0.00		0.00		0.00	0.00	
Total	6.24	6.32	10.90	6.61	5.63	1.67	2.61	0.67	0.46	1.51	0.91	4.63
Days	16	19	24	17	17	9	15	8	4	8	6	14

157 Precip Days

Total Rainfall for Water Year 2019: 48.16

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

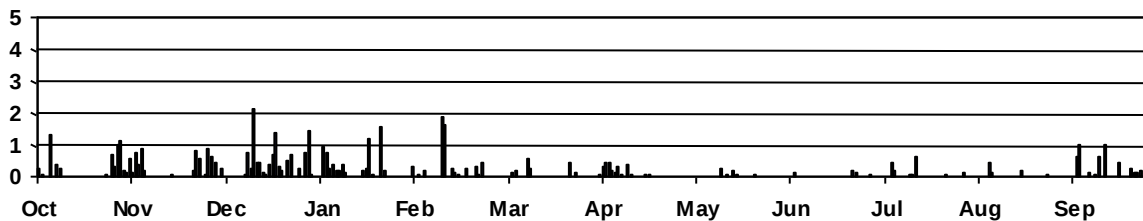
Thurston County

Notes:

Snow storm Beginning Feb 2, 2019.

Visit our website at

Annual Hyetograph:



45w--Rochester Drop Box_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.19	0.10	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.64	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.19	0.00
03	0.01	0.33	0.00	0.53	0.11	0.00	0.02	0.00	0.00	0.00	0.00	0.00
04	0.00	0.62	0.01	0.38	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
05	1.21	0.30	0.00	0.25	0.19	0.00	0.33	0.00	0.00	0.00	0.00	0.00
06	0.01	0.02	0.00	0.39	0.00	0.11	0.44	0.00	0.01	0.00	0.00	0.00
07	0.32	0.00	0.01	0.13	0.00	0.12	0.52	0.00	0.29	0.00	0.00	0.00
08	0.21	0.01	0.05	0.23	0.00	0.08	0.35	0.00	0.00	0.00	0.00	0.28
09	0.01	0.02	0.69	0.27	0.00	0.00	0.10	0.00	0.00	0.38	0.04	1.24
10	0.00	0.00	0.26	0.08	0.13	0.00	0.25	0.00	0.00	p 0.17	0.09	0.00
11	0.00	0.00	1.48	0.00	1.47	0.51	0.10	0.00	0.00	0.03	0.00	0.00
12	0.00	0.00	0.24	0.00	1.17	0.20	0.00	0.00	0.00	0.00	0.00	0.09
13	0.00	0.00	0.20	0.01	0.01	0.00	0.30	0.00	0.00	0.00	0.00	0.00
14	0.00	0.09	0.13	0.00	0.27	0.00	0.15	0.25	0.00	0.00	0.00	0.05
15	0.00	0.00	0.05	0.00	0.05	0.00	0.06	0.08	0.00	0.07	0.00	0.77
16	0.00	0.02	0.39	0.17	0.01	0.00	0.02	0.09	0.00	0.09	0.00	0.16
17	0.00	0.00	0.45	0.23	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.91
18	0.00	0.00	1.11	1.25	0.00	0.00	0.03	0.11	0.00	0.00	0.00	0.00
19	0.00	0.00	0.18	0.12	0.43	0.00	0.05	0.08	0.00	0.00	0.00	0.00
20	0.01	0.01	0.16	0.00	0.01	0.00	0.01	0.07	0.00	0.00	0.00	0.00
21	0.01	0.17	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00
22	0.01	0.55	0.40	0.86	0.32	0.01	0.09	0.00	0.00	0.00	0.00	0.36
23	0.04	0.41	0.46	0.14	0.06	0.01	0.02	0.00	0.00	0.00	0.00	0.00
24	0.05	0.01	0.01	0.01	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.50	0.08	0.01	0.00	0.00	0.24	0.00	0.06	0.04	0.00	0.00	0.00
26	0.24	0.70	0.32	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.26
27	1.00	0.60	0.01	0.00	0.00	0.14	0.00	0.00	0.17	0.02	0.00	0.06
28	0.77	0.69	0.46	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.14
29	0.27	0.01	0.90	0.00		0.00	0.00	0.00	0.00	0.00	0.23	0.25
30	0.19	0.15	0.14	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.39		0.01	0.01		0.00		0.00		0.00	0.00	

Total	5.50	5.53	8.17	5.06	5.10	1.43	2.94	0.74	0.92	1.01	0.72	4.57
Days	20	21	26	17	17	10	18	7	5	8	5	12

166 Precip Days

Total Rainfall for Water Year 2019: 41.69

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

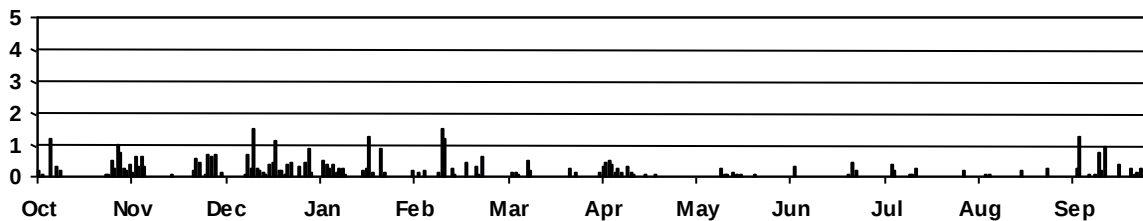
Thurston County

Notes:

Snow storm began Feb 2, 2019.

Visit our website at

Annual Hyetograph:



55u--Tenino_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.35	0.03	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.06	0.59	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.14	0.06	0.00
03	0.00	0.22	0.00	0.47	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04	0.00	0.57	0.01	0.32	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
05	0.95	0.10	0.00	0.13	0.06	0.00	0.22	0.00	0.00	0.00	0.00	0.00
06	0.02	0.05	0.00	0.39	0.00	0.12	0.34	0.00	0.02	0.00	0.00	0.00
07	0.19	0.00	0.00	0.12	0.00	0.14	0.47	0.00	0.24	0.00	0.00	0.00
08	0.22	0.00	0.02	0.15	0.01	0.05	0.15	0.00	0.00	0.00	0.00	0.45
09	0.00	0.03	0.59	0.64	0.00	0.00	0.05	0.00	0.00	0.37	0.19	1.09
10	0.00	0.00	0.25	0.20	0.00	0.00	0.15	0.00	0.00	0.21	0.30	0.00
11	0.00	0.00	1.48	0.00	2.08	0.50	0.12	0.00	0.00	0.00	0.12	0.00
12	0.00	0.01	0.27	0.00	1.56	0.31	0.00	0.00	0.00	0.00	0.00	0.15
13	0.00	0.00	0.27	0.00	0.02	0.00	0.37	0.00	0.00	0.00	0.00	0.00
14	0.00	0.08	0.10	0.00	0.26	0.00	0.09	0.14	0.00	0.00	0.00	0.00
15	0.00	0.00	0.03	0.01	0.05	0.00	0.01	0.00	0.00	0.11	0.00	1.02
16	0.00	0.01	0.40	0.10	0.11	0.00	0.02	0.05	0.00	0.01	0.00	0.10
17	0.00	0.00	0.35	0.22	0.00	0.00	0.00	0.01	0.00	0.36	0.00	1.05
18	0.00	0.00	1.03	0.95	0.00	0.00	0.02	0.14	0.00	0.00	0.00	0.19
19	0.00	0.00	0.16	0.28	0.28	0.00	0.12	0.10	0.00	0.00	0.00	0.00
20	0.00	0.00	0.49	0.00	0.01	0.00	0.01	0.04	0.00	0.00	0.00	0.00
21	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
22	0.01	0.61	0.36	0.79	0.26	0.04	0.06	0.00	0.00	0.00	0.00	0.27
23	0.05	0.61	0.53	0.43	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00
24	0.02	0.00	0.01	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.36	0.02	0.01	0.00	0.00	0.33	0.00	0.34	0.00	0.00	0.00	0.00
26	0.22	0.98	0.26	0.00	0.00	0.01	0.00	0.00	0.21	0.00	0.00	0.06
27	1.18	0.74	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.05	0.00	0.05
28	0.73	0.74	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
29	0.05	0.01	0.88	0.00		0.00	0.00	0.00	0.00	0.00	0.13	0.08
30	0.09	0.10	0.04	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.15		0.00	0.01		0.00		0.00		0.00	0.00	
Total	4.65	5.61	7.79	5.21	5.29	1.66	2.35	0.82	0.47	1.25	0.88	4.66
Days	16	19	22	16	16	10	16	7	3	7	6	12

150 Precip Days

Total Rainfall for Water Year 2019: 40.64

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

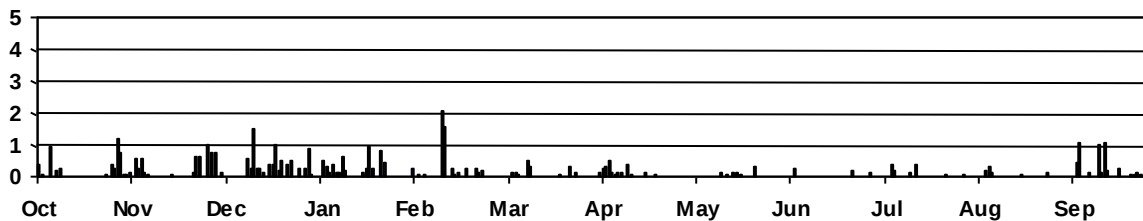
Thurston County

Notes:

Snow storm began Feb 2, 2019.

Visit our website at

Annual Hyetograph:



59u--Bloody Run USGS_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.07	0.05	0.00	0.00	0.27	0.00	0.00	0.00	0.00		0.00	
02	0.03	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
03	0.00	0.01	0.00	0.13	0.08	0.00	0.00	0.00	0.00		0.00	
04	0.00	0.18	0.00	0.09	0.05	0.00	0.04	0.00	0.00		0.00	
05	0.59	0.08	0.00	0.01	0.00	0.00	0.24	0.00	0.00		0.00	
06	0.01	0.00	0.00	0.21	0.00	0.10	0.18	0.00	0.00		0.00	
07	0.12	0.00	0.00	0.02	0.00	0.09	0.34	0.00	0.00		0.00	
08	0.24	0.00	0.00	0.04	0.10	0.01	0.12	0.00	0.00		0.00	
09	0.00	0.00	0.46	0.38	0.42	0.00	0.10	0.00	0.00			
10	0.00	0.00	0.15	0.07	0.09	0.00	0.22	0.00	0.00			
11	0.00	0.00	0.88	0.00	0.83	0.08	0.23	0.00	0.00			0.00
12	0.00	0.00	0.12	0.00	0.30	0.16	0.03	0.00				0.00
13	0.00	0.00	0.04	0.00	0.03	0.00	0.22	0.00				0.00
14	0.00	0.04	0.04	0.00	0.19	0.00	0.15	0.12				0.00
15	0.00	0.00	0.01	0.00	0.02	0.00	0.03	0.01		0.00		0.00
16	0.00	0.03	0.23	0.04	0.10	0.00	0.06	0.11		0.00		0.00
17	0.00	0.00	0.15	0.01	0.00	0.00	0.01	0.05		0.00		0.00
18	0.00	0.00	0.54	0.67	0.00	0.00	0.03	0.07		0.00		0.00
19	0.00	0.00	0.08	0.21	0.37	0.00	0.12	0.11		0.00		0.00
20	0.00	0.00	0.06	0.00	0.02	0.00	0.06	0.00		0.00		0.00
21	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.01		0.00		0.00
22	0.00	0.56	0.20	0.24	0.11	0.00	0.07	0.00		0.00		0.20
23	0.05	0.35	0.23	0.15	0.00	0.00	0.01	0.00		0.00		0.00
24	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00		0.00		0.00
25	0.14	0.00	0.00	0.00	0.00	0.17	0.00	0.14		0.00		0.00
26	0.11	0.22	0.17	0.00	0.00	0.04	0.00	0.00		0.00		0.03
27	0.50	0.50	0.00	0.00	0.00	0.08	0.00	0.00		0.00		0.02
28	0.93	0.45	0.11	0.00	0.00	0.01	0.00	0.00		0.00		0.03
29	0.05	0.00	0.47	0.00		0.00	0.00	0.00		0.00		0.05
30	0.04	0.05	0.02	0.00		0.00	0.00	0.00		0.00		0.00
31	0.14		0.00	0.00		0.00		0.00		0.00		
Total	3.02	2.82	3.96	2.27	3.02	0.74	2.26	0.62	0.00	0.00	0.00	0.33
Days	14	14	18	14	16	9	19	8				5

117 Precip Days

Total Rainfall for Water Year 2019: 19.04

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

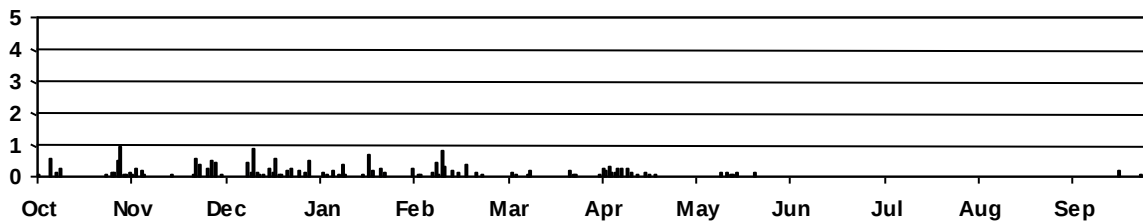
Thurston County

Notes:

Snow storm events Feb 2019. Site vandalized June to July. USGS repaired July 22, 2019.

Visit our website at

Annual Hyetograph:



60v--Bucoda

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01										0.00	0.00	0.00
02										0.18	0.03	0.00
03										0.00	0.00	0.00
04										0.00	0.00	0.00
05										0.00	0.04	0.00
06										0.00	0.00	0.00
07										0.00	0.00	0.00
08										0.00	0.00	1.37
09										0.35	0.24	0.70
10										0.35	0.10	0.00
11										0.00	0.13	0.00
12										0.00	0.00	0.15
13										0.00	0.00	0.00
14										0.00	0.00	0.01
15										0.46	0.00	0.78
16										0.00	0.00	0.04
17										0.20	0.00	0.92
18										0.00	0.00	0.12
19										0.00	0.00	0.00
20									0.00	0.00	0.00	0.00
21									0.00	0.00	0.03	0.00
22									0.00	0.00	0.00	0.28
23									0.00	0.00	0.00	0.00
24									0.00	0.00	0.00	0.00
25									0.00	0.00	0.00	0.00
26									0.25	0.00	0.00	0.11
27									0.00	0.04	0.00	0.05
28									0.00	0.00	0.00	0.14
29									0.00	0.00	0.13	0.23
30									0.00	0.00	0.00	0.00
31										0.00	0.00	
Total									0.25	1.58	0.70	4.90
Days									1	6	7	13

27 Precip Days

Total Rainfall for Water Year 2019: 7.43

Notes:

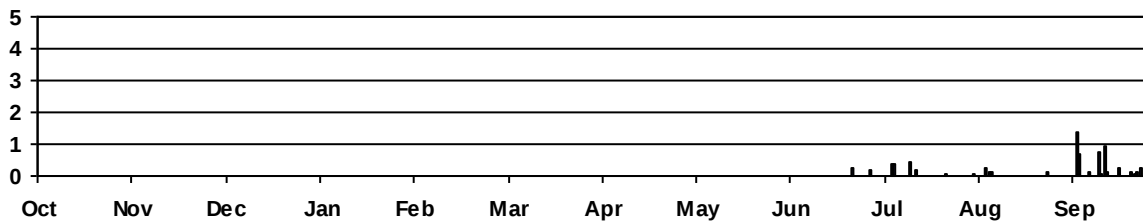
Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

Thurston County

Visit our website at

Annual Hyetograph:



65u--Grand Mound_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.08	0.05	0.00	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.01	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
03	0.00	0.24	0.00	0.43	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00
04	0.00	0.48	0.00	0.33	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.00
05	0.94	0.39	0.00	0.21	0.07	0.00	0.23	0.00	0.00	0.00	0.00	0.00
06	0.00	0.03	0.00	0.31	0.00	0.09	0.44	0.00	0.05	0.00	0.00	0.00
07	0.29	0.00	0.00	0.09	0.00	0.14	0.44	0.00	0.21	0.00	0.00	0.00
08	0.21	0.00	0.03	0.20	0.01	0.01	0.19	0.00	0.00	0.00	0.00	1.13
09	0.02	0.01	0.57	0.28	0.09	0.00	0.05	0.00	0.00	0.36	0.25	1.65
10	0.00	0.01	0.17	0.25	0.07	0.00	0.25	0.00	0.00	0.08	0.16	0.00
11	0.00	0.00	1.38	0.00	2.17	0.30	0.16	0.00	0.00	0.00	0.01	0.00
12	0.00	0.00	0.30	0.00	0.80	0.12	0.00	0.00	0.00	0.00	0.00	0.11
13	0.00	0.00	0.15	0.01	0.02	0.00	0.32	0.00	0.00	0.00	0.00	0.02
14	0.00	0.09	0.10	0.00	0.20	0.00	0.03	0.03	0.00	0.00	0.00	0.01
15	0.00	0.00	0.07	0.01	0.03	0.00	0.01	0.07	0.00	0.18	0.00	1.04
16	0.00	0.02	0.43	0.14	0.02	0.00	0.01	0.25	0.00	0.01	0.00	0.23
17	0.00	0.00	0.50	0.38	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.99
18	0.00	0.00	0.85	0.95	0.00	0.00	0.06	0.03	0.00	0.00	0.00	0.00
19	0.00	0.00	0.16	0.11	0.33	0.00	0.06	0.12	0.00	0.00	0.00	0.00
20	0.00	0.00	0.19	0.00	0.02	0.00	0.00	0.05	0.00	0.00	0.00	0.00
21	0.01	0.14	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
22	0.01	0.43	0.41	0.68	0.33	0.04	0.09	0.00	0.00	0.00	0.00	0.28
23	0.02	0.55	0.43	0.12	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
24	0.01	0.01	0.01	0.01	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.27	0.05	0.00	0.00	0.00	0.16	0.00	0.07	0.04	0.00	0.00	0.00
26	0.12	0.73	0.22	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.10
27	0.87	0.77	0.00	0.00	0.00	0.11	0.00	0.00	0.02	0.02	0.00	0.02
28	0.76	0.72	0.36	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.13
29	0.24	0.00	0.87	0.00		0.00	0.00	0.00	0.00	0.00	0.19	0.30
30	0.14	0.12	0.16	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.23		0.00	0.00		0.00		0.00		0.00	0.00	
Total	4.23	5.35	7.39	4.53	4.73	0.98	2.43	0.62	0.40	0.68	0.82	6.01
Days	17	19	21	19	19	9	16	7	5	6	6	13

157 Precip Days

Total Rainfall for Water Year 2019: 38.17

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

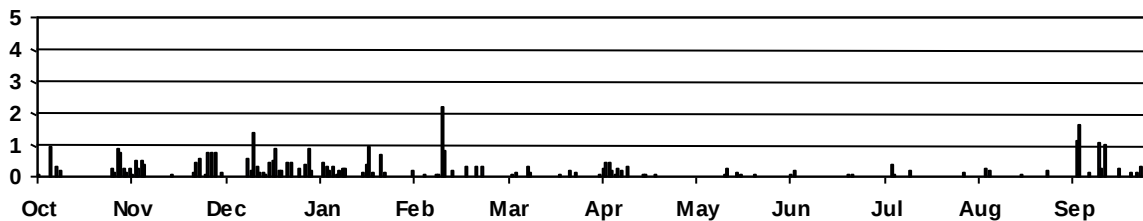
Thurston County

Notes:

Snow storm events Feb 2019. U30 logger channels for Wind and Air Temp failed. Replace all instrument on 03/12/19 with CSI.

Visit our website at

Annual Hyetograph:



69u--Summit Lake_Rain

Water Year: 2019

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.26	0.28	0.01	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02	0.13	0.84	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.37	0.00
03	0.00	0.50	0.00	1.15	0.01	0.00	0.06	0.00	0.00	0.01	0.00	0.00
04	0.00	1.14	0.00	0.39	0.06	0.00	0.08	0.00	0.00	0.00	0.00	0.00
05	1.13	0.29	0.01	0.50	0.24	0.00	0.43	0.00	0.01	0.00	0.00	0.00
06	0.01	0.00	0.00	0.97	0.00	0.04	0.91	0.00	0.17	0.00	0.00	0.00
07	0.35	0.00	0.01	0.07	0.00	0.24	0.17	0.00	0.41	0.00	0.00	0.00
08	0.11	0.00	0.06	0.31	0.26	0.14	0.24	0.00	0.00	0.00	0.00	0.40
09	0.01	0.01	0.68	0.51	0.20	0.00	0.14	0.00	0.00	0.26	0.01	0.16
10	0.00	0.00	0.16	0.28	0.16	0.00	0.41	0.00	0.00	0.19	0.10	0.00
11	0.00	0.00	2.07	0.00	0.04	0.54	0.21	0.00	0.00	0.00	0.02	0.00
12	0.00	0.00	0.46	0.01	1.26	0.18	0.00	0.00	0.00	0.00	0.01	0.42
13	0.00	0.01	0.44	0.00	0.29	0.00	0.63	0.00	0.00	0.00	0.00	0.03
14	0.00	0.11	0.25	0.01	0.49	0.00	0.29	0.29	0.00	0.00	0.00	0.11
15	0.00	0.00	0.13	0.00	0.28	0.00	0.08	0.13	0.00	0.09	0.00	0.49
16	0.00	0.03	0.91	0.31	0.03	0.00	0.19	0.49	0.00	0.01	0.00	0.05
17	0.00	0.01	1.55	0.35	0.01	0.00	0.12	0.11	0.00	0.50	0.00	0.80
18	0.00	0.00	1.38	1.48	0.00	0.00	0.08	0.03	0.00	0.00	0.00	0.01
19	0.00	0.00	0.08	0.28	0.28	0.00	0.05	0.22	0.00	0.00	0.00	0.00
20	0.00	0.00	0.58	0.00	0.06	0.00	0.08	0.03	0.00	0.00	0.00	0.00
21	0.00	0.56	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.60	0.00
22	0.00	1.36	1.24	1.53	0.44	0.11	0.06	0.00	0.00	0.00	0.01	0.30
23	0.00	0.74	1.10	0.50	0.08	0.03	0.07	0.00	0.00	0.00	0.00	0.03
24	0.04	0.00	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.76	0.06	0.07	0.00	0.00	0.64	0.00	0.09	0.02	0.00	0.00	0.00
26	0.28	1.12	0.36	0.00	0.00	0.03	0.01	0.00	0.41	0.00	0.00	0.14
27	1.27	1.68	0.01	0.01	0.00	0.19	0.00	0.00	0.07	0.03	0.00	0.13
28	0.81	0.31	0.36	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03
29	0.16	0.00	1.71	0.01		0.00	0.00	0.00	0.00	0.00	0.18	0.08
30	0.22	0.66	0.07	0.00		0.00	0.00	0.00	0.00	0.00	0.01	0.00
31	0.24		0.00	0.00		0.00		0.00		0.00	0.01	

Total	5.78	9.71	13.71	8.68	5.09	2.15	4.32	1.39	1.09	1.09	1.32	3.18
Days	15	18	25	19	21	11	21	8	6	7	10	15

176 Precip Days

Total Rainfall for Water Year 2019: 57.51

Precipitation is measured with a tipping bucket rain gauge. Ice and snow accumulations in the rain gauge are not measured until they melt.

Precipitation from snow is not measured accurately

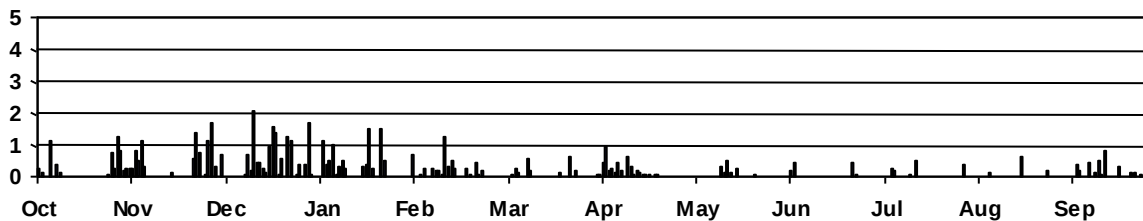
Thurston County

Notes:

Snow storm Feb 2-3 2019.

Visit our website at

Annual Hyetograph:



Appendix B – Air Temperature Data

01u--Nisqually Rvr nr National USGS

Water Year: 2019 Air Temperatures in degrees Celsius

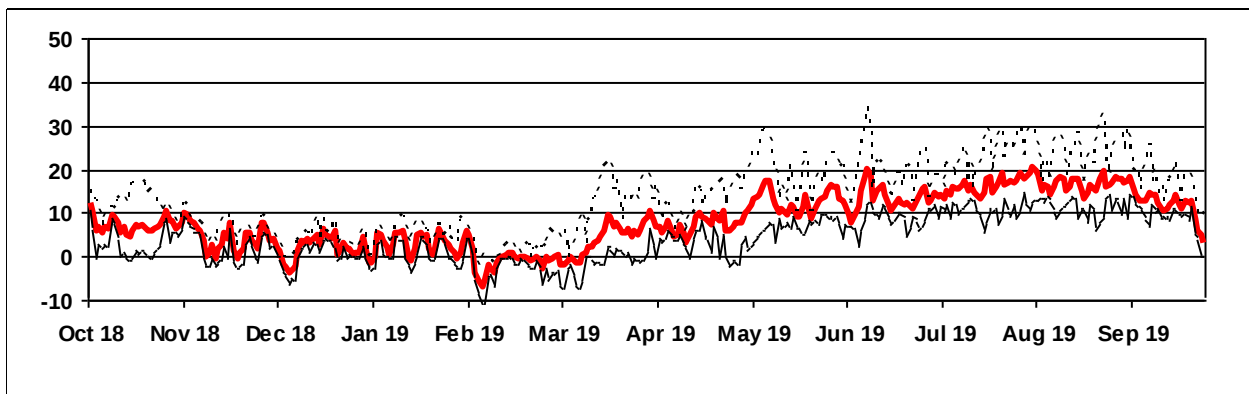
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	12	10	1.9	-1.46	6.2	-0.18	9.3	8.0	16	16	19	18
02	11	9.6	1.5	-0.06	5.1	-0.06	11	8.1	16	12	18	18
03	6.0	8.1	-1.70	5.4	1.7	0.68	8.3	9.9	13	13	18	18
04	6.9	7.9	-2.27	4.9	-3.43	-1.97	6.8	11	13	15	19	17
05	5.4	6.7	-3.79	3.7	-5.51	-1.53	6.9	12	12	14	21	18
06	7.0	6.0	-3.28	2.4	-6.90	-0.88	5.5	13	9.5	14	20	18
07	6.6	3.9	-2.02	0.50	-5.23	-0.02	7.0	14	7.6	13	19	16
08	9.9	0.06	1.3	2.7	-1.93	-1.03	8.2	14	9.8	15	15	14
09	9.4	0.82	3.8	5.8	-2.55	-1.41	5.8	17	12	14	17	13
10	8.1	2.7	3.4	5.7	-3.64	-1.21	4.9	17	15	16	16	13
11	5.7	-0.16	4.1	5.9	-1.10	0.37	5.3	17	18	16	14	13
12	6.8	2.0	3.2	4.0	-0.05	0.78	7.4	14	20	15	16	15
13	5.3	2.9	4.0	-0.37	0.30	2.2	5.4	12	19	17	17	14
14	4.6	5.8	5.3	-1.03	0.74	2.5	3.4	10	13	18	19	14
15	6.2	4.4	2.8	1.9	0.99	3.5	5.1	11	15	15	18	12
16	7.5	7.8	6.7	5.0	0.79	3.9	6.8	10	16	17	15	11
17	6.9	1.6	5.1	5.6	-0.15	4.8	9.2	9.5	16	15	16	11
18	7.2	-0.45	4.8	4.6	-0.28	6.0	10	12	14	14	18	11
19	7.0	0.93	4.4	5.0	0.01	9.6	9.4	11	12	14	18	12
20	6.2	1.9	5.8	1.7	0.24	9.2	8.6	9.2	11	15	18	13
21	5.9	5.6	0.63	0.63	-0.40	7.1	8.4	9.0	12	18	15	14
22	6.7	5.6	1.9	1.9	-1.05	8.0	7.6	11	14	18	13	12
23	6.9	3.7	3.4	6.4	-0.30	6.6	10	14	13	15	15	11
24	7.2	2.7	1.8	4.7	0.09	5.4	8.8	11	12	16	17	13
25	9.1	2.0	1.9	3.8	-0.94	5.5	8.2	8.8	12	17	16	13
26	11	7.9	0.76	2.8	-2.47	6.4	10	11	12	19	15	13
27	8.3	8.0	1.1	2.0	-0.13	4.6	6.1	13	11	17	18	8.8
28	8.3	5.6	1.2	0.92	-0.90	6.1	6.0	13	13	17	20	6.1
29	6.5	4.0	4.7	-0.61		5.2	6.9	14	14	17	16	5.2
30	6.8	4.0	2.4	0.91		6.1	7.9	15	16	17	16	3.4
31	7.8		-1.31	3.1		8.3		16		17	17	
Avg Temp	7.4	4.4	2.0	2.9	-0.74	3.4	7.5	12	14	16	17	13
Max Temp	17	12	9.7	9.5	7.9	22	20	29	34	30	33	30
Max Mean Daily	12	10	6.7	6.4	6.2	9.6	11	17	20	19	21	18

Avg Air Temp for Water Year 2019: 8.2

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



05u--Yelm WRF_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

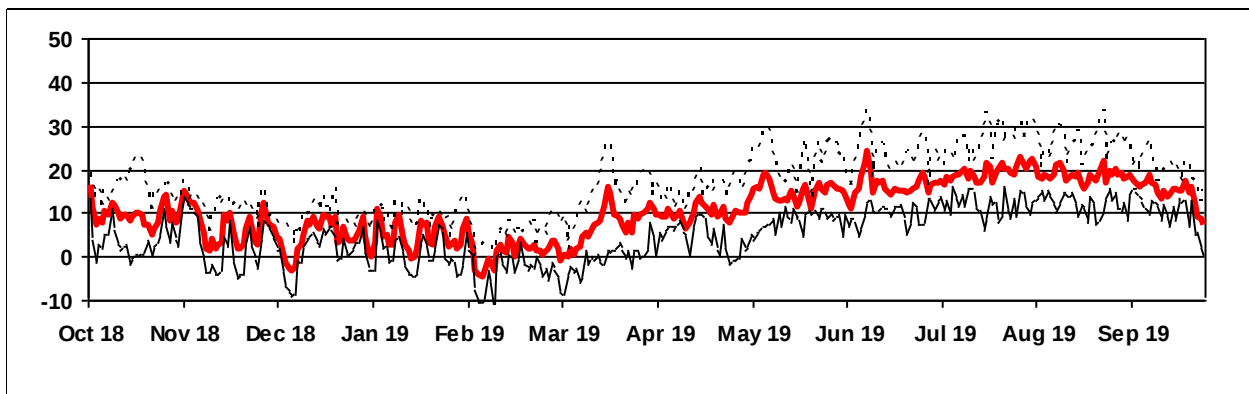
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	15	4.3	0.27	8.8	3.8	11	10	17	18	23	20
02	12	14	4.3	3.5	5.7	3.7	13	10	16	15	21	19
03	7.2	12	0.69	11	2.8	1.8	11	10	16	17	20	19
04	8.6	12	-1.09	8.7	-3.20	-0.62	9.7	12	15	17	22	18
05	7.8	11	-2.70	4.8	-4.26	0.44	9.7	14	14	17	22	18
06	10	8.9	-2.97	5.1	-4.30	-0.15	9.2	16	12	17	20	19
07	9.6	5.6	-2.35	2.8	-3.21	2.1	9.1	16	11	16	19	17
08	12	2.0	2.0	3.0	-0.16	0.73	11	16	15	18	18	17
09	12	1.4	2.7	7.6	-1.41	1.7	9.8	19	16	18	19	16
10	10	4.3	5.3	9.7	-3.28	2.3	8.8	19	18	19	18	17
11	8.7	1.7	8.3	4.8	1.2	4.4	9.7	18	22	19	18	17
12	9.6	2.7	7.2	2.7	2.9	5.5	11	15	24	19	19	19
13	9.7	3.3	9.3	1.2	1.5	4.7	8.0	13	20	20	21	17
14	8.2	9.9	7.2	-0.34	1.0	6.4	6.5	13	15	20	22	17
15	9.0	8.5	6.6	-0.02	4.9	7.6	7.7	13	17	18	20	15
16	10	10	9.5	2.0	3.2	8.0	10	14	17	20	18	14
17	10	5.5	9.4	8.2	0.27	8.5	12	13	17	18	18	15
18	9.7	1.8	9.1	7.5	3.0	12	14	15	16	17	19	14
19	7.6	1.8	7.6	7.7	4.0	16	12	14	15	17	19	14
20	7.4	2.9	9.3	3.4	3.0	15	11	12	14	18	19	16
21	5.3	6.5	3.1	2.7	2.1	9.7	11	13	16	22	17	16
22	6.3	9.2	3.6	6.9	2.0	9.8	9.7	16	15	21	16	15
23	8.0	7.1	7.1	9.1	3.0	8.6	12	17	15	17	17	15
24	11	3.5	4.4	6.9	1.5	7.3	9.1	13	15	19	19	18
25	14	2.8	3.7	5.1	1.4	5.7	9.7	11	15	20	18	15
26	14	11	3.9	2.4	0.76	7.9	11	15	15	22	17	16
27	8.5	12	4.2	3.0	1.7	5.7	8.6	17	16	20	20	12
28	10	8.5	5.8	3.6	1.7	9.6	8.1	15	16	20	22	9.4
29	8.1	7.6	9.3	1.8		8.8	9.6	15	17	19	17	8.6
30	8.5	7.1	4.7	3.0		9.5	11	16	19	19	20	7.2
31	13		0.37	6.4		10		17		20	19	
Avg Temp	9.8	7.0	4.6	4.7	1.3	6.3	10	14	16	19	19	16
Max Temp	24	18	16	15	12	27	21	30	34	33	34	29
Max Mean Daily	16	15	9.5	11	8.8	16	14	19	24	22	23	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



10u--Meridian Rd_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

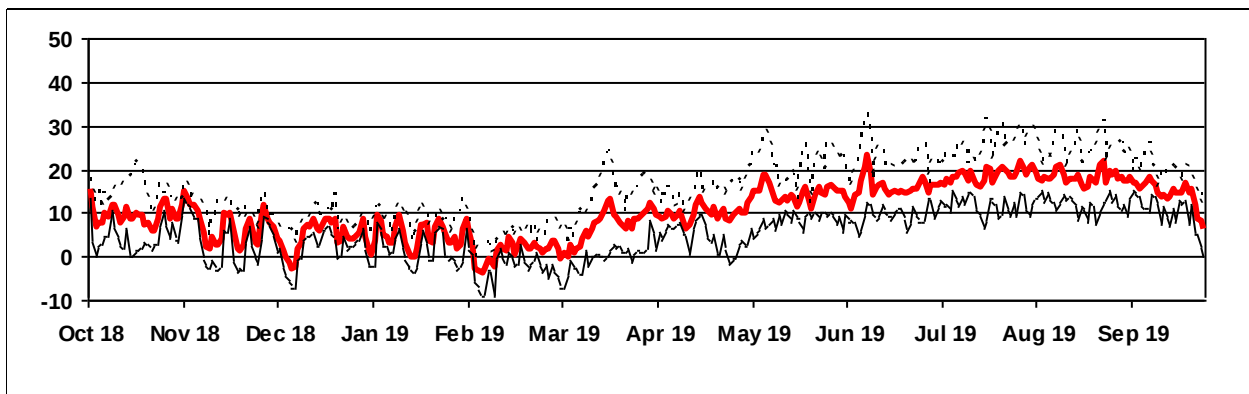
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	15	4.0	0.50	8.7	3.7	11	11	16	18	22	20
02	12	13	4.0	3.7	6.0	3.6	13	10	15	15	20	18
03	7.2	12	1.5	9.9	2.5	1.7	11	10	15	17	19	18
04	8.0	12	-0.05	8.3	-2.63	-0.45	9.7	12	15	16	21	18
05	7.8	10	-1.44	5.1	-3.26	0.95	9.4	14	14	17	21	18
06	10	8.9	-2.49	4.8	-3.70	0.11	8.8	15	12	17	19	18
07	9.4	5.5	-2.06	3.1	-2.90	2.6	9.0	15	11	16	18	17
08	12	2.3	2.0	3.3	-0.34	0.80	11	15	14	18	18	17
09	12	1.7	3.3	7.0	-1.04	1.9	9.9	19	15	17	18	16
10	9.5	4.6	6.3	9.8	-2.35	2.3	8.7	19	17	18	18	16
11	8.0	2.9	7.5	6.0	1.4	4.1	9.6	17	21	18	18	17
12	9.1	3.0	6.8	3.5	3.0	5.9	11	14	23	19	19	18
13	12	4.2	8.7	1.2	2.0	4.8	7.7	13	19	20	21	17
14	8.8	10.0	6.6	0.02	1.6	6.5	6.4	13	14	19	21	17
15	8.9	9.9	6.2	-0.04	4.4	7.8	7.6	13	16	18	19	15
16	10	10	8.0	2.0	3.1	8.3	9.9	14	16	20	17	14
17	9.8	6.1	8.9	7.6	0.60	8.6	12	13	17	18	18	14
18	9.6	2.0	8.9	7.6	2.8	10	14	15	16	17	18	13
19	7.2	1.5	7.8	7.7	4.0	13	12	14	14	16	18	14
20	7.7	3.0	8.7	3.9	3.1	13	11	11	15	17	19	16
21	6.1	6.5	3.4	3.2	1.8	9.8	11	12	15	21	17	15
22	6.0	8.7	3.5	6.9	1.9	9.1	9.6	15	15	20	16	15
23	8.7	7.0	7.0	8.9	3.3	7.9	12	16	15	17	16	15
24	11	3.2	4.6	6.8	2.2	7.4	8.8	13	15	19	18	17
25	13	2.8	4.4	5.4	1.7	6.3	9.8	11	15	20	18	15
26	14	9.5	4.3	3.3	0.79	8.1	11	14	15	21	17	16
27	8.7	12	4.5	3.5	2.1	6.6	8.6	16	16	20	21	12
28	11	8.7	5.8	4.6	1.8	9.0	8.3	15	16	19	22	8.7
29	8.7	7.8	8.8	2.0		8.9	9.6	14	17	18	17	8.3
30	9.0	6.9	4.8	2.8		9.4	10	16	18	18	20	6.7
31	12		1.5	6.4		10		17		19	19	
Avg Temp	9.8	7.1	4.7	4.8	1.5	6.2	10	14	16	18	19	15
Max Temp	22	18	15	14	11	25	20	30	33	32	32	27
Max Mean Daily	16	15	8.9	9.9	8.7	13	14	19	23	21	22	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



11u--NOAA Olympia Airport

Water Year: 2019 Air Temperatures in degrees Celsius

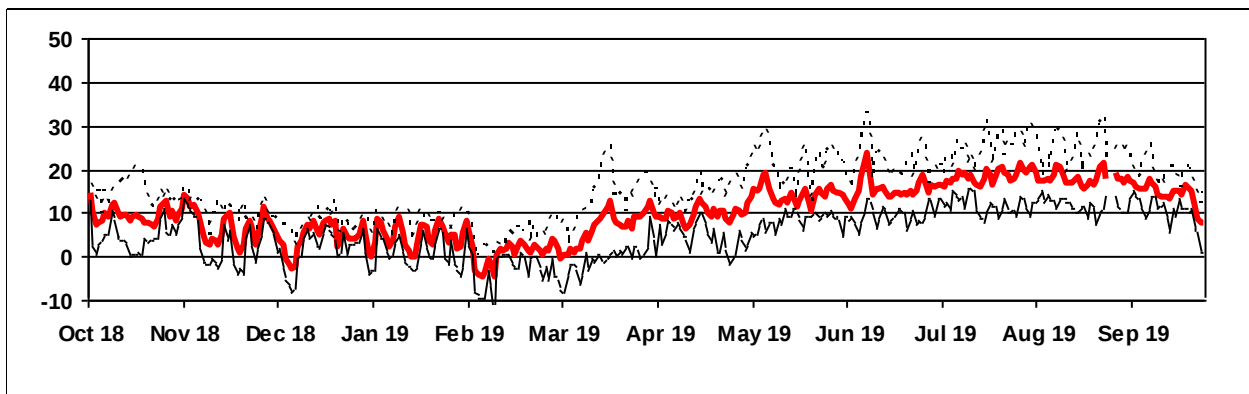
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	14	4.5	0.09	8.3	4.1	12	11	15	17	22	19
02	11	13	3.9	3.3	5.8	3.9	13	9.9	15	15	20	18
03	7.6	12	2.8	8.8	2.3	1.8	10	10	15	17	19	18
04	8.1	12	-0.28	7.7	-2.96	-0.56	9.4	13	14	16	21	17
05	8.3	10	-1.63	5.9	-4.14	0.74	9.2	14	14	17	21	18
06	10	8.3	-2.89	4.3	-4.49	0.32	8.8	16	12	17	19	17
07	9.4	4.7	-2.03	2.2	-3.45	1.8	9.0	15	11	16	17	17
08	12	3.2	2.2	3.7	-0.60	0.83	11	16	13	18	17	16
09	13	2.7	3.8	6.7	-1.52	1.9	10	19	15	17	17	16
10	10	4.4	5.8	9.2	-4.65	1.8	8.7	19	18	18	18	16
11	9.1	3.6	7.6	5.7	0.76	3.8	9.5	16	22	18	18	16
12	9.7	3.0	6.5	2.9	1.8	5.8	10	13	24	20	19	18
13	9.6	5.0	8.1	1.6	1.6	3.9	7.6	13	18	19	21	17
14	8.3	8.6	6.1	0.09	1.9	6.0	6.3	12	14	19	21	16
15	9.3	9.5	5.3	0.26	3.4	7.6	7.3	13	16	18	18	14
16	9.9	10	7.8	2.6	2.2	8.3	9.6	13	16	19	17	14
17	9.2	4.6	8.5	7.5	0.37	8.8	12	12	16	17	17	14
18	8.8	1.8	8.6	7.3	2.6	10	13	15	15	16	17	14
19	7.9	0.77	7.5	6.9	3.7	12	12	14	14	16	18	13
20	7.9	2.8	8.2	3.6	2.6	13	11	12	14	18	19	15
21	7.4	6.6	2.4	3.0	1.2	8.8	10	13	15	20	16	15
22	7.1	8.3	4.0	5.8	1.1	7.7	9.4	15	15	19	16	15
23	8.9	6.8	6.7	8.7	2.8	7.4	11	16	14	17	17	14
24	12	3.0	4.6	7.1	2.2	6.8	9.3	12	15	19	18	17
25	12	4.7	4.1	5.4	1.5	7.0	11	11	14	20	17	15
26	13	8.9	4.3	3.5	0.76	8.1	11	14	15	21	17	15
27	9.1	12	4.3	4.9	1.8	6.7	8.7	16	14	19	20	11
28	11	8.6	5.3	4.9	1.6	9.1	8.0	15	15	19	22	9.0
29	8.5	8.1	8.5	2.0		9.1	9.8	14	17	18	18	8.0
30	9.7	6.4	5.5	2.4		9.3	11	16	19	18		7.7
31	11		0.74	5.6		10		17		19		
Avg Temp	9.8	6.9	4.5	4.6	1.0	6.0	10.0	14	15	18	18	15
Max Temp	22	17	13	12	10	26	20	30	33	32	33	26
Max Mean Daily	15	14	8.6	9.2	8.3	13	13	19	24	21	22	19

Avg Air Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



11y--Deschutes Falls Park

Water Year: 2019 Air Temperatures in degrees Celsius

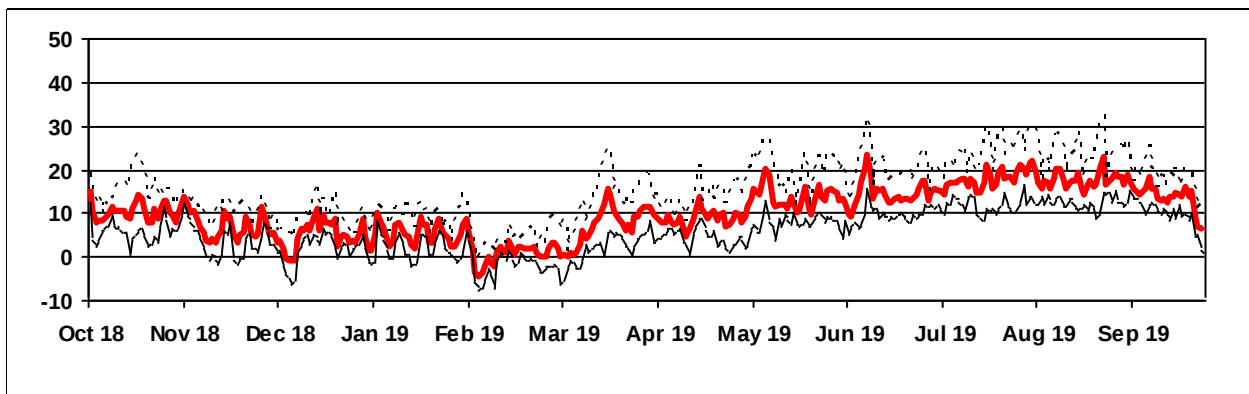
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	14	3.4	1.3	8.9	3.3	12	9.7	15	17	21	19
02	10	12	3.7	5.0	5.8	3.2	12	7.9	15	13	20	18
03	7.7	10	2.0	10 e	1.8	2.1	9.6	9.4	13	15	19	19
04	8.3	10	-0.38	7.9 e	-3.75	-0.12	9.3	12	13	16	22	17
05	8.4	8.4	-0.95	6.7	-4.61 e	0.72	8.1	13	13	15	22	19
06	8.7	7.1	-1.04	4.0 e	-3.48	-0.11	7.9	15	9.6	15	19	18
07	9.7	5.6	-1.01	2.3	-2.01	1.1	7.9	15	9.0	14	17	16
08	11	3.7	4.1	3.1 e	-0.13	0.49	9.8	14	12	17	16	15
09	11	3.1	6.3	7.6 e	-1.18	1.1	8.0	18	14	17	17	15
10	11	4.1	5.9	8.0	-2.36	3.0	7.3	20	17	17	17	15
11	11	3.1	7.4	5.8	1.1	6.1	8.0	19	20	17	16	16
12	11	4.5	6.1	5.2	2.4	4.4	9.2	13	24	18	18	19
13	9.5	5.8	8.9	4.6	1.5	4.5	6.5	12	19	18	20	16
14	9.0	11	11	2.6	1.1	6.6	4.8	12	13	18	20	16
15	11	8.8	6.1	1.9	3.8	8.1	6.5	12	16	16	18	13
16	13	9.5	9.5	4.7	2.1	8.6	8.8	12	15	18	16	13
17	14	5.1	7.8	9.1	0.59	9.9	11	11	15	17	17	14
18	13	3.5	7.9	7.3 e	2.2	12	14	14	14	15	17	12
19	11	5.1	7.3	7.5	2.5	15	11	12	12	15	17	14
20	8.0	5.4	8.7	3.5	1.8	14	9.6	10	13	17	19	14
21	7.9	9.1	2.2	3.3	2.0	10	9.0	11	13	21	16	15
22	11	7.4	4.9	6.6	1.8	9.9	10	14	14	19	14	14
23	8.7	5.2	5.2	8.6	2.4	8.5	11	16	13	16	17	14
24	11	4.8	4.6	5.8	1.0	7.7	8.5	11	14	17	17	16
25	13	5.1	3.3	5.0	-0.14	6.2	9.7	9.5	14	19	16	14
26	13	11	3.9	4.1	0.27	7.6	10	14	13	21	17	15
27	10	10	3.5	2.5	0.20	5.5	6.8	17	13	18	20	9.4
28	9.5	7.1	5.2	2.2	2.0	9.1	7.6	14	14	18	23	7.1
29	8.1	5.2	8.9	3.3		9.0	8.9	13	16	18	16	6.6
30	9.5	5.4	4.5	5.2		11	10	15	18	17	18	6.8
31	12		1.5	7.5		11		16		19	18	
Avg Temp	11	7.0	4.8	5.2	0.98	6.5	9.1	13	14	17	18	14
Max Temp	24	15	17	15	13	25	21	28	32	30	32	27
Max Mean Daily	16	14	11	10	8.9	15	14	20	24	21	23	19

Avg Air Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



11z--Rainier FS-4 Rain

Water Year: 2019 Air Temperatures in degrees Celsius

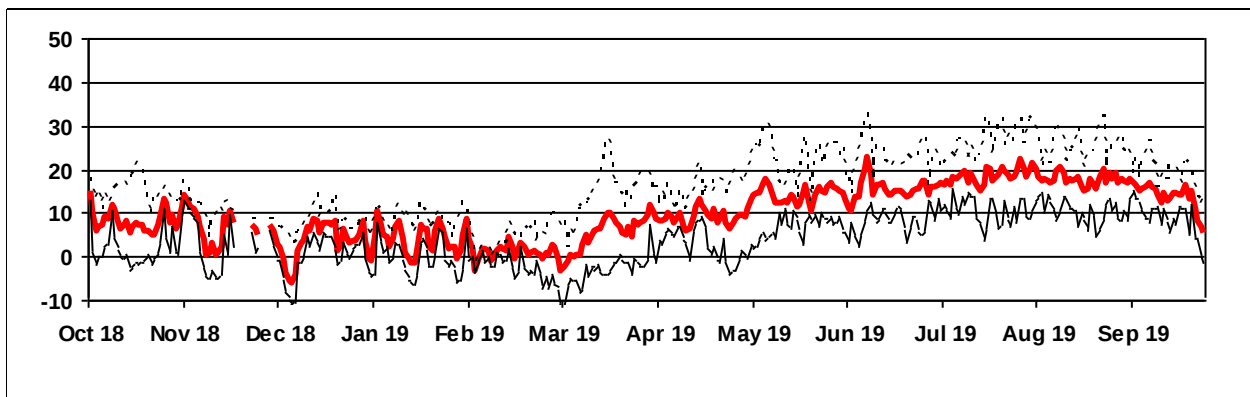
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	14	2.8	-0.85	8.7	2.7	9.7	9.8	16	17	22	19
02	10	13	2.5	5.2	4.3	2.6	12	9.9	16	14	20	17
03	6.2	11	-0.61	10	1.9	-0.57	10	9.3	15	16	19	18
04	6.9	11	-3.43	7.2	-3.32	-3.18	8.6	11	15	16	20	18
05	7.2	9.4	-5.24	5.1	-0.32	-2.09	8.5	13	13	17	21	17
06	9.2	7.0	-5.87	4.4	1.9	-0.82	8.5	14	11	17	20	18
07	8.8	4.1	-3.82	2.2	1.8	0.75	8.6	15	11	17	18	17
08	12	0.37	1.5	4.1	1.3	0.02	10	15	14	17	17	16
09	11	0.92	3.1	7.0	-0.82	0.70	9.2	17	14	17	18	15
10	7.9	3.3	3.9	8.4	0.03	0.37	7.9	18	17	18	18	16
11	6.7	0.40	7.2	4.1	1.5	2.8	9.1	17	20	18	17	16
12	7.5	0.81	5.9	1.1	2.3	4.9	10	14	23	18	18	17
13	8.1	2.5	8.6	-0.58	1.7	3.1	7.1	13	19	19	20	16
14	5.7	9.3	8.3	-1.38	1.3	5.3	5.8	12	14	20	21	16
15	6.8	7.5	5.5	-1.10	4.5	5.9	6.7	13	17	17	19	14
16	7.7	10	8.0	1.3	2.4	6.6	9.5	13	17	19	17	13
17	7.5	7.8	7.9	7.4	-0.47	6.5	11	12	17	18	18	15
18	7.2		8.0	6.7	2.0	8.9	13	14	16	16	18	13
19	5.9		7.2	6.4	3.1	10	12	14	14	15	18	14
20	6.0		8.4	2.5	2.3	10.0	11	11	14	17	18	15
21	4.9		1.6	1.5	0.49	8.9	9.7	12	15	20	16	15
22	5.2		3.1	5.9	1.1	7.9	9.0	15	15	20	15	14
23	7.3	7.5	6.3	8.6	1.7	7.0	11	16	15	17	16	14
24	9.4	6.4	4.0	6.4	1.2	5.7	7.9	13	14	18	18	16
25	13	5.2	3.2	4.7	0.57	5.0	8.9	11	14	19	17	13
26	13		3.8	2.0	-0.37	6.7	11	14	14	21	16	15
27	7.7	12	3.8	2.6	0.85	4.6	7.9	16	15	20	18	11
28	9.8		5.3	2.3	0.58	8.3	6.5	15	16	19	20	8.2
29	6.6	7.3	8.2	-0.46		7.5	7.9	15	16	18	17	7.2
30	7.4	6.0	3.6	1.5		7.6	8.9	16	18	19	19	5.6
31	12		-0.55	4.9		8.3		17		19	18	
Avg Temp	8.4	6.9	3.6	3.8	1.5	4.6	9.3	14	15	18	18	15
Max Temp	22	18	15	13	11	27	22	31	33	33	33	28
Max Mean Daily	15	14	8.6	10	8.7	10	13	18	23	21	22	19

Avg Air Temp for Water Year 2019: 9.8

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



13u--Lake Lawrence_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

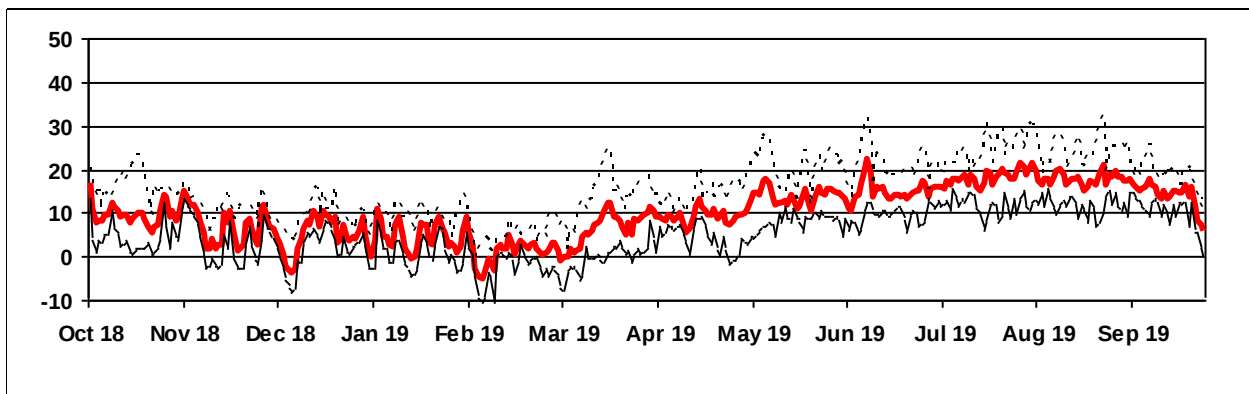
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	17	15	4.0	0.16	9.5	3.3	10	9.6	15	17	22	20
02	11	13	3.4	3.9	5.7	3.5	12	9.5	15	14	20	18
03	7.8	12	0.46	11	2.7	1.3	11	9.9	15	16	19	18
04	8.2	12	-2.07	8.6	-2.80	-0.85	9.0	11	14	16	21	18
05	8.2	10	-3.23	4.9	-4.53	0.15	9.3	13	13	16	22	18
06	9.8	8.2	-3.78	4.9	-5.00	0.02	8.7	15	11	16	20	18
07	9.7	5.5	-2.51	2.7	-3.48	2.1	8.5	15	10	16	18	17
08	12	1.9	1.8	2.5	-0.18	0.80	9.9	14	14	17	17	16
09	12	2.1	4.0	7.4	-1.38	1.5	9.1	17	14	17	18	15
10	10	4.3	6.3	9.3	-3.17	2.0	8.2	18	17	18	18	16
11	9.1	2.0	8.4	4.5	1.8	4.6	9.1	17	20	18	17	16
12	9.8	2.7	7.2	2.0	3.0	5.7	10	13	23	18	18	18
13	9.5	2.9	10	0.54	2.0	5.0	7.5	12	20	18	20	16
14	8.0	10	9.2	-0.61	1.9	6.2	5.7	12	14	19	20	16
15	8.9	7.8	6.7	-0.08	5.2	7.6	6.6	13	16	17	19	15
16	9.8	10	11	2.0	3.0	7.9	9.4	13	16	19	16	13
17	10.0	5.5	9.7	7.7	0.57	8.3	12	12	16	18	18	15
18	9.9	1.4	9.3	7.5	2.7	11	13	14	15	16	18	13
19	8.6	1.9	8.0	7.6	3.9	12	12	13	13	15	18	14
20	6.9	2.6	9.4	3.2	2.9	12	11	11	13	17	18	15
21	5.4	8.0	3.1	2.7	1.8	9.4	9.7	12	14	20	16	15
22	7.0	8.9	4.1	7.5	2.9	9.1	9.5	14	14	19	15	15
23	7.6	6.7	7.3	9.2	3.5	8.5	11	16	14	16	16	15
24	10	3.6	4.4	6.7	1.7	7.0	8.7	12	14	18	18	17
25	14	2.8	3.7	5.6	1.1	5.3	9.1	10	13	19	17	14
26	14	12	4.5	2.5	0.68	7.8	10	14	14	20	16	16
27	9.1	12	4.2	3.3	1.0	5.2	7.9	16	15	19	19	11
28	11	8.3	6.1	2.5	1.6	8.9	7.2	15	15	19	21	8.4
29	8.4	7.0	9.3	0.95		8.5	8.5	14	15	18	17	7.6
30	8.9	6.7	5.1	2.6		9.0	9.3	15	18	18	19	6.2
31	13		0.59	5.9		9.5		16		19	19	
Avg Temp	9.9	6.9	4.8	4.5	1.4	5.9	9.4	14	15	18	18	15
Max Temp	24	18	16	15	12	25	21	28	32	31	32	27
Max Mean Daily	17	15	11	11	9.5	12	13	18	23	20	22	20

Avg Air Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:16:58 AM by Nat Kale

18u--Lacey Fire Dist. 3 Fire Station_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

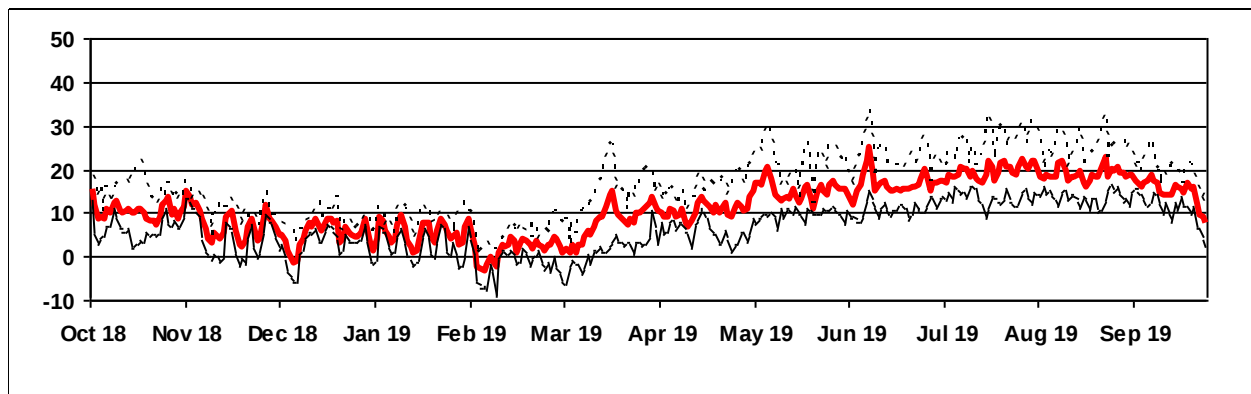
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	15	5.1	1.3	8.6	4.8	13	12	16	19	22	21
02	12	14	5.0	4.0	6.5	4.4	14	11	16	15	21	19
03	8.7	12	3.7	9.5	2.9	2.5	11	11	16	17	20	19
04	9.3	12	1.4	8.2	-2.06	0.99	11	14	16	17	22	18
05	8.6	11	-0.42	6.3	-2.70	2.0	10	15	15	17	22	19
06	11	8.6	-1.35	4.9	-2.96	1.1	9.4	17	13	18	20	19
07	10.0	6.4	-0.95	3.3	-1.95	2.8	9.4	17	12	17	18	18
08	12	4.4	3.0	4.2	-0.01	0.90	11	16	15	19	18	17
09	13	3.3	4.2	7.2	-0.98	2.7	11	20	16	18	19	16
10	11	5.4	6.0	9.9	-2.39	2.9	9.3	21	19	18	19	17
11	10	4.4	7.7	6.9	1.1	4.5	9.9	18	22	19	18	17
12	11	4.2	7.0	3.9	2.6	6.2	11	14	25	21	19	19
13	11	5.7	8.8	2.3	2.6	5.1	8.0	14	19	20	22	18
14	10	9.4	7.0	1.1	2.7	7.2	6.9	13	15	20	22	17
15	9.9	10.0	6.1	1.5	4.5	8.5	8.3	13	17	19	20	15
16	11	10	8.1	3.6	3.5	9.2	10	14	17	20	17	14
17	11	5.8	8.8	7.9	1.1	9.5	12	13	18	18	19	14
18	10	2.7	9.0	7.8	3.4	12	14	16	16	18	18	14
19	8.7	2.2	7.9	7.9	4.2	14	13	14	15	17	19	14
20	8.3	3.8	8.5	4.6	3.5	15	12	12	15	19	20	16
21	8.3	7.0	3.2	3.4	2.7	11	11	13	16	22	17	16
22	7.2	8.6	4.2	6.2	2.0	9.7	10	16	15	20	16	16
23	9.3	7.1	6.9	9.0	3.5	8.9	12	16	16	18	17	15
24	12	3.7	5.5	7.3	2.9	8.2	9.9	13	16	20	19	17
25	13	4.3	4.9	6.0	2.6	7.4	11	11	16	21	18	16
26	14	8.7	4.5	4.1	1.6	8.9	12	15	16	22	18	16
27	9.7	12	4.9	4.8	2.7	7.7	9.6	17	16	21	21	12
28	11	8.9	5.6	5.6	2.6	10	9.4	15	17	20	23	9.7
29	9.0	8.4	8.8	2.9		10	11	14	18	19	18	9.1
30	10	6.8	6.3	3.4		11	12	16	20	19	20	8.1
31	12		2.1	6.8		11		17		21	20	
Avg Temp	11	7.5	5.2	5.3	2.0	7.1	11	15	17	19	19	16
Max Temp	23	18	14	13	10	26	21	31	34	33	33	27
Max Mean Daily	16	15	9.0	9.9	8.6	15	14	21	25	22	23	21

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:17:20 AM by Nat Kale

18w--WARC TC_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

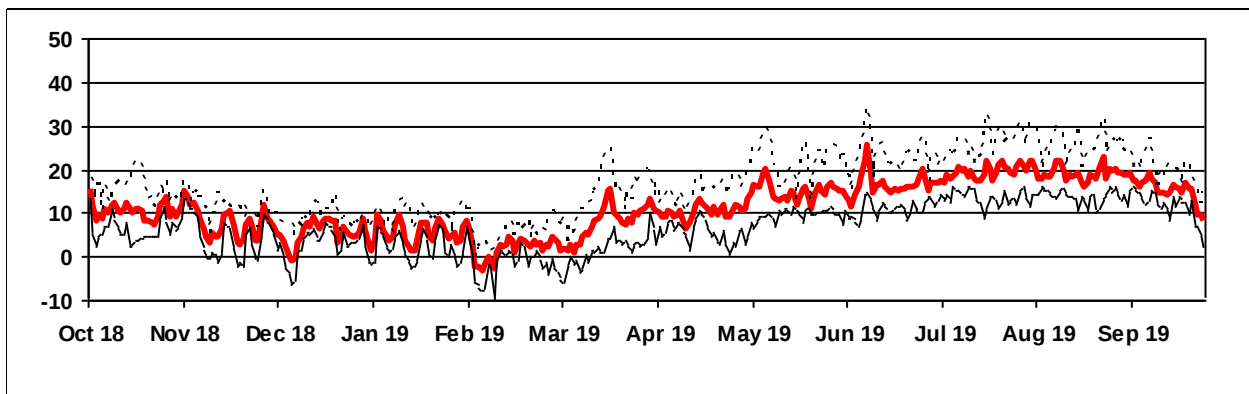
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	15	5.3	1.4	8.5	4.8	12	11	16	19	22	20
02	12	14	5.0	4.1	6.7	4.3	13	11	16	15	21	19
03	8.5	12	4.0	9.7	2.7	3.1	11	11	15	17	20	19
04	9.7	13	2.3	8.3	-2.19	1.6	11	13	15	17	22	19
05	8.6	11	0.29	6.2	-2.35	2.0	10	15	14	17	22	19
06	11	8.8	-0.87	4.8	-2.98	1.4	9.3	16	13	18	20	19
07	10	6.6	-0.57	3.6	-1.95	2.9	9.1	16	12	17	18	17
08	12	4.6	3.4	4.4	-0.01	0.82	11	16	14	19	18	17
09	13	3.4	4.4	7.2	-0.86	2.9	10	19	16	18	19	16
10	11	5.6	6.3	9.8	-2.83	2.9	9.1	20	19	18	19	17
11	10.0	4.5	7.7	6.9	0.96	4.5	9.7	17	22	19	18	18
12	11	4.7	7.0	3.7	2.6	5.7	11	14	26	21	20	19
13	12	6.5	9.1	2.5	2.6	5.0	7.9	13	19	20	22	18
14	11	9.7	7.3	1.2	2.7	7.0	6.6	13	15	20	22	17
15	10	10	6.5	1.4	4.7	8.5	8.1	13	16	18	20	15
16	11	10	8.2	3.7	3.7	8.9	10	14	17	20	18	15
17	11	7.2	9.0	8.0	1.0	9.1	12	13	18	18	19	15
18	11	3.2	9.0	7.7	3.4	11	13	15	16	17	18	14
19	8.4	2.7	8.2	8.0	4.3	15	12	15	15	17	19	15
20	8.3	4.0	8.5	4.6	3.9	15	12	12	15	19	19	16
21	7.9	7.4	3.4	3.7	2.8	10	11	13	16	22	17	16
22	7.2	8.6	4.4	6.4	2.2	9.5	9.9	16	15	20	16	16
23	9.3	7.2	6.8	8.8	3.5	8.9	12	16	15	18	17	15
24	12	3.9	5.7	7.3	2.9	8.0	9.9	13	16	19	19	17
25	13	3.6	5.0	6.0	3.1	7.5	11	11	16	21	18	16
26	14	8.7	4.5	4.1	1.7	8.8	12	15	16	22	18	16
27	9.4	12	4.8	4.5	2.7	7.9	9.1	16	16	20	21	12
28	11	8.9	5.8	5.7	2.2	10	9.0	15	17	20	23	9.9
29	9.3	8.3	8.7	3.2		9.7	11	14	18	19	18	9.7
30	10	6.9	5.9	3.5		11	12	16	20	19	20	8.4
31	12		2.7	7.1		11		17		21	20	
Avg Temp	11	7.7	5.4	5.4	2.0	7.1	10	15	16	19	19	16
Max Temp	23	18	15	13	11	25	20	30	34	33	32	27
Max Mean Daily	16	15	9.1	9.8	8.5	15	13	20	26	22	23	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:17:39 AM by Nat Kale

20u--South Bay Fire Station_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

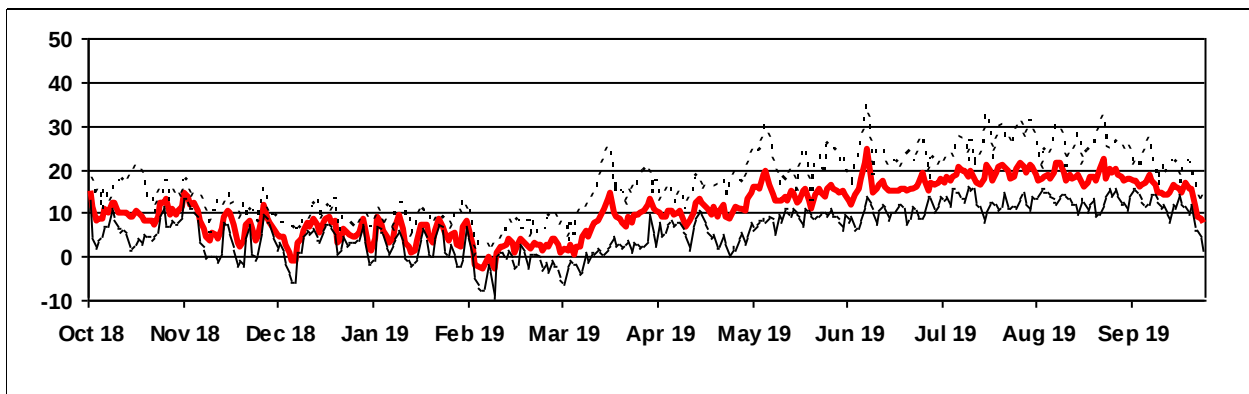
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	5.0	1.4	8.5	4.4	12	11	16	17	22	20
02	12	14	4.8	4.1	6.5	4.1	13	11	15	15	21	19
03	8.4	12	4.5	9.1	2.7	2.7	11	11	15	17	19	19
04	8.8	12	3.0	7.9	-1.74	0.78	10	13	15	16	21	18
05	8.7	11	0.78	6.1	-2.26	1.7	10	15	14	17	21	18
06	11	8.3	-0.94	4.6	-2.72	1.6	9.3	16	13	18	19	18
07	10.0	6.4	-0.70	3.3	-1.90	2.7	9.4	16	12	17	17	17
08	12	4.5	3.3	4.3	-0.02	0.66	11	16	14	18	18	17
09	12	3.9	4.4	7.0	-0.96	2.6	11	19	15	18	19	16
10	10	5.4	6.1	9.6	-2.54	2.4	9.5	20	18	18	19	17
11	10	5.0	7.7	6.7	0.80	4.5	10.0	16	21	19	18	17
12	10	4.2	7.0	3.3	2.3	6.1	11	14	25	21	19	19
13	10	6.6	8.9	2.4	2.5	4.7	8.1	13	19	20	22	17
14	9.3	9.3	7.2	0.91	2.8	7.1	6.7	13	15	20	22	17
15	9.4	10	5.7	1.5	4.3	8.0	8.2	13	16	18	19	15
16	10	10	8.0	3.5	3.4	8.5	10	14	17	20	17	15
17	10	7.4	8.8	7.5	0.83	9.0	12	13	17	18	19	14
18	9.5	3.1	9.1	7.6	3.5	11	13	15	16	17	18	14
19	8.5	2.4	8.0	7.5	4.3	13	13	15	15	17	18	15
20	8.2	4.0	8.3	4.5	3.4	15	12	12	15	18	19	17
21	8.3	7.2	3.3	3.5	2.4	10.0	11	13	15	21	17	16
22	7.3	8.3	4.2	6.0	2.0	9.1	9.8	15	15	20	16	16
23	9.3	6.9	6.6	8.9	3.2	8.7	12	16	16	17	17	15
24	12	3.7	5.7	7.1	2.7	7.8	9.4	13	16	19	18	17
25	13	4.6	4.9	5.7	2.9	7.2	11	11	15	21	18	16
26	13	8.6	4.6	3.9	1.6	9.0	12	14	16	21	18	16
27	9.7	12	4.8	5.0	2.8	7.8	9.2	16	16	21	20	12
28	11	8.8	5.6	5.6	2.5	9.7	8.7	15	16	20	22	9.4
29	9.7	8.1	8.7	3.0		9.6	11	14	17	18	18	9.0
30	10	6.7	6.4	2.6		10	12	16	19	18	20	7.8
31	11		2.1	6.7		11		17		20	19	
Avg Temp	10	7.7	5.3	5.2	1.9	6.8	10	14	16	19	19	16
Max Temp	21	18	14	13	11	26	21	30	35	33	33	28
Max Mean Daily	15	15	9.1	9.6	8.5	15	13	20	25	21	22	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



23u--Percival Creek, Bldg 4_Rain

Water Year: 2019 **Air Temperatures in degrees Celsius**

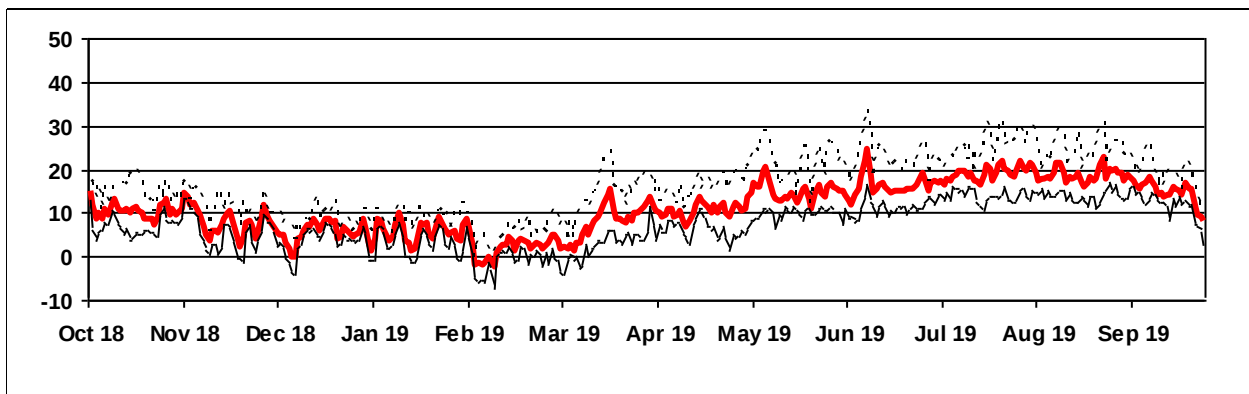
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	5.4	1.7	8.7	5.0	13	12	16	18	22	20
02	12	14	5.1	4.4	6.8	4.9	14	11	16	15	20	19
03	9.0	12	5.0	8.9	2.9	3.7	11	11	15	17	20	19
04	10	12	3.4	8.1	-1.91	1.8	11	14	15	17	22	18
05	9.0	11	1.9	6.4	-1.38	2.6	10	15	14	17	21	19
06	11	9.5	0.24	4.7	-1.61	2.1	9.4	17	13	18	19	19
07	9.9	7.0	0.01	3.5	-1.44	2.9	9.5	16	12	17	18	17
08	12	5.3	4.1	4.5	0.00	1.6	11	16	14	18	18	17
09	13	3.8	4.7	7.2	-0.96	3.1	11	20	16	17	18	16
10	11	5.9	6.2	10.0	-2.41	3.3	9.4	21	19	18	18	16
11	11	6.2	7.6	7.5	1.1	4.9	9.9	18	22	19	18	17
12	10	5.5	7.0	3.6	2.5	6.9	11	14	25	20	19	19
13	11	7.3	8.8	3.2	2.7	4.9	7.8	14	19	20	22	17
14	10	8.9	7.6	1.5	3.0	7.4	6.7	13	15	20	22	16
15	11	10	6.0	2.1	4.8	8.5	8.2	13	16	19	19	14
16	12	10	8.0	3.9	3.7	9.1	10	14	17	19	17	15
17	11	7.2	8.7	7.8	1.4	10	12	13	17	17	18	14
18	10	4.3	8.8	7.5	3.8	12	14	15	16	17	18	14
19	8.8	2.6	8.1	7.9	4.2	14	13	14	15	17	18	14
20	8.9	4.7	8.5	5.2	3.7	16	12	12	15	19	19	16
21	8.7	7.7	4.1	4.3	3.1	11	12	13	15	21	17	16
22	7.5	8.4	4.7	5.9	1.8	8.9	10	16	15	20	16	15
23	9.1	7.4	6.8	9.0	3.0	8.8	12	16	15	18	17	14
24	12	4.3	6.0	7.6	3.1	8.3	10	13	15	19	19	17
25	12	5.7	5.5	6.6	3.0	7.8	11	11	16	21	17	16
26	13	9.2	4.8	4.9	1.8	9.3	13	15	16	22	18	15
27	9.9	12	5.0	5.4	2.9	8.3	10	17	16	20	21	12
28	11	9.1	5.6	6.2	3.2	10	9.3	15	17	20	23	9.5
29	9.8	8.5	8.6	4.1		10	12	14	17	19	18	9.1
30	10	6.8	7.2	3.5		10	13	16	19	19	20	8.3
31	11		2.6	7.4		11		17		20	20	
Avg Temp	11	8.1	5.7	5.6	2.2	7.4	11	15	16	19	19	16
Max Temp	21	18	14	13	10	25	20	29	34	32	31	27
Max Mean Daily	15	15	8.8	10.0	8.7	16	14	21	25	22	23	20

Avg Air Temp for Water Year 2019: **11**

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:18:23 AM by Nat Kale

24u--McLane FS Wx

Water Year: 2019 Air Temperatures in degrees Celsius

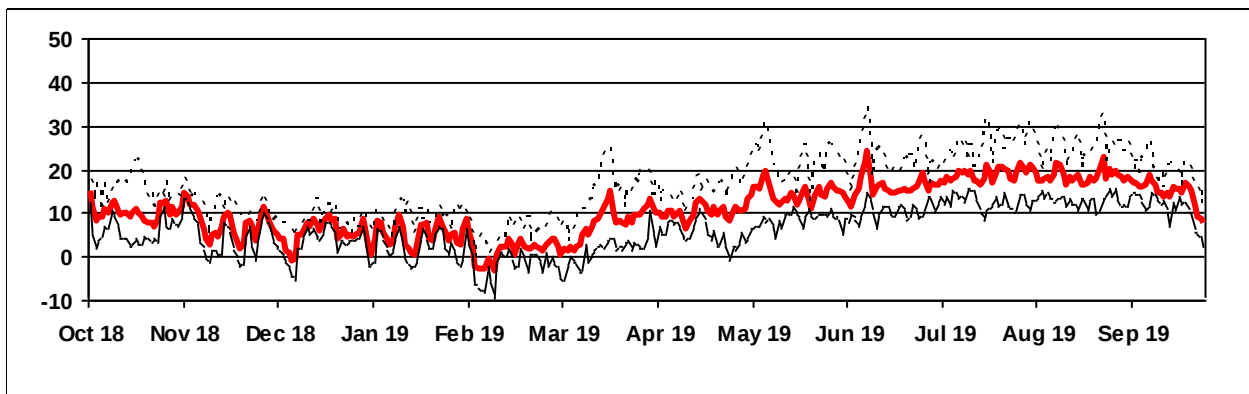
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	5.0	0.61	8.8	4.2	12	11	16	18	21	20
02	12	14	4.1	4.4	6.1	4.3	14	11	15	15	20	19
03	8.4	12	4.2	8.4	2.6	2.5	11	11	15	17	19	19
04	9.2	12	1.6	7.8	-2.24	0.66	10	13	15	16	21	17
05	9.1	11	0.85	5.7	-2.52	1.9	10	14	14	17	21	18
06	11	9.3	-0.87	4.3	-2.78	1.2	9.3	16	13	17	19	18
07	9.9	6.3	-0.51	2.7	-2.69	2.5	9.2	16	12	17	18	17
08	12	4.1	5.1	3.5	-0.42	1.2	11	15	14	18	17	17
09	13	2.7	5.3	6.9	-1.42	2.4	10	19	15	18	18	16
10	11	5.2	6.2	9.7	-3.10	2.8	9.5	20	18	18	18	16
11	9.8	5.5	7.7	7.1	0.60	5.0	10	16	22	18	17	17
12	10	4.7	7.0	3.0	2.5	6.5	11	13	24	20	19	19
13	10	6.8	8.7	2.1	2.2	4.9	7.7	13	18	19	22	18
14	9.3	9.1	7.6	0.82	2.4	6.8	6.7	12	15	20	21	17
15	10	10	5.8	0.66	4.3	8.1	8.3	12	16	19	19	15
16	11	9.8	8.0	3.0	3.0	8.9	9.8	13	16	20	17	15
17	10	5.8	8.7	7.2	0.50	9.7	12	13	17	17	18	14
18	9.3	3.5	9.5	7.4	3.1	12	14	15	16	17	18	15
19	8.4	2.0	8.1	7.9	4.2	13	13	14	15	16	18	14
20	7.9	3.0	8.6	4.3	2.4	15	12	12	15	18	19	16
21	8.0	8.0	4.3	3.8	1.8	9.7	11	13	15	21	17	16
22	7.1	8.4	5.1	5.8	2.0	8.1	9.7	15	15	19	16	16
23	8.6	7.3	6.5	9.1	2.8	8.3	12	16	15	17	17	15
24	12	3.6	4.8	7.2	2.4	7.7	9.7	13	16	19	18	17
25	12	5.9	5.1	5.9	2.0	7.3	11	11	15	21	18	16
26	13	10.0	4.6	4.0	1.5	9.0	11	14	15	21	18	15
27	9.6	12	4.9	5.0	2.7	7.7	9.1	16	15	20	20	12
28	11	9.0	5.7	5.6	3.2	9.9	8.4	14	16	20	23	9.4
29	9.8	8.1	8.8	3.4		9.6	10	14	17	18	18	8.8
30	10	6.3	6.5	3.0		9.8	11	16	19	18	20	7.9
31	11		1.3	6.3		11		17		20	19	
Avg Temp	10	7.7	5.4	5.0	1.6	6.8	10	14	16	18	19	16
Max Temp	23	18	14	13	11	26	21	31	34	32	33	27
Max Mean Daily	15	15	9.5	9.7	8.8	15	14	20	24	21	23	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:18:40 AM by Nat Kale

27u--Boston Harbor_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

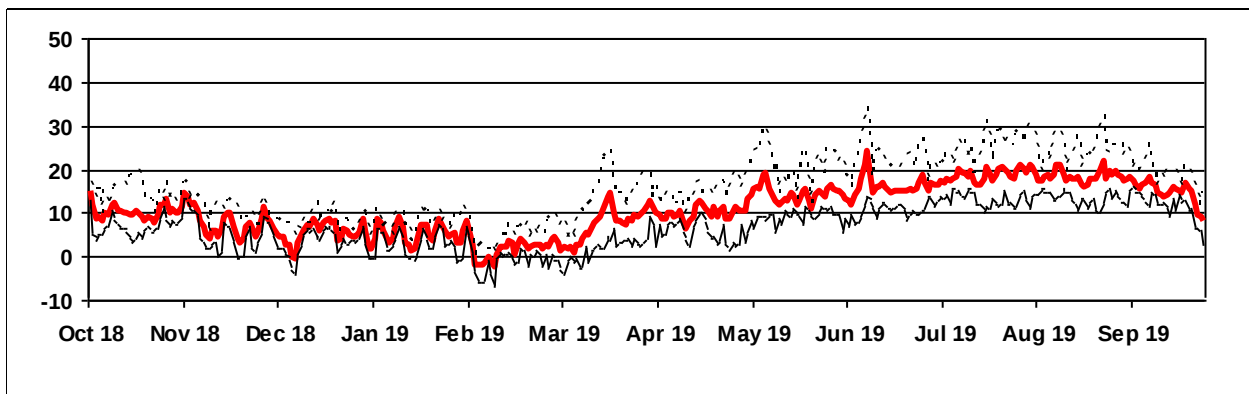
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	5.0	1.8	8.3	4.2	12	11	16	17	21	20
02	12	14	4.7	4.3	6.6	4.6	13	11	15	15	20	19
03	8.6	12	4.7	8.7	3.0	3.2	11	11	15	17	19	18
04	9.3	12	3.0	7.8	-1.76	1.6	10	13	14	17	21	17
05	8.5	11	2.7	6.2	-1.92	2.3	9.8	14	14	17	21	18
06	10	8.5	0.08	4.3	-1.95	1.7	8.7	16	13	17	19	18
07	9.8	7.0	-0.31	3.3	-1.45	2.5	9.0	16	12	17	17	17
08	12	5.2	3.5	4.2	0.11	0.78	10	16	14	18	18	17
09	12	4.3	5.0	6.9	-1.00	2.9	10	19	16	17	18	16
10	10	5.8	6.2	9.4	-2.21	3.0	9.3	19	18	18	19	16
11	10	6.1	7.6	7.0	0.48	4.1	9.8	15	21	18	18	17
12	10	4.8	6.9	3.2	2.4	5.7	11	14	25	20	19	18
13	10.0	6.6	8.7	2.8	2.2	5.1	8.0	13	18	19	21	17
14	9.9	9.3	7.4	1.5	2.4	6.8	6.6	12	15	19	21	16
15	9.7	10	5.9	1.8	3.9	8.0	8.3	13	16	18	19	15
16	11	10	7.9	3.8	3.3	8.7	9.4	13	16	20	17	14
17	10	7.0	8.4	7.4	0.52	9.2	12	13	17	17	18	14
18	9.4	4.3	9.0	7.3	3.2	11	13	15	16	17	18	14
19	8.4	3.5	8.0	7.6	4.1	14	12	14	15	17	18	15
20	9.1	4.3	8.2	4.5	3.3	15	11	12	15	18	19	16
21	9.0	7.1	3.7	3.8	2.1	10	11	13	15	21	17	16
22	7.9	8.1	4.4	5.9	2.2	8.5	9.2	15	15	19	16	15
23	9.6	7.0	6.5	8.8	3.0	8.5	11	16	15	17	17	15
24	12	4.6	5.8	7.2	2.9	7.9	9.4	13	15	19	18	17
25	12	5.6	5.1	6.1	3.0	7.4	11	11	15	20	18	15
26	13	8.7	4.6	4.7	1.8	8.6	12	14	16	21	18	15
27	10	11	4.6	5.2	2.8	8.1	8.9	15	15	20	20	12
28	11	8.7	5.5	5.6	2.6	9.5	8.8	15	16	20	22	9.6
29	9.9	8.1	8.7	3.5		9.3	11	14	17	18	18	9.1
30	10.0	6.4	6.1	3.2		9.8	11	16	19	18	20	8.3
31	11		2.0	6.2		11		17		20	19	
Avg Temp	10	7.9	5.5	5.3	1.9	6.9	10	14	16	18	19	16
Max Temp	20	17	13	12	9.9	25	20	30	35	32	32	27
Max Mean Daily	15	15	9.0	9.4	8.3	15	13	19	25	21	22	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



33x--Griffin FS 13-2

Water Year: 2019 Air Temperatures in degrees Celsius

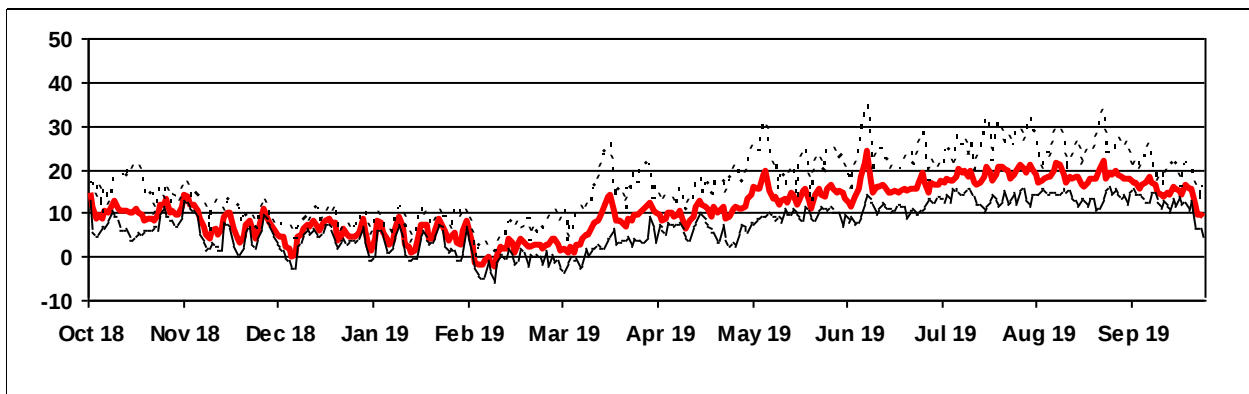
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	14	5.0	1.3	8.3	4.2	12	11	16	17	21	20
02	12	14	4.5	4.0	6.7	4.2	13	11	15	15	20	19
03	8.9	12	4.5	8.1	2.8	2.9	11	12	15	17	20	18
04	9.7	12	2.1	7.8	-1.47	1.3	10	13	15	17	21	18
05	9.0	11	2.1	5.8	-1.60	2.1	9.8	14	13	17	20	18
06	10	8.7	0.27	4.0	-1.62	1.1	8.4	16	12	17	19	18
07	10	7.1	0.75	3.0	-0.83	2.5	9.0	16	12	17	17	17
08	12	5.1	4.5	3.9	0.14	1.1	10	16	14	18	17	17
09	13	4.1	5.1	6.7	-1.15	2.8	10	19	16	17	18	16
10	11	5.9	6.4	9.3	-2.02	3.0	9.2	20	18	18	18	16
11	10	6.4	7.4	6.8	0.02	4.2	9.6	15	21	19	18	17
12	11	5.3	6.8	3.0	2.5	5.3	11	14	24	20	20	18
13	11	6.4	8.2	2.3	1.7	5.1	7.7	14	17	19	21	17
14	10	9.2	7.0	1.1	2.1	6.8	6.4	12	15	20	21	16
15	10.0	10	5.8	1.6	4.1	8.1	8.3	13	16	18	19	15
16	11	10	7.8	3.3	3.2	8.4	9.3	13	16	20	17	14
17	10	6.5	8.4	7.3	0.87	9.2	12	13	17	17	18	14
18	9.8	4.0	8.9	7.2	3.3	12	13	15	16	16	18	15
19	8.3	3.2	7.7	7.4	4.0	14	12	14	15	17	18	14
20	8.7	4.7	7.8	4.3	3.2	14	11	12	15	18	19	16
21	9.0	7.4	3.9	4.2	2.2	10	11	13	15	21	17	16
22	8.2	8.2	4.7	5.8	2.2	8.3	9.4	15	15	19	16	15
23	9.7	7.0	6.5	8.7	2.7	8.5	11	16	15	18	17	14
24	12	4.2	5.2	7.1	2.7	7.9	10.0	13	16	19	18	17
25	12	5.8	4.8	5.8	3.0	7.1	11	11	15	21	18	15
26	13	9.2	4.6	3.7	2.0	8.7	11	14	16	21	18	15
27	10	11	4.5	4.6	2.9	8.2	8.9	15	15	20	20	12
28	11	8.8	5.7	5.5	3.0	9.8	9.0	14	16	20	22	9.9
29	9.6	7.9	8.6	3.3		9.6	11	14	17	18	18	9.6
30	9.6	6.4	5.9	2.8		10	12	16	19	19	20	9.1
31	12		1.8	6.1		11		16		20	19	
Avg Temp	11	7.9	5.4	5.0	1.9	6.8	10	14	16	18	19	16
Max Temp	22	18	12	12	10	26	22	31	35	32	34	28
Max Mean Daily	15	14	8.9	9.3	8.3	14	13	20	24	21	22	20

Avg Air Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



44u--Black Lake FD-95

Water Year: 2019 Air Temperatures in degrees Celsius

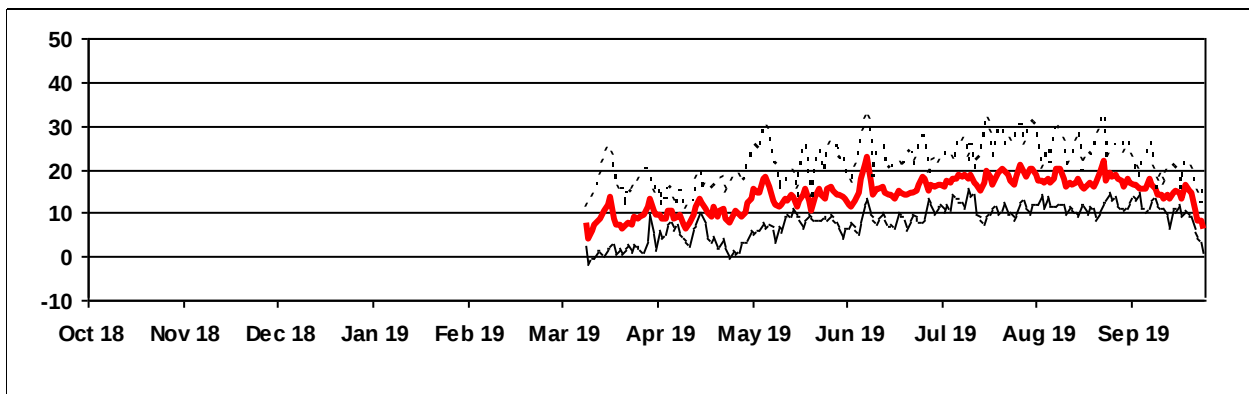
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01							12	9.9	15	18	21	19
02							14	9.2	15	15	19	18
03							11	10	14	17	18	18
04							9.7	12	14	16	20	16
05							9.5	14	13	16	20	18
06							8.7	16	12	17	19	17
07							8.7	15	11	16	17	17
08							11	15	13	17	17	16
09							11	18	15	17	17	16
10							8.9	19	18	18	18	15
11							9.4	16	21	18	17	16
12						7.9	9.8	13	23	19	18	18
13						4.1	7.2	12	18	18	20	17
14						6.2	6.3	12	14	19	20	16
15						7.2	8.0	12	16	18	18	14
16						8.2	9.7	13	16	19	16	14
17						8.8	12	13	16	17	17	13
18						10	14	14	15	16	17	14
19						12	13	14	14	15	17	13
20						14	11	12	14	17	18	15
21						8.7	10.0	13	14	20	16	15
22						7.6	9.4	14	15	18	16	15
23						7.2	11	16	15	17	17	13
24						6.6	9.1	13	14	18	17	16
25						7.2	10	11	14	19	16	15
26						8.1	11	14	15	20	17	15
27						7.6	8.9	16	15	20	19	10
28						9.1	7.9	14	15	19	22	8.4
29						8.9	9.8	13	16	18	17	8.2
30						9.1	11	15	18	17	19	6.7
31						9.9		16		18	18	
Avg Temp						8.4	10	14	15	18	18	15
Max Temp						26	20	31	33	33	33	27
Max Mean Daily						14	14	19	23	20	22	19

Avg Air Temp for Water Year 2019: 14

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



45u--Littlerock_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

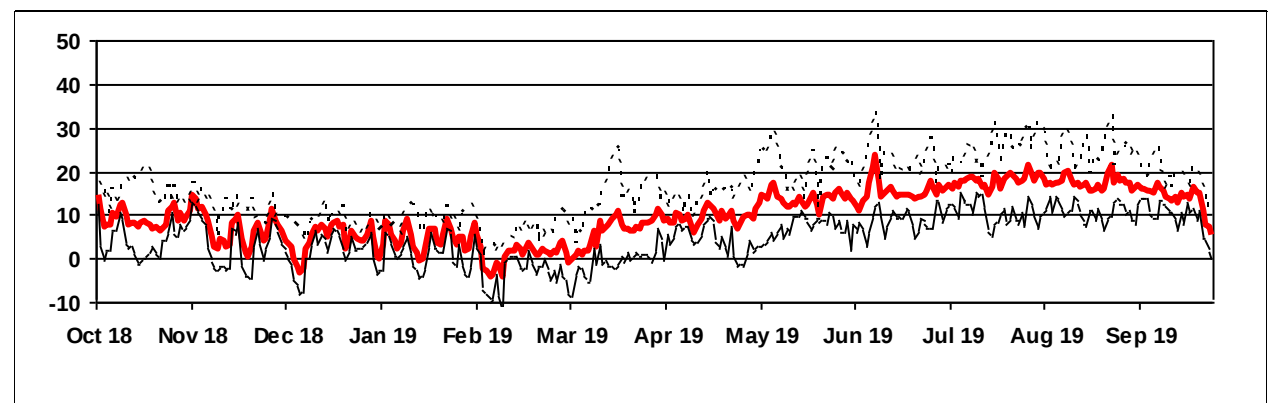
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	4.1	0.09	8.2	3.9	10	10	15	16	21	19
02	12	14	3.6	3.1	5.8	4.0	12	10	14	15	19	17
03	7.2	12	2.9	8.6	2.8	1.5	10	9.2	15	17	18	18
04	7.8	12	0.04	7.6	-2.23	-0.94	8.7	12	14	16	20	16
05	7.7	10	-1.57	5.4	-2.53	0.12	9.1	13	13	16	20	17
06	10	8.8	-2.92	4.4	-3.88	0.89	8.5	15	12	17	18	17
07	9.5	5.0	-2.18	2.6	-3.61	1.7	8.5	14	11	16	17	16
08	12	2.9	2.5	3.8	-0.76	1.2	10	14	13	17	17	16
09	13	2.3	3.7	6.5	-1.15	1.7	10	17	14	16	17	16
10	9.9	4.5	5.5	9.1	-4.27	1.7	8.6	18	17	18	18	16
11	8.0	4.2	7.4	5.6	0.72	3.3	9.2	14	21	18	17	15
12	8.3	2.8	6.4	2.7	2.0	6.4	10	14	24	19	18	17
13	8.5	3.4	7.8	1.3	1.9	2.9	7.4	13	18	19	20	17
14	7.3	8.4	7.1	-0.55	2.1	9.0	6.0	12	14	19	20	16
15	8.2	9.4	4.9	0.01	3.4	6.7	7.7	12	15	18	18	14
16	8.9	10	7.9	2.5	2.4	7.4	9.3	13	16	18	17	14
17	8.4	4.6	8.5	7.0	1.2	7.8	11	12	16	17	17	13
18	7.9	1.4	8.6	7.1	2.7	9.2	13	14	16	17	17	14
19	6.8	0.69	7.5	7.0	3.6	10	12	13	14	15	17	13
20	7.3	2.7	8.0	4.0	2.3	11	11	12	15	17	18	15
21	6.3	6.3	2.2	3.4	1.2	8.0	10	13	15	20	16	14
22	7.1	8.2	4.1	5.4	0.85	6.8	8.8	14	15	18	16	15
23	8.1	6.8	6.7	9.1	2.4	7.0	11	15	15	16	16	14
24	11	4.0	5.1	7.0	1.9	6.4	9.2	12	14	18	17	17
25	12	4.7	4.7	5.0	1.6	6.4	9.8	10	14	19	16	15
26	13	8.7	4.3	3.1	0.84	7.4	11	14	14	20	16	15
27	8.8	12	4.3	5.3	1.9	6.7	8.6	15	14	19	20	11
28	11	8.8	5.4	5.2	1.3	8.5	7.1	15	15	18	22	7.8
29	8.9	8.0	8.6	1.8		8.3	8.6	14	16	17	17	7.4
30	9.7	6.3	5.2	2.3		8.5	9.5	15	18	18	19	5.6
31	11		0.39	5.2		8.8		16		18	18	
Avg Temp	9.4	6.9	4.5	4.5	1.2	5.6	9.6	13	15	18	18	15
Max Temp	22	18	14	13	10	26	20	30	34	32	33	27
Max Mean Daily	15	15	8.6	9.1	8.2	11	13	18	24	20	22	19

Avg Air Temp for Water Year 2019:
10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



45w--Rochester Drop Box_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

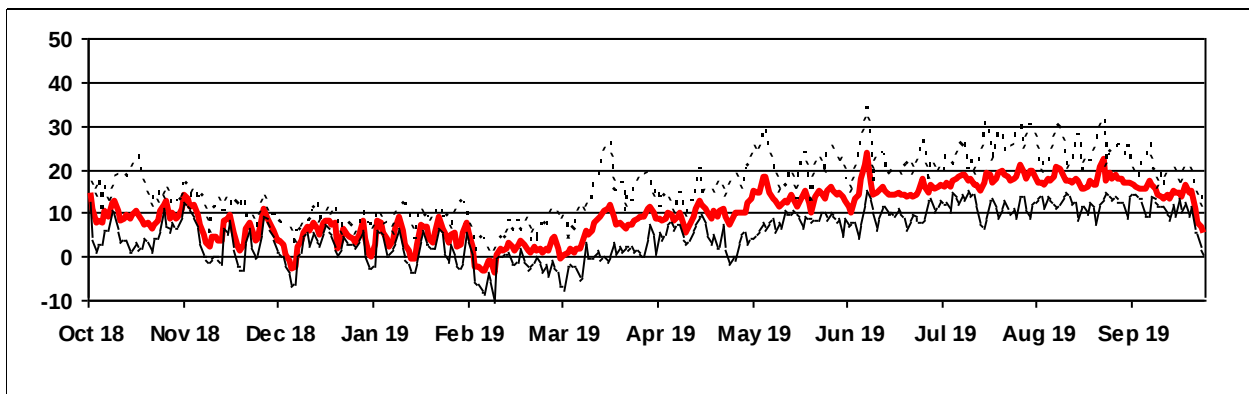
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	14	3.9	-0.12	8.0	4.3	11	10	15	16	21	19
02	11	13	3.6	2.8	5.7	4.4	12	10	14	15	19	18
03	7.7	11	2.7	8.4	2.3	1.9	10	10	15	17	18	18
04	8.2	12	0.71	7.6	-2.08	-0.39	8.9	12	14	15	20	17
05	7.8	9.5	-0.66	5.7	-2.14	0.40	9.0	13	13	16	20	17
06	10	7.6	-2.68	4.0	-3.29	1.0	8.5	15	12	16	18	17
07	9.3	5.2	-2.12	2.4	-3.11	1.8	8.6	15	10	16	17	16
08	12	3.3	2.5	3.7	-0.90	0.87	10	15	13	17	17	16
09	13	2.4	3.8	6.6	-1.03	1.8	9.5	18	14	16	17	15
10	11	4.7	5.6	9.1	-3.49	1.9	8.3	19	18	17	18	16
11	8.5	4.6	7.0	6.1	0.57	3.3	9.0	15	21	18	17	15
12	8.9	3.7	5.9	2.7	1.9	5.8	10	14	24	18	18	17
13	9.6	3.8	7.7	1.4	1.7	5.1	7.2	13	17	19	20	17
14	9.0	8.2	6.5	-0.20	2.0	6.0	5.6	12	14	19	20	16
15	9.9	8.9	5.0	-0.24	3.4	7.8	7.4	12	15	17	18	14
16	11	9.8	7.8	2.7	2.3	8.8	9.1	13	15	18	17	14
17	9.7	5.7	8.5	7.2	1.4	9.1	11	12	16	17	17	14
18	8.3	2.4	8.3	7.0	2.6	11	13	14	15	17	17	14
19	7.6	1.5	7.3	7.0	3.7	11	12	13	14	15	18	13
20	7.9	3.1	7.8	4.1	2.7	12	11	12	14	17	18	15
21	6.3	6.4	1.9	3.5	1.2	9.0	10.0	13	14	19	15	15
22	7.3	8.0	3.9	5.6	0.80	7.3	8.9	14	15	19	16	15
23	8.4	6.4	6.5	9.1	2.5	8.0	11	15	14	17	16	14
24	11	3.9	5.2	6.7	1.7	7.5	9.4	12	14	18	17	17
25	12	4.0	4.6	5.4	1.7	6.6	11	10	14	19	16	15
26	13	8.6	4.2	3.5	1.1	7.6	11	14	14	20	16	15
27	9.0	11	3.5	5.0	1.7	7.4	9.0	15	14	19	21	11
28	10	8.7	5.3	5.4	1.4	8.3	7.6	15	14	18	23	7.9
29	8.7	7.8	8.4	2.6		8.7	9.4	14	15	17	17	7.0
30	9.4	6.1	4.3	2.9		9.1	10	15	18	18	19	5.8
31	11		0.34	5.4		9.4		16		18	18	
Avg Temp	9.7	6.9	4.4	4.6	1.2	6.0	9.6	14	15	17	18	15
Max Temp	23	17	13	13	10.0	27	20	30	34	31	32	26
Max Mean Daily	15	14	8.5	9.1	8.0	12	13	19	24	20	23	19

Avg Air Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



55u--Tenino_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

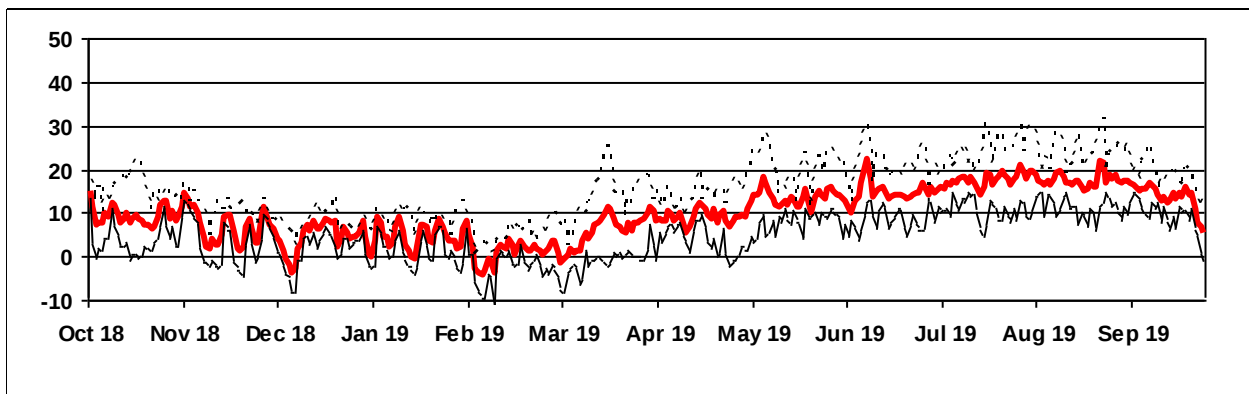
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15	15	4.0	0.21	8.5	3.6	10.0	9.4	15	16	21	19
02	11	13	3.9	3.6	5.1	3.8	12	9.6	14	14	19	17
03	7.2	12	1.4	9.1	2.4	1.1	11	9.3	15	16	18	17
04	7.8	12	-0.39	7.9	-2.54	-1.09	8.5	11	14	15	20	18
05	7.7	10.0	-1.72	4.9	-3.60	-0.17	8.9	13	13	16	20	17
06	10	8.0	-3.57	4.6	-4.09	0.32	8.4	14	11	16	19	17
07	9.2	4.7	-2.67	2.5	-3.27	1.8	8.4	14	10	16	17	16
08	13	2.3	2.0	3.1	-0.59	1.1	11	15	13	17	17	16
09	12	2.0	3.4	6.9	-0.97	1.6	9.5	18	14	16	17	15
10	9.7	4.4	6.0	9.4	-3.43	1.5	8.3	17	17	18	17	16
11	8.0	2.9	7.3	6.1	1.3	3.8	9.1	15	21	17	17	16
12	8.9	2.6	6.1	2.9	2.6	5.7	10.0	13	23	18	18	17
13	10.0	5.1	8.4	1.4	2.2	4.0	7.2	12	18	19	19	16
14	8.1	9.3	6.6	0.17	2.0	5.7	5.8	12	14	18	20	16
15	8.9	9.6	6.7	-0.24	4.3	7.3	6.9	12	15	17	18	14
16	9.9	9.9	8.0	2.3	2.7	7.9	9.3	13	16	18	17	13
17	8.9	6.0	8.7	7.4	0.70	8.5	11	12	16	17	17	14
18	8.1	2.0	8.5	7.4	2.9	9.5	13	14	15	16	17	13
19	7.3	1.4	7.7	7.1	3.9	11	12	13	14	14	17	13
20	7.5	2.4	8.3	3.6	2.6	11	11	11	14	16	18	15
21	6.5	6.8	2.4	3.1	1.4	8.9	9.7	12	14	19	16	14
22	6.7	8.7	4.0	6.1	1.6	7.4	8.9	14	14	19	15	15
23	9.0	6.7	6.8	8.8	2.9	6.8	11	16	14	17	16	14
24	12	3.3	5.6	6.8	2.0	6.2	8.1	12	14	18	17	16
25	13	3.4	4.2	5.6	1.4	5.7	9.5	10	13	18	16	14
26	13	9.1	4.5	3.7	0.65	8.0	11	14	14	20	16	15
27	9.0	12	4.5	3.9	1.3	6.0	8.2	15	15	19	22	11
28	11	8.8	5.5	3.8	1.9	8.0	6.9	15	15	18	22	7.8
29	8.3	7.6	8.4	2.0		8.0	8.5	14	15	17	17	6.8
30	9.3	6.4	4.7	2.4		8.3	9.2	15	17	18	19	5.7
31	11		0.51	6.3		8.8		16		18	18	
Avg Temp	9.6	6.9	4.5	4.6	1.3	5.5	9.3	13	15	17	18	14
Max Temp	23	17	14	13	10	26	20	29	31	31	32	27
Max Mean Daily	15	15	8.7	9.4	8.5	11	13	18	23	20	22	19

Avg Air Temp for Water Year 2019: 9.9

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:20:29 AM by Nat Kale

60v--Bucoda

Water Year: 2019 Air Temperatures in degrees Celsius

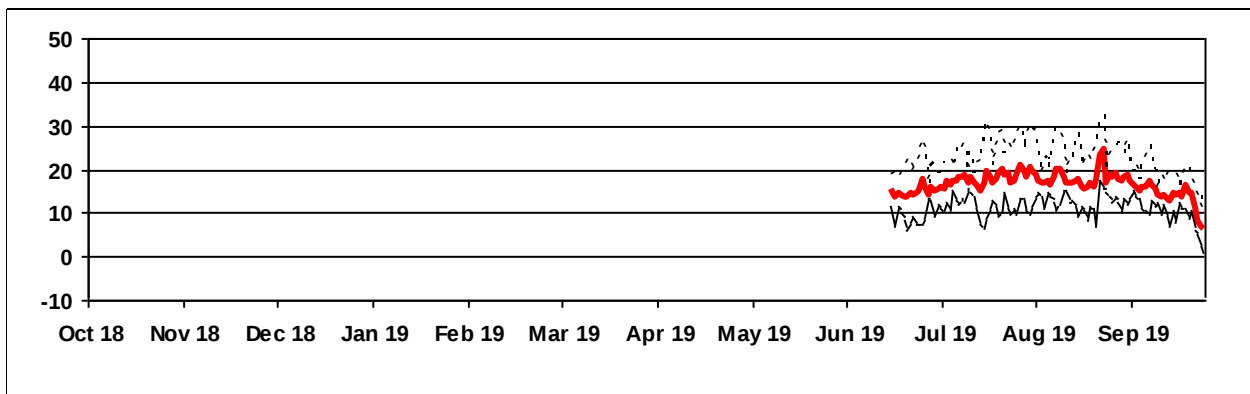
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
01										16	21	19	
02										14	20	18	
03										16	19	18	
04										15	21	18	
05										16	20	19	
06										16	19	17	
07										16	17	17	
08										17	17	16	
09										17	17	15	
10										18	18	16	
11										18	17	16	
12										18	18	18	
13										18	20	17	
14										19	20	16	
15										17	19	14	
16										18	17	14	
17										17	17	14	
18										16	17	13	
19										15	17	13	
20									16	17	18	15	
21									14	20	16	14	
22									15	18	16	15	
23									14	17	16	14	
24									14	18	17	17	
25									14	19	16	15	
26									15	20	17	15	
27									14	19	23	11	
28									15	19	25	8.3	
29									15	17	17	7.0	
30									18	18	19	6.3	
31										19	18		
Avg Temp										15	17	18	15
Max Temp										27	31	33	27
Max Mean Daily										18	20	25	19

Avg Air Temp for Water Year 2019: 16

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



65u--Grand Mound_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

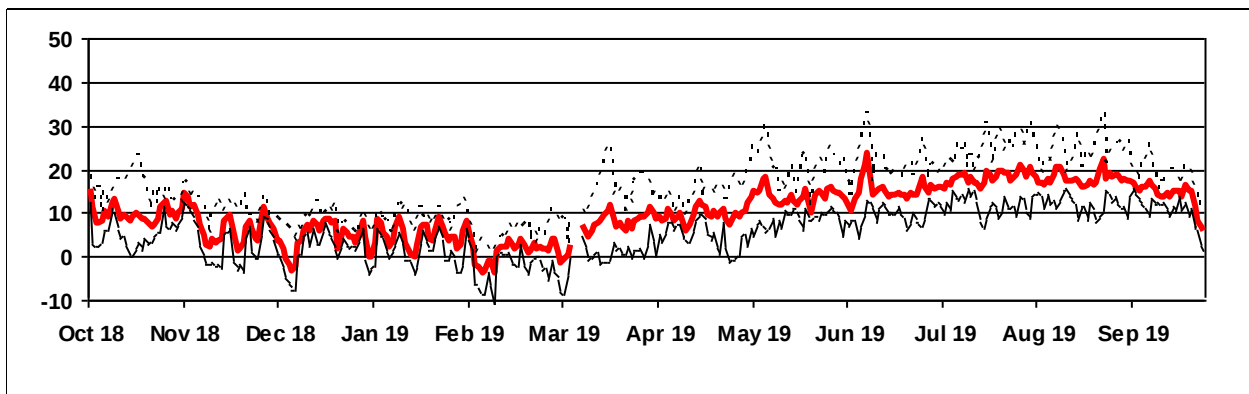
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	16	15	3.9	-0.06	8.5	4.0	10	9.4	15	16	21	19
02	11	14	3.7	3.2	6.0	4.4	12	10	15	15	20	19
03	8.0	12	1.8	8.8	2.7	1.2	10	11	15	17	18	18
04	8.0	12	-0.52	7.8	-1.96	-1.09	8.6	12	14	16	21	18
05	8.4	9.6	-1.73	5.6	-2.37	-0.18	9.3	14	13	16	19	18
06	11	7.2	-2.98	4.4	-3.60	0.44	8.5	15	11	16	18	17
07	9.5	5.0	-2.05	2.5	-3.31	2.8	8.9	15	11	16	17	17
08	13	3.0	3.4	3.8	-0.79		11	15	13	17	17	16
09	13	2.4	3.8	6.8	-0.95		9.7	18	15	17	17	15
10	11	4.4	5.9	9.3	-3.71		8.5	19	18	18	18	16
11	8.9	3.5	7.3	6.7	1.4	7.3	9.1	14	21	18	17	16
12	9.5	3.5	6.2	3.3	2.6	5.7	10	13	24	19	19	18
13	9.4	4.1	8.5	1.4	2.2	4.8	7.3	12	17	19	21	16
14	8.3	8.2	7.2	0.35	2.2	5.9	6.0	12	14	19	21	16
15	9.1	9.1	5.9	-0.03	4.3	7.2	7.5	12	15	17	19	14
16	10	9.7	8.2	2.9	2.8	7.9	9.6	13	16	18	17	14
17	9.9	5.5	8.6	7.2	1.9	8.2	12	13	16	17	17	14
18	8.6	1.6	8.8	7.3	2.8	9.7	13	14	15	17	17	15
19	8.6	1.7	7.7	7.2	4.2	11	12	13	14	16	18	14
20	7.9	3.3	8.2	4.2	2.7	12	11	12	14	17	18	15
21	6.8	7.0	2.1	3.6	0.96	8.7	9.9	13	14	20	16	15
22	7.5	8.3	4.6	6.0	1.3	7.1	9.2	14	15	19	16	15
23	8.9	6.5	6.7	9.1	3.1	7.6	11	15	14	18	16	14
24	11	4.1	5.4	6.7	1.9	7.0	9.4	12	14	18	18	17
25	12	3.8	4.5	5.5	2.4	5.9	10	10	14	20	17	15
26	13	9.1	4.5	3.6	1.7	8.2	11	14	15	20	17	15
27	9.5	11	3.4	4.6	1.7	6.4	8.9	15	14	19	20	11
28	10	8.8	5.5	4.8	1.5	8.4	7.5	15	14	19	22	8.5
29	9.0	7.9	8.4	2.0		8.7	9.1	13	16	17	18	7.1
30	10	6.4	4.7	2.6		9.3	9.9	15	18	18	19	6.2
31	11		-0.08	5.9		9.4		16		19	18	
Avg Temp	10.0	6.9	4.6	4.7	1.5	6.3	9.7	14	15	18	18	15
Max Temp	24	18	13	14	10	26	21	30	33	31	34	27
Max Mean Daily	16	15	8.8	9.3	8.5	12	13	19	24	20	22	19

Avg Air Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:21:09 AM by Nat Kale

69u--Summit Lake_Rain

Water Year: 2019 Air Temperatures in degrees Celsius

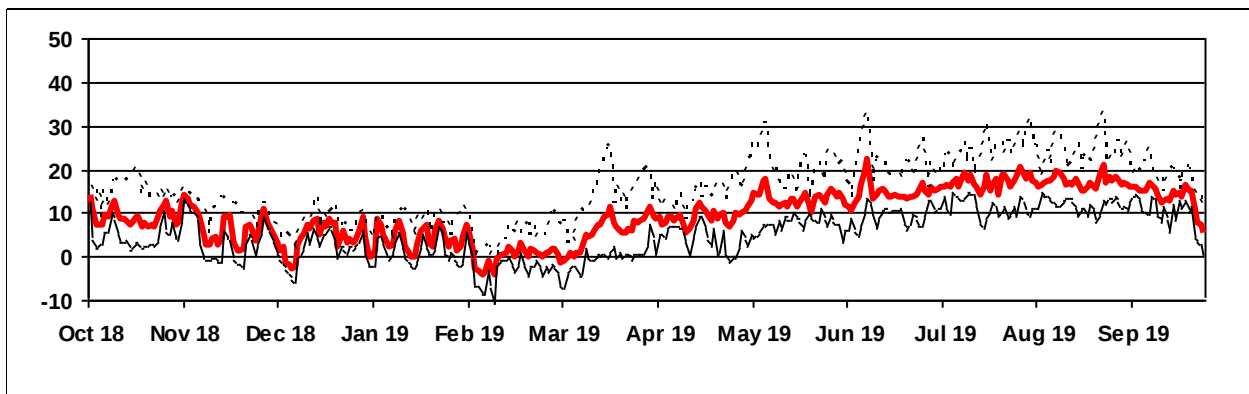
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	14	14	3.4	-0.03	7.3	2.1	10	9.6	15	15	21	18
02	11	13	1.5	1.6	6.2	2.0	12	10	14	14	19	18
03	7.4	12	2.3	8.6	1.9	0.58	9.4	10	15	16	18	17
04	7.4	12	-1.09	7.5	-2.79	-1.48	8.8	12	13	15	19	17
05	7.5	10	-1.72	5.2	-3.08	-0.78	9.0	13	12	16	18	17
06	9.8	8.8	-2.85	3.3	-4.24	0.08	7.6	15	11	16	17	16
07	9.2	5.0	-2.03	2.5	-3.56	1.1	8.0	14	10	16	16	16
08	12	3.0	2.8	2.7	-0.63	0.30	9.4	14	12	17	16	16
09	13	2.7	4.7	6.2	-2.37	1.1	9.2	17	14	16	17	15
10	9.8	4.0	5.3	8.2	-3.82	1.2	8.5	18	17	17	18	15
11	8.6	4.8	7.5	5.4	-0.57	2.5	9.3	13	20	18	17	15
12	8.8	2.9	6.4	2.4	0.68	5.3	9.9	13	23	16	18	17
13	8.2	4.1	8.3	1.1	0.61	4.8	7.4	12	16	18	20	16
14	7.2	9.4	8.6	0.01	0.98	5.2	5.7	12	14	19	19	16
15	7.8	9.1	5.0	-0.10	2.6	6.3	6.4	12	14	18	18	14
16	9.1	9.5	8.1	2.7	1.6	7.3	8.5	12	15	19	17	13
17	9.1	3.3	7.1	6.2	0.18	7.6	11	12	16	17	17	13
18	7.2	1.4	8.6	6.7	1.7	9.2	12	13	15	16	17	13
19	7.7	1.5	7.8	7.2	3.1	9.6	12	13	14	14	18	13
20	6.9	1.9	7.9	3.3	1.6	12	11	12	14	16	17	15
21	7.5	7.0	2.2	2.5	-0.09	8.0	9.8	12	14	19	15	14
22	6.9	7.5	4.7	6.0	1.8	6.8	8.4	14	14	15	15	15
23	9.4	6.5	5.9	8.5	1.5	6.3	10	15	14	17	16	14
24	11	3.9	3.2	6.3	0.92	5.6	8.6	12	14	18	17	16
25	12	4.9	4.1	4.8	0.35	5.7	9.7	10	13	14	16	15
26	13	9.5	3.4	2.5	0.00	6.3	10	14	14	19	16	15
27	9.1	11	3.7	3.7	0.97	6.1	7.7	14	14	19	19	10
28	11	7.8	6.1	4.2	1.2	8.1	7.1	14	14	18	21	7.8
29	7.3	7.1	9.3	1.3		7.8	8.5	13	15	16	17	7.2
30	8.1	5.3	4.7	2.2		8.4	9.9	14	17	18	18	5.8
31	12		0.04	4.7		8.9		16		18	18	
Avg Temp	9.3	6.8	4.4	4.1	0.50	5.0	9.2	13	15	17	18	14
Max Temp	21	17	14	12	10	26	21	31	34	31	34	27
Max Mean Daily	14	14	9.3	8.6	7.3	12	12	18	23	19	21	18

Avg Air Temp for Water Year 2019: 9.6

Notes:

Thurston County

Annual Air Temp-- Mean, Maximum, Minimum:



02/04/2020 11:21:25 AM by Nat Kale

Appendix C – Stream Discharge and Stage Data

10a--Eaton Creek @ Yelm Hwy

Water Year: 2019

Elv: 166

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	7.4	8.5	13	13	11	9.7	9.3	7.8	6.1	5.0	4.9	3.4
02	8.3	9.7	11	11	12	9.4	8.8	7.6	5.9	4.9	4.9	3.5
03	8.1	9.1	10	11	12	9.4	8.8	7.7	5.6	5.1	5.0	3.3
04	7.8	10	10	15	11	9.3	9.0	7.5	5.8	5.1	4.8	3.6
05	8.6	9.9	10	14	11	9.2	10	7.5	5.6	5.1	4.7	3.6
06	10	8.7	10.0	13	10	9.6	12	7.4	5.6	5.0	4.8	3.3
07	9.2	7.8	9.8	13	10	10.0	19	7.1	5.7	4.9	4.6	3.2
08	9.3	8.8	9.8	12	10.0	9.9	16	6.8	5.9	4.9	4.4	2.8
09	9.5	9.2	11	12	11	9.7	13	6.8	5.9	5.0	4.5	3.2
10	9.6	9.1	15	18	11	9.2	12	6.7	5.6 e	5.2	4.9	3.6
11	8.7	9.1	22	17	13	9.1	12	6.6	5.7	5.3	6.5	3.5
12	8.2	9.2	27	14	29	14	13	6.4	5.9	5.3	5.8	3.3
13	8.0	9.2	26	13	26 e	12	13	6.3	5.6	4.9	5.3	3.6
14	8.0	9.0	20	12	25	10	14	6.4	5.4	4.8	4.9	3.5
15	7.6	9.1	16	12	26	9.5	14	7.0	5.5	4.8	4.7	4.2
16	7.3	9.0	14	12	24	9.0	12	6.9	5.5	5.1 e	4.6	4.5
17	7.5	9.3	14	13	19	8.8	11	6.8	5.5	5.1	4.6	4.9
18	7.4	9.6	23	14	15	8.7	11	6.4	5.4	5.5	4.6	6.3
19	7.3	9.6	31	23	13	8.7	11	7.0	5.5	5.1	4.6	5.2
20	7.4	9.6	26	19	14	9.0	11	6.9	5.4	5.1	4.5	4.6
21	7.4	9.2	20	15	13	8.5	11	7.0	5.2	5.0	4.5	4.2
22	7.5	11	15	13	12	8.4	10	6.6	5.2	4.8	4.6	4.1
23	7.3	16	17	22	13	8.7	9.6 p	6.2	5.2	4.8	4.6	4.0
24	7.1	15	19	20	12	8.6	9.5	6.4	5.1	4.8	4.5	3.9
25	6.9	12	16	15	14	8.8	9.1	6.2	5.2	4.9	4.4	3.8
26	8.8	12	13	13	12	11	8.6	6.7	5.2	4.9	4.2	3.5
27	9.5	21	13	12	11	10	8.4	6.5	5.1	5.0	3.9	3.6
28	14	21	13	11	10	11	8.5	6.3	5.1	4.8	3.6	4.2
29	15	20	15	11		10	8.3	6.0	5.1	4.9	3.4	4.2
30	13	15	19	11		9.7	8.1	5.9	5.2	4.9	3.5	4.4
31	10		16	10		9.3		5.9		4.9	3.5	

Avg Discharge	8.8	11	16	14	15	9.6	11	6.7	5.5	5.0	4.6	3.9
Max Instantaneous	18	25	36	24	41	15	22	8.3	6.5	7.1	9.7	9.0
Max Mean Daily	15	21	31	23	29	14	19	7.8	6.1	5.5	6.5	6.3

Average Discharge for Water Year 2019: 9.3 [Low Flow \(Cal Year\)--7 day](#) 3.26 09/09/2019 [--30 day](#) 3.81 09/13/201

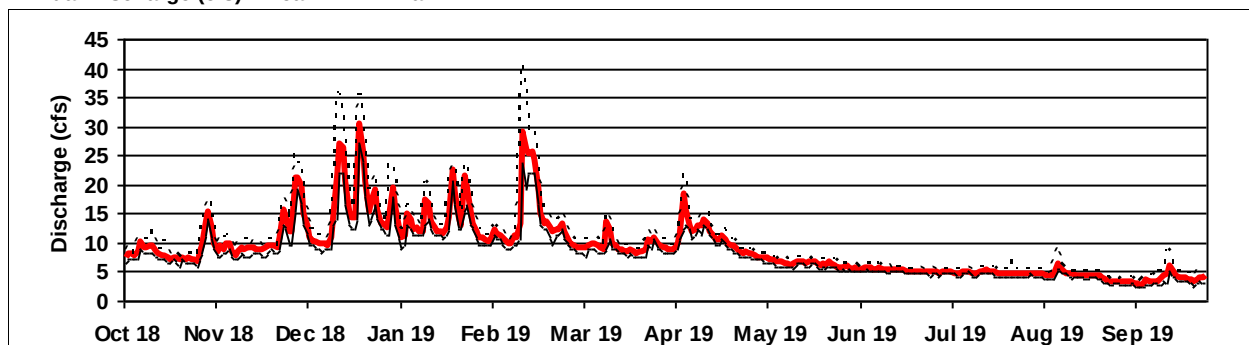
Lowest Stage: 0.89 **Discharge:** 2.27 09/07/2019 **Metrics** [High Pulse Count](#) 3 [Range](#) 62 Days

Peak Inst Stage: 1.26 **Discharge:** 40.8 02/12/2019 [TQ Mean \(Use Daily Avg\)](#) 0.42 [R-B Index](#) 0.10

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



10a--Eaton Creek @ Yelm Hwy

Water Year: 2019

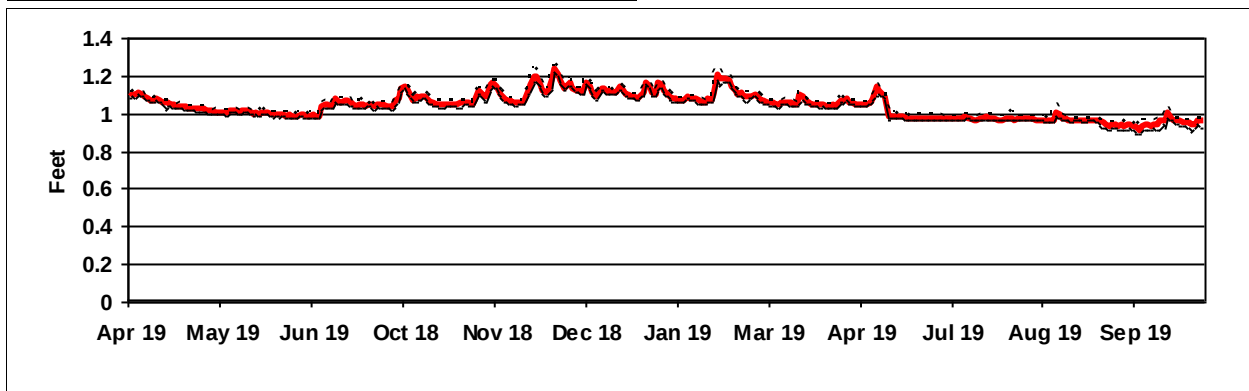
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	1.04	1.07	1.10	1.11	1.07	1.06	1.05	1.03	1.00	0.98	0.98	0.93
02	1.05	1.09	1.08	1.09	1.09	1.06	1.05	1.03	1.00	0.98	0.98	0.94
03	1.05	1.08	1.07	1.10	1.08	1.06	1.05	1.03	0.99	0.98	0.98	0.93
04	1.04	1.09	1.07	1.14	1.08	1.05	1.05	1.03	1.00	0.98	0.97	0.94
05	1.05	1.09	1.06	1.13	1.08	1.05	1.06	1.03	0.99	0.98	0.97	0.94
06	1.08	1.08	1.06	1.11	1.07	1.06	1.08	1.03	0.99	0.98	0.97	0.93
07	1.06	1.06	1.06	1.12	1.06	1.06	1.15	1.02	0.99	0.98	0.97	0.93
08	1.06	1.06	1.06	1.11	1.06	1.06	1.12	1.02	1.00	0.98	0.96	0.91
09	1.07	1.05	1.07	1.11	1.08	1.06	1.10	1.02	1.00	0.98	0.97	0.93
10	1.07	1.05	1.12	1.15	1.07	1.05	1.09	1.01	0.99	e 0.98	0.97	0.94
11	1.06	1.05	1.16	1.13	1.10	1.05	1.09	1.01	0.99	0.99	1.01	0.94
12	1.05	1.05	1.20	1.10	1.21	1.10	1.10	1.01	1.00	0.98	1.00	0.93
13	1.04	1.05	1.20	1.10	1.19	e 1.09	1.10	1.01	0.99	0.98	0.98	0.94
14	1.05	1.05	1.16	1.09	1.19	1.07	1.11	1.01	0.99	0.97	0.98	0.94
15	1.05	1.05	1.12	1.09	1.19	1.06	1.10	1.02	0.99	0.97	0.97	0.96
16	1.04	1.05	1.11	1.08	1.18	1.05	1.09	1.02	0.99	0.98	e 0.97	0.96
17	1.05	1.06	1.12	1.09	1.15	1.05	1.08	1.02	0.99	0.98	0.97	0.97
18	1.05	1.06	1.19	1.11	1.12	1.05	1.07	1.01	0.99	0.99	0.97	1.01
19	1.04	1.06	1.24	1.17	1.10	1.05	1.07	1.02	0.99	0.98	0.97	0.98
20	1.05	1.06	1.21	1.15	1.11	1.05	1.08	1.02	0.99	0.98	0.97	0.97
21	1.05	1.05	1.18	1.11	1.09	1.04	1.07	1.02	0.98	0.98	0.97	0.96
22	1.05	1.07	1.14	1.10	1.09	1.04	1.06	1.01	0.98	0.97	0.97	0.96
23	1.04	1.12	1.15	1.17	1.09	1.05	1.06	p 1.00	0.98	0.97	0.97	0.95
24	1.04	1.11	1.17	1.16	1.09	1.04	1.06	1.01	0.98	0.97	0.97	0.95
25	1.04	1.09	1.14	1.12	1.10	1.05	1.05	1.00	0.98	0.98	0.96	0.95
26	1.07	1.09	1.12	1.10	1.09	1.07	1.05	1.01	0.98	0.98	0.96	0.94
27	1.08	1.16	1.12	1.09	1.07	1.07	1.04	1.01	0.98	0.98	0.95	0.94
28	1.13	1.17	1.11	1.08	1.07	1.08	1.04	1.01	0.98	0.97	0.94	0.96
29	1.15	1.15	1.13	1.08		1.06	1.04	1.00	0.98	0.98	0.93	0.96
30	1.13	1.12	1.17	1.07		1.06	1.04	1.00	0.98	0.98	0.94	0.96
31	1.09		1.15	1.07		1.05		1.00		0.98	0.94	
Avg Stage	1.06	1.08	1.13	1.11	1.11	1.06	1.07	1.02	0.99	0.98	0.97	0.95
Max Instant	1.2	1.2	1.3	1.2	1.3	1.1	1.2	1.0	1.0	1.0	1.1	1.1
Max Mean Daily	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.0	1.0	0.99	1.0	1.0

Average Stage for Water Year 2019: 1.04

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



14a--Spurgeon Creek @ Rich Road bridge

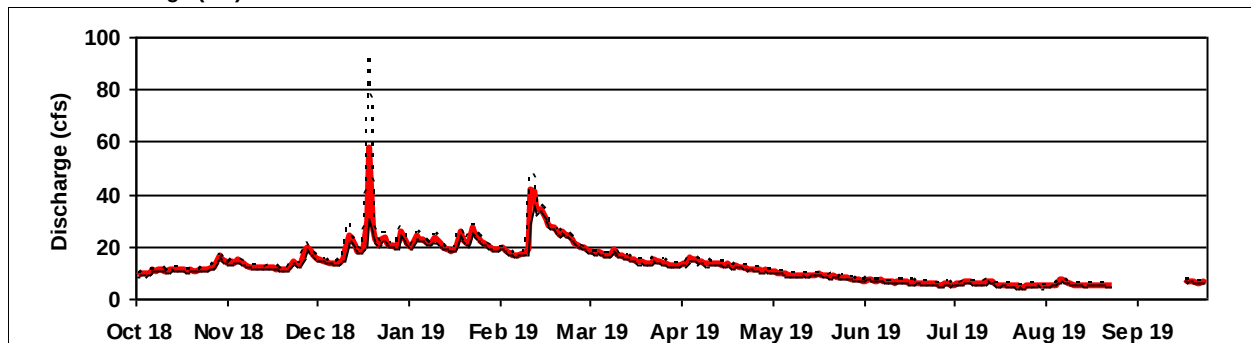
Water Year: 2019

Elv:

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	9.3	13	16	21	19	20	13	11	7.9	5.6	5.2	
02	9.9	14	15	20	20	19	13	11	7.6	5.4	5.5	
03	9.8	14	15	21	19	19	13	11	7.5	6.1	5.5	
04	9.8	15	14	24	19	18	13	11	7.4	6.0	5.5	
05	10	15	14	23	18	18	13	11	7.1	5.6	5.2	
06	11	14	14	23	17	18	14	11	7.1	5.7	5.1	
07	11	13	14	22	17	18	16	10	7.6	5.9	5.2	
08	11	12	14	21	17	18	15	9.9	7.6	5.9	5.2	
09	11	12	14	21	18	17	15	9.8	7.2	6.0	5.4	
10	11	12	15	24	17	17	14	9.6	7.1	6.6	5.7	
11	11	12	19	23	19	17	14	9.4	7.3	6.7	7.3	
12	11	12	25	21	42	19	14	9.3	7.0	6.6	7.4	
13	12	12	23	20	41	18	14	9.3	6.6	6.2	6.6	
14	11	12	20	19	34	17	14	9.2	6.7	5.8	6.2	
15	11	12	18	19	35	17	14	9.3	6.6	6.1	5.8	
16	11	12	18	18	34	16	14	9.5	6.4	6.3	5.7	
17	11	12	19	19	31	16	13	9.2	6.7	6.6	5.6	
18	11	12	30	21	28	15	13	9.2	6.6	7.1	5.6	
19	11	11	58	26	27	15	13	9.5	6.6	6.6	5.5	
20	11	11	26	23	27	15	14	9.4	6.5	5.9	5.4	
21	11	11	23	22	25	14	13	9.7	6.4	5.6	5.5	
22	11	12	21	21	24	14	13	9.5	6.5	5.6	5.7	
23	11	14	23	28	26	14	13	9.1	6.4	5.7	5.6	7.3
24	11	14	24	25	25	14	12	8.9	6.3	5.4	5.6	7.0
25	11	13	21	23	24	14	12	8.7	6.3	5.2	5.7	7.1
26	12	14	20	22	23	15	12	9.0	6.2	5.1	5.7	6.6
27	12	19	20	21	22	14	12	8.6	6.2	5.1	5.3	6.5
28	15	20	20	20	21	15	12	8.2	6.1	5.0	5.1	6.5
29	17	19	22	20		14	11	8.3	6.1	4.9	5.2	6.7
30	15	17	26	19		14	11	8.2	5.8	4.8		6.4
31	14		23	19		13		8.4		5.1		
Avg Discharge	12	14	21	22	25	16	13	9.5	6.8	5.8	5.6	6.7
Max Instantaneous	17	22	94	29	49	21	17	12	8.5	7.8	8.4	7.8
Max Mean Daily	17	20	58	28	42	20	16	11	7.9	7.1	7.4	7.3

<u>Average Discharge for Water Year 2019:</u>		13	<u>Low Flow (Cal Year)--7 day</u>	<u>--30 day</u>	
<u>Lowest Stage:</u>	<u>Discharge:</u>		Metrics	<u>High Pulse Count</u>	<u>Range</u>
<u>Peak Inst Stage:</u>	<u>Discharge:</u>		<u>TQ Mean (Use Daily Avg)</u>	<u>R-B Index</u>	0.07
Discharge is determined by comparing continuous stage records with field flow measurements.					
Thurston County					

Annual Discharge (cfs)-- Mean — Max ---- Min —



14a--Spurgeon Creek @ Rich Road bridge

Water Year: 2019

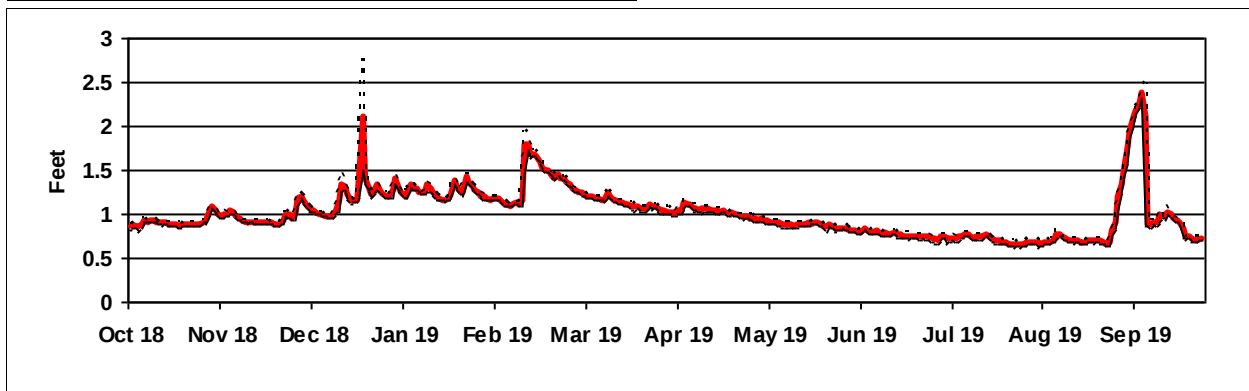
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.85	0.97	1.06	1.25	1.18	1.28	1.03	0.95	0.83	0.72	0.68	1.21
02	0.88	1.01	1.05	1.21	1.19	1.26	1.02	0.94	0.82	0.71	0.69	1.35
03	0.87	0.99	1.03	1.25	1.18	1.24	1.02	0.95	0.81	0.74	0.69	1.51
04	0.87	1.04	1.01	1.34	1.16	1.22	1.02	0.93	0.81	0.74	0.69	1.78
05	0.89	1.02	0.99	1.30	1.12	1.21	1.05	0.93	0.80	0.72	0.68	1.96
06	0.94	0.98	0.98	1.29	1.11	1.20	1.05	0.92	0.80	0.72	0.67	2.11
07	0.92	0.95	0.98	1.26	1.10	1.21	1.14	0.91	0.83	0.73	0.68	2.18
08	0.93	0.93	0.98	1.24	1.11	1.19	1.11	0.90	0.82	0.73	0.68	2.28
09	0.94	0.92	1.00	1.25	1.13	1.18	1.11	0.90	0.80	0.74	0.69	2.38
10	0.92	0.92	1.03	1.33	1.12	1.17	1.07	0.89	0.80	0.76	0.70	2.11
11	0.90	0.92	1.16	1.29	1.16	1.16	1.07	0.88	0.81	0.77	0.78	0.89
12	0.90	0.91	1.35	1.24	1.80	1.24	1.05	0.88	0.79	0.77	0.78	0.89
13	0.90	0.91	1.31	1.20	1.80	1.20	1.06	0.88	0.78	0.75	0.75	0.92
14	0.89	0.91	1.22	1.18	1.68	1.17	1.06	0.87	0.79	0.73	0.73	0.90
15	0.89	0.91	1.15	1.17	1.69	1.16	1.06	0.88	0.78	0.74	0.71	0.99
16	0.89	0.91	1.15	1.16	1.67	1.14	1.05	0.88	0.77	0.75	0.70	0.97
17	0.89	0.91	1.16	1.18	1.60	1.14	1.04	0.88	0.79	0.74	0.70	0.99
18	0.87	0.90	1.48	1.23	1.52	1.12	1.04	0.88	0.77	0.77	0.70	1.02
19	0.88	0.89	2.11	1.39	1.50	1.11	1.03	0.90	0.77	0.75	0.69	0.99
20	0.88	0.88	1.40	1.31	1.49	1.09	1.05	0.89	0.76	0.72	0.69	0.96
21	0.88	0.89	1.30	1.26	1.44	1.08	1.02	0.91	0.76	0.70	0.69	0.93
22	0.88	0.93	1.23	1.24	1.42	1.08	1.01	0.90	0.76	0.70	0.70	0.92
23	0.88	1.01	1.30	1.44	1.45	1.07	1.02	0.88	0.76	0.70	0.70	0.84
24	0.88	0.99	1.33	1.37	1.42	1.06	1.00	0.87	0.75	0.69	0.70	0.74
25	0.88	0.96	1.25	1.31	1.41	1.06	1.00	0.86	0.75	0.68	0.70	0.74
26	0.92	1.00	1.22	1.27	1.37	1.11	0.98	0.88	0.75	0.67	0.70	0.72
27	0.93	1.19	1.21	1.24	1.33	1.08	0.97	0.86	0.75	0.67	0.68	0.71
28	1.05	1.20	1.20	1.21	1.29	1.09	0.97	0.85	0.74	0.67	0.67	0.71
29	1.09	1.16	1.27	1.20		1.07	0.96	0.85	0.74	0.66	0.68	0.72
30	1.04	1.09	1.40	1.18		1.05	0.96	0.84	0.73	0.66	0.82	0.71
31	1.00		1.29	1.17		1.04		0.85		0.67	0.90	
Avg Stage	0.91	0.97	1.21	1.26	1.37	1.14	1.03	0.89	0.78	0.72	0.71	1.20
Max Instant	1.1	1.3	2.8	1.5	2.0	1.3	1.2	0.98	0.86	0.80	0.99	2.5
Max Mean Daily	1.1	1.2	2.1	1.4	1.8	1.3	1.1	0.95	0.83	0.77	0.90	2.4

Average Stage for Water Year 2019: 1.02

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



17a--Chambers Creek @ Rich Road bridge

Water Year: 2019

Elv: 166

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.23	0.53	0.32	1.8	1.5	2.2	1.2	0.64	0.22	0.08	0.03	0.02
02	0.26	0.99	0.25	1.3	2.0	2.0	1.2	0.61	0.21	0.08	0.03	0.02
03	0.25	0.83	0.22	2.4	1.5	1.8	1.3	0.59	1.0	0.07	0.03	0.02
04	0.24	1.3	0.19	6.5	1.7	1.6	1.2	0.58	0.36	0.07	0.03	0.02
05	0.28	0.88	0.18	4.6	1.2	1.5	1.6	0.57	0.24	0.07	0.03	0.02
06	0.32	0.75	0.16	4.6	1.0	1.6	1.9	0.54	0.19	0.07	0.03	0.02
07	0.29	0.67	0.16	3.8	0.91	1.9	4.5	0.53	0.24	0.07	0.03	0.02
08	0.33	0.63	0.16	2.6	0.96	2.0	3.5	0.51	0.20	0.19	0.02	0.02
09	0.34	0.62	0.24	2.8	2.9	2.0	5.9	0.49	0.19	0.08	0.02	0.02
10	0.31	0.61	0.32	3.8	1.9	1.9	3.7	0.45	0.21	0.08	0.04	0.02
11	0.29	0.60	1.6	2.7	4.6	1.8	3.3	0.45	0.21	0.07	0.04	0.02
12	0.27	0.57	1.7	2.1	30	4.0	2.8	0.44	0.20	0.06	0.04	0.02
13	0.26	0.56	2.7	1.7	18	2.9	3.1	0.42	0.18	0.06	0.03	0.02
14	0.26	0.54	1.5	1.4	14	2.5	3.0	0.45	0.15	0.05	0.03	0.02
15	0.24	0.55	0.91	1.2	16	2.3	2.3	0.46	0.17	0.05	0.03	0.02
16	0.24	0.55	0.97	1.0	14	2.1	1.8	0.46	0.14	0.05	0.03	0.02
17	0.23	0.54	1.4	1.2	9.4	2.0	1.5	0.43	0.16	0.05	0.03	0.03
18	0.22	0.56	7.4	2.5	6.5	1.9	1.3	0.34	0.15	0.05	0.02	0.03
19	0.23	0.54	6.6	8.8	6.0	1.8	1.2	0.46	0.14	0.05	0.02	0.02
20	0.24	0.54	3.2	4.3	6.3	1.7	1.5	0.40	0.14	0.04	0.02	0.02
21	0.25	0.54	2.2	2.7	4.8	1.5	1.1	0.36	0.13	0.04	0.02	0.02
22	0.26	0.71	1.8	2.5	4.5	1.7	0.92	0.35	0.12	0.04	0.03	0.02
23	0.26	1.3	5.3	11	4.8	1.7	0.89	0.32	0.12	0.04	0.02	0.02
24	0.25	0.78	6.5	5.4	4.6	1.6	0.81	0.35	0.12	0.04	0.02	0.02
25	0.27	0.64	2.9	3.4	4.5	1.6	0.80	0.44	0.11	0.03	0.02	0.02
26	0.37	1.2	2.2	2.5	3.5	1.9	0.76	0.41	0.10	0.03	0.02	0.02
27	0.45	2.0	1.9	2.1	2.8	1.8	0.70	0.30	0.10	0.03	0.02	0.02
28	1.0	1.5	1.4	1.9	2.4	1.8	0.67	0.27	0.10	0.03	0.02	0.02
29	0.84	0.71	4.5	1.6		1.5	0.67	0.26	0.09	0.03	0.02	0.02
30	0.59	0.39	6.6	1.3		1.3	0.67	0.25	0.09	0.03	0.02	0.02
31	0.60		2.9	1.2		1.3		0.25		0.03	0.02	

Avg Discharge	0.34	0.77	2.2	3.1	6.1	1.9	1.9	0.43	0.19	0.06	0.03	0.02
Max Instantaneous	1.2	2.8	14	14	33	4.7	7.2	0.72	15	0.38	0.09	0.04
Max Mean Daily	1.0	2.0	7.4	11	30	4.0	5.9	0.64	1.0	0.19	0.04	0.03

Average Discharge for Water Year 2019: 1.4 [Low Flow \(Cal Year\)--7 day](#) 0.02 10/13/2019 [--30 day](#) 0.02 10/04/201

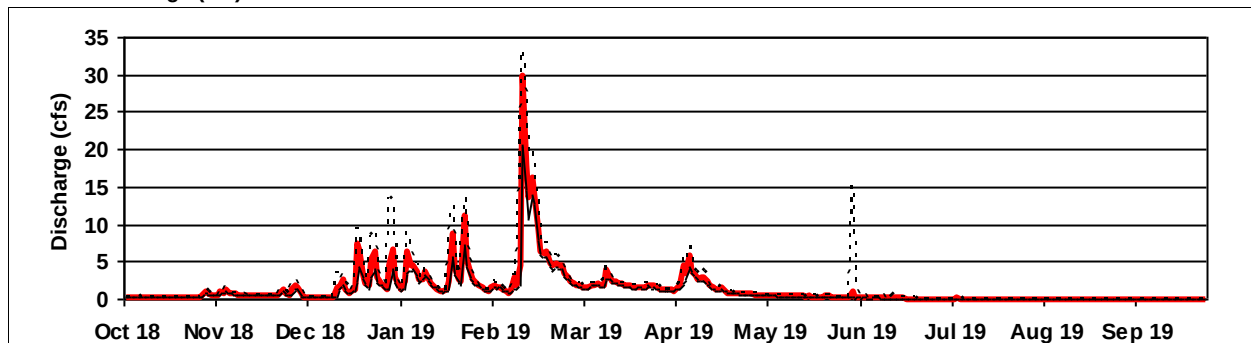
Lowest Stage: 0.4 **Discharge:** 0.01 08/23/2019 **Metrics** [High Pulse Count](#) 2 [Range](#) 3 Days

Peak Inst Stage: 1.86 **Discharge:** 33.33 02/12/2019 [TQ Mean \(Use Daily Avg\)](#) 0.30 [R-B Index](#) 0.36

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean █ Max ---- Min ---



02/04/2020 11:31:10 AM by Nat Kale

17a--Chambers Creek @ Rich Road bridge

Water Year: 2019

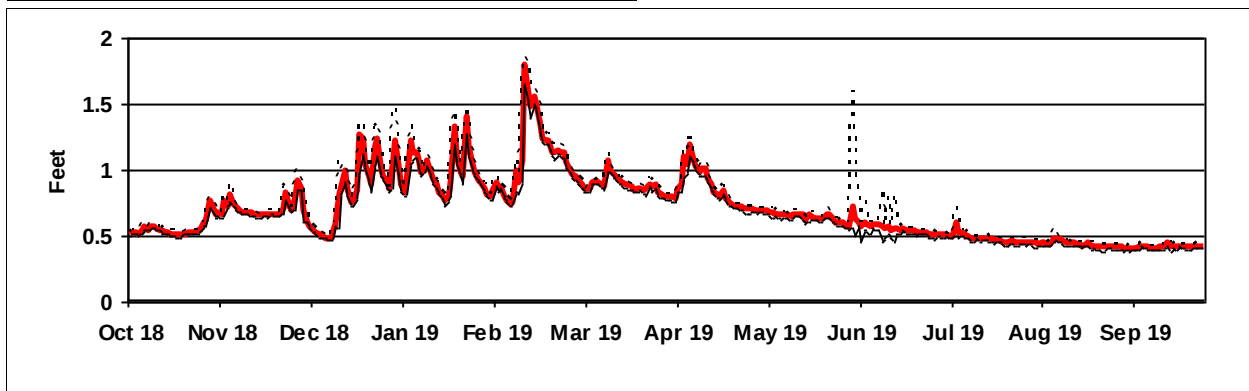
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.52	0.66	0.58	0.89	0.85	0.95	0.80	0.70	0.58	0.51	0.45	0.42
02	0.53	0.77	0.55	0.83	0.91	0.92	0.81	0.69	0.58	0.51	0.46	0.42
03	0.53	0.73	0.53	0.95	0.86	0.90	0.81	0.69	0.72	0.51	0.46	0.41
04	0.52	0.82	0.51	1.23	0.88	0.87	0.79	0.69	0.64	0.51	0.45	0.41
05	0.54	0.75	0.51	1.13	0.81	0.86	0.86	0.69	0.60	0.51	0.44	0.41
06	0.57	0.72	0.49	1.14	0.78	0.87	0.90	0.68	0.57	0.50	0.45	0.41
07	0.55	0.70	0.49	1.08	0.75	0.91	1.11	0.68	0.60	0.50	0.45	0.41
08	0.57	0.68	0.49	0.98	0.76	0.92	1.05	0.67	0.59	0.60	0.44	0.42
09	0.57	0.68	0.54	1.00	1.00	0.91	1.20	0.67	0.58	0.53	0.44	0.43
10	0.56	0.68	0.59	1.08	0.91	0.90	1.07	0.66	0.59	0.53	0.49	0.43
11	0.55	0.68	0.82	0.99	1.07	0.88	1.03	0.66	0.59	0.51	0.49	0.42
12	0.54	0.67	0.88	0.94	1.81	1.08	0.99	0.66	0.59	0.50	0.48	0.41
13	0.53	0.67	1.00	0.89	1.59	1.00	1.01	0.65	0.57	0.49	0.47	0.41
14	0.53	0.66	0.86	0.84	1.48	0.97	1.01	0.66	0.56	0.48	0.45	0.41
15	0.52	0.66	0.76	0.81	1.56	0.95	0.94	0.67	0.57	0.49	0.45	0.42
16	0.52	0.66	0.77	0.77	1.50	0.93	0.89	0.67	0.55	0.48	0.45	0.42
17	0.52	0.67	0.85	0.81	1.35	0.91	0.84	0.66	0.56	0.49	0.45	0.44
18	0.51	0.67	1.28	0.93	1.24	0.90	0.82	0.62	0.56	0.49	0.44	0.45
19	0.51	0.67	1.25	1.33	1.22	0.89	0.80	0.67	0.55	0.48	0.44	0.42
20	0.52	0.67	1.05	1.11	1.23	0.88	0.85	0.65	0.56	0.48	0.43	0.43
21	0.53	0.67	0.95	0.99	1.14	0.85	0.79	0.64	0.55	0.47	0.44	0.42
22	0.53	0.71	0.90	0.96	1.13	0.87	0.76	0.64	0.54	0.47	0.45	0.43
23	0.53	0.83	1.18	1.41	1.15	0.87	0.75	0.63	0.54	0.47	0.43	0.43
24	0.54	0.73	1.24	1.18	1.13	0.85	0.73	0.64	0.54	0.46	0.43	0.42
25	0.55	0.70	1.02	1.05	1.13	0.86	0.73	0.67	0.53	0.46	0.43	0.42
26	0.60	0.81	0.95	0.98	1.06	0.90	0.72	0.67	0.53	0.46	0.42	0.42
27	0.62	0.92	0.92	0.93	1.00	0.88	0.71	0.63	0.53	0.47	0.42	0.42
28	0.77	0.86	0.86	0.91	0.97	0.89	0.71	0.61	0.53	0.46	0.42	0.43
29	0.74	0.70	1.06	0.87		0.84	0.71	0.60	0.52	0.46	0.42	0.43
30	0.67	0.61	1.23	0.82		0.82	0.71	0.60	0.51	0.46	0.42	0.42
31	0.68		1.01	0.80		0.81		0.60		0.46	0.42	
Avg Stage	0.56	0.71	0.84	0.99	1.12	0.90	0.86	0.66	0.57	0.49	0.44	0.42
Max Instant	0.81	1.0	1.5	1.5	1.9	1.1	1.3	0.72	1.6	0.73	0.57	0.48
Max Mean Daily	0.77	0.92	1.3	1.4	1.8	1.1	1.2	0.70	0.72	0.60	0.49	0.45

Average Stage for Water Year 2019: 0.71

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



02/04/2020 11:31:31 AM

18a--Woodland Creek @ Pleasant Glade Road bridge

Water Year: 2019

Elv: 27

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	11	14	19	34	31	32	25	21	14	13	12	9.6
02	12	15	19	32	30	31	25	20	14	13	13	9.6
03	12	15	19	33	28	31	25	20	13	13	12	9.5
04	12	17	19	41	27	30	25	20	13	13	12	9.4
05	13	16	19	36	26	30	27	19	13	13	11	9.3
06	13	15	19	39	26	30	27	18	12	12	11	8.9
07	12	15	19	38	26	31	32	18	13	13	12	9.1
08	13	14	18	35	26	30	30	18	13	12	11	9.4
09	13	14	20	36	28	30	32	18	13	13	10	9.8
10	12	14	21	38	28	29	29	17	13	14	11	9.9
11	12	13	37	36	30	28	28	17	16	12	10	9.4
12	12	13	35	35	47	31	27	17	17	12	10	9.3
13	12	13	37	34	40	29	29	17	13	12	9.8	9.1
14	12	13	30	34	39	28	31	17	13	12	10	8.8
15	11	13	28	33	41	27	29	17	13	11	10	10
16	11	11	30	33	41	27	27	17	14	12	10	9.2
17	11	12	29	33	40	27	27	18	14	12	9.8	10
18	12	13	43	36	38	27	26	17	14	12	9.6	10.0
19	12	13	35	43	38	27	25	17	14	12	9.3	9.4
20	11	13	33	36	39	27	25	17	14	12	9.1	9.1
21	11	13	32	34	37	27	25	18	14	12	9.1	9.1
22	11	14	31	33	37	27	24	17	14	12	10	9.1
23	11	23	49	42	37	27	24	16	14	12	11	9.4
24	11	15	48	35	37	26	23	17	14	12	11	8.8
25	11	14	36	32	36	27	22	17	14	12	10	8.7
26	14	18	35	31	35	28	22	16	14	12	10	8.9
27	14	29	34	31	34	27	22	16	14	12	10	8.9
28	18	24	33	31	32	28	22	16	14	12	10	9.5
29	15	21	38	32		27	21	16	13	13	10	9.4
30	13	19	40	30		26	21	15	13	13	10.0	9.0
31	13		35	31		26		14		13	9.8	

Avg Discharge	12	15	30	35	34	28	26	17	14	12	11	9.3
Max Instantaneous	21	37	68	50	50	33	38	22	28	15	13	14
Max Mean Daily	18	29	49	43	47	32	32	21	17	14	13	10

Average Discharge for Water Year 2019: 20 [Low Flow \(Cal Year\)--7 day](#) 8.58 12/03/2019 [--30 day](#) 9.13 10/03/201

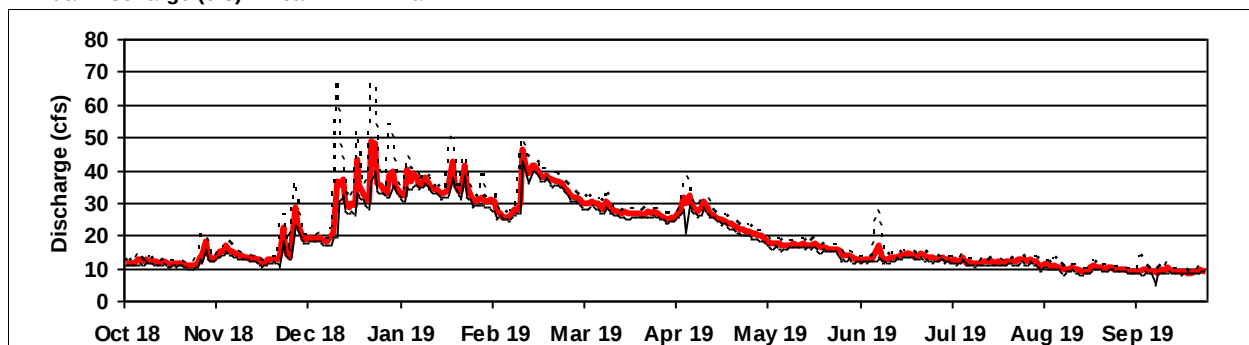
Lowest Stage: 0.26 **Discharge:** 4.66 09/13/2019 **Metrics** [High Pulse Count](#) 0 [Range](#) 0 Days

Peak Inst Stage: 1.36 **Discharge:** 67.63 12/11/2018 [TQ Mean \(Use Daily Avg\)](#) 0.41 [R-B Index](#) 0.06

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



02/04/2020 11:32:29 AM by Nat Kale

18a--Woodland Creek @ Pleasant Glade Road br

Water Year: 2019

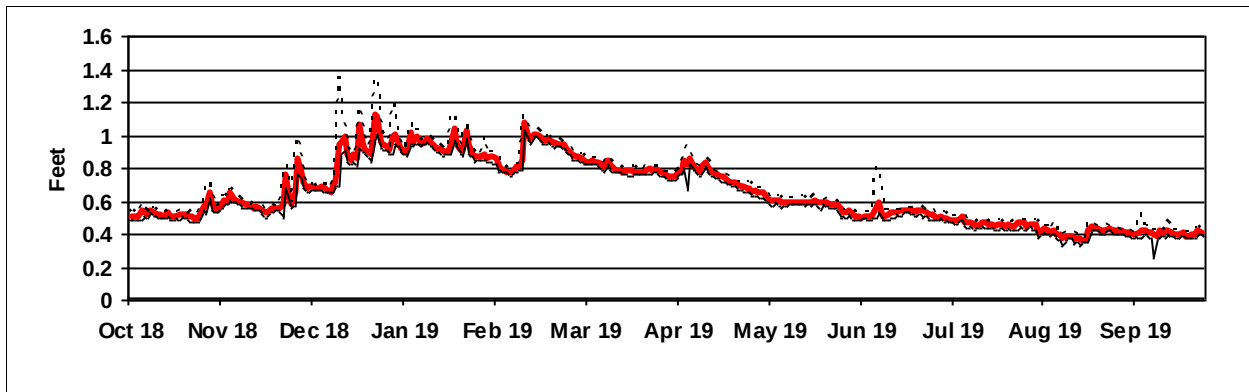
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.50	0.58	0.69	0.92	0.87	0.87	0.75	0.67	0.53	0.51	0.45	0.42
02	0.51	0.61	0.69	0.90	0.86	0.87	0.75	0.66	0.54	0.50	0.46	0.42
03	0.51	0.60	0.68	0.91	0.82	0.86	0.75	0.65	0.52	0.51	0.46	0.41
04	0.51	0.65	0.68	1.02	0.80	0.85	0.75	0.65	0.51	0.50	0.46	0.41
05	0.54	0.62	0.69	0.96	0.79	0.84	0.77	0.62	0.51	0.50	0.41	0.41
06	0.53	0.61	0.68	1.00	0.78	0.84	0.78	0.61	0.50	0.49	0.42	0.40
07	0.52	0.60	0.67	0.98	0.78	0.85	0.85	0.61	0.51	0.49	0.44	0.40
08	0.54	0.59	0.66	0.95	0.78	0.84	0.83	0.61	0.51	0.48	0.43	0.41
09	0.53	0.58	0.70	0.96	0.81	0.84	0.86	0.61	0.51	0.49	0.41	0.42
10	0.52	0.58	0.72	0.98	0.81	0.82	0.81	0.60	0.52	0.51	0.42	0.43
11	0.52	0.57	0.95	0.96	0.85	0.81	0.80	0.59	0.57	0.47	0.40	0.41
12	0.51	0.56	0.96	0.94	1.08	0.85	0.78	0.60	0.59	0.47	0.40	0.41
13	0.52	0.57	0.99	0.92	1.00	0.82	0.81	0.60	0.51	0.47	0.38	0.40
14	0.53	0.56	0.88	0.92	0.98	0.80	0.84	0.60	0.51	0.46	0.39	0.39
15	0.51	0.55	0.85	0.91	1.01	0.79	0.81	0.60	0.52	0.45	0.39	0.43
16	0.51	0.53	0.88	0.90	1.01	0.79	0.78	0.60	0.53	0.46	0.39	0.41
17	0.51	0.53	0.86	0.91	0.99	0.78	0.77	0.60	0.53	0.47	0.38	0.43
18	0.52	0.56	1.07	0.95	0.97	0.79	0.76	0.60	0.53	0.47	0.38	0.43
19	0.52	0.56	0.95	1.04	0.97	0.79	0.75	0.60	0.54	0.46	0.37	0.41
20	0.52	0.56	0.91	0.95	0.98	0.79	0.75	0.60	0.54	0.46	0.36	0.40
21	0.51	0.56	0.90	0.91	0.96	0.78	0.74	0.61	0.55	0.45	0.36	0.40
22	0.51	0.58	0.88	0.91	0.96	0.78	0.72	0.60	0.55	0.46	0.42	0.40
23	0.50	0.76	1.13	1.03	0.95	0.78	0.72	0.59	0.54	0.46	0.45	0.41
24	0.50	0.62	1.12	0.94	0.95	0.78	0.71	0.59	0.53	0.46	0.44	0.39
25	0.52	0.58	0.96	0.89	0.94	0.79	0.70	0.60	0.54	0.45	0.44	0.39
26	0.57	0.66	0.95	0.87	0.92	0.80	0.69	0.58	0.55	0.46	0.43	0.40
27	0.57	0.86	0.93	0.87	0.90	0.79	0.69	0.58	0.54	0.45	0.43	0.40
28	0.66	0.77	0.91	0.87	0.88	0.80	0.68	0.58	0.53	0.45	0.43	0.42
29	0.59	0.72	0.99	0.88		0.79	0.68	0.58	0.52	0.47	0.44	0.41
30	0.55	0.68	1.01	0.86		0.78	0.66	0.56	0.52	0.47	0.43	0.40
31	0.55		0.95	0.87		0.77		0.53		0.47	0.42	
Avg Stage	0.53	0.61	0.87	0.93	0.91	0.81	0.76	0.60	0.53	0.47	0.42	0.41
Max Instant	0.72	0.99	1.4	1.1	1.1	0.90	0.95	0.69	0.81	0.53	0.48	0.53
Max Mean Daily	0.66	0.86	1.1	1.0	1.1	0.87	0.86	0.67	0.59	0.51	0.46	0.43

Average Stage for Water Year 2019: 0.65

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean — Max ----- Min —



20a--Woodard Creek @ 36th Ave. NE

Water Year: 2019

Elv: 117

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	3.3	5.1	11	8.2	7.9	8.1	7.0	5.8	4.8	2.0	2.4	1.7
02	3.5	6.2	5.7	6.9	8.5	7.7	6.8	5.5	4.7	2.1	2.6	1.8
03	3.3	5.7	3.8	7.3	8.1	7.6	6.6	5.3	4.4	2.2	2.4	1.6
04	3.2	6.7	2.9	15	7.7	7.4	6.4	5.3	3.8	2.3	2.2	1.4
05	3.5	5.6	2.0	19	7.1	7.8	7.1	5.2	3.5	2.2	2.0	1.3
06	4.4	4.7	1.7	15	7.0	8.1	8.2	5.1	3.4	2.3	1.9	1.2
07	3.9	4.0	1.6	12	6.7	8.6	12	4.9	3.3	2.3	1.8	1.2
08	4.4	3.6	1.7	10	6.8	8.5	12	4.6	3.3	2.2	1.7	1.2
09	4.2	3.4	2.5	9.8	8.5	8.3	12	4.3	3.1	2.3	1.7	1.8
10	3.9	3.2	4.5	12	8.4	8.0	10	4.3	3.0	3.2	1.8	3.1
11	4.8	3.0	13	10	9.5	7.8	9.0	4.9	2.9	3.5	1.8	3.4
12	5.5	2.9	22	9.0	26	10	8.6	4.9	3.1	3.7	2.0	2.9
13	4.6	2.9	19	8.1	27	9.5	8.7	4.7	3.0	5.7	2.0	2.5
14	4.0	2.8	12	7.3	17	8.4	8.8	4.6	2.6	4.8	1.9	2.1
15	3.6	2.6	8.2	6.9	17	8.0	8.7	4.6	2.5	3.7	1.9	2.5
16	3.3	2.3	7.8	6.5	16	7.7	8.2	4.9	2.3	3.2	1.8	3.0
17	3.1	2.1	9.1	7.5	14	7.8	8.1	4.9	2.8	2.9	1.8	3.2
18	3.1	2.0	23	10	11	8.1	7.7	4.6	3.1	3.1	1.8	4.1
19	3.0	2.1	20	21	11	7.8	7.5	4.6	2.7	3.6	1.7	4.1
20	3.1	2.0	12	15	11	7.7	7.7	4.5	2.5	3.3	1.6	2.9
21	3.0	2.2	8.0	9.8	10	7.5	7.7	4.5	2.4	2.9	1.8	2.4
22	3.1	3.0	7.0	9.1	10	7.1	7.2	4.5	2.4	2.7	2.0	2.4
23	3.1	12	17	17	11	7.0	7.2	4.4	2.4	2.5	1.9	2.3
24	3.2	8.5	23	14	11	6.9	6.9	4.1	2.3	2.3	1.8	2.2
25	3.2	5.3	14	10	11	7.2	6.5	4.1	2.1	2.1	1.7	2.0
26	5.4	6.2	11	8.6	9.9	8.2	6.4	3.9	2.1	1.9	1.6	1.8
27	7.2	18	9.4	7.9	9.0	7.7	5.9	3.8	2.0	1.9	1.5	1.8
28	13	13	8.5	7.7	8.3	8.0	5.8	3.8	1.9	1.9	1.4	2.0
29	8.7	10	11	7.5		7.7	6.0	5.6	1.9	1.8	1.3	1.8
30	6.2	13	15	7.4		7.2	5.8	6.1	2.1	1.8	1.3	1.6
31	5.5		11	7.3		7.2		5.2		2.0	1.6	
Avg Discharge	4.4	5.5	10	10	11	7.9	7.9	4.8	2.9	2.7	1.8	2.2
Max Instantaneous	15	19	28	22	33	11	13	7.1	5.5	6.2	2.8	4.7
Max Mean Daily	13	18	23	21	27	10	12	6.1	4.8	5.7	2.6	4.1

Average Discharge for Water Year 2019: 6.0 [Low Flow \(Cal Year\)--7 day](#) 1.2 10/12/2019 [--30 day](#) 1.64 08/26/201

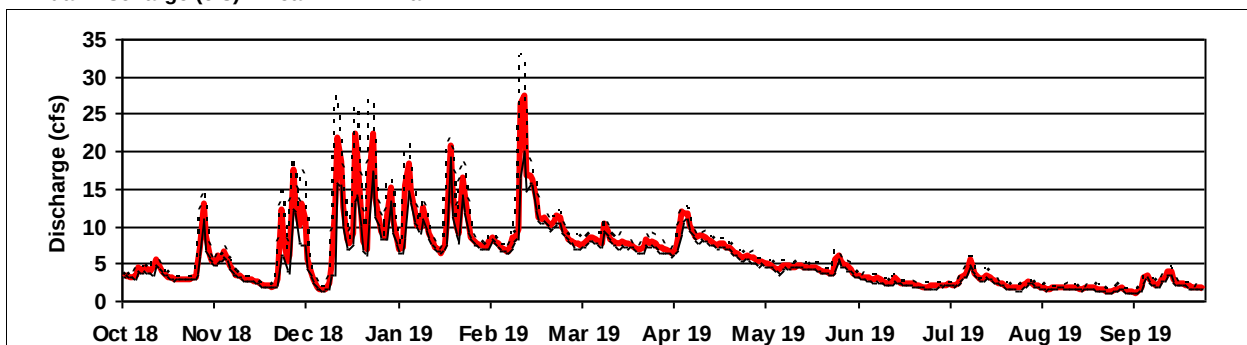
Lowest Stage: 0.79 **Discharge:** 0.95 08/29/2019 **Metrics** [High Pulse Count](#) 5 [Range](#) 62 Days

Peak Inst Stage: 2.2 **Discharge:** 32.73 02/13/2019 [TQ Mean \(Use Daily Avg\)](#) 0.42 [R-B Index](#) 0.17

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



02/04/2020 11:34:24 AM by Nat Kale

20a--Woodard Creek @ 36th Ave. NE

Water Year: 2019

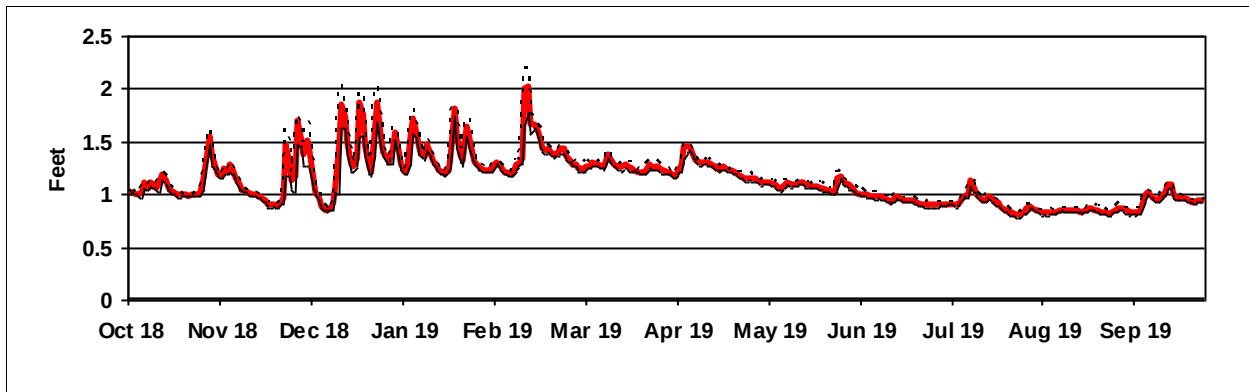
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	1.01	1.18	1.42	1.28	1.27	1.28	1.22	1.15	1.10	0.90	0.87	0.87
02	1.03	1.25	1.15	1.21	1.30	1.25	1.21	1.13	1.09	0.90	0.89	0.88
03	1.01	1.22	1.03	1.23	1.28	1.25	1.20	1.12	1.07	0.91	0.88	0.87
04	1.00	1.28	0.97	1.59	1.26	1.24	1.18	1.12	1.03	0.91	0.86	0.85
05	1.02	1.21	0.89	1.72	1.22	1.26	1.22	1.12	1.01	0.90	0.85	0.83
06	1.11	1.15	0.86	1.57	1.22	1.27	1.28	1.12	1.00	0.91	0.84	0.83
07	1.06	1.09	0.86	1.46	1.20	1.30	1.46	1.10	1.00	0.91	0.84	0.83
08	1.11	1.05	0.87	1.38	1.20	1.29	1.45	1.09	1.00	0.90	0.83	0.84
09	1.09	1.04	0.93	1.36	1.29	1.28	1.45	1.07	0.99	0.90	0.83	0.89
10	1.07	1.02	1.08	1.48	1.29	1.27	1.37	1.07	0.99	0.97	0.84	1.01
11	1.14	1.00	1.48	1.39	1.34	1.26	1.32	1.10	0.98	0.99	0.84	1.03
12	1.19	1.00	1.85	1.32	2.00	1.39	1.30	1.11	0.99	1.00	0.85	0.99
13	1.13	1.00	1.74	1.27	2.03	1.34	1.31	1.10	0.99	1.13	0.86	0.97
14	1.08	0.99	1.49	1.24	1.66	1.29	1.31	1.09	0.96	1.07	0.86	0.94
15	1.04	0.96	1.29	1.21	1.66	1.27	1.30	1.09	0.95	1.00	0.85	0.97
16	1.02	0.94	1.27	1.19	1.64	1.26	1.28	1.11	0.93	0.96	0.85	1.00
17	1.00	0.90	1.34	1.24	1.53	1.26	1.27	1.11	0.97	0.94	0.85	1.02
18	1.00	0.90	1.87	1.38	1.43	1.28	1.26	1.09	0.99	0.95	0.85	1.09
19	1.00	0.90	1.77	1.81	1.42	1.26	1.24	1.09	0.97	0.98	0.84	1.09
20	1.00	0.89	1.45	1.57	1.43	1.25	1.26	1.08	0.95	0.96	0.84	1.01
21	0.99	0.91	1.27	1.36	1.39	1.24	1.25	1.08	0.94	0.93	0.85	0.97
22	1.00	0.97	1.22	1.32	1.38	1.22	1.23	1.08	0.94	0.92	0.87	0.97
23	1.00	1.48	1.64	1.65	1.40	1.22	1.23	1.07	0.94	0.89	0.87	0.97
24	1.01	1.30	1.87	1.57	1.43	1.21	1.21	1.06	0.93	0.87	0.86	0.96
25	1.01	1.13	1.54	1.39	1.43	1.23	1.19	1.05	0.92	0.85	0.86	0.95
26	1.18	1.17	1.41	1.30	1.36	1.28	1.18	1.04	0.91	0.84	0.84	0.93
27	1.30	1.70	1.34	1.27	1.32	1.25	1.16	1.03	0.90	0.83	0.84	0.92
28	1.56	1.52	1.30	1.25	1.29	1.27	1.15	1.03	0.90	0.82	0.83	0.94
29	1.38	1.39	1.43	1.24		1.26	1.16	1.15	0.90	0.81	0.82	0.94
30	1.25	1.51	1.60	1.24		1.23	1.15	1.18	0.90	0.81	0.83	0.92
31	1.20		1.41	1.23		1.23		1.13		0.84	0.86	
Avg Stage	1.10	1.13	1.34	1.38	1.42	1.26	1.26	1.10	0.97	0.92	0.85	0.94
Max Instant	1.6	1.8	2.1	1.9	2.2	1.4	1.5	1.2	1.1	1.2	0.91	1.1
Max Mean Daily	1.6	1.7	1.9	1.8	2.0	1.4	1.5	1.2	1.1	1.1	0.89	1.1

Average Stage for Water Year 2019: 1.14

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean — Max ----- Min —



02/04/2020 11:34:43 AM

32b--Green Cove Creek @ Butler Cove Fire Station

Water Year: 2019

Elv: 105

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.12	0.42	1.2	3.2	3.9	3.3	1.7	0.81	0.41	0.21	0.03	0.07
02	0.13	0.58	0.88	2.7	3.8	3.2	1.6	0.75	0.33	0.24	0.04	0.08
03	0.12	0.51	0.78	4.3	3.5	3.0	1.6	0.73	0.33	0.21	0.03	0.09
04	0.12	0.89	0.68	13	3.2	2.6	1.5	0.75	0.31	0.17	0.03	0.10
05	0.18	0.73	0.65	9.8	2.8	2.5	1.8	0.86	0.32	0.17	0.04	0.10
06	0.14	0.61	0.63	12	2.6	2.3	2.2	0.78	0.31	0.17	0.04	0.10
07	0.15	0.52	0.59	9.4	2.3	2.5	4.1	0.75	0.32	0.17	0.04	0.08
08	0.17	0.45	0.59	6.4	2.4	2.5	3.0	0.57	0.29	0.17	0.04	0.08
09	0.15	0.40	0.82	6.5	2.6	2.4	3.0	0.56	0.29	0.15	0.04	0.14
10	0.14	0.40	1.2	15	2.4	2.3	2.5	0.55	0.28	0.16	0.05	0.14
11	0.15	0.40	11	8.2	3.0	2.2	2.3	0.68	0.29	0.16	0.05	0.13
12	0.14	0.38	7.4	5.2	15	3.6	2.1	0.53	0.29	0.15	0.05	0.13
13	0.14	0.36	13	4.2	11	2.9	2.5	0.57	0.30	0.14	0.05	0.18
14	0.13	0.39	4.1	3.4	9.3	2.6	2.7	0.47	0.28	0.15	0.05	0.13
15	0.14	0.41	2.7	3.1	12	2.5	2.0	0.49	0.25	0.14	0.05	0.21
16	0.14	0.42	3.1	2.9	11	2.3	1.8	0.53	0.26	0.14	0.03	0.18
17	0.15	0.44	6.2	3.9	8.1	2.2	1.6	0.54	0.26	0.13	0.04	0.25
18	0.15	0.42	24	9.6	5.5	2.1	1.6	0.70	0.25	0.13	0.04	0.18
19	0.14	0.33	9.5	21	5.7	2.1	1.4	0.56	0.25	0.13	0.04	0.15
20	0.15	0.28	5.5	10	6.6	2.1	1.4	0.51	0.25	0.13	0.05	0.17
21	0.14	0.32	3.9	6.4	5.8	2.0	1.3	0.58	0.22	0.12	0.07	0.15
22	0.14	0.62	3.4	7.5	5.4	1.9	1.2	0.42	0.23	0.11	0.06	0.19
23	0.15	2.0	15	18	5.6	1.8	1.2	0.52	0.22	0.12	0.06	0.18
24	0.15	0.98	14	10	6.8	1.7	1.2	0.41	0.22	0.08	0.06	0.19
25	0.17	0.68	5.4	7.6	5.9	1.8	1.1	0.47	0.21	0.02	0.07	0.20
26	0.24	1.1	4.5	5.8	4.5	2.0	1.0	0.48	0.21	0.03	0.07	0.22
27	0.34	4.8	3.9	4.8	3.9	1.9	0.94	0.45	0.21	0.03	0.07	0.23
28	0.49	2.4	3.1	4.3	3.6	1.9	0.91	0.43	0.20	0.03	0.07	0.26
29	0.50	1.6	7.9	3.7		1.8	0.87	0.40	0.20	0.03	0.06	0.30
30	0.42	1.2	9.5	3.4		1.7	0.85	0.43	0.21	0.03	0.06	0.31
31	0.41		4.5	3.3		1.7		0.50		0.03	0.07	

Avg Discharge	0.19	0.83	5.5	7.4	5.6	2.3	1.8	0.57	0.27	0.12	0.05	0.16
Max Instantaneous	1.2	7.7	35	27	19	4.1	4.9	1.8	0.65	0.28	0.10	0.39
Max Mean Daily	0.50	4.8	24	21	15	3.6	4.1	0.86	0.41	0.24	0.07	0.31

Average Discharge for Water Year 2019: 2.1 [Low Flow \(Cal Year\)--7 day](#) 0.03 08/03/2019 [--30 day](#) 0.04 08/12/201

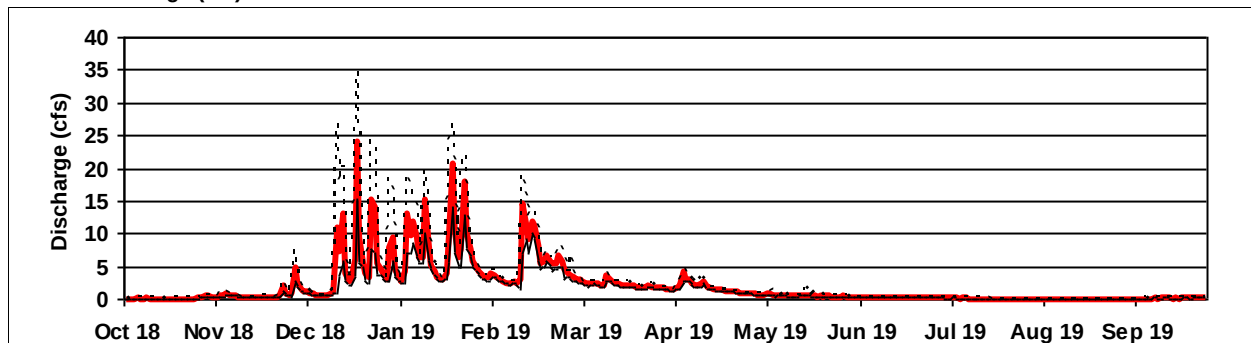
Lowest Stage: 1.43 **Discharge:** 0.02 07/24/2019 **Metrics** [High Pulse Count](#) 10 [Range](#) 66 Days

Peak Inst Stage: 2.08 **Discharge:** 34.78 12/18/2018 [TQ Mean \(Use Daily Avg\)](#) 0.30 [R-B Index](#) 0.37

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



02/04/2020 11:35:18 AM by Nat Kale

32b--Green Cove Creek @ Butler Cove Fire Stati

Water Year: 2019

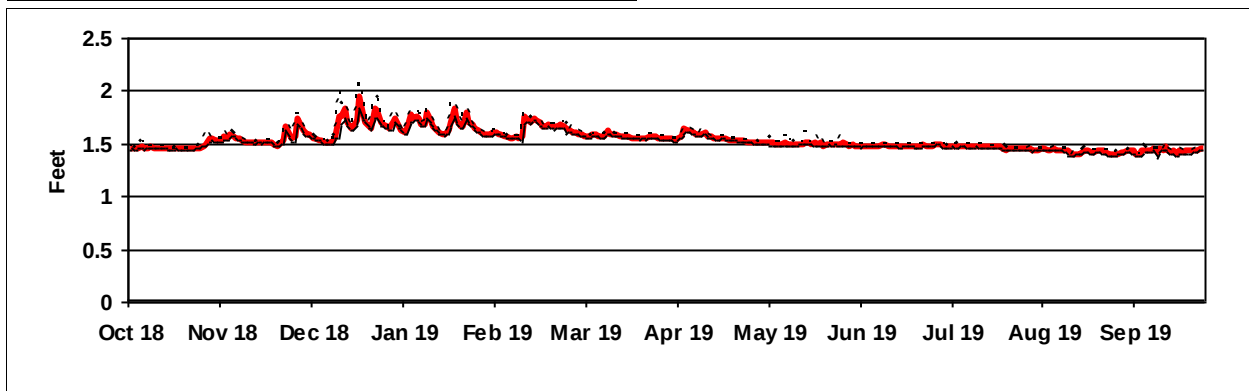
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	1.46	1.54	1.59	1.63	1.61	1.61	1.55	1.51	1.49	1.49	1.45	1.41
02	1.46	1.57	1.56	1.61	1.61	1.60	1.55	1.51	1.48	1.50	1.45	1.42
03	1.45	1.56	1.55	1.65	1.60	1.59	1.55	1.51	1.49	1.49	1.44	1.42
04	1.46	1.60	1.53	1.78	1.59	1.58	1.54	1.51	1.48	1.48	1.44	1.43
05	1.48	1.58	1.53	1.74	1.58	1.58	1.56	1.52	1.48	1.47	1.44	1.43
06	1.45	1.56	1.52	1.77	1.57	1.57	1.58	1.52	1.48	1.47	1.45	1.43
07	1.46	1.55	1.51	1.74	1.56	1.59	1.65	1.51	1.48	1.48	1.45	1.40
08	1.47	1.53	1.51	1.69	1.56	1.59	1.62	1.50	1.48	1.47	1.44	1.40
09	1.46	1.52	1.54	1.69	1.57	1.58	1.63	1.50	1.48	1.47	1.44	1.44
10	1.46	1.52	1.58	1.79	1.56	1.57	1.61	1.49	1.48	1.48	1.45	1.44
11	1.46	1.52	1.77	1.72	1.58	1.57	1.60	1.51	1.48	1.48	1.44	1.43
12	1.46	1.52	1.76	1.66	1.76	1.62	1.59	1.49	1.48	1.47	1.44	1.43
13	1.46	1.51	1.83	1.63	1.73	1.60	1.60	1.50	1.49	1.47	1.44	1.45
14	1.45	1.52	1.70	1.61	1.71	1.59	1.61	1.49	1.49	1.47	1.44	1.42
15	1.45	1.51	1.65	1.60	1.74	1.59	1.58	1.49	1.48	1.48	1.43	1.46
16	1.45	1.52	1.66	1.59	1.73	1.58	1.57	1.50	1.48	1.48	1.40	1.44
17	1.46	1.52	1.72	1.62	1.70	1.57	1.56	1.50	1.48	1.47	1.40	1.47
18	1.45	1.52	1.95	1.71	1.66	1.57	1.56	1.52	1.48	1.47	1.41	1.44
19	1.45	1.49	1.78	1.84	1.67	1.57	1.55	1.51	1.48	1.47	1.41	1.42
20	1.45	1.48	1.71	1.72	1.68	1.56	1.56	1.50	1.48	1.47	1.42	1.43
21	1.45	1.49	1.67	1.67	1.67	1.56	1.55	1.51	1.48	1.47	1.44	1.41
22	1.45	1.54	1.65	1.67	1.66	1.56	1.54	1.49	1.48	1.47	1.43	1.43
23	1.45	1.66	1.83	1.79	1.66	1.56	1.54	1.51	1.48	1.48	1.42	1.42
24	1.46	1.59	1.82	1.71	1.69	1.56	1.54	1.48	1.48	1.46	1.42	1.43
25	1.46	1.55	1.70	1.68	1.67	1.56	1.53	1.50	1.48	1.44	1.43	1.43
26	1.48	1.57	1.68	1.65	1.64	1.57	1.53	1.50	1.48	1.45	1.43	1.43
27	1.50	1.74	1.66	1.63	1.62	1.57	1.53	1.50	1.49	1.45	1.43	1.43
28	1.55	1.67	1.64	1.61	1.61	1.57	1.52	1.50	1.48	1.45	1.42	1.44
29	1.55	1.63	1.71	1.60		1.56	1.52	1.49	1.48	1.45	1.41	1.45
30	1.54	1.60	1.75	1.59		1.55	1.52	1.50	1.48	1.45	1.40	1.45
31	1.54		1.67	1.59		1.55		1.51		1.45	1.41	
Avg Stage	1.47	1.56	1.67	1.68	1.64	1.58	1.56	1.50	1.48	1.47	1.43	1.43
Max Instant	1.6	1.8	2.1	1.9	1.8	1.6	1.7	1.6	1.5	1.5	1.5	1.5
Max Mean Daily	1.6	1.7	2.0	1.8	1.8	1.6	1.7	1.5	1.5	1.5	1.5	1.5

Average Stage for Water Year 2019: 1.54

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



02/04/2020 11:35:41 AM

44a--Black Lake Ditch @ Belmore Road SW

Water Year: 2019

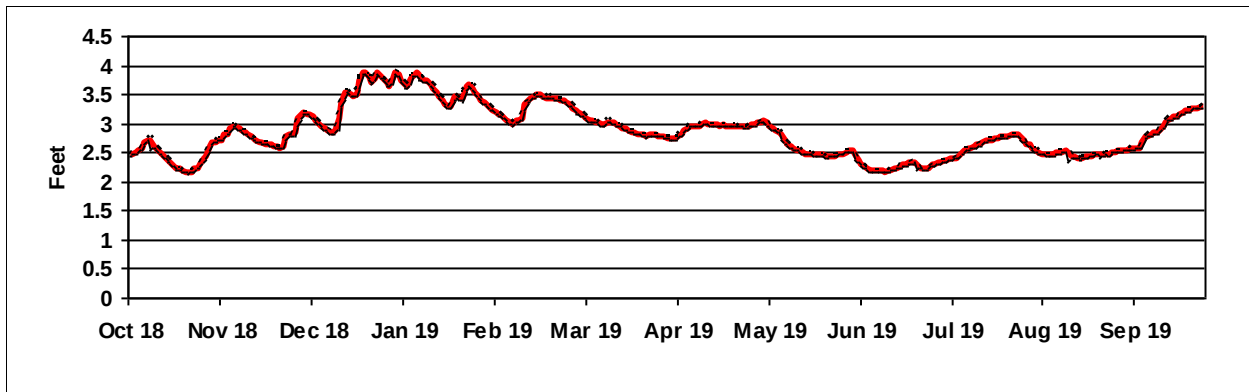
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	2.46	2.73	3.15	3.76	3.23	3.23	2.75	3.00	2.51	2.31	2.66	2.53
02	2.49	2.80	3.11	3.66	3.20	3.20	2.75	3.02	2.53	2.32	2.63	2.54
03	2.51	2.81	3.06	3.65	3.16	3.16	2.74	3.04	2.54	2.34	2.59	2.55
04	2.53	2.93	3.00	3.77	3.15	3.12	2.74	3.06	2.49	2.36	2.55	2.55
05	2.58	2.95	2.96	3.83	3.10	3.09	2.77	3.04	2.36	2.37	2.52	2.56
06	2.68	2.95	2.92	3.87	3.07	3.06	2.81	2.96	2.31	2.39	2.49	2.57
07	2.73	2.91	2.89	3.85	3.02	3.05	2.89	2.93	2.26	2.40	2.48	2.58
08	2.70	2.88	2.85	3.78	3.00	3.04	2.92	2.90	2.23	2.41	2.46	2.59
09	2.61	2.84	2.84	3.73	3.06	3.01	2.96	2.86	2.20	2.43	2.46	2.67
10	2.56	2.80	2.88	3.74	3.05	2.99	2.96	2.80	2.19	2.51	2.48	2.77
11	2.52	2.77	3.09	3.68	3.10	2.98	2.97	2.71	2.20	2.54	2.50	2.79
12	2.47	2.74	3.37	3.62	3.32	3.04	2.97	2.65	2.20	2.57	2.52	2.81
13	2.42	2.71	3.54	3.54	3.39	3.03	2.99	2.60	2.19	2.59	2.52	2.84
14	2.38	2.69	3.55	3.46	3.42	3.01	3.01	2.57	2.17	2.60	2.53	2.85
15	2.33	2.68	3.51	3.40	3.46	2.99	2.99	2.54	2.19	2.63	2.50	2.90
16	2.28	2.66	3.48	3.33	3.49	2.96	2.98	2.54	2.20	2.65	2.45	2.95
17	2.25	2.65	3.50	3.29	3.49	2.93	2.98	2.52	2.22	2.69	2.43	3.01
18	2.22	2.63	3.76	3.31	3.47	2.91	2.98	2.49	2.23	2.71	2.41	3.07
19	2.19	2.62	3.88	3.46	3.45	2.89	2.97	2.49	2.28	2.72	2.40	3.09
20	2.17	2.60	3.87	3.46	3.45	2.86	2.98	2.48	2.30	2.73	2.41	3.11
21	2.17	2.59	3.80	3.42	3.44	2.84	2.97	2.47	2.31	2.75	2.43	3.12
22	2.18	2.62	3.72	3.42	3.43	2.82	2.96	2.47	2.32	2.76	2.45	3.16
23	2.23	2.79	3.79	3.65	3.42	2.82	2.96	2.47	2.33	2.77	2.45	3.19
24	2.25	2.82	3.87	3.67	3.41	2.80	2.96	2.46	2.34	2.78	2.47	3.22
25	2.29	2.81	3.82	3.62	3.40	2.79	2.95	2.43	2.30	2.78	2.48	3.23
26	2.39	2.84	3.77	3.55	3.37	2.81	2.96	2.44	2.23	2.79	2.47	3.26
27	2.44	3.08	3.71	3.48	3.32	2.80	2.94	2.45	2.23	2.80	2.47	3.27
28	2.60	3.16	3.64	3.41	3.28	2.81	2.95	2.45	2.22	2.80	2.48	3.28
29	2.67	3.18	3.77	3.37		2.79	2.96	2.46	2.24	2.81	2.49	3.29
30	2.69	3.17	3.89	3.33		2.78	2.98	2.48	2.29	2.78	2.52	3.31
31	2.72		3.84	3.27		2.77		2.49		2.71	2.52	
Avg Stage	2.44	2.81	3.45	3.56	3.29	2.95	2.92	2.65	2.29	2.61	2.49	2.92
Max Instant	2.8	3.2	3.9	3.9	3.5	3.3	3.0	3.1	2.6	2.8	2.7	3.3
Max Mean Daily	2.7	3.2	3.9	3.9	3.5	3.2	3.0	3.1	2.5	2.8	2.7	3.3

Average Stage for Water Year 2019: 2.87

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



45a--Black River @ 110th Ave. SW

Water Year: 2019

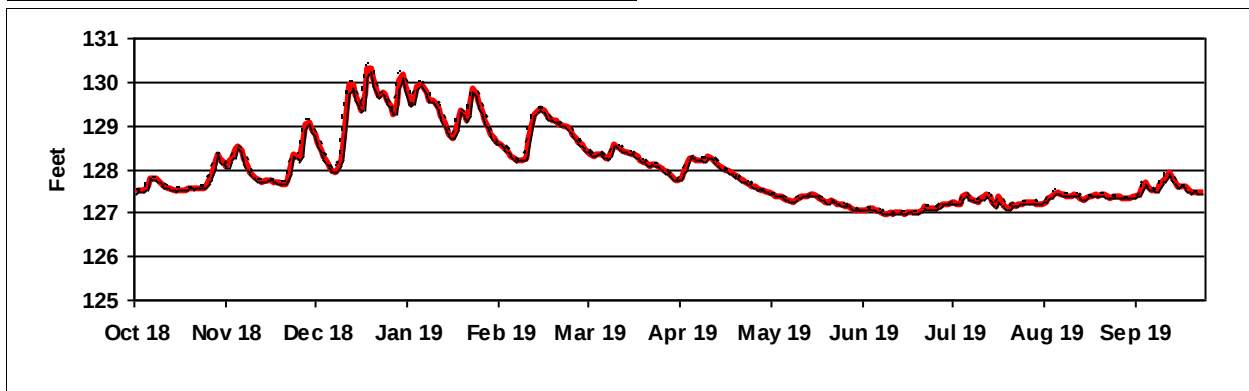
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	127.48	128.08	128.78	129.94	128.61	128.62	127.88	127.57	127.14	127.10	127.23	127.37
02	127.51	128.22	128.61	129.65	128.59	128.55	127.83	127.53	127.12	127.14	127.23	127.35
03	127.50	128.23	128.44	129.48	128.54	128.48	127.77	127.52	127.08	127.19	127.25	127.35
04	127.50	128.46	128.28	129.65	128.48	128.41	127.75	127.48	127.07	127.21	127.22	127.34
05	127.61	128.52	128.16	129.89	128.40	128.36	127.81	127.46	127.05	127.21	127.22	127.35
06	127.79	128.44	128.06	129.96	128.32	128.32	127.94	127.43	127.06	127.23	127.22	127.36
07	127.78	128.24	127.98	129.91	128.24	128.33	128.18	127.40	127.08	127.23	127.26	127.36
08	127.78	128.05	127.94	129.77	128.20	128.36	128.24	127.38	127.12	127.22	127.33	127.41
09	127.72	127.92	127.98	129.60	128.22	128.33	128.26	127.37	127.10	127.22	127.36	127.56
10	127.66	127.84	128.19	129.56	128.21	128.27	128.21	127.34	127.07	127.40	127.43	127.68
11	127.60	127.78	128.58	129.53	128.25	128.23	128.22	127.31	127.05	127.42	127.47	127.62
12	127.58	127.73	129.50	129.40	128.70	128.45	128.21	127.27	127.03	127.36	127.45	127.54
13	127.56	127.71	129.93	129.23	129.09	128.55	128.20	127.26	126.99	127.31	127.42	127.53
14	127.53	127.74	129.95	129.06	129.27	128.54	128.28	127.29	126.97	127.28	127.40	127.50
15	127.52	127.76	129.73	128.92	129.35	128.48	128.26	127.35	127.00	127.26	127.39	127.64
16	127.54	127.76	129.49	128.79	129.38	128.43	128.20	127.39	126.99	127.32	127.40	127.73
17	127.54	127.72	129.33	128.73	129.35	128.39	128.12	127.39	127.01	127.37	127.43	127.81
18	127.53	127.69	129.71	128.78	129.24	128.37	128.06	127.37	127.00	127.44	127.40	127.92
19	127.56	127.69	130.30	129.16	129.15	128.36	128.01	127.42	127.00	127.39	127.35 p	127.83
20	127.56	127.67	130.33	129.33	129.14	128.33	128.00	127.41	126.99	127.25	127.30	127.71
21	127.56	127.67	130.08	129.24	129.10	128.28	127.96	127.38	127.00	127.17	127.35	127.60
22	127.57	127.75	129.76	129.12	129.04	128.22	127.91	127.34	127.01	127.37	127.38	127.59
23	127.58	128.16	129.65	129.56	129.01	128.17	127.87	127.29	127.00	127.24	127.39	127.60
24	127.57	128.33	129.76	129.84	128.99	128.14	127.82	127.24	127.00	127.13	127.41	127.60
25	127.61	128.29	129.72	129.74	128.99	128.09	127.78	127.23	127.00	127.11	127.40	127.50
26	127.80	128.23	129.56	129.52	128.92	128.13	127.75	127.27	127.04	127.10	127.43	127.49
27	127.87	128.70	129.42	129.31	128.81	128.10	127.70	127.25	127.13	127.19	127.43	127.47
28	128.22	129.02	129.28	129.11	128.71	128.08	127.66	127.20	127.10	127.17	127.36	127.46
29	128.34	129.09	129.48	128.94		128.03	127.63	127.18	127.09	127.21	127.33	127.48
30	128.26	128.95	130.05	128.81		127.98	127.60	127.18	127.09	127.22	127.36	127.46
31	128.15		130.16	128.69		127.93		127.15		127.23	127.36	
Avg Stage	127.69	128.11	129.23	129.36	128.80	128.30	127.97	127.34	127.05	127.25	127.35	127.54
Max Instant	128	129	130	130	129	129	128	128	127	127	128	128
Max Mean Daily	128	129	130	130	129	129	128	128	127	127	127	128

Average Stage for Water Year 2019: 128.00

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



02/04/2020 11:43:51 AM

52a--Salmon Creek @ Littlerock Rd.

Water Year: 2019

Elv: 157

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.53	2.4	4.8	21	15	20	7.9	5.5	2.2	0.51	0.15	0.06
02	0.61	3.7	4.1	17	16	19	7.6	5.3	2.1	0.46	0.17	0.06
03	0.60	3.1	3.6	20	16	17	7.6	5.2	1.9	0.50	0.17	0.05
04	0.58	5.5	3.5	39	14	16	7.3	5.2	1.8	0.50	0.15	0.05
05	0.69	4.4	3.3	36	13	15	7.6	5.1	1.7	0.45	0.14	0.05
06	1.2	3.6	3.0	32	12	14	8.5	4.7	1.7	0.41	0.13	0.05
07	1.1	2.7	2.8	26	11	15	13	4.6	1.5	0.39	0.12	0.05
08	1.1	2.2	2.8	22	11	16	13	4.6	1.6	0.37	0.13	0.08
09	1.1	1.9	3.4	21	12	15	14	4.3	1.5	0.37	0.13	0.24
10	1.0	1.8	4.9	25	12	13	12	4.0	1.4	0.60	0.15	0.34
11	0.96	1.7	17	22	14	13	12	4.0	1.3	0.65	0.15	0.26
12	0.82	1.6	27	18	40	19	11	3.7	1.3	0.53	0.15	0.23
13	0.73	1.6	32	15	61	18	11	3.4	1.2	0.42	0.12	0.26
14	0.75	1.8	22	14	59	16	12	3.5	1.1	0.37	0.11	0.26
15	0.76	1.8	15	13	57	14	11	3.7	1.1	0.37	0.10	0.40
16	0.76	1.6	13	13	57	13	9.9	3.5	1.1	0.36	0.09	0.48
17	0.72	1.5	14	15	51	12	9.2	3.4	0.92	0.38	0.10	0.58
18	0.72	1.5	38	19	43	12	8.6	3.3	0.76	0.44	0.09	0.73
19	0.75	1.4	49	37	39	11	8.1	3.4	0.69	0.37	0.09	0.55
20	0.75	1.3	36	33	40	11	8.0	3.2	0.69	0.32	0.08	0.44
21	0.75	1.3	23	24	36	9.9	7.6	3.1	0.64	0.28	0.11	0.39
22	0.74	1.7	18	24	33	9.5	7.5	3.0	0.62	0.25	0.12	0.42
23	0.78	4.9	27	52	33	13	7.5	3.0	0.66	0.21	0.11	0.46
24	0.87	4.1	32	45	34	10	7.1	2.7	0.58	0.26	0.09	0.41
25	0.95	3.1	24	32	33	9.2	6.6	2.7	0.52	0.19	0.09	0.37
26	1.7	3.8	20	25	29	10	6.4	2.8	0.57	0.18	0.09	0.38
27	1.8	11	18	21	25	9.7	6.3	2.6	0.63	0.16	0.08 e	0.38
28	3.0	11	17	19	22	9.8	6.1	2.4	0.65	0.15	0.06 e	0.40
29	3.4	9.3	35	17		9.8	5.8	2.4	0.61	0.15	0.07	0.44
30	2.7	6.2	44	16		9.5	5.7	2.3	0.53	0.15	0.07	0.39
31	2.5		31	15		8.2		2.2		0.15	0.06	

Avg Discharge	1.1	3.5	19	24	30	13	8.8	3.6	1.1	0.35	0.11	0.31
Max Instantaneous	4.0	14	54	55	65	22	15	5.7	2.4	0.81	0.20	0.81
Max Mean Daily	3.4	11	49	52	61	20	14	5.5	2.2	0.65	0.17	0.73

Average Discharge for Water Year 2019: 8.8 [Low Flow \(Cal Year\)--7 day](#) 0.05 09/04/2019 [--30 day](#) 0.09 08/26/201

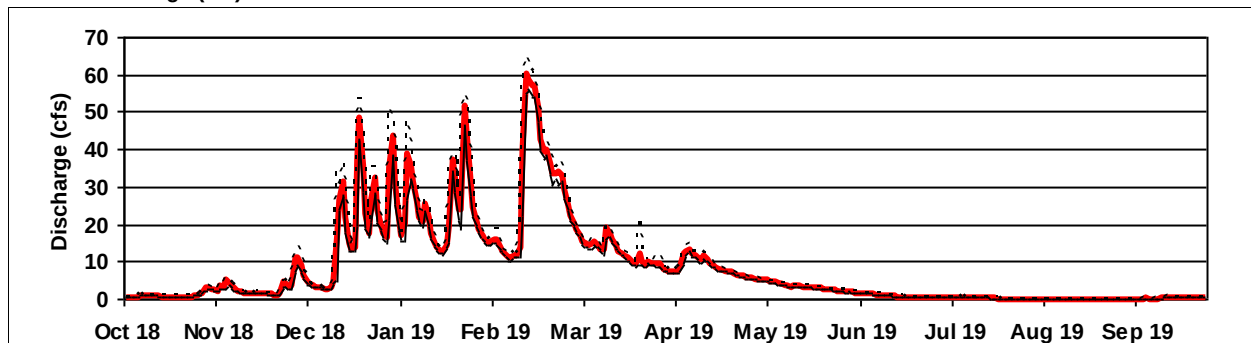
Lowest Stage: 157.7 **Discharge:** 0.01 08/28/2019 **Metrics** [High Pulse Count](#) 8 [Range](#) 61 Days

Peak Inst Stage: 159.2 **Discharge:** 65.38 02/13/2019 [TQ Mean \(Use Daily Avg\)](#) 0.34 [R-B Index](#) 0.18

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



02/04/2020 11:44:28 AM by Nat Kale

52a--Salmon Creek @ Littlerock Rd.

Water Year: 2019

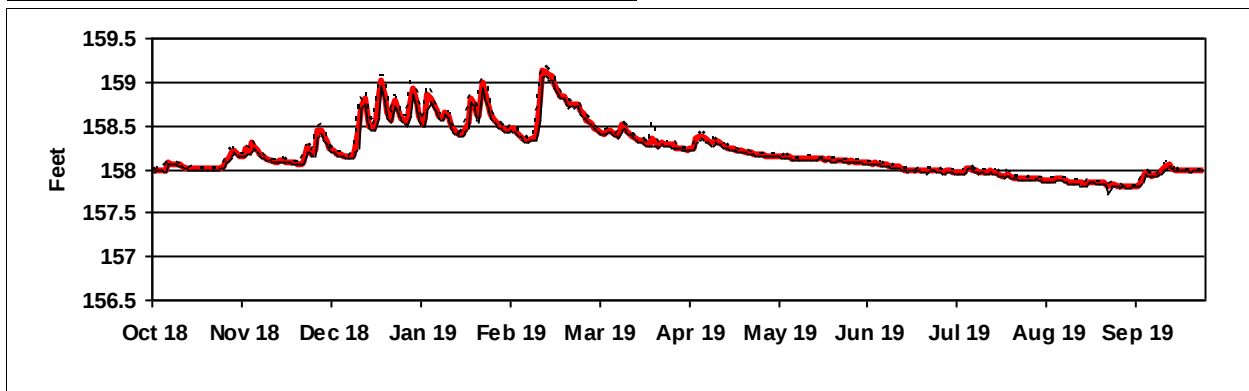
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	157.98	158.16	158.24	158.60	158.45	158.54	158.24	158.16	158.09	157.98	157.89	157.81
02	158.00	158.23	158.22	158.52	158.47	158.51	158.23	158.16	158.09	157.97	157.90	157.81
03	157.99	158.20	158.19	158.58	158.47	158.48	158.23	158.16	158.08	157.98	157.90	157.80
04	157.99	158.30	158.18	158.86	158.42	158.45	158.22	158.16	158.07	157.98	157.89	157.80
05	158.00	158.26	158.17	158.81	158.38	158.42	158.23	158.16	158.07	157.97	157.88	157.80
06	158.07	158.22	158.16	158.76	158.36	158.41	158.25	158.15	158.07	157.96	157.87	157.80
07	158.06	158.18	158.14	158.68	158.34	158.43	158.36	158.14	158.06	157.96	157.87	157.80
08	158.06	158.14	158.14	158.61	158.34	158.44	158.37	158.15	158.07	157.96	157.87	157.83
09	158.06	158.13	158.16	158.58	158.36	158.42	158.38	158.14	158.06	157.96	157.88	157.92
10	158.05	158.11	158.23	158.65	158.35	158.39	158.35	158.13	158.05	158.01	157.89	157.97
11	158.04	158.10	158.52	158.60	158.41	158.38	158.33	158.13	158.05	158.02	157.89	157.94
12	158.02	158.09	158.73	158.51	158.84	158.52	158.31	158.12	158.05	158.00	157.89	157.93
13	158.01	158.08	158.81	158.46	159.13	158.49	158.31	158.12	158.04	157.98	157.87	157.94
14	158.01	158.11	158.65	158.42	159.10	158.45	158.33	158.12	158.03	157.97	157.86	157.94
15	158.01	158.10	158.50	158.39	159.08	158.41	158.30	158.13	158.04	157.97	157.85	157.98
16	158.01	158.09	158.47	158.40	159.07	158.38	158.28	158.13	158.04	157.96	157.84	158.01
17	158.01	158.08	158.49	158.44	158.98	158.36	158.26	158.12	158.02	157.97	157.85	158.03
18	158.01	158.08	158.87	158.53	158.88	158.34	158.25	158.12	158.00	157.99	157.84	158.06
19	158.01	158.07	159.01	158.82	158.84	158.33	158.23	158.13	157.99	157.97	157.84	158.02
20	158.01	158.06	158.84	158.75	158.84	158.31	158.23	158.13	157.99	157.96	157.83	158.00
21	158.01	158.06	158.65	158.62	158.79	158.29	158.22	158.12	157.99	157.95	157.86	157.98
22	158.01	158.09	158.56	158.61	158.74	158.28	158.21	158.11	157.99	157.93	157.86	157.99
23	158.02	158.26	158.71	159.00	158.74	158.35	158.21	158.12	158.00	157.92	157.86	158.00
24	158.02	158.22	158.79	158.91	158.75	158.30	158.20	158.10	157.98	157.94	157.84	157.99
25	158.03	158.18	158.66	158.73	158.74	158.27	158.19	158.10	157.98	157.91	157.84	157.98
26	158.10	158.21	158.59	158.63	158.68	158.30	158.19	158.11	157.99	157.90	157.84	157.98
27	158.11	158.45	158.55	158.56	158.62	158.29	158.18	158.11	158.00	157.90	157.83 e	157.98
28	158.19	158.45	158.53	158.53	158.57	158.29	158.18	158.10	158.00	157.89	157.81 e	157.99
29	158.21	158.39	158.81	158.49		158.29	158.17	158.10	158.00	157.89	157.82	158.00
30	158.18	158.30	158.93	158.46		158.28	158.17	158.09	157.99	157.89	157.82	157.98
31	158.16		158.76	158.44		158.25		158.10		157.89	157.81	
Avg Stage	158.05	158.18	158.52	158.61	158.67	158.38	158.25	158.13	158.03	157.95	157.86	157.94
Max Instant	158	159	159	159	159	159	158	158	158	158	158	158
Max Mean Daily	158	158	159	159	159	159	158	158	158	158	158	158

Average Stage for Water Year 2019: 158.21

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



02/04/2020 11:44:50 AM

55a--Scatter Creek @ James Rd.

Water Year: 2019

Elv: 137.9

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	0.00	0.00	0.00	23	46	57	16	8.5	0.00	0.00 e	0.00 e	0.00 e
02	0.00	0.01	0.00	28	41	54	15	7.3	0.00	0.00 e	0.00 e	0.00 e
03	0.00	0.00	0.00	28	37	49	14	6.9	0.00	0.00 e	0.00 e	0.00 e
04	0.00	0.00	0.00	28	35	45	13	6.5	0.00	0.00 e	0.00 e	0.00 e
05	0.00	0.00	0.00	25	30	42	13	6.2	0.00	0.00 e	0.00 e	0.00 p
06	0.00	0.00	0.00	28	26	39	14	5.9	0.00	0.00 e	0.00 e	0.00 p
07	0.00	0.00	0.00	28	22	38	15	5.4	0.00	0.00 e	0.00 e	0.00 p
08	0.00	0.00	0.00	26	21	36	14	5.5	0.00	0.00 e	0.00 e	0.00 p
09	0.00	0.00	0.00	28	22	35	15	5.3	0.00	0.00 e	0.00 e	0.00 p
10	0.00	0.00	0.00	31	19	33	15	5.1	0.00	0.00 e	0.00 e	0.00 p
11	0.00	0.00	0.15	34	21	31	17	4.7	0.00	0.00 e	0.00 e	0.00 p
12	0.00	0.00	1.5	45	45	35	16	4.1	0.00	0.00 e	0.00 e	0.00 p
13	0.00	0.00	0.58	50	79	32	17	3.6	0.00	0.00 e	0.00 e	0.00 p
14	0.00	0.00	0.03	48	180	33	19	3.4	0.00	0.00 e	0.00 e	0.00 p
15	0.00	0.00	0.00	45	179	33	19	3.1	0.00	0.00 e	0.00 e	0.00 p
16	0.00	0.00	0.00	42	158	32	19	3.1	0.00	0.00 e	0.00 e	0.00 p
17	0.00	0.00	0.00	39	148	30	19	3.0	0.00	0.00 e	0.00 e	0.00 p
18	0.00	0.00	0.57	38	136	29	19	2.4	0.00	0.00 e	0.00 e	0.00 p
19	0.00	0.00	2.5	46	124	28	19	2.6	0.00	0.00 e	0.00 e	0.00 p
20	0.00	0.00	0.37	46	114	27	19	2.3	0.00	0.00 e	0.00 e	0.00 p
21	0.00	0.00	0.00	57	103	24	18	2.3	0.00	0.00 e	0.00 e	0.00 p
22	0.00	0.00	0.00	62	97	23	17	2.1	0.00	0.00 e	0.00 e	0.00 p
23	0.00	0.00	0.00	71	90	22	17	2.0	0.00	0.00 e	0.00 e	0.00 p
24	0.00	0.00	0.00	70	83	20	16	1.6	0.00	0.00 e	0.00 e	0.00 p
25	0.00	0.00	0.00	82	79	19	15	1.4	0.00 e	0.00 e	0.00 e	0.00 p
26	0.00	0.00	0.00	84	73	23	14	1.6	0.00 e	0.00 e	0.00 e	0.00 p
27	0.00	0.00	0.12	78	68	22	12	1.4	0.00 e	0.00 e	0.00 e	0.00 p
28	0.01	0.00	0.24	69	61	21	11	0.85	0.00 e	0.00 e	0.00 e	0.00 p
29	0.09	0.00	2.1	63		20	10	0.09	0.00 e	0.00 e	0.00 e	0.00 p
30	0.00	0.00	9.4	57		18	9.5	0.00	0.00 e	0.00 e	0.00 e	p
31	0.00		11	51		17		0.00		0.00 e	0.00 e	

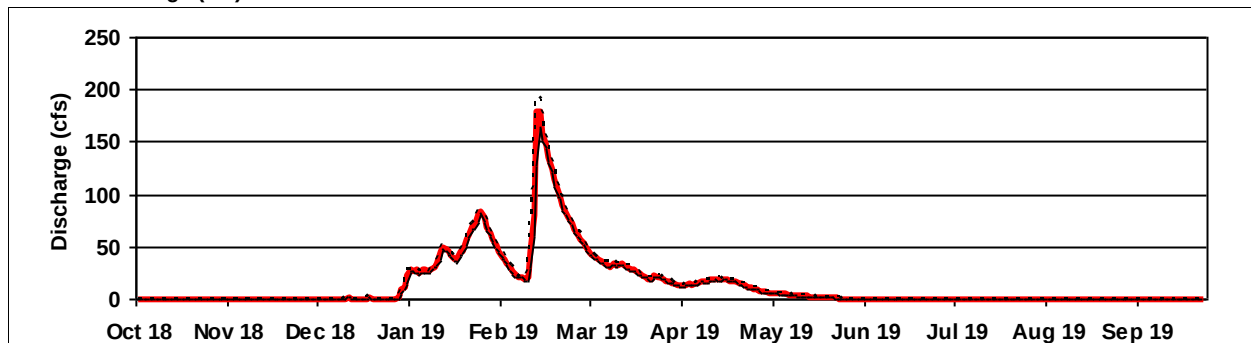
Avg Discharge	0.00	0.00	0.91	47	76	31	16	3.5	0.00	0.00	0.00	0.00
Max Instantaneous	0.36	0.08	15	86	194	60	21	9.9	0.00	0.00	0.00	0.00
Max Mean Daily	0.09	0.01	11	84	180	57	19	8.5	0.00	0.00	0.00	0.00

Average Discharge for Water Year 2019:		14	Low Flow (Cal Year)--7 day	--30 day
Lowest Stage:	Discharge:	Metrics		
		High Pulse Count	Range	
Peak Inst Stage:	Discharge:	TQ Mean (Use Daily Avg)	R-B Index	-1
Discharge is determined by comparing continuous stage records with field flow measurements.				

Discharge is determined by comparing continuous stage records with field flow measurements.

Thurston County

Annual Discharge (cfs)-- Mean — Max ---- Min —



55a--Scatter Creek @ James Rd.

Water Year: 2019

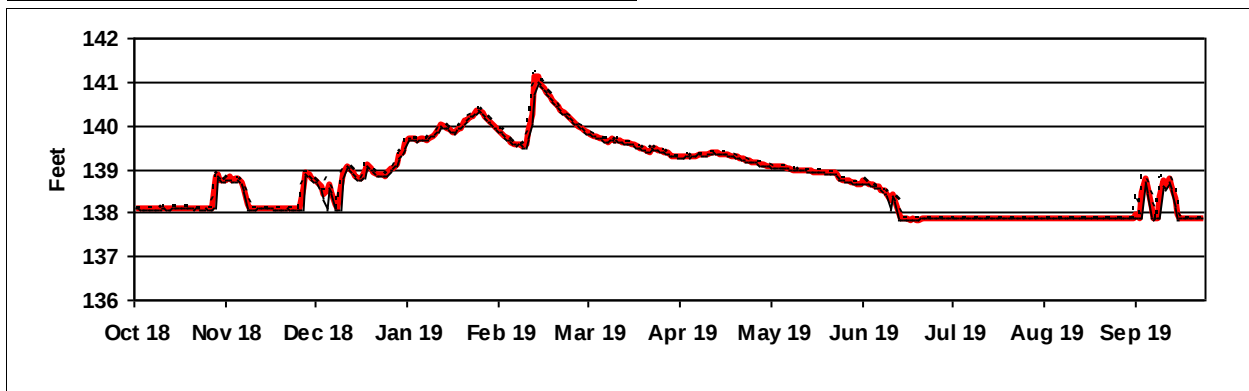
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	138.10	138.76	138.73	139.61	139.93	140.00	139.34	139.14	138.73	137.86 e	137.86 e	137.86
02	138.10	138.82	138.69	139.70	139.87	139.96	139.32	139.11	138.71	137.86 e	137.86 e	137.86
03	138.09	138.77	138.59	139.70	139.82	139.90	139.31	139.10	138.69	137.86 e	137.86 e	137.86
04	138.10	138.78	138.44	139.71	139.77	139.84	139.28	139.09	138.67	137.86 e	137.86 e	137.86
05	138.09	138.79	138.54	139.66	139.70	139.80	139.28	139.08	138.67	137.86 e	137.86 e	137.86
06	138.09	138.71	138.64	139.71	139.64	139.77	139.29	139.07	138.73	137.86 e	137.86 e	137.86
07	138.09	138.56	138.49	139.70	139.58	139.75	139.32	139.06	138.68	137.86 e	137.86 e	137.99
08	138.09	138.20	138.19	139.68	139.56	139.72	139.30	139.06	138.66	137.86 e	137.86 e	137.86
09	138.10	138.09	138.09	139.72	139.57	139.70	139.31	139.05	138.65	137.86 e	137.86 e	138.49
10	138.11	138.09	138.66	139.76	139.52	139.67	139.31	139.05	138.60	137.86 e	137.86 e	138.80
11	138.10	138.10	138.91	139.81	139.55	139.64	139.34	139.04	138.61	137.86 e	137.86 e	138.59
12	138.10	138.10	139.08	139.95	139.89	139.69	139.33	139.02	138.53	137.86 e	137.86 e	138.13
13	138.11	138.10	139.02	140.02	140.27	139.66	139.34	139.00	138.50	137.86 e	137.86 e	137.86
14	138.11	138.10	138.95	139.99	141.11	139.67	139.36	138.99	138.42	137.86 e	137.86 e	137.86
15	138.11	138.10	138.86	139.96	141.11	139.67	139.37	138.98	138.27	137.86 e	137.86 e	138.40
16	138.11	138.10	138.79	139.92	140.95	139.64	139.38	138.98	138.41	137.86 e	137.86 e	138.73
17	138.11	138.10	138.78	139.87	140.86	139.62	139.37	138.98	138.30	137.86 e	137.86 e	138.62
18	138.11	138.10	138.98	139.86	140.77	139.60	139.36	138.96	138.00	137.86 e	137.86 e	138.78
19	138.11	138.09	139.13	139.96	140.67	139.58	139.36	138.96	137.86	137.86 e	137.86 e	138.63
20	138.10	138.10	139.03	139.96	140.59	139.56	139.36	138.95	137.86	137.86 e	137.86 e	138.34
21	138.10	138.10	138.95	140.10	140.47	139.52	139.34	138.95	137.86	137.86 e	137.86 e	137.95
22	138.10	138.09	138.88	140.14	140.42	139.49	139.32	138.94	137.85	137.86 e	137.86 e	137.86
23	138.09	138.09	138.87	140.23	140.35	139.47	139.31	138.94	137.86	137.86 e	137.86 e	137.86
24	138.10	138.09	138.90	140.22	140.29	139.43	139.29	138.92	137.85	137.86 e	137.86 e	137.86
25	138.10	138.09	138.86	140.35	140.24	139.41	139.27	138.91	137.85 e	137.86 e	137.86 e	137.86
26	138.10	138.09	138.92	140.36	140.17	139.49	139.25	138.92	137.86 e	137.86 e	137.86 e	137.86
27	138.10	138.55	139.01	140.30	140.12	139.46	139.21	138.91	137.86 e	137.86 e	137.86 e	137.86
28	138.82	138.91	139.03	140.21	140.05	139.45	139.19	138.88	137.86 e	137.86 e	137.86 e	137.86
29	138.88	138.89	139.13	140.13		139.42	139.18	138.81	137.86 e	137.86 e	137.86 e	137.86
30	138.77	138.81	139.36	140.06		139.39	139.16	138.76	137.86 e	137.86 e	137.86 e	137.86
31	138.74		139.38	139.99		139.37		138.75		137.86 e	137.86 e	
Avg Stage	138.19	138.34	138.83	139.95	140.17	139.62	139.30	138.98	138.27	137.86	137.86	138.10
Max Instant	139	139	139	140	141	140	139	139	139	138	138	139
Max Mean Daily	139	139	139	140	141	140	139	139	139	138	138	139

Average Stage for Water Year 2019: 138.79

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



02/04/2020 11:45:54 AM

65a--Prairie Creek @ Old Highway 99

Water Year: 2019

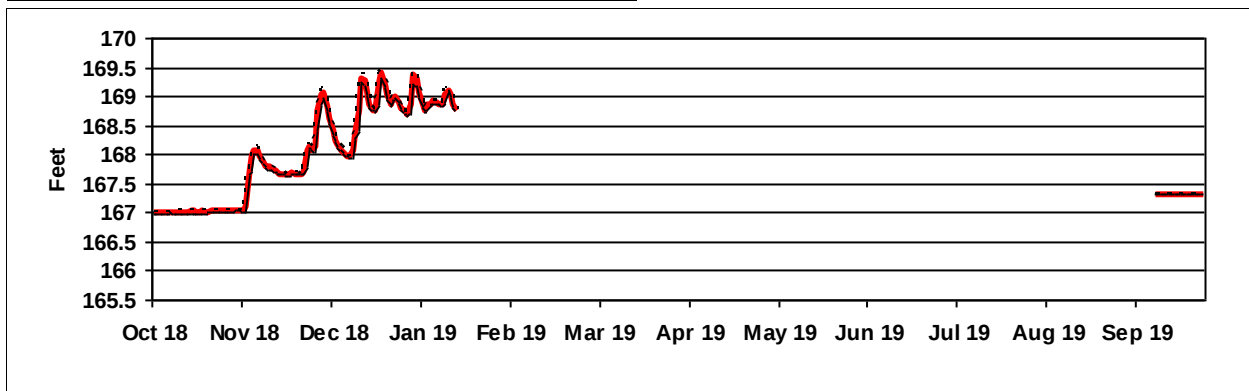
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	167.00	167.04	168.62	169.07								
02	167.00	167.10	168.42	168.88								
03	167.00	167.72	168.26	168.77								
04	167.00	167.99	168.17	168.87								
05	167.00	168.07	168.09	168.88								
06	167.01	168.06	168.04	168.92								
07	167.01	167.96	167.99	168.91								
08	167.01	167.88	167.96	168.87								
09	167.01	167.80	168.06	168.85								
10	167.01	167.79	168.38	169.05								
11	167.02	167.77	168.77	169.12								
12	167.02	167.73	169.33	169.03								
13	167.02	167.70	169.29	168.88								167.32
14	167.03	167.68	169.08	168.78								167.32
15	167.03	167.67	168.88									167.32
16	167.02	167.66	168.78									167.32
17	167.02	167.67	168.78									167.32
18	167.03	167.69	169.26									167.32
19	167.02	167.68	169.41									167.32
20	167.02	167.67	169.21									167.32
21	167.03	167.66	169.05									167.32
22	167.03	167.71	168.88									167.32
23	167.03	168.06	168.98									167.32
24	167.03	168.15	169.00									167.32
25	167.04	168.09	168.91									167.32
26	167.03	168.13	168.81									167.32
27	167.04	168.75	168.75									167.32
28	167.04	169.04	168.68									167.32
29	167.04	169.07	168.88									167.32
30	167.04	168.84	169.37									167.32
31	167.04		169.31									
Avg Stage	167.02	167.93	168.75	168.92								167.32
Max Instant	167	169	169	169								167
Max Mean Daily	167	169	169	169								167

Average Stage for Water Year 2019: 167.99

Stage is computed from matching datum to logger records.

Thurston County

Annual Stage (ft)-- Mean Max ----- Min



Appendix D – Stream Temperature Data

10a--Eaton Creek @ Yelm Hwy

Water Year: 2019 WaterTemperatures in degrees Celsius

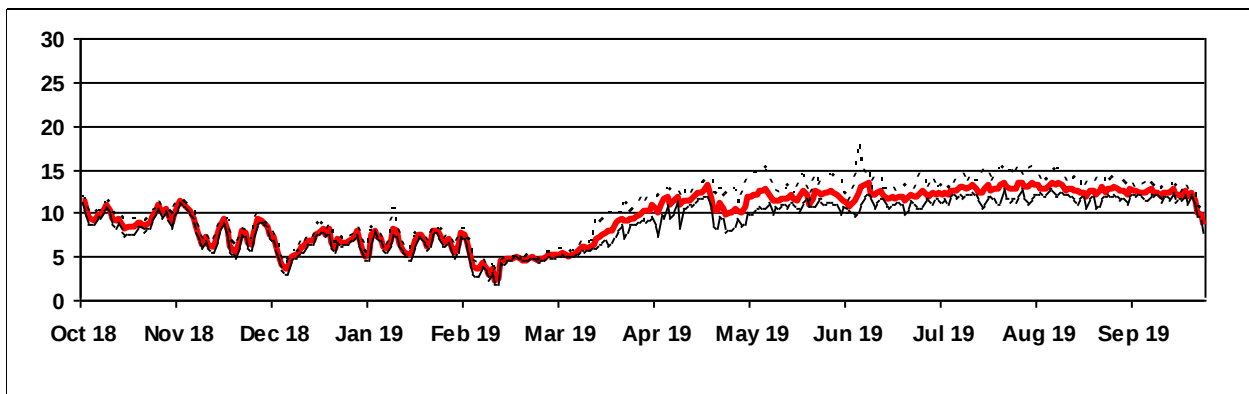
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	11.5	11.1	7.5	5.0	7.8	5.2	10.4	10.4	12.5	12.6	13.6	13.1
02	11.4	11.5	7.2	5.3	7.6	5.2	10.3	10.3	12.4	12.0	13.6	12.9
03	9.6	11.0	6.3	7.5	6.8	5.2	10.3	10.1	12.0	11.9	13.1	12.6
04	9.4	10.8	4.9	8.1	5.1	5.3	10.9	10.9	11.7	12.3	13.0	12.6
05	9.1	10.3	4.1	7.4	3.8	5.4	10.6	11.9	11.5	12.2	13.4	12.1
06	9.9	9.5	3.6	7.1	3.6	5.5	10.2	12.0	11.1	12.3	13.3	12.8
07	9.8	8.5	3.8	6.2	3.7	5.2	11.3	12.2	10.9	12.1	13.2	12.6
08	10.5	7.2	5.1	5.9	4.3	5.1	11.6	12.2	11.3	12.3	12.7	12.6
09	11.1	6.5	5.3	6.9	3.6	5.2	11.9	12.7	11.4	12.0	12.9	12.5
10	10.3	7.3	5.4	8.2	3.1	5.4	10.9	12.7	12.5	12.5	12.8	12.5
11	9.4	6.5	6.3	7.9	3.7	5.8	11.4	12.7	13.1	12.6	13.4	12.5
12	9.1	6.1	6.1	6.7	2.3	6.1	12.0	12.2	13.2	12.7	13.6	12.6
13	9.4	6.2	6.9	5.8	2.5	6.1	11.0	11.5	13.4	13.1	13.4	12.7
14	8.7	7.8	7.0	5.5	4.5	6.0	11.5	11.5	12.1	13.0	13.5	12.4
15	8.4	8.5	6.9	5.2	4.5	6.1	11.4	11.5	12.2	12.7	13.3	12.3
16	8.5	9.3	7.6	5.4	4.7	6.4	11.5	11.6	12.4	13.2	e 12.7	12.0
17	8.6	8.1	7.9	6.8	4.7	7.1	11.8	11.7	12.7	13.2	12.8	12.4
18	8.6	6.3	8.1	7.6	4.9	7.4	12.2	11.8	12.2	12.8	12.7	12.5
19	9.0	5.7	7.6	7.5	5.0	7.5	12.3	12.1	11.7	12.4	12.6	12.3
20	8.8	5.6	8.2	6.9	4.9	7.8	12.4	11.6	11.7	12.3	12.6	12.8
21	8.5	6.9	6.7	6.2	4.7	8.1	12.7	11.3	11.9	12.8	12.5	12.0
22	8.6	8.0	6.0	6.9	4.7	8.0	13.3	11.9	11.8	13.3	12.3	12.1
23	8.9	7.9	7.0	8.1	4.8	8.9	11.8	12.5	12.0	12.5	12.0	12.0
24	9.7	6.6	6.7	8.1	5.0	9.1	10.3	12.2	11.9	12.8	12.7	12.6
25	10.4	6.3	6.7	7.9	4.8	9.4	10.2	11.1	11.5	12.7	12.6	12.0
26	11.0	7.7	6.7	6.8	4.6	9.1	11.1	11.7	11.9	13.2	12.2	e 12.4
27	10.0	9.4	7.0	6.7	4.7	9.2	10.5	12.5	12.2	13.6	12.6	11.5
28	10.4	9.1	7.2	7.2	4.8	9.4	9.8	12.3	11.8	13.1	13.1	10.2
29	9.7	8.9	8.0	5.8		9.4	10.0	12.1	11.9	12.9	12.4	9.8
30	9.0	8.5	7.0	5.6		9.6	10.2	12.3	12.4	12.9	12.8	8.7
31	10.0		5.5	6.4		9.8		12.5		12.8	12.8	
Avg Temp	9.6	8.1	6.5	6.7	4.6	7.1	11	12	12	13	13	12
Max Temp	12	12	9.0	11	8.2	11	14	15	18	15	16	14
Max Mean Daily	12	11	8.2	8.2	7.8	9.8	13	13	13	14	14	13

Avg Water Temp for Water Year 2019: 9.6

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



14a--Spurgeon Creek @ Rich Road bridge

Water Year: 2019 WaterTemperatures in degrees Celsius

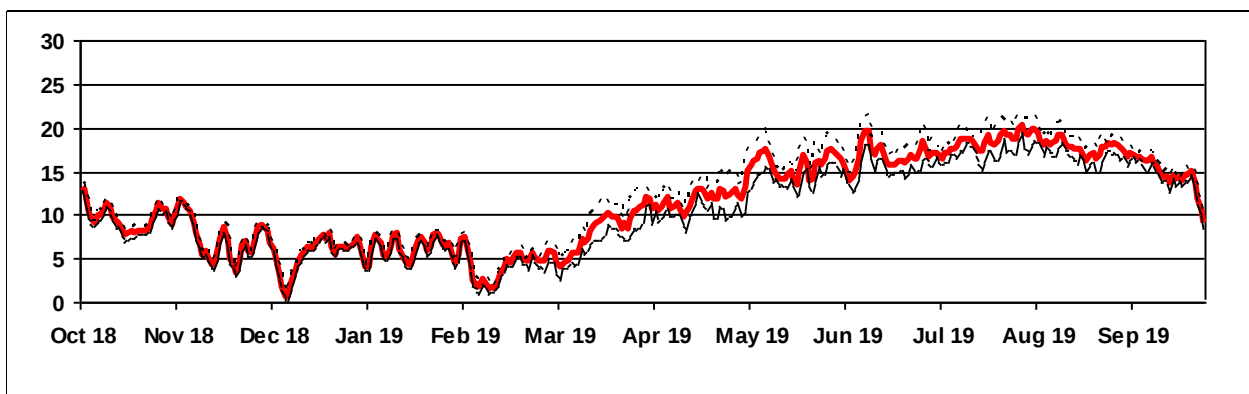
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	13.3	11.3	6.9	4.1	7.2	5.9	11.3	13.2	17.7	18.5	20.0	18.3
02	13.0	12.0	6.3	4.2	7.5	5.9	12.2	12.4	17.5	17.5	20.3	18.1
03	10.5	11.5	5.3	6.5	6.6	5.7	12.0	11.8	16.9	16.6	19.4	17.8
04	9.8	11.1	3.2	7.7	4.6	4.5	10.8	13.2	16.5	17.3	19.3	17.5
05	9.1	10.5	1.7	7.4	2.5	4.2	11.2	15.0	16.0	17.2	20.0	16.8
06	10.0	9.3	0.79	6.8	2.1	4.4	10.6	15.7	14.9	16.9	20.0	17.2
07	10.0	8.1	0.70	5.6	1.9	4.9	10.9	16.2	14.1	16.6	19.5	17.0
08	10.7	6.7	2.6	5.3	2.8	4.9	11.4	16.6	14.4	17.2	18.7	16.8
09	11.5	5.5	3.6	6.4	2.2	5.7	12.1	17.1	15.0	17.3	18.2	16.7
10	10.9	5.9	4.5	7.9	1.7	5.7	10.9	17.4	16.5	17.6	18.5	16.5
11	9.9	5.3	5.6	8.0	1.8	5.8	10.9	17.6	18.5	17.7	18.1	16.2
12	9.3	4.5	5.7	6.2	1.7	7.3	11.4	16.7	19.7	17.9	18.2	16.3
13	9.3	4.3	6.4	5.2	2.8	e 6.9	10.7	15.3	19.7	18.8	18.6	16.8
14	8.4	6.1	6.5	4.7	3.4	7.3	9.8	14.8	17.6	18.9	19.3	16.1
15	7.9	7.4	6.2	4.4	4.2	8.4	10.2	14.2	17.1	18.9	19.3	15.5
16	7.9	8.6	6.9	4.5	4.9	8.8	11.0	14.2	17.7	18.8	18.0	14.5
17	8.2	7.2	7.3	6.1	4.7	9.1	11.8	14.2	18.0	18.5	17.8	14.4
18	8.1	5.0	7.8	7.2	5.0	9.4	12.9	14.7	17.4	17.8	17.8	14.4
19	8.3	4.3	7.3	7.5	5.7	9.7	13.0	15.0	16.1	17.4	17.7	13.8
20	8.3	3.5	8.0	6.9	5.8	10.2	13.0	14.1	15.7	17.5	17.7	14.7
21	8.2	4.9	6.3	5.9	5.1	10.3	12.9	13.6	15.8	18.4	17.5	14.2
22	8.2	6.5	5.6	6.3	4.7	9.9	11.8	15.0	15.8	19.3	16.8	14.5
23	8.7	7.2	6.5	7.7	4.8	9.8	12.5	16.9	16.3	18.4	16.4	14.0 e
24	9.6	5.9	6.4	8.0	5.6	9.5	11.9	16.1	16.2	18.0	17.0	14.7
25	10.5	5.7	6.4	7.8	5.3	8.5	12.0	13.9	16.0	18.5	17.1	14.6
26	11.5	6.6	6.2	6.6	4.8	9.1	13.1	14.2	16.5	19.2	16.6	15.1
27	10.7	8.7	6.4	6.4	4.8	8.5	12.9	16.0	16.9	19.7	16.9	13.8
28	10.7	8.9	6.7	6.8	4.8	9.7	12.1	16.3	16.5	19.3	17.9	12.0
29	9.8	8.8	7.6	5.2		10.5	12.4	15.7	16.5	19.2	17.9	10.9
30	9.0	8.2	6.8	4.6		10.6	12.7	16.6	17.6	18.9	18.2	9.1
31	9.8		5.0	5.5		11.0		17.5		18.8	18.0	
Avg Temp	9.7	7.3	5.6	6.2	4.3	7.8	12	15	17	18	18	15
Max Temp	14	12	8.6	8.4	8.0	13	15	20	22	21	22	19
Max Mean Daily	13	12	8.0	8.0	7.5	11	13	18	20	20	20	18

Avg Water Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



17a--Chambers Creek @ Rich Road bridge

Water Year: 2019 WaterTemperatures in degrees Celsius

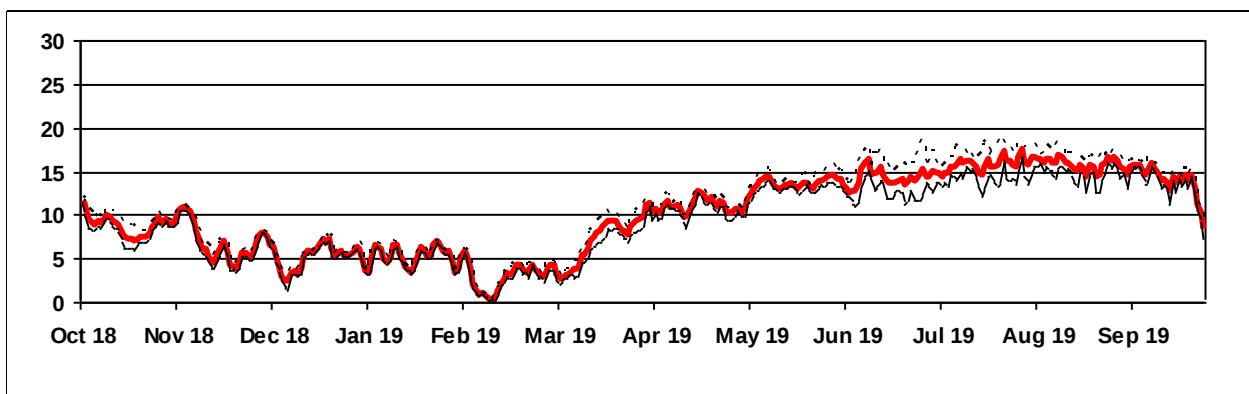
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	11.8	10.3	6.7	3.7	5.4	4.2	9.9	10.7	14.6	15.4	16.6	16.8
02	11.6	10.7	6.3	3.5	6.0	4.4	11.1	10.8	14.6	14.3	17.6	16.3
03	9.7	10.9	5.6	5.0	5.5	4.3	11.5	10.4	14.2	14.5	16.2	15.6
04	9.5	10.8	4.0	6.7	3.8	3.2	10.4	10.9	14.2	15.1	15.8	15.4
05	9.0	10.4	3.1	6.5	2.0	2.7	10.7	12.0	13.6	14.8	16.7	14.6
06	9.5	9.4	2.4	6.3	1.3	2.8	10.3	12.6	13.1	14.9	16.8	15.5
07	9.2	8.3	2.4	5.2	1.0	3.3	10.5	13.2	12.7	14.4	16.6	15.8
08	9.6	7.1	3.5	4.6	1.1	3.3	11.2	13.6	12.9	14.8	16.4	15.8
09	10.1	6.1	3.6	5.3	0.67	3.7	11.8	14.1	12.8	14.8	16.1	15.8
10	9.9	6.3	3.3	6.6	0.52	3.9	11.0	14.3	13.8	15.5	16.5	15.3
11	9.4	5.4	3.9	6.7	0.39	4.0	11.0	14.5	15.3	15.6	16.4	14.7
12	9.2	4.7	5.2	5.7	0.55	5.5	11.3	14.5	16.1	15.8	16.1	15.1
13	9.0	4.5	5.9	4.9	1.6	5.6	10.9	13.6	16.4	16.6	16.0	16.1
14	8.0	5.8	6.0	4.1	2.1	6.1	9.8	13.3	14.6	16.0	16.9	15.6
15	7.6	6.2	5.7	3.7	2.7	7.1	9.8	13.0	14.9	16.2	16.8	14.9
16	7.4	7.1	5.9	3.5	3.4	7.5	10.6	13.2	14.8	16.2	15.9	14.0
17	7.4	5.8	6.6	4.3	3.3	8.0	11.2	13.4	15.5	16.1	16.1	14.1
18	7.2	4.4	7.2	5.7	3.5	8.3	12.1	13.6	14.6	15.6	15.7	13.8
19	7.3	4.2	6.9	6.3	4.3	8.7	12.7	13.7	13.9	14.9	15.4	12.7
20	7.5	3.9	7.4	6.0	4.3	9.1	12.5	13.6	13.7	14.8	15.1	14.5
21	7.5	4.7	6.2	5.2	3.8	9.5	12.3	13.1	13.8	15.6	15.8	13.7
22	7.5	5.6	5.2	5.2	3.5	9.4	11.6	13.2	13.7	16.5	15.3	14.5
23	8.0	5.8	5.8	6.6	3.6	9.4	12.1	13.9	14.0	15.5	14.5	13.9
24	8.7	5.4	5.9	7.0	4.5	9.0	11.4	13.8	14.1	15.6	15.7	14.7
25	9.3	5.3	5.5	7.0	4.0	8.2	11.0	13.2	13.6	15.8	15.6	14.0
26	9.9	5.7	5.5	6.0	3.4	8.2	11.7	13.1	14.1	16.4	14.5	14.8
27	9.2	7.6	5.6	5.7	3.2	7.7	11.5	13.6	14.3	17.3	14.8	13.2
28	9.7	8.1	5.8	5.9	3.1	8.7	10.4	14.0	14.0	16.4	15.8	11.1
29	9.2	8.1	6.5	4.5		9.2	10.3	14.0	14.2	16.2	16.1	10.3
30	9.0	7.5	6.2	3.5		9.4	10.4	14.1	15.0	15.8	16.8	8.5
31	9.3		4.7	3.9		9.6		14.5		15.6	16.4	
Avg Temp	8.9	6.9	5.3	5.3	2.9	6.6	11	13	14	16	16	14
Max Temp	12	11	7.8	7.2	6.3	11	13	16	18	19	19	18
Max Mean Daily	12	11	7.4	7.0	6.0	9.6	13	15	16	17	18	17

Avg Water Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



18a--Woodland Creek @ Pleasant Glade Road bridge

Water Year: 2019 WaterTemperatures in degrees Celsius

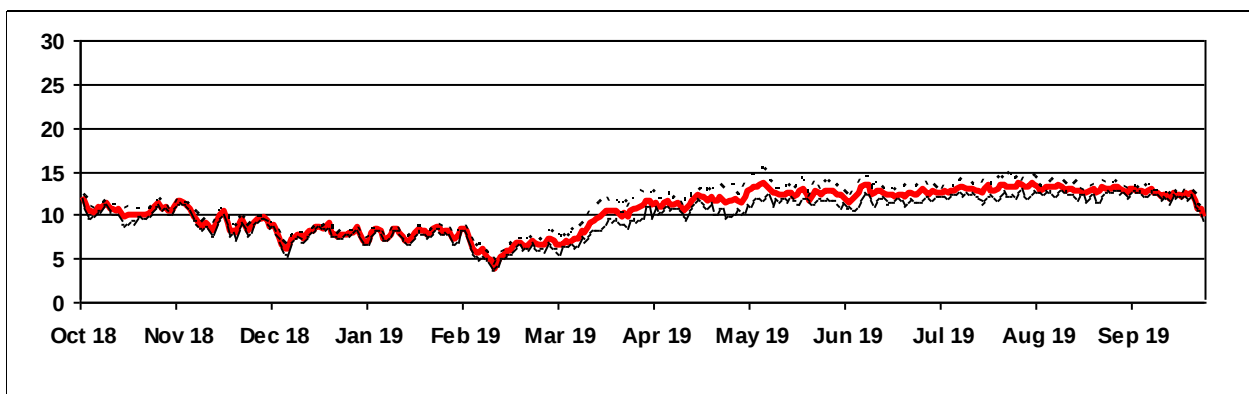
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	12.1	11.7	8.8	6.9	8.5	7.4	11.2	11.8	12.7	13.1	13.7	13.3
02	11.7	11.8	8.8	7.0	8.6	7.3	11.8	11.6	12.8	12.5	13.6	13.3
03	10.5	11.4	8.5	8.1	8.2	7.1	11.8	11.5	12.4	12.4	13.4	13.1
04	10.5	11.2	7.3	8.4	6.8	6.6	11.3	12.2	12.3	12.7	13.3	12.9
05	10.3	10.8	6.7	8.4	6.1	6.6	11.5	12.8	12.1	12.7	13.6	12.6
06	10.9	10.0	6.2	8.2	5.8	6.7	11.0	12.9	11.7	12.6	13.6	12.9
07	10.7	9.6	6.2	7.4	5.8	7.0	11.0	13.2	11.6	12.5	13.3	13.0
08	11.3	9.0	7.3	7.4	6.1	6.8	11.4	13.4	11.8	12.7	12.9	12.9
09	11.5	8.7	7.5	7.9	5.3	7.2	11.7	13.6	12.0	12.6	13.1	12.8
10	10.9	9.2	7.8	8.5	5.1	7.2	11.2	13.6	12.6	12.9	13.2	12.8
11	10.7	8.9	7.7	8.5	4.9	7.4	11.3	13.6	13.3	12.9	13.2	12.7
12	10.6	8.3	7.4	8.0	4.0	8.2	11.6	13.2	13.6	13.2	13.2	12.9
13	10.7	8.5	8.0	7.6	4.8	8.1	11.1	12.5	13.4	13.3	13.3	13.0
14	10.0	9.7	8.3	7.2	5.2	8.7	10.5	12.5	12.3	13.3	13.6	12.7
15	9.8	10.1	8.3	7.1	5.4	9.2	10.7	12.4	12.5	13.0	13.4	12.6
16	10.0	10.5	8.6	7.2	5.9	9.4	11.2	12.4	12.8	13.1	12.9	12.2
17	10.1	9.2	8.8	8.0	6.0	9.6	11.6	12.4	12.9	13.1	13.1	12.3
18	10.0	8.2	8.6	8.4	6.3	9.8	12.1	12.6	12.5	12.9	13.1	12.3
19	10.2	8.3	8.6	8.2	6.8	10.1	12.3	12.7	12.4	12.7	12.9	11.9
20	10.2	8.0	9.1	8.2	6.9	10.6	12.2	12.2	12.3	12.7	12.9	12.6
21	10.2	9.1	7.9	7.7	6.7	10.6	12.2	12.3	12.3	13.1	12.8	12.3
22	10.1	9.5	7.8	8.0	6.5	10.4	11.7	12.8	12.2	13.4	12.6	12.4
23	10.4	8.8	7.6	8.5	6.7	10.4	12.2	13.2	12.4	12.8	12.5	12.2
24	10.8	8.2	7.7	8.8	7.0	10.3	11.7	12.3	12.4	12.8	12.9	12.6
25	11.2	8.6	7.8	8.7	6.8	9.8	11.7	11.7	12.2	13.1	12.9	12.3
26	11.5	9.3	7.8	8.1	6.6	10.2	12.2	12.3	12.5	13.4	12.7	12.6
27	10.9	9.5	7.9	8.2	6.5	9.8	11.8	12.8	12.6	13.6	12.8	11.7
28	10.9	9.7	8.1	8.3	6.7	10.6	11.4	12.5	12.5	13.3	13.2	10.9
29	10.4	9.8	8.6	7.3		10.7	11.7	12.4	12.5	13.3	13.0	10.7
30	10.5	9.4	7.9	7.3		10.8	11.7	12.8	12.9	13.2	13.2	9.8
31	10.9		7.2	7.7		11.0		12.9		13.3	13.1	
Avg Temp	11	9.5	7.9	7.9	6.3	8.9	12	13	12	13	13	12
Max Temp	12	12	9.5	9.0	9.0	13	14	15	15	15	15	14
Max Mean Daily	12	12	9.1	8.8	8.6	11	12	14	14	14	14	13

Avg Water Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



20a--Woodard Creek @ 36th Ave. NE

Water Year: 2019 WaterTemperatures in degrees Celsius

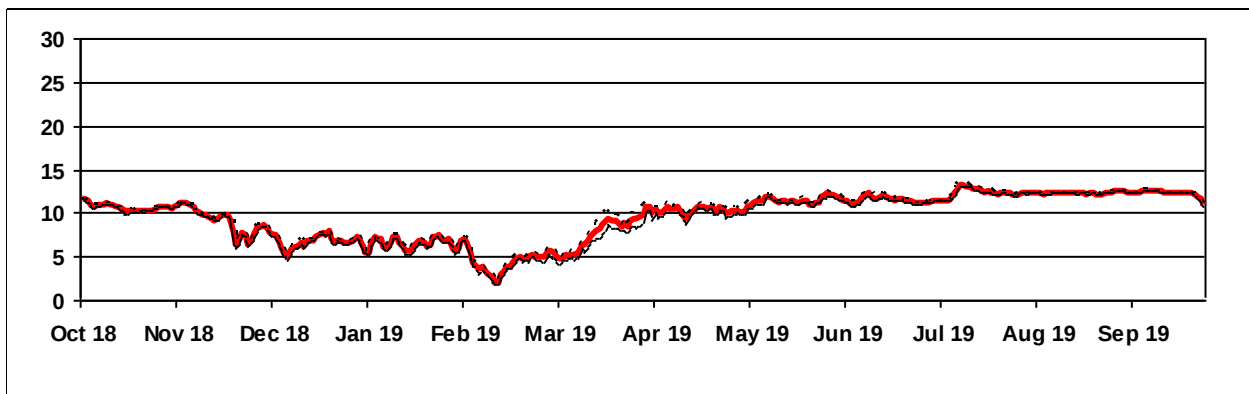
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	11.7	10.9	7.8	5.6	6.9	5.7	10.0	10.3	12.2	11.3	12.2	12.5
02	11.7	11.1	7.6	5.6	7.0	5.7	10.7	10.3	12.2	11.3	12.4	12.6
03	11.3	11.1	7.5	6.7	6.6	5.5	10.8	10.1	12.0	11.3	12.4	12.6
04	11.1	11.1	6.6	7.3	5.4	5.0	10.2	10.4	11.7	11.4	12.3	12.5
05	10.9	11.0	5.9	7.0	4.3	4.8	10.5	10.9	11.5	11.4	12.3	12.4
06	10.9	10.7	5.3	7.0	3.9	4.9	10.1	11.1	11.3	11.4	12.3	12.4
07	10.9	10.3	5.1	6.3	3.6	5.2	10.0	11.3	11.2	11.5	12.3	12.4
08	11.0	10.1	6.0	6.1	3.9	5.0	10.3	11.4	11.1	11.5	12.3	12.4
09	11.2	9.8	6.2	6.6	3.2	5.3	10.8	11.4	11.1	11.5	12.2	12.5
10	11.1	9.8	6.2	7.3	3.0	5.4	10.5	11.6	11.3	11.7	12.3	12.6
11	10.9	9.6	6.6	7.3	2.8	5.6	10.5	12.0	11.6	12.3	12.3	12.7
12	10.8	9.4	6.2	6.7	2.0	6.4	10.7	12.0	12.1	12.7	12.3	12.7
13	10.8	9.3	6.8	6.2	2.1	6.3	10.3	11.6	12.3	13.3	12.3	12.7
14	10.5	9.4	7.0	5.7	3.0	6.8	9.6	11.5	12.0	13.3	12.4	12.6
15	10.2	9.6	7.0	5.6	3.5	7.4	9.5	11.3	11.7	13.2	12.4	12.6
16	10.3	9.9	7.3	5.7	3.9	7.7	9.9	11.4	11.7	13.0	12.4	12.5
17	10.3	9.8	7.6	6.4	3.9	8.0	10.1	11.4	12.0	12.9	12.4	12.5
18	10.3	9.5	7.8	6.9	4.3	8.3	10.6	11.3	12.1	12.8	12.4	12.4
19	10.3	7.7	7.6	6.8	4.9	8.7	10.9	11.4	11.8	12.7	12.3	12.4
20	10.3	6.4	8.0	6.6	5.0	9.1	10.9	11.3	11.7	12.5	12.3	12.4
21	10.3	7.2	7.0	6.3	4.9	9.3	10.8	11.1	11.6	12.5	12.3	12.4
22	10.3	7.8	6.7	6.5	4.7	9.1	10.5	11.2	11.6	12.5	12.3	12.4
23	10.3	7.5	6.9	7.2	5.0	9.1	10.7	11.6	11.6	12.4	12.2	12.3
24	10.4	6.5	6.8	7.4	5.3	8.9	10.5	11.5	11.6	12.3	12.3	12.3
25	10.6	6.9	6.6	7.5	5.1	8.5	10.4	11.1	11.5	12.2	12.3	12.3
26	10.8	7.6	6.6	6.8	5.0	8.8	10.7	11.0	11.5	12.3	12.2	12.3
27	10.7	8.5	6.7	6.9	5.0	8.5	10.5	11.2	11.3	12.4	12.2	12.2
28	10.7	8.6	6.8	7.1	5.0	9.1	10.1	11.3	11.1	12.4	12.2	11.9
29	10.7	8.7	7.4	6.0		9.3	10.2	11.8	11.1	12.4	12.3	11.6
30	10.6	8.3	7.1	5.6		9.4	10.2	12.2	11.2	12.2	12.3	11.0
31	10.7		6.1	6.0		9.6		12.3		12.1	12.4	
Avg Temp	11	9.1	6.8	6.5	4.4	7.3	10	11	12	12	12	12
Max Temp	12	11	8.2	7.7	7.3	11	11	13	13	14	13	13
Max Mean Daily	12	11	8.0	7.5	7.0	9.6	11	12	12	13	12	13

Avg Water Temp for Water Year 2019: 9.6

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



32b--Green Cove Creek @ Butler Cove Fire Station

Water Year: 2019 WaterTemperatures in degrees Celsius

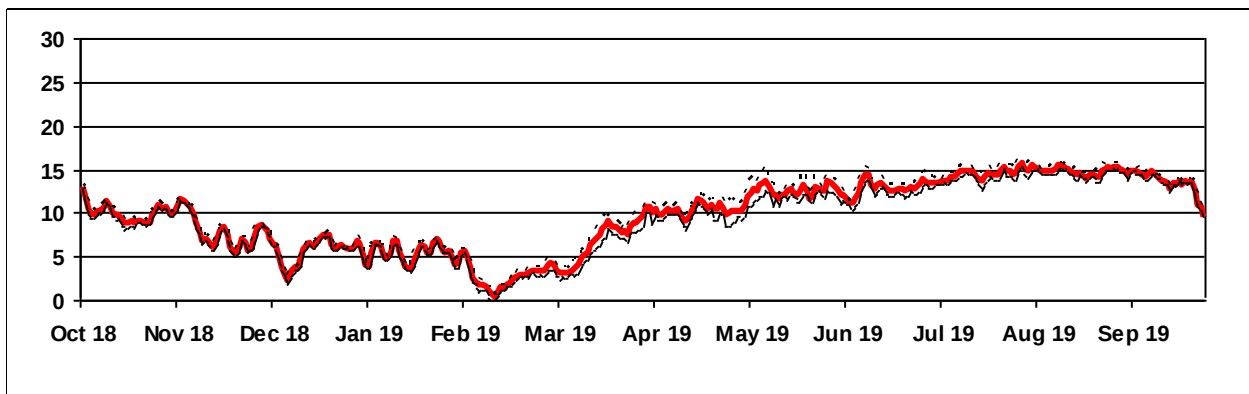
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	13.0	11.1	7.2	4.2	5.5	4.2	9.8	10.2	13.4	13.9	15.4	15.5
02	12.5	11.6	6.5	4.0	5.8	4.3	10.7	10.3	13.2	13.5	15.7	15.3
03	10.5	11.4	6.3	5.4	5.3	4.1	10.9	10.2	12.7	13.4	15.2	15.1
04	10.0	11.3	4.9	6.7	3.8	3.5	10.1	10.9	12.2	13.5	14.9	14.9
05	9.8	10.7	3.9	6.6	2.5	3.2	10.5	12.0	12.1	13.5	15.5	14.4
06	10.4	9.8	2.8	6.2	2.0	3.2	9.9	12.4	11.7	13.6	15.4	14.9
07	10.3	8.9	2.4	5.2	1.8	3.2	9.8	12.7	11.3	13.7	15.1	14.9
08	10.9	7.8	3.4	4.9	1.9	3.2	10.1	12.7	11.3	13.8	14.9	14.8
09	11.4	6.8	3.8	5.4	1.6	3.5	10.5	13.3	11.8	13.8	14.8	14.8
10	10.9	7.1	3.7	6.9	1.1	3.7	10.3	13.5	12.4	14.2	14.9	14.5
11	10.2	6.9	5.2	6.8	0.76	4.1	10.4	13.8	13.6	14.2	14.9	14.2
12	9.8	6.2	5.9	5.6	0.46	5.0	10.6	13.0	14.4	14.5	14.9	14.4
13	9.9	6.1	6.5	4.7	1.1	5.2	10.0	12.1	14.5	14.8	15.1	14.8
14	9.2	7.3	6.6	3.9	1.5	5.6	9.1	12.1	13.4	14.8	15.5	14.6
15	8.8	8.0	6.2	3.7	1.5	6.3	9.1	11.6	12.9	14.9	15.5	14.2
16	8.9	8.6	6.4	3.7	1.9	6.8	9.7	12.2	13.2	14.9	15.0	13.7
17	9.1	7.6	7.0	4.8	2.0	7.2	10.2	12.2	13.6	14.8	15.0	13.6
18	8.9	6.1	7.6	5.9	2.6	7.7	11.1	12.6	13.4	14.3	14.7	13.6
19	9.1	5.6	7.4	6.5	2.8	8.2	11.6	12.8	12.8	14.0	14.6	12.8
20	9.2	5.4	7.7	6.1	3.1	8.7	11.5	12.4	12.6	13.7	14.5	13.6
21	9.0	6.2	6.5	5.5	3.1	9.1	11.3	12.2	12.5	14.2	14.7	13.4
22	8.9	7.1	5.8	5.5	3.1	8.5	10.6	12.3	12.7	14.6	14.3	13.8
23	9.0	6.7	6.3	6.6	3.2	8.4	11.0	13.4	12.9	14.5	14.1	13.4
24	9.8	5.8	6.4	7.0	3.5	8.2	10.6	12.6	12.7	14.4	14.5	13.7
25	10.5	6.0	6.1	6.9	3.5	7.7	10.6	11.7	12.5	14.5	14.5	13.6
26	11.1	7.0	6.0	5.8	3.4	7.9	11.1	12.0	12.8	14.9	14.2	13.8
27	10.5	8.4	5.9	5.6	3.4	7.6	10.5	13.1	13.0	15.5	14.3	12.5
28	10.7	8.7	6.0	5.8	3.5	8.5	9.9	12.9	12.9	15.0	14.9	11.1
29	10.2	8.5	6.9	4.8		8.9	10.1	12.5	12.9	14.9	15.2	10.7
30	9.9	7.9	6.6	4.1		9.0	10.3	12.7	13.4	14.5	15.3	9.6
31	10.2		5.2	4.4		9.4		13.7		14.7	15.2	
Avg Temp	10	7.9	5.8	5.5	2.7	6.3	10	12	13	14	15	14
Max Temp	13	12	8.0	7.3	6.1	11	12	15	15	16	16	16
Max Mean Daily	13	12	7.7	7.0	5.8	9.4	12	14	14	15	16	15

Avg Water Temp for Water Year 2019: 9.7

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



44a--Black Lake Ditch @ Belmore Road SW

Water Year: 2019 **WaterTemperatures in degrees Celsius**

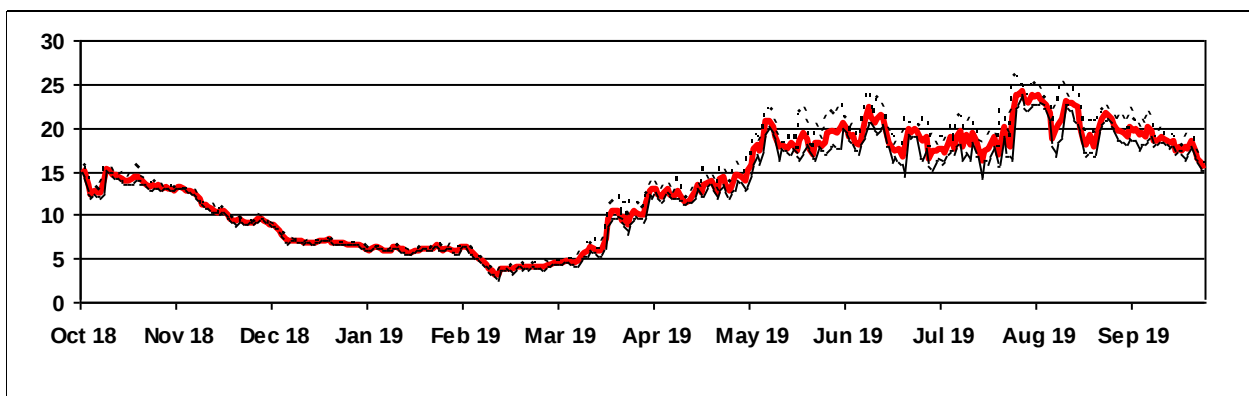
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	15.4	13.2	9.0	6.1	6.4	4.3	10.1	14.6	19.6	18.6	23.9	20.4
02	15.0	13.2	8.9	6.1	6.5	4.4	11.5	14.7	19.7	19.0	24.3	19.6
03	13.6	13.0	8.8	6.2	6.4	4.6	12.7	14.5	19.4	16.5	23.3	19.8
04	12.4	12.9	8.3	6.4	5.8	4.6	13.0	14.0	20.2	17.3	22.8	19.6
05	12.8	12.9	7.8	6.4	5.7	4.5	12.9	15.2	20.6	17.4	23.9	19.1
06	12.6	12.6	7.2	6.3	5.4	4.6	12.4	15.8	19.9	17.6	23.7	20.2
07	12.6	12.3	7.0	6.1	5.0	4.8	12.1	17.7	19.1	17.6	23.8	19.8
08	14.2	11.8	7.1	6.0	4.7	4.7	12.7	18.1	19.3	17.1	23.4	19.8
09	15.4	11.3	7.1	6.1	4.3	4.6	13.1	17.3	18.3	18.3	22.8	19.4
10	15.2	11.1	7.0	6.5	3.9	4.5	12.4	19.0	18.1	19.1	22.7	19.4
11	14.8	10.9	7.0	6.3	3.6	4.9	12.2	20.8	18.6	17.6	21.9	19.1
12	14.7	10.8	6.8	6.1	3.2	5.6	12.9	20.9	20.8	19.0	18.8	20.1
13	14.4	10.5	6.9	6.1	3.1	5.8	12.5	20.2	22.4	19.7	20.0	19.7
14	14.3	10.4	7.0	5.9	3.8	6.0	11.7	19.1	21.2	17.8	20.4	18.7
15	14.0	10.5	6.8	5.7	3.8	6.4	11.6	18.0	20.7	19.2	21.2	18.6
16	14.0	10.6	6.9	5.8	4.0	6.2	11.7	18.0	21.1	18.0	23.2	19.1
17	14.3	10.0	7.1	5.9	3.8	5.9	12.1	17.8	21.4	19.5	22.9	18.8
18	14.5	9.6	7.2	6.0	3.9	5.9	12.8	17.7	21.4	18.6	22.8	18.5
19	14.5	9.4	7.1	6.2	4.1	6.3	13.4	18.3	19.2	17.5	22.8	18.4
20	14.2	9.4	7.2	6.2	4.2	7.4	12.7	18.1	18.2	16.2	22.5	18.5
21	13.8	9.5	6.8	6.1	4.1	9.7	13.6	17.3	17.7	17.3	20.1	17.5
22	13.6	9.4	6.8	6.1	4.0	10.5	13.7	18.6	17.4	17.6	18.2	17.9
23	13.2	9.3	6.8	6.3	4.0	10.6	13.9	19.4	17.6	18.1	18.2	17.4
24	13.4	9.1	6.8	6.5	4.2	10.6	13.4	18.9	16.8	19.0	19.2	17.8
25	13.4	9.2	6.8	6.4	4.2	9.4	12.6	17.7	17.9	16.9	17.8	17.7
26	13.5	9.1	6.6	6.0	4.2	9.8	14.2	16.9	19.9	18.1	18.7	18.6
27	13.1	9.6	6.7	6.1	4.2	9.0	14.4	18.2	19.6	20.2	20.4	17.3
28	13.3	9.6	6.6	6.3	4.1	9.9	13.6	18.3	20.0	18.3	21.2	16.4
29	13.1	9.5	6.7	6.0		10.6	12.8	18.0	19.6	18.0	21.7	16.0
30	13.1	9.3	6.6	5.9		10.4	13.4	18.3	18.7	21.4	21.5	15.3
31	12.9		6.3	6.0		10.1		19.4		23.9	21.0	
Avg Temp	14	11	7.2	6.1	4.5	7.0	13	18	19	18	22	19
Max Temp	16	13	9.2	7.0	6.9	12	16	23	25	26	26	22
Max Mean Daily	15	13	9.0	6.5	6.5	11	14	21	22	24	24	20

Avg Water Temp for Water Year 2019: **13**

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



45a--Black River @ 110th Ave. SW

Water Year: 2019 WaterTemperatures in degrees Celsius

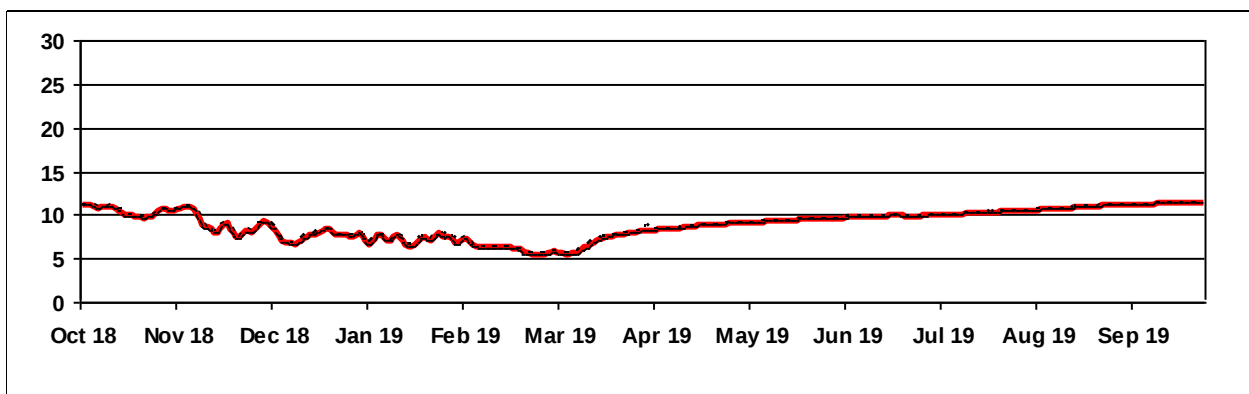
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	11.2	10.7	9.0	7.1	7.1	5.7	8.2	9.1	9.7	10.0	10.5	11.2
02	11.2	10.9	8.6	6.7	7.4	5.8	8.2	9.1	9.7	10.1	10.6	11.2
03	11.2	10.9	8.2	6.8	7.4	5.9	8.3	9.1	9.7	10.1	10.6	11.2
04	11.2	10.9	7.6	7.4	6.9	5.7	8.3	9.2	9.7	10.1	10.6	11.2
05	11.1	11.0	7.1	7.7	6.5	5.7	8.4	9.2	9.7	10.1	10.6	11.2
06	10.9	10.9	7.0	7.8	6.4	5.6	8.4	9.2	9.7	10.1	10.6	11.2
07	10.9	10.3	6.8	7.5	6.3	5.6	8.4	9.2	9.8	10.1	10.6	11.3
08	11.0	9.6	6.8	7.2	6.4	5.6	8.5	9.2	9.8	10.1	10.7	11.3
09	11.0	9.0	6.7	7.1	6.4	5.6	8.5	9.3	9.8	10.2	10.7	11.3
10	11.1	8.7	6.8	7.5	6.3	5.7	8.5	9.3	9.8	10.2	10.7	11.3
11	11.1	8.6	7.2	7.8	6.3	5.7	8.5	9.3	9.8	10.2	10.7	11.3
12	10.8	8.4	7.4	7.7	6.3	6.1	8.6	9.3	9.8	10.2	10.7	11.3
13	10.6	8.1	7.6	7.2	6.3	6.3	8.6	9.4	9.9	10.2	10.7	11.3
14	10.4	8.1	7.8	6.7	6.3	6.4	8.6	9.4	9.9	10.2	10.7	11.3
15	10.1	8.5	7.8	6.5	6.3	6.7	8.7	9.4	9.9	10.3	10.7	11.4
16	10.0	9.0	7.8	6.5	6.4	6.9	8.7	9.4	9.9	10.3	10.7	11.4
17	10.0	9.1	8.0	6.6	6.3	7.1	8.7	9.4	9.9	10.3	10.7	11.4
18	9.9	8.5	8.3	7.1	6.3	7.2	8.8	9.5	9.9	10.3	10.7	11.4
19	9.9	8.0	8.4	7.4	6.2	7.4	8.8	9.5	10.0	10.3	10.9	11.4
20	9.9	7.6	8.5	7.5	6.2	7.5	8.9	9.5	10.0	10.3	11.0	11.4
21	9.7	7.5	8.3	7.3	5.9	7.6	8.9	9.5	10.0	10.4	11.0	11.4
22	9.8	7.8	7.9	7.1	5.7	7.6	8.9	9.5	10.0	10.4	11.0	11.4
23	9.8	8.3	7.7	7.4	5.6	7.7	8.9	9.5	10.0	10.4	11.0	11.4
24	9.9	8.2	7.8	7.8	5.5	7.8	8.9	9.6	10.0	10.4	11.0	11.5
25	10.3	8.1	7.8	8.0	5.6	7.8	9.0	9.6	10.0	10.4	11.1	11.5
26	10.5	8.2	7.7	7.7	5.6	7.9	9.0	9.6	10.0	10.4	11.1	11.5
27	10.7	8.8	7.7	7.5	5.6	8.0	9.0	9.6	10.0	10.5	11.1	11.5
28	10.7	9.2	7.6	7.5	5.6	8.0	9.0	9.6	10.0	10.5	11.1	11.5
29	10.6	9.3	7.8	7.3		8.1	9.1	9.6	10.0	10.5	11.1	11.5
30	10.5	9.2	8.0	6.8		8.1	9.1	9.6	10.0	10.5	11.1	11.5
31	10.6		7.7	6.8		8.2		9.7		10.5	11.2	
Avg Temp	11	9.0	7.7	7.3	6.3	6.8	8.7	9.4	9.9	10	11	11
Max Temp	11	11	9.2	8.0	7.6	8.2	9.1	9.7	10	10	11	12
Max Mean Daily	11	11	9.0	8.0	7.4	8.2	9.1	9.7	10	10	11	11

Avg Water Temp for Water Year 2019: 9.0

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



52a--Salmon Creek @ Littlerock Rd.

Water Year: 2019 WaterTemperatures in degrees Celsius

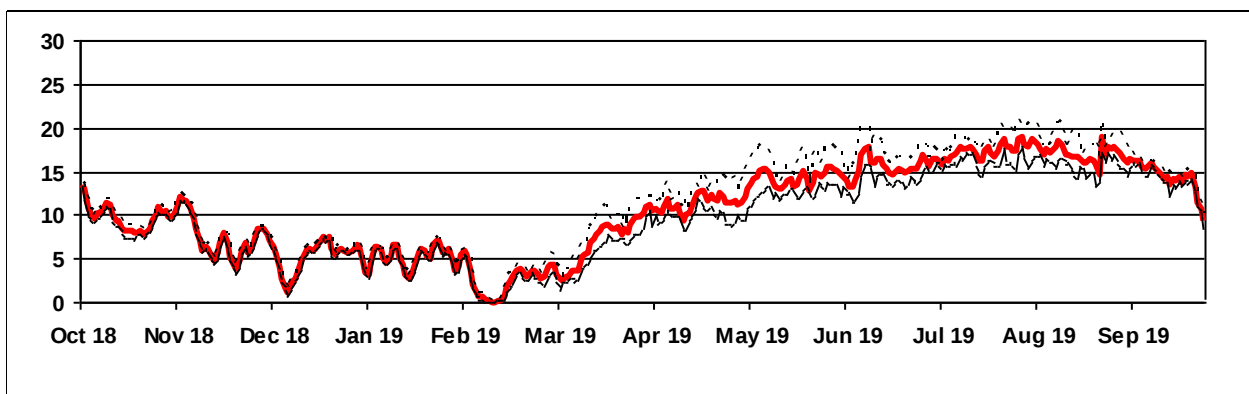
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	13.5	11.3	7.0	3.5	5.4	4.1	10.2	11.6	15.6	16.9	18.8	18.0
02	13.0	12.1	6.4	3.2	5.9	4.4	11.1	11.3	15.4	16.2	19.1	17.4
03	10.7	11.7	5.7	4.9	5.5	4.4	11.3	11.3	15.1	15.6	18.2	17.2
04	10.2	11.7	4.1	6.5	3.7	3.2	10.5	12.1	14.7	16.4	17.9	16.4
05	9.5	10.9	2.7	6.4	2.1	2.7	10.7	13.1	14.3	16.4	18.7	16.0
06	10.4	9.7	1.7	6.2	1.3	2.6	10.5	13.8	14.0	16.2	18.5	16.4
07	10.3	8.5	1.3	5.1	0.68	3.0	10.3	14.2	13.4	15.8	18.0	16.2
08	10.9	7.1	2.2	4.7	0.60	3.1	10.9	14.5	13.4	16.6	17.6	16.3
09	11.6	6.0	2.7	5.3	0.24	3.7	11.9	15.0	13.9	16.4	17.0	16.3
10	11.3	6.4	3.5	6.7	0.16	3.7	10.8	15.3	15.2	16.7	17.6	15.7
11	10.1	6.2	4.9	6.6	0.11	3.7	10.8	15.4	17.0	16.9	17.3	15.3
12	9.5	5.4	5.3	5.4	0.07	5.3	11.3	14.9	17.7	17.1	17.5	15.6
13	9.4	4.8	6.1	4.4	0.15	5.5	10.4	13.8	17.8	17.9	17.9	16.1
14	8.6	5.8	6.3	3.3	0.26	5.7	9.5	13.4	16.0	17.6	18.5	15.5
15	8.2	7.0	5.9	2.9	0.73	6.8	10.0	13.1	16.0	17.7	18.0	15.1
16	8.2	7.9	6.3	3.0	1.9	7.3	10.3	13.1	16.5	17.8	16.9	14.8
17	8.2	7.0	6.9	4.4	2.5	7.9	11.0	13.6	16.6	17.6	17.0	14.2
18	8.0	5.2	7.5	5.7	3.0	8.3	12.1	14.0	15.8	17.0	16.8	14.4
19	8.1	4.3	7.2	6.3	3.7	8.6	12.6	14.1	15.2	16.2	16.8	13.5
20	8.2	3.9	7.6	5.9	4.0	9.0	12.7	13.3	14.8	16.3	16.8	14.3
21	7.9	4.8	6.1	5.3	3.7	8.9	12.9	13.5	14.7	17.3	16.4	14.0
22	8.1	6.1	5.4	5.1	3.0	8.5	11.6	14.3	14.9	17.8	16.1	14.4
23	8.4	6.8	5.9	6.7	3.1	8.5	12.3	15.1	15.4	17.1	16.0	13.8
24	9.3	5.8	6.3	7.1	3.7	8.6	11.9	14.3	15.2	16.7	16.5	14.6
25	10.1	6.1	6.0	7.0	3.6	7.9	11.6	12.9	14.9	17.4	16.2	14.4
26	10.9	6.8	5.6	5.8	3.2	8.6	12.6	13.8	15.1	18.1	15.8	14.9
27	10.4	8.4	5.8	5.8	2.8	8.0	12.2	15.0	15.5	18.7	14.6	13.4
28	10.5	8.6	5.9	6.1	2.9	9.0	11.4	14.7	15.3	18.0	18.9	11.5
29	9.9	8.5	6.7	4.7		9.6	11.4	14.4	15.3	17.9	17.0	10.8
30	9.8	7.9	6.5	3.8		9.9	11.4	15.0	16.3	17.5	17.8	9.3
31	10.2		4.7	4.1		9.9		15.6		17.3	17.5	
Avg Temp	9.8	7.4	5.4	5.2	2.4	6.5	11	14	15	17	17	15
Max Temp	14	13	8.1	7.5	6.3	12	15	18	20	21	21	20
Max Mean Daily	14	12	7.6	7.1	5.9	9.9	13	16	18	19	19	18

Avg Water Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



54a--Beaver Creek @ Case Road SW

Water Year: 2019 WaterTemperatures in degrees Celsius

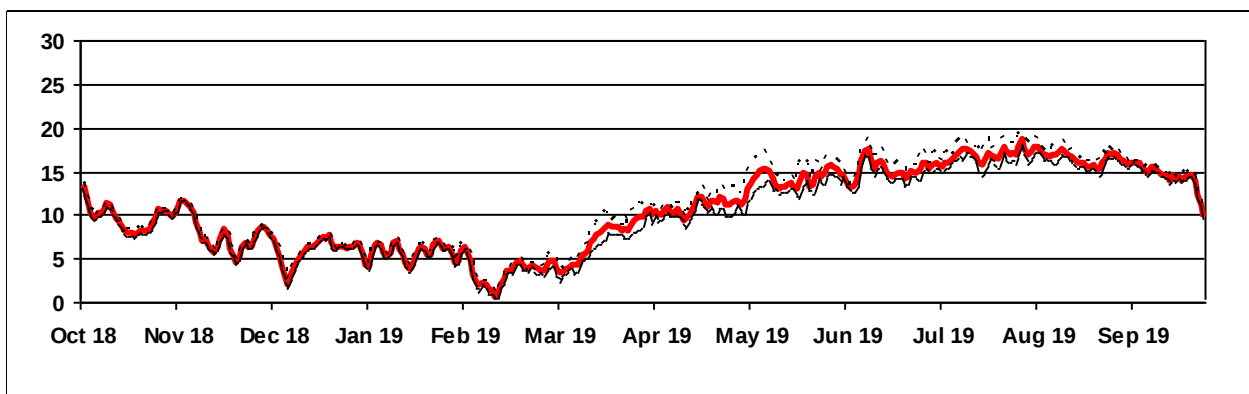
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	13.4	10.9	7.7	4.4	6.0	4.5	10.0	11.7	15.8	16.1	18.0	17.2
02	13.2	11.8	7.4	4.0	6.5	4.8	10.6	11.7	15.7	16.0	18.7	16.9
03	11.2	11.8	6.7	5.4	6.0	4.9	10.8	11.3	15.3	15.5	17.7	16.6
04	10.4	11.5	5.3	6.7	4.8	4.0	10.0	11.9	14.7	15.9	17.0	16.3
05	9.7	11.1	4.3	6.8	3.2	3.4	10.5	13.0	14.7	15.9	17.5	15.8
06	10.2	10.3	2.9	6.6	2.4	3.4	10.1	13.7	13.7	15.8	17.8	16.0
07	10.2	9.2	2.1	5.7	2.0	3.8	10.1	14.3	13.2	15.6	17.8	16.1
08	10.8	8.0	3.5	5.3	2.3	4.0	10.5	14.7	13.4	16.0	17.5	16.0
09	11.4	7.1	4.3	5.8	2.0	4.4	11.0	15.1	13.6	16.0	16.9	16.0
10	11.3	7.2	4.9	6.9	1.5	4.3	10.3	15.3	14.6	16.3	17.0	15.5
11	10.4	6.6	5.6	7.1	1.5	4.4	10.3	15.4	16.2	16.7	16.8	15.1
12	9.7	6.1	5.8	6.2	0.64	5.4	10.7	15.0	17.5	16.9	16.9	15.0
13	9.4	5.7	6.3	5.4	1.1	5.6	10.2	14.1	17.6	17.5	16.8	15.6
14	8.7	6.5	6.5	4.5	2.0	6.0	9.3	13.6	16.4	17.5	17.3	15.5
15	8.2	7.4	6.3	3.9	2.8	6.9	9.5	13.1	15.4	17.6	17.7	15.1
16	8.1	8.4	6.7	4.0	3.6	7.4	10.0	13.2	15.9	17.4	17.2	14.7
17	7.9	7.8	7.2	5.1	3.7	7.8	10.6	13.3	16.4	17.2	17.0	14.6
18	7.8	6.2	7.6	6.1	3.9	8.1	11.5	13.6	16.1	16.7	16.7	14.6
19	8.0	5.2	7.4	6.5	4.6	8.3	12.1	13.8	14.9	16.0	16.5	14.0
20	8.3	4.6	7.8	6.2	4.7	8.7	12.2	13.3	14.6	15.7	16.1	14.6
21	8.2	5.2	6.8	5.6	4.3	8.9	11.8	13.1	14.5	16.3	16.0	14.2
22	8.2	6.4	6.1	5.6	3.9	8.6	11.0	13.7	14.7	17.2	16.0	14.4
23	8.5	7.0	6.4	6.7	3.9	8.8	11.8	14.8	15.0	17.0	15.6	14.1
24	9.1	6.4	6.5	7.2	4.3	8.7	11.6	14.6	14.8	16.7	15.7	14.4
25	9.8	6.5	6.5	7.2	4.0	8.2	11.4	13.2	14.2	16.6	15.9	14.5
26	10.7	7.0	6.3	6.3	3.9	8.5	12.2	13.4	14.4	17.0	15.4	14.7
27	10.6	8.3	6.4	6.2	3.8	8.2	11.9	14.4	15.0	17.9	15.4	13.9
28	10.6	8.7	6.4	6.4	3.8	8.8	11.2	14.8	15.0	17.3	16.1	12.3
29	10.2	8.8	7.0	5.5		9.3	11.3	14.5	15.0	17.0	16.6	11.3
30	9.8	8.3	6.7	4.7		9.6	11.4	14.8	15.4	17.2	17.2	9.8
31	10.1		5.4	4.9		9.8		15.7		17.0	16.9	
Avg Temp	9.8	7.9	6.0	5.8	3.5	6.7	11	14	15	17	17	15
Max Temp	14	12	8.1	7.5	6.8	11	14	18	19	19	20	18
Max Mean Daily	13	12	7.8	7.2	6.5	9.8	12	16	18	18	19	17

Avg Water Temp for Water Year 2019: 11

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



55a--Scatter Creek @ James Rd.

Water Year: 2019 WaterTemperatures in degrees Celsius

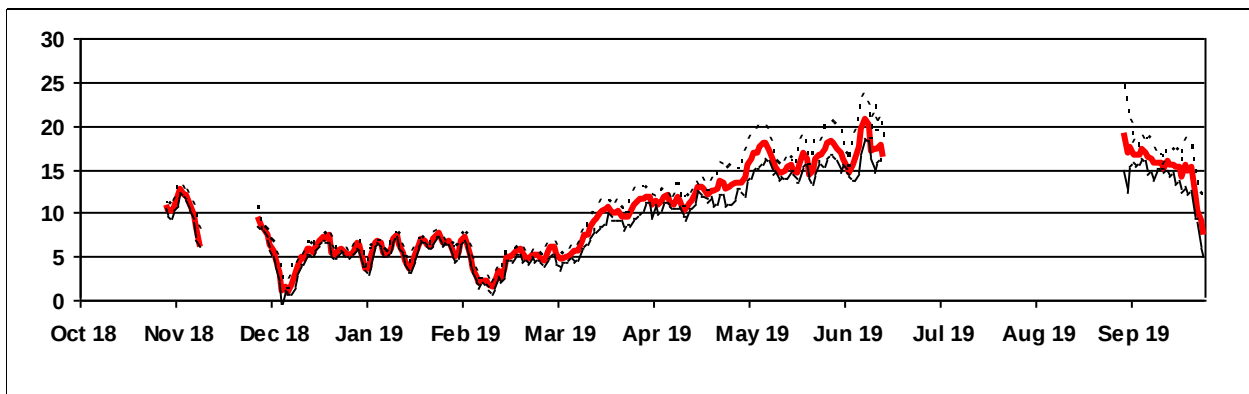
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		12.1	6.4	3.8	6.8	5.7	11.7	13.5	18.3			
02		12.9	5.8	3.6	7.3	6.3	12.0	13.6	18.0			
03		12.2	4.8	5.2	6.8	6.2	11.9	13.4	17.5			
04		12.2	3.2	6.6	5.1	5.3	11.0	14.2	16.9			19.2
05		11.0	1.2	6.8	3.6	4.7	11.4	15.5	16.3			17.0
06		9.8	1.5	6.6	2.7	4.7	11.1	16.3	15.5			17.7
07		8.4	1.0	5.5	2.1	5.0	11.4	16.9	14.8			16.7
08		6.2	1.8	5.2	2.3	5.0	11.8	17.0	15.5			16.7
09			3.3	5.8	2.4	5.5	12.0	17.6	16.3			16.8
10			3.8	7.1	1.7	5.7	11.1	18.0	17.6			17.4
11			4.9	7.5	1.5	5.7	11.0	18.0	19.6			16.9
12			4.8	6.5	2.2	6.9	11.8	17.3	20.9			16.5
13			5.9	5.6	3.3	7.5	11.4	16.1	20.1			16.3
14			5.9	4.5	2.5	7.5	10.3	15.4	17.3			15.7
15			5.4	3.6	3.8	8.5	10.6	14.7	17.5			15.8
16			6.2	3.8	5.0	9.1	11.1	14.7	17.5			15.8
17			6.9	5.3	5.1	9.5	11.4	14.9	17.9			15.2
18			7.3	6.5	5.2	10.0	12.4	15.4	16.6			16.0
19			7.1	7.1	5.7	10.3	13.0	15.5				15.5
20			7.5	6.8	5.9	10.6	13.0	14.8				15.6
21			5.6	6.5	5.4	10.9	12.9	14.6				15.4
22			5.2	6.2	4.9	10.0	12.2	15.6				15.2
23			5.8	7.2	4.9	10.1	12.5	17.0				14.3
24			6.0	7.7	5.3	10.3	12.6	16.3				15.5
25			5.7	7.7	5.3	9.6	12.7	14.5				15.0
26			5.3	6.8	5.4	9.6	13.7	14.9				15.3
27		9.6	5.2	6.7	4.8	9.5	13.6	16.3				12.1
28	11.0	8.4	5.5	6.8	4.7	10.1	12.8	16.8				10.4
29	10.4	8.2	6.6	5.8		10.9	13.0	16.6				9.2
30	10.2	7.5	6.4	5.1		11.3	13.2	17.3				7.5
31	10.7		4.7	5.6		11.6		18.1				
Avg Temp	11	9.9	5.1	6.0	4.3	8.2	12	16	17			15
Max Temp	11	14	8.3	8.0	7.7	13	16	21	24			25
Max Mean Daily	11	13	7.5	7.7	7.3	12	14	18	21			19

Avg Water Temp for Water Year 2019: 10

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



65a--Prairie Creek @ Old Highway 99

Water Year: 2019 WaterTemperatures in degrees Celsius

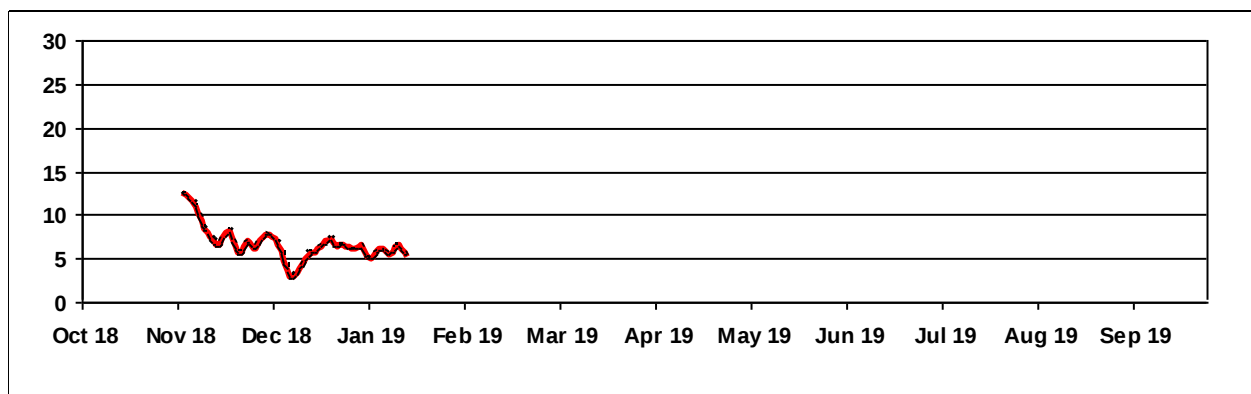
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01			7.6	5.2								
02		12.5	7.3	5.0								
03		12.4	6.8	5.4								
04		12.2	5.9	5.9								
05		11.7	4.8	6.1								
06		11.1	3.8	6.2								
07		10.3	2.9	5.9								
08		9.4	3.0	5.6								
09		8.5	3.5	5.7								
10		8.0	3.9	6.3								
11		7.6	4.5	6.6								
12		7.0	5.0	6.1								
13		6.6	5.6	5.7								
14		6.6	5.8	5.3								
15		7.3	5.8									
16		8.0	6.1									
17		8.3	6.5									
18		7.6	7.0									
19		6.5	7.1									
20		5.8	7.4									
21		5.7	6.8									
22		6.3	6.5									
23		7.1	6.6									
24		6.8	6.6									
25		6.3	6.5									
26		6.3	6.3									
27		7.0	6.2									
28		7.6	6.2									
29		7.9	6.5									
30		7.8	6.6									
31			5.7									
Avg Temp		8.1	5.8	5.8								
Max Temp		12	7.8	6.7								
Max Mean Daily		12	7.6	6.6								

Avg Water Temp for Water Year 2019: 6.6

Notes:

Thurston County

Annual Water Temp-- Mean, Maximum, Minimum:



Appendix E – Groundwater Data

DP1--5013 Donnelly Dr SE

Water Year: 2019 **Well Water Levels are in feet**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		181.75					181.66					
02												
03												
04												
05												
06						181.62						
07								181.60				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		181.81										
31			181.73									

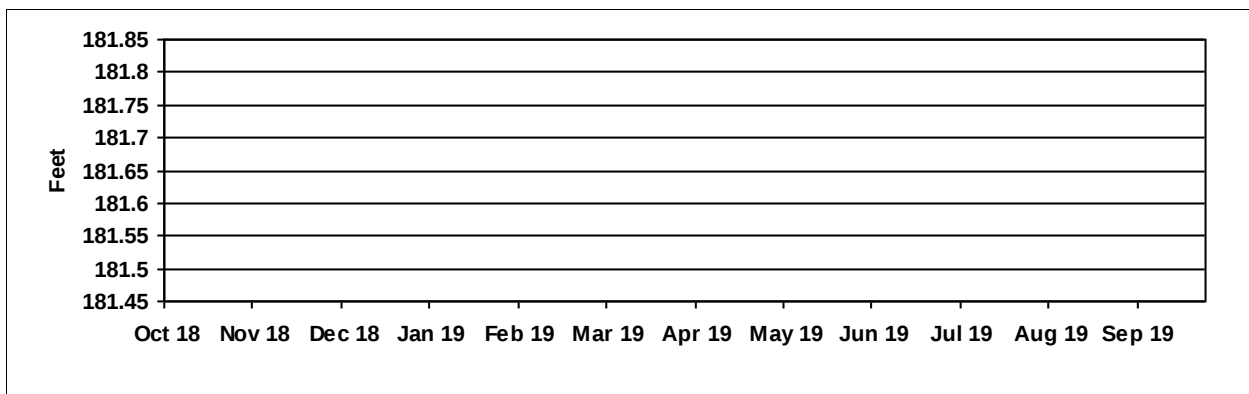
Avg WL	181.78	181.73				181.62	181.66	181.60				
Max WL	181.81	182				181.62	181.66	181.60				
Max Day Mean	181.81	181.73				181.62	181.66	181.60				

Average Well Water Level for Water Year 2019: 181.68

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



DP2--3986 Woodlawn Dr SE

Water Year: 2019 **Well Water Levels are in feet**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		184.57					184.61					
02												
03												
04												
05												
06						184.65						
07								184.65				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		184.57										
31			184.65									

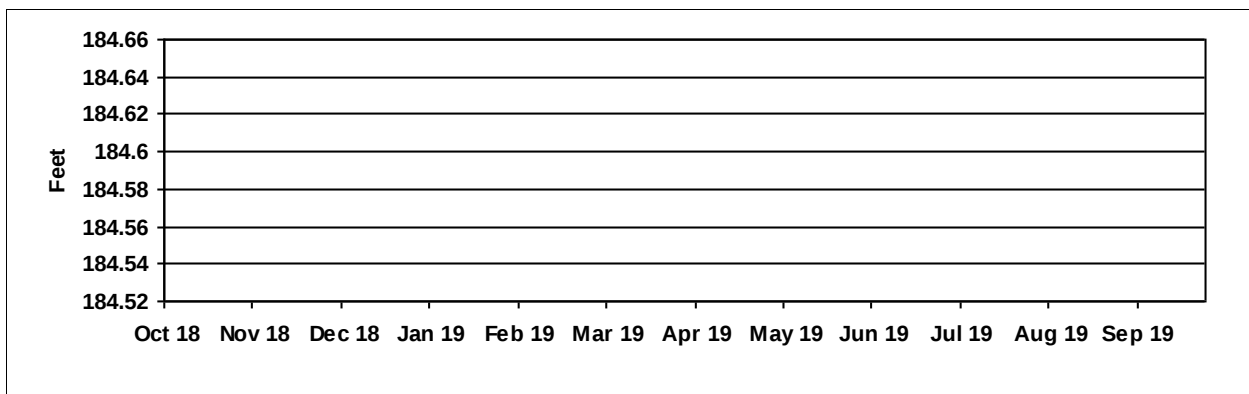
Avg WL	184.57	184.65				184.65	184.61	184.65				
Max WL	184.57	185				184.65	184.61	184.65				
Max Day Mean	184.57	184.65				184.65	184.61	184.65				

Average Well Water Level for Water Year 2019: 184.63

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



DP3--5535 Donnelly Dr SE

Water Year: 2019 **Well Water Levels are in feet**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		180.23					180.20					
02												
03												
04												
05												
06						180.20						
07								180.19				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		180.47										
31			180.26									

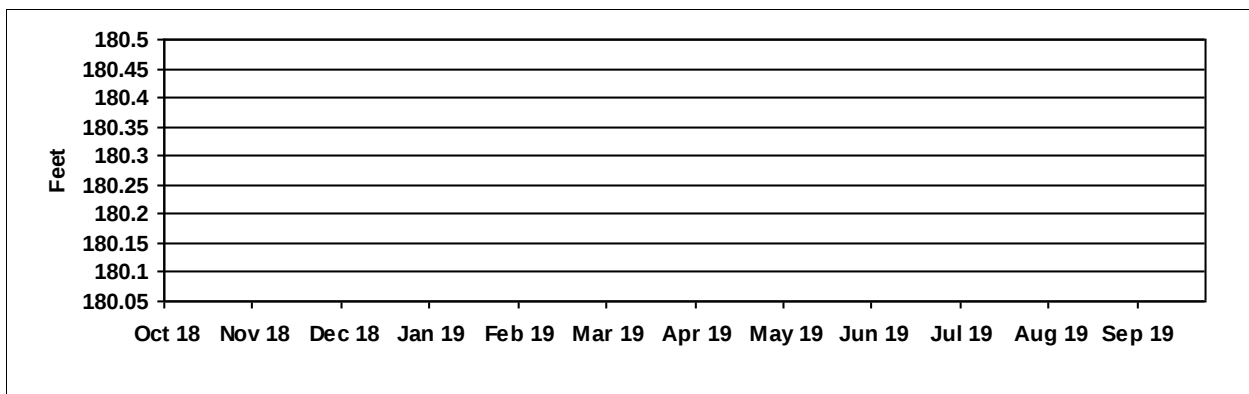
Avg WL	180.35	180.26				180.20	180.20	180.19				
Max WL	180.47	180				180.20	180.20	180.19				
Max Day Mean	180.47	180.26				180.20	180.20	180.19				

Average Well Water Level for Water Year 2019: 180.24

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



--

Water Year: 2019 Well Water Levels are in feet

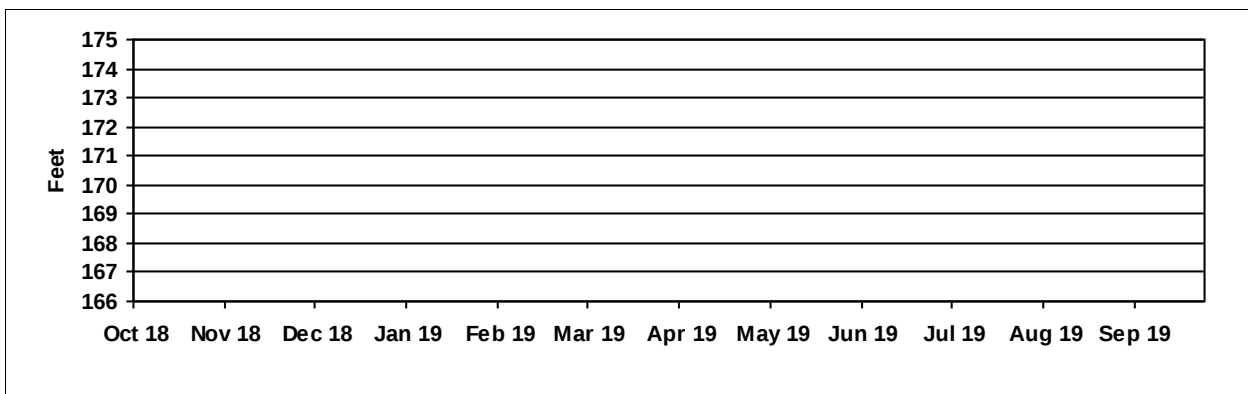
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		170.13					173.94					
02												
03												
04												169.23
05												
06						173.62						
07								173.17				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		169.63										
31			170.68									
Avg WL		169.88	170.68			173.62	173.94	173.17				169.23
Max WL		170.13	171			173.62	173.94	173.17				169.23
Max Day Mean		170.13	170.68			173.62	173.94	173.17				169.23

Average Well Water Level for Water Year 2019: 171.75

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



ECY2--5535 Donnelly Dr SE

Water Year: 2019 **Well Water Levels are in feet**

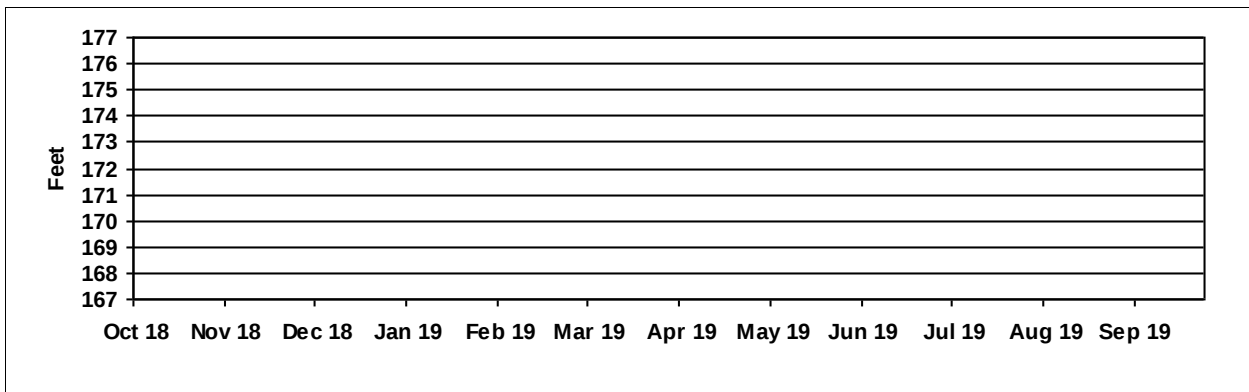
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01		171.86					175.76					
02												
03												
04												170.42
05												
06						175.59						
07								174.20				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		171.64										
31			173.68									
Avg WL		171.75	173.68			175.59	175.76	174.20				170.42
Max WL		171.86	174			175.59	175.76	174.20				170.42
Max Day Mean		171.86	173.68			175.59	175.76	174.20				170.42

Average Well Water Level for Water Year 2019: 173.57

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



ET1--8538 9th Way SE

Water Year: 2019 Well Water Levels are in feet

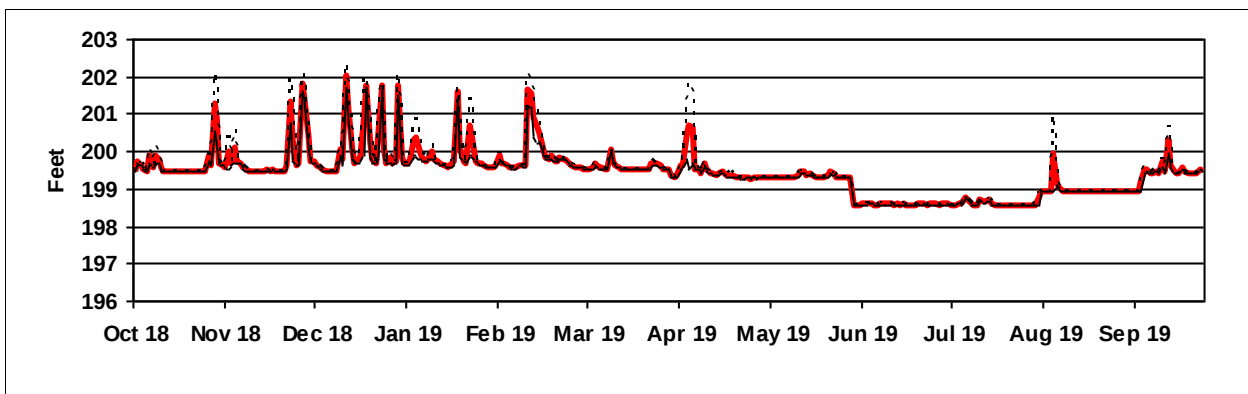
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	199.47	199.60	199.73	199.67	199.63	199.58	199.52	199.29	199.30	198.60	198.58	198.94
02	199.72	200.00	199.66	199.67	199.92	199.57	199.38	199.29	199.30	198.59	198.58	198.95
03	199.66	199.70	199.56	199.77	199.69	199.55	199.30	199.30	198.59	198.60	198.58	198.94
04	199.54	200.14	199.51	200.34	199.70	199.54	199.35	199.30	198.59	198.60	198.59	198.94
05	199.48	199.73	199.49	200.38	199.65	199.55	199.61	199.30	198.59	198.60	198.76	198.95
06	199.89	199.69	199.48	200.02	199.57	199.56	199.64	199.30	198.60	198.59	198.94	198.95
07	199.59	199.59	199.47	199.85	199.56	199.68	200.41	199.30	198.60	198.59	198.94	198.94
08	199.91	199.51	199.46	199.76	199.56	199.58	200.70	199.29	198.61	198.59	198.94	198.95
09	199.77	199.50	199.46	199.82	199.66	199.59	200.63	199.30	198.62	198.60	198.94	199.18
10	199.57	199.49	200.06	199.99	199.62	199.53	199.51	199.30	198.59	198.60	199.95	199.53
11	199.48	199.50	199.82	199.78	199.61	199.52	199.55	199.30	198.59	198.80	199.15	199.54
12	199.47	199.50	202.04	199.73	201.67	200.06	199.43	199.30	198.60	198.72	199.04	199.42
13	199.47	199.49	201.17	199.67	201.57	199.75	199.69	199.31	198.60	198.61	198.94	199.44
14	199.47	199.49	200.07	199.63	200.91	199.63	199.51	199.31	198.60	198.58	198.94	199.50
15	199.46	199.52	199.69	199.61	200.67	199.57	199.43	199.35	198.60	198.59	198.94	199.43
16	199.48	199.49	199.77	199.59	200.49	199.54	199.40	199.46	198.60	198.71	198.94	199.72
17	199.47	199.53	199.83	199.71	200.05	199.52	199.34	199.45	198.59	198.66	198.94	199.45
18	199.47	199.49	200.97	199.75	199.84	199.52	199.40	199.39	198.60	198.68	198.94	200.34
19	199.47	199.50	201.78	201.59	199.81	199.52	199.47	199.40	198.59	198.71	198.94	199.61
20	199.47	199.49	200.25	200.12	199.88	199.52	199.43	199.37	198.60	198.61	198.95	199.49
21	199.47	199.50	199.79	199.75	199.76	199.52	199.34	199.31	198.59	198.58	198.94	199.41
22	199.47	199.61	199.67	199.71	199.74	199.52	199.39	199.30	198.59	198.58	198.94	199.40
23	199.47	201.36	200.45	200.68	199.83	199.52	199.35	199.30	198.59	198.58	198.95	199.57
24	199.47	200.32	201.77	200.42	199.79	199.52	199.31	199.30	198.59	198.58	198.95	199.45
25	199.48	199.65	200.06	199.76	199.81	199.51	199.31	199.34	198.60	198.58	198.95	199.40
26	199.89	199.68	199.70	199.71	199.67	199.69	199.29	199.47	198.60	198.59	198.95	199.40
27	199.65	201.85	199.87	199.67	199.66	199.67	199.29	199.40	198.60	198.58	198.94	199.41
28	201.31	201.41	199.68	199.62	199.60	199.68	199.29	199.32	198.59	198.58	198.94	199.40
29	200.85	200.45	199.72	199.60		199.62	199.28	199.31	198.60	198.58	198.94	199.55
30	199.70	199.76	201.79	199.58		199.55	199.29	199.30	198.60	198.59	198.94	199.46
31	199.63		199.84	199.57		199.52		199.30		198.57	198.95	
Avg WL	199.67	199.85	200.12	199.89	199.96	199.59	199.53	199.33	198.64	198.61	198.93	199.36
Max WL	202.09	202.08	202	201.72	202.08	200.07	201.88	199.49	199.30	198.82	200.96	200.72
Max Day Mean	201.31	201.85	202.04	201.59	201.67	200.06	200.70	199.47	199.30	198.80	199.95	200.34

Average Well Water Level for Water Year 2019: 199.46

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



HFB-01--628 Hidden Forest Dr SE

Water Year: 2019 Well Water Levels are in feet

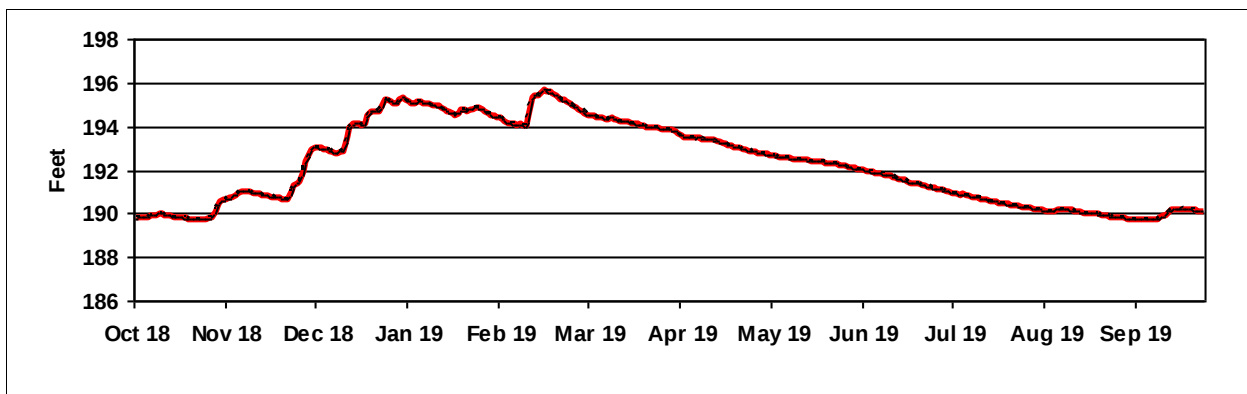
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	189.81	190.67	193.06	195.26	194.45	194.81	193.85	192.82	192.18	191.14	190.28	189.85
02	189.83	190.74	193.07	195.16	194.41	194.73	193.84	192.79	192.15	191.10	190.27	189.84
03	189.82	190.79	193.02	195.08	194.35	194.64	193.80	192.76	192.11	191.09	190.24	189.83
04	189.82	190.89	192.98	195.03	194.28	194.55	193.71	192.74	192.07	191.05	190.22	189.80
05	189.81	190.99	192.95	195.12	194.19	194.49	193.63	192.72	192.05	191.02	190.20	189.79
06	189.96	191.02	192.91	195.17	194.14	194.48	193.54	192.69	192.03	190.97	190.17	189.78
07	189.95	191.03	192.86	195.10	194.12	194.46	193.50	192.65	191.99	190.95	190.15	189.76
08	189.97	191.01	192.79	195.08	194.10	194.45	193.50	192.62	191.94	190.92	190.14	189.75
09	190.01	191.02	192.76	195.08	194.11	194.42	193.48	192.61	191.91	190.89	190.12	189.75
10	190.00	190.99	192.84	195.00	194.07	194.37	193.47	192.60	191.88	190.91	190.15	189.80
11	189.98	190.95	192.90	194.99	194.03	194.34	193.49	192.57	191.86	190.86	190.22	189.80
12	189.95	190.93	193.51	194.95	194.55	194.41	193.46	192.55	191.85	190.83	190.24	189.80
13	189.92	190.89	193.93	194.87	195.31	194.35	193.45	192.53	191.81	190.79	190.25	189.80
14	189.89	190.86	194.14	194.79	195.45	194.30	193.45	192.52	191.76	190.76	190.24	189.78
15	189.86	190.84	194.14	194.74	195.39	194.29	193.43	192.52	191.75	190.73	190.21	189.81
16	189.84	190.80	194.14	194.67	195.57	194.27	193.39	192.51	191.72	190.71	190.18	189.90
17	189.82	190.77	194.07	194.63	195.68	194.24	193.31	192.48	191.67	190.68	190.15	189.93
18	189.81	190.75	194.17	194.52	195.63	194.21	193.29	192.46	191.62	190.65	190.11	190.12
19	189.79	190.73	194.49	194.60	195.58	194.19	193.27	192.45	191.58	190.61	190.08	190.18
20	189.78	190.70	194.73	194.75	195.53	194.18	193.22	192.43	191.55	190.59	190.07	190.20
21	189.77	190.67	194.73	194.76	195.43	194.11	193.16	192.42	191.50	190.56	190.05	190.22
22	189.75	190.69	194.69	194.71	195.36	194.09	193.12	192.39	191.45	190.52	190.03	190.23
23	189.74	191.03	194.74	194.77	195.28	194.04	193.09	192.37	191.43	190.50	190.02	190.25
24	189.73	191.29	195.05	194.82	195.21	194.01	193.04	192.36	191.40	190.46	190.01	190.23
25	189.73	191.42	195.27	194.88	195.15	194.00	193.03	192.33	191.38	190.45	189.99	190.21
26	189.81	191.53	195.24	194.84	195.05	194.01	192.99	192.35	191.34	190.43	189.96	190.18
27	189.85	191.92	195.16	194.78	195.00	193.99	192.95	192.32	191.30	190.39	189.94	190.17
28	190.14	192.43	195.08	194.70	194.89	193.96	192.91	192.29	191.26	190.38	189.92	190.15
29	190.41	192.78	195.04	194.63		193.91	192.90	192.27	191.21	190.36	189.89	190.14
30	190.54	192.97	195.25	194.56		193.88	192.86	192.25	191.18	190.35	189.88	190.10
31	190.63		195.33	194.49		193.87		192.22		190.31	189.87	
Avg WL	189.93	191.14	194.03	194.86	194.87	194.26	193.34	192.50	191.70	190.71	190.10	189.97
Max WL	190.64	193.00	195	195.28	195.68	194.83	193.85	192.83	192.18	191.15	190.29	190.26
Max Day Mean	190.63	192.97	195.33	195.26	195.68	194.81	193.85	192.82	192.18	191.14	190.28	190.25

Average Well Water Level for Water Year 2019: 192.28

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:22:27 PM

HFB-02--524 Hidden Forest Dr SE

Water Year: 2019 Well Water Levels are in feet

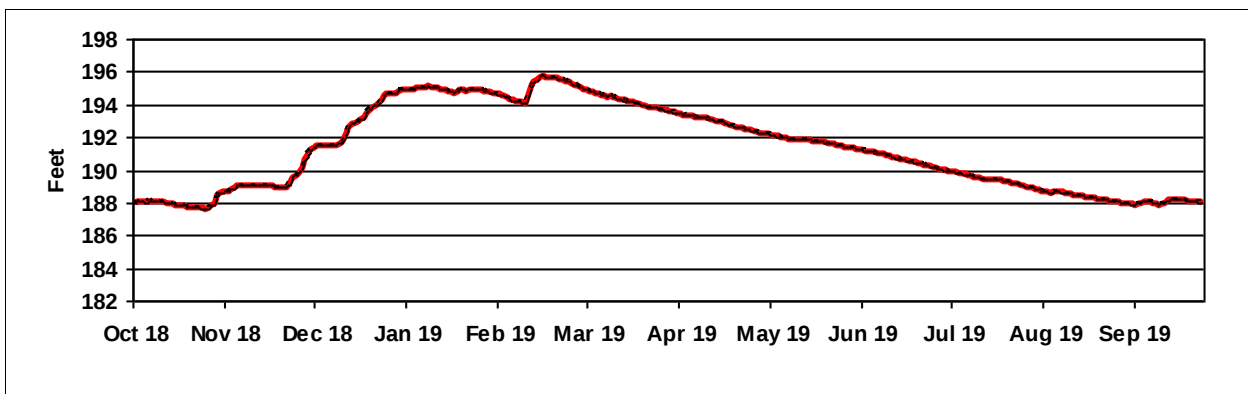
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	187.99	188.68	191.41	194.96	194.68	195.16	193.64	192.38	191.42	190.15	189.01	188.07
02	188.07	188.73	191.48	194.93	194.66	195.08	193.61	192.32	191.39	190.10	188.97	188.04
03	188.12	188.81	191.51	194.92	194.61	194.99	193.55	192.28	191.36	190.06	188.93	188.02
04	188.12	188.91	191.55	194.96	194.54	194.91	193.48	192.24	191.33	190.01	188.90	187.98
05	188.05	189.04	191.58	195.05	194.46	194.84	193.44	192.21	191.29	189.97	188.83	187.95
06	188.16	189.10	191.57	195.11	194.37	194.80	193.39	192.18	191.26	189.94	188.77	187.93
07	188.14	189.13	191.56	195.09	194.29	194.74	193.39	192.13	191.22	189.94	188.72	187.92
08	188.13	189.14	191.52	195.10	194.24	194.68	193.40	192.08	191.17	189.89	188.69	187.96
09	188.15	189.14	191.53	195.13	194.23	194.64	193.35	192.04	191.14	189.83	188.64	188.00
10	188.12	189.13	191.65	195.11	194.16	194.57	193.29	192.01	191.10	189.81	188.66	188.08
11	188.07	189.10	191.74	195.10	194.11	194.51	193.27	191.98	191.07	189.77	188.74	188.10
12	188.03	189.09	192.26	195.07	194.43	194.56	193.23	191.94	191.04	189.71	188.70	188.08
13	187.98	189.07	192.60	194.99	195.14	194.50	193.20	191.91	190.99	189.67	188.67	188.02
14	187.94	189.06	192.86	194.94	195.40	194.44	193.19	191.88	190.93	189.61	188.62	187.95
15	187.91	189.07	192.93	194.90	195.51	194.39	193.16	191.87	190.90	189.58	188.58	187.92
16	187.89	189.05	193.02	194.85	195.68	194.34	193.10	191.87	190.85	189.53	188.55	188.00
17	187.86	189.04	193.07	194.82	195.77	194.28	193.01	191.86	190.81	189.50	188.53	188.00
18	187.83	189.02	193.23	194.73	195.73	194.25	192.97	191.88	190.75	189.47	188.50	188.17
19	187.80	189.01	193.52	194.86	195.71	194.21	192.95	191.88	190.72	189.43	188.47	188.25
20	187.78	189.00	193.78	194.94	195.74	194.17	192.89	191.83	190.68	189.43	188.44	188.24
21	187.75	188.99	193.90	194.91	195.67	194.10	192.83	191.82	190.63	189.45	188.39	188.21
22	187.73	189.01	193.94	194.85	195.62	194.05	192.77	191.77	190.58	189.42	188.37	188.20
23	187.71	189.29	194.05	194.94	195.57	193.99	192.74	191.73	190.53	189.40	188.35	188.21
24	187.69	189.60	194.36	194.98	195.53	193.94	192.68	191.71	190.49	189.36	188.33	188.19
25	187.67	189.72	194.59	195.00	195.49	193.90	192.64	191.67	190.46	189.34	188.29	188.15
26	187.72	189.80	194.67	194.96	195.41	193.90	192.59	191.68	190.41	189.31	188.25	188.13
27	187.82	190.18	194.69	194.93	195.34	193.87	192.55	191.63	190.36	189.25	188.22	188.10
28	188.03	190.63	194.67	194.87	195.25	193.82	192.49	191.58	190.29	189.20	188.19	188.06
29	188.45	191.02	194.69	194.83		193.75	192.46	191.55	190.25	189.16	188.16	188.05
30	188.61	191.25	194.87	194.77		193.70	192.42	191.51	190.20	189.11	188.13	188.02
31	188.66		194.96	194.71		193.67		191.46		189.05	188.11	
Avg WL	188.00	189.33	193.02	194.95	195.05	194.35	193.06	191.90	190.85	189.60	188.54	188.07
Max WL	188.67	191.28	195	195.13	195.77	195.18	193.64	192.39	191.43	190.16	189.02	188.25
Max Day Mean	188.66	191.25	194.96	195.13	195.77	195.16	193.64	192.38	191.42	190.15	189.01	188.25

Average Well Water Level for Water Year 2019: 191.39

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



HFB-03--8836 6th Way SE

Water Year: 2019 Well Water Levels are in feet

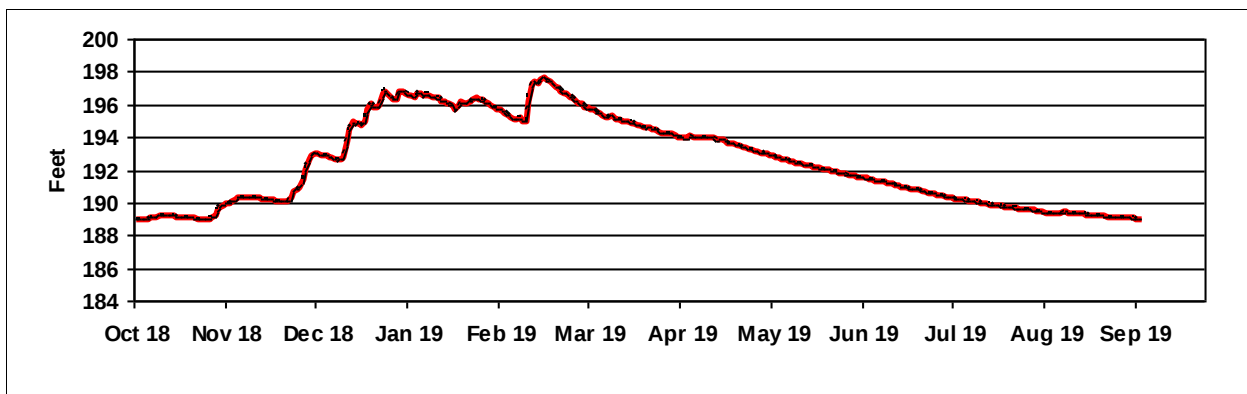
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	189.05	189.94	193.05	196.74	195.78	196.14	194.25	193.16	191.72	190.52	189.61	189.12
02	189.06	190.00	193.03	196.62	195.69	196.04	194.23	193.09	191.69	190.48	189.58	189.11
03	189.06	190.08	192.95	196.53	195.64	195.89	194.15	193.04	191.66	190.44	189.56	189.09
04	189.06	190.19	192.91	196.46	195.50	195.80	194.06	193.00	191.63	190.41	189.54	189.09
05	189.06	190.36	192.89	196.70	195.34	195.75	194.03	192.96	191.60	190.37	189.49	189.07
06	189.11	190.38	192.83	196.75	195.21	195.74	193.96	192.89	191.57	190.32	189.44	189.07
07	189.16	190.38	192.76	196.55	195.15	195.55	193.98	192.82	191.52	190.29	189.41	189.05
08	189.17	190.37	192.66	196.61	195.17	195.48	194.08	192.76	191.45	190.26	189.41	189.04
09	189.21	190.39	192.62	196.63	195.20	195.40	194.03	192.73	191.41	190.23	189.39	189.04
10	189.23	190.36	192.67	196.45	195.04	195.29	194.02	192.69	191.37	190.20	189.39	
11	189.25	190.34	192.79	196.50	195.02	195.26	194.06	192.63	191.35	190.17	189.41	
12	189.24	190.32	193.81	196.43	196.25	195.34	194.03	192.57	191.34	190.15	189.42	
13	189.22	190.29	194.51	196.27	197.28	195.20	194.01	192.52	191.29	190.11	189.44	
14	189.20	190.26	194.97	196.20	197.44	195.13	194.04	192.48	191.22	190.08	189.44	
15	189.17	190.24	194.84	196.13	197.33	195.10	194.05	192.45	191.21	190.05	189.43	
16	189.16	190.20	194.86	196.05	197.59	195.05	193.98	192.42	191.17	190.01	189.42	
17	189.14	190.17	194.71	195.99	197.65	194.99	193.86	192.34	191.12	189.99	189.39	
18	189.12	190.14	195.00	195.67	197.52	194.97	193.84	192.31	191.05	189.96	189.37	
19	189.10	190.12	195.69	195.97	197.43	194.93	193.87	192.28	191.02	189.92	189.34	
20	189.09	190.10	196.06	196.20	197.35	194.90	193.78	192.23	190.99	189.90	189.34	
21	189.07	190.08	195.90	196.13	197.10	194.77	193.69	192.20	190.94	189.87	189.31	
22	189.06	190.08	195.83	196.09	197.01	194.75	193.64	192.13	190.89	189.83	189.29	
23	189.06	190.30	195.94	196.22	196.86	194.63	193.61	192.09	190.86	189.81	189.27	
24	189.05	190.71	196.68	196.34	196.76	194.57	193.52	192.06	190.82	189.78	189.27	
25	189.05	190.84	196.86	196.40	196.69	194.58	193.50	192.01	190.79	189.75	189.25	
26	189.06	190.95	196.70	196.34	196.50	194.51	193.44	191.99	190.75	189.73	189.23	
27	189.12	191.39	196.51	196.28	196.44	194.53	193.38	191.94	190.70	189.71	189.20	
28	189.24	192.11	196.39	196.16	196.25	194.41	193.31	191.88	190.64	189.68	189.19	
29	189.61	192.64	196.36	196.07		194.32	193.28	191.85	190.60	189.67	189.16	
30	189.80	192.93	196.86	195.97		194.28	193.22	191.81	190.56	189.66	189.15	
31	189.89		196.86	195.86		194.27		191.76		189.63	189.14	
Avg WL	189.19	190.56	194.73	196.30	196.36	195.08	193.83	192.42	191.16	190.03	189.36	189.08
Max WL	189.91	192.96	197	196.83	197.68	196.16	194.25	193.17	191.73	190.52	189.61	189.12
Max Day Mean	189.89	192.93	196.86	196.75	197.65	196.14	194.25	193.16	191.72	190.52	189.61	189.12

Average Well Water Level for Water Year 2019: 192.34

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



LRS7a--3804 93rd Ave SW

Water Year: 2019 Well Water Levels are in feet

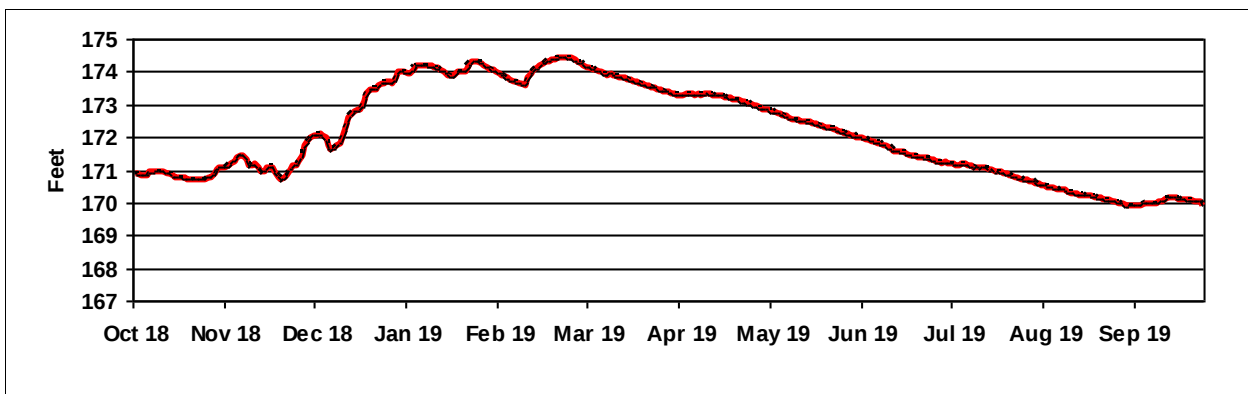
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	170.88	171.10	172.07	174.02	174.02	174.32	173.39	172.96	172.12	171.26	170.70	170.02
02	170.88	171.15	172.09	173.98	173.98	174.28	173.37	172.93	172.09	171.26	170.69	170.00
03	170.86	171.23	172.10	173.98	173.93	174.22	173.34	172.89	172.06	171.24	170.67	169.98
04	170.84	171.30	172.05	174.10	173.88	174.17	173.31	172.88	172.03	171.25	170.62	169.95
05	170.83	171.39	171.98	174.20	173.82	174.14	173.30	172.85	172.01	171.23	170.59	169.94
06	170.94	171.44	171.78	174.23	173.76	174.11	173.29	172.81	171.98	171.21	170.57	169.94
07	170.94	171.45	171.62	174.21	173.72	174.07	173.33	172.78 e	171.97	171.20	170.54	169.93
08	170.96	171.32	171.68	174.21	173.70	174.04	173.33	172.75	171.95	171.17	170.51	169.92
09	170.97	171.16	171.75	174.19	173.67	174.00	173.33	172.72	171.91	171.16	170.49	169.96
10	170.97	171.17	171.84	174.19	173.63	173.95	173.32	172.68	171.89	171.19	170.46	170.02
11	170.95	171.20	172.02	174.16	173.62	173.92	173.33	172.65	171.85	171.19	170.44	170.02
12	170.93	171.08	172.37	174.12	173.86	173.97	173.32	172.61	171.81	171.18	170.43	170.01
13	170.90	170.95	172.62	174.07	173.98	173.92	173.33	172.57	171.78	171.13	170.41	170.01
14	170.85	171.00	172.76	174.02	174.06	173.89	173.35	172.55	171.74	171.10	170.39	170.00
15	170.80	171.07	172.82	173.97	174.13	173.86	173.33	172.54	171.69	171.10	170.35	170.03
16	170.78	171.12	172.86	173.93	174.21	173.84	173.31	172.52	171.62	171.09	170.32	170.08
17	170.78	171.12	172.89	173.89	174.27	173.81	173.29	172.50	171.59	171.09	170.31	170.11
18	170.76	170.97	173.11	173.88	174.30	173.79	173.28	172.48	171.58	171.09	170.28	170.18
19	170.74	170.81	173.37	174.02	174.35	173.76	173.27	172.48	171.56	171.05	170.26	170.18
20	170.73	170.70	173.49	174.04	174.41	173.73	173.25	172.45	171.55	171.03	170.24	170.17
21	170.73	170.78	173.50	174.01	174.41	173.70	173.23	172.43	171.50	170.99	170.23	170.15
22	170.72	170.87	173.50	174.04	174.43	173.66	173.21	172.39	171.48	170.97	170.23	170.14
23	170.73	171.05	173.57	174.27	174.44	173.63	173.19	172.36	171.43	170.94	170.21	170.13
24	170.72	171.13	173.67	174.33	174.46	173.59	173.16	172.33	171.43	170.92	170.19	170.12
25	170.72	171.18	173.68	174.34	174.47	173.57	173.14	172.31	171.41	170.89	170.17	170.10
26	170.77	171.25	173.70	174.32	174.44	173.56	173.11	172.30	171.40	170.86	170.15	170.09
27	170.79	171.47	173.69	174.28	174.42	173.53	173.09	172.27	171.38	170.82	170.13	170.07
28	170.90	171.75	173.67	174.22	174.37	173.50	173.05	172.24	171.38	170.80	170.10	170.06
29	171.02	171.92	173.82	174.17		173.47	173.02	172.21	171.35	170.76	170.09	170.05
30	171.08	172.03	174.00	174.11		173.44	172.99	172.18	171.33	170.74	170.07	169.94
31	171.10		174.04	174.06		173.42		172.15		170.71	170.05	
Avg WL	170.86	171.21	172.84	174.11	174.10	173.83	173.25	172.54	171.70	171.05	170.35	170.04
Max WL	171.10	172.06	174	174.38	174.49	174.36	173.41	172.99	172.15	171.33	170.76	170.20
Max Day Mean	171.10	172.03	174.04	174.34	174.47	174.32	173.39	172.96	172.12	171.26	170.70	170.18

Average Well Water Level for Water Year 2019: 172.16

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



LRS8a--8925 Walter Court SW (2017)

Water Year: 2019 Well Water Levels are in feet

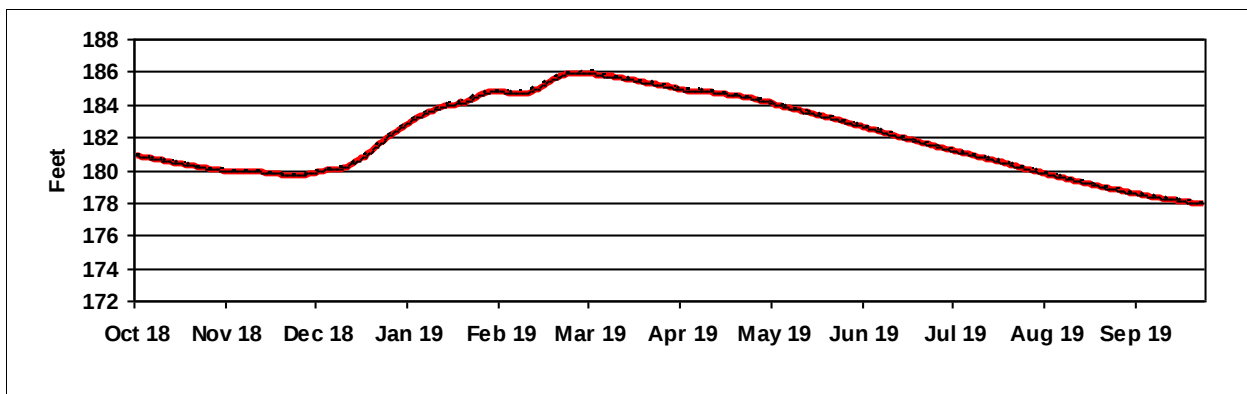
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	180.92	179.98	179.86	182.77	184.82	185.97	185.12	184.33	182.91	181.45	180.07	178.78
02	180.89	179.97	179.90	182.90	184.84	185.97	185.08	184.27	182.86	181.40	180.02	178.74
03	180.85	179.96	179.95	183.02	184.85	185.95	185.01	184.24	182.79	181.36	179.99	178.70
04	180.82	179.96	180.00	183.11	184.79	185.95	184.99	184.21	182.75	181.32	179.94	178.66
05	180.78	179.95	180.03	183.27	184.74	185.98	184.96	184.16	182.71	181.27	179.89	178.62
06	180.75	179.95	180.05	183.32	184.69	185.96	184.91	184.10	182.68	181.23	179.84	178.58
07	180.71	179.94	180.06	183.39	184.70	185.85	184.87	184.03	182.62	181.19	179.79	178.56
08	180.69	179.93	180.07	183.53	184.76	185.84	184.88	183.98	182.56	181.15	179.75	178.54
09	180.66	179.93	180.10	183.61	184.75	185.80	184.82	183.95	182.53	181.10	179.71	178.50
10	180.62	179.92	180.12	183.66	184.71	185.75	184.84	183.90	182.48	181.06	179.67	178.47
11	180.58	179.91	180.16	183.76	184.69	185.77	184.88	183.84	182.43	181.02	179.63	178.43
12	180.56	179.90	180.21	183.81	184.72	185.75	184.83	183.79	182.38	180.99	179.59	178.40
13	180.52	179.88	180.31	183.86	184.84	185.66	184.83	183.74	182.32	180.94	179.54	178.37
14	180.48	179.86	180.43	183.93	184.97	185.66	184.82	183.69	182.26	180.89	179.49	178.35
15	180.45	179.84	180.53	183.98	185.00	185.65	184.83	183.69	182.21	180.85	179.45	178.32
16	180.43	179.83	180.65	184.02	185.10	185.62	184.76	183.64	182.16	180.81	179.41	178.29
17	180.40	179.81	180.74	184.03	185.21	185.60	184.73	183.56	182.11	180.78	179.37	178.27
18	180.36	179.79	180.85	184.01	185.33	185.59	184.75	183.55	182.06	180.73	179.34	178.24
19	180.32	179.77	180.99	184.07	185.49	185.57	184.74	183.50	182.01	180.69	179.30	178.21
20	180.29	179.75	181.18	184.16	185.59	185.53	184.69	183.46	181.97	180.64	179.25	178.19
21	180.26	179.73	181.32	184.15	185.63	185.47	184.64	183.41	181.92	180.60	179.21	178.16
22	180.24	179.72	181.50	184.24	185.72	185.45	184.63	183.35	181.87	180.54	179.18	178.14
23	180.20	179.70	181.64	184.30	185.77	185.39	184.61	183.31	181.84	180.49	179.14	178.11
24	180.16	179.69	181.78	184.39	185.85	185.36	184.57	183.27	181.80	180.44	179.10	178.08
25	180.13	179.68	181.91	184.48	185.91	185.36	184.56	183.23	181.75	180.40	179.05	178.06
26	180.10	179.69	182.06	184.58	185.92	185.30	184.51	183.20	181.70	180.35	179.02	178.03
27	180.07	179.70	182.16	184.66	185.96	185.29	184.48	183.14	181.65	180.30	178.98	178.01
28	180.05	179.74	182.29	184.72	185.95	185.22	184.44	183.09	181.60	180.26	178.93	177.98
29	180.03	179.79	182.41	184.77		185.16	184.42	183.06	181.55	180.21	178.89	177.95
30	180.01	179.83	182.52	184.81		185.14	184.37	183.00	181.50	180.16	178.85	177.93
31	180.00		182.63	184.83		185.13		182.95		180.11	178.82	
Avg WL	180.43	179.84	180.92	183.94	185.19	185.60	184.75	183.63	182.20	180.80	179.43	178.32
Max WL	180.92	179.98	183	184.84	186.00	186.01	185.13	184.36	182.93	181.48	180.09	178.80
Max Day Mean	180.92	179.98	182.63	184.83	185.96	185.98	185.12	184.33	182.91	181.45	180.07	178.78

Average Well Water Level for Water Year 2019: 182.09

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



LRS11a--9605 Tilley Rd S

Water Year: 2019 Well Water Levels are in feet

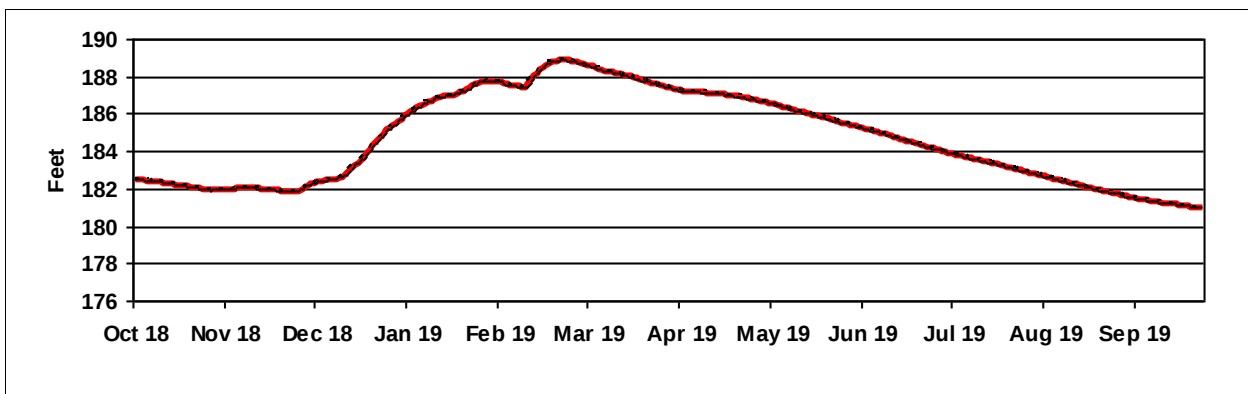
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	182.57	181.96	182.32	185.90	187.77	188.78	187.45	186.76	185.49	184.13	182.93	181.74
02	182.56	181.98	182.37	186.01	187.75	188.74	187.41	186.72	185.45	184.09	182.89	181.70
03	182.52	182.00	182.41	186.12	187.73	188.68	187.36	186.68	185.41	184.05	182.85	181.66
04	182.50	182.02	182.45	186.22	187.67	188.62	187.31	186.65	185.36	184.01	182.81	181.62
05	182.46	182.05	182.48	186.34	187.61	188.60	187.28	186.62	185.32	183.96	182.77	181.59
06	182.46	182.07	182.51	186.43	187.56	188.57	187.24	186.57	185.27	183.92	182.73	181.56
07	182.43	182.07	182.53	186.50	187.52	188.50	187.23	186.53	185.23	183.88	182.69	181.52
08	182.41	182.06	182.55	186.59	187.52	188.45	187.22	186.48	185.18	183.84	182.64	181.49
09	182.39	182.06	182.57	186.68	187.51	188.40	187.20	186.45	185.14	183.80	182.60	181.46
10	182.38	182.05	182.60	186.74	187.46	188.34	187.19	186.41	185.10	183.77	182.56	181.44
11	182.35	182.05	182.67	186.82	187.43	188.30	187.20	186.36	185.06	183.74	182.52	181.41
12	182.33	182.04	182.81	186.88	187.61	188.29	187.17	186.32	185.02	183.70	182.48	181.38
13	182.31	182.03	182.97	186.92	187.85	188.24	187.17	186.26	184.98	183.66	182.45	181.35
14	182.28	182.02	183.15	186.96	188.07	188.20	187.16	186.22	184.93	183.62	182.41	181.32
15	182.25	182.00	183.29	186.99	188.22	188.17	187.16	186.18	184.88	183.58	182.37	181.31
16	182.22	181.98	183.42	187.02	188.39	188.14	187.14	186.15	184.83	183.55	182.33	181.28
17	182.20	181.98	183.52	187.03	188.54	188.10	187.11	186.10	184.78	183.51	182.30	181.26
18	182.17	181.96	183.68	187.01	188.66	188.06	187.10	186.06	184.74	183.48	182.26	181.26
19	182.15	181.94	183.89	187.09	188.75	188.03	187.09	186.03	184.69	183.44	182.22	181.23
20	182.11	181.92	184.16	187.17	188.82	187.99	187.07	185.99	184.65	183.40	182.18	181.21
21	182.09	181.91	184.36	187.21	188.84	187.93	187.04	185.95	184.59	183.37	182.14	181.19
22	182.06	181.90	184.52	187.28	188.87	187.89	187.02	185.89	184.55	183.33	182.10	181.16
23	182.04	181.92	184.67	187.40	188.88	187.82	187.00	185.86	184.51	183.28	182.06	181.14
24	182.02	181.92	184.84	187.50	188.90	187.77	186.97	185.82	184.47	183.24	182.02	181.11
25	181.99	181.92	184.99	187.62	188.91	187.74	186.96	185.78	184.42	183.21	181.98	181.09
26	181.98	181.92	185.15	187.69	188.88	187.70	186.93	185.74	184.38	183.17	181.95	181.07
27	181.95	182.03	185.27	187.75	188.86	187.66	186.90	185.70	184.33	183.13	181.91	181.04
28	181.97	182.12	185.38	187.78	188.81	187.61	186.86	185.65	184.28	183.09	181.88	181.02
29	181.99	182.20	185.49	187.79		187.56	186.83	185.61	184.24	183.05	181.84	180.99
30	181.99	182.27	185.64	187.79		187.51	186.80	185.56	184.20	183.01	181.81	180.97
31	181.98		185.77	187.78		187.48		185.52		182.97	181.77	
Avg WL	182.23	182.01	183.69	187.00	188.19	188.12	187.12	186.15	184.85	183.55	182.34	181.32
Max WL	182.57	182.29	186	187.81	188.93	188.80	187.47	186.79	185.52	184.18	182.96	181.76
Max Day Mean	182.57	182.27	185.77	187.79	188.91	188.78	187.45	186.76	185.49	184.13	182.93	181.74

Average Well Water Level for Water Year 2019: 184.71

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



MW1--10415 Littlerock Rd SW

Water Year: 2019 Well Water Levels are in feet

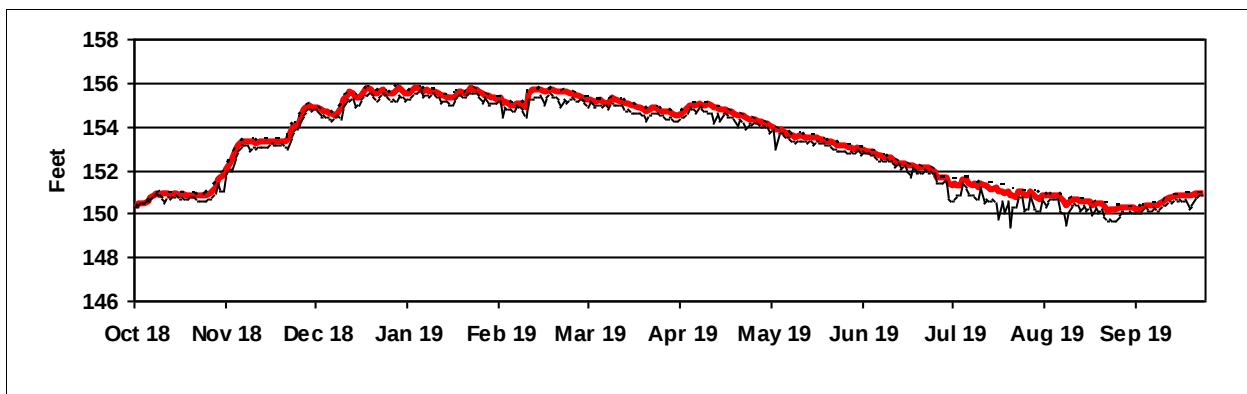
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	150.30	152.04	154.90	155.57	155.29	155.41	154.66	154.26	153.07	151.71	150.85	150.31
02	150.46	152.28	154.84	155.54	155.31	155.35	154.62	154.21	153.04	151.66	151.03	150.34
03	150.50	152.50	154.79	155.61	155.03	155.29	154.56	154.17	152.98	151.66	150.86	150.31
04	150.53	152.96	154.74	155.79	155.18	155.25	154.54	154.11	153.04	151.64	150.79	150.30
05	150.55	153.19	154.72	155.84	155.09	155.23	154.62	154.05	152.99	151.42	150.67	150.31
06	150.72	153.32	154.63	155.75	155.02	155.20	154.70	153.99	152.96	151.33	150.85	150.27
07	150.82	153.33	154.58	155.65	154.99	155.18	154.89	153.87	152.90	151.38	150.82	150.25
08	150.93	153.36	154.54	155.67	155.04	155.21	154.97	153.88	152.89	151.35	150.87	150.25
09	150.90	153.36	154.65	155.62	155.03	155.16	154.98	153.86	152.84	151.32	150.86	150.30
10	150.92	153.31	154.85	155.64	154.95	155.10	154.99	153.79	152.78	151.56	150.86	150.40
11	150.91	153.28	155.22	155.61	154.93	155.10	155.05	153.70	152.70	151.56	150.84	150.40
12	150.92	153.30	155.44	155.52	155.52	155.31	154.98	153.61	152.71	151.45	150.72	150.41
13	150.90	153.31	155.58	155.45	155.68	155.25	155.02	153.57	152.63	151.35	150.56	150.43
14	150.91	153.32	155.51	155.40	155.72	155.23	155.05	153.55	152.60	151.36	150.40	150.44
15	150.91	153.36	155.38	155.37	155.70	155.18	155.01	153.61	152.59	151.25	150.53	150.50
16	150.90	153.37	155.38	155.31	155.72	155.14	154.88	153.58	152.51	151.44	150.64	150.57
17	150.91	153.35	155.43	155.33	155.62	155.06	154.85	153.53	152.39	151.32	150.69	150.67
18	150.88	153.35	155.69	155.37	155.62	155.05	154.80	153.53	152.36	151.30	150.68	150.76
19	150.86	153.35	155.76	155.62	155.68	155.00	154.83	153.53	152.33	151.13	150.58	150.79
20	150.88	153.35	155.69	155.63	155.69	154.95	154.79	153.50	152.34	151.15	150.59	150.84
21	150.86	153.36	155.57	155.50	155.64	154.89	154.69	153.50	152.23	151.19	150.55	150.84
22	150.87	153.39	155.52	155.53	155.63	154.87	154.68	153.43	152.19	151.08	150.56	150.86
23	150.87	153.90	155.63	155.77	155.58	154.81	154.64	153.40	152.23	151.03	150.43	150.86
24	150.85	154.06	155.68	155.75	155.62	154.72	154.55	153.32	152.16	150.94	150.49	150.89
25	150.86	154.10	155.56	155.67	155.61	154.80	154.56	153.31	152.16	151.01	150.47	150.86
26	150.96	154.26	155.56	155.59	155.56	154.88	154.48	153.29	152.13	150.83	150.46	150.88
27	151.05	154.78	155.49	155.50	155.52	154.85	154.43	153.21	152.12	150.88	150.38	150.94
28	151.26	154.91	155.51	155.46	155.44	154.81	154.38	153.19	152.11	150.78	150.13	150.93
29	151.56	154.98	155.71	155.40		154.73	154.33	153.16	152.07	151.05	150.25	150.94
30	151.71	154.93	155.79	155.35		154.74	154.31	153.15	151.98	151.04	150.21	150.93
31	151.75		155.66	155.31		154.71		153.10		150.87	150.23	
Avg WL	150.91	153.52	155.29	155.55	155.41	155.05	154.73	153.61	152.53	151.26	150.61	150.59
Max WL	152.00	155.03	156	155.90	155.79	155.46	155.11	154.32	153.12	151.97	151.08	150.99
Max Day Mean	151.75	154.98	155.79	155.84	155.72	155.41	155.05	154.26	153.07	151.71	151.03	150.94

Average Well Water Level for Water Year 2019: 153.26

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:07:04 PM

MW2--10415 Littlerock Rd SW

Water Year: 2019 **Well Water Levels are in feet**

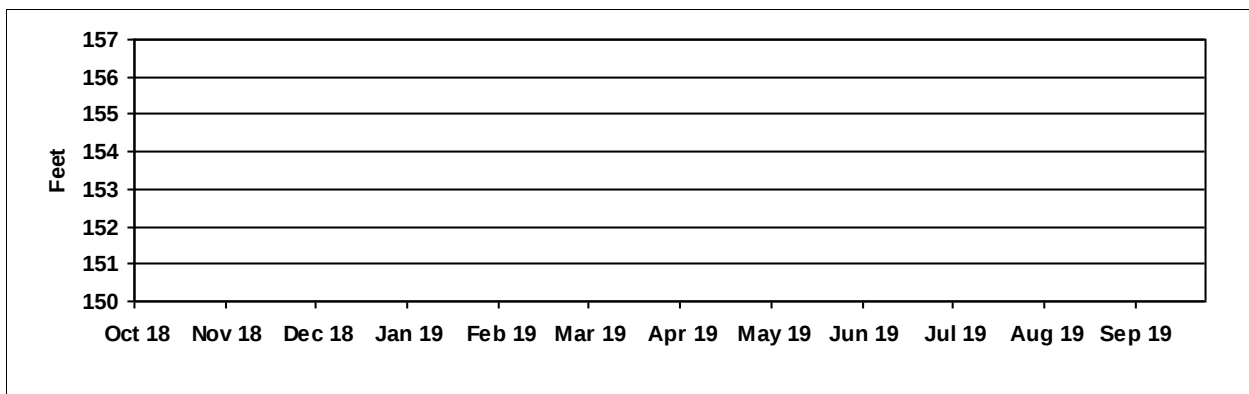
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	152.58	154.02					154.94			153.45	153.01	
02												
03									154.06			
04												152.60
05												
06						155.38						
07								154.62				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		155.62										
31			156.28	155.53								
Avg WL	152.58	154.82	156.28	155.53		155.38	154.94	154.62	154.06	153.45	153.01	152.60
Max WL	152.58	155.62	156	155.53		155.38	154.94	154.62	154.06	153.45	153.01	152.60
Max Day Mean	152.58	155.62	156.28	155.53		155.38	154.94	154.62	154.06	153.45	153.01	152.60

Average Well Water Level for Water Year 2019: 154.30

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



MW3a--3623 104TH Ave SW (Jones)

Water Year: 2019 Well Water Levels are in feet

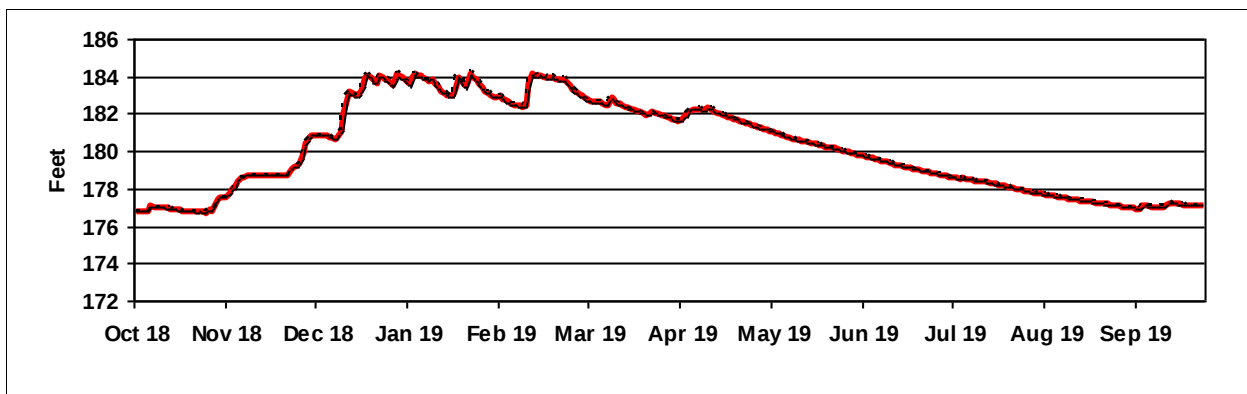
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	176.83	177.61	180.91	183.81	182.93	183.08	181.81	181.32	179.98	178.81	177.88	177.10
02	176.84	177.77	180.90	183.63	182.96	182.99	181.77	181.26	179.94	178.78	177.84	177.07
03	176.82	177.94	180.89	183.85	182.84	182.88	181.71	181.22	179.90	178.74	177.82	177.06
04	176.81	178.18	180.88	184.13	182.77	182.77	181.66	181.18	179.85	178.71	177.79	177.03
05	176.80	178.46	180.85	184.06	182.67	182.70	181.70	181.13	179.82	178.67	177.76	177.00
06	177.08	178.60	180.81	184.03	182.57	182.66	181.78	181.07	179.78	178.64	177.72	176.98
07	177.00	178.66	180.75	183.92	182.50	182.66	182.13	181.00	179.73	178.61	177.70	176.96
08	177.03	178.70	180.70	183.86	182.48	182.66	182.20	180.95	179.68	178.58	177.67	176.96
09	177.03	178.73	180.79	183.80	182.44	182.58	182.30	180.91	179.65	178.55	177.65	177.08
10	177.02	178.74	181.09	183.91	182.39	182.50	182.28	180.85	179.61	178.58	177.63	177.15
11	177.00	178.76	182.03	183.69	182.46	182.49	182.29	180.79	179.57	178.55	177.60	177.09
12	176.98	178.76	182.77	183.42	183.68	182.90	182.22	180.74	179.53	178.52	177.58	177.04
13	176.96	178.76	183.23	183.27	184.16	182.76	182.25	180.69	179.49	178.49	177.56	177.01
14	176.93	178.76	183.13	183.15	184.05	182.63	182.32	180.64	179.45	178.45	177.53	176.99
15	176.90	178.76	182.99	183.05	184.07	182.54	182.28	180.62	179.41	178.42	177.50	177.06
16	176.87	178.76	183.08	182.97	184.08	182.46	182.16	180.58	179.36	178.40	177.48	177.06
17	176.86	178.75	183.17	182.99	184.01	182.39	182.07	180.53	179.32	178.39	177.45	177.16
18	176.84	178.73	184.00	183.27	183.94	182.33	182.02	180.50	179.28	178.37	177.42	177.29
19	176.81	178.71	184.09	184.01	183.98 w	182.28	181.98	180.49	179.25	178.33	177.39	177.24
20	176.79	178.70	183.98	183.90	184.02	182.22	181.95	180.45	179.21	178.30	177.37	177.22
21	176.78	178.70	183.82	183.57	183.90	182.15	181.87	180.41	179.17	178.26	177.34	177.20
22	176.76	178.72	183.69	183.57	183.84	182.11	181.82	180.35	179.13	178.23	177.32	177.19
23	176.77	179.05	184.04	184.14	183.81	182.04	181.77	180.32	179.10	178.20	177.30	177.18
24	176.76	179.13	184.02	184.02	183.83	181.99	181.70	180.28	179.06	178.16	177.28	177.16
25	176.75	179.23	183.85	183.88	183.80	182.01	181.66	180.26	179.03	178.13	177.26	177.14
26	176.87	179.34	183.82	183.65	183.49	182.11	181.60	180.23	178.99	178.10	177.23	177.13
27	176.84	179.91	183.68	183.42	183.34	182.05	181.54	180.18	178.95	178.06	177.21	177.12
28	177.28	180.44	183.58	183.27	183.18	182.01	181.48	180.14	178.93	178.03	177.19	177.12
29	177.45	180.74	184.13	183.13		181.94	181.43	180.10	178.89	178.00	177.16	177.11
30	177.52	180.87	184.11	183.02		181.89	181.38	180.06	178.86	177.96	177.14	177.09
31	177.57		183.97	182.92		181.85		180.01		177.93	177.12	
Avg WL	176.95	178.90	182.70	183.59	183.36	182.41	181.90	180.62	179.40	178.39	177.48	177.10
Max WL	177.58	180.90	184	184.30	184.35	183.12	182.35	181.36	180.01	178.85	177.92	177.36
Max Day Mean	177.57	180.87	184.13	184.14	184.16	183.08	182.32	181.32	179.98	178.81	177.88	177.29

Average Well Water Level for Water Year 2019: 180.23

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:07:41 PM

MW5--800 93rd Ave SE

Water Year: 2019 Well Water Levels are in feet

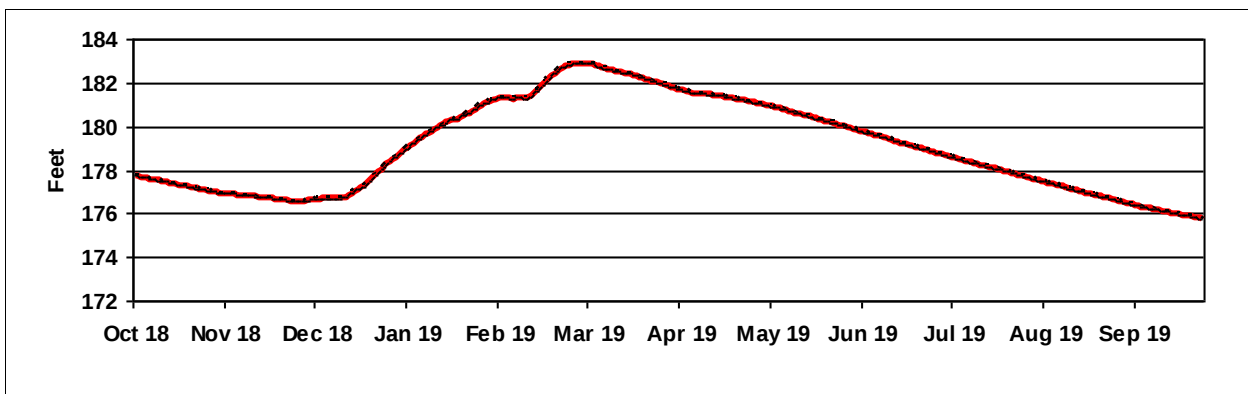
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	177.78	176.95	176.69	178.94	181.29	182.90	181.87	181.10	179.99	178.81	177.70	176.61
02	177.76	176.94	176.70	179.05	181.32	182.91	181.83	181.06	179.95	178.78	177.67	176.58
03	177.72	176.93	176.71	179.16	181.35	182.89	181.79	181.03	179.92	178.74	177.63	176.55
04	177.69	176.92	176.72	179.26	181.34	182.88	181.75	181.01	179.87	178.70	177.60	176.51
05	177.66	176.89	176.72	179.37	181.32	182.89	181.72	180.97	179.83	178.66	177.56	176.47
06	177.63	176.89	176.72	179.47	181.30	182.89	181.67	180.94	179.79	178.62	177.53	176.45
07	177.61	176.87	176.72	179.55	181.29	182.83	181.63	180.90 e	179.75	178.59	177.49	176.41
08	177.59	176.85	176.72	179.65	181.32	182.79	181.61	180.87	179.70	178.55	177.45	176.38
09	177.55	176.84	176.72	179.74	181.34	182.75	181.57	180.84	179.67	178.51	177.41	176.35
10	177.53	176.82	176.72	179.82	181.32	182.69	181.55	180.81	179.63	178.48	177.38	176.32
11	177.50	176.81	176.74	179.91	181.31	182.66	181.54	180.77	179.60	178.45	177.34	176.29
12	177.48	176.79	176.78	180.00	181.33	182.65	181.52	180.73	179.56	178.41	177.30	176.26
13	177.44	176.78	176.87	180.07	181.44	182.59	181.51	180.69	179.53	178.38	177.27	176.24
14	177.42	176.76	176.97	180.13	181.57	182.55	181.49	180.65	179.49	178.34	177.23	176.21
15	177.38	176.75	177.06	180.20	181.67	182.53	181.49	180.62	179.45	178.31	177.20	176.18
16	177.35	176.73	177.13	180.27	181.80	182.50	181.46	180.59	179.41	178.27	177.16	176.15
17	177.33	176.72	177.20	180.32	181.94	182.47	181.42	180.54	179.36	178.24	177.13	176.13
18	177.30	176.69	177.28	180.34	182.08	182.45	181.41	180.51	179.32	178.20	177.09	176.10
19	177.27	176.68	177.39	180.38	182.24	182.42	181.41	180.48	179.28	178.17	177.05	176.07
20	177.24	176.66	177.55	180.46	182.37	182.39	181.38	180.44	179.25	178.14	177.02	176.05
21	177.21	176.64	177.71	180.51	182.47	182.34	181.35	180.40	179.20	178.10	176.99	176.03
22	177.18	176.63	177.84	180.57	182.56	182.30	181.32	180.35	179.17	178.07	176.95	176.00
23	177.15	176.61	177.96	180.64	182.63	182.24	181.30	180.32	179.13	178.03	176.91	175.97
24	177.13	176.59	178.07	180.72	182.71	182.19	181.28	180.28	179.09	177.99	176.88	175.95
25	177.10	176.58	178.19	180.82	182.78	182.17	181.26	180.25	179.06	177.96	176.84	175.92
26	177.08	176.57	178.31	180.91	182.82	182.12	181.24	180.21	179.02	177.93	176.81	175.90
27	177.04	176.57	178.42	181.00	182.86	182.09	181.21	180.17	178.98	177.89	176.78	175.87
28	177.02	176.60	178.52	181.07	182.88	182.04	181.18	180.13	178.93	177.85	176.75	175.84
29	177.00	176.63	178.62	181.14		181.98	181.16	180.09	178.90	177.81	176.72	175.81
30	176.99	176.67	178.73	181.19		181.94	181.13	180.06	178.86	177.78	176.68	175.79
31	176.98		178.83	181.24		181.91		180.02		177.74	176.65	
Avg WL	177.36	176.75	177.40	180.19	181.88	182.48	181.47	180.58	179.42	178.27	177.17	176.18
Max WL	177.78	176.95	179	181.28	182.90	182.92	181.91	181.12	180.01	178.85	177.74	176.64
Max Day Mean	177.78	176.95	178.83	181.24	182.88	182.91	181.87	181.10	179.99	178.81	177.70	176.61

Average Well Water Level for Water Year 2019: 179.10

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:07:59 PM

SCMW_1--Leon St. SW

Water Year: 2019 Well Water Levels are in feet

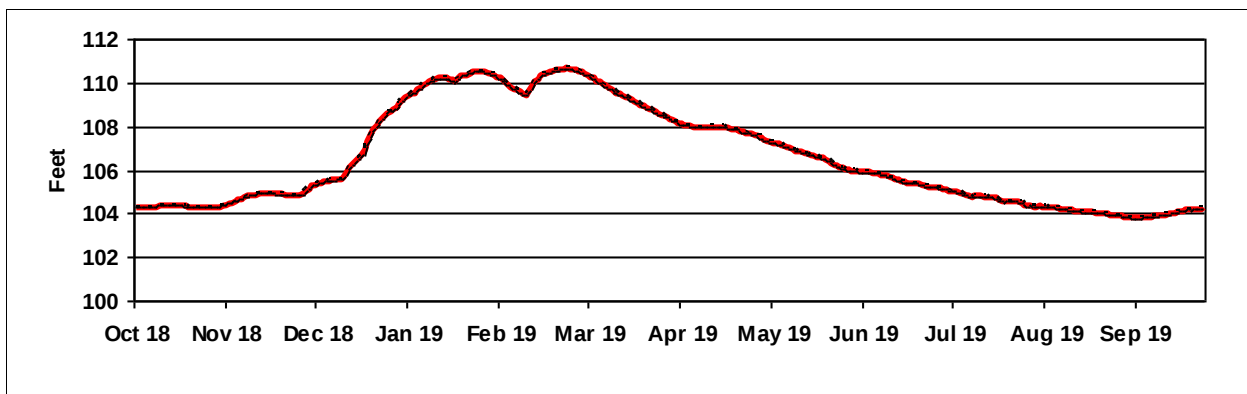
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	104.35	104.42	105.33	109.35	110.29	110.56	108.37	107.57	106.01	105.20	104.39	103.91
02	104.34	104.47	105.38	109.44	110.22	110.50	108.32	107.51	106.00	105.18	104.41	103.91
03	104.35	104.51	105.43	109.50	110.14	110.41	108.25	107.42	106.00	105.17	104.34	103.88
04	104.33	104.57	105.47	109.56	110.04	110.35	108.19	107.36	105.96	105.13	104.34	103.86
05	104.32	104.63	105.52	109.71	109.93	110.29	108.13	107.30	105.93	105.07	104.36	103.84
06	104.35	104.70	105.54	109.78	109.83	110.22	108.07	107.28	105.93	105.03	104.35	103.83
07	104.35	104.75	105.55	109.87	109.74	110.12	108.05	107.25	105.94	105.03	104.33	103.82
08	104.35	104.81	105.56	110.00	109.68	110.04	108.03	107.20	105.92	105.01	104.31	103.81
09	104.37	104.85	105.57	110.08	109.60	109.95	107.98	107.16	105.90	104.99	104.30	103.83
10	104.37	104.89	105.58	110.13	109.52	109.86	107.95	107.11	105.88	104.94	104.28	103.85
11	104.37	104.90	105.66	110.20	109.44	109.79	107.96	107.06	105.84	104.86	104.27	103.87
12	104.37	104.93	105.93	110.23	109.61	109.73	107.96	107.01	105.81	104.82	104.25	103.88
13	104.38	104.95	106.13	110.23	109.85	109.62	107.97	106.96	105.77	104.78	104.23	103.90
14	104.39	104.95	106.31	110.23	110.06	109.56	107.99	106.91	105.74	104.81	104.21	103.91
15	104.39	104.96	106.45	110.22	110.19	109.50	108.01	106.87	105.69	104.83	104.19	103.93
16	104.37	104.96	106.56	110.18	110.31	109.44	108.01	106.83	105.66	104.82	104.17	103.96
17	104.38	104.94	106.66	110.13	110.40	109.37	108.00	106.78	105.61	104.80	104.16	103.98
18	104.36	104.93	106.93	110.08	110.45	109.31	108.00	106.75	105.55	104.79	104.14	104.01
19	104.35	104.91	107.34	110.23	110.50	109.25	108.01	106.71	105.50	104.77	104.12	104.04
20	104.35	104.91	107.67	110.34	110.57	109.18	107.98	106.67	105.49	104.75	104.11	104.07
21	104.34	104.89	107.88	110.35	110.59	109.09	107.93	106.63	105.45	104.72	104.10	104.10
22	104.32	104.86	108.06	110.38	110.62	109.02	107.91	106.59	105.43	104.64	104.08	104.12
23	104.31	104.85	108.23	110.46	110.62	108.94	107.89	106.55	105.41	104.59	104.08	104.15
24	104.29	104.84	108.41	110.52	110.63	108.88	107.85	106.51	105.38	104.55	104.06	104.18
25	104.29	104.84	108.55	110.55	110.68	108.82	107.83	106.45	105.36	104.59	104.06	104.19
26	104.28	104.86	108.65	110.55	110.67	108.75	107.78	106.35	105.33	104.58	104.04	104.20
27	104.29	104.94	108.70	110.54	110.65	108.70	107.74	106.25	105.29	104.58	104.02	104.23
28	104.29	105.05	108.76	110.50	110.61	108.62	107.71	106.20	105.26	104.57	104.00	104.24
29	104.31	105.17	108.84	110.46		108.54	107.66	106.15	105.25	104.55	103.98	104.25
30	104.35	105.27	109.04	110.41		108.48	107.62	106.10	105.22	104.52	103.96	104.26
31	104.38		109.23	110.36		108.43		106.05		104.43	103.94	
Avg WL	104.34	104.85	106.93	110.15	110.19	109.46	107.97	106.82	105.65	104.81	104.18	104.00
Max WL	104.40	105.31	109	110.57	110.71	110.59	108.42	107.61	106.03	105.21	104.44	104.28
Max Day Mean	104.39	105.27	109.23	110.55	110.68	110.56	108.37	107.57	106.01	105.20	104.41	104.26

Average Well Water Level for Water Year 2019: 106.61

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SCMW_2--Pendleton and 180th

Water Year: 2019 Well Water Levels are in feet

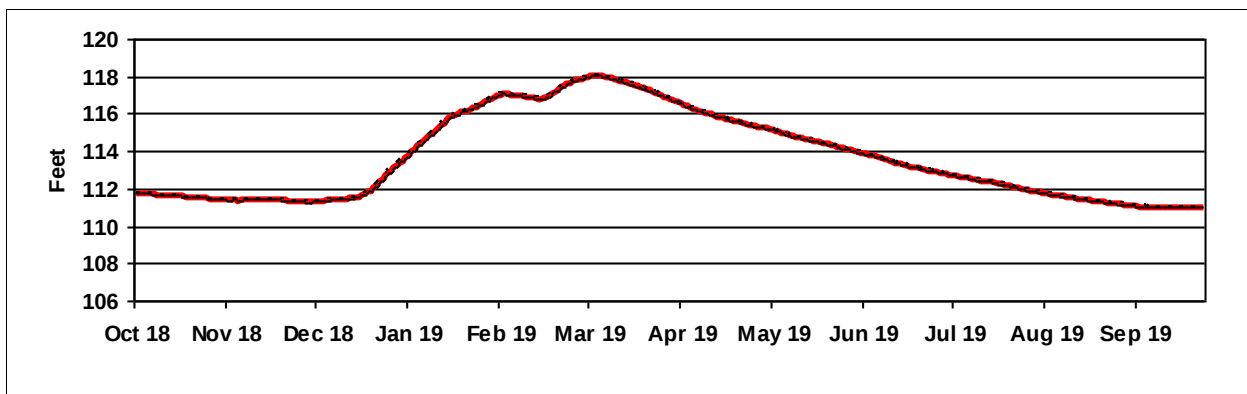
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	111.78	111.41	111.33	113.66	116.99	117.86	116.84	115.34	114.11	112.92	111.95	111.20
02	111.78	111.40	111.35	113.82	117.05	117.91	116.79	115.31	114.08	112.89	111.91	111.20
03	111.77	111.40	111.36	113.98	117.09	117.94	116.71	115.28	114.03	112.87	111.89	111.18
04	111.75	111.40	111.38	114.13	117.11	117.99	116.65	115.25	113.99	112.83	111.86	111.16
05	111.74	111.39	111.40	114.30	117.09	118.04	116.58	115.21	113.95	112.78	111.83	111.13
06	111.73	111.40	111.41	114.43	117.05	118.07	116.51	115.16	113.90	112.75	111.79	111.12
07	111.72	111.41	111.43	114.56	117.03	118.05	116.44	115.12	113.87	112.73	111.76	111.10
08	111.71	111.41	111.43	114.71	117.05	118.06	116.38	115.07	113.82	112.69	111.74	111.07
09	111.70	111.41	111.45	114.84	117.03	118.03	116.29	115.03	113.79	112.66	111.71	111.06
10	111.69	111.42	111.46	114.96	116.99	118.00	116.24	114.98	113.76	112.63	111.68	111.06
11	111.67	111.44	111.46	115.11	116.95	117.98	116.19	114.93	113.71	112.60	111.66	111.05
12	111.68	111.43	111.47	115.26	116.91	117.95	116.14	114.89	113.66	112.58	111.64	111.04
13	111.65	111.43	111.51	115.39	116.88	117.88	116.09	114.84	113.61	112.55	111.62	111.04
14	111.67	111.42	111.52	115.54	116.87	117.84	116.04	114.80	113.56	112.52	111.58	111.03
15	111.64	111.45	111.56	115.68	116.84	117.80	116.00	114.76	113.51	112.48	111.56	111.01
16	111.63	111.45	111.61	115.80	116.84	117.76	115.93	114.73	113.47	112.46	111.53	111.01
17	111.62	111.44	111.68	115.89	116.85	117.71	115.88	114.69	113.42	112.44	111.51	111.00
18	111.60	111.43	111.74	115.96	116.91	117.67	115.84	114.66	113.37	112.41	111.48	111.00
19	111.59	111.42	111.83	116.03	117.02	117.63	115.81	114.62	113.33	112.39	111.46	111.00
20	111.58	111.41	111.92	116.10	117.14	117.58	115.76	114.59	113.29	112.36	111.44	111.00
21	111.57	111.40	112.06	116.14	117.23	117.50	115.71	114.56	113.25	112.33	111.43	111.00
22	111.54	111.38	112.21	116.20	117.34	117.45	115.68	114.51	113.21	112.29	111.40	111.00
23	111.52	111.36	112.37	116.25	117.43	117.39	115.64	114.46	113.18	112.26	111.39	111.00
24	111.52	111.36	112.53	116.32	117.52	117.33	115.59	114.42	113.14	112.23	111.36	111.00
25	111.52	111.35	112.68	116.39	117.60	117.28	115.57	114.39	113.11	112.20	111.35	111.01
26	111.49	111.33	112.83	116.47	117.68	117.21	115.52	114.36	113.08	112.15	111.33	111.01
27	111.49	111.32	112.97	116.56	117.75	117.16	115.49	114.32	113.03	112.12	111.31	111.02
28	111.47	111.31	113.12	116.65	117.81	117.09	115.45	114.28	113.00	112.09	111.28	111.02
29	111.46	111.31	113.25	116.75		117.01	115.42	114.24	112.99	112.05	111.26	111.02
30	111.43	111.32	113.39	116.84			116.94	115.38	114.20	112.95	112.01	111.02
31	111.43		113.53	116.93			116.89		114.16		111.98	111.23
Avg WL	111.62	111.39	111.98	115.54	117.14	117.65	116.02	114.75	113.51	112.46	111.55	111.05
Max WL	111.78	111.47	114	116.97	117.84	118.09	116.87	115.37	114.14	112.93	111.98	111.23
Max Day Mean	111.78	111.45	113.53	116.93	117.81	118.07	116.84	115.34	114.11	112.92	111.95	111.20

Average Well Water Level for Water Year 2019: 113.72

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:08:39 PM

SCMW_3--201st and Old HW 99

Water Year: 2019 Well Water Levels are in feet

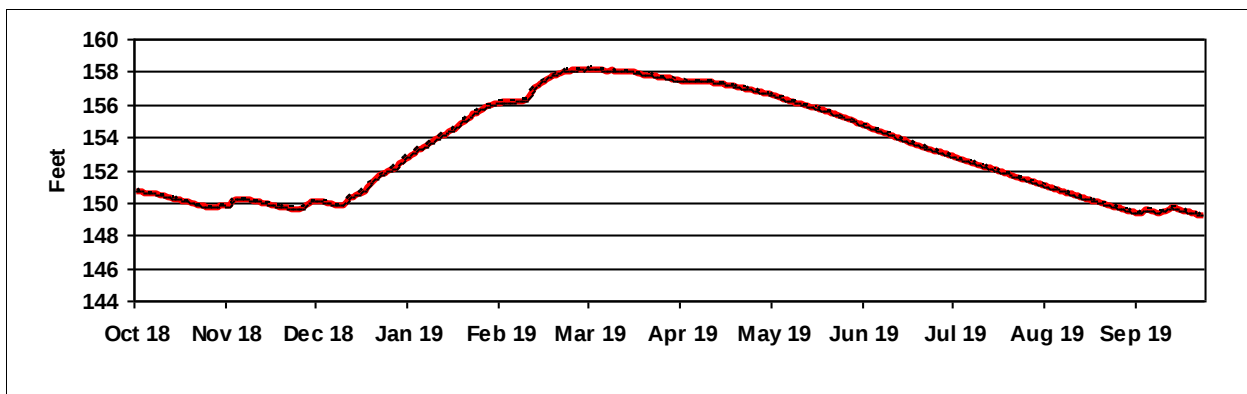
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	150.77	149.81	150.11	152.71	156.10	158.15	157.62	156.83	155.13	153.15	151.39	149.69
02	150.74	149.81	150.11	152.84	156.13	158.16	157.59	156.77	155.07	153.10	151.33	149.64
03	150.69	150.08	150.08	152.97	156.17	158.14	157.54	156.74	154.98	153.05	151.28	149.60
04	150.63	150.18	150.05	153.07	156.18	158.16	157.50	156.70	154.91	152.98	151.23	149.54
05	150.58	150.23	150.01	153.24	156.16	158.20	157.48	156.65	154.85	152.91	151.18	149.49
06	150.57	150.26	149.97	153.30	156.16	158.21	157.44	156.60	154.77	152.86	151.11	149.45
07	150.56	150.25	149.94	153.39	156.17	158.15	157.45	156.53	154.70	152.80	151.05	149.40
08	150.54	150.21	149.89	153.52	156.24	158.13	157.48	156.48	154.61	152.74	150.99	149.35
09	150.52	150.18	149.87	153.62	156.25	158.11	157.42	156.44	154.56	152.68	150.93	149.42
10	150.48	150.15	149.86	153.71	156.26	158.08	157.41	156.39	154.50	152.62	150.88	149.60
11	150.42	150.09	149.91	153.87	156.28	158.10	157.44	156.31	154.44	152.57	150.82	149.60
12	150.38	150.07	150.11	153.98	156.46	158.13	157.43	156.25	154.39	152.52	150.77	149.53
13	150.34	150.03	150.30	154.08	156.82	158.06	157.42	156.19	154.32	152.46	150.72	149.48
14	150.29	149.98	150.41	154.19	157.08	158.06	157.40	156.12	154.24	152.39	150.65	149.43
15	150.24	149.93	150.48	154.30	157.22	158.07	157.41	156.08	154.19	152.33	150.60	149.42
16	150.19	149.90	150.55	154.40	157.37	158.05	157.34	156.04	154.13	152.29	150.55	149.51
17	150.16	149.86	150.61	154.46	157.48	158.03	157.31	155.96	154.04	152.24	150.50	149.54
18	150.10	149.83	150.76	154.53	157.60	158.03	157.30	155.93	153.97	152.19	150.44	149.67
19	150.08	149.79	151.02	154.72	157.73	158.02	157.29	155.88	153.91	152.13	150.37	149.74
20	150.02	149.75	151.24	154.91	157.82	157.99	157.25	155.85	153.85	152.08	150.32	149.71
21	149.97	149.71	151.38	155.00	157.86	157.93	157.19	155.81	153.77	152.03	150.27	149.64
22	149.92	149.68	151.52	155.13	157.92	157.91	157.17	155.74	153.70	151.96	150.21	149.58
23	149.86	149.67	151.64	155.27	157.96	157.86	157.14	155.69	153.64	151.90	150.16	149.54
24	149.81	149.67	151.78	155.42	158.03	157.83	157.10	155.63	153.58	151.85	150.11	149.50
25	149.78	149.67	151.87	155.54	158.09	157.83	157.09	155.58	153.52	151.80	150.05	149.46
26	149.72	149.65	151.96	155.64	158.10	157.79	157.02	155.52	153.46	151.73	150.00	149.40
27	149.70	149.72	152.01	155.74	158.14	157.78	156.99	155.45	153.38	151.67	149.95	149.36
28	149.71	149.88	152.10	155.82	158.12	157.71	156.95	155.38	153.32	151.62	149.89	149.31
29	149.79	150.02	152.19	155.91		157.66	156.92	155.32	153.27	151.57	149.84	149.26
30	149.84	150.10	152.37	155.98		157.65	156.87	155.24	153.21	151.51	149.79	149.22
31	149.83		152.55	156.04		157.63		155.19		151.45	149.74	
Avg WL	150.20	149.94	150.86	154.43	157.07	157.99	157.30	156.04	154.15	152.30	150.55	149.50
Max WL	150.78	150.27	153	156.07	158.18	158.25	157.64	156.86	155.16	153.18	151.43	149.77
Max Day Mean	150.77	150.26	152.55	156.04	158.14	158.21	157.62	156.83	155.13	153.15	151.39	149.74

Average Well Water Level for Water Year 2019: 153.36

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:09:11 PM

SCMW_4--Edinger Morris and Florence

Water Year: 2019 Well Water Levels are in feet

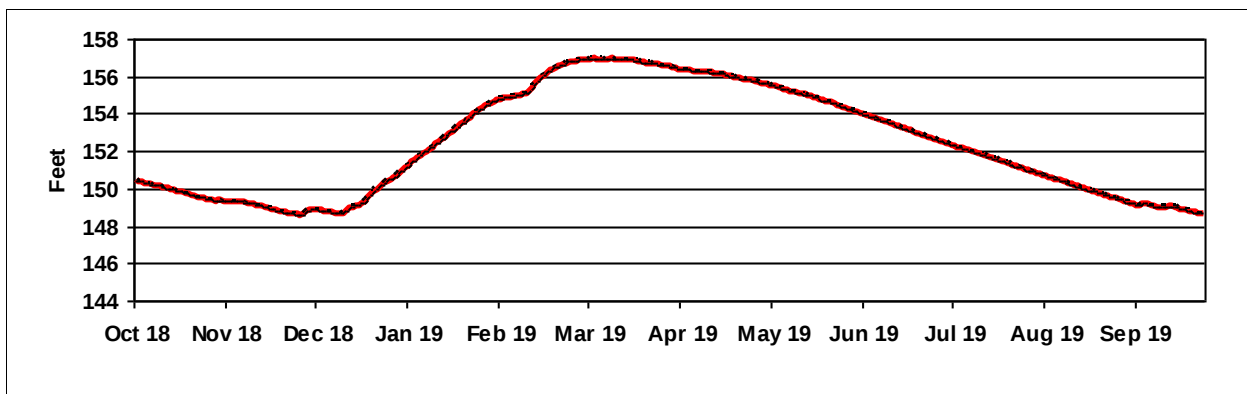
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	150.47	149.33	148.91	151.15	154.76	156.88	156.57	155.74	154.31	152.65	151.04	149.47
02	150.43	149.32	148.90	151.30	154.82	156.91	156.54	155.69	154.25	152.60	150.99	149.43
03	150.38	149.31	148.88	151.44	154.87	156.91	156.49	155.66	154.20	152.55	150.94	149.38
04	150.33	149.31	148.85	151.57	154.91	156.94	156.45	155.62	154.13	152.49	150.89	149.33
05	150.28	149.33	148.83	151.71	154.92	156.97	156.43	155.58	154.08	152.43	150.83	149.28
06	150.26	149.32	148.79	151.82	154.94	157.00	156.39	155.53	154.02	152.38	150.78	149.23
07	150.23	149.30	148.76	151.93	154.96	156.98	156.39	155.49	153.96	152.33	150.73	149.18
08	150.20	149.27	148.72	152.05	155.01	156.98	156.38	155.45	153.90	152.27	150.67	149.14
09	150.17	149.23	148.70	152.16	155.05	156.98	156.34	155.41	153.85	152.23	150.62	149.20
10	150.13	149.20	148.69	152.27	155.08	156.96	156.32	155.37	153.80	152.18	150.57	149.25
11	150.08	149.14	148.72	152.41	155.11	156.97	156.32	155.33	153.74	152.13	150.52	149.20
12	150.04	149.13	148.89	152.53	155.25	156.99	156.30	155.27	153.69	152.09	150.47	149.14
13	150.01	149.09	148.98	152.64	155.48	156.95	156.29	155.23	153.64	152.03	150.42	149.10
14	149.96	149.03	149.05	152.76	155.67	156.96	156.27	155.18	153.59	151.98	150.36	149.05
15	149.93	148.99	149.11	152.90	155.83	156.95	156.26	155.14	153.55	151.91	150.31	149.03
16	149.87	148.96	149.18	153.01	155.99	156.94	156.22	155.11	153.49	151.87	150.26	149.05
17	149.85	148.91	149.24	153.10	156.11	156.93	156.18	155.07	153.43	151.83	150.22	149.03
18	149.79	148.88	149.37	153.19	156.23	156.93	156.16	155.03	153.37	151.77	150.16	149.11
19	149.75	148.83	149.55	153.37	156.35	156.91	156.15	154.99	153.32	151.72	150.11	149.10
20	149.70	148.79	149.72	153.50	156.45	156.89	156.11	154.93	153.26	151.67	150.06	149.06
21	149.66	148.76	149.88	153.60	156.52	156.85	156.07	154.89	153.20	151.63	150.01	149.01
22	149.61	148.71	150.02	153.72	156.59	156.83	156.04	154.83	153.15	151.57	149.96	148.96
23	149.55	148.69	150.14	153.87	156.64	156.79	156.00	154.78	153.09	151.52	149.92	148.93
24	149.53	148.68	150.26	154.01	156.71	156.77	155.96	154.72	153.03	151.47	149.87	148.90
25	149.49	148.66	150.36	154.13	156.77	156.76	155.94	154.68	152.98	151.41	149.82	148.85
26	149.43	148.63	150.44	154.23	156.81	156.73	155.91	154.64	152.92	151.35	149.76	148.80
27	149.41	148.69	150.52	154.34	156.84	156.72	155.87	154.58	152.86	151.30	149.71	148.76
28	149.39	148.79	150.60	154.44	156.86	156.67	155.84	154.52	152.79	151.25	149.66	148.72
29	149.40	148.87	150.70	154.54		156.63	155.81	154.47	152.75	151.20	149.61	148.69
30	149.40	148.91	150.88	154.62		156.61	155.77	154.41	152.70	151.15	149.57	148.65
31	149.37		151.02	154.69		156.59		154.37		151.09	149.52	
Avg WL	149.87	149.00	149.51	153.00	155.77	156.87	156.19	155.09	153.50	151.87	150.27	149.07
Max WL	150.48	149.33	151	154.73	156.88	157.02	156.59	155.76	154.33	152.67	151.08	149.50
Max Day Mean	150.47	149.33	151.02	154.69	156.86	157.00	156.57	155.74	154.31	152.65	151.04	149.47

Average Well Water Level for Water Year 2019: 152.50

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:09:27 PM

SCMW_5--183rd Ave

Water Year: 2019 Well Water Levels are in feet

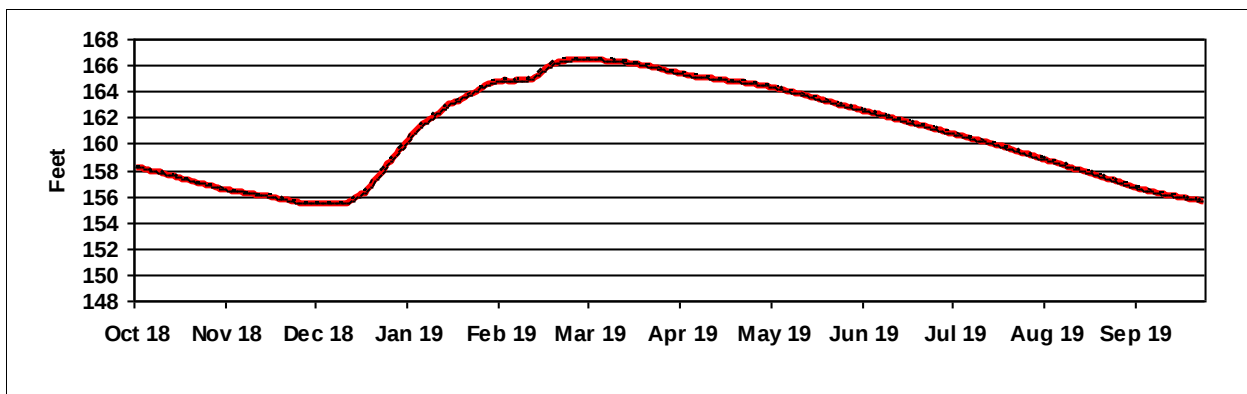
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	158.28	156.51	155.50	160.09	164.79	166.46	165.59	164.56	162.85	161.11	159.23	157.11
02	158.24	156.48	155.52	160.39	164.83	166.47	165.55	164.52	162.80	161.06	159.17	157.05
03	158.17	156.43	155.52	160.68	164.87	166.47	165.49	164.49	162.74	161.02	159.11	156.97
04	158.09	156.40	155.52	160.93	164.88	166.48	165.45	164.45	162.69	160.95	159.03	156.90
05	158.05	156.36	155.52	161.18	164.87	166.49	165.40	164.40	162.64	160.89	158.96	156.82
06	157.99	156.33	155.51	161.36	164.85	166.51	165.35	164.35	162.58	160.83	158.89	156.75
07	157.93	156.30	155.50	161.52	164.85	166.46	165.29	164.30	162.52	160.78	158.82	156.68
08	157.91	156.28	155.48	161.72	164.88	166.45	165.26	164.25	162.46	160.72	158.76	156.61
09	157.85	156.24	155.47	161.90	164.90	166.42	165.20	164.20	162.41	160.66	158.69	156.56
10	157.79	156.20	155.46	162.05	164.89	166.39	165.17	164.14	162.35	160.61	158.64	156.50
11	157.73	156.16	155.46	162.23	164.89	166.39	165.15	164.07	162.30	160.56	158.57	156.45
12	157.67	156.12	155.50	162.41	164.92	166.37	165.13	164.02	162.25	160.51	158.51	156.39
13	157.60	156.07	155.60	162.57	165.02	166.31	165.10	163.97	162.17	160.44	158.43	156.34
14	157.57	156.04	155.73	162.75	165.17	166.29	165.08	163.91	162.11	160.38	158.34	156.28
15	157.50	156.02	155.87	162.91	165.31	166.30	165.05	163.87	162.05	160.31	158.27	156.22
16	157.43	155.99	156.02	163.05	165.46	166.28	165.01	163.82	161.99	160.27	158.21	156.17
17	157.38	155.94	156.17	163.16	165.64	166.25	164.98	163.76	161.93	160.22	158.15	156.13
18	157.32	155.90	156.32	163.23	165.81	166.24	164.97	163.70	161.87	160.16	158.08	156.09
19	157.26	155.85	156.51	163.33	165.99	166.21	164.95	163.64	161.82	160.10	158.02	156.06
20	157.20	155.80	156.78	163.46	166.13	166.18	164.91	163.58	161.77	160.04	157.96	156.03
21	157.14	155.75	157.09	163.55	166.19	166.13	164.87	163.53	161.70	159.97	157.90	155.99
22	157.07	155.71	157.40	163.69	166.27	166.09	164.85	163.44	161.64	159.90	157.83	155.95
23	157.01	155.66	157.69	163.82	166.32	166.04	164.83	163.38	161.58	159.84	157.76	155.90
24	156.95	155.61	157.96	163.95	166.37	166.00	164.79	163.31	161.53	159.78	157.68	155.87
25	156.91	155.57	158.21	164.08	166.41	165.97	164.78	163.26	161.48	159.71	157.62	155.83
26	156.83	155.53	158.49	164.21	166.42	165.91	164.73	163.20	161.42	159.64	157.54	155.78
27	156.78	155.49	158.76	164.34	166.44	165.87	164.70	163.13	161.36	159.57	157.46	155.74
28	156.72	155.47	159.02	164.47	166.44	165.79	164.68	163.07	161.30	159.51	157.38	155.71
29	156.67	155.48	159.28	164.57		165.73	164.65	163.02	161.23	159.44	157.32	155.65
30	156.62	155.49	159.54	164.66		165.68	164.61	162.96	161.16	159.37	157.25	155.61
31	156.58		159.79	164.73		165.63		162.91		159.31	157.18	
Avg WL	157.43	155.97	156.72	162.81	165.49	166.20	165.05	163.78	162.02	160.25	158.22	156.27
Max WL	158.29	156.51	160	164.78	166.47	166.53	165.62	164.59	162.89	161.14	159.29	157.16
Max Day Mean	158.28	156.51	159.79	164.73	166.44	166.51	165.59	164.56	162.85	161.11	159.23	157.11

Average Well Water Level for Water Year 2019: 160.85

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SCMW_6--Loganberry

Water Year: 2019 Well Water Levels are in feet

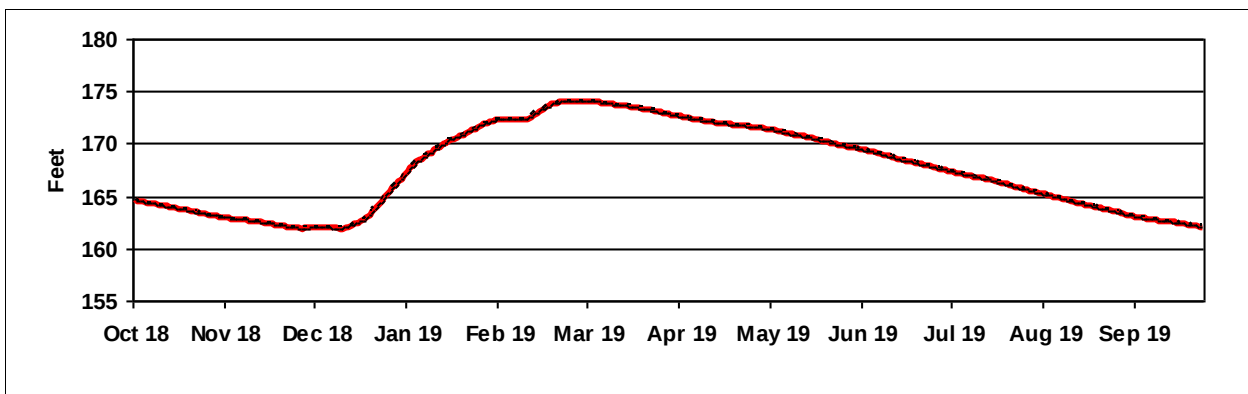
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	164.68	163.00	162.03	167.04	172.28	174.11	172.89	171.61	169.79	167.75	165.66	163.50
02	164.61	162.96	162.03	167.39	172.32	174.11	172.84	171.56	169.74	167.69	165.59	163.44
03	164.56	162.90	162.03	167.71	172.36	174.09	172.77	171.52	169.67	167.64	165.52	163.37
04	164.50	162.88	162.03	167.99	172.36	174.08	172.71	171.49	169.61	167.56	165.44	163.30
05	164.43	162.85	162.03	168.27	172.33	174.10	172.66	171.44	169.55	167.48	165.37	163.23
06	164.38	162.83	162.00	168.47	172.31	174.11	172.59	171.38	169.49	167.42	165.29	163.17
07	164.33	162.79	162.00	168.64	172.31	174.04	172.52	171.32	169.42	167.37	165.22	163.10
08	164.29	162.75	161.98	168.85	172.35	174.01	172.48	171.27	169.34	167.29	165.15	163.04
09	164.24	162.72	161.97	169.05	172.36	173.97	172.40	171.22	169.29	167.23	165.07	162.99
10	164.20	162.67	161.96	169.21	172.34	173.93	172.36	171.17	169.22	167.17	165.01	162.95
11	164.13	162.63	161.96	169.42	172.33	173.91	172.33	171.10	169.15	167.11	164.95	162.91
12	164.08	162.59	162.04	169.61	172.41	173.89	172.29	171.03	169.09	167.05	164.88	162.86
13	164.01	162.55	162.14	169.79	172.57	173.81	172.25	170.97	169.01	166.98	164.81	162.81
14	163.98	162.50	162.26	169.99	172.77	173.76	172.22	170.91	168.94	166.91	164.73	162.77
15	163.91	162.47	162.39	170.17	172.95 e	173.74	172.20	170.86	168.86	166.84	164.65	162.71
16	163.86	162.43	162.51	170.33	173.14	173.70	172.14	170.83	168.80	166.80	164.58	162.68
17	163.81	162.39	162.64	170.46	173.32	173.66	172.08	170.76	168.72	166.75	164.52	162.64
18	163.75	162.34	162.79	170.54	173.50	173.63	172.04	170.71	168.64	166.68	164.44	162.63
19	163.69	162.30	163.01	170.66	173.67	173.60	172.02	170.65	168.57	166.61	164.37	162.60
20	163.63	162.25	163.30	170.81	173.80	173.56	171.98	170.58	168.51	166.55	164.31	162.56
21	163.57	162.20	163.62	170.92	173.87	173.49	171.93	170.52	168.43	166.48	164.25	162.51
22	163.50	162.15	163.94	171.06	173.95	173.45	171.90	170.43	168.37	166.40	164.18	162.47
23	163.45	162.11	164.25	171.22	173.99	173.38	171.88	170.35	168.31	166.33	164.12	162.42
24	163.40	162.07	164.57	171.35	174.05	173.33	171.84	170.29	168.24	166.26	164.05	162.39
25	163.34	162.03	164.87	171.49	174.09	173.30	171.83	170.22	168.17	166.19	163.99	162.34
26	163.28	161.99	165.19	171.63	174.09	173.24	171.78	170.17	168.11	166.10	163.91	162.29
27	163.23	161.96	165.49	171.77	174.12	173.20	171.75	170.08	168.04	166.03	163.84	162.24
28	163.18	161.97	165.80	171.90	174.10	173.12	171.72	170.02	167.96	165.96	163.77	162.19
29	163.14	161.99	166.11	172.02		173.04	171.69	169.97	167.90	165.89	163.70	162.15
30	163.10	162.01	166.41	172.11		172.98	171.65	169.91	167.82	165.82	163.64	162.12
31	163.05		166.71	172.20		172.93		169.85		165.74	163.57	
Avg WL	163.85	162.44	163.29	170.07	173.07	173.65	172.19	170.78	168.83	166.78	164.60	162.75
Max WL	164.69	163.00	167	172.25	174.15	174.15	172.92	171.64	169.83	167.79	165.71	163.55
Max Day Mean	164.68	163.00	166.71	172.20	174.12	174.11	172.89	171.61	169.79	167.75	165.66	163.50

Average Well Water Level for Water Year 2019: 167.69

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SCMW_7--Leitner and 180th

Water Year: 2019 Well Water Levels are in feet

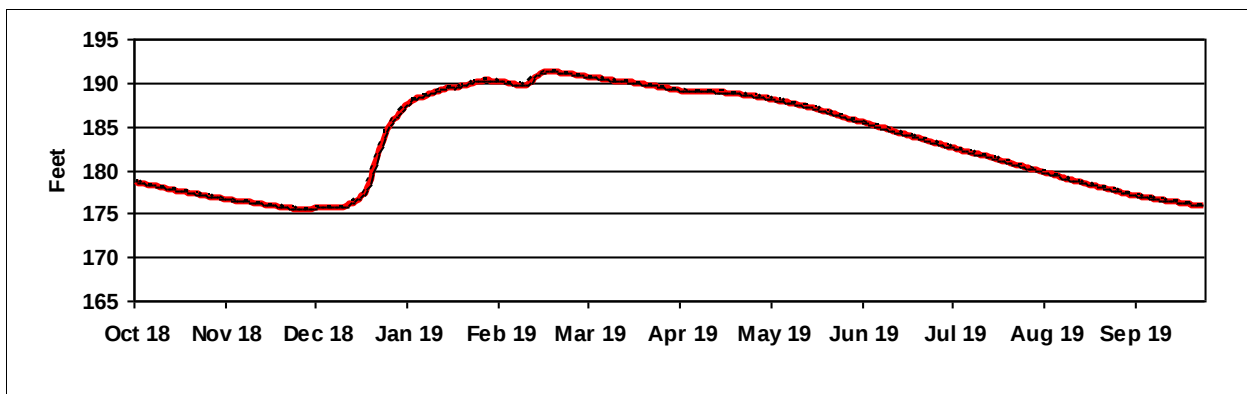
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	178.68	176.68	175.68	187.33	190.24	190.90	189.38	188.46	185.95	183.07	180.28	177.56
02	178.62	176.62	175.71	187.68	190.19	190.84	189.33	188.40	185.86	183.01	180.19	177.47
03	178.54	176.57	175.73	187.94	190.15	190.78	189.26	188.35	185.76	182.92	180.11	177.40
04	178.46	176.54	175.75	188.12	190.08	190.73	189.21	188.29	185.64	182.80	180.02	177.33
05	178.38	176.50	175.77	188.31	189.99	190.70	189.16	188.23	185.59	182.72	179.92	177.25
06	178.31	176.46	175.76	188.40	189.90	190.67	189.10	188.17	185.50	182.61	179.82	177.17
07	178.26	176.43	175.77	188.47	189.85	190.59	189.06	188.08	185.41	182.53	179.73	177.10
08	178.18	176.39	175.76	188.62	189.84	190.54	189.05	188.00	185.29	182.43	179.65	177.03
09	178.11	176.34	175.76	188.74	189.82	190.47	189.00	187.94	185.18	182.35	179.55	176.99
10	178.06	176.28	175.77	188.83	189.75	190.40	188.99	187.87	185.10	182.29	179.48	176.92
11	177.97	176.24	175.78	188.97	189.71	190.36	189.01	187.80	185.01	182.19	179.40	176.86
12	177.88	176.19	175.91	189.12	189.89	190.34	188.99	187.72	184.91	182.08	179.31	176.80
13	177.84	176.14	176.11	189.24	190.30	190.26	188.99	187.65	184.83	182.03	179.19	176.74
14	177.78	176.07	176.32	189.34	190.76	190.24	188.99	187.58	184.75	181.92	179.08	176.67
15	177.70	176.05	176.54	189.43	190.99	190.22	189.01	187.53	184.64	181.84	178.99	176.61
16	177.66	176.01	176.76	189.48	191.14	190.19	188.98	187.47	184.55	181.77	178.89	176.57
17	177.62	175.96	177.05	189.47	191.23	190.15	188.94	187.36	184.44	181.69	178.81	176.51
18	177.56	175.92	177.44	189.44	191.29	190.12	188.94	187.29	184.34	181.61	178.73	176.48
19	177.48	175.87	178.06	189.50	191.33	190.08	188.94	187.20	184.24	181.49	178.64	176.44
20	177.42	175.81	179.08	189.63	191.34	190.04	188.90	187.13	184.16	181.39	178.56	176.40
21	177.35	175.76	180.27	189.71	191.28	189.97	188.85	187.05	184.08	181.30	178.47	176.35
22	177.27	175.71	181.41	189.82	191.26	189.93	188.84	186.93	183.98	181.20	178.38	176.30
23	177.21	175.66	182.40	189.92	191.20	189.85	188.82	186.82	183.86	181.13	178.31	176.25
24	177.15	175.62	183.27	190.02	191.17	189.81	188.78	186.73	183.78	181.04	178.23	176.20
25	177.09	175.57	184.04	190.15	191.14	189.78	188.76	186.65	183.70	180.92	178.14	176.16
26	177.00	175.53	184.74	190.24	191.06	189.71	188.70	186.55	183.59	180.82	178.06	176.10
27	176.96	175.51	185.29	190.30	191.02	189.67	188.65	186.42	183.48	180.74	177.98	176.06
28	176.89	175.52	185.75	190.33	190.96	189.59	188.60	186.32	183.37	180.66	177.88	176.01
29	176.85	175.57	186.16	190.32		189.52	188.56	186.25	183.27	180.57	177.79	175.96
30	176.80	175.63	186.54	190.30		189.46	188.51	186.13	183.17	180.46	177.73	175.91
31	176.74		186.92	190.27		189.42		186.05		180.38	177.64	
Avg WL	177.67	176.04	179.14	189.27	190.60	190.17	188.94	187.37	184.58	181.74	178.93	176.65
Max WL	178.70	176.69	187	190.35	191.39	190.94	189.42	188.51	186.02	183.14	180.37	177.64
Max Day Mean	178.68	176.68	186.92	190.33	191.34	190.90	189.38	188.46	185.95	183.07	180.28	177.56

Average Well Water Level for Water Year 2019: 183.43

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:10:21 PM

SCMW_8--Old HW 99 and Violet Prairie

Water Year: 2019 Well Water Levels are in feet

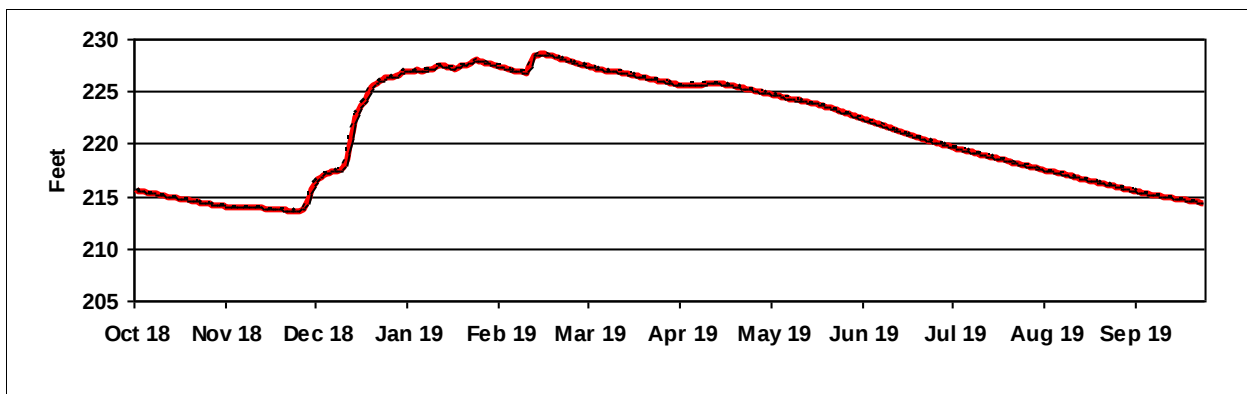
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	215.62	214.06	216.27	227.01	227.46	227.67	225.84	225.05	222.88	220.11	217.91	215.88
02	215.56	214.05	216.66	227.03	227.40	227.59	225.79	224.98	222.79	220.04	217.84	215.82
03	215.49	214.03	216.91	227.02	227.34	227.50	225.71	224.93	222.67	219.97	217.79	215.75
04	215.43	214.01	217.09	227.01	227.27	227.43	225.65	224.87	222.57	219.89	217.72	215.68
05	215.36	214.04	217.22	227.05	227.17	227.38	225.61	224.81	222.48	219.81	217.65	215.61
06	215.32	214.03	217.30	227.04	227.08	227.31	225.56	224.74	222.38	219.73	217.57	215.55
07	215.27	214.03	217.37	227.02	227.00	227.23	225.59	224.68	222.28	219.67	217.50	215.49
08	215.21	214.01	217.41	227.08	226.97	227.18	225.67	224.62	222.18	219.59	217.45	215.42
09	215.16	213.98	217.47	227.11	226.93	227.10	225.68	224.56	222.11	219.52	217.38	215.37
10	215.11	213.96	217.54	227.18	226.87	227.02	225.69	224.49	222.01	219.45	217.32	215.31
11	215.05	213.93	217.76	227.35	226.85	226.97	225.69	224.42	221.92	219.38	217.26	215.25
12	215.00	213.92	218.49	227.48	227.25	226.98	225.70	224.35	221.83	219.30	217.21	215.19
13	214.93	213.88	219.78	227.50	228.08	226.96	225.72	224.28	221.72	219.23	217.14	215.14
14	214.89	213.87	221.32	227.45	228.48	226.94	225.75	224.22	221.62	219.15	217.06	215.09
15	214.84	213.84	222.47	227.39	228.53	226.88	225.78	224.18	221.53	219.08	216.99	215.04
16	214.79	213.83	223.23	227.34	228.57	226.81	225.77	224.14	221.42	219.02	216.93	215.00
17	214.75	213.80	223.71	227.27	228.58	226.75	225.74	224.06	221.32	218.95	216.88	214.95
18	214.69	213.77	224.15	227.23	228.56	226.70	225.74	224.01	221.23	218.88	216.80	214.90
19	214.65	213.75	224.67	227.30	228.53	226.64	225.72	223.96	221.13	218.82	216.73	214.86
20	214.59	213.74	225.33	227.49	228.47	226.57	225.69	223.90	221.05	218.74	216.67	214.82
21	214.54	213.71	225.66	227.58	228.37	226.49	225.63	223.84	220.96	218.67	216.60	214.77
22	214.49	213.67	225.86	227.60	228.28	226.42	225.59	223.75	220.88	218.59	216.54	214.73
23	214.42	213.66	226.00	227.66	228.17	226.34	225.55	223.67	220.78	218.53	216.49	214.67
24	214.38	213.66	226.15	227.85	228.09	226.28	225.48	223.57	220.70	218.46	216.42	214.64
25	214.33	213.67	226.29	228.00	228.02	226.23	225.45	223.49	220.61	218.40	216.35	214.60
26	214.27	213.68	226.38	227.98	227.92	226.17	225.36	223.43	220.54	218.32	216.28	214.54
27	214.24	213.81	226.39	227.89	227.85	226.15	225.29	223.34	220.44	218.25	216.23	214.50
28	214.19	214.15	226.43	227.80	227.75	226.08	225.24	223.25	220.35	218.19	216.16	214.45
29	214.17	214.88	226.50	227.71		226.00	225.18	223.16	220.28	218.11	216.09	214.41
30	214.14	215.69	226.63	227.62		225.95	225.11	223.06	220.20	218.05	216.02	214.39 e
31	214.10		226.87	227.54		225.90		222.96		217.99	215.96	
Avg WL	214.81	213.97	221.98	227.41	227.78	226.76	225.60	224.09	221.50	219.03	216.93	215.06
Max WL	215.62	216.02	227	228.03	228.60	227.72	225.89	225.10	222.91	220.16	217.96	215.94
Max Day Mean	215.62	215.69	226.87	228.00	228.58	227.67	225.84	225.05	222.88	220.11	217.91	215.88

Average Well Water Level for Water Year 2019: 221.24

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SCMW_9--County ROW along Old Hwy 99 @ Bill

Water Year: 2019 Well Water Levels are in feet

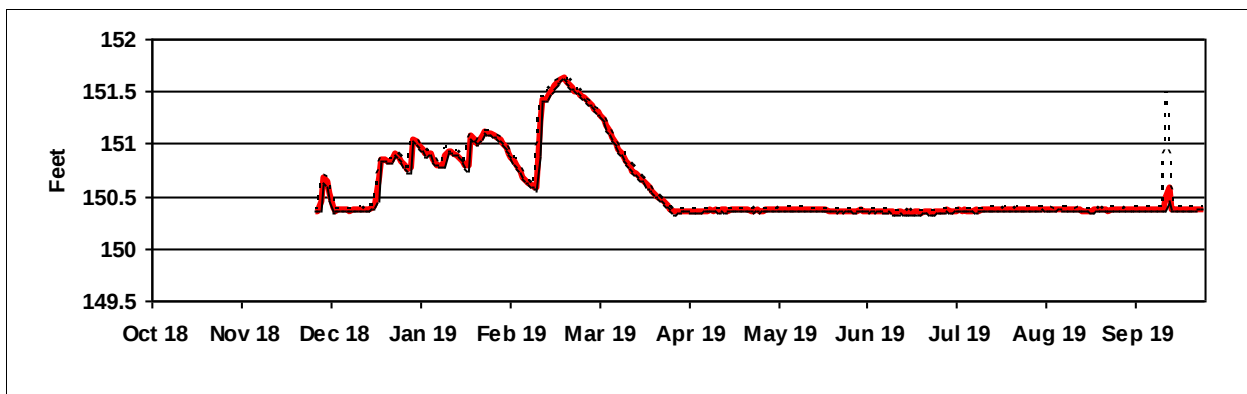
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01			150.53	150.98	150.92	151.39	150.36	150.37	150.36	150.35	150.37	150.37
02			150.40	150.95	150.88	151.37	150.36	150.37	150.36	150.35	150.37	150.37
03			150.36	150.92	150.84	151.33	150.36	150.37	150.37	150.37	150.38	150.38
04			150.37	150.91	150.79	151.31	150.36	150.37	150.36	150.36	150.38	150.37
05			150.37	150.91	150.74	151.28	150.36	150.37	150.36	150.36	150.38	150.37
06			150.37	150.85	150.69	151.23	150.35	150.37	150.36	150.36	150.37	150.38
07			150.37	150.80	150.65	151.17	150.36	150.38	150.36	150.37	150.38	150.38
08			150.36	150.80	150.63	151.12	150.36	150.38	150.35	150.36	150.38	150.37
09			150.37	150.80	150.60	151.06	150.36	150.37	150.36	150.37	150.37	150.38
10			150.37	150.89	150.59	151.01	150.36	150.37	150.36	150.36	150.37	150.37
11			150.37	150.94	150.58	150.95	150.36	150.37	150.35	150.36	150.38	150.38
12			150.37	150.94	151.21	150.92	150.37	150.37	150.35	150.36	150.38	150.37
13			150.37	150.92	151.42	150.87	150.36	150.38	150.36	150.37	150.37	150.38
14			150.37	150.90	151.42	150.83	150.37	150.37	150.35	150.36	150.37	150.38
15			150.38	150.88	151.47	150.79	150.36	150.37	150.34	150.37	150.37	150.37
16			150.40	150.84	151.52	150.75	150.37	150.37	150.35	150.38	150.37	150.38
17			150.44	150.80	151.56	150.72	150.37	150.37	150.35	150.38	150.37	150.50
18			150.69	150.80	151.60	150.70	150.36	150.37	150.34	150.38	150.37	150.58
19			150.86	151.08	151.62	150.66	150.37	150.37	150.35	150.37	150.36	150.38
20			150.85	151.04	151.63	150.64	150.37	150.37	150.35	150.37	150.36	150.38
21			150.84	151.01	151.60	150.61	150.37	150.37	150.34	150.37	150.36	150.38
22			150.83	151.02	151.58	150.58	150.37	150.37	150.35	150.37	150.36	150.38
23			150.87	151.09	151.54	150.55	150.37	150.36	150.35	150.37	150.37	150.37
24			150.91	151.12	151.51	150.52	150.37	150.36	150.34	150.38	150.37	150.38
25			150.87	151.11	151.51	150.50	150.37	150.36	150.35	150.38	150.37	150.38
26		150.36	150.84	151.10	151.47	150.47	150.36	150.36	150.35	150.37	150.37	150.37
27		150.36	150.80	151.09	151.45	150.45	150.36	150.36	150.35	150.38	150.37	150.38
28		150.46	150.76	151.07	151.42	150.42	150.37	150.36	150.34	150.37	150.36	150.38
29		150.68	150.78	151.04		150.38	150.36	150.36	150.35	150.38	150.37	150.38
30		150.64	151.05	151.01		150.35	150.36	150.36	150.35	150.37	150.37	150.38
31			151.02	150.96		150.36		150.36		150.37	150.37	
Avg WL		150.50	150.60	150.95	151.19	150.82	150.36	150.37	150.35	150.37	150.37	150.39
Max WL		150.71	151	151.13	151.64	151.41	150.39	150.40	150.38	150.40	150.40	151.51
Max Day Mean		150.68	151.05	151.12	151.63	151.39	150.37	150.38	150.37	150.38	150.38	150.58

Average Well Water Level for Water Year 2019: 150.57

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:10:59 PM

SLB-1--Scott Lake, Trevue Ave SW & Scott Cree

Water Year: 2019 Well Water Levels are in feet

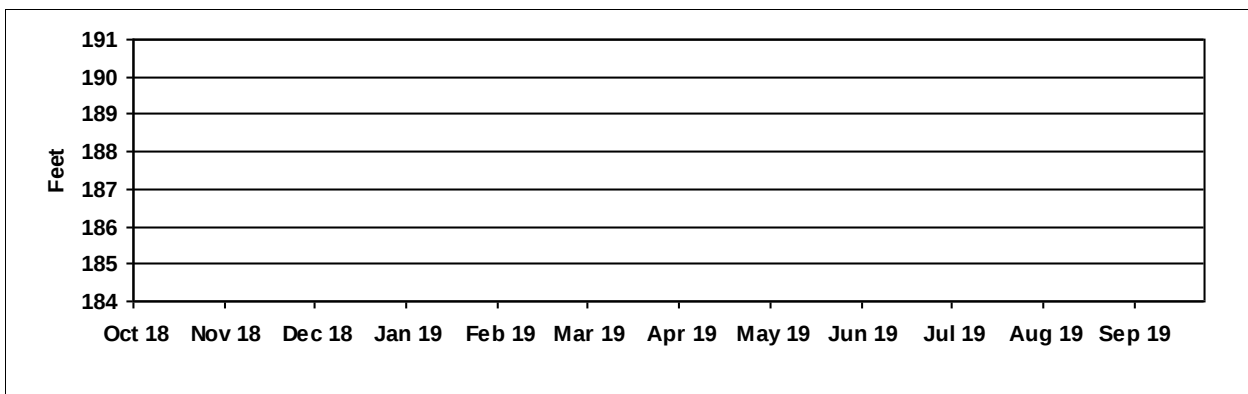
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	186.08	186.98					188.57			187.13		
02												
03									187.73			
04												186.19
05												
06						189.10						
07								188.20				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		188.77										
31			189.82	189.27								
Avg WL	186.08	187.88	189.82	189.27		189.10	188.57	188.20	187.73	187.13		186.19
Max WL	186.08	188.77	190	189.27		189.10	188.57	188.20	187.73	187.13		186.19
Max Day Mean	186.08	188.77	189.82	189.27		189.10	188.57	188.20	187.73	187.13		186.19

Average Well Water Level for Water Year 2019: 188.00

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SLB-2--Scott Lake, 11746 Scott Creek Dr SW

Water Year: 2019 Well Water Levels are in feet

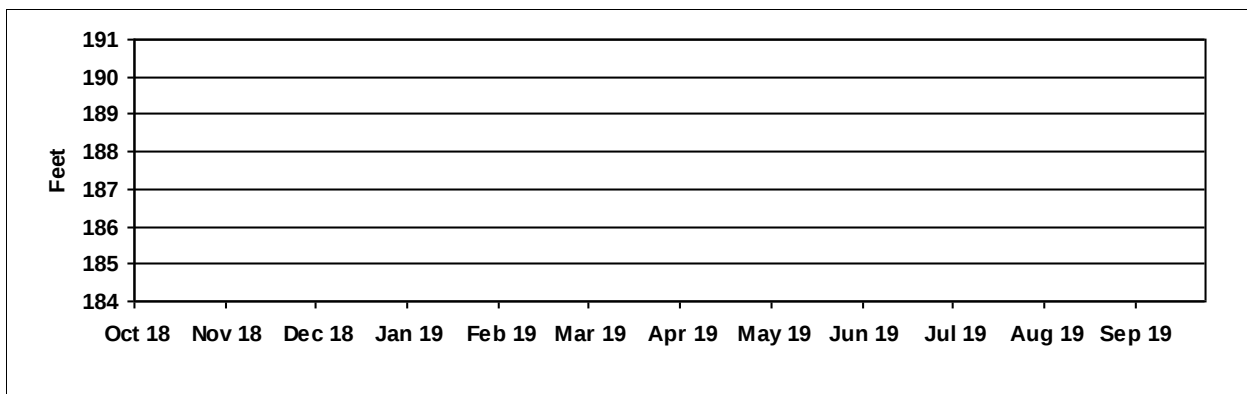
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	186.21	186.91					188.99			187.35		
02												
03									188.05			
04												186.29
05												
06						189.77						
07								188.60				
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		188.30										
31			190.25	189.88								
Avg WL	186.21	187.61	190.25	189.88		189.77	188.99	188.60	188.05	187.35		186.29
Max WL	186.21	188.30	190	189.88		189.77	188.99	188.60	188.05	187.35		186.29
Max Day Mean	186.21	188.30	190.25	189.88		189.77	188.99	188.60	188.05	187.35		186.29

Average Well Water Level for Water Year 2019: 188.30

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



SSW1--Stuart St Well

Water Year: 2019 Well Water Levels are in feet

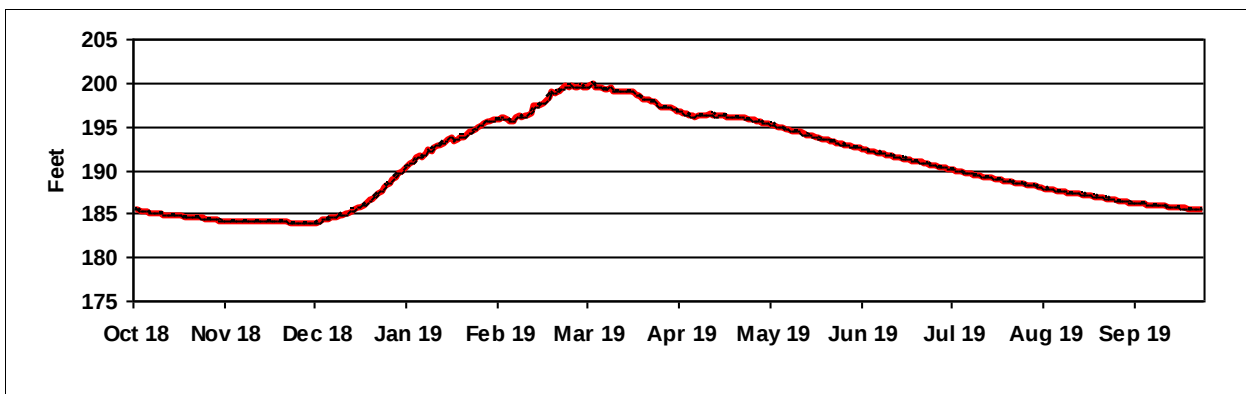
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	185.52	184.21	183.97	190.22	195.86	199.61	197.18	195.69	192.81	190.51	188.37	186.51
02	185.47	184.18	183.96	190.57	195.85	199.64	197.16	195.54	192.76	190.42	188.30	186.46
03	185.36	184.16	184.15	190.88	196.08	199.54	196.97	195.48	192.67	190.35	188.24	186.41
04	185.27	184.14	184.36	190.94	195.97	199.51	196.80	195.43	192.64	190.28	188.19	186.36
05	185.23	184.10	184.43	191.43	195.77	199.63	196.80	195.37	192.59	190.20	188.06	186.33
06	185.18	184.09	184.48	191.74	195.64	199.94	196.61	195.24	192.50	190.12	187.98	186.26
07	185.14	184.08	184.55	191.48	195.71	199.59	196.43	195.10	192.40	190.06	187.92	186.24
08	185.10	184.07	184.60	191.91	195.98	199.48	196.38	194.98	192.25	189.98	187.87	186.20
09	185.06	184.08	184.72	192.43	196.24	199.43	196.24	194.94	192.18	189.91	187.82	186.18
10	185.01	184.07	184.79	192.29	196.09	199.26	196.14	194.88	192.12	189.82	187.76	186.15
11	184.96	184.07	184.94	192.66	196.20	199.28	196.32	194.78	192.06	189.73	187.68	186.08
12	184.92	184.07	184.98	192.86	196.24	199.54	196.31	194.65	192.04	189.66	187.64	186.07
13	184.88	184.08	185.17	192.88	196.59	199.15	196.35	194.54	191.95	189.58	187.58	186.02
14	184.85	184.08	185.41	193.14	197.33	199.01	196.36	194.46	191.82	189.51	187.52	186.00
15	184.82	184.07	185.43	193.38	197.39	199.06	196.47	194.41	191.75	189.43	187.48	185.96
16	184.78	184.08	185.70	193.48	197.52	199.11	196.39	194.37	191.69	189.37	187.44	185.91
17	184.76	184.06	185.79	193.71	197.65	199.01	196.20	194.15	191.57	189.31	187.39	185.88
18	184.71	184.06	185.99	193.26	197.79	199.01	196.25	194.11	191.49	189.23	187.33	185.84
19	184.68	184.06	186.12	193.47	198.33	199.00	196.41	194.02	191.43	189.16	187.27	185.79
20	184.65	184.06	186.57	193.85	198.96	198.98	196.35	193.91	191.37	189.11	187.23	185.76
21	184.62	184.05	186.70	193.86	198.85	198.66	196.17	193.83	191.27	189.07	187.18	185.72
22	184.58	184.06	187.08	194.01	199.10	198.58	196.14	193.68	191.17	188.99	187.12	185.73
23	184.56	184.02	187.39	194.38	199.15	198.24	196.16	193.59	191.11	188.93	187.07	185.66
24	184.51	183.97	187.69	194.36	199.42	198.07	196.04	193.53	191.06	188.84	187.01	185.65
25	184.49	183.97	187.96	194.72	199.72	198.08	196.09	193.45	191.01	188.80	186.93	185.62
26	184.45	183.98	188.33	194.93	199.57	197.86	196.02	193.36	190.92	188.75	186.88	185.62
27	184.42	183.96	188.57	195.25	199.79	197.87	195.96	193.25	190.82	188.65	186.85	185.60
28	184.38	183.96	188.91	195.38	199.60	197.56	195.83	193.12	190.72	188.60	186.77	185.59
29	184.33	183.98	189.31	195.60		197.30	195.83	193.06	190.64	188.56	186.70	185.58
30	184.27	183.96	189.61	195.66		197.18	195.74	193.00	190.58	188.49	186.64	185.54
31	184.26		189.83	195.73		197.17		192.89		188.43	186.58	
Avg WL	184.81	184.06	186.18	193.24	197.44	198.82	196.34	194.28	191.71	189.41	187.45	185.96
Max WL	185.54	184.22	190	195.75	199.83	199.97	197.18	195.69	192.82	190.52	188.38	186.52
Max Day Mean	185.52	184.21	189.83	195.73	199.79	199.94	197.18	195.69	192.81	190.51	188.37	186.51

Average Well Water Level for Water Year 2019: 190.81

Stage is computed from matching datum to logger records.

Thurston County

Annual Well Water Level-- Mean, Maximum, Minimum:



02/04/2020 1:12:19 PM

Appendix F – Lake Level Data

10b--Lake St. Clair

Water Year: 2019 Lake Levels are in feet

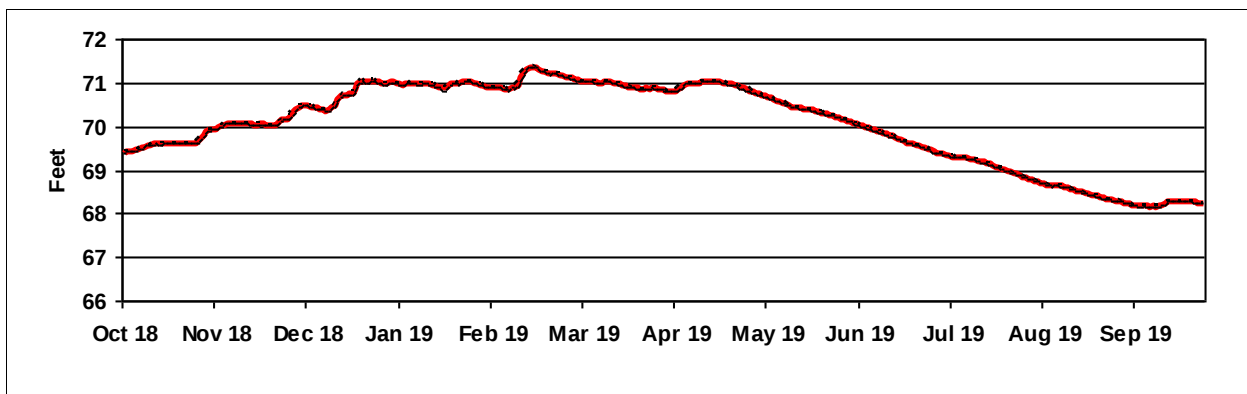
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	69.40	69.96	70.49	71.00	70.91	71.11	70.84	70.80	70.16	69.43	68.83	68.30
02	69.44	69.99	70.48	70.97	70.91	71.09	70.83	70.77	70.14	69.41	68.81	68.28
03	69.44	70.01	70.46	70.96	70.91	71.07	70.82	70.75	70.11	69.40	68.79	68.26
04	69.44	70.05	70.44	70.98	70.91	71.05	70.81	70.72	70.08	69.39	68.76	68.25
05	69.46	70.08	70.42	70.98	70.89	71.03	70.82	70.70	70.06	69.36	68.74	68.23
06	69.49	70.09	70.40	70.99	70.87	71.02	70.85	70.68	70.03	69.34	68.72	68.21
07	69.51	70.09	70.39	70.98	70.86	71.03	70.92	70.66	70.01	69.32	68.70	68.19
08	69.54	70.08	70.37	70.97	70.85	71.02	70.95	70.63	69.99	69.30	68.67	68.18
09	69.58	70.08	70.38	70.97	70.90	71.02	70.99	70.60	69.97	69.28	68.65	68.18
10	69.59	70.07	70.42	70.99	70.90	71.01	70.98	70.58	69.95	69.30	68.65	68.19
11	69.60	70.07	70.50	70.99	70.94	71.00	71.00	70.55	69.93	69.31	68.67	68.18
12	69.60	70.06	70.63	70.98	71.13	71.03	71.00	70.52	69.91	69.29	68.66	68.17
13	69.60	70.06	70.71	70.95	71.26	71.04	71.01	70.48	69.88	69.27	68.64	68.18
14	69.60	70.05	70.74	70.93	71.33	71.03	71.03	70.46	69.85	69.25	68.63	68.17
15	69.60	70.05	70.74	70.91	71.37	71.01	71.04	70.45	69.83	69.23	68.61	68.19
16	69.60	70.06	70.75	70.88	71.38	70.99	71.04	70.44	69.80	69.22	68.58	68.20
17	69.60	70.06	70.77	70.88	71.36	70.97	71.04	70.42	69.78	69.20	68.56	68.23
18	69.60	70.05	70.87	70.90	71.33	70.95	71.03	70.40	69.75	69.19	68.54	68.29
19	69.60	70.05	70.98	70.97	71.29	70.94	71.03	70.39	69.73	69.17	68.52	68.29
20	69.60	70.04	71.02	70.99	71.27	70.92	71.03	70.39	69.70	69.14	68.50	68.29
21	69.60	70.04	71.03	70.99	71.24	70.91	71.01	70.38	69.67	69.12	68.48	68.28
22	69.60	70.07	71.02	70.98	71.22	70.89	70.99	70.36	69.64	69.09	68.46	68.29
23	69.61	70.15	71.04	71.03	71.21	70.88	70.99	70.34	69.62	69.06	68.45	68.30
24	69.61	70.18	71.06	71.05	71.20	70.87	70.98	70.31	69.60	69.04	68.43	68.29
25	69.62	70.19	71.04	71.05	71.19	70.86	70.95	70.30	69.58	69.01	68.41	68.28
26	69.67	70.23	71.02	71.03	71.18	70.88	70.93	70.29	69.56	68.99	68.39	68.28
27	69.70	70.33	71.00	71.01	71.15	70.87	70.90	70.27	69.54	68.96	68.37	68.27
28	69.81	70.40	70.98	70.98	71.13	70.88	70.88	70.25	69.51	68.93	68.35	68.25
29	69.88	70.45	70.98	70.96		70.88	70.85	70.23	69.49	68.91	68.33	68.25
30	69.92	70.48	71.02	70.94		70.87	70.82	70.21	69.47	68.88	68.32	68.23
31	69.95		71.02	70.92		70.85		70.19		68.86	68.31	
Avg WL	69.61	70.12	70.75	70.97	71.11	70.97	70.95	70.47	69.81	69.18	68.57	68.24
Max WL	69.96	70.49	71	71.06	71.39	71.12	71.05	70.81	70.18	69.44	68.84	68.32
Max Day Mean	69.95	70.48	71.06	71.05	71.38	71.11	71.04	70.80	70.16	69.43	68.83	68.30

Average Lake Level for Water Year 2019: 70.06

Stage is computed from matching datum to logger records.

Thurston County

Annual Lake Level-- Mean, Maximum, Minimum:



02/04/2020 11:50:31 AM

18b--Long Lake

Water Year: 2019 **Lake Levels are in feet**

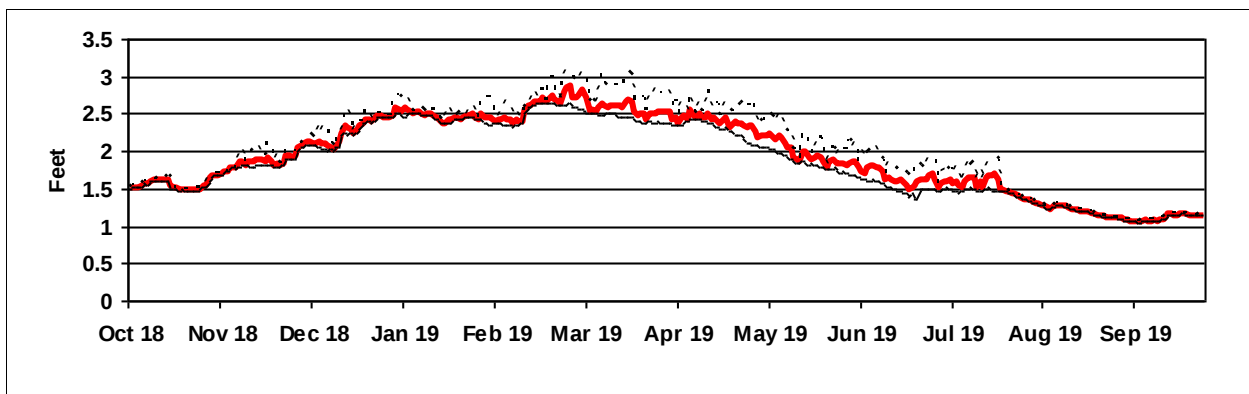
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	1.51	1.70	2.14	2.53	2.42	2.72	2.55	2.26	1.83	1.63	1.36	1.11
02	1.53	1.74	2.12	2.59	2.41	2.75	2.53	2.20	1.85	1.52	1.35	1.11
03	1.53	1.74	2.12	2.56	2.42	2.83	2.44	2.21	1.86	1.58	1.34	1.10
04	1.53	1.79	2.15	2.53	2.44	2.79	2.46	2.21	1.88	1.60	1.32	1.09
05	1.54	1.79	2.10	2.51	2.46	2.72	2.39	2.21	1.78	1.60	1.30	1.08
06	1.58	1.79	2.10	2.54	2.43	2.55	2.47	2.24	1.75	1.62	1.28	1.08
07	1.58	1.88	2.08	2.54	2.43	2.56	2.48	2.20	1.70	1.57	1.27	1.06
08	1.60	1.88	2.05	2.51	2.37	2.54	2.44	2.17	1.78	1.60	1.26	1.06
09	1.62	1.83	2.03	2.49	2.43	2.58	2.57	2.22	1.83	1.55	1.24	1.08
10	1.62	1.86	2.06	2.52	2.40	2.64	2.48	2.20	1.81	1.51	1.27	1.09
11	1.63	1.87	2.14	2.51	2.41	2.62	2.45	2.10	1.79	1.60	1.29	1.08
12	1.63	1.86	2.25	2.49	2.56	2.59	2.51	2.05	1.80	1.65	1.29	1.08
13	1.64	1.90	2.35	2.47	2.61	2.61	2.45	2.05	1.73	1.65	1.28	1.09
14	1.64	1.89	2.32	2.42	2.63	2.62	2.47	1.93	1.63	1.65	1.27	1.08
15	1.56	1.89	2.29	2.39	2.68	2.63	2.51	1.91	1.66	1.53	1.26	1.10
16	1.51	1.87	2.25	2.39	2.68	2.61	2.44	1.87	1.62	1.60	1.24	1.10
17	1.51	1.92	2.30	2.43	2.68	2.60	2.45	2.00	1.61	1.53	1.23	1.13
18	1.50	1.86	2.36	2.42	2.72	2.66	2.41	2.01	1.59	1.66	1.22	1.17
19	1.50	1.83	2.39	2.46	2.67	2.71	2.37	1.92	1.63	1.68	1.21	1.17
20	1.49	1.84	2.44	2.45	2.70	2.67	2.43	1.89	1.60	1.68	1.20	1.16
21	1.49	1.83	2.44	2.44	2.75	2.53	2.46	1.93	1.56	1.70	1.20	1.16
22	1.49	1.85	2.40	2.47	2.70	2.48	2.33	1.95	1.50	1.63	1.20	1.17
23	1.49	1.94	2.45	2.48	2.67	2.51	2.36	1.92	1.53	1.49	1.18	1.18
24	1.49	1.94	2.49	2.49	2.64	2.50	2.40	1.88	1.54	1.49	1.17	1.17
25	1.50	1.93	2.48	2.50	2.80	2.43	2.39	1.78	1.59	1.47	1.16	1.16
26	1.54	1.95	2.47	2.46	2.86	2.52	2.39	1.86	1.62	1.46	1.15	1.16
27	1.55	2.06	2.47	2.44	2.88	2.50	2.36	1.89	1.62	1.44	1.14	1.16
28	1.65	2.08	2.46	2.50	2.72	2.52	2.33	1.88	1.63	1.43	1.13	1.15
29	1.68	2.11	2.49	2.46		2.53	2.34	1.84	1.67	1.41	1.13	1.15
30	1.69	2.13	2.60	2.45		2.54	2.35	1.85	1.70	1.39	1.13	1.15
31	1.69		2.57	2.47		2.55		1.84		1.37	1.12	
Avg WL	1.56	1.89	2.30	2.48	2.59	2.60	2.43	2.02	1.69	1.56	1.23	1.12
Max WL	1.70	2.21	2.8	2.73	3.10	3.07	2.83	2.53	2.16	1.96	1.37	1.19
Max Day Mean	1.69	2.13	2.60	2.59	2.88	2.83	2.57	2.26	1.88	1.70	1.36	1.18

Average Lake Level for Water Year 2019: **1.96**

Stage is computed from matching datum to logger records.

Thurston County

Annual Lake Level-- Mean, Maximum, Minimum:



02/04/2020 11:51:09 AM

18c--Hicks Lake

Water Year: 2019 Lake Levels are in feet

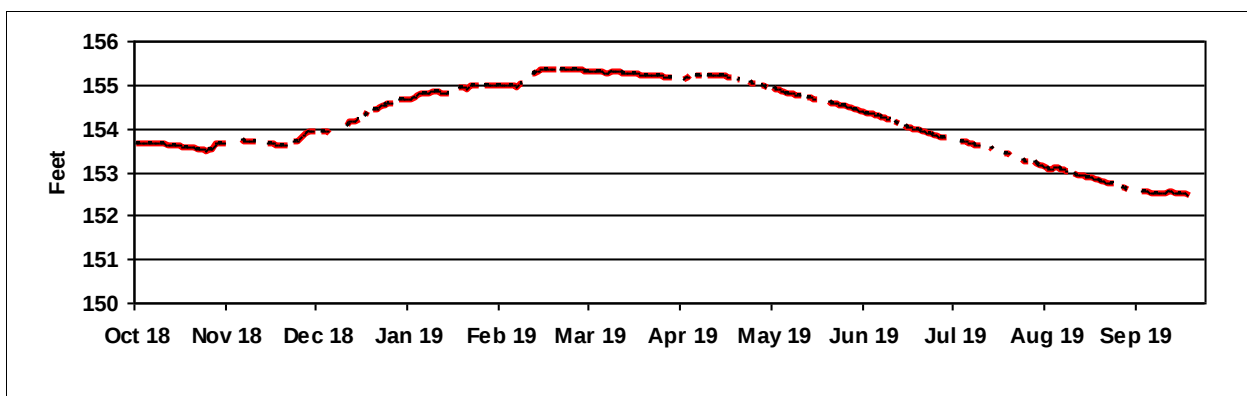
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
01	153.67	153.67	153.95	154.67	154.99	155.35	155.17		154.50	153.85	153.25	
02	153.67			154.67	155.00	155.34	155.16	154.98	154.48	153.82		152.67
03	153.66		153.94	154.69	154.99	155.33		154.97	154.45	153.81	153.23	152.65
04	153.65	153.75	153.93	154.74	155.00	155.32	155.14	154.95	154.44	153.78	153.20	152.63
05	153.65		153.93	154.77	154.99	155.31			154.41		153.17	
06	153.67	153.74	153.91	154.79	154.97	155.30	155.15	154.93	154.39		153.15	152.59
07	153.67	153.73		154.81	154.97	155.31	155.19	154.91	154.37		153.12	
08	153.67	153.73	153.90	154.81	154.95	155.31	155.20	154.89	154.35		153.09	
09	153.68	153.71		154.83	155.03	155.30		154.87	154.33	153.70	153.07	152.55
10	153.67	153.70	153.94	154.85	155.02	155.29	155.23	154.85	154.31	153.71	153.11	152.57
11	153.65	153.69		154.85		155.27	155.23	154.83	154.29	153.69	153.10	152.55
12	153.64		154.09	154.84		155.31	155.23	154.81	154.27	153.67	153.08	152.54
13	153.63	153.67	154.15	154.83	155.27	155.30		154.79	154.25	153.66	153.05	152.53
14	153.62		154.17	154.83	155.29	155.30	155.23	154.77	154.23	153.63	153.03	152.52
15	153.61	153.66	154.19	154.83	155.31	155.30	155.23	154.75	154.21	153.63	153.01	152.54
16	153.60	153.65	154.21	154.81	155.34	155.29	155.22	154.75		153.62		152.52
17	153.59	153.65			155.35	155.28	155.21		154.17		152.97	152.54
18	153.57	153.64	154.32		155.35	155.27	155.20	154.72	154.13		152.95	152.55
19	153.55	153.63	154.40	154.93	155.35	155.27	155.20	154.71		153.55	152.93	152.55
20	153.55	153.61		154.93	155.36	155.26	155.20	154.69	154.09	153.53	152.91	152.53
21	153.55	153.61	154.43	154.93	155.36	155.25	155.19	154.69	154.05		152.89	152.52
22	153.52	153.61	154.43	154.92		155.24	155.17		154.02	153.47	152.88	152.52
23	153.52		154.51	155.01	155.37	155.23		154.65	154.00		152.87	152.52
24	153.51	153.71	154.55	155.01	155.38	155.22	155.15		153.98	153.43	152.85	152.50
25	153.49	153.71	154.55	155.01	155.38	155.21	155.13	154.61	153.97	153.42	152.83	152.47
26	153.51	153.74	154.57	155.01	155.37	155.22		154.60	153.95	153.39	152.81	
27	153.53	153.85	154.57		155.35	155.21		154.59	153.93		152.78	
28	153.65	153.91	154.60	155.00	155.35	155.21	155.07	154.57	153.91	153.35	152.75	
29	153.65	153.93		154.99		155.20	155.05	154.55	153.89		152.75	
30	153.67	153.95	154.67	154.99		155.19	155.04	154.54	153.87	153.30	152.74	152.39
31	153.67		154.67	154.97		155.18		154.52		153.27		
Avg WL	153.61	153.72	154.27	154.87	155.20	155.27	155.17	154.75	154.19	153.58	152.98	152.54
Max WL	153.68	153.95	155	155.01	155.38	155.35	155.23	154.98	154.50	153.85	153.25	152.67
Max Day Mean	153.68	153.95	154.67	155.01	155.38	155.35	155.23	154.98	154.50	153.85	153.25	152.67

Average Lake Level for Water Year 2019: 154.18

Stage is computed from matching datum to logger records.

Thurston County

Annual Lake Level-- Mean, Maximum, Minimum:



02/04/2020 11:51:49 AM