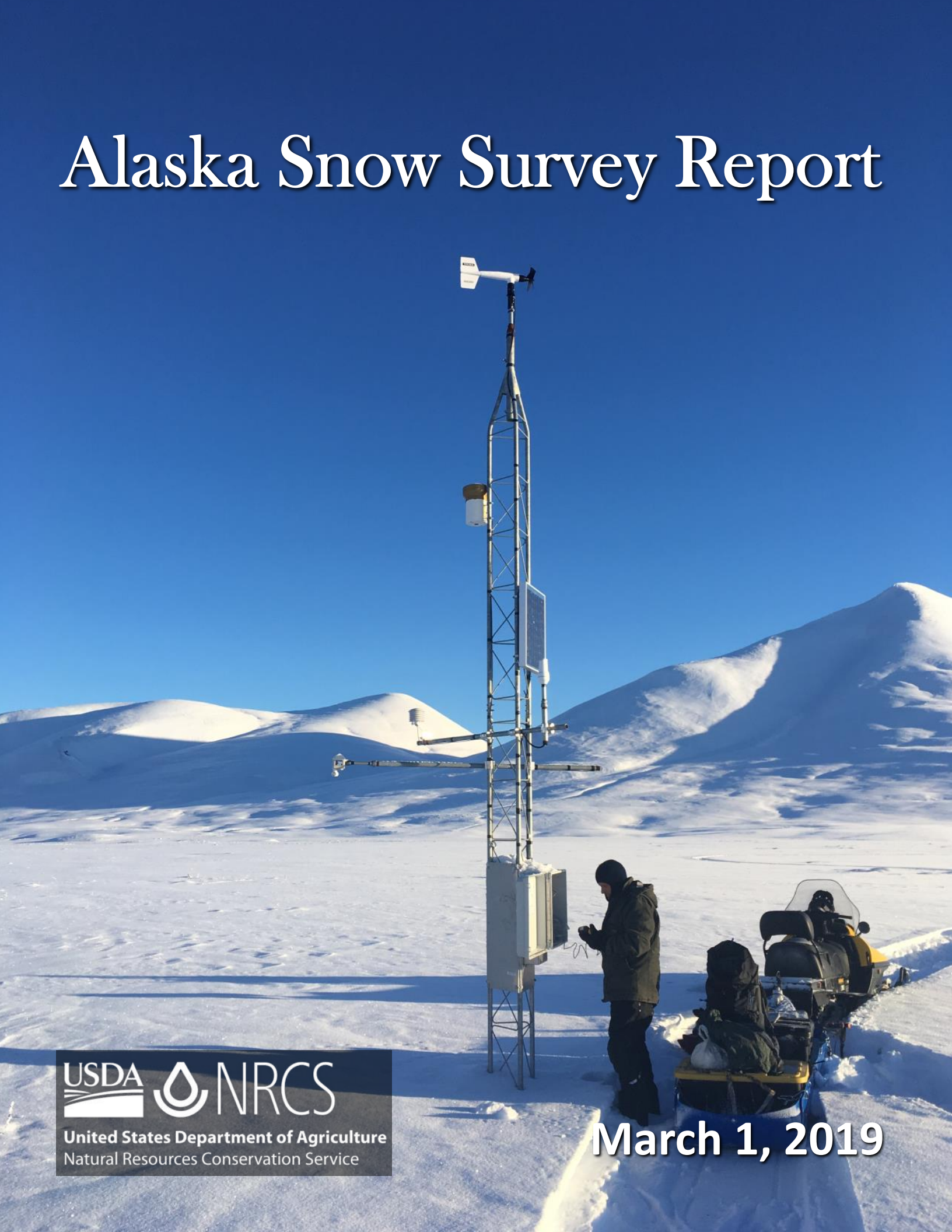
Alaska Snow Survey Report



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

March 1, 2019

The USDA Natural Resources Conservation Service cooperates with the following organizations in snow survey work:

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- Eagle School, Gateway School District

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- Ministry of the Environment
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United States Department of Agriculture

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Cover photo: NRCS Hydrologic Technician, Dan Kenney, works on Horsepasture Pass SNOLITE site in January. The site was experiencing issues broadcasting data. Horespasture Pass sits on a divide between the Copper Basin and the Susitna Basin. The Horsepasture Pass snow course was measured this month by the Alaska Department of Fish and Game, with 32 inches of snow with 7.6 inches of water content, 135% of normal.

Table of Contents

General Overview

SnowPack

Snowpack in the western half of the Alaska is flourishing, except for those regions in the south which got rain this month. Parts of the lower Yukon have deeper snow than they have experienced in many years and sites in the upper Koyukuk are near record breaking. The snowpack slacks to the east. The Yukon Flats retains near normal snowpack, but the Tanana basin is below normal with many locations their lightest since 2010 or in the case of the snowpack near Delta Junction, the lightest in 36 years of record. In Southcentral, a large mid-month storm brought the snowpack in the MatSu to near normal. Further south, the Kenai Peninsula is well below normal and western Cook Inlet has some of its deepest snowpacks since 2012. Storms brought snow to much of Southeast Alaska. Many places snowpack reached sea level and areas which were devoid of snow last month have a decent covering this month, but the region still has well below normal snowpack.

		Basin Index	
		Current	Last Year
Alaska Statewide Snowpack	**# of Sites**	**Percent of Median**	**Percent of Median**
Upper Yukon Basin	33	72	93
Central Yukon Basin	11	116	145
Tanana Basin	23	77	167
Koyukuk Basin	6	163	145
Kuskokwim Basin	—	—	—-
Copper Basin	17	89	126
Matanuska-Susitna Basin	18	95	101
Northern Cook Inlet	8	75	56
Kenai Peninsula	19	66	58
Western Gulf of Alaska	8	83	74
Southeast Alaska	7	59	60

General Overview Continued

Precipitation

February was wet for western Alaska with stations reporting 2 to four times average monthly precipitation. Precipitation in this region was distributed across the month rather than in one or two big storms. Nome received reportable precipitation on 21 days during the month, totaling 2.74" of water content, 324% of average February precipitation.

The middle Tanana basin also received above normal precipitation for the month, though not as dramatic, but in most locations in this region, snow came in two or three main storms. The six Chena Valley gauges reported an average of 145% of normal. These storms missed the upper valley, where Delta Junction and Tok areas remain dry.

Areas along the Gulf of Alaska received below normal precipitation for the month. Many sites, stretching from Southeast west to Prince William Sound and the eastern Kenai Peninsula, received less than a third of average February precipitation. However, in Southcentral Alaska, northern Cook Inlet was the beneficiary of a large mid-month storm which brought monthly totals to above average levels.

In the Arctic, precipitation was varied, with the western plains likely receiving more precipitation than the eastern half.

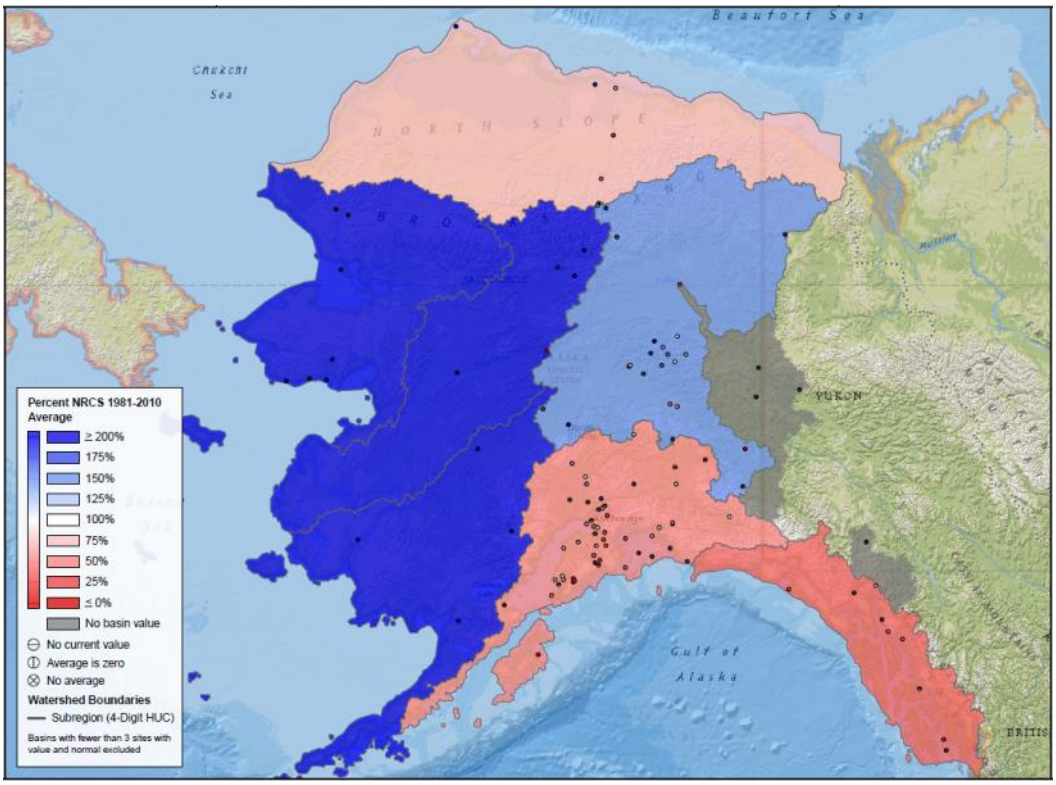
Temperature

Northern and Western Alaska experienced well above normal temperatures during February. Bethel and Nome in western Alaska were 14°F and 18°F, respectively, above normal for the month, while in the north, Bettles and Barrow were 16°F and 19°F above normal for the month. Temperatures were more varied in other parts of the state. Southeast Alaska has been near or below normal with Juneau logging a -6°F departure from normal for February. Southcentral has been mixed with slightly interior sites like Talkeetna and Gulkana just below normal (-1°F and -2°F departures) and coastal Anchorage and Homer above normal for the month (3°F and 6°F departures).

Alaska Statewide Precipitation Maps

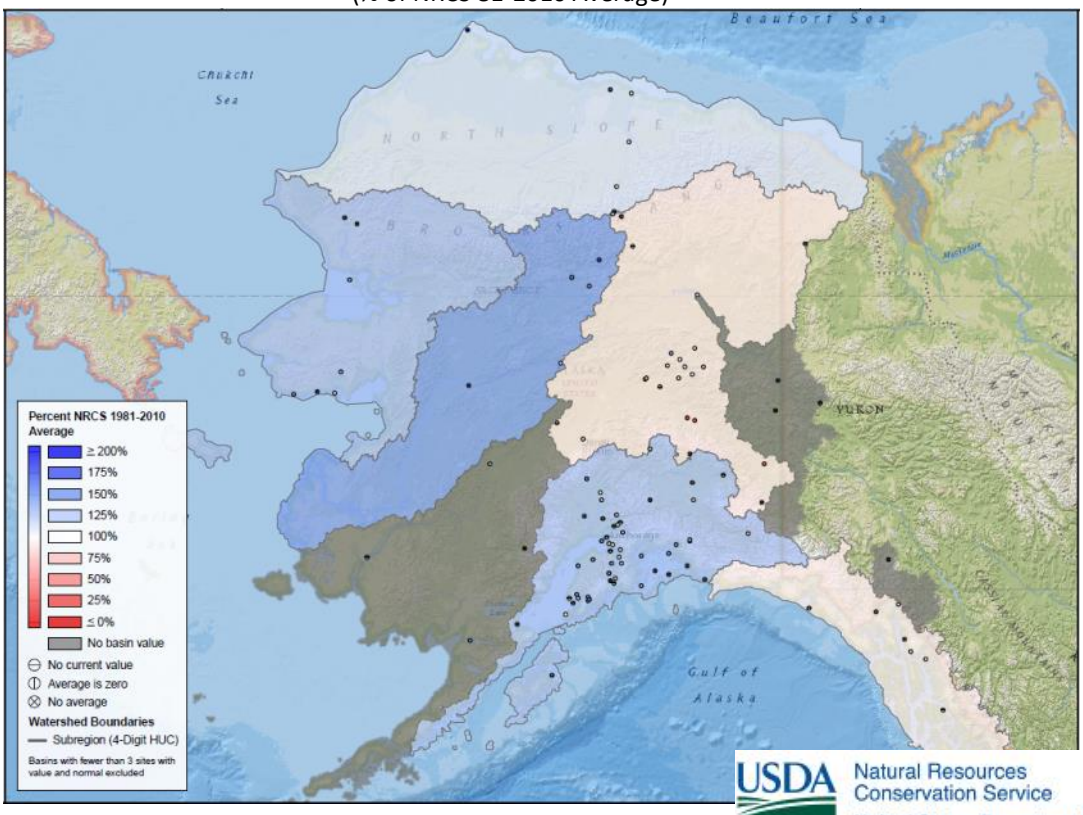
Monthly Precipitation for February, 2019

(% of NRCS 81-2010 Average)



Water Year-to-date Precipitation (Oct. 1-Feb. 28, 2018)

(% of NRCS 81-2010 Average)



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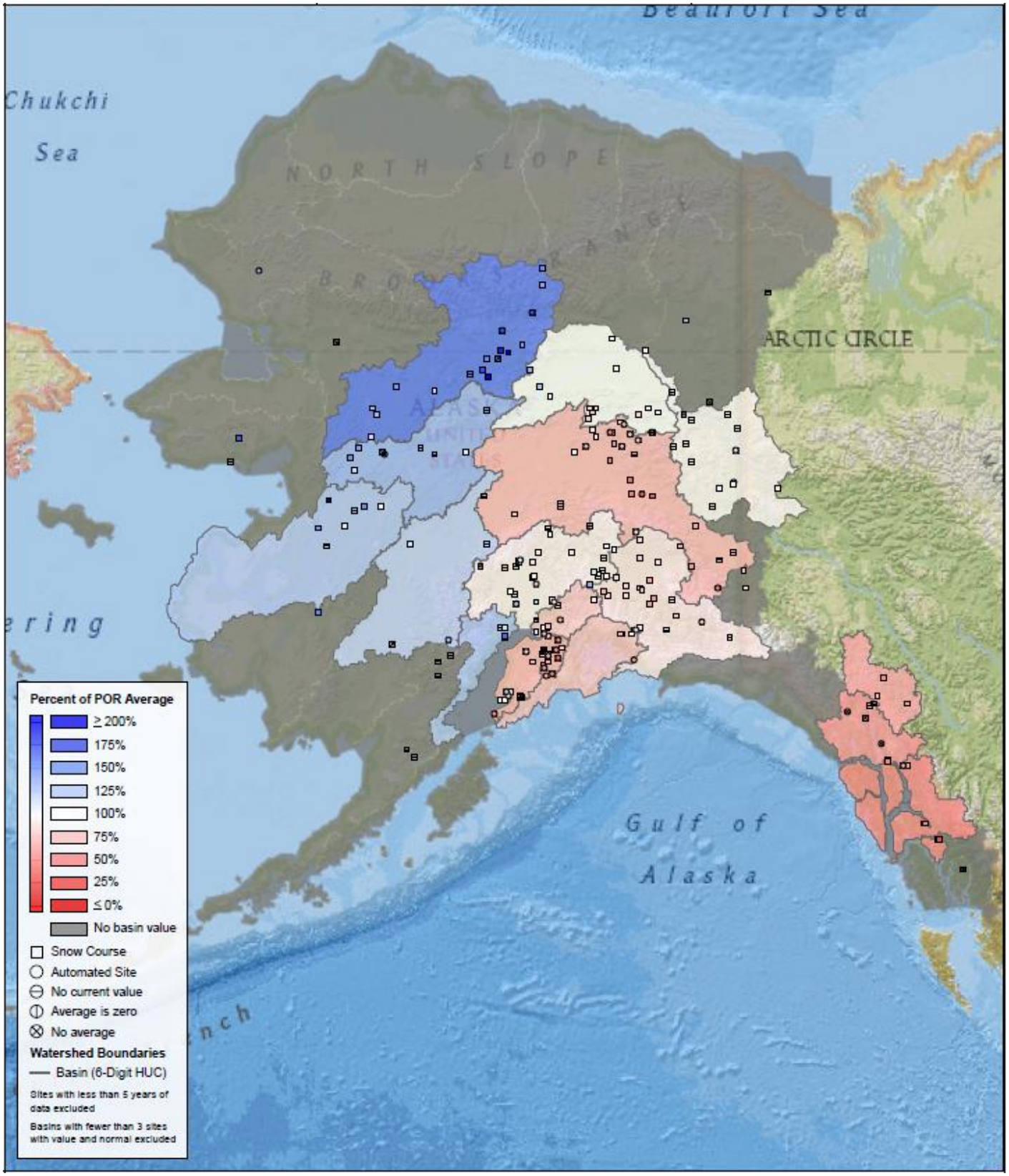
Alaska Statewide Snowpack Map

Based on March 1st, 2019 Snow Water Equivalent



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Streamflow Forecasts

FORECAST POINT*	Percent of Ave. Flow	Period
Yukon River at Eagle	87	April - July
Porcupine River nr Int'l Boundary……	115	April - July
Yukon River near Stevens Village	94	April - July
Tanana River at Fairbanks	88	April - July
Tanana River at Nenana	93	April - July
Little Chena River near Fairbanks	91	April - July
Chena River near Two Rivers	94	April - July
Salcha near Salchaket	94	April - July
Kuskokwim River at Crooked Creek	108	April - July
Sagvanirktok River near Pump Station 3	106	April - July
Kuparuk River near Deadhorse	112	April - July
Gulkana River at Sourdough	93	April - July
Little Susitna River near Palmer	101	April - July
Talkeetna River near Talkeetna	94	April - July
Ship Creek near Anchorage	72	April - July
Kenai River at Cooper Landing	85	April - July
Taiya River nr Skagway	93	April - July

Snowmelt Runoff Index (SRI): for streams which no longer have stream gauging stations

FORECAST POINT	INDEX
Koyukuk River at Hughes……..	2.2
MF Koyukuk R near Wiseman ……..	2.5
Slate Creek at Coldfoot……..	2.5
Beaver Creek above Victoria Creek……..	-1.5
Birch Creek below South Fork……..	-1.7
Caribou Creek at Chatanika……..	-1.0
Susitna River near Gold Creek……..	-0.7
Chulitna River near Talkeetna……..	-2.5
Deshka River at mouth near Willow……..	-1.2
Montana Creek at Parks Highway……..	-1.0
Willow Creek near Willow……..	-1.2
Skwentna River at Skwentna……..	-0.3
Chuitna River near Tyonek……..	1.0
Campbell Creek near Spenard……..	-1.6
Indian Creek at Indian……..	-2.5
Bird Creek at Bird Creek ……..	-2.5
Glacier Creek nr Girdwood ……..	-2.0
Six Mile Creek near Hope……..	-2.5
Resurrection Creek near Hope……..	—
Grouse Ck at Grouse Lake Outlet nr Seward ……..	-2.0
Anchor River near Anchor Point ……..	-1.0
Deep Creek near Ninilchik……..	-1.5
Ninilchik River near Ninilchik……..	-1.5
Fritz Creek near Homer……..	-1.5
Skagway River at Skagway……..	-1.5
Municipal Watershed C nr Petersburg ……..	-2.0
Gold Creek near Juneau……..	-2.2

Index	Key:
-2 to -3	much below average snowmelt runoff
-1 to -2	below average snowmelt runoff
-1 to +1	average snowmelt runoff
+1 to +2	above average snowmelt runoff
+2 to +3	much above average snowmelt runoff

HOW FORECASTS ARE MADE

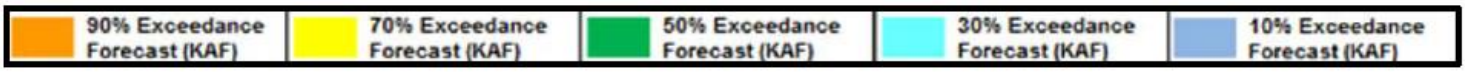
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

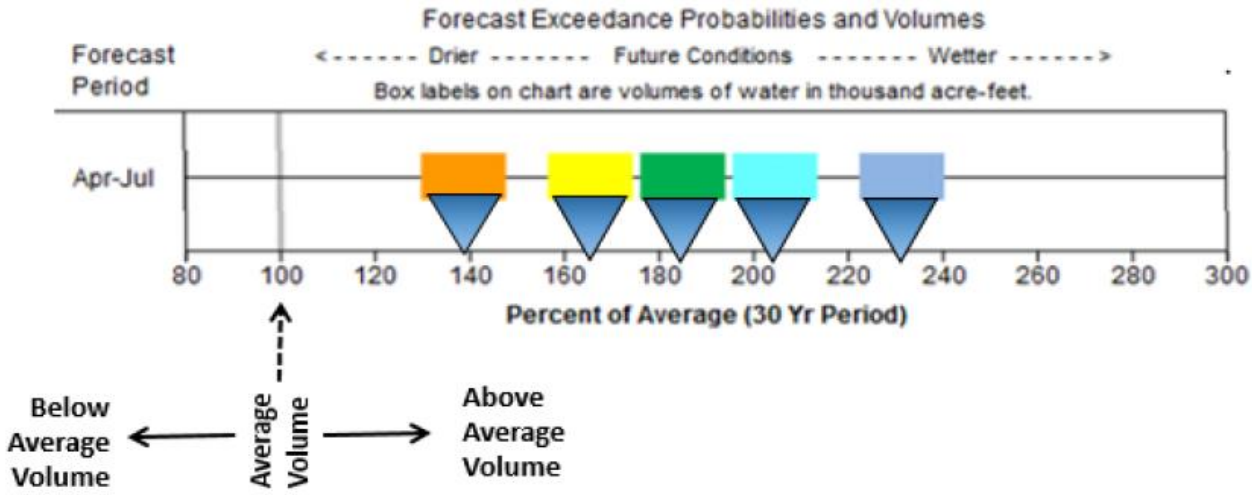
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

How to Interpret the Streamflow Forecast Graphic:

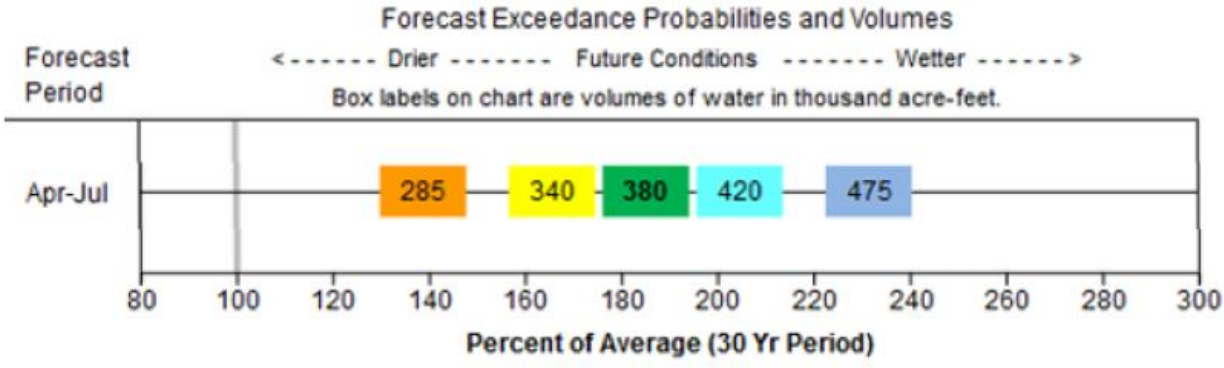
This graphic provides a visual alternative to the forecast tables the NRCS has presented for years. It gives both the volume and percent of average of each of the five forecast exceedances. The five colored boxes represent each forecast's five exceedances.



The center of each forecast exceedance box corresponds to that exceedance's percent of average on the horizontal axis. In this case the green 50% exceedance forecast box is centered over 185% of average streamflow. If drier future conditions occur the orange box (90% exceedance) is 139% of average. If wetter future conditions occur the darker blue box (10% exceedance) is 232% of average. In some cases when exceedance volumes are similar, the width of the colored boxes gets squeezed. Still use the center of the box to determine its percent of average. The width of the box is irrelevant.

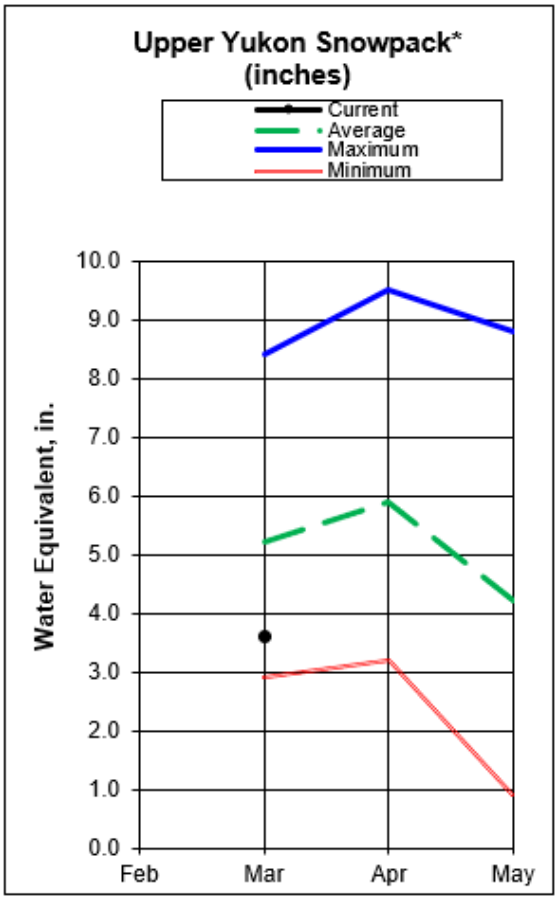


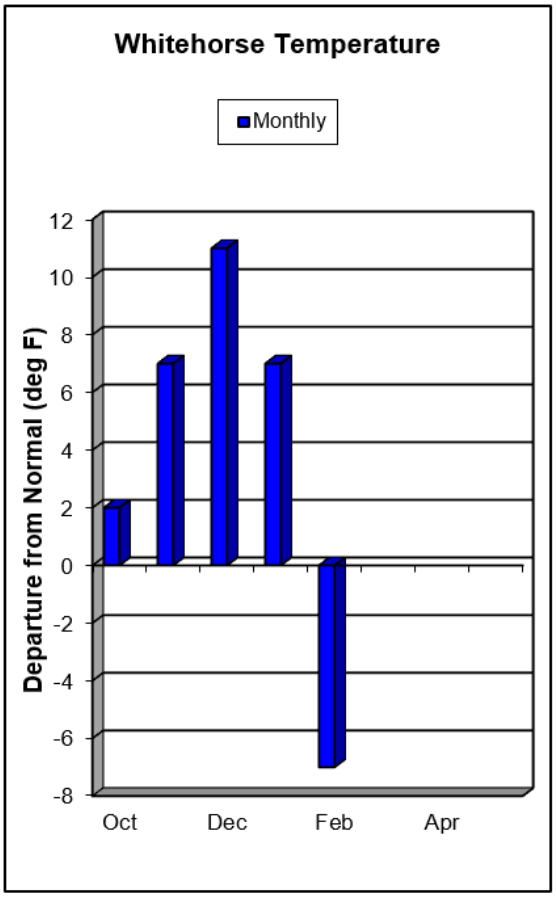
Boxes to the right of the gray 100% of average line represent above average volumes. Conversely, any boxes to the left of the gray 100% line represent below average volumes. In this case all forecast exceedances are for above average April-July volumes. Averages are based on the 1981-2010 period. The number inside or above each colored box represents the volume of that exceedance forecast in thousand acre-feet (KAF). In this case the green 50% exceedance forecast volume is 380 KAF which is centered above 185% of average. Volumes decrease with drier future conditions (left of green box) and increase with wetter conditions (right of green box).



Forecast graphics for other basins are available at: https://www.wcc.nrcs.usda.gov/wsf/Fcst_Chart/
This is an new product. Please submit likes, dislikes and questions to Daniel.Fisher@ak.usda.gov

Upper Yukon Basin





Snowpack

Snowpack in the Upper Yukon Basin is both below normal and less than last year at this time. The 33 index sites average 72% of median snowpack, compared to 93% last year. The snowpack near Dawson is closest to normal, with the three sites there averaging 89% of normal. The snowpack dwindles to the south, where the White River Basin only has 68% of normal snowpack. The snowpack upstream from Whitehorse is only 60% of normal. The Stewart and Pelly Basins are near 80% of normal and are very similar to last year.

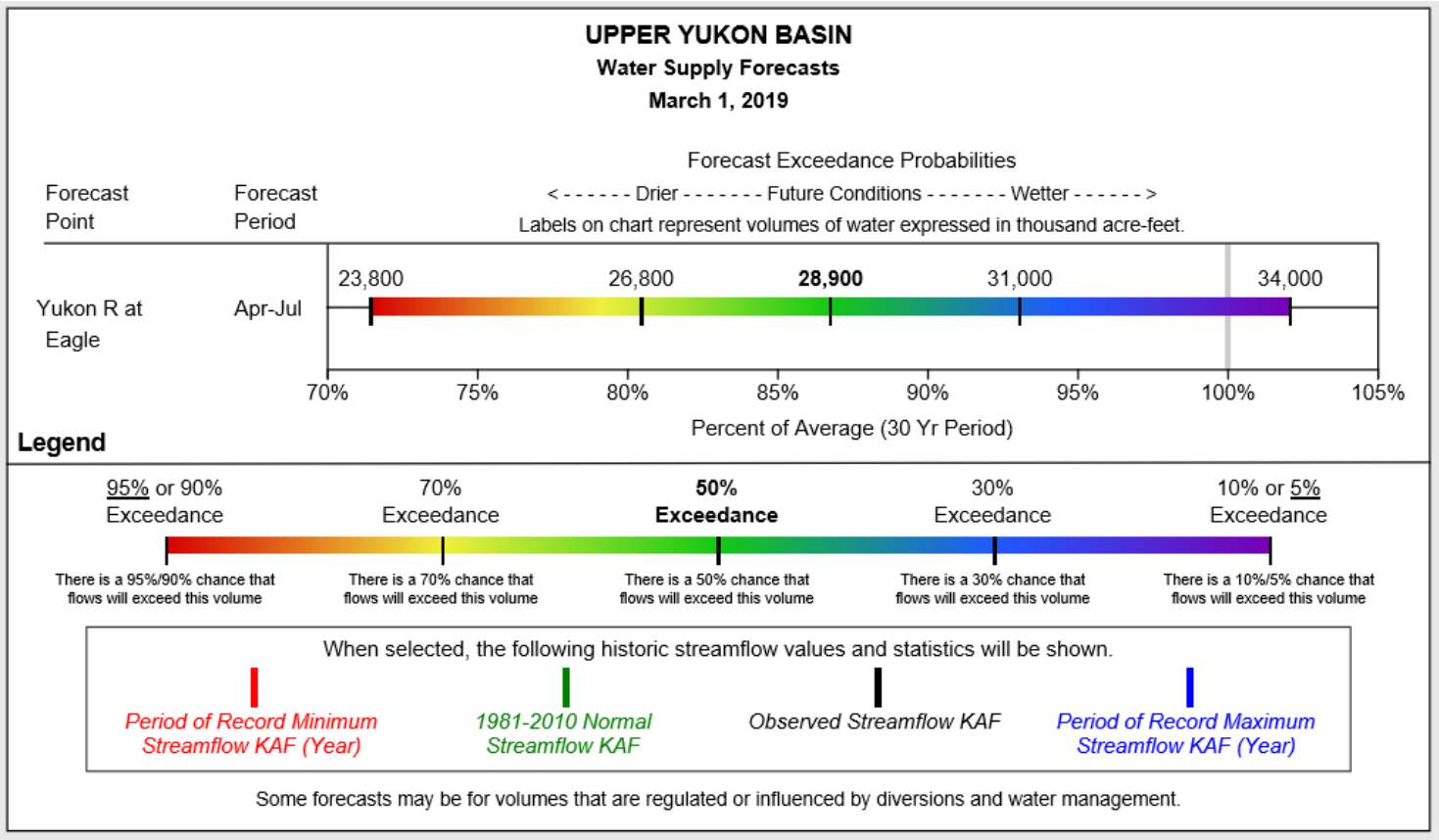
Upper Yukon Basin

Snowpack Data

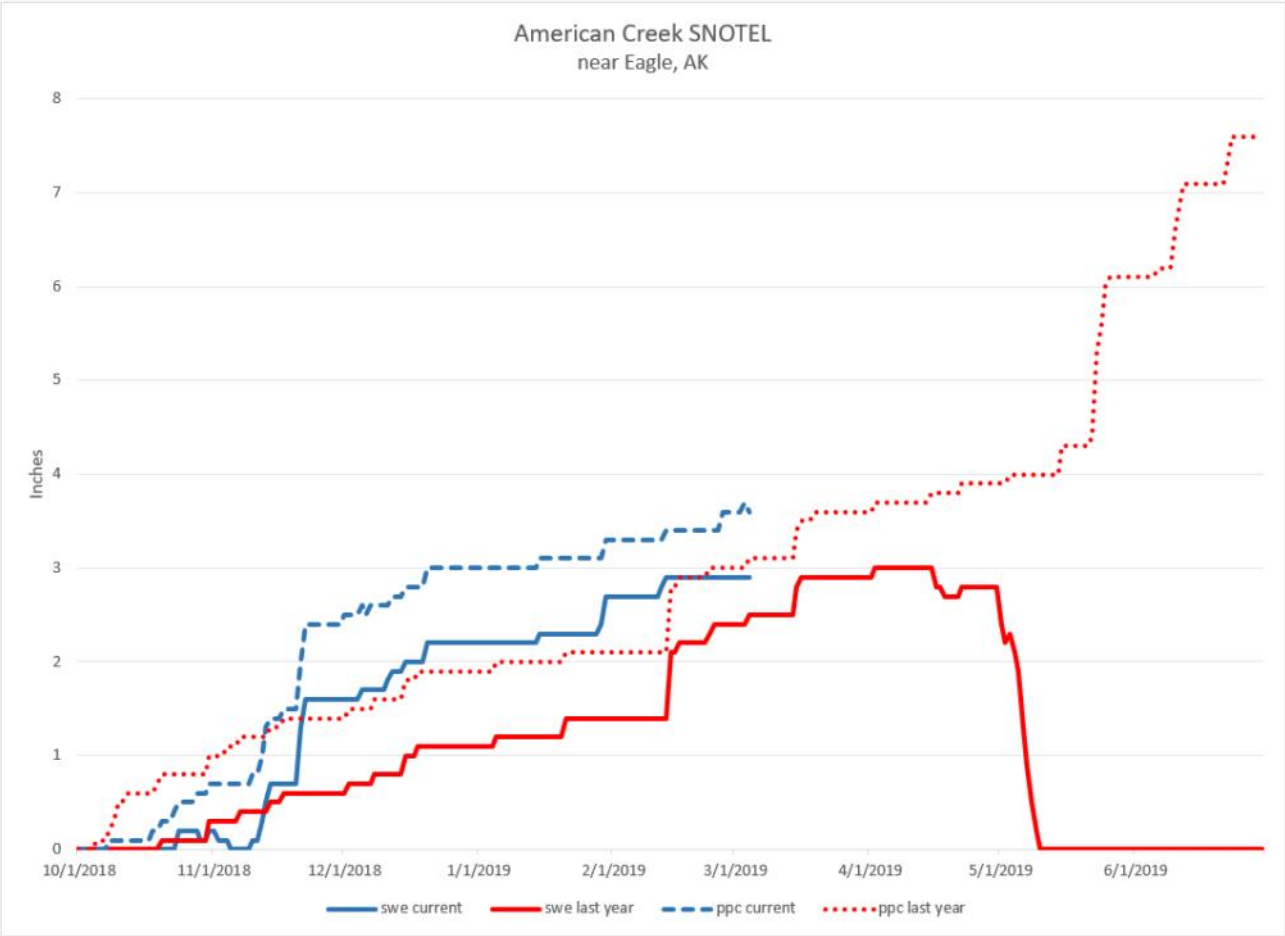
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Atlin	2395	14	15	20	2.6	2.8	4.4
Beaver Creek	2150	16	22	16	2.2*	3.9	2.4
Blackstone River	1020	20	26	---	3.3	4.1	---
Burns Lake	3650	35	33	33	7.7	6.0	7.4
Burwash Airstrip	2660	8	11	10	1.3	1.8	1.7
Calumet	4300	25	33	34	5.1	5.6	6.8
Canyon Mine	1160	10	19	---	1.5	3.2	---
Casino Creek	3495	19	31	24	2.6	5.1	4.0
Chair Mountain	3500	19	30	20	2.8	5.1	3.0
Eagle Plains	2330	34	36	28	7.6	8.8	5.6
Eagle River	1115	32	37	25	5.7	6.4	4.1
Edwards Lake	2720	21	24	30	3.4	4.0	5.4
Finlayson Airstrip	3240	21	25	20	3.9	4.1	3.6
Francis River	730	25	27	---	4.6	4.1	---
Fuller Lake	3695	31	28	31	5.8	4.6	6.7
Grizzly Creek	3200	29	29	28	5.4	4.6	5.9
Hoole River	3400	21	30	24	3.3	4.8	4.6
Hyland	855	29	30	---	6.1	5.2	---
Jordan Lake	3050	21	23	24	3.2	4.1	4.8
King Solomon Dome	3540	24	30	29	4.6	5.5	5.6
Log Cabin (B.C.)	2900	36	37	48	9.1	9.7	13.3
Macintosh	3805	14	26	19	1.8	4.2	3.3
Mayo Airport	1770	16	16	20	2.7	2.5	3.8
Meadow Creek	4050	30	37	40	4.7	8.2	9.4
Midnight Dome	2805	26	29	26	4.7	5.9	5.0
Montana Mtn.	3350	16	25	24	2.8	5.7	5.2
Morley Lake	2700	20	24	24	3.2	4.6	5.1
Mt. Berdoe	3395	15	22	22	2.2	3.4	3.8
Mt. Mcintyre B	3600	20	32	26	3.8	5.9	5.2
Mt. Nansen	3350	11	18	17	1.5	2.8	2.6
Ogilvie River	550	24	21	---	4.2	3.4	---
Pelly Farm	1550	10	17	16	1.4*	2.7	2.8
Pine Lake Airstrip	995	30	33	---	5.7	6.2	---
Plata Airstrip	2725	26	28	30	5.1	5.2	6.2
Rackla Lake	3410	29	25	31	5.4	3.9	6.4
Riffs Ridge	2130	29	28	28	5.6	5.7	4.7
Rose Creek (Faro)	1080	20	25	---	2.9	4.1	---
Russell Lake	3480	31	37	35	5.7	6.9	7.0
Satasha Lake	3630	12	19	18	1.8	3.1	3.1
Summit	985	25	26	34	5.8	5.7	9.2
Tagish	3540	18	31	25	2.8	6.4	5.1
Twin Creeks	2950	25	27	30	4.4	4.6	6.3
Watson Lake Airport	685	21	31	---	3.5	4.7	---
Whitehorse Airport	2300	11	26	19	1.6	4.2	3.6
Williams Creek	3000	13	20	18	1.9	3.0	3.1
Withers Lake	3200	29	33	34	5.7	6.3	7.4

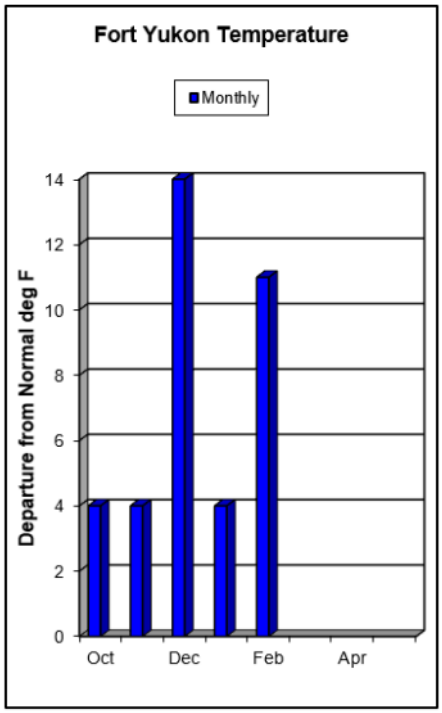
**Estimate*

Streamflow Forecasts



Central Yukon Basin





Snowpack

The measured snowpack in the Central Yukon Basin remains near normal. Stations on the western side of the basin, along the Dalton Highway, measured above normal, near 130% of median. Sites in the Yukon Flats and in the Forty Mile country range from slightly low to slightly above normal.

Central Yukon Basin

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
American Creek	1050	17	17	---	2.9	2.4	---
Atigun Pass	4800	41	53	---	---	---	---
Borealis	1330	19	34	23	3.6	6.4	4.0
Boundary	3500	23	---	22	4.5	---	4.3
Chicken Airstrip	1650	16	---	16	2.9	---	2.8
Circle Hot Springs	860	21	---	22	3.6	---	3.6
Eagle Summit	3650	7	20	---	---	---	---
Fort Yukon	430	20	22	---	---	---	---
Fort Yukon	430	19	19	18	2.9	2.8	3.0
Fossil	1400	18	37	22	3.4	7.0	3.8
Graphite Lake	600	23	---	---	3.9*	---	---
Hess Creek	1000	25	20	24	5.0	4.6	4.5
Jack Wade Jct	3585	25	24	---	3.9	4.0	---
Lost Chicken Hill	2150	17	---	18	3.4	---	3.1
Lower Beaver Creek	400	26	---	---	4.7*	---	---
Ptarmigan Creek	2270	20	35	23	3.4	5.8	3.6
Seven Mile	600	27	22	26	6.0	4.6	4.6
Stack Pup Creek	1620	22	---	23	3.5		3.7
Thirty Mile	1350	38	37	34	9.6	9.6	7.0
Upper Nome Creek	2520	25	51	---	---	---	---
Vunzik Lake	500	21	---	---	3.6*	---	---
Windy Gap	1900	23	46	24	4.6	10.3	4.8
Wolf	1200	21	32	21	3.5	6.0	3.6

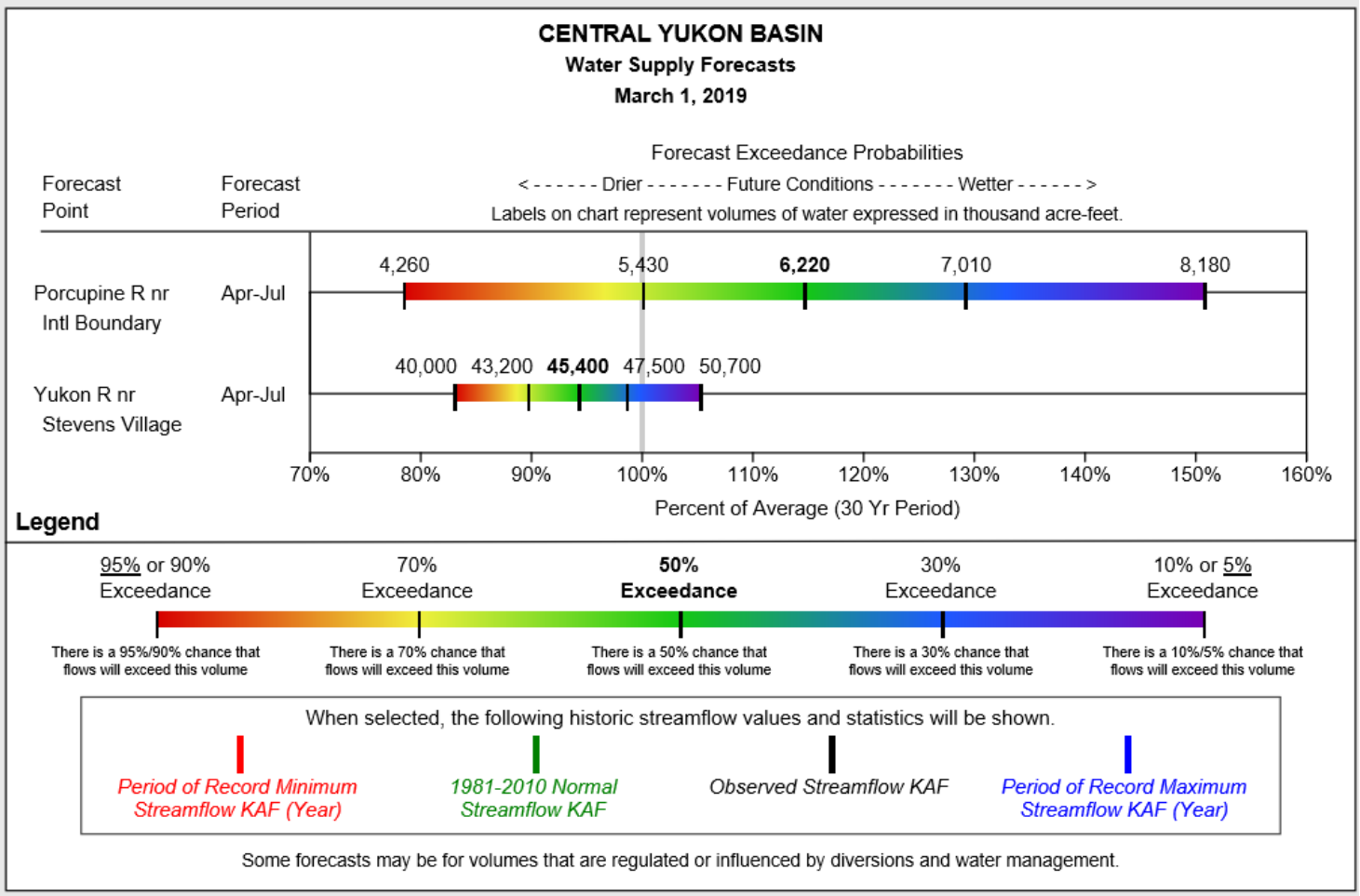
**Estimate*

Precipitation

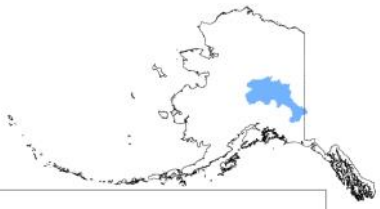
Inches Accumulated since October 1st

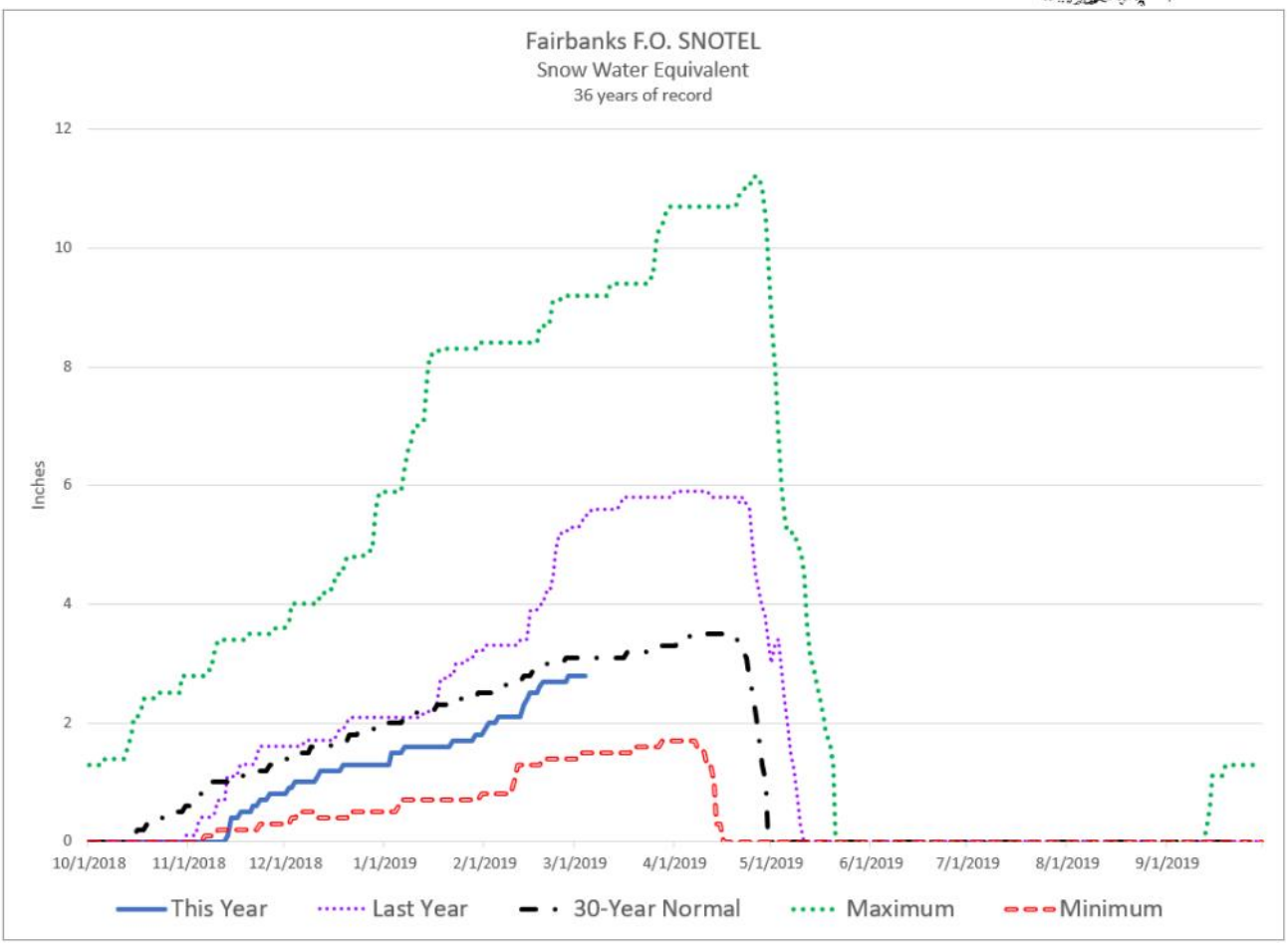
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
American Creek	1050	3.7	3.0	---	---
Atigun Pass	4800	5.3	5.6	4.8	110%
Chandalar Camp	3300	5.6	3.6	3.9	144%
Eagle Summit	3650	4.4	7.9	4.7	94%
Fort Yukon	430	3.5	3.2	3.1	113%
Jack Wade Jct	3585	4.2	4.0	---	---
Upper Nome Creek	2520	6.0	10.7	4.3	140%

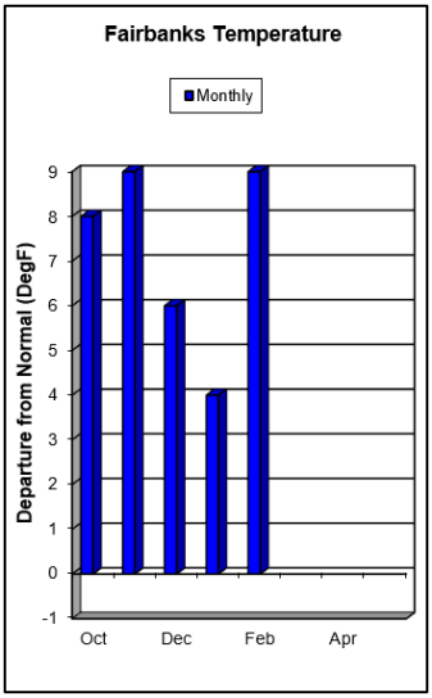
Streamflow Forecasts



Tanana Basin







Snowpack

The snowpack in the Tanana Valley remains below normal, with only the snowpack in the Chatanika Valley near normal. The Chena Basin received above normal precipitation during February, but afterwards the basin's 7 sites still only average 87% of normal snowpack. Like last month, the snowpack near Tok and Delta Junction is less than half of normal with both Granite Creek SNOTEL and the Gerstle River sites bringing new 31 and 36-year record lows.

Tanana Basin

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Bonanza Creek	1150	20	36	20	4.1	8.0	3.9
Caribou Creek	1250	19	30	20	3.8	6.4	3.6
Caribou Snow Pillow	900	19	31	21	3.8	6.8	3.6
Chisana	3320	10	22	---	1.7	4.5	4.1
Cleary Summit	2230	28	51	26	5.0	10.2	4.6
Colorado Creek	700	17	40	20	2.4	7.4	3.4
Fairbanks F.O.	450	15	---	---	2.8	5.3	3.1
Faith Creek	1750	22	41	24	3.9	7.7	4.2
Fielding Lake SNOTEL	3000	30	40	---	6.8	9.0	---
Fielding Lake	3000	32	48	37	6.9	9.9	8.6
Fort Greely	1500	10	20	17	1.4	3.2	3.0
French Creek	1800	16	53	24	2.7	10.7	4.6
Gerstle River	1200	8	23	18	1.0	3.6	2.9
Granite Crk	1240	7	19	---	1.4	3.7	3.5
Kantishna	1550	19	40	24	3.4*	7.8*	4.4
Lost Creek	3030	11	28	17	1.7	4.5	3.0
Mentasta Pass	2430	19	34	24	3.4	5.4	5.1
Monument Creek	1850	19	42	---	4.0	8.6	4.0
Mt. Ryan	2800	26	39	---	3.7	9.1	4.4
Munson Ridge	3100	25	63	---	5.4	14.2	5.9
Shaw Creek Flats	980	8	25	14	1.2	4.0	2.5
Teuchet Creek	1640	16	29	---	3.0	6.4	3.3
Tok Junction	1650	15	14	18	2.1	1.6	3.0

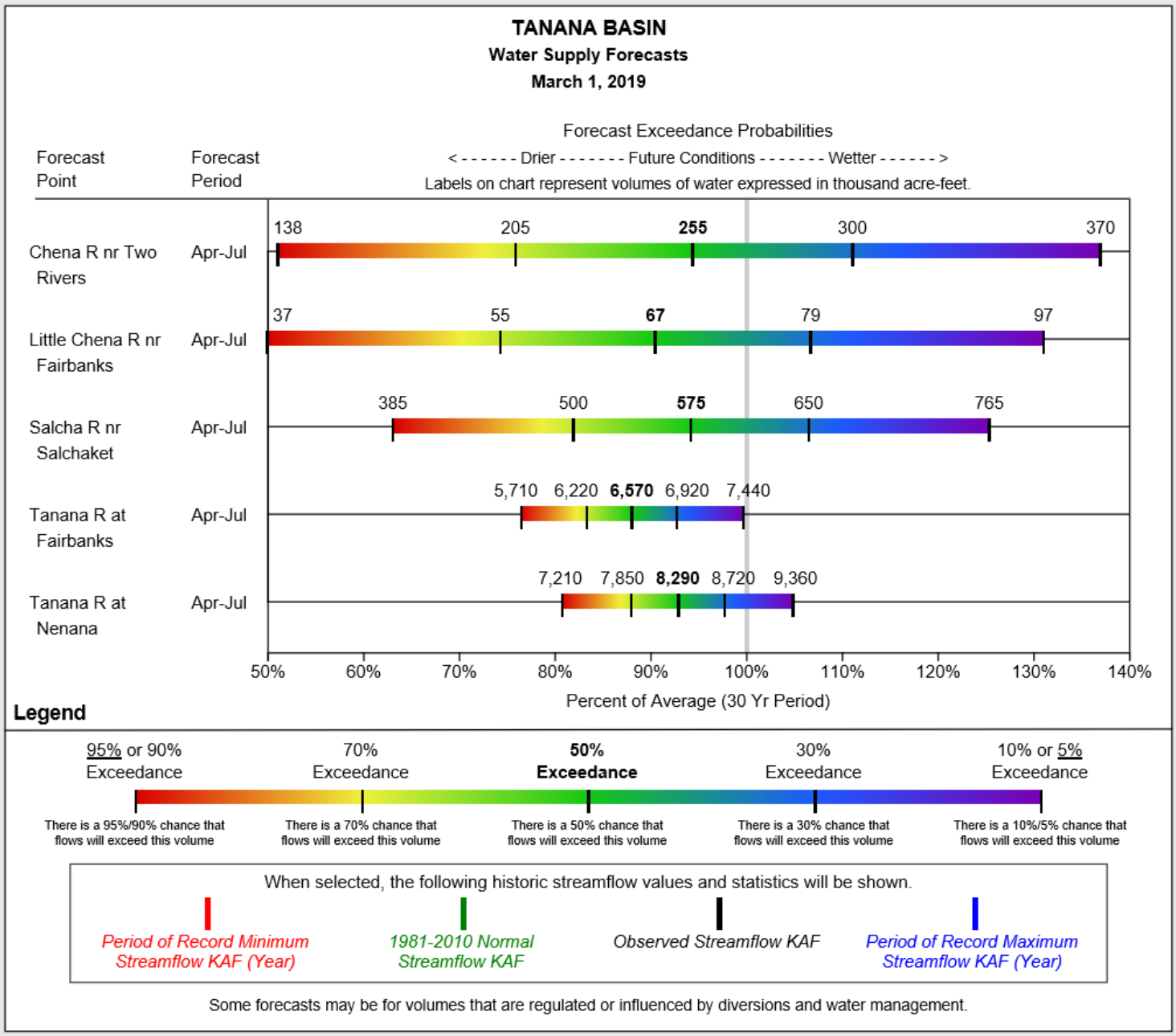
**Estimate*

Precipitation

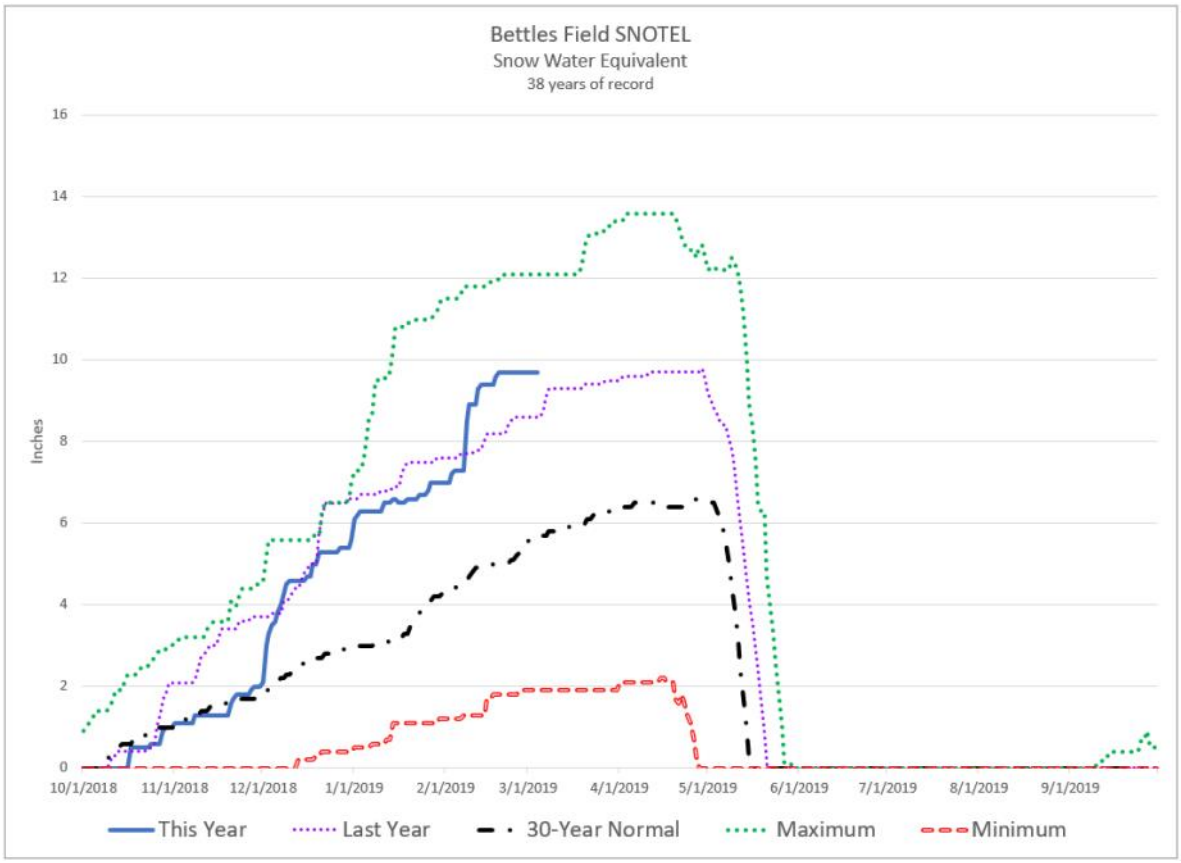
Inches Accumulated since October 1st

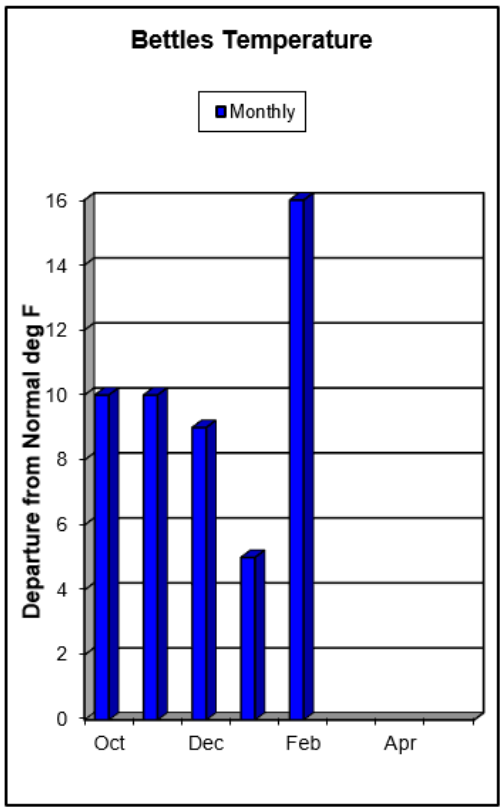
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Chisana	3320	2.0	5.1	---	---
Fairbanks F.O.	450	2.8	7.4	4.0	70%
Granite Crk	1240	1.6	4.2	3.6	44%
Kantishna	1550	4.2	11.9	3.8	111%
Little Chena Ridge	2000	4.3	8.0	4.8	90%
Nenana	415	3.8	5.3	---	---
Tok	1630	2.2	2.7	---	---
Upper Chena	2850	5.3	13.0	5.9	90%

Streamflow Forecasts



Western Interior Basins





Snowpack

Koyukuk

The upper Koyukuk keeps winning the snow lottery. Coldfoot SNOTEL now has its wettest March 1st snowpack in its 25-year history and Bettles has its deepest March snowpack since 1993. All measurement sites in this basin are above normal.

Kuskokwim

The Kuskokwim basin has above normal snowpack over most of the basin. Telaquana Lake SNOTEL has 22" of snow depth and 5.7" of water content. It's the same depth as last year, but with greater water content. In the lower Kuskokwim, Bethel received 5 times the normal February precipitation, but much of it came as rain.

Lower Yukon

The Lower Yukon has above normal snowpack. The new Galena AK SNOTEL site has 22" of snow with 5.0" of water content. Further down the river, Yankee Slough Aerial Marker, with 20 years of record, was read at an all-time high of 51 inches.

Western Interior Basins

Snowpack Data

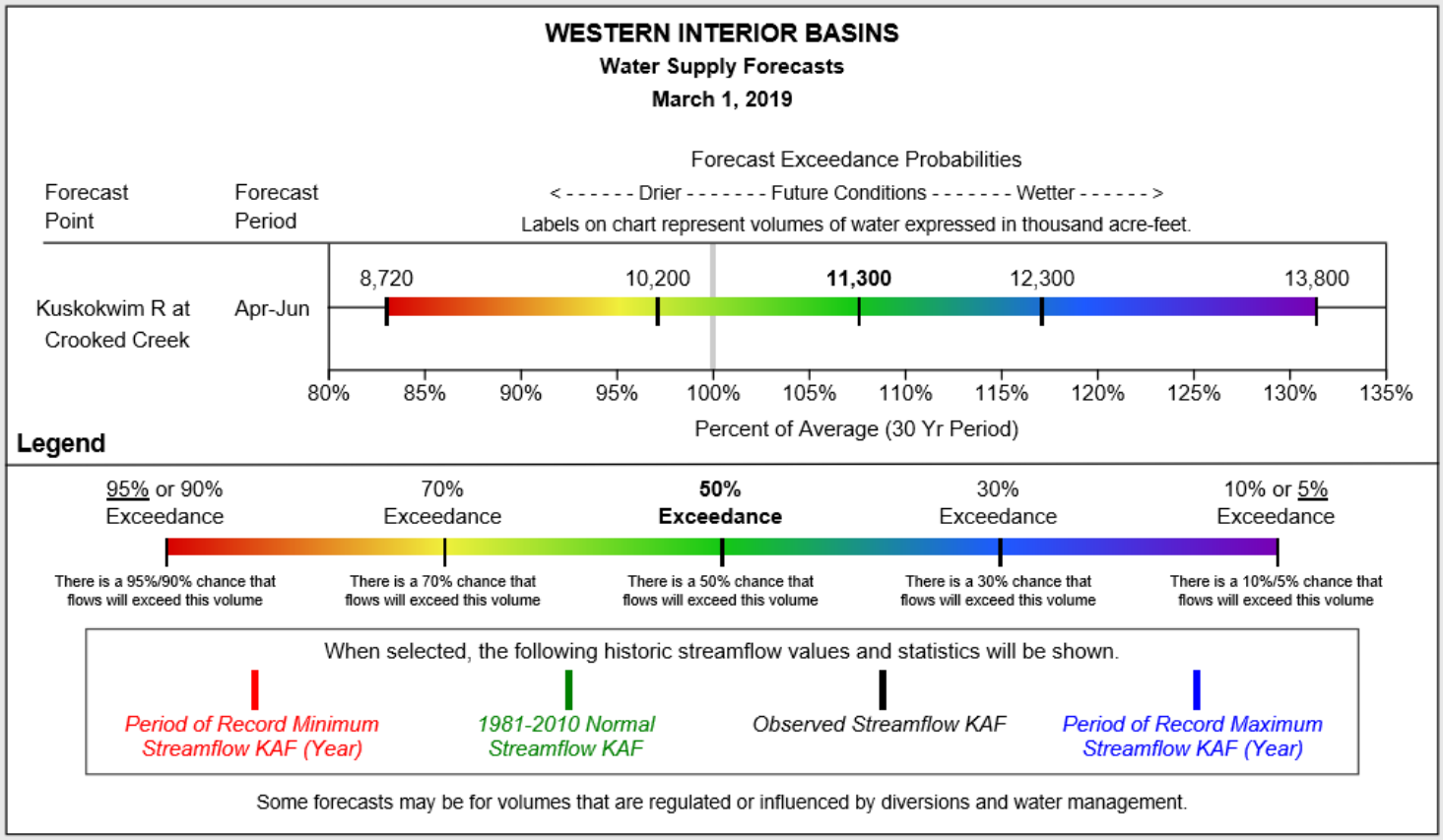
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Koyukuk							
Bettles Field	640	40	32	---	9.7	8.6	5.6
Bonanza Forks	1200	32	30	---	7.4	6.6	4.8
Cloverleaf	170	30	32	---	6.9*	6.8	---
Coldfoot	1040	42	34	---	9.5	7.5	5.3
Colville Bend	170	30	33	---	6.9*	5.9	---
Disaster Creek	1550	28	22	22	5.2	4.8	3.2
East Chalatna	430	35	33	---	8.1*	7.4	---
Gobblers Knob	2030	20	10	---	---	---	---
Huggins Creek	290	31	39	---	6.5*	8.1	---
Jr Slough	160	27	32	---	6.1*	6.6	---
Kaldoyeit	750	44	46	20	10.5*	9.9	3.7
Kanuti Chalatna	670	35	45	28	8.4*	9.7	5.2
Kanuti Kilolitna	550	48*	26	21	11.0*	6.4	4.0
Minnkokut	580	50	48	32	11.8*	10.7	5.7
Nolitna	560	39	47	28	9.4*	10.4	5.0
Table Mountain	2200	30	23	21	6.1	5.2	3.3
Treat Island	190	31	36	---	6.7*	8.2	---
Kuskokwim							
Aniak	80	16	23	---	5.1*	5.7*	---
Mcgrath	340	32	25	27	6.4*	4.4*	5.4
Telaquana Lake	1550	23	---	22	4.7	---	4.4
Telaquana Lake SNOTEL	1275	22	22	---	5.7	5.3	---
Lower Yukon							
Bullfrog	100	42	42	---	9.4*	9.6	---
Hozatka Lake	206	22	21	---	4.1*	3.6*	---
Little Mud River	855	20	24	---	4.3*	4.4	---
Middle Innoko	150	33	---	32	7.4*	---	6.5
Ninemile Island	140	43	36	---	9.2*	7.7	---
Pike Trap Lake	130	12	18	---	3.4*	3.9	---
Squirrel Creek	150	42	36	---	9.4*	7.7	---
Upper Innoko	180	31	36	33	6.8*	7.5	7.2
Wapoo Hills	220	49	45	33	11.3*	10.0	6.8
Yankee Slough	100	51	42	38	11.9*	9.1	8.4

**Estimate*

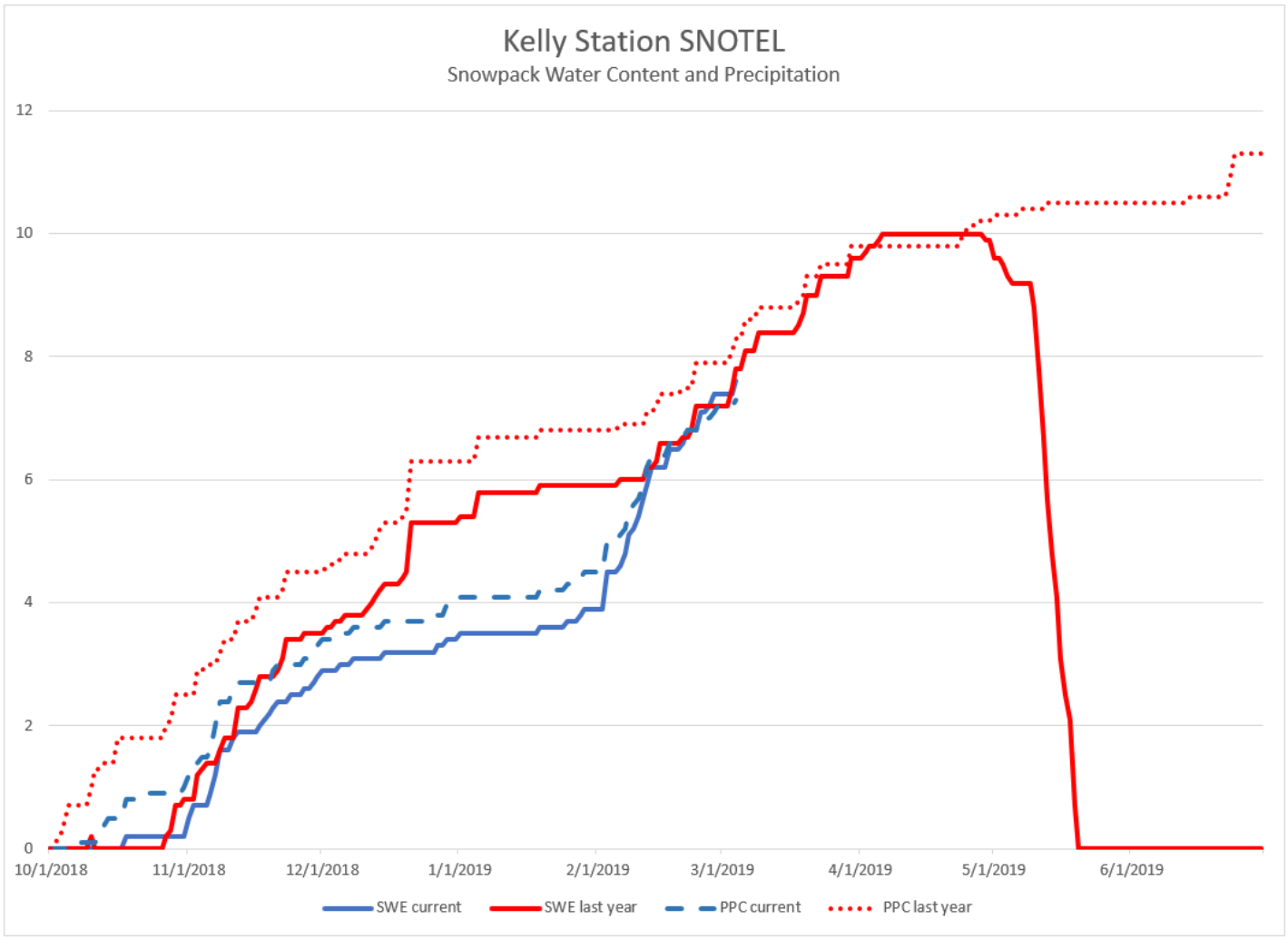
Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Koyukuk					
Bettles Field	640	8.6	7.8	5.8	148%
Coldfoot	1040	10.0	6.8	5.7	175%
Gobblers Knob	2030	8.3	8.1	6.1	136%
Kuskokwim					
Aniak	80	7.6	10.3	---	---
Telaquana Lake	1275	6.3	9.7	---	---
Lower Yukon					
Hozatka Lake	206	4.9	6.6	---	---

Streamflow Forecasts



Arctic and Kotzebue Sound



Snowpack

Arctic

The Arctic had moderate amounts of precipitation this month. It is likely that the storms which dumped snow on northwest Alaska also contributed snow to the western plains.

Kotzebue

Northwest Alaska had much above normal precipitation during February. Kelly Station SNOTEL, with 31" of snow and 7.4" of water content, has similar snow depth as the last two years, but more water content. It is its highest March 1st snow water content since the site was revitalized in 2011.

Arctic and Kotzebue Sound

Snowpack Data

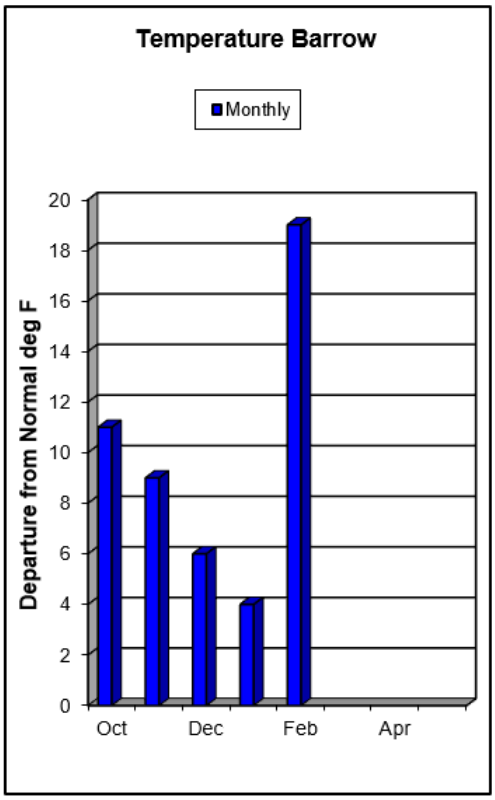
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Atigun Pass	4800	41	53	---	---	---	---
Imnaviat Creek	3050	14	35	---	---	---	---
Kelly Station	310	31	31	---	7.4	7.2	---
Prudhoe Bay	30	10	19	---	---	---	---
Sagwon	1000	22	14	---	---	---	---

**Estimate*

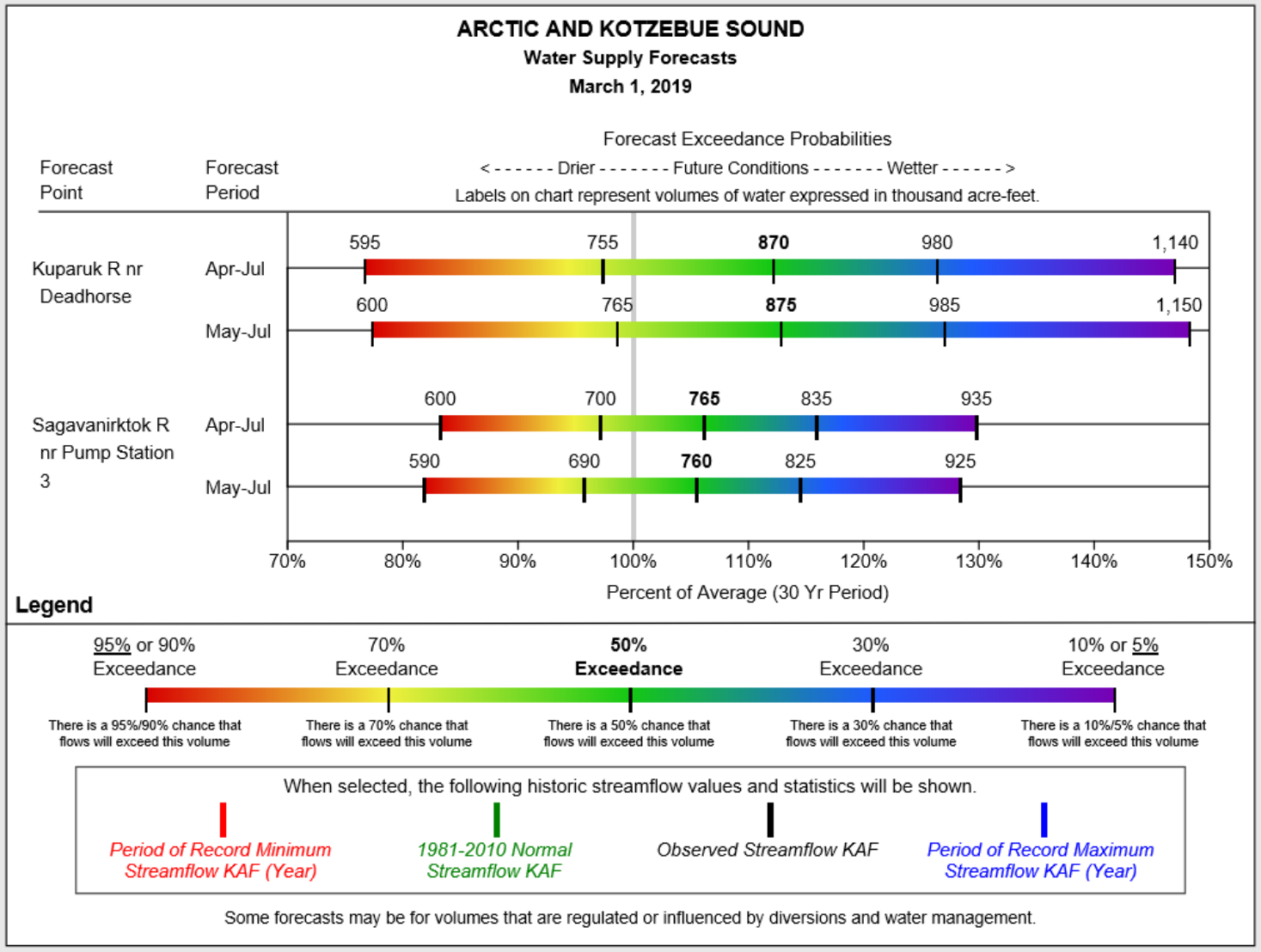
Precipitation

Inches Accumulated since October 1st

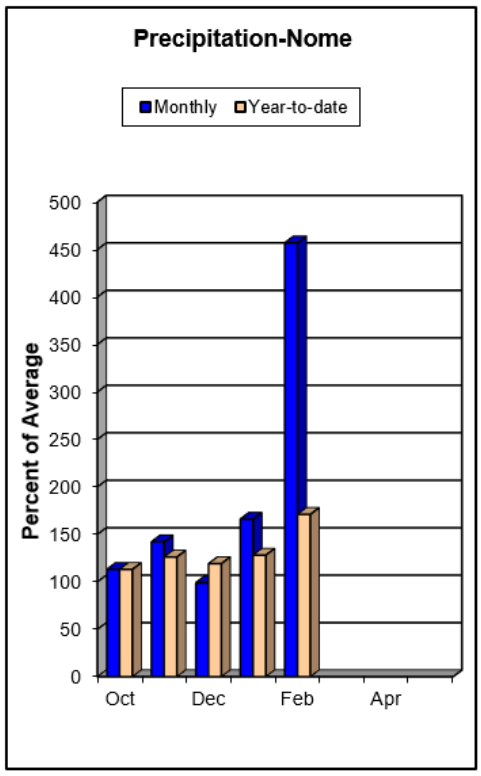
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Arctic					
Atigun Camp	3400	2.7	2.0	2.1	129%
Atigun Pass	4800	5.3	5.6	4.8	110%
Imnaviat Creek	3050	2.4	3.9	2.6	92%
Prudhoe Bay	30	2.5	3.8	2.6	96%
Sagwon	1000	2.5	3.2	2.6	96%
Kotzebue Sound					
Port Red Dog	50	5.1	5.7	3.1	162%
Red Dog Mine	950	7.9	6.0	3.9	203%
Kelly Station	310	7.2	7.9	---	---

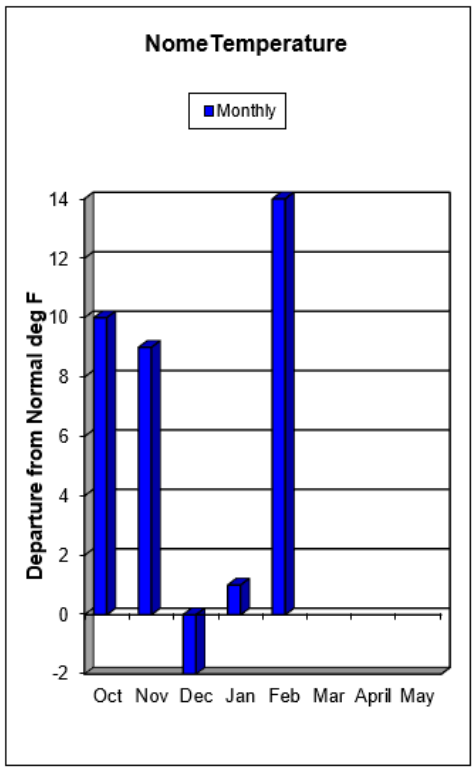


Streamflow Forecasts



Norton Sound/Y-K Delta/Bristol Bay





Snowpack

Southwest Alaska had much above normal precipitation for February, anywhere between 2 and 5 times the average amount. Precipitation was distributed across the whole month. This precipitation came as rain in much of Southwest, but mainly as snow further north. Nome recorded snowfall on 21 days in February.

Precipitation

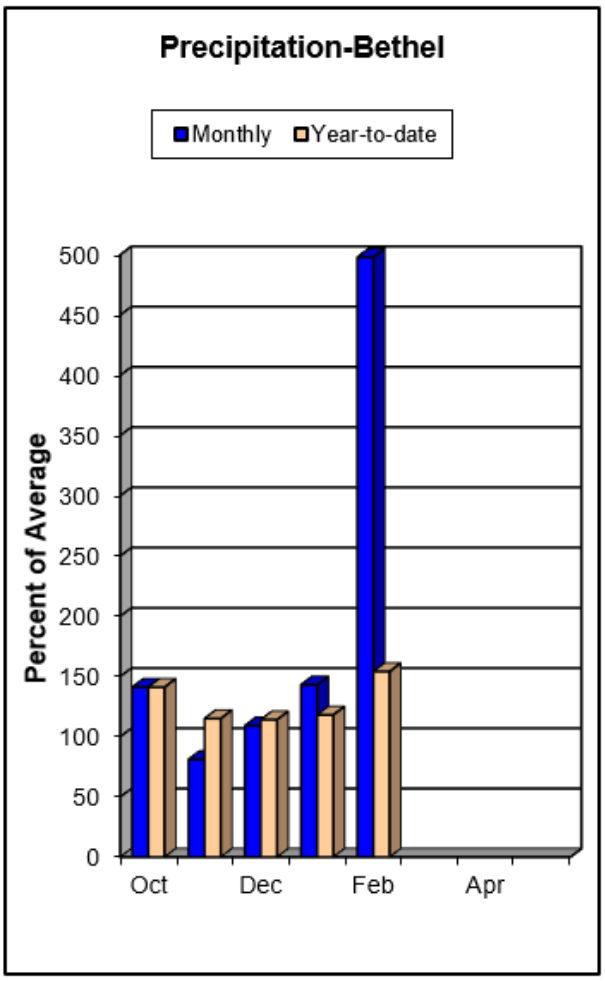
		Inches Accumulated since October 1st			
Site Name	**Elev.**	**This Year**	**Last Year**	**1981-2010 Normal**	**% of Normal**
Norton Sound					
Pargon Creek	100	6.7	7.2	5.1	131%
Rocky Point	250	5.5	6.4	4.8	115%

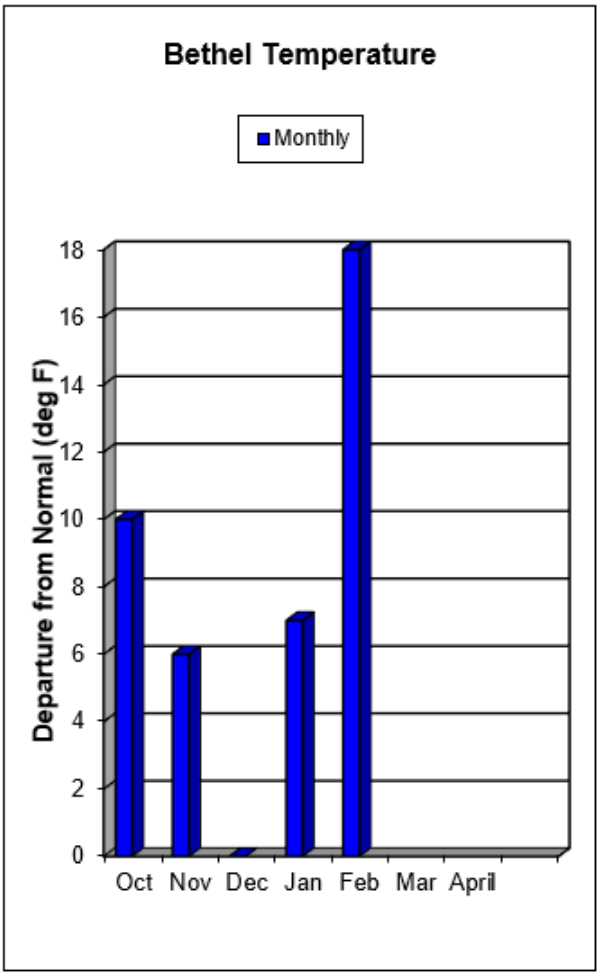
Norton Sound/Bristol Bay

Snowpack Data

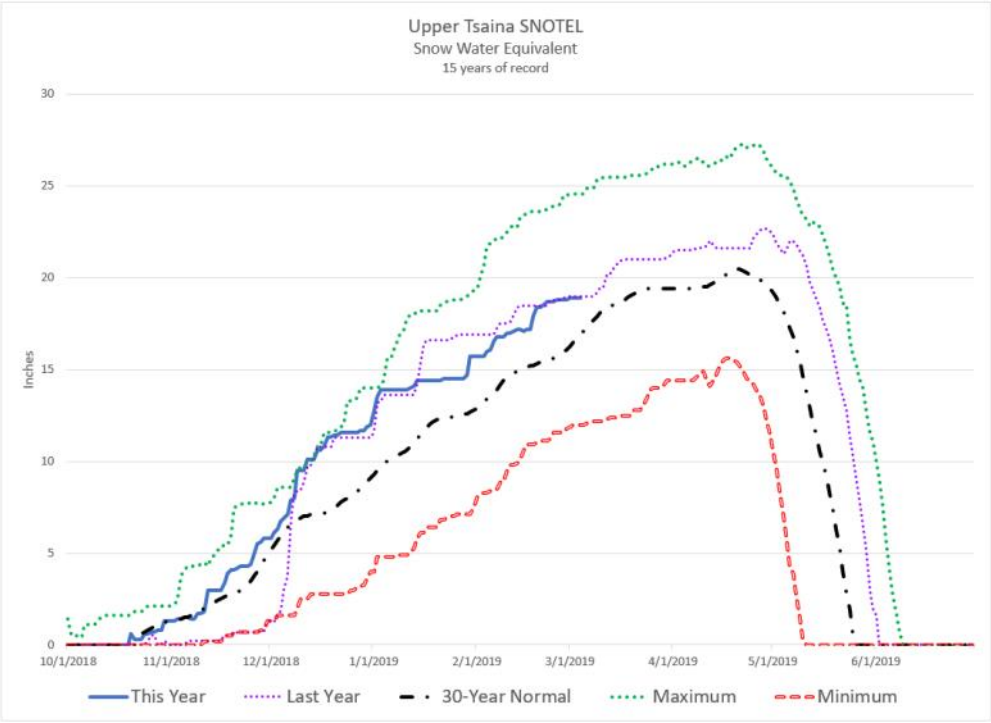
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Norton Sound							
Johnsons Camp	25	30	9	---	---	---	---
Pargon Creek	100	21	15*	---	3.7	2.4*	---
Rocky Point	250	40	30*	---	6.4	4.5*	---

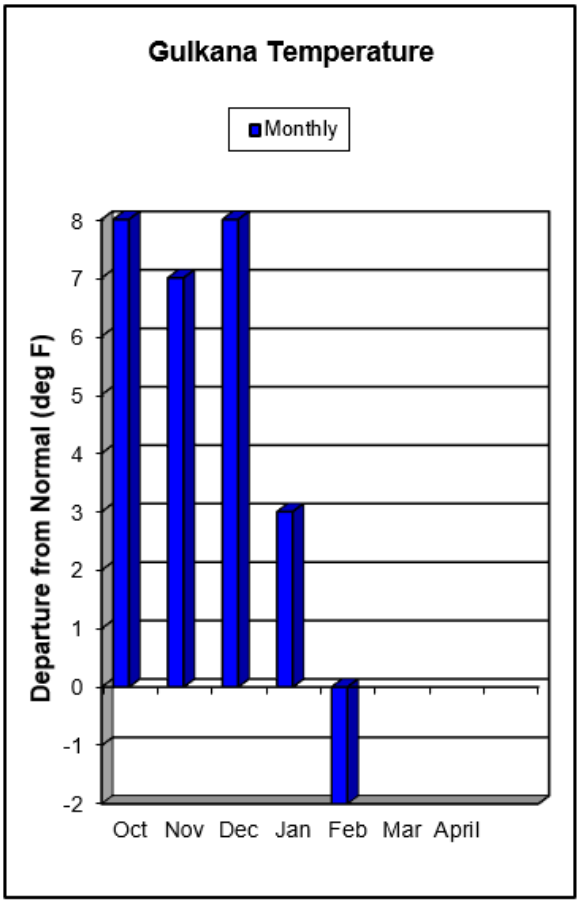
**Estimate*





Copper Basin





Snowpack

The Snowpack in the Copper River Basin is still below normal and considerably less than last year. Like last month, portions of the Talkeetnas and the Chugach range are near, or even above normal, but the Copper Valley floor itself, along with the Alaska Range sites are more meager with sites ranging from 65% of normal to near normal. Gains during the month were average.

Copper Basin

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Chistochina	1950	19	29	20	3.3	6.1	3.2
Chokosna	1550	14	14	16	2.5	2.6	3.2
Copper Center	1264	18	30	---	3.1	5.5	---
Dadina Lake	2160	19	36	27	3.1*	7.4	5.4
Fielding Lake	3000	32	48	37	6.9	9.9	8.6
Fielding Lake SNOTEL	3000	30	40	---	6.8	9.0	---
Haggard Creek	2540	23	36	26	4.1	7.4	5.2
Kenny Lake School	1300	12	27	17	2.0	4.8	3.0
Little Nelchina	2650	18	31	24	3.0	5.7	4.7
Lost Creek	3030	11	28	17	1.7	4.5	3.0
May Creek	1610	17	---	---	3.5	4.7	4.6
Mentasta Pass	2430	19	34	24	3.4	5.4	5.1
Monsoon Lake	3100	28	35	28	5.8*	6.6	5.4
Paxson	2650	28	44	30	5.3	8.9	5.9
Sanford River	2280	21	34	28	3.3	6.9	5.2
St. Anne Lake	1990	22	30	23	3.9	6.1	4.2
Tazlina	1250	16	27	16	2.7	5.3	3.4
Tolsona Creek	2000	18	28	20	3.1	5.6	3.8
Tsaina River	1650	54*	58	53	13.6*	14.2	14.1
Twin Lakes	2400	23	32	28	4.6	7.2	5.6
Upper Tsaina River	1750	68	70	---	18.9	19.0	16.3
Worthington Glacier	2100	70*	62	69	23.4*	21.2	21.6

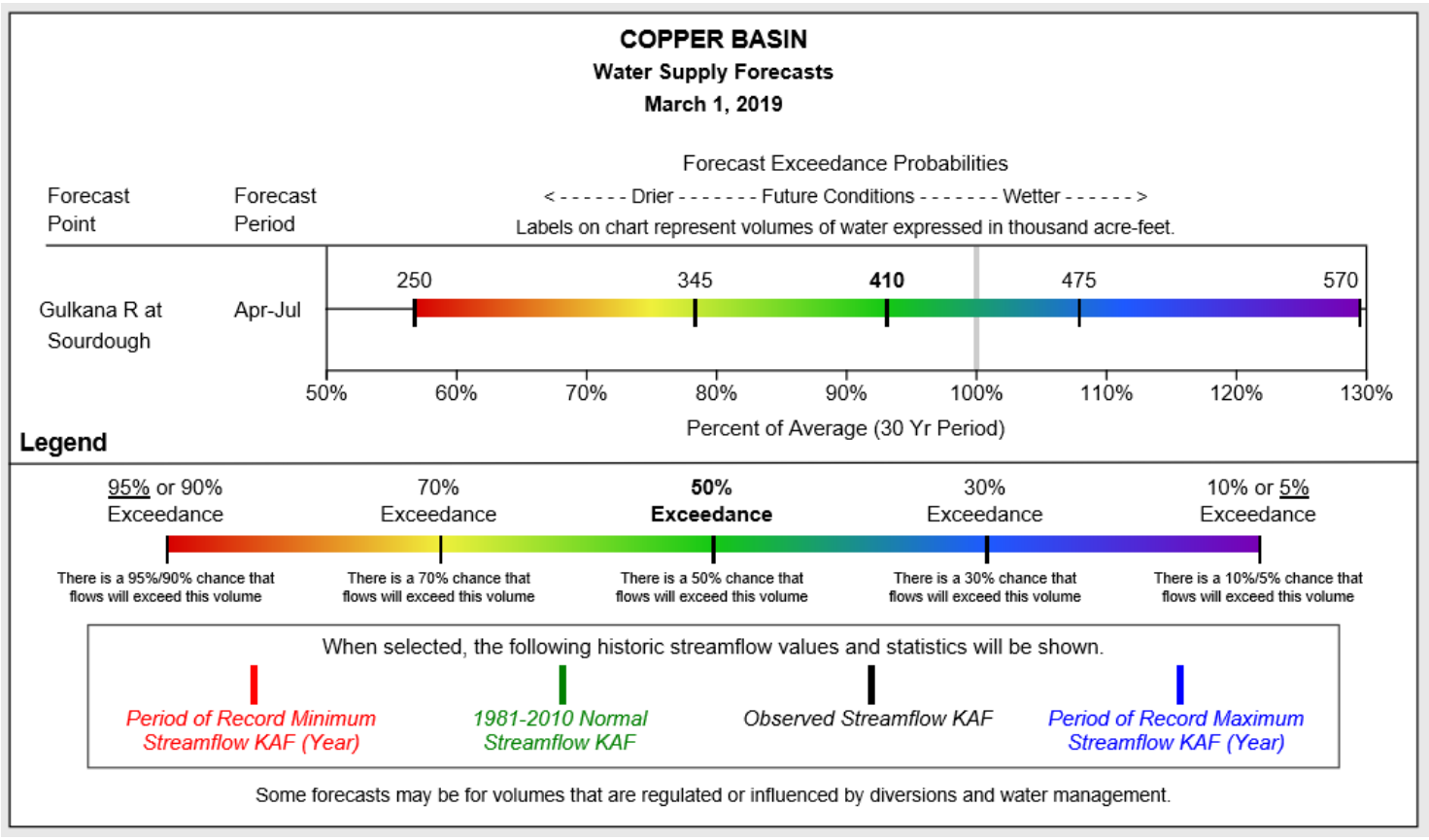
**Estimate*

Precipitation

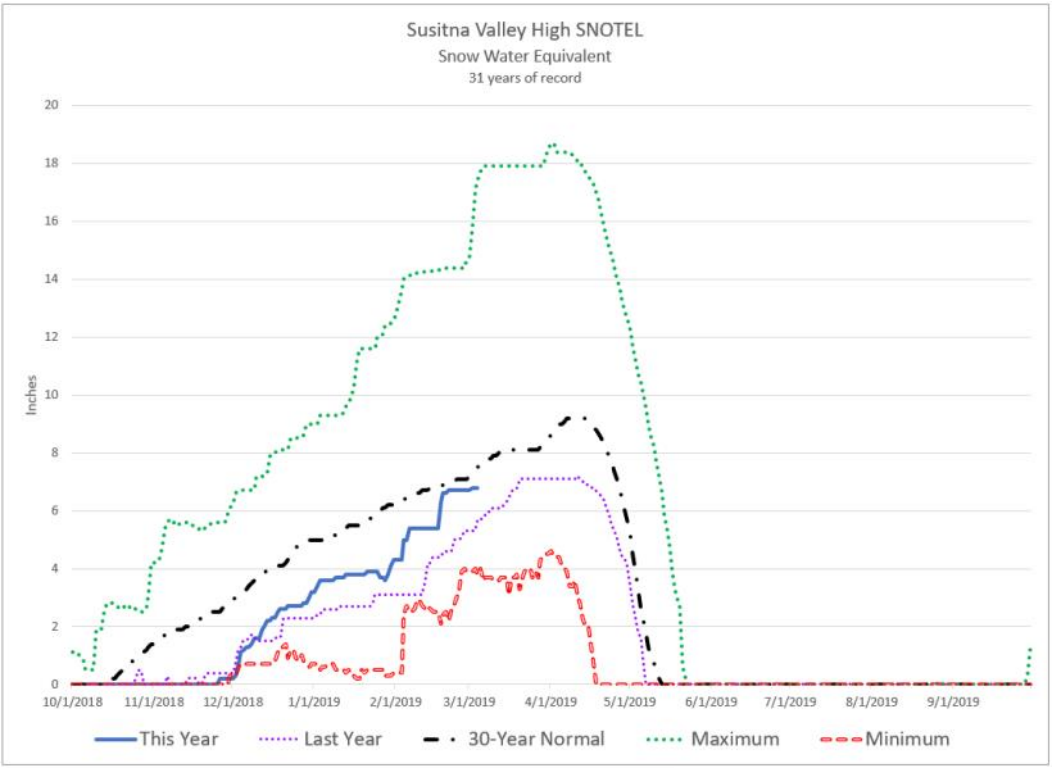
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
May Creek	1610	4.3	11.0	5.5	78%
Upper Tsaina River	1750	30.5	23.5	24.1	127%

Streamflow Forecasts

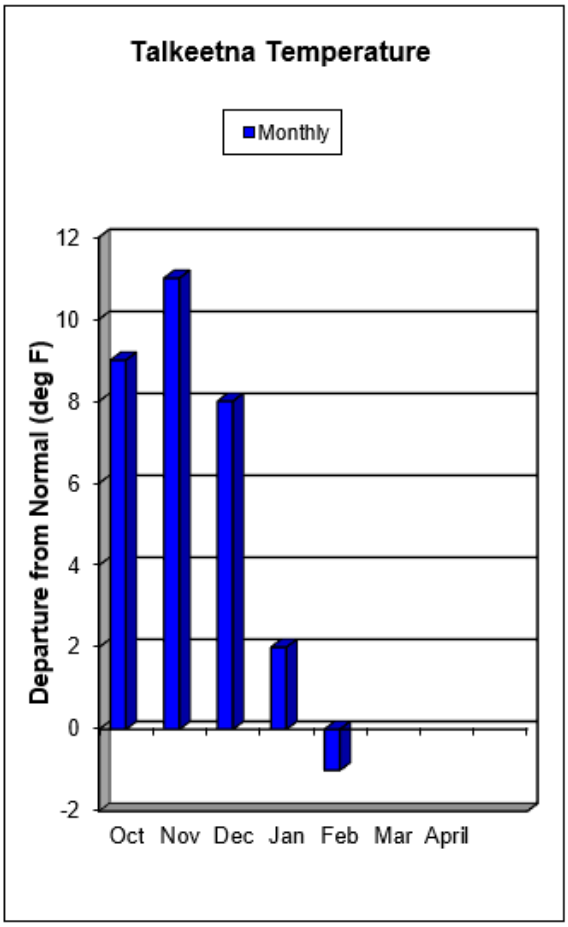


Matanuska—Susitna Basin



Snowpack

A large midmonth storm brought above normal precipitation to much of the MatSu region during February. This storm brought much of the snowpack in the Susitna Valley to near normal and the snowpack is now fairly similar to last year at this time. Sites range from 84% of normal at Denali View Snow Course, near the Chulitna Bridge, to 137% of normal at the Willow Airstrip Snow Course in Willow.



Matanuska—Susitna Basin

Precipitation

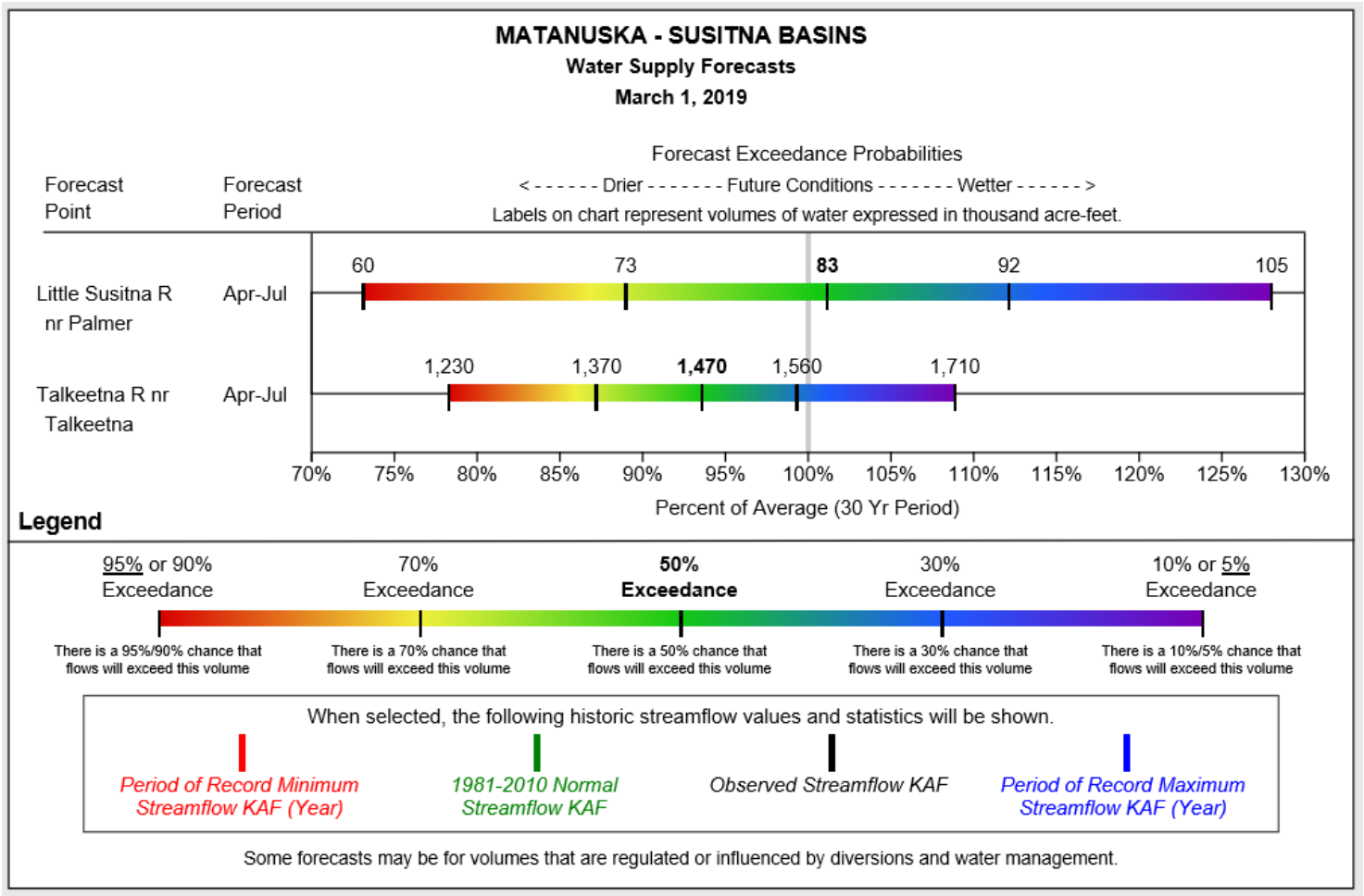
		Inches Accumulated since October 1st			
Site Name	**Elev.**	**This Year**	**Last Year**	**1981-2010 Normal**	**% of Normal**
Alexander Lake	160	19.5	12.8	---	---
Independence Mine	3550	15.6	18.7	13.3	117%
Monahan Flat	2710	8.3	7.6	7.1	117%
Susitna Valley High	375	12.5	12.8	10.5	119%
Tokositna Valley	850	25.2	18.4	17.1	147%

Snowpack Data

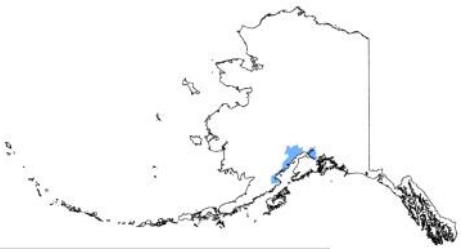
		Snow Depth (in)			**Water Content (in)**		
Site Name	**Elev.**	**Current**	**Last Year**	**1981-2010 Normal**	**Current**	**Last Year**	**1981-2010 Normal**
Alexander Lake	160	41	35	44	9.9	7.5	11.0
Alexander Lake SNOTEL	160	36	28	---	7.6	6.5	---
Archangel Road	2200	44	52	42	10.8	12.8	11.7
Birthday Pass	4020	65	90	---	19.0	26.5	---
Blueberry Hill	1200	43	47	45	11.5	10.6	12.8
Clearwater Lake	2650	28	---	26	4.7*	---	4.7
Curtis Lake	2850	23	32	21	3.9*	6.1	4.0
Denali View	700	37	40	38	9.2	7.9	10.9
E. Fork Chulitna	1770	43	48	46	11.1	11.7	11.2
Fishhook Basin	3300	52	64	53	13.6	16.0	15.6
Fog Lakes	2120	23	35	22	4.2	6.2	4.3
Horsepasture Pass	4300	32	33	28	7.6	6.6	5.5
Independence Mine	3550	56	78	62	15.3	21.9	18.6
Independence Mine SNOTEL	3550	44	60	---	11.1	13.9	10.2
Lake Louise	2400	19	27	21	3.2	5.0	3.8
Little Susitna	1700	41	44	37	9.0	9.5	9.7
Monahan Flat	2710	30	33	33	6.9*	6.7	6.8
Sheep Mountain	2900	22	33	24	4.6	7.1	4.8
Skwentna	160	40	33	42	9.7	7.4	10.6
Square Lake	2950	23	29	21	4.2	5.5	3.5
Susitna Valley High	375	33	28	---	6.7	5.3	7.2
Talkeetna	350	29	30	28	6.4	5.2	6.2
Tokositna Valley	850	49	46	---	12.5	11.6	10.4
Upper Oshetna River	3150	21	29	20	3.9*	5.8	4.0
Upper Sanona Creek	3100	24	---	27	4.1*	---	5.0
Willow Airstrip	200	38	30	27	7.8	5.1	5.7

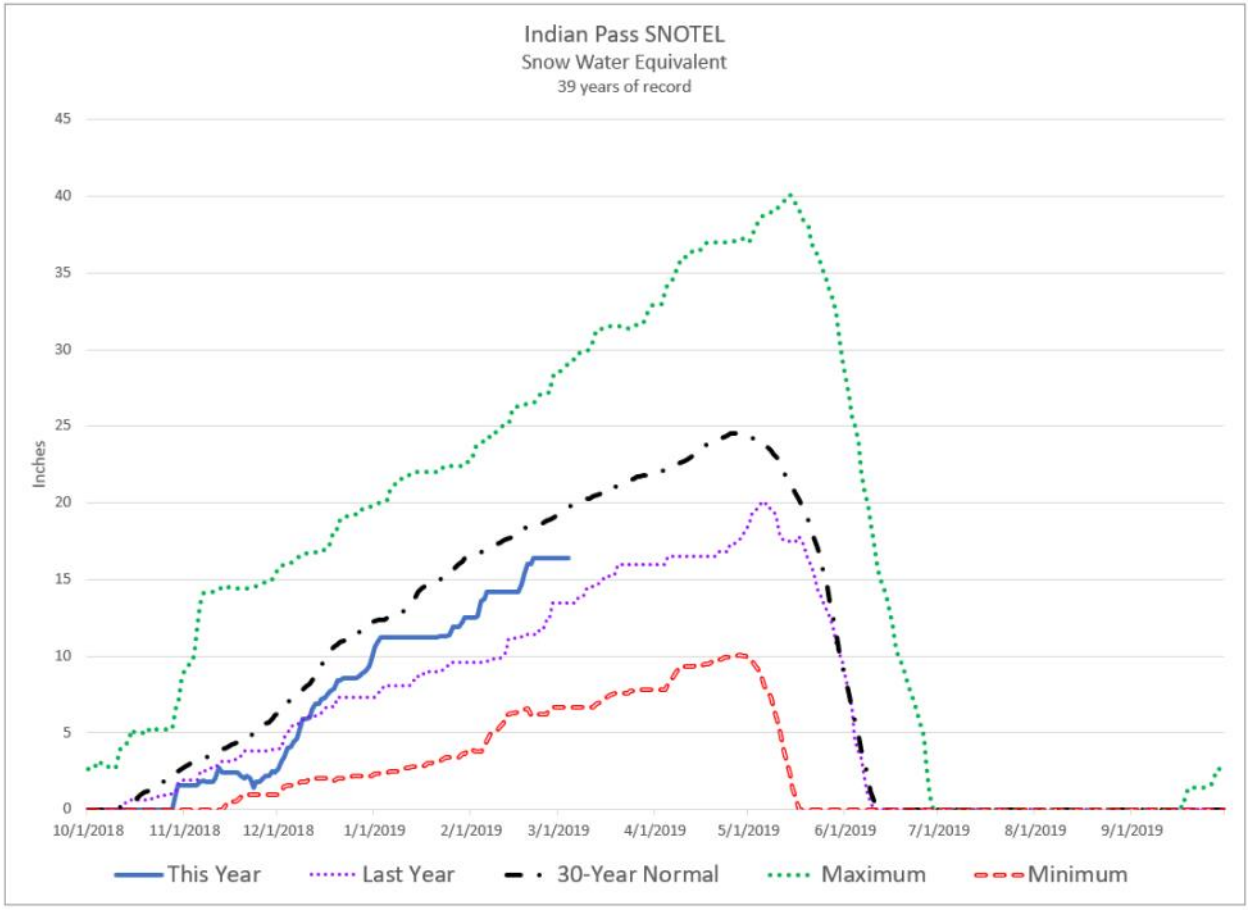
**Estimate*

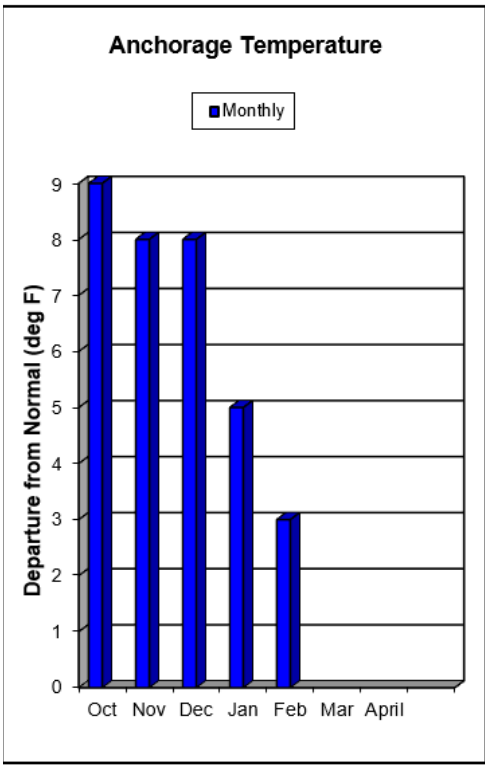
Streamflow Forecasts



Northern Cook Inlet







Snowpack

Mid-month storms brought above normal precipitation to locations near Cook Inlet. Locations further to the east received below normal precipitation. Mountain snowpacks continue to be below normal, ranging from 60-90% while snowpacks in lower lying areas are near normal or even above normal. Snowpack on the western side of Cook Inlet is above normal with most sites reporting their deepest snowpack since 2012.

Northern Cook Inlet

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Anchorage Hillside	2080	24	27	---	5.7	5.2	8.3
Arctic Ski Bowl	3000	27	---	35	7.9	---	10.8
Arctic Valley #1	500	16	---	18	3.8	---	4.0
Arctic Valley #2	1000	22	---	22	5.1	---	4.5
Arctic Valley #3	1450	23	---	28	5.5	---	6.7
Arctic Valley #4	2030	22	---	28	5.3	---	6.4
Congahbuna Lake	550	53	28	34	14.3*	7.3	9.0
Granite Point	250	26	9	20	6.3*	1.9	4.7
Indian Pass	2350	56	59	---	16.4	13.5	19.3
Kincaid Park	250	19	19	17	4.6	3.2	3.9
Lone Ridge	1675	88	64	76	30.5*	18.1	29.0
Moraine	2100	18	14	---	4.0	3.3	6.8
Mt. Alyeska	1540	46	46	---	13.9	11.8	26.6
Portage Valley	50	27	22	36	9.7	4.6	11.0
South Campbell Creek	1200	25	18	24	5.1	3.0	5.8

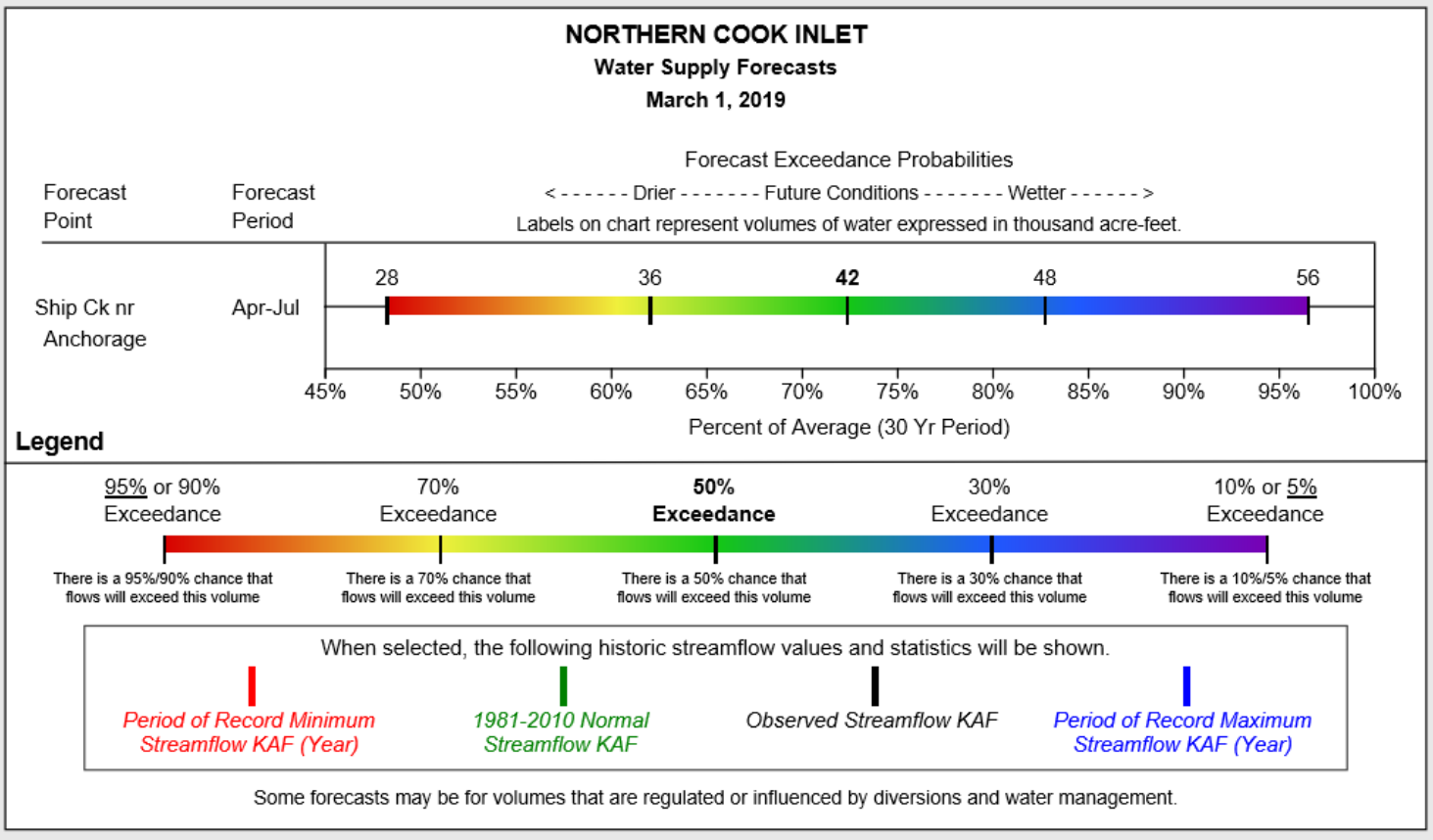
**Estimate*

Precipitation

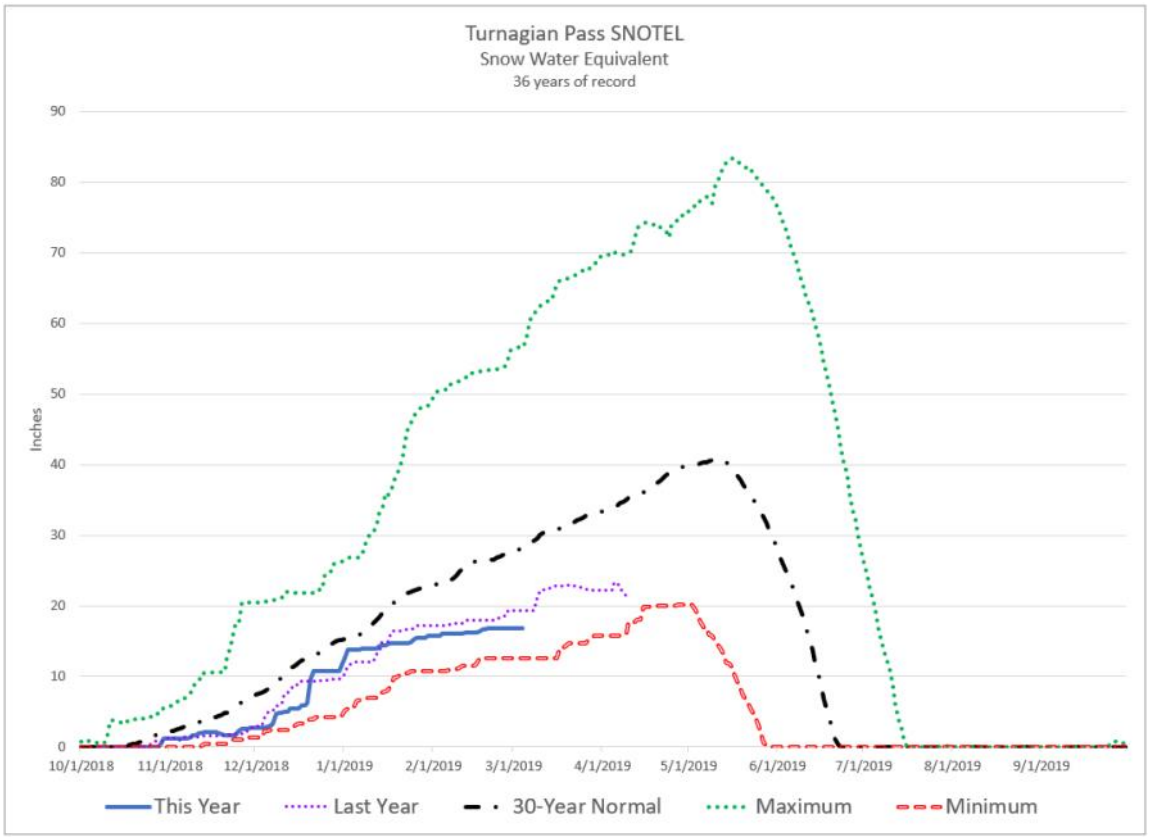
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchorage Hillside	2080	12.9	10.7	11.9	108%
Indian Pass	2350	22.3	21.3	22.0	101%
Moraine	2100	12.9	7.0	10.1	128%
Mt. Alyeska	1540	45.3	28.8	39.9	114%

Streamflow Forecasts

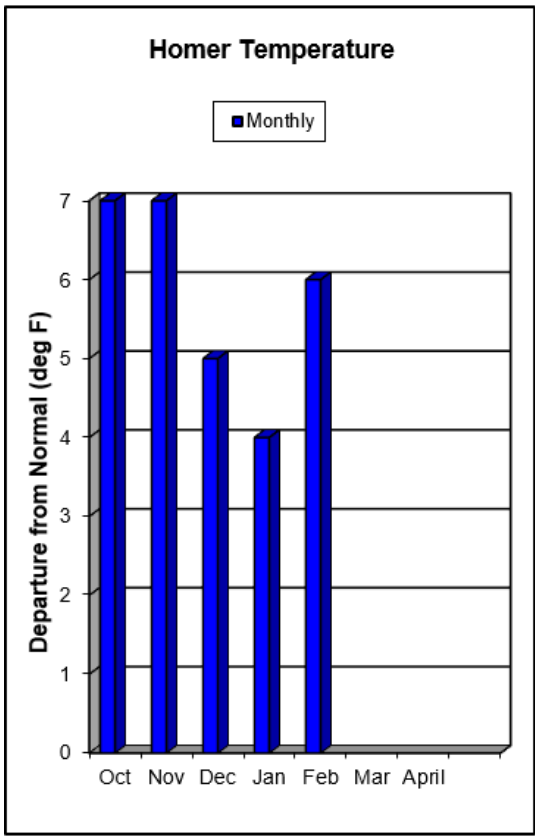


Kenai Peninsula



Snowpack

Most of the Kenai Peninsula received below normal precipitation during February, except for areas near Cook Inlet, which received near to above normal precipitation. The snowpack made minor gains across the Peninsula, but remains below normal in most locations. The nineteen comparable locations average 67% of normal, better than last year's 58%, but not by much



Kenai Peninsula

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Anchor River Divide	1653	44	43	---	12.4	11.5	10.1
Bear Creek	2516	10	---	---	2.6*	---	---
Benjamin Creek	3090	39	---	---	11.3*	---	---
Bertha Creek	950	30	32	47	8.7	6.4	14.7
Bridge Creek	1300	32	20	34	9.5	5.2	9.6
Browns Lake	276	31	19	---	6.5*	3.1	---
Cooper Lake	1200	32	27	---	8.0	8.1	13.1
Cytex Pass	1860	44	---	---	12*	---	---
Demonstration Forest	780	21	8	23	6.5	2.2	6.6
Eagle Lake	1400	32	31	40	8.6	6.1	10.4
Exit Glacier	400	24	22	48	6.4	5.4	15.9
Exit Glacier	400	26	23	---	7.5	6.5	15.9
Fox River Bench	1214	25	---	---	6.9*	---	---
Grandview	1100	29	46	---	10.3	11.5	26.5
Grouse Creek Divide	700	24	28	---	7.6	8.9	14.6
Indian Pass	2350	56	59	---	16.4	13.5	19.3
Jean Lake	620	12	14	14	2.5	2.1	3.2
Kenai Moose Pens	300	19	21	---	3.5	3.6	4.0
Kenai Summit	1390	32	33	45	8.3	7.6	12.3
Lower Kachemak Creek	1915	39	36	---	---	---	---
Mcneil Canyon	1320	28	23	---	7.8	5.8	9.0
Middle Fork Bradley	2300	41	39	---	---	---	---
Moose Pass	700	19	22	---	4.0	3.2	6.0
Mosquito Lake	279	21	24	---	6.4*	4.1	---
Mt. Alyeska	1540	46	46	---	13.9	11.8	26.6
Nikolai Creek	853	11	---	---	2.9*	---	---
Pepper Lake	213	22	---	---	4.0*	---	---
Port Graham	300	12	6	---	3.5	1.5	6.7
Portage Valley	50	27	22	36	9.7	4.6	11.0
Skilak Lake	266	6	---	---	1.5*	---	---
Snug Harbor Road	500	12	9	17	2.9	1.3	5.2
Summit Creek	1400	28	30	---	6.7	6.6	10.0
Trapper Joe Ridge	2424	23	---	---	5.1*	---	---
Turnagain Pass	1880	59	72	---	16.8	19.4	27.9

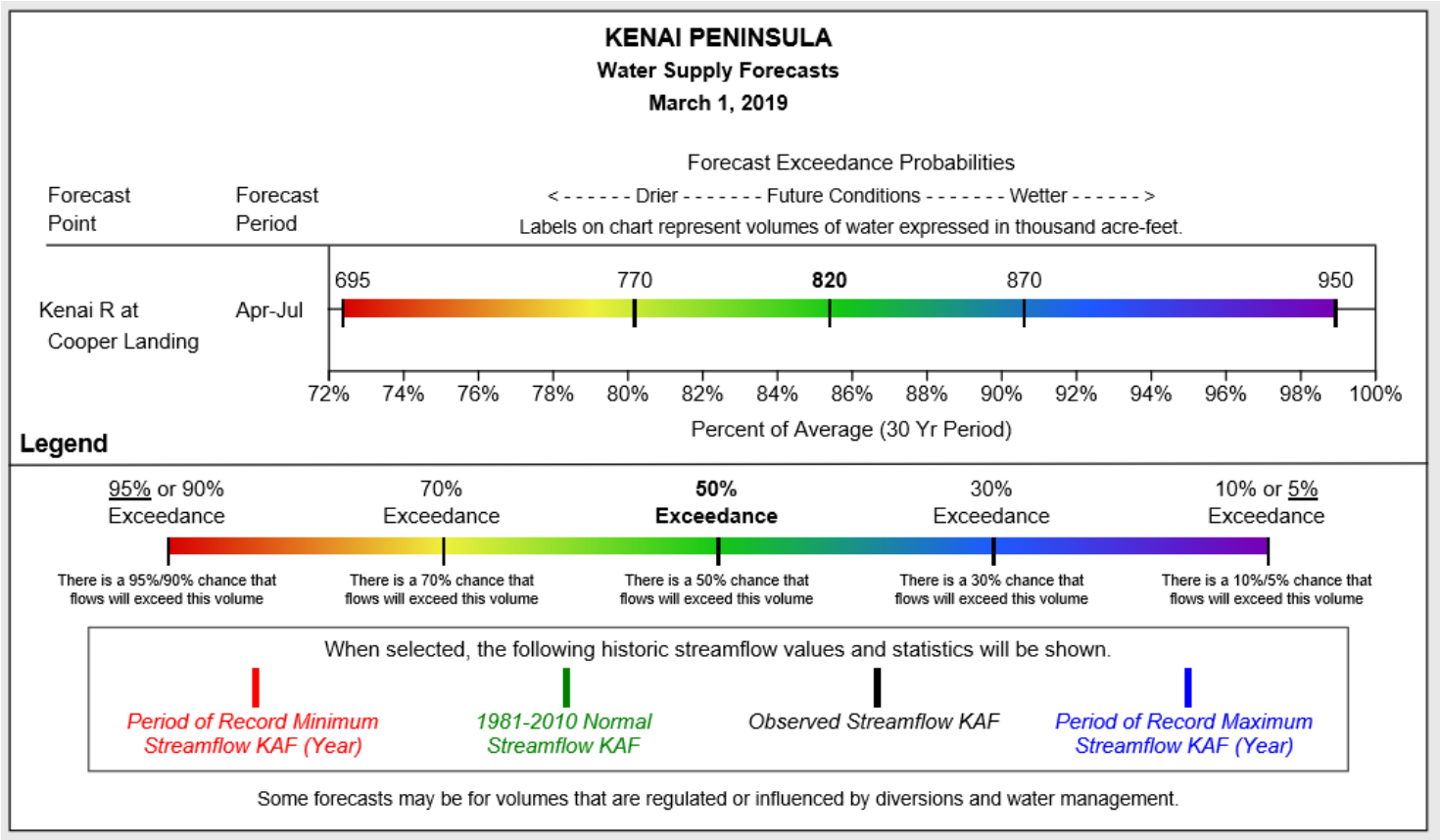
**Estimate*

Precipitation

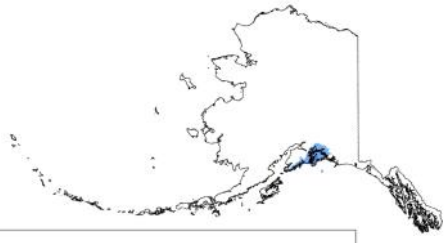
Inches Accumulated since October 1st

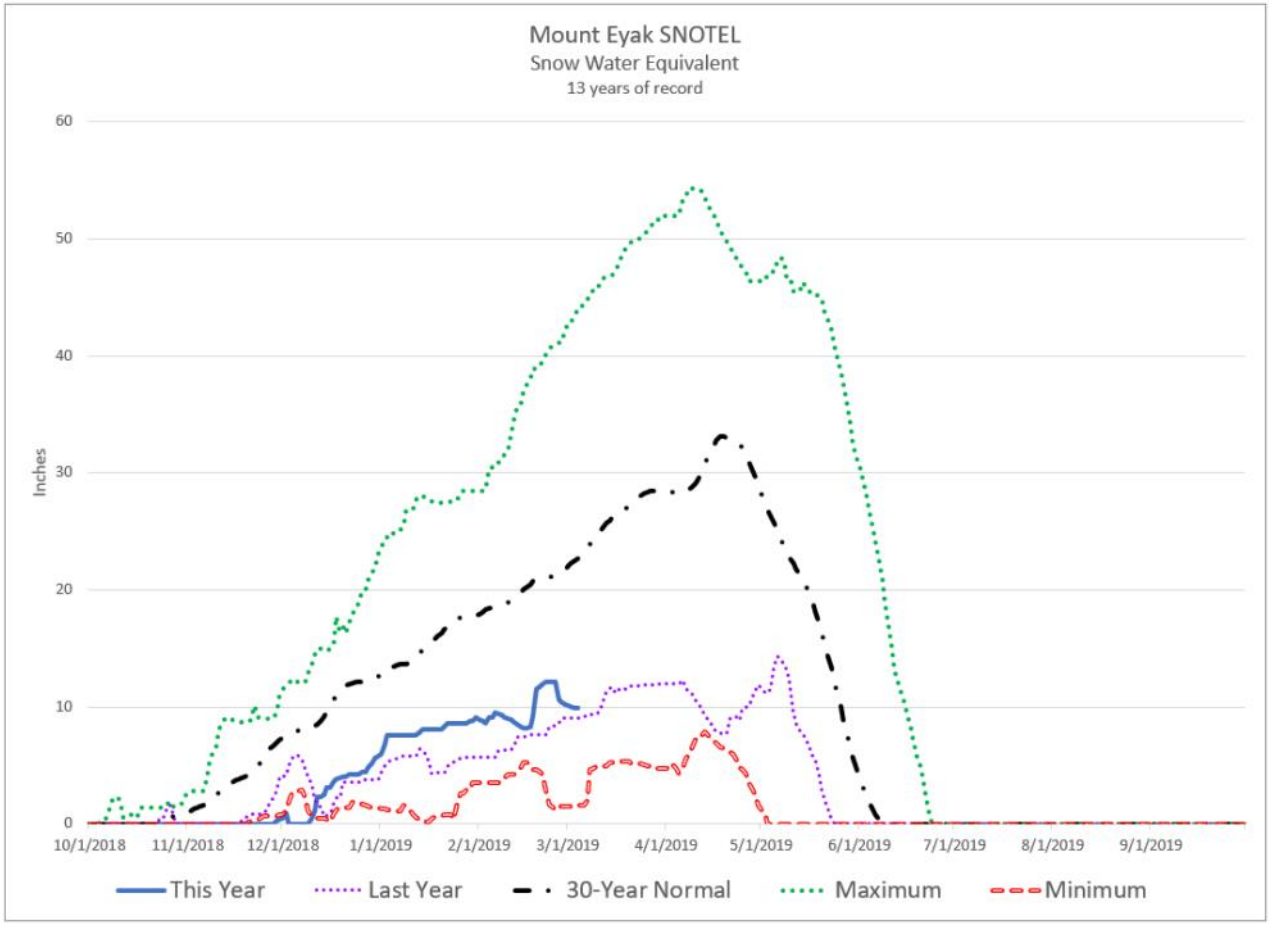
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchor River Divide	1653	20.7	16.2	14.4	144%
Cooper Lake	1200	33.1	19.5	22.9	145%
Grandview	1100	43.6	28.2	34.8	125%
Grouse Creek Divide	700	39.6	30.4	33.3	119%
Kachemak Creek	1660	53.0	38.9	34.7	153%
Kenai Moose Pens	300	10.2	7.8	7.3	140%
Mcneil Canyon	1320	17.8	12.9	14.9	119%
Middle Fork Bradley	2300	42.0	26.7	29.0	145%
Nuka Glacier	1250	59.1	42.2	48.2	123%
Port Graham	300	43.2	37.5	43.5	99%
Summit Creek	1400	20.2	14.5	14.0	144%
Turnagain Pass	1880	40.1	26.4	34.3	117%

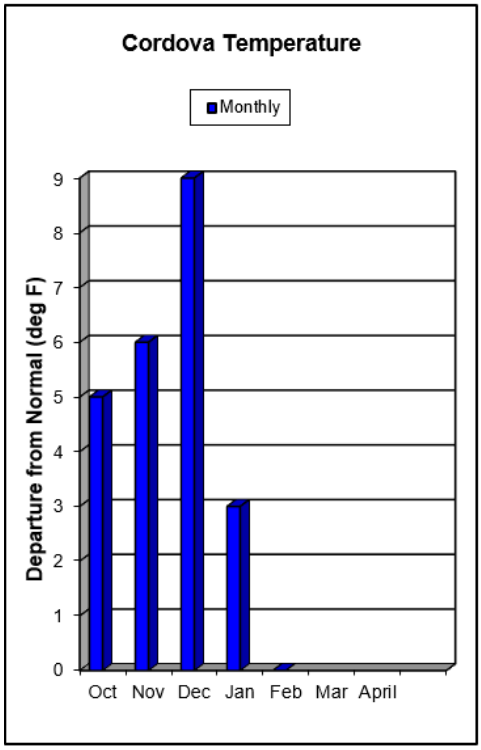
Streamflow Forecasts



Western Gulf – Prince William Sound







Snowpack

The Prince William Sound area has received below normal precipitation during February. Snowpack in this region is a mix of near normal conditions in the eastern mountains, to only half of median on the western side.

Western Gulf — Prince William Sound

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Exit Glacier	400	24	22	48	6.4	5.4	15.9
Exit Glacier SNOTEL	400	26	23	---	7.5	6.5	15.9
Grouse Creek Divide	700	24	28	---	7.6	8.9	14.6
Lowe River	600	56	42	50	14.6	11.0	14.8
Mt. Eyak	1405	43	33	---	12.1	9.0	22.1
Nicks Valley	4280	104	87	---	---	---	---
Sugarloaf Mountain	550	60	41	70	16.0*	14.1	21.1
Tsaina River	1650	54*	58	53	13.6*	14.2	14.1
Upper Tsaina River	1750	68	70	---	18.9	19.0	16.3
Valdez	50	46*	32	46	13.2*	9.0	14.0
Worthington Glacier	2100	70*	62	69	23.4*	21.2	21.6

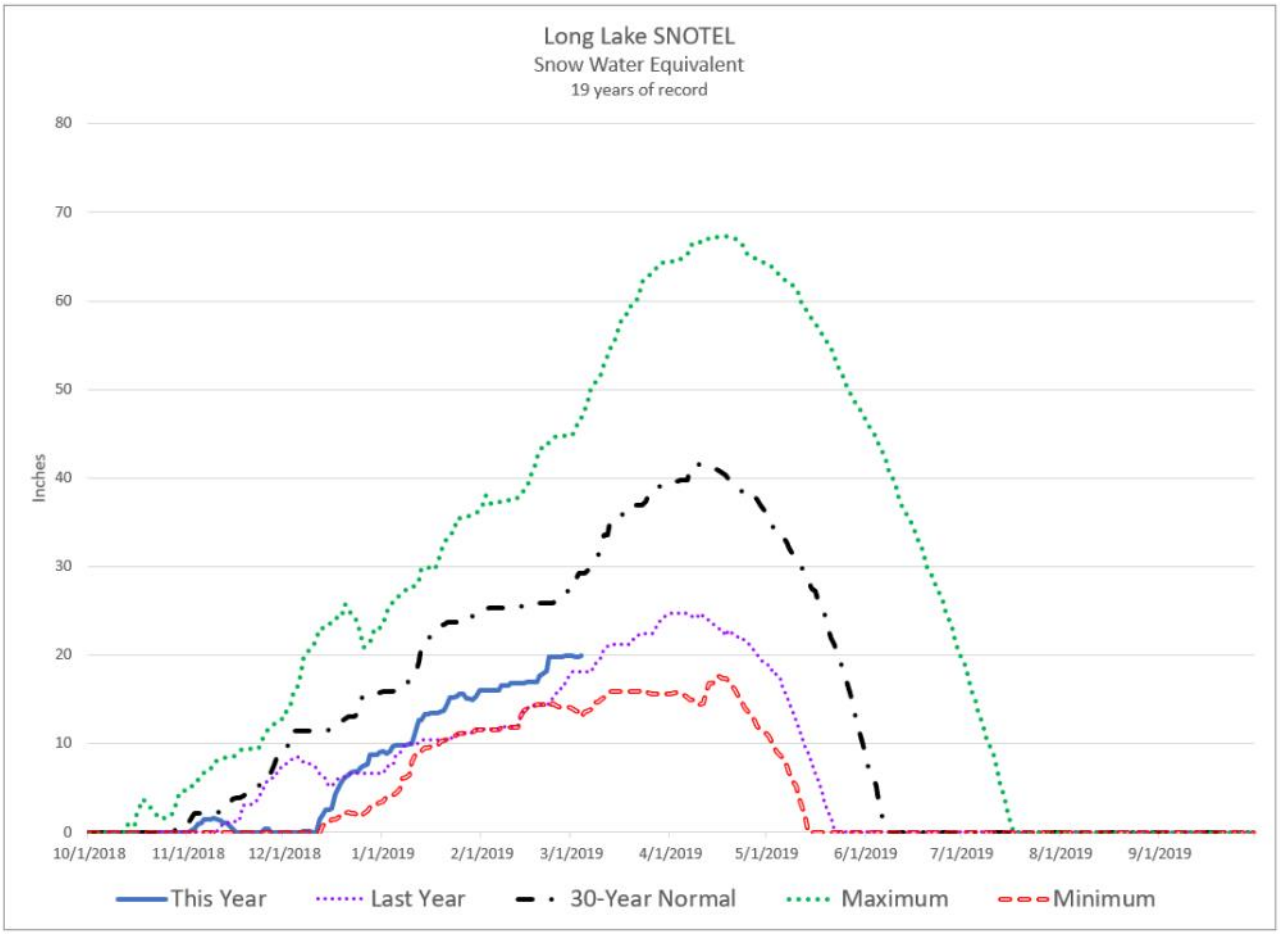
**Estimate*

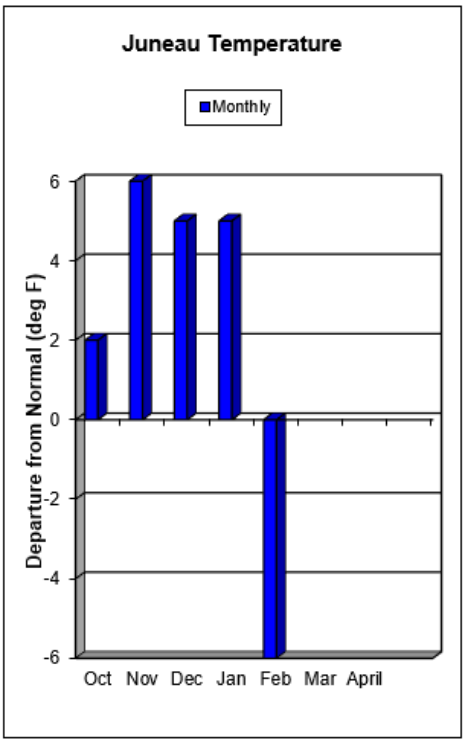
Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Esther Island	50	96.6	72.5	71.9	134%
Grouse Creek Divide	700	39.6	30.4	33.3	119%
Mt. Eyak	1405	81.3	63.2	---	---
Nuchek	50	95.8	69.3	---	---
Nuka Glacier	1250	59.1	42.2	48.2	123%
Port Graham	300	43.2	37.5	43.5	99%
Seal Island	20	45.6	30.6	---	---
Strawberry Reef	30	50.0	35.3	---	---
Sugarloaf Mtn	550	49.0	40.5	34.5	142%
Tatitlek	50	50.5	38.6	35.7	141%

Southeast





Snowpack

Southeast had below normal precipitation in February, but because of colder than normal temperatures, much of that precipitation came as snow. In many locations snow fell down to sea level. Both Fish Creek Snow Course, near Juneau, and Petersburg Reservoir Snow Course, near Petersburg, are low elevation snow courses which had no snow last month. This month they were read with 13" and 19" of snow depth respectively.

Southeast

Snowpack Data

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Cropley Lake	1650	48	42	71	12.3	9.1	23.1
Eagle Crest	1200	32	34	45	7.4	5.3	16.5
Fish Creek	500	13	20	20	1.5	3.1	6.5
Heen Latinee	2065	34	32	---	8.1	7.0	---
Institute Creek	1350	18	39	---	3.1	9.1	---
Long Lake	850	71	74	---	19.9	18.1	27.2
Petersburg Reservoir	550	19	31	18	3.3	8.1	4.0
Petersburg Ridge, S.	1650	44	46	65	10.4	11.2	21.4
Rainbow Falls	500	8	21	---	---	3.4	---
Speel River	280	64	65	68	17.1	18.9	23.7

**Estimate*

Precipitation Data

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Long Lake	850	73.9	64.9	85.9	86%
Heen Latinee	2065	34.0	29.2	---	---
Moore Creek Bridge	2250	25.6	20.1	23.7	108%

Streamflow Forecast

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Taiya River near Skagway	Apr-Jul	93	114	71	430	464

For further information contact:

NRCS Alaska web site: **www.nrcs.usda.gov/wps/portal/nrcs/main/ak/snow/**
NRCS Water and Climate Center web site: **http://www.wcc.nrcs.usda.gov/**
Alaska Meteor Burst Communication System (AMBCS) web site: **www.ambcs.org**

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