Alaska Snow Survey Report

Petersburg Ridge Snow Course on February 27th, 2020. The snow course was measured with 91” of snow depth and 27.3” of water content, 128% of average and the snow course’s highest reading since 2013.

Photo by: USFS Hydrologist Heath Whitacre

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

March 1, 2020

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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.

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General Overview

SnowPack

Most of Alaska made greater-than-average snowpack gains during February. In locations in Southeast Alaska, Southcentral and parts of the Tanana basin, these gains were 2-4 times the average monthly gains.

The snowpack itself across the state is generally near or above normal (much above normal in some areas). Exceptions to this are the Kenai Peninsula, Northwest Alaska and the very upper part of the Tanana basin, near the Wrangell Mountains, which all retain below normal snowpacks.

Southeast saw some of the greatest gains this month and the above normal snowpacks there are more robust than they've been since 2013 or 2012. This trend continues north to Prince William Sound where low lying areas have deeper snow than in the last 7 years, but upper elevation sites have near normal snowpacks.

Other big winners include the Susitna Basin where some snow courses saw their greatest February gains in history and have snowpacks more substantial than since 2005. Nearby, North Cook Inlet also saw substantial gains, but only enough to bring the snowpack in the region to near normal.

In the Tanana Basin, Granite Creek SNOTEL posted its second highest snowpack in the site's 31-year record, just a year after its record low snowpack. Near the headwaters of the Delta River, Fielding Lake snow course posted the deepest March 1st snowpack in its 60-year history.

Though lighter than last year, the Koyukuk has above normal snowpack for the third year-in-a-row. The Lower Yukon also has above normal snowpack; the aerial markers in this region are tracking the top three deepest snowpacks in their 13 to 20-year histories. This above normal snowpack continues upriver to the central Yukon basin all the way to the Yukon headwaters. The Fortymile country snow courses are record high, as are the Dawson area snow courses. Boundary snow course, near the border, along the Taylor Highway, set a new 50-year record high. Several sites in the Yukon are near record high and the upper basin is experiencing its most vigorous snowpack since 2012.

		Basin Index	
		Current	Last Year
Alaska Statewide Snowpack	**# of Sites**	**Percent of Median**	**Percent of Median**
Upper Yukon Basin	29	130	74
Central Yukon Basin	16	133	112
Tanana Basin	24	134	77
Koyukuk Basin	11	155	187
Kuskokwim Basin	2	184	113
Copper Basin	16	107	86
Matanuska-Susitna Basin	18	145	95
Northern Cook Inlet	14	93	88
Kenai Peninsula	20	69	65
Western Gulf of Alaska	5	78	60
Southeast Alaska	7	137	59

General Overview Continued

Precipitation

Much of the state received normal or above normal precipitation during the month of February. The big winners for the month were Southeast Alaska, Southwest Alaska, and the Matanuska and Susitna Basins, where many sites received over 150% of average monthly precipitation.

Basins which were also reported above normal precipitation were the Tanana Basin, Cook Inlet and Prince William Sound.

The Copper Valley, Central Yukon, and the Arctic Plains made near normal gains, while Northwest Alaska had below normal February precipitation.

Currently, the Arctic Plains and Northwest Alaska are the only regions reporting below normal precipitation for the Water Year (since Oct. 1st), while the rest of the state is near or above normal for the winter.

Temperature

In general temperatures moderated across the state in February, with most reporting stations within a couple of degrees Fahrenheit of average.

Bettles, Barrow, and Bethel were all sites which reported below normal temperatures for the month, however. Bethel was the most below normal, coming in at 11°F below normal for the month, while Barrow and Bettles were 7°F and 5°F below normal, respectively.

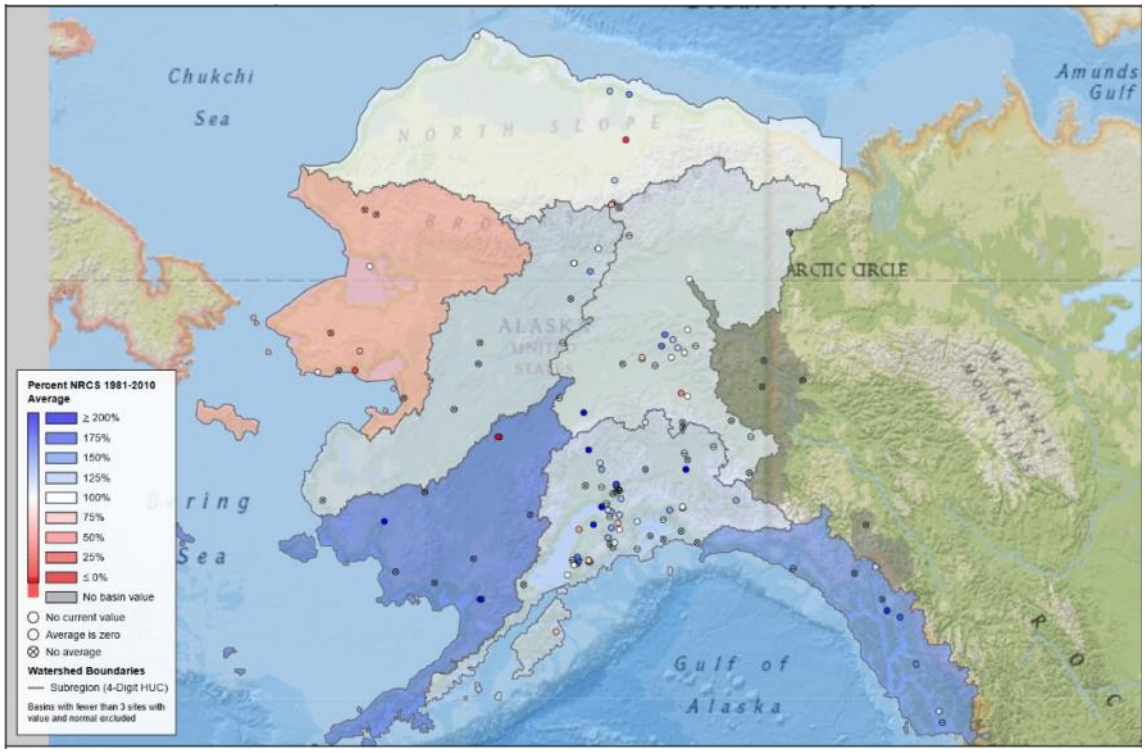
Juneau was the only site reporting more than a couple of degrees above normal for February. It was 4°F above normal on average.

The rest of the reporting stations in the state were within 2°F either above or below normal.

Alaska Statewide Precipitation Maps

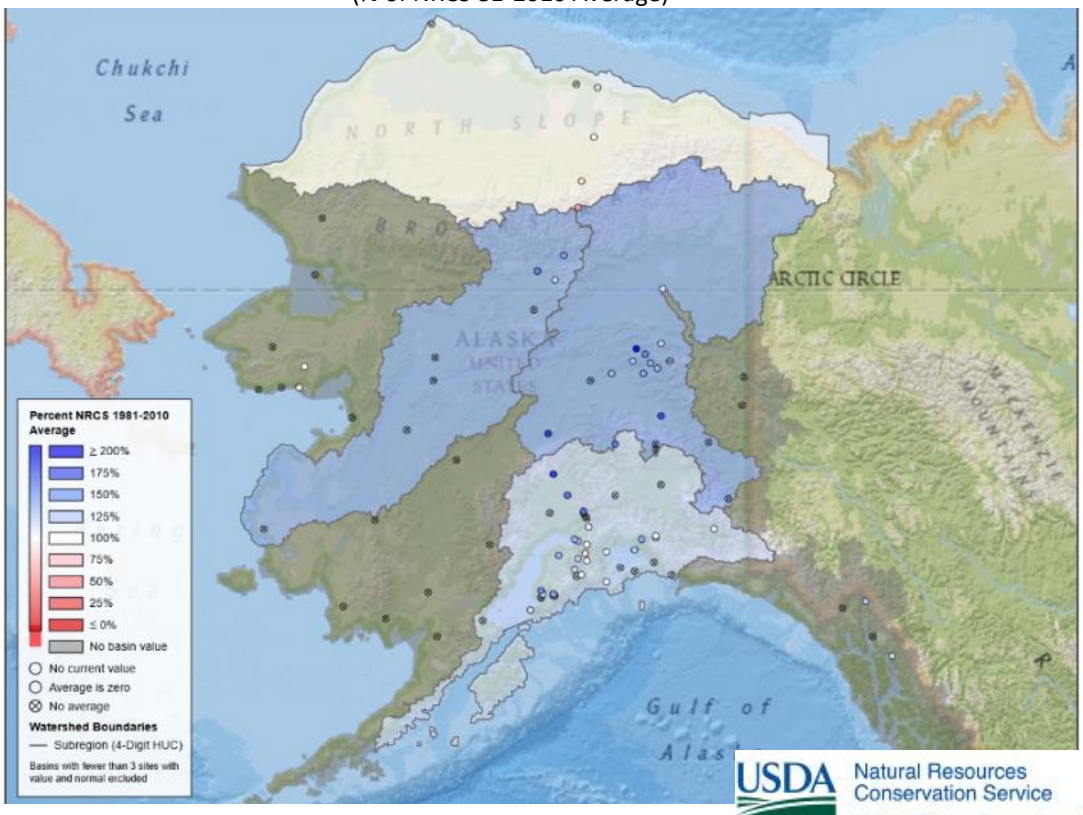
Monthly Precipitation for February, 2020

(% of NRCS 81-2010 Average)



Water Year-to-date Precipitation (Oct. 1. 2019 -Feb. 29, 2020)

(% of NRCS 81-2010 Average)



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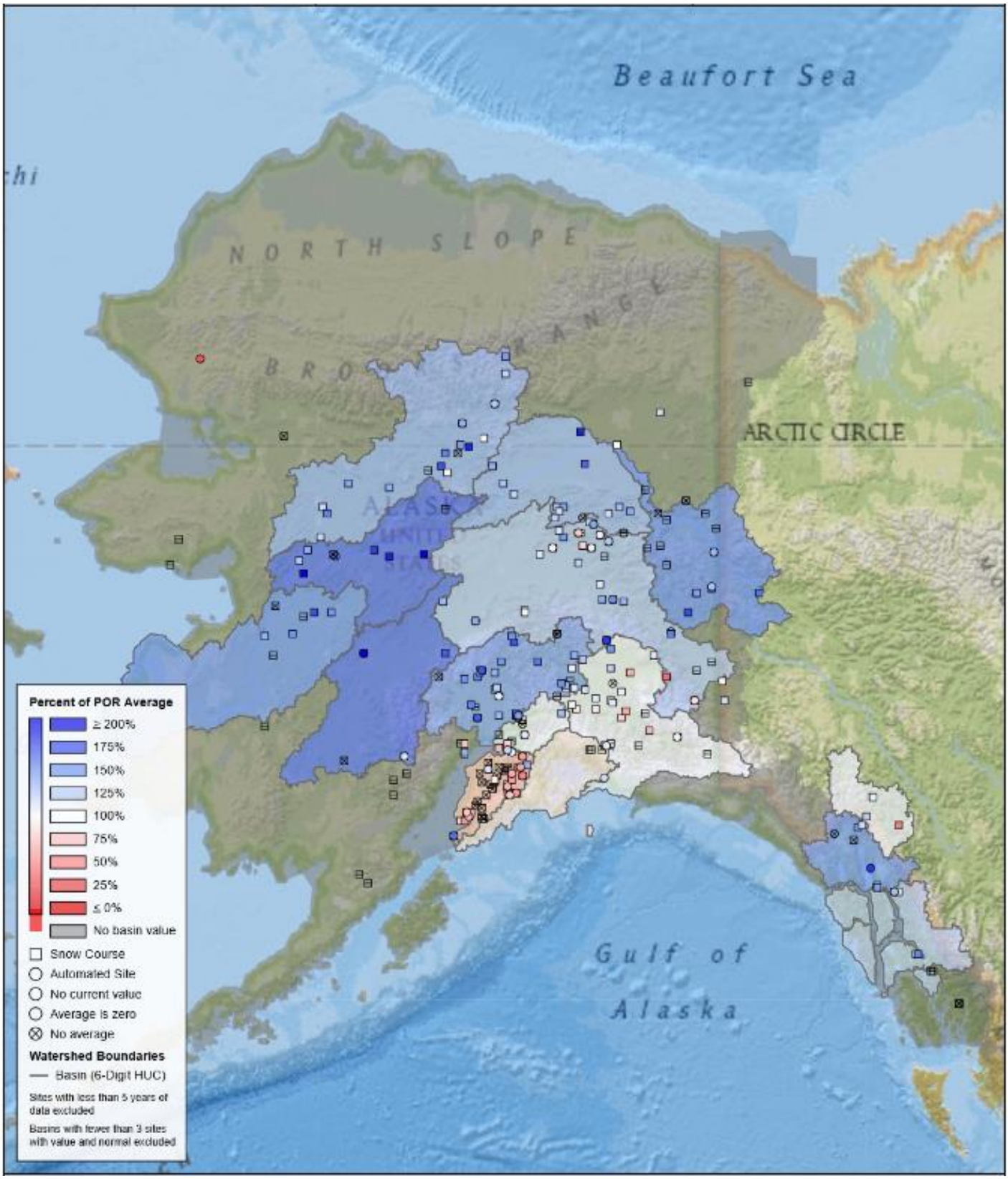
Alaska Statewide Snowpack Map

Based on March 1st, 2020 Snow Water Equivalent



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Streamflow Forecasts

FORECAST POINT*	Percent of Ave. Flow	Period
Yukon River at Eagle	110	April - July
Porcupine River nr Int'l Boundary……	97	April - July
Yukon River near Stevens Village	114	April - July
Tanana River at Fairbanks	121	April - July
Tanana River at Nenana	113	April - July
Little Chena River near Fairbanks	110	April - July
Chena River near Two Rivers	111	April - July
Salcha near Salchaket	119	April - July
Kuskokwim River at Crooked Creek	121	April - July
Sagvanirktok River near Pump Station 3	127	April - July
Kuparuk River near Deadhorse	185	April - July
Gulkana River at Sourdough	131	April - July
Little Susitna River near Palmer	107	April - July
Talkeetna River near Talkeetna	123	April - July
Ship Creek near Anchorage	100	April - July
Kenai River at Cooper Landing	93	April - July
Bradley Lake Inflow	99	April - July
Taiya River nr Skagway	111	April - July

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

FORECAST POINT	INDEX
Koyukuk River at Hughes……..	1.5
MF Koyukuk R near Wiseman ……..	1.5
Slate Creek at Coldfoot……..	1.0
Beaver Creek above Victoria Creek……..	0
Birch Creek below South Fork……..	0
Caribou Creek at Chatanika……..	0.5
Susitna River near Gold Creek……..	1.0
Chulitna River near Talkeetna……..	1.5
Deshka River at mouth near Willow……..	1.5
Montana Creek at Parks Highway……..	0
Willow Creek near Willow……..	0
Skwentna River at Skwentna……..	0
Chuitna River near Tyonek……..	-1.0
Campbell Creek near Spenard……..	-2.0
Indian Creek at Indian……..	-2.5
Bird Creek at Bird Creek ……..	-2.5
Glacier Creek nr Girdwood ……..	-0.5
Six Mile Creek near Hope……..	-2.0
Resurrection Creek near Hope……..	—
Grouse Ck at Grouse Lake Outlet nr Seward ……..	-2.5
Anchor River near Anchor Point ……..	-2.5
Deep Creek near Ninilchik……..	-2.5
Ninilchik River near Ninilchik……..	-2.5
Fritz Creek near Homer……..	-2.5
Skagway River at Skagway……..	-1.5
Municipal Watershed C nr Petersburg ……..	1.0
Gold Creek near Juneau……..	2.0

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

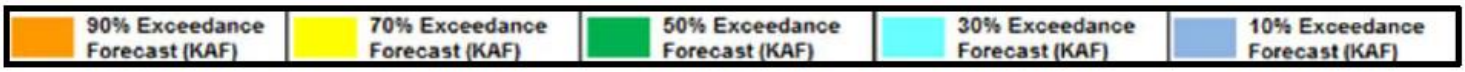
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual 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.

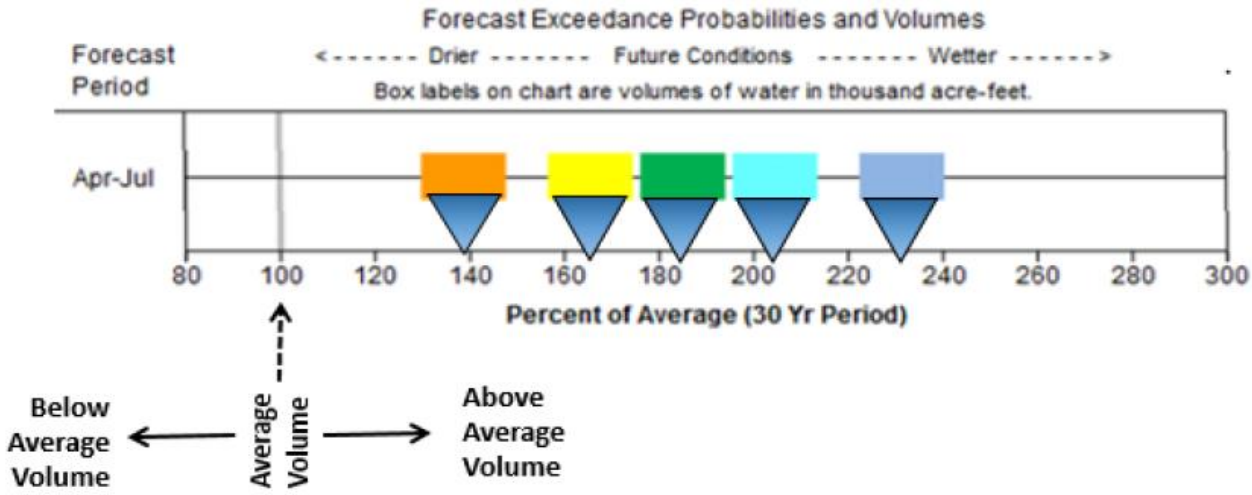
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. 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:

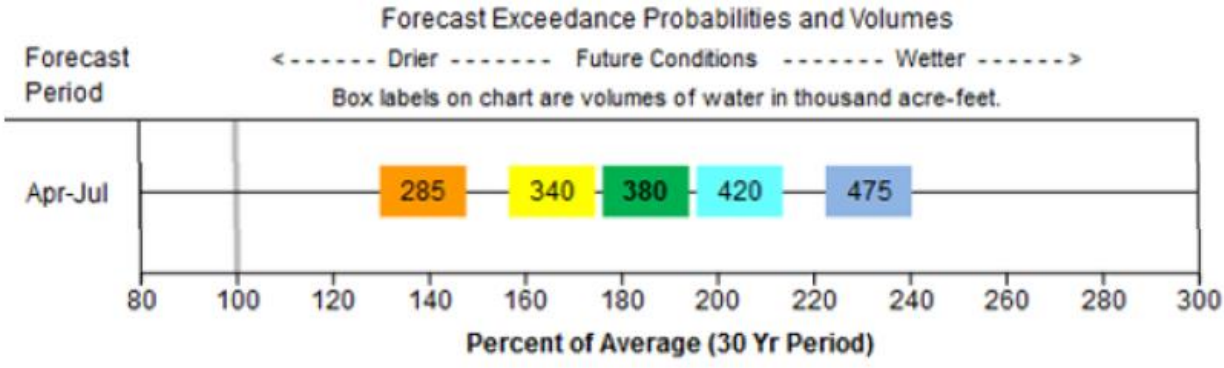
This graphic provides a visual alternative to the forecast tables the NRCS has presented for years. It gives both the volume and percent of average of each of the five forecast exceedances. The five colored boxes represent each forecast's five exceedances.



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.

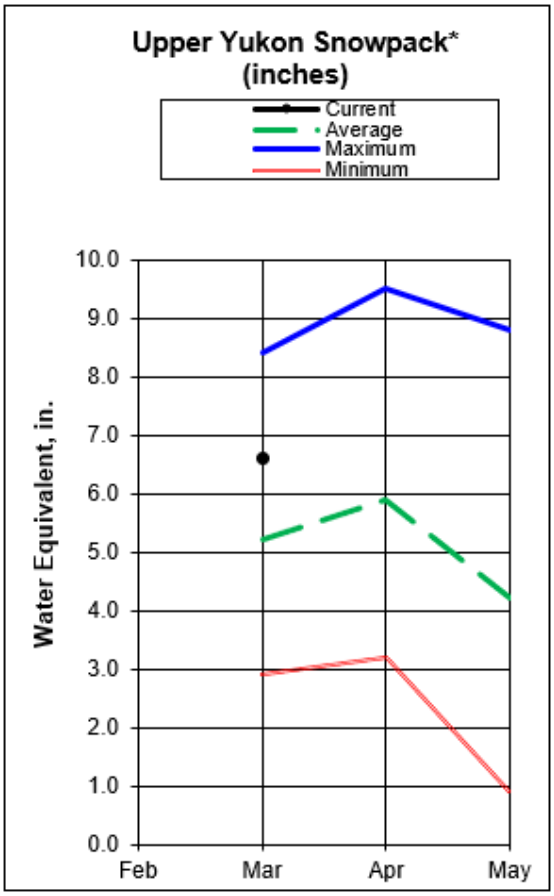


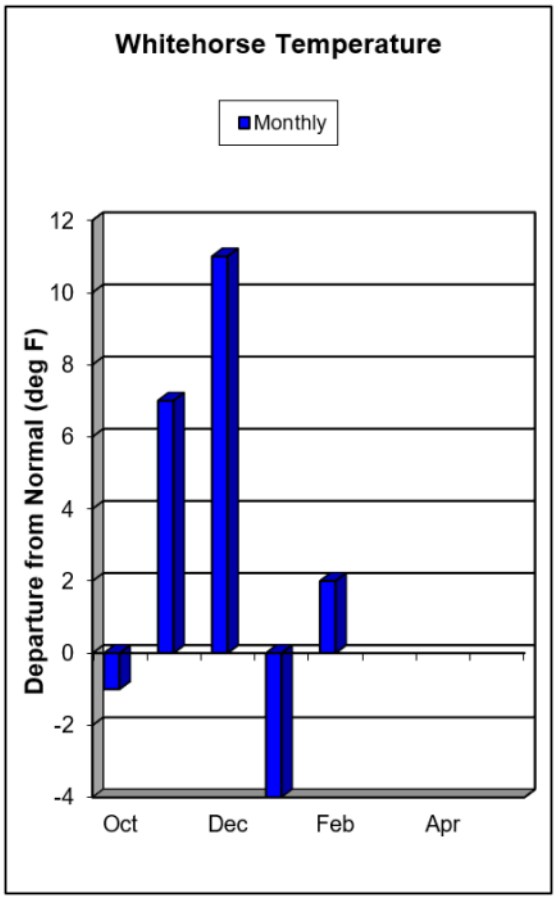
Boxes to the right of the gray 100% of average line represent above average volumes. Conversely, any boxes to the left of the gray 100% line represent below average volumes. In this case all forecast exceedances are for above average April-July volumes. Averages are based on the 1981-2010 period. The 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

The Upper Yukon Basin has above normal snowpack this winter. Not since 2012 has it been this deep for the basin as a whole. Individual snowpack measurements range from 94% to 176% of normal.

The three snow courses near Dawson averaged 160% of normal with both Grizzly Creek and Midnight Dome Snow Courses carving out new 46-year record highs.

Likewise, three snow courses in the Stewart-Pelly drainages set new record highs. These were: Pelly Farm (36-years on record), Hoole River (42-years on record), and Rose Creek (23-years on record). The 12 sites in these basins average 135% of normal snowpack.

While no new records were set in the White River basin, the 8 sites record an average of 121% on normal snowpack, nearly twice the amount of snow last year, but less than the 2018 snowpack.

The basin above Whitehorse, also has twice as much snow as it did last year. The nine sites in this location average 112% of normal.

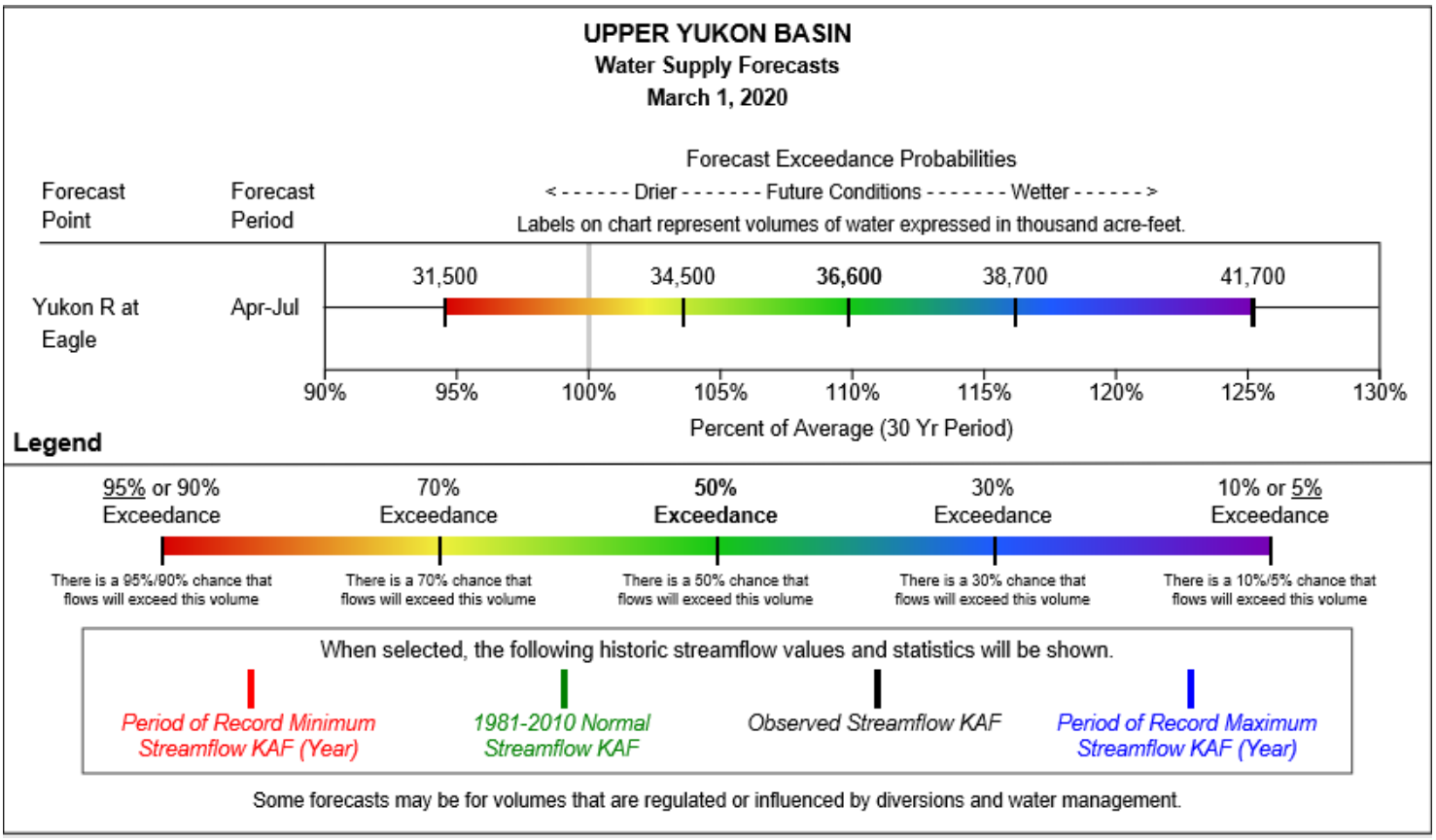
Upper Yukon Basin

Snowpack Data

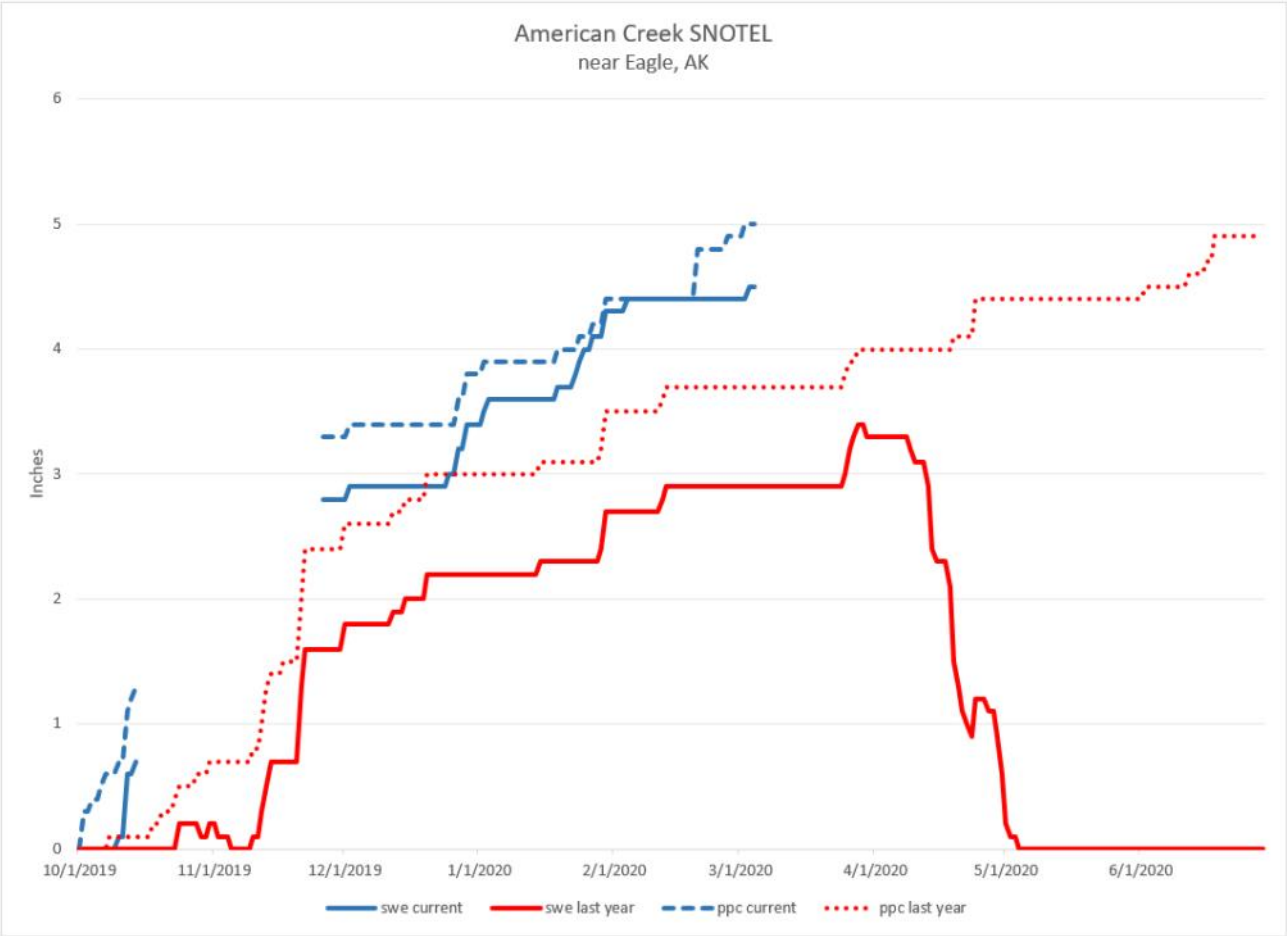
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Beaver Creek	2150	18	16	16	2.8	2.2	2.4
Blackstone River	1020	28	20	---	4.4	3.3	---
Burns Lake	3650	44	35	33	9.8	7.7	7.4
Burwash Airstrip	2660	11	8	10	1.9	1.3	1.7
Calumet	4300	52	25	34	10.9	5.1	6.8
Canyon Mine	1160	17	10	---	2.8	1.5	---
Casino Creek	3495	32	19	24	5.0	2.6	4.0
Chair Mountain	3500	22	19	20	3.9	2.8	3.0
Eagle Plains	2330	29	34	28	4.5	7.6	5.6
Eagle River	1115	24	32	25	3.8	5.7	4.1
Finlayson Airstrip	3240	29	21	20	5.8	3.9	3.6
Francis River	730	39	25	---	8.1	4.6	---
Fuller Lake	3695	36	31	31	6.7	5.8	6.7
Grizzly Creek	3200	47	29	28	10.4	5.4	5.9
Hoole River	3400	39	21	24	8.0	3.3	4.6
Hyland	855	46	29	---	10.4	6.1	---
King Solomon Dome	3540	41	24	29	7.4	4.6	5.6
Macintosh	3805	23	14	19	3.7	1.8	3.3
Mayo Airport	1770	35	16	20	6.1	2.7	3.8
Meadow Creek	4050	48	30	40	10.9	4.7	9.4
Midnight Dome	2805	42	26	26	8.6	4.7	5.0
Montana Mtn.	3350	25	16	24	5.5	2.8	5.2
Morley Lake	2700	27	20	24	4.8	3.2	5.1
Mt. Berdoe	3395	30	15	22	4.9	2.2	3.8
Mt. Mcintyre B	3600	31	20	26	6.2	3.8	5.2
Mt. Nansen	3350	22	11	17	3.1	1.5	2.6
Ogilvie River	550	33	24	---	5.7	4.2	---
Pelly Farm	1550	26	10	16	5.0	1.4	2.8
Pine Lake Airstrip	995	42	30	---	9.0	5.7	---
Plata Airstrip	2725	37	26	30	7.5	5.1	6.2
Rackla Lake	3410	40	29	31	8.6	5.4	6.4
Riffs Ridge	2130	32	29	28	6.1	5.6	4.7
Rose Creek Faro	1080	25	20	---	7.8	2.9	---
Russell Lake	3480	40	31	35	7.7	5.7	7.0
Satasha Lake	3630	21	12	18	3.5	1.8	3.1
Summit	985	36	25	34	8.0	5.8	9.2
Tagish	3540	26	18	25	5.2	2.8	5.1
Twin Creeks	2950	35	25	30	7.1	4.4	6.3
Watson Lake Airport	685	28	21	---	5.3	3.5	---
Whitehorse Airport	2300	22	11	19	4.1	1.6	3.6
Williams Creek	3000	26	13	18	4.3	1.9	3.1
Withers Lake	3200	43	29	34	10.0	5.7	7.4

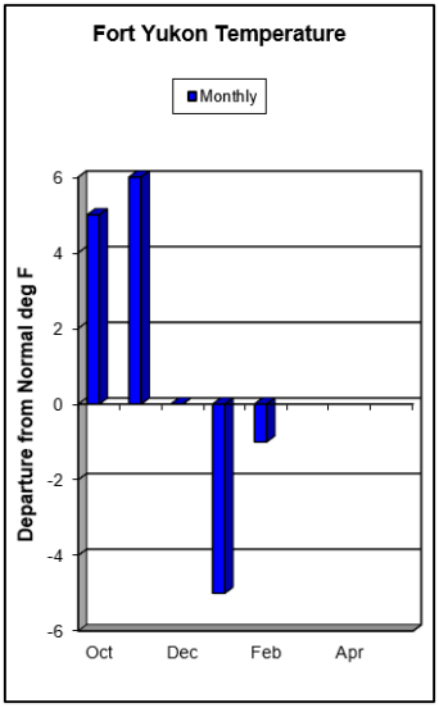
**Estimate*

Streamflow Forecasts



Central Yukon Basin





Snowpack

The measured snowpack in the Central Yukon Basin is above normal and made greater-than-normal gains during February. The sixteen sites in this basin averaged 133% of normal snowpack.

Snowpack along the Dalton Highway on the western side of the basin is similar to last year, while the White Mountain and Forty-mile snowpacks are considerably deeper this year. Three of the four snow courses in the Forty-Mile area set new record highs: these include Boundary (50-year record), Mount Fairplay (48-year record) and Lost Chicken Hill (23-year record).

Snowpack in the Upper Porcupine Basin was close to 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	20	17	---	4.4	2.9	---
Atigun Pass	4800	41	41	---	---	---	---
Borealis	1330	28	19	23	5.6	3.6	4.0
Boundary	3500	35	23	22	7.8	4.5	4.3
Chicken Airstrip	1650	21	16	16	4.0	2.9	2.8
Circle Hot Springs	860	29	21	22	5.0	3.6	3.6
Eagle Summit	3650	8	7	---	---	---	---
Fort Yukon	430	16	20	---	---	---	---
Fort Yukon	430	20	19	18	3.2	2.9	3.0
Fossil	1400	25	18	22	5.1	3.4	3.8
Graphite Lake	600	19	23	---	3.4*	3.9	---
Hess Creek	1000	31	25	24	5.8	5.0	4.5
Jack Wade Jct	3585	33	25	---	6.2	3.9	
Lost Chicken Hill	2150	25	17	18	4.9	3.4	3.1
Lower Beaver Creek	400	37	26	---	8.0*	4.7	---
Mt. Fairplay	3100	32	---	20	6.6	---	3.8
Ptarmigan Creek	2270	29	20	23	4.9	3.4	3.6
Seven Mile	600	32	27	26	6.0	6.0	4.6
Stack Pup Creek	1620	29	22	23	4.8	3.5	3.7
Thirty Mile	1350	44	38	34	9.7	9.6	7.0
Upper Nome Creek	2520	32	25	---	7.0	---	---
Vunzik Lake	500	33	21	---	7.1*	3.6	---
Windy Gap	1900	35	23	24	7.9	4.6	4.8
Wolf	1200	26	21	21	5.4	3.5	3.6

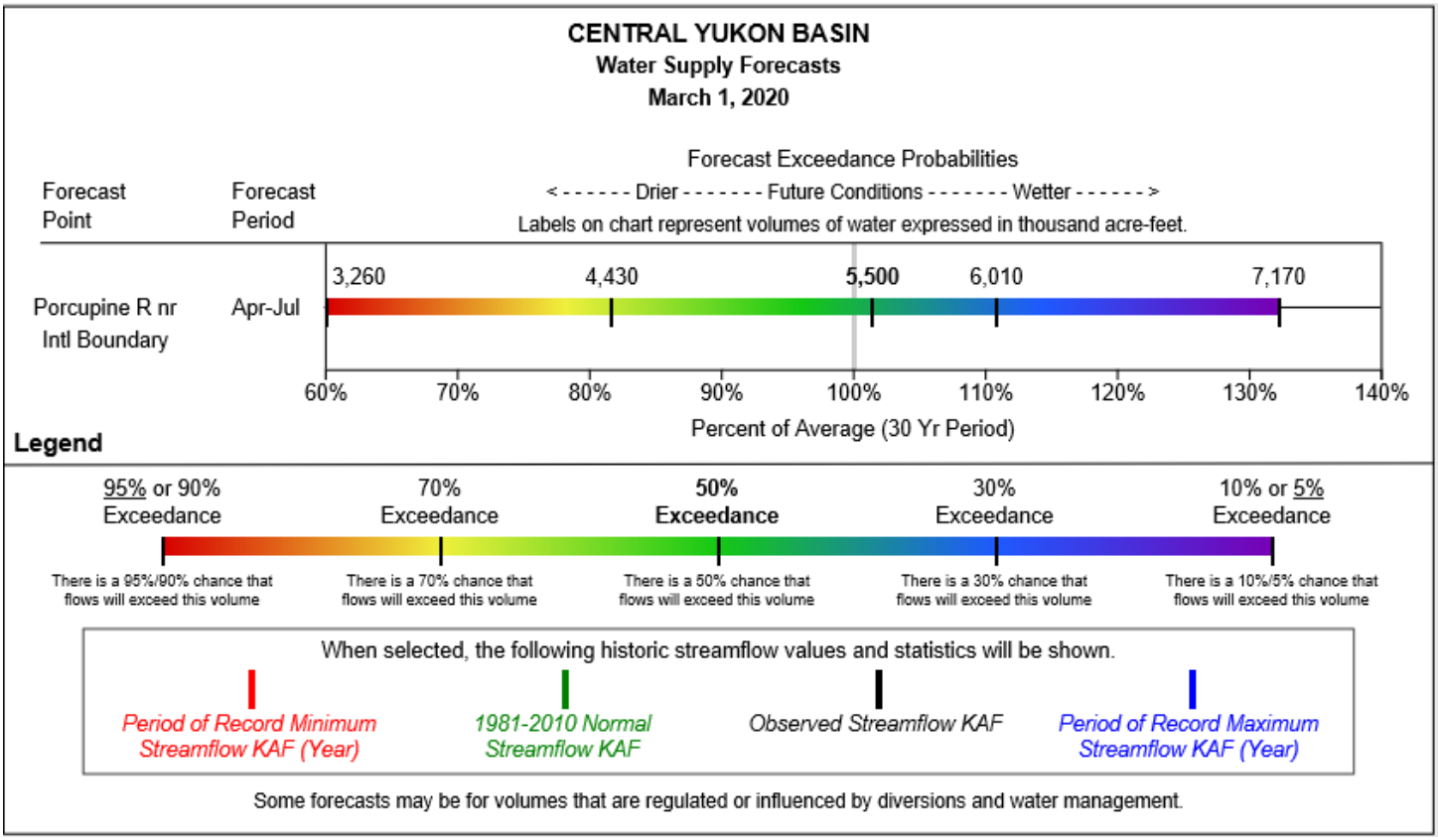
**Estimate*

Precipitation

Inches Accumulated since October 1st

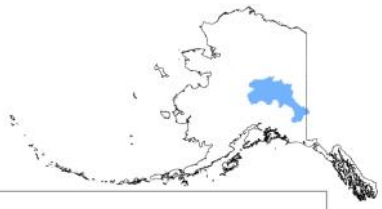
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
American Creek	1050	4.9	3.7	---	---
Atigun Pass	4800	3.0	4.9	4.8	63%
Chandalar Camp	3300	5.5	5.6	3.9	141%
Eagle Summit	3650	5.8	4.4	4.7	123%
Fort Yukon	430	3.5	3.5	3.1	113%
Jack Wade Jct	3585	6.5	4.2	---	---
Upper Nome Creek	2520	8.4	6.0	4.3	195%

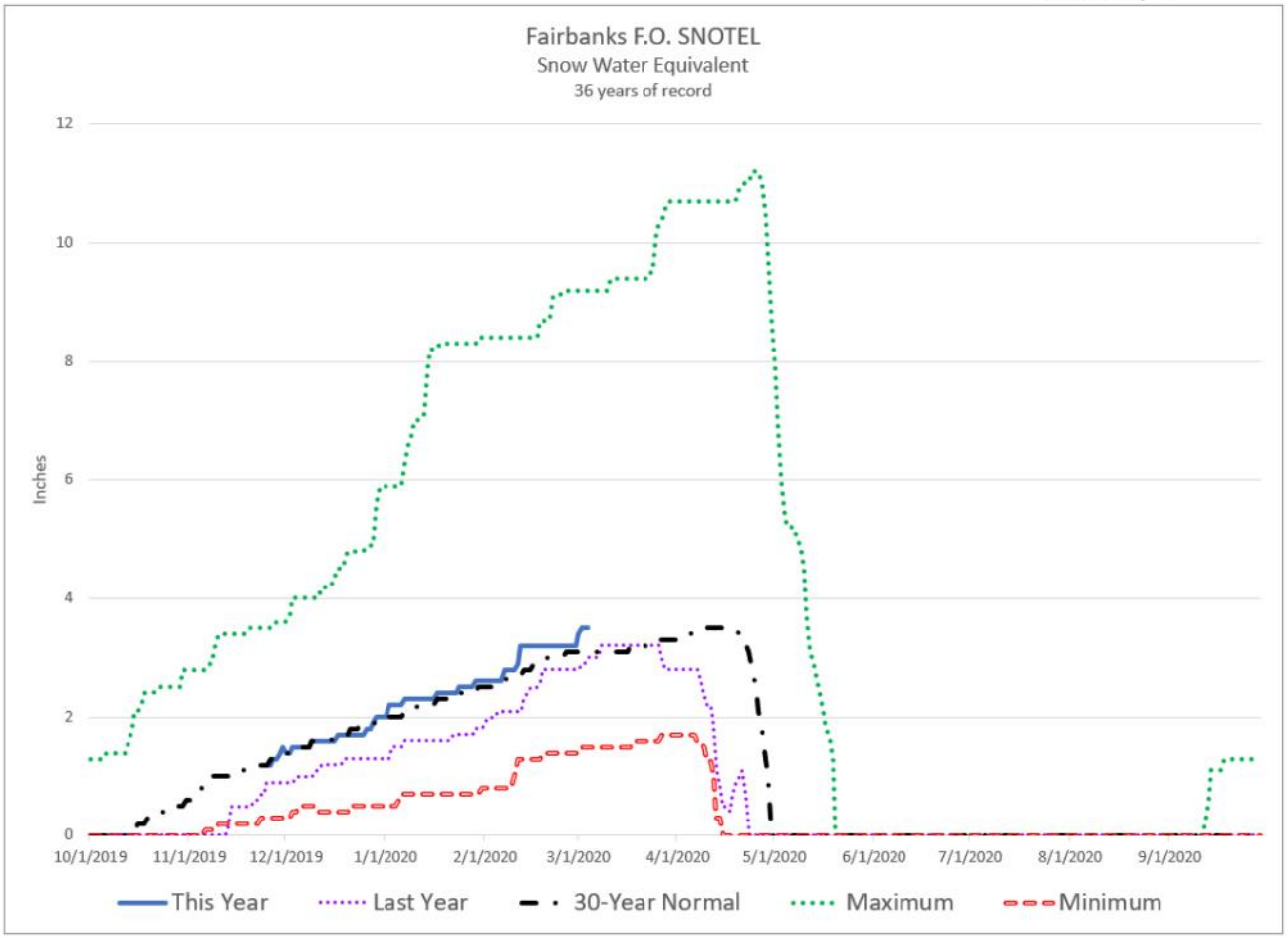
Streamflow Forecasts

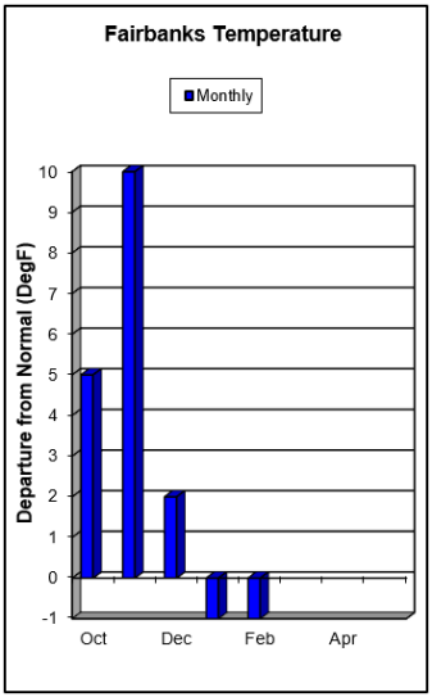


Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Yukon R near Stevens Village	Apr-Jul	114	125	103	54900	48100

Tanana Basin







Snowpack

The snowpack in the Tanana Basin made greater-than-normal gains in February. Snowpack in the low-lying areas of the lower valley is near normal, the snowpack in the very upper basin near the Wrangell Mountains is below normal, but the snowpack in most of the rest of the basin is above normal. The 24 sites in the basin average 133% of normal.

The only below normal snowpack is in the portion of the basin south of the Alaska Range in the Nabesna River Valley. The two sites here are near half of normal. Further downstream, near Tok, the snowpack rebounds and Tok Junction Snow Course is 167% of normal, its fourth highest reading in 57 years with 26 inches of snow depth and 5.0 inches of water content.

This above normal snowpack continues down valley, where the 5 sites near Delta Junction average 169% of normal. The Granite Creek SNOTEL site recorded its second highest March 1st reading in 32 years, just a year after its record low reading was set. Fielding Lake snow course set its new 60-year record high with 210% of normal snowpack. The new Look Eyrie SNOLITE site near the Caswell Glacier had 155" of snow depth on March 1st.

Still lower in the valley, the Fairbanks area had slightly above normal snowpack, while the Chena basin averaged 130% of normal snowpack.

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	26	---	20	4.8	---	3.9
Caribou Creek	1250	22	---	20	4.9	---	3.6
Caribou Snow Pillow	900	23	---	21	5.3	---	3.6
Chisana	3320	16	10	---	2.8	1.7	4.1
Cleary Summit	2230	39	---	26	8.1	---	4.6
Colorado Creek	700	23	---	20	3.4	---	3.4
Fairbanks F.O.	450	19	15	---	3.4	2.8	3.1
Faith Creek	1750	29	---	24	5.3	---	4.2
Fielding Lake	3000	64	---	37	18.1	---	8.6
Fielding Lake SNOTEL	3000	52	30	---	15.3	6.8	---
Fort Greely	1500	22	---	17	4.2	---	3.0
French Creek	1800	30	---	24	6.6	---	4.6
Gerstle River	1200	20	---	18	3.9	---	2.9
Granite Crk	1240	23	7	---	5.3	1.4	3.5
Kantishna	1550	28	---	24	5.9*	---	4.4
Lake Minchumina	730	27	---	19	4.9	---	3.4
Look Eyrie	5040	147	---	---	---	---	---
Lost Creek	3030	11	---	17	1.2	---	3.0
Mentasta Pass	2430	29	---	24	5.9	---	5.1
Monument Creek	1850	23	19	---	4.8	4.0	4.0
Mt. Ryan	2800	31	26	---	7.0	3.7	4.4
Munson Ridge	3100	37	25	---	7.5	5.4	5.9
Rock Creek Bottom	2250	21	---	20	3.9*	---	3.7
Shaw Creek Flats	980	18	---	14	3.1	---	2.5
Teuchet Creek	1640	21	16	---	4.6	3.0	3.3
Tok Junction	1650	26	---	18	5.0	---	3.0

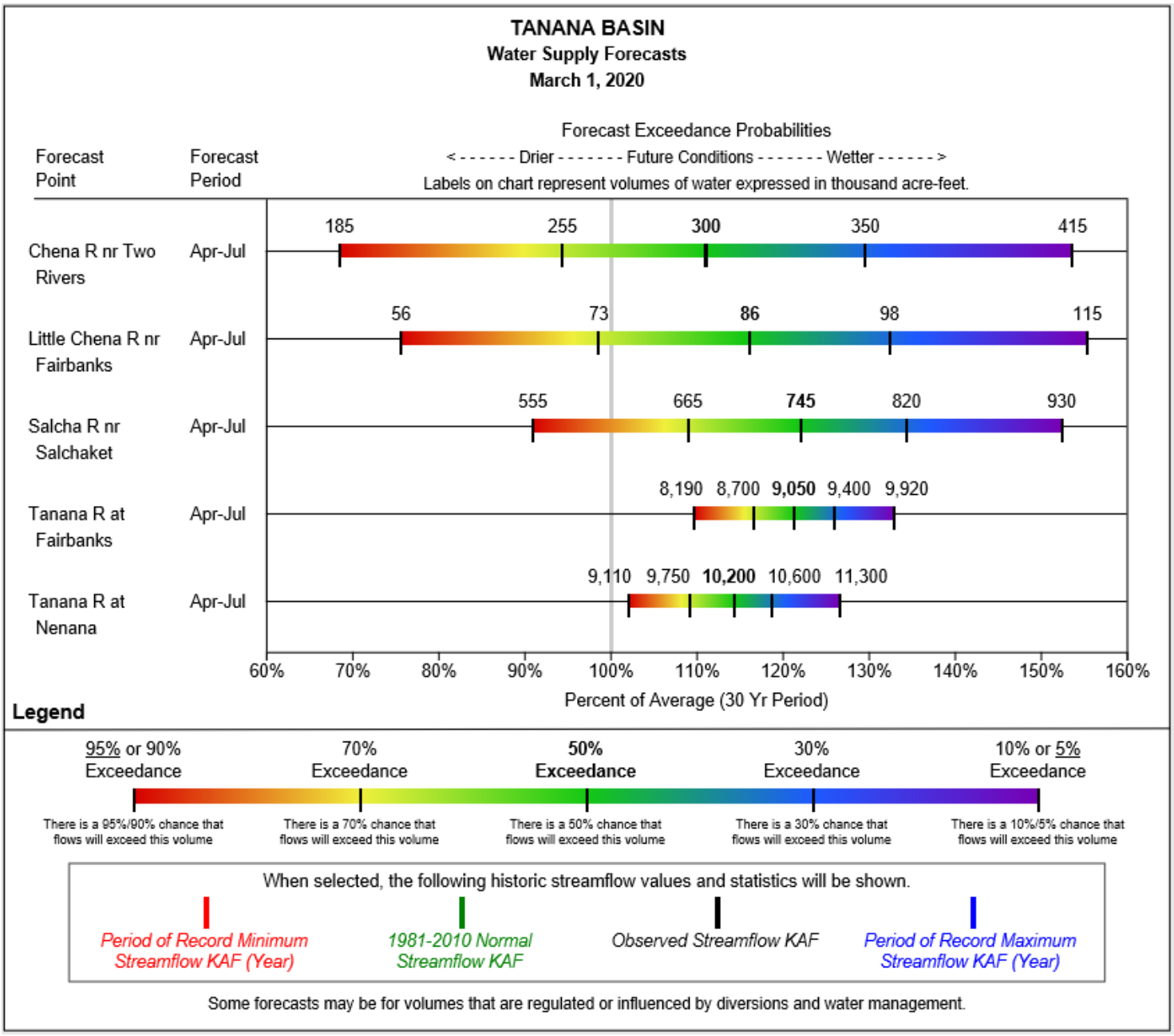
**Estimate*

Precipitation

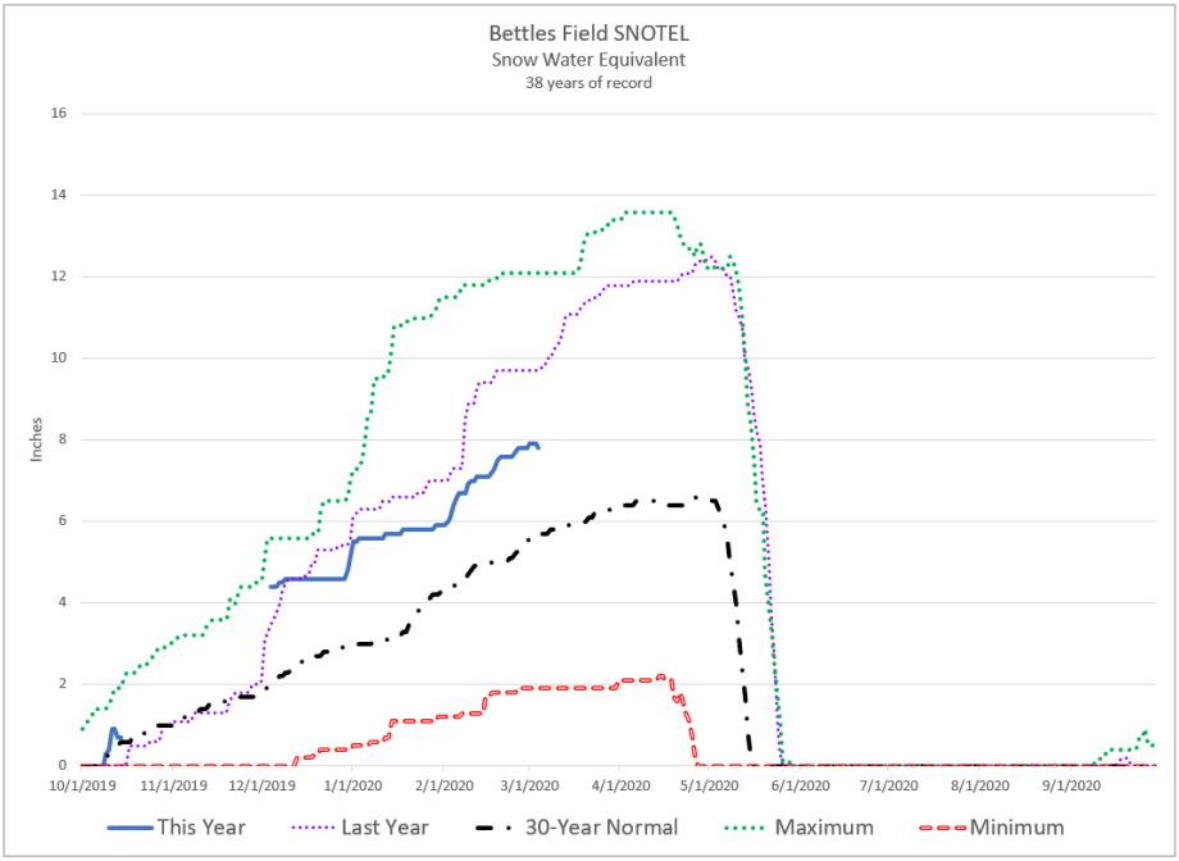
Inches Accumulated since October 1st

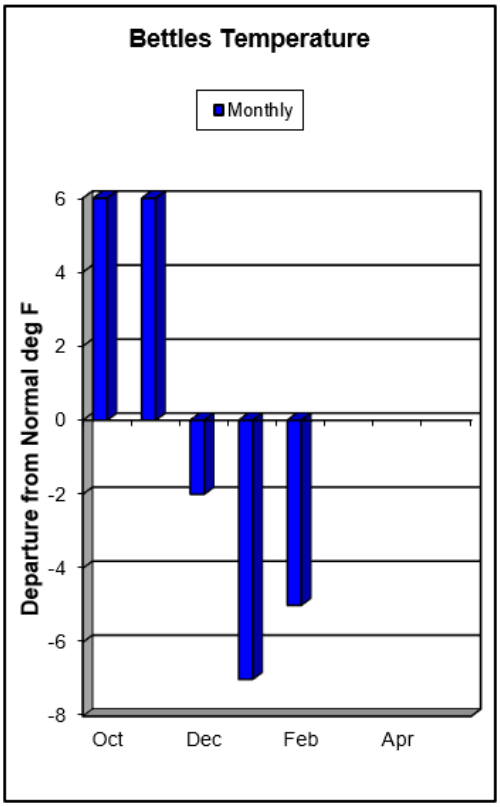
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Chisana	3320	4.5	2.0	---	---
Fairbanks F.O.	450	5.3	2.9	4.0	133%
Granite Creek	1240	6.4	2.1	3.6	178%
Kantishna	1550	6.9	4.2	3.8	182%
Little Chena Ridge	2000	6.3	4.3	4.8	131%
Monument Creek	1850	6.6	4.5	4.8	138%
Mt. Ryan	2800	7.6	5.1	4.9	155%
Munson Ridge	3100	9.3	6.1	6.6	141%
Nenana	415	6.4	3.8	---	---
Teuchet Creek	1640	5.1	3.8	3.8	134%
Upper Chena	2850	---	5.3	5.9	---

Streamflow Forecasts



Western Interior Basins





Snowpack

Koyukuk

The Koyukuk Basin has much above normal snowpack, but less than last year. The eleven sites in this basin average 155% of normal.

Kuskokwim

The Kuskokwim basin has above normal snowpack. Purkeypile Mine Snow Course, at 161% of normal, recorded the highest March 1st snowpack in its 29-year history. Likewise, McGrath and Lake Minchumina report above normal snowpack. Aniak SCAN has more snow depth than last year, about the same as two years ago.

Lower Yukon

The Lower Yukon has above normal snowpack. The three Aerial Markers between Galena and Tanana recorded the deepest snowpack in their 14-year record. Similarly, down river from Galena, sites were measured with some of the deepest snowpacks in their 20-year history.

Western Interior Basins

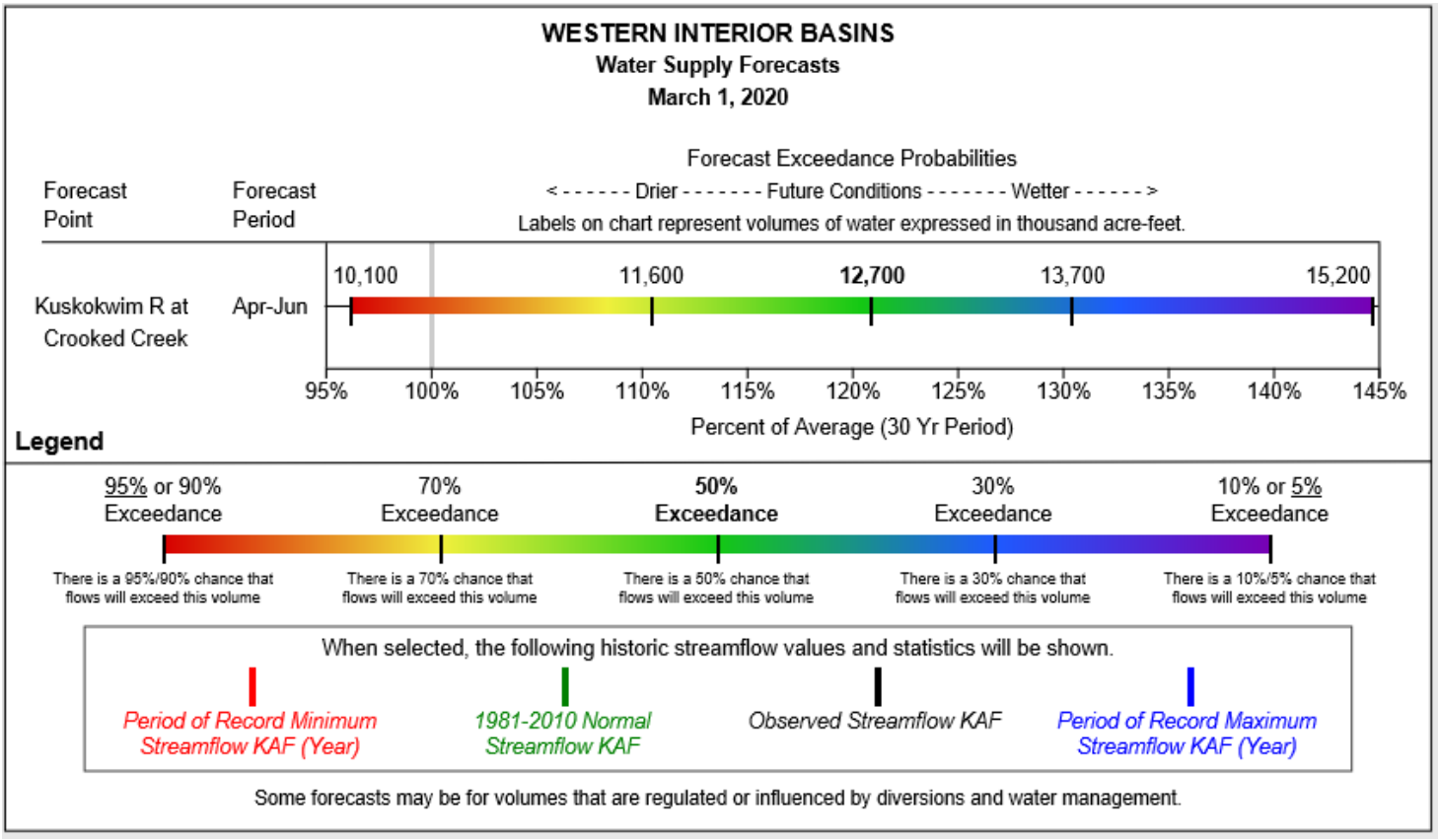
Snowpack Data

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	36	40	---	7.9	9.7	5.6
Bonanza Forks	1200	28	32	26	5.0	7.4	4.8
Cloverleaf	170	42	30	---	8.4*	6.9	---
Coldfoot	1040	33	42	---	7.0	9.5	5.3
Colville Bend	170	30	30	---	6.3*	6.9	---
Disaster Creek	1550	26	28	22	4.4	5.2	3.2
East Chalatna	430	22	35	---	4.3*	8.1	---
Gobblers Knob	2030	4	20	---	---	---	---
Huggins Creek	290	36	31	---	7.8*	6.5	---
Jr Slough	160	31	27	---	6.3*	6.1	---
Kaldoyeit	750	45	44	20	9.6*	10.5	3.7
Kanuti Chalatna	670	40	35	28	8.7*	8.4	5.2
Kanuti Kilolitna	550	23	48	21	4.6*	11.0	4.0
Minnkokut	580	43	50	32	9.3*	11.8	5.7
Nolitna	560	45	39	28	9.7*	9.4	5.0
Table Mountain	2200	30	30	21	5.9	6.1	3.3
Treat Island	190	32	31	---	6.6*	6.7	---
Kuskokwim							
Aniak	80	24	16	---	---	---	---
McGrath	340	44	---	---	13.2	---	---
Purkeypile Mine	2025	32	---	24	7.4	---	4.6
Telaquana Lake	1550	27	23	22	4.8	4.7	4.4
Telaquana Lake SNOTEL	1275	21	22	---	5.1	5.7	---
Lower Yukon							
Bullfrog	100	51	42	---	11.2	9.4	---
Deer Creek	195	46	---	---	10.5*	---	---
Galena AK	410	32	22	---	6.3	5.0	---
Hozatka Lake	206	25	22	---		---	---
Little Mud River	855	36	20	---	8.6*	4.3	---
Lower Nowitna River	205	36	---	---	8.5*	---	---
Middle Innoko	150	45	33	32	10.3*	7.4	6.5
Ninemile Island	140	38	43	---	7.9*	9.2	---
Pike Trap Lake	130	30	12	---	6.2*	3.4	---
Squirrel Creek	150	48	42	---	9.2*	9.4	---
Upper Innoko	180	45	31	33	10.7*	6.8	7.2
Wapoo Hills	220	60	49	33	13.5*	11.3	6.8
Yankee Slough	100	45	51	38	11.2*	11.9	8.4

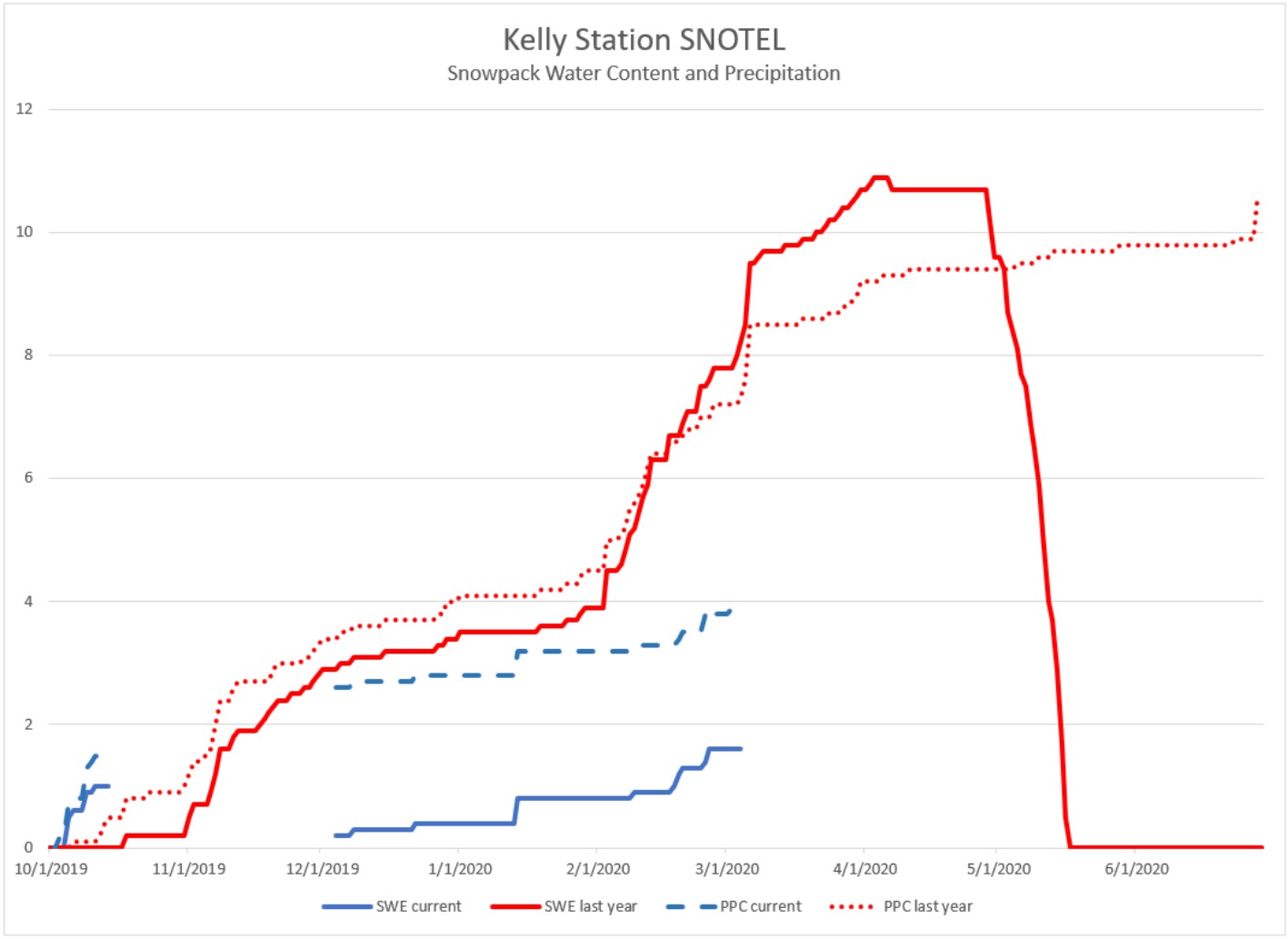
Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Koyukuk					
Bettles Field	640	8.9	8.6	5.8	153%
Coldfoot	1040	8.2	10.0	5.7	144%
Gobblers Knob	2030	7.5	8.8	6.1	123%
Kuskokwim					
Aniak	80	9.3	7.6	---	---
McGrath	340	13.8	---	---	---
Telaquana Lake	1275	9.8	6.3	---	---
Lower Yukon					
Galena AK	410	6.4	5.0	---	---
Hozatka Lake	206	6.5	4.9	---	---

Streamflow Forecasts



Arctic and Kotzebue Sound



Snowpack

Arctic

The Arctic continues to have near normal precipitation this winter, though February displayed site-to-site variability. Snow depths at the SNOTEL sites along the Dalton Highway are similar to last year.

Kotzebue

Kelly Station SNOTEL made below normal gains during February and is reporting its lightest March 1st snow-pack since 2013.

Arctic and Kotzebue Sound

Snowpack Data

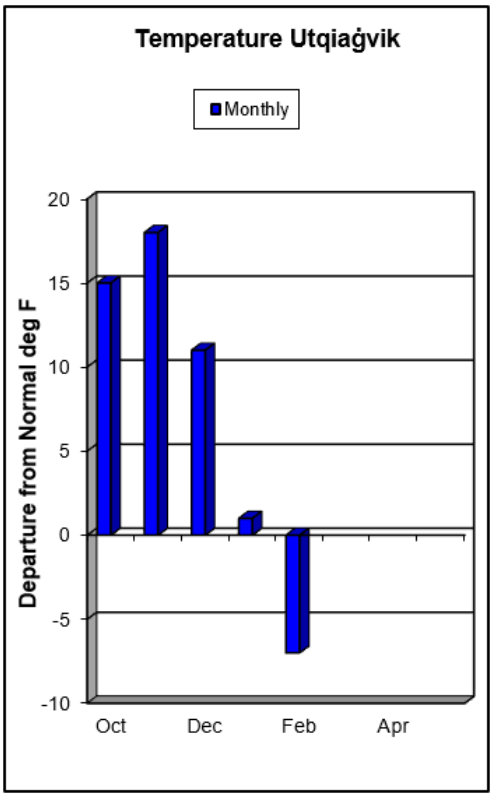
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Atigun Pass	4800	41	41	---	---	---	---
Imnaviat Creek	3050	18	14	---	---	---	---
Kelly Station	310	11	31	---	1.6	7.8	---
Prudhoe Bay	30	14	10	---	---	---	---
Sagwon	1000	18	22	---	---	---	---

**Estimate*

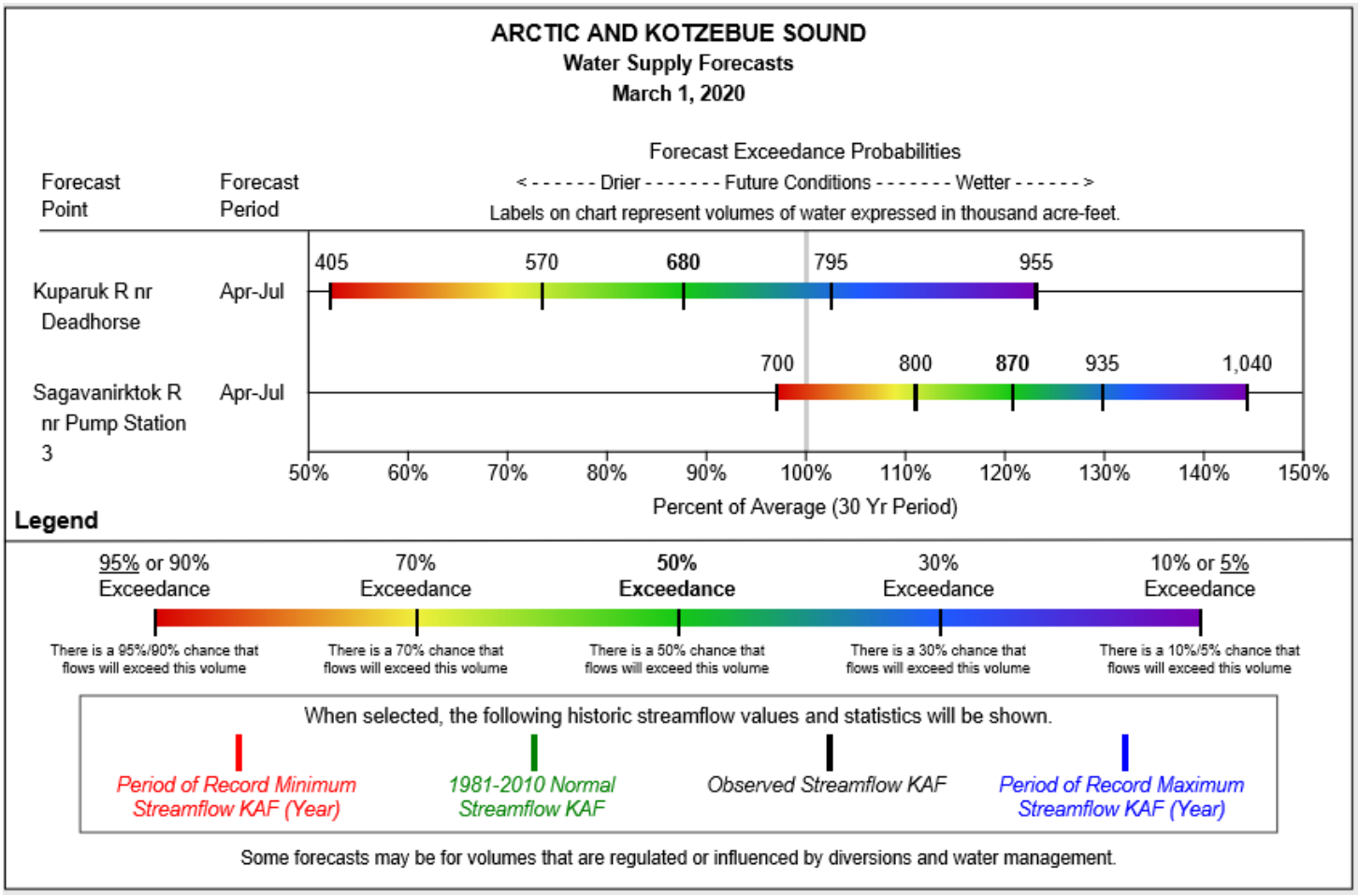
Precipitation

Inches Accumulated since October 1st

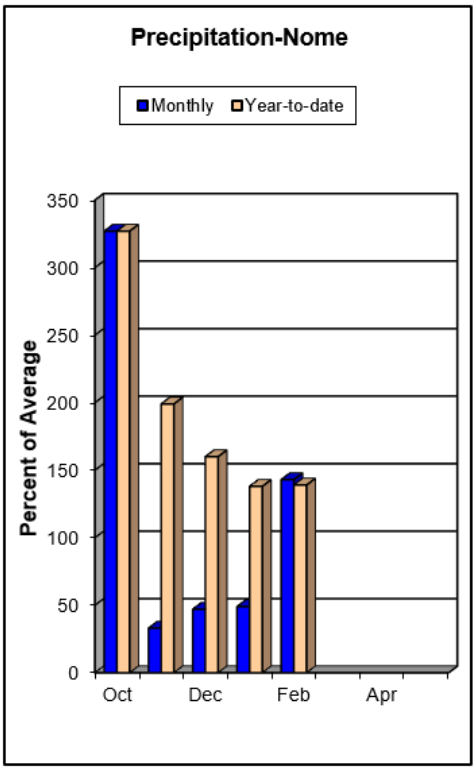
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Arctic					
Atigun Camp	3400	3.0	2.7	2.1	143%
Atigun Pass	4800	3.0	4.9	4.8	63%
Imnaviat Creek	3050	2.2	2.4	2.6	85%
Prudhoe Bay	30	3.0	2.5	2.6	115%
Sagwon	1000	2.5	2.5	2.6	96%
Kotzebue Sound					
Kelly Station	310	3.8	7.2	---	---

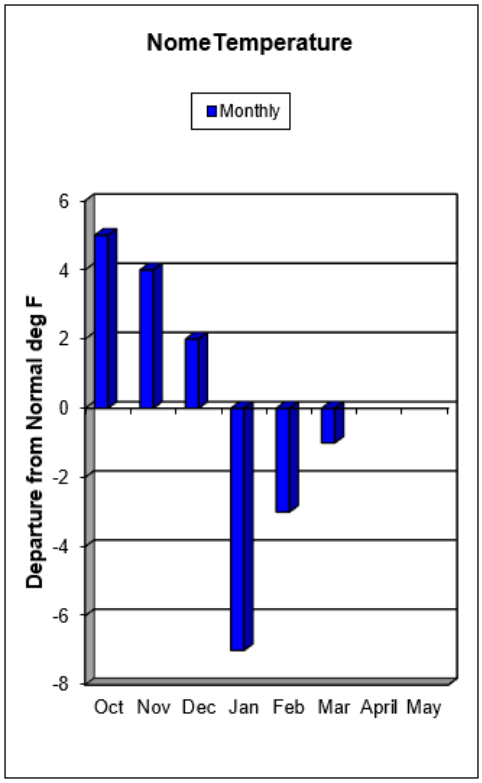


Streamflow Forecasts



Norton Sound/Y-K Delta/Bristol Bay





Snowpack

The Seward Peninsula received mixed amounts of precipitation in February. Snowpack reporting sites on the peninsula have less snow on March 1st than they have since 2015.

Precipitation

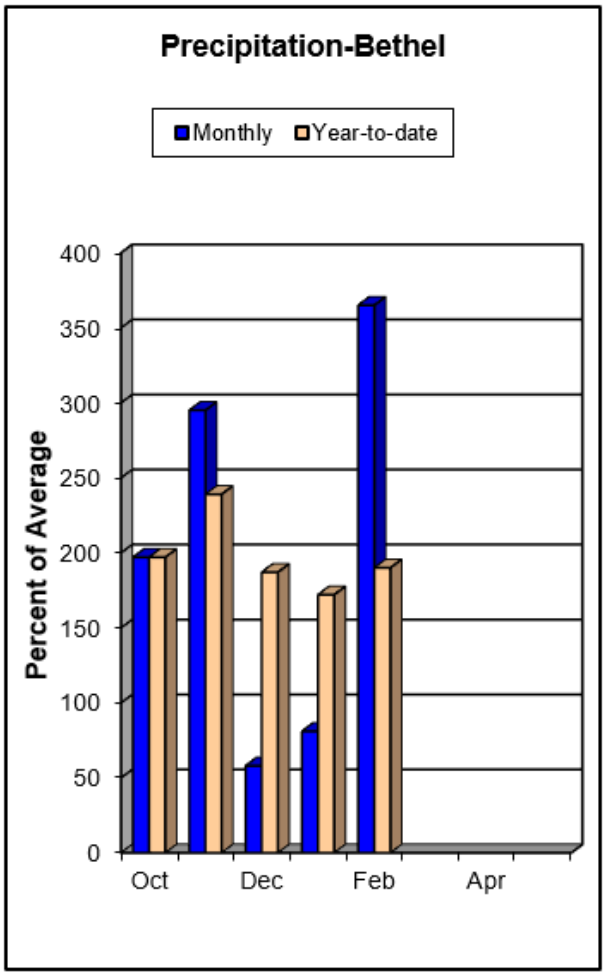
		Inches Accumulated since October 1st			
Site Name	**Elev.**	**This Year**	**Last Year**	**1981-2010 Normal**	**% of Normal**
Norton Sound					
Pargon Creek	100	5.0	6.7	5.1	98%
Rocky Point	250	4.4	5.5	4.8	92%

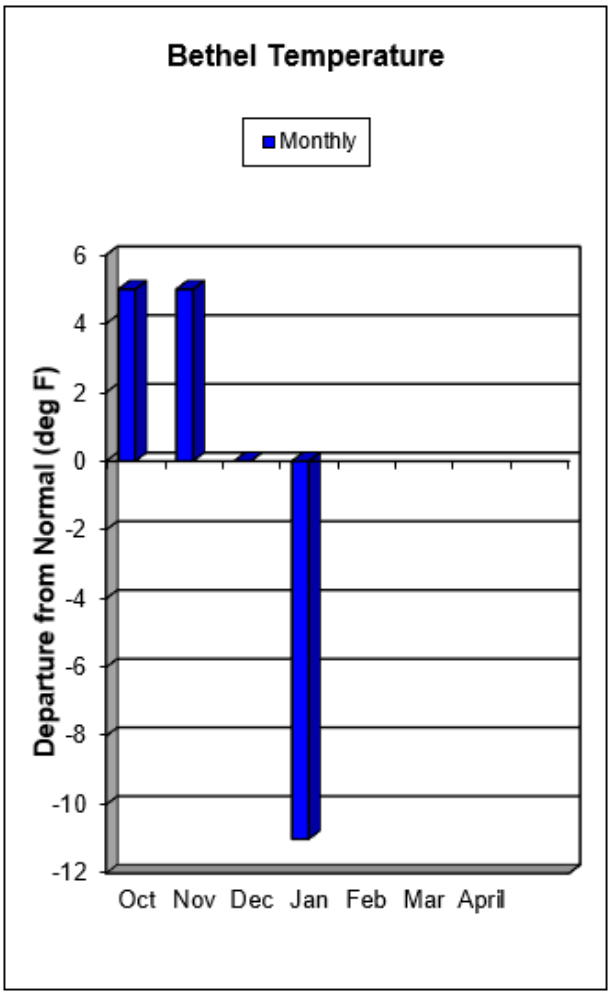
Norton Sound/Bristol Bay

Snowpack Data

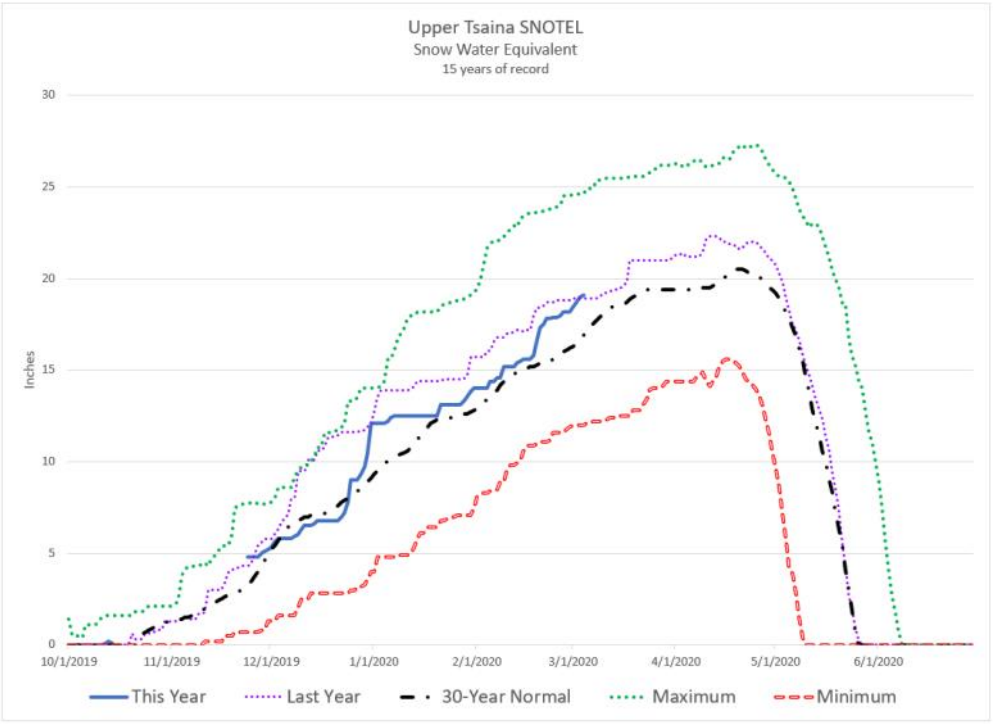
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Norton Sound							
Johnsons Camp	25	6	39	---	---	---	---
Pargon Creek	100	---	27	---	---	---	---
Rocky Point	250	12	46	---	---	---	---

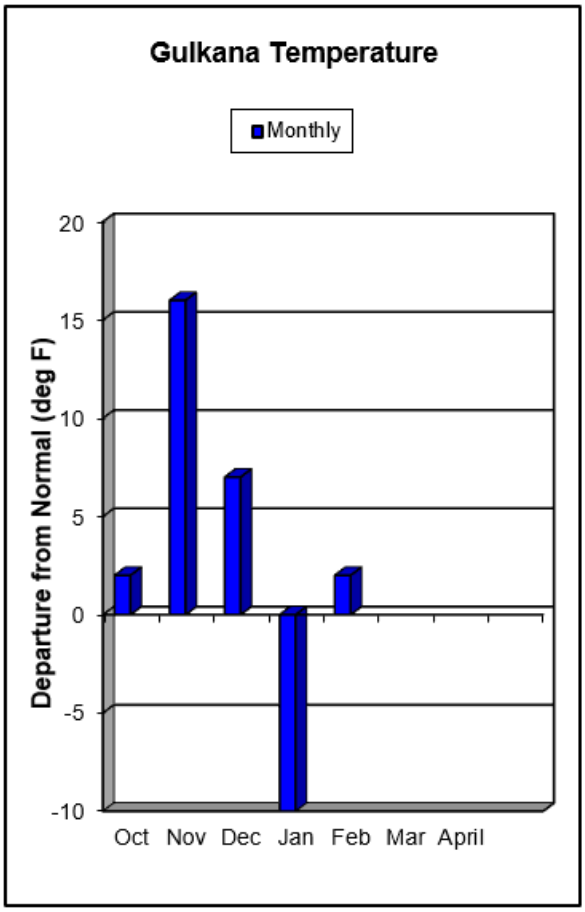
**Estimate*





Copper Basin





Snowpack

While eastern portions of the valley have below normal snowpack, most of the Copper Valley has near normal snowpack. Snowpack near the Alaska Range made above normal gains during February and have much above normal snowpack. The Paxson Snow Course was measured with the third wettest March 1st snowpack in its 39-year record, and just over Isabella Pass, Fielding Lake Snow Course was measured with a 60-year record breaking deep snowpack.

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	15	19	20	2.5	3.3	3.2
Chokosna	1550	12	14	16	2.3	2.5	3.2
Copper Center	1264	20	18	---	4.6	3.1	---
Dadina Lake	2160	22	19	27	3.5	3.1	5.4
Fielding Lake	3000	64	32	37	18.1	6.9	8.6
Fielding Lake	3000	52	30	---	15.3	6.8	---
Gulkana River	1830	20	15	---	4.4	3.7	---
Haggard Creek	2540	30	23	26	6.2	4.1	5.2
Kenny Lake School	1300	16	12	17	2.7	2.0	3.0
Little Nelchina	2650	24	18	24	4.6	3.0	4.7
Lost Creek	3030	11	11	17	1.2	1.7	3.0
May Creek	1610	21	17	---	4.7	3.5	4.6
Mentasta Pass	2430	29	19	24	5.9	3.4	5.1
Monsoon Lake	3100	36	28	28	7.0	5.8	5.4
Nicks Valley	4280	142	104	---	---	---	---
Paxson	2650	41	28	30	9.2	5.3	5.9
Sanford River	2280	27	21	28	5.3*	3.3	5.2
St. Anne Lake	1990	23	22	23	4.3*	3.9	4.2
Tazlina	1250	21	16	16	4.1	2.7	3.4
Tolsona Creek	2000	23	18	20	4.3	3.1	3.8
Twin Lakes	2400	26	23	28	5.0	4.6	5.6
Upper Tsaina River	1750	74	68	---	18.5	18.9	16.3

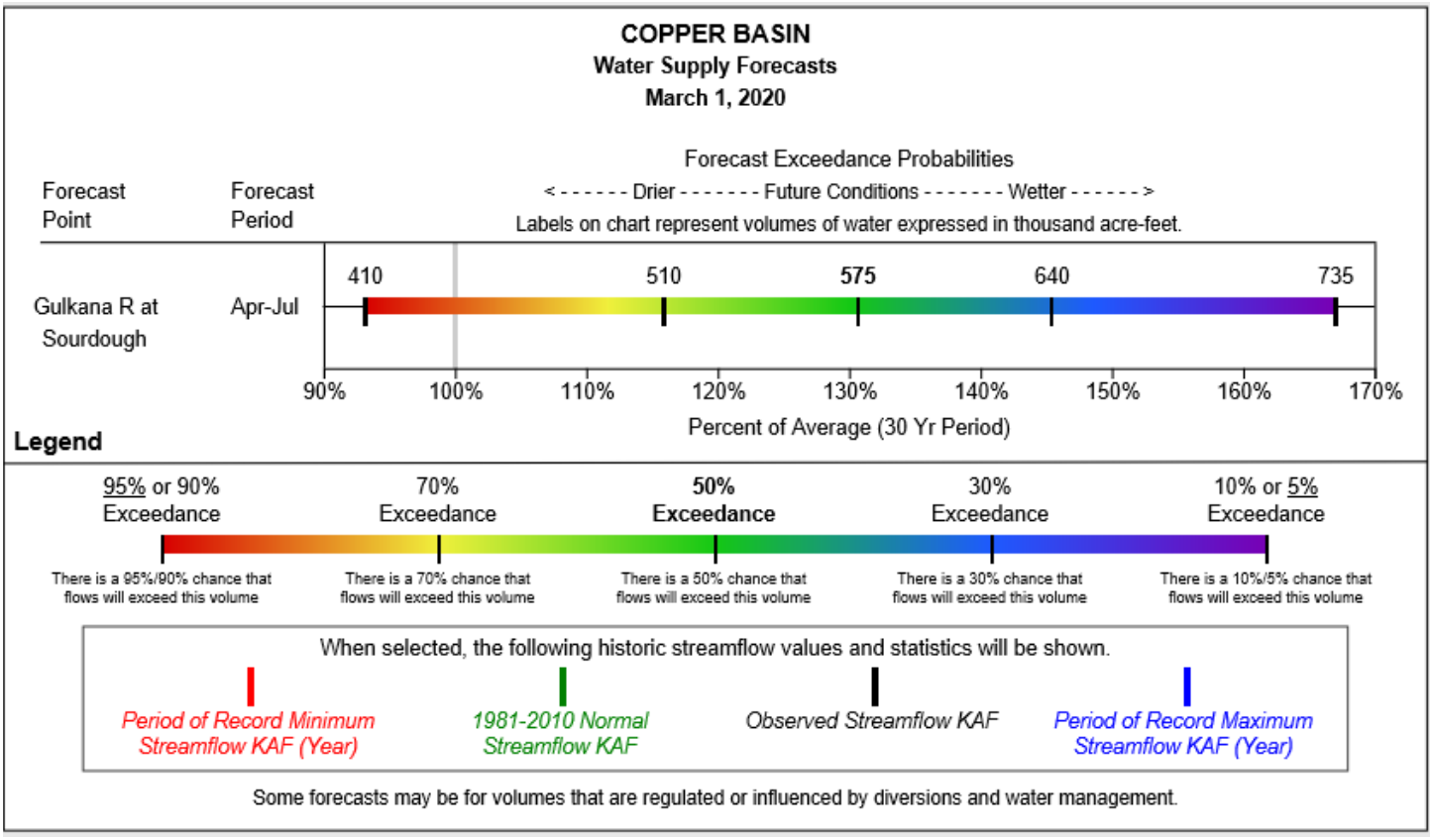
**Estimate*

Precipitation

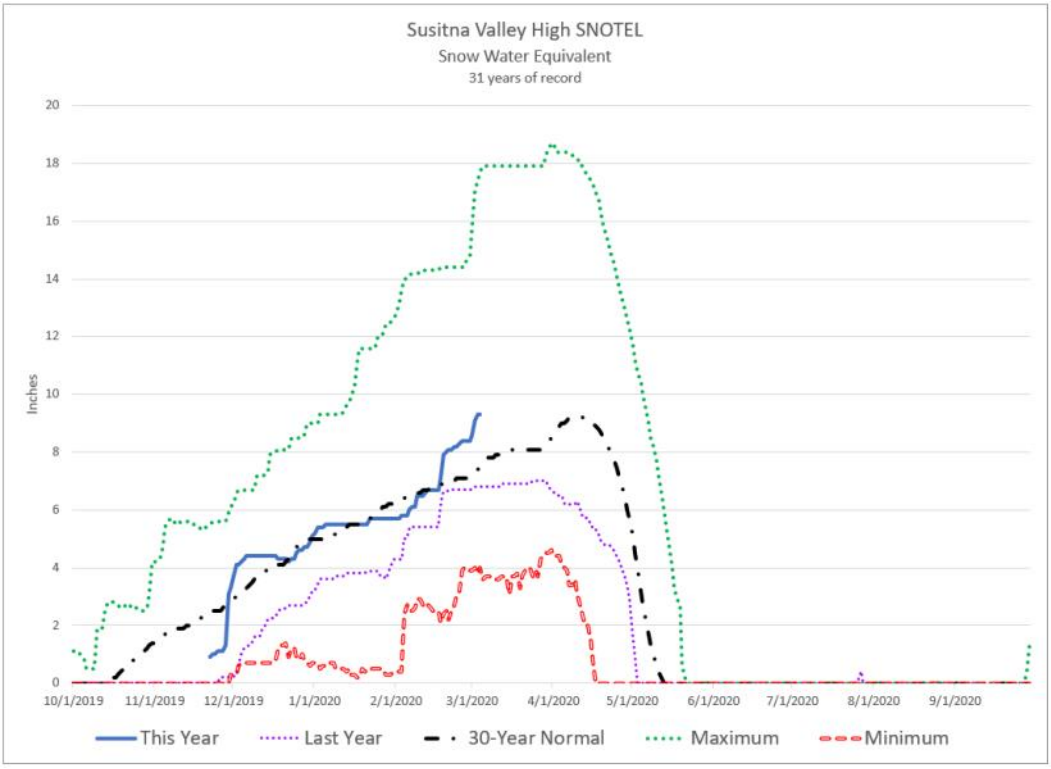
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Gulkana River	1830	4.9	3.4	---	---
May Creek	1610	5.9	4.3	5.5	107%
Upper Tsaina River	1750	24.4	30.5	24.1	101%

Streamflow Forecasts

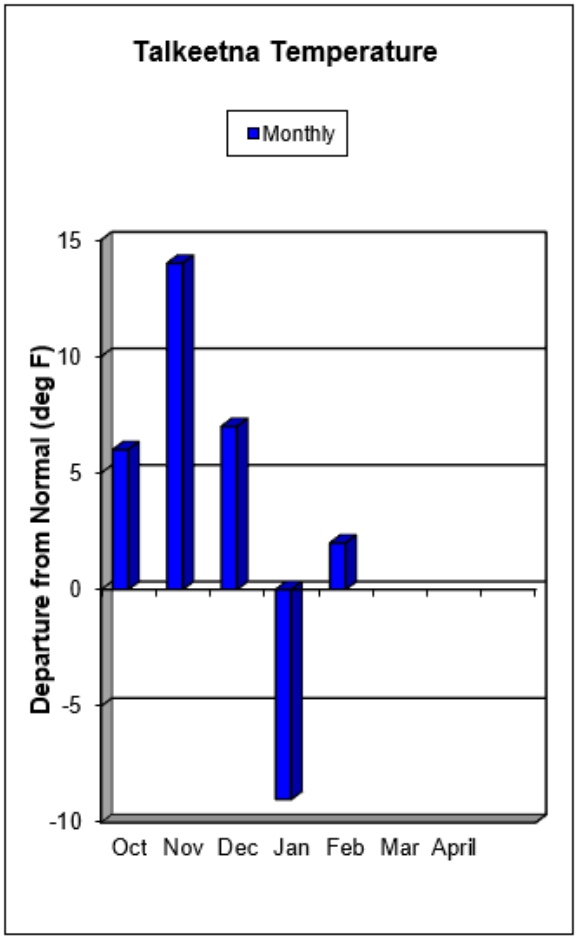


Matanuska—Susitna Basin



Snowpack

Big storms hit the Susitna Valleys during February. Several snow courses, such as Willow Airstrip, Denali View, Blueberry Hill and Ramsdyke Creek, posted their greatest February gains on record. Snowpack in this area is above normal with the 22 snow sites averaging 145% of normal. Tokositna SNOTEL is reporting its greatest March 1st SWE in its 14-year record. The East Fork Chulitna Snow Course, near Broad Pass, is reporting its beefiest snowpack since 2005. Likewise, in the Little Susitna Basin, the upper elevation snow courses have the deepest March 1st snowpack since 2005, though the lower elevation sites are similar to the last two years.



Matanuska—Susitna Basin

Precipitation

Inches Accumulated since October 1st

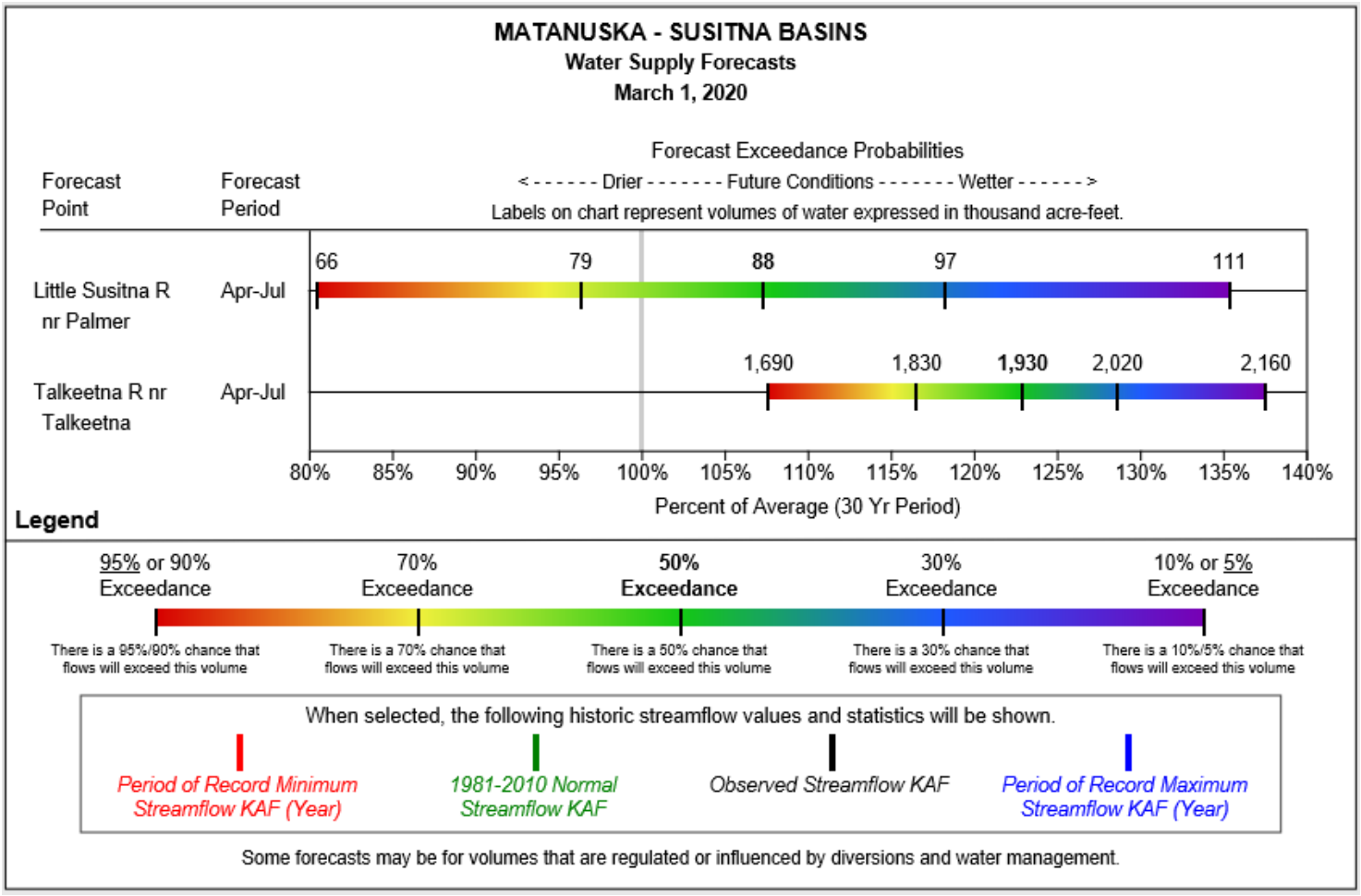
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Alexander Lake	160	17.9	19.7	---	---
Frostbite Bottom	2700	19.8	---	---	---
Independence Mine	3550	21.6	15.6	13.3	162%
Monahan Flat	2710	11.2	8.3	7.1	158%
Susitna Valley High	375	16.8	12.6	10.5	160%
Tokositna Valley	850	31.0	25.2	17.1	181%

Snowpack Data

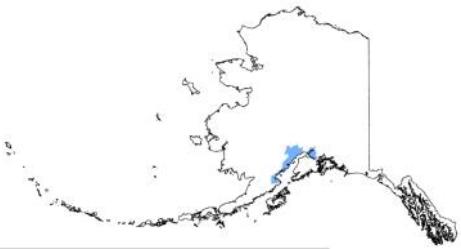
		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Alexander Lake	160	51	41	44	13.1	9.9	11.0
Alexander Lake SNOTEL	160	48	36	---	12.3	7.6	---
Archangel Road	2200	48	44	42	12.6	10.8	11.7
Birthday Pass	4020	102	65	---	35.8*	19.0	---
Blueberry Hill	1200	74	43	45	19.5	11.5	12.8
Chelatna Lake	1450	56	---	44	14.1*	---	10.0
Clearwater Lake	2650	32	28	26	6.4*	4.7	4.7
Curtis Lake	2850	27	23	21	4.6	3.9	4.0
Denali View	700	60	37	38	14.2	9.2	10.9
Dunkle Hills	2700	60	---	---	16.3*	---	---
Dutch Hills	3100	99	---	74	32.8*	---	22.1
E. Fork Chulitna	1770	74	43	46	20.6	11.1	11.2
Fishhook Basin	3300	73	52	53	24.1	13.6	15.6
Fog Lakes	2120	36	23	22	7.6*	4.2	4.3
Frostbite Bottom	2700	55	---	---	16.5	---	---
Horsepasture Pass	4300	36	32	28	7.3*	7.6	5.5
Independence Mine	3550	86	56	62	28.7	15.3	18.6
Independence Mine SNOTEL	3550	66	44	---	17.9	11.1	10.2
Lake Louise	2400	24	19	21	4.4	3.2	3.8
Little Susitna	1700	42	41	37	10.2	9.0	9.7
Monahan Flat	2710	41	30	---	8.7	5.2	---
Nugget Bench	2010	61	---	48	18.9*	---	13.1
Ramsdyke Creek	2220	100	---	62	32.9*	---	18.6
Sheep Mountain	2900	29	22	24	6.6	4.6	4.8
Skwentna	160	63	40	42	15.5	9.7	10.6
Square Lake	2950	31	23	21	5.6*	4.2	3.5
Susitna Valley High	375	39	33	---	8.6	6.7	7.2
Talkeetna	350	37	29	28	8.3	6.4	6.2
Tokositna Valley	850	84	49	---	21.1	12.5	10.4
Tyone River	2400	22	---	24	4.4*	---	4.4
Upper Oshetna River	3150	31	21	20	6.3*	3.9	4.0
Upper Sanona Creek	3100	25	24	27	4.6*	4.1	5.0
Willow Airstrip	200	45	38	27	8.5	7.8	5.7

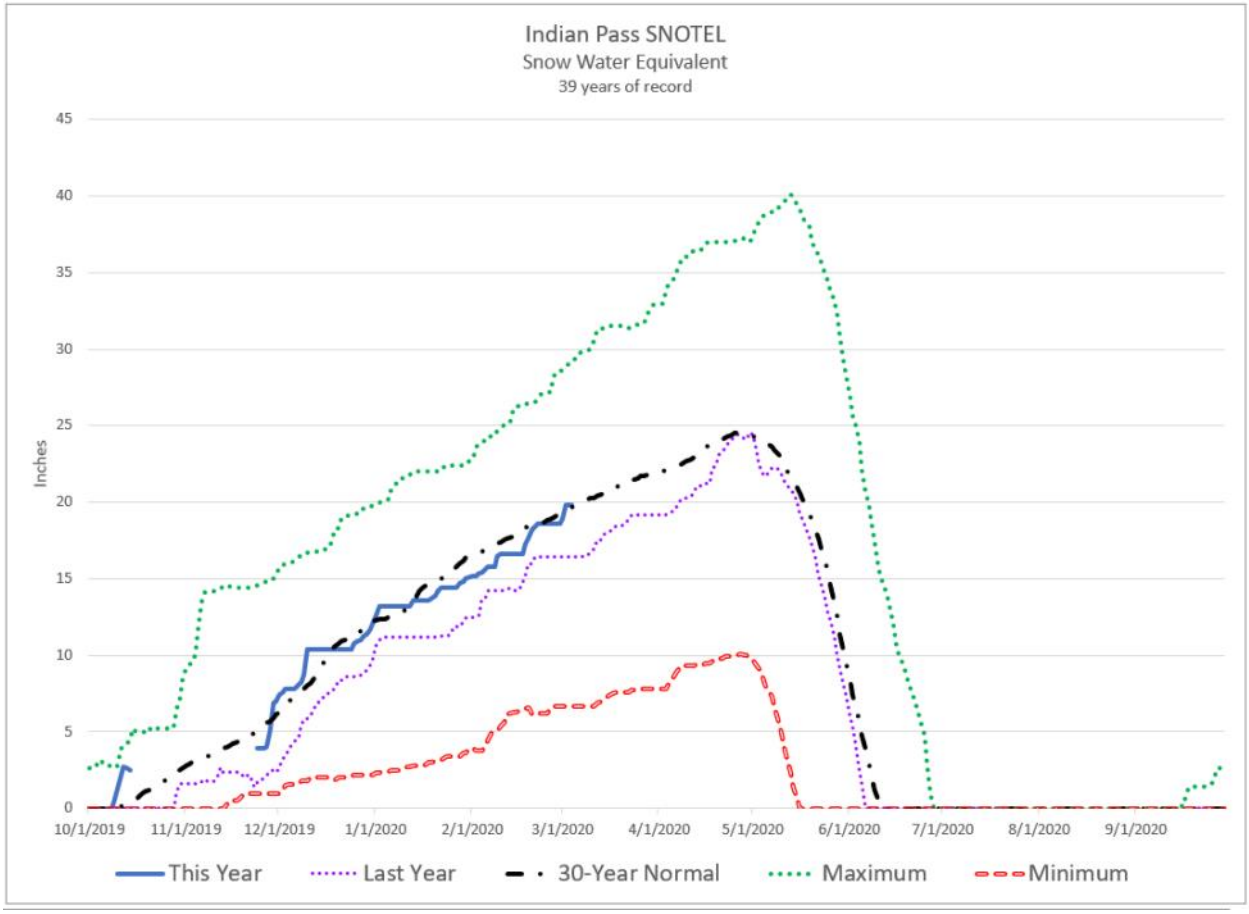
**Estimate*

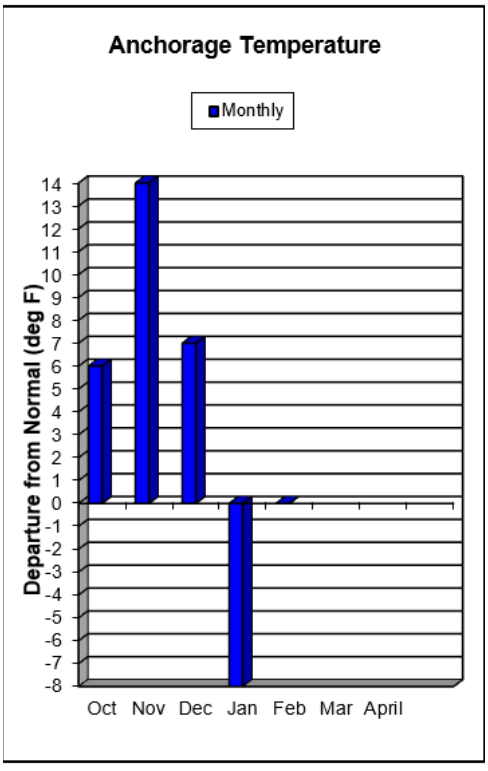
Streamflow Forecasts



Northern Cook Inlet







Snowpack

The Northern Cook Inlet area has received greater-than-average gains in snowpack during February. Portage Snow Course, made the second greatest February snowpack gain in its history. Snow sites were variable, ranging from 61% of normal at Mount Alyeska SNOTEL to 147% at Portage Valley Snow Course. The 14 measured sites in this region average 93% of normal. As a whole, the snowpack is somewhat more hearty than last year at this time, more so at elevation.

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	37	24	---	9.3	5.7	8.3
Arctic Valley #1	500	13	16	18	2.9	3.8	4.0
Arctic Valley #2	1000	20	22	22	4.3	5.1	4.5
Arctic Valley #3	1450	32	23	28	7.6	5.5	6.7
Arctic Valley #4	2030	31	22	28	7.6	5.3	6.4
Congahbuna Lake	550	47	53	34	12.0	14.3	9.0
Indian Pass	2350	69	56	---	18.9	16.4	19.3
Kincaid Park	250	17	19	17	2.9	4.6	3.9
Lone Ridge	1675	79	88	76	20.1*	30.5	29.0
Moraine	2100	28	18	---	6.0	4.0	6.8
Mt. Alyeska	1540	65	46	---	16.2	13.9	26.6
Portage Valley	50	60	27	36	16.2	9.7	11.0
South Campbell Creek	1200	21	25	24	3.9	5.1	5.8

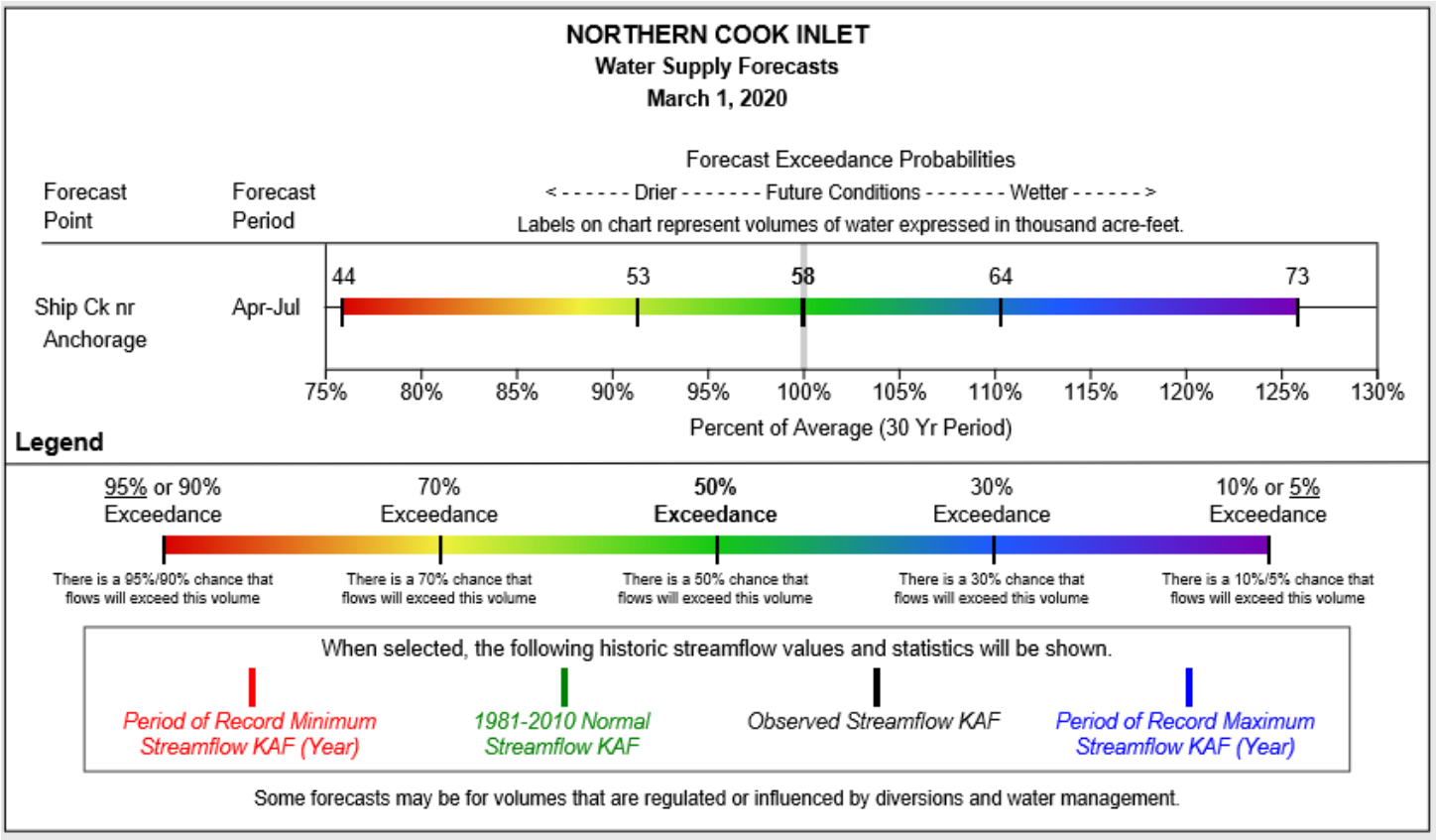
**Estimate*

Precipitation

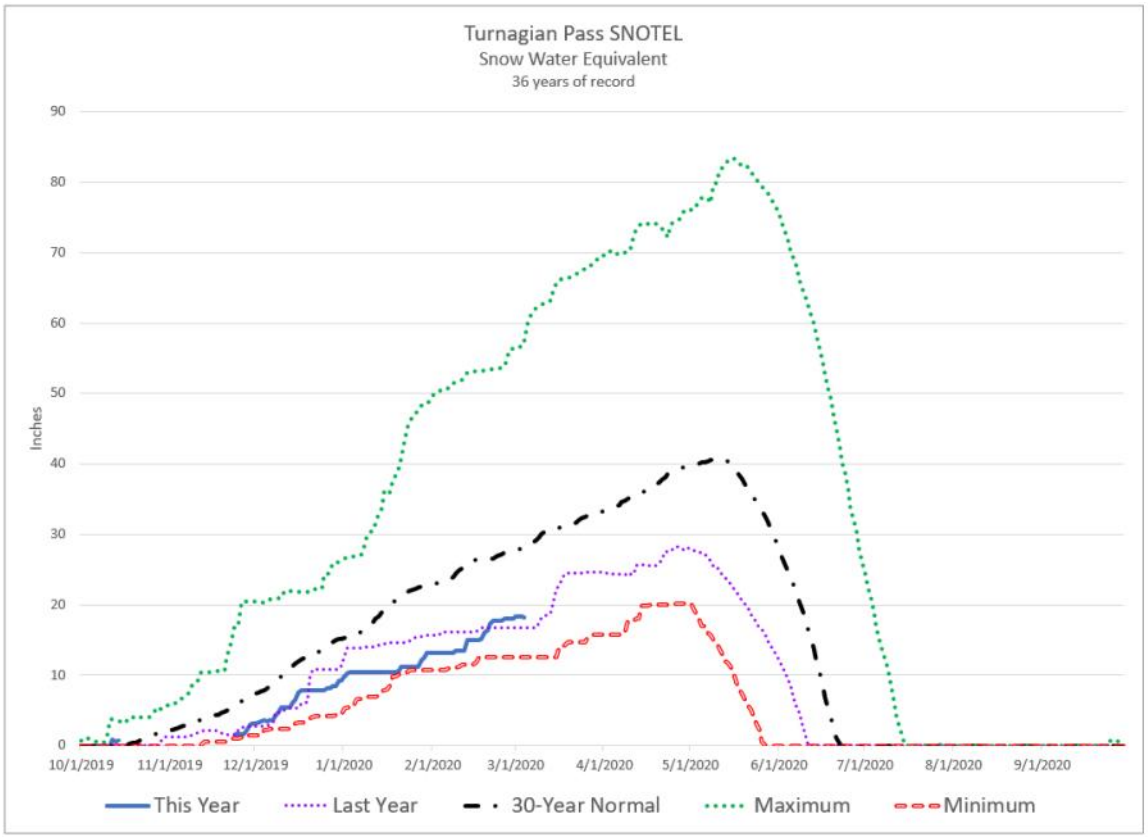
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchorage Hillside	2080	16.2	13.7	11.9	136%
Indian Pass	2350	29.2	22.3	22.0	133%
Mcneil River SGS	140	40.3	45.0	---	---
Moraine	2100	10.7	12.9	10.1	106%
Mt. Alyeska	1540	39.1	45.3	39.9	98%

Streamflow Forecasts

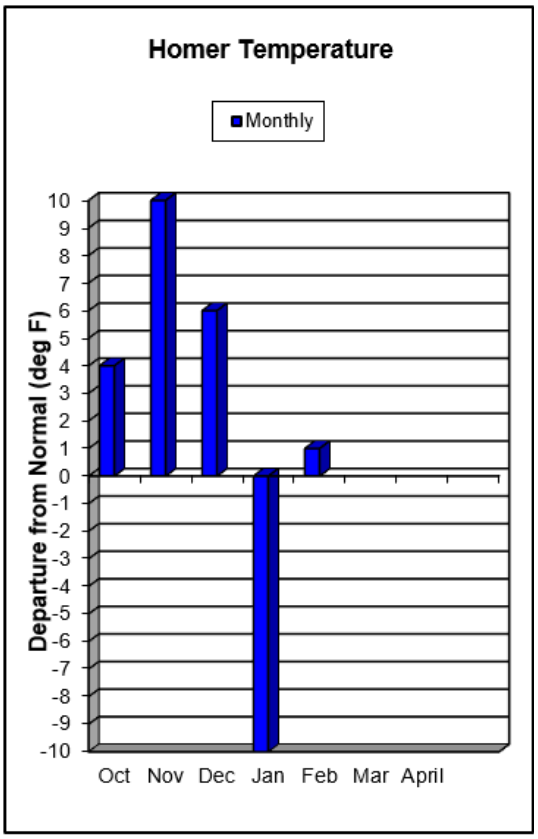


Kenai Peninsula



Snowpack

Even though the Kenai Peninsula snowpack made greater-than-average gains during February, the overall snowpack continues to be below normal. The 20 measured sites in this area averaged 69% of normal, slightly better than last year. Port Graham SNOTEL is the foil to the trend. It had 33" of snow with 9.7" of water content or 145% of normal, its wettest March 1st snowpack since 2012.



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	40	44	---	8.0	12.4	10.1
Bertha Creek	950	43	30	47	9.8	8.7	14.7
Bridge Creek	1300	28	32	34	5.6	9.5	9.6
Cooper Lake	1200	39	32	---	8.7	8.0	13.1
Demonstration Forest	780	28	21	23	6.0	6.5	6.6
Eagle Lake	1400	32	32	40	7.0	8.6	10.4
Exit Glacier	400	37	24	48	9.7	6.4	15.9
Exit Glacier SNOTEL	400	36	26	---	8.4	7.5	15.9
Grandview	1100	56	30	---	11.2	10.9	26.5
Grouse Creek Divide	700	29	24	---	7.8	7.6	14.6
Indian Pass	2350	69	56	---	18.9	16.4	19.3
Jean Lake	620	19	12	14	3.3	2.5	3.2
Kenai Moose Pens	300	25	19	---	4.8	3.5	4.0
Kenai Summit	1390	40	32	45	8.8	8.3	12.3
Lower Kachemak Creek	1915	39	39	---	---	---	---
Mcneil Canyon	1320	29	28	---	6.4	7.8	9.0
Middle Fork Bradley	2300	28	41	---	---	---	---
Moose Pass	700	23	19	20	3.6	4.0	6.0
Mt. Alyeska	1540	65	46	---	16.2	13.9	26.6
Port Graham	300	33	12	---	9.7	3.5	6.7
Portage Valley	50	60	27	36	16.2	9.7	11.0
Snug Harbor Road	500	16	12	17	3.0	2.9	5.2
Summit Creek	1400	32	28	---	6.4	6.7	10.0
Turnagain Pass	1880	78	59	---	18.4	16.8	27.9

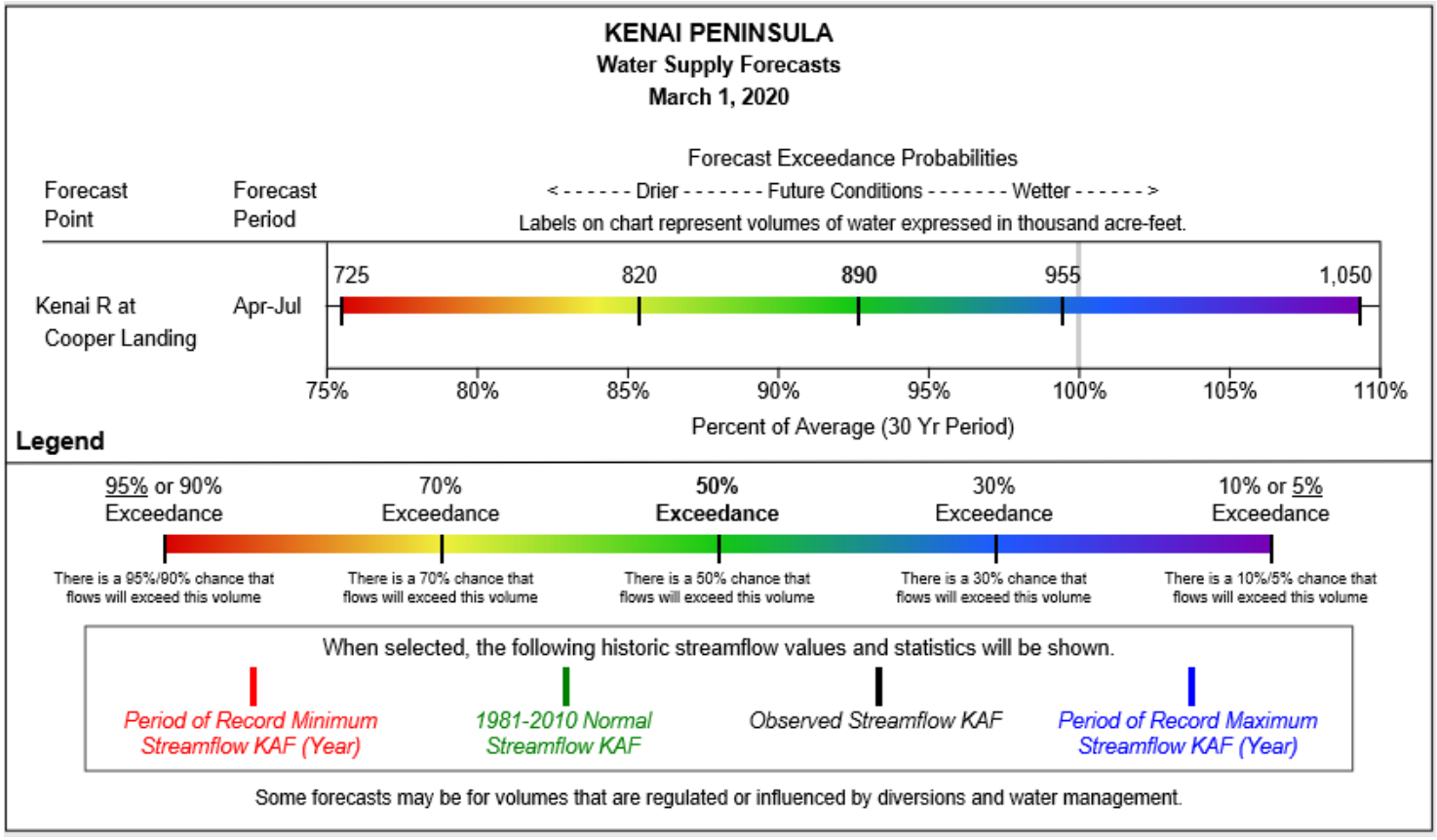
**Estimate*

Precipitation

Inches Accumulated since October 1st

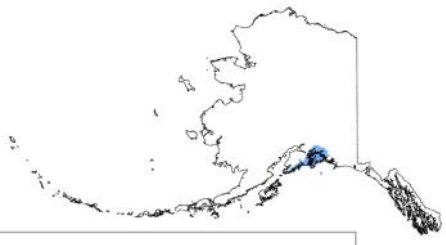
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchor River Divide	1653	22.1	21.1	14.4	153%
Cooper Lake	1200	27.3	33.1	22.9	119%
Grandview	1100	37.0	45.6	34.8	106%
Grouse Creek Divide	700	35.1	41.0	33.3	105%
Kenai Moose Pens	300	10.0	10.2	7.3	137%
Mcneil Canyon	1320	17.3	17.8	14.9	116%
Middle Fork Bradley	2300	41.0	42.0	29.0	141%
Nuka Glacier	1250	---	59.1	48.2	---
Port Graham	300	50.7	43.2	43.5	117%
Summit Creek	1400	17.4	20.2	14.0	124%
Turnagain Pass	1880	30.6	40.1	34.3	89%

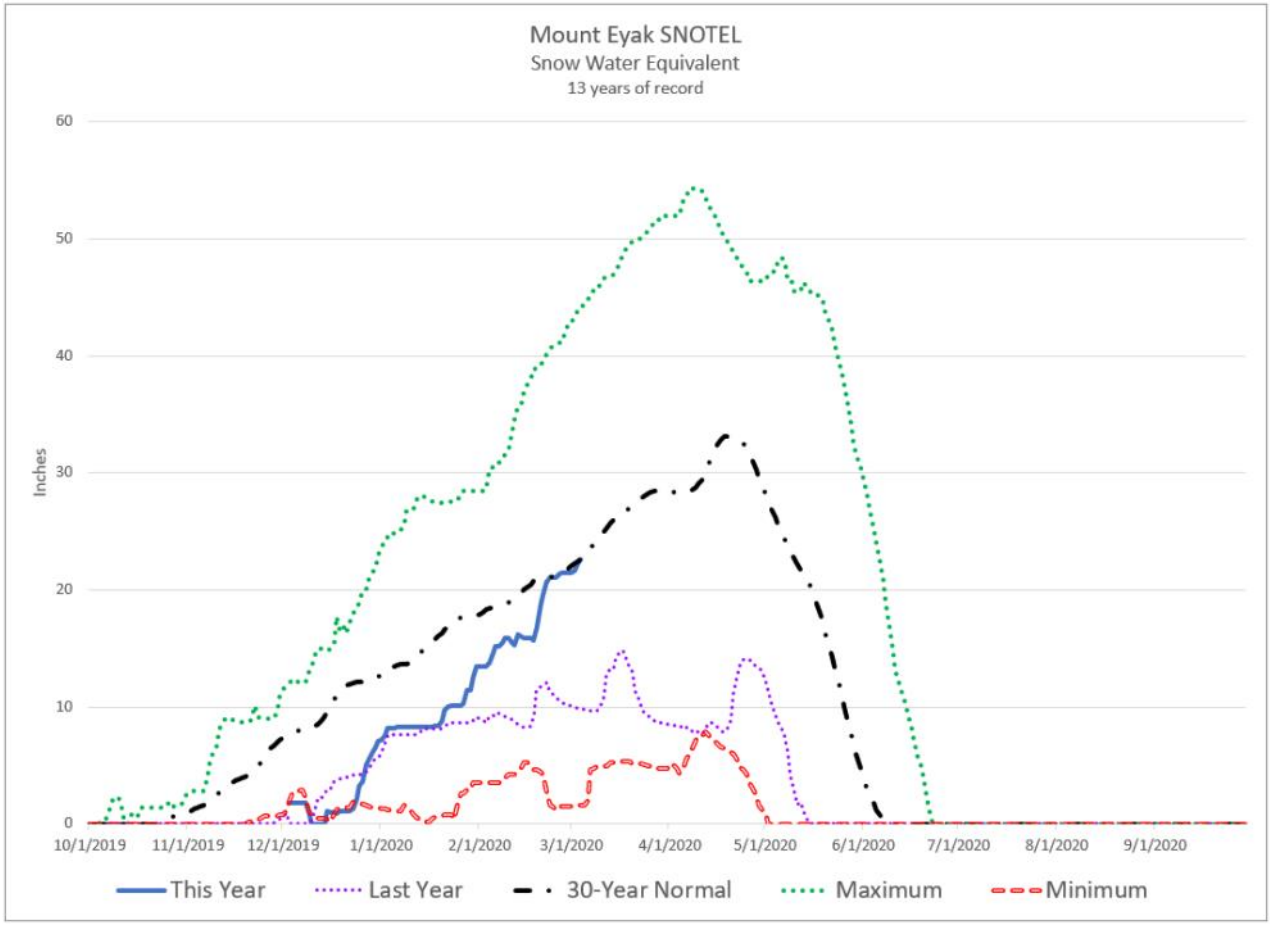
Streamflow Forecasts

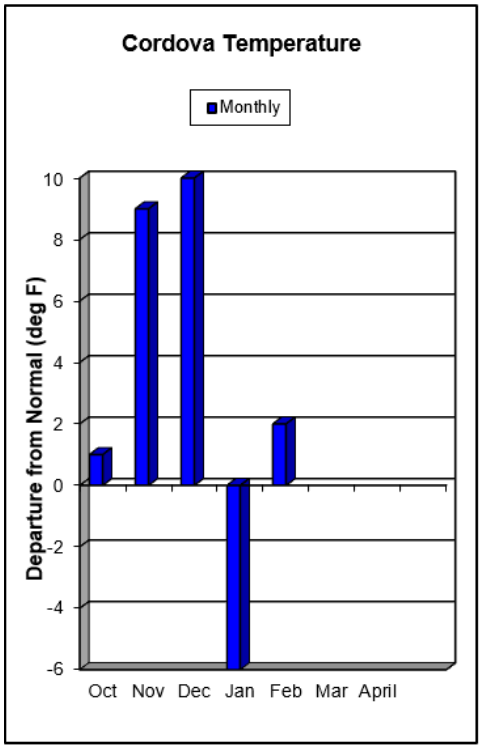


Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Bradley Lake Inflow	Apr-Jul	99	116	79	194	197

Western Gulf – Prince William Sound







Snowpack

Snowpack in Prince William Sound made greater-than-average gains during February. Although there are limited sites reporting in the area this month, it appears higher elevations have near normal snowpacks, while low-lying areas have more robust snowpacks than they've had in the last two years, perhaps even going back to 2013.

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	37	24	48	9.7	6.4	15.9
Exit Glacier SNOTEL	400	36	26	---	8.4	7.5	15.9
Grouse Creek Divide	700	29	24	---	7.8	7.6	14.6
Mt. Eyak	1405	72	43	---	21.5	10.1	22.1
Nicks Valley	4280	142	104	---	---	---	---
Upper Tsaina River	1750	74	68	---	18.5	18.9	16.3

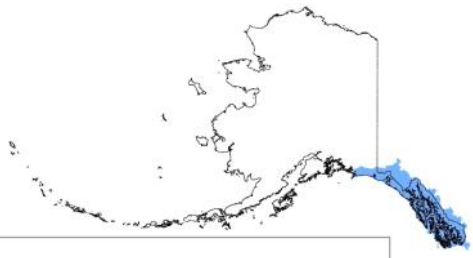
**Estimate*

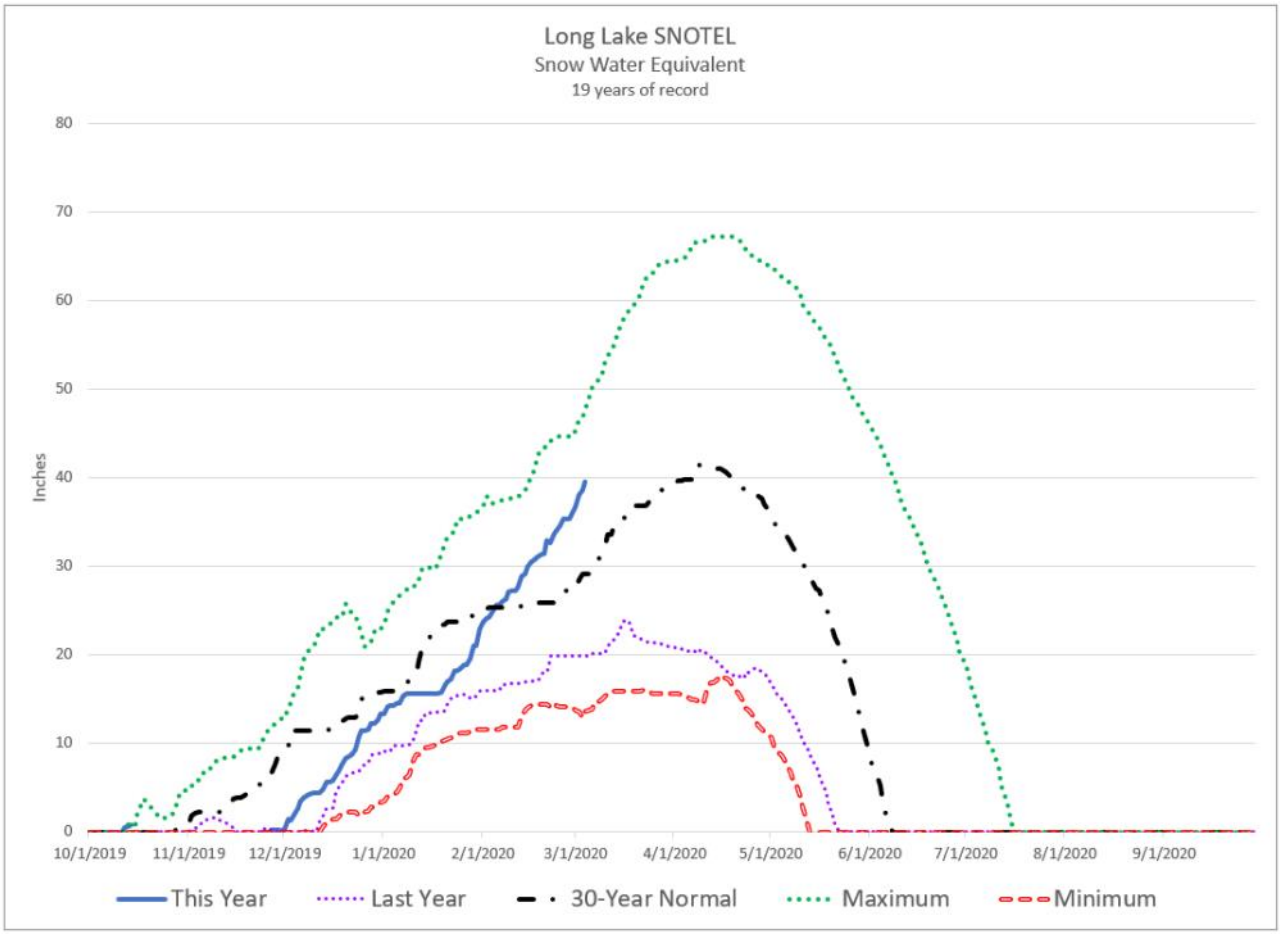
Precipitation

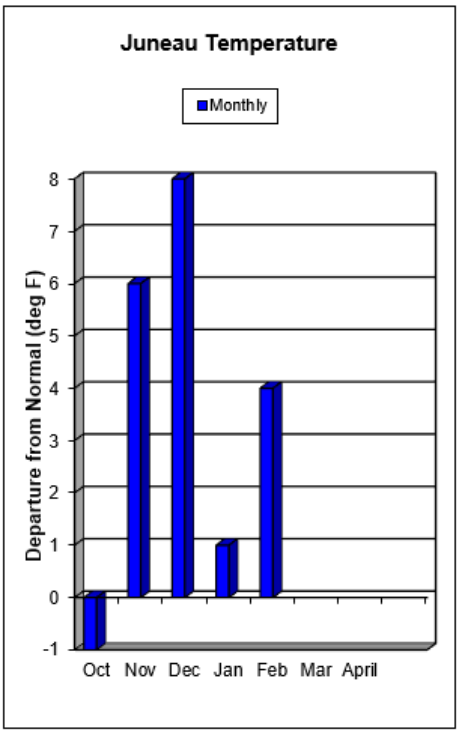
		Inches Accumulated since October 1st			
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Esther Island	50	76.4	96.6	71.9	106%
Grouse Creek Divide	700	35.1	41.0	33.3	105%
Mt. Eyak	1405	73.7	81.3	---	---
Nuchek	50	81.4	95.8	---	---
Nuka Glacier	1250	54.0*	59.1	48.2	112%
Port Graham	300	50.7	43.2	43.5	117%
Seal Island	20	---	45.6	---	---
Strawberry Reef	30	41.0	50.0	---	---
Sugarloaf Mtn	550	47.8	49.0	34.5	139%
Tatitlek	50	44.8	50.5	35.7	125%

**Estimate*

Southeast







Snowpack

Snowpack in Southeast Alaska made some stupendous gains during February with most sites logging the second to fourth highest February gains in their history. Gains were 200%-600% of average. While the current snowpacks are not record-breaking, most locations have their deepest or wettest snowpacks recorded since 2013 or 2012. The 7 snow sites measured in Southeast averaged 137% on normal.

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	105	---	71	34.7	---	23.1
Eagle Crest	1200	81	---	45	25.3	---	16.5
Fish Creek	500	22	---	20	6.8	---	6.5
Flower Mountain	2510	85	41	---	23.3	14.2	---
Heen Latinee	2065	84	34	---	23.4	8.1	---
Long Lake	850	101	71	---	36.7	19.9	27.2
Moore Creek Bridge	2250	79	---	64	20.4	---	18.9
Petersburg Reservoir	550	28	---	18	9.8	---	4.0
Petersburg Ridge, S.	1650	91	---	65	27.3	---	21.4
Speel River	280	89	---	68	26.6	---	23.7
West Creek	475	43	---	---	11.8	---	---

**Estimate*

Precipitation Data

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Long Lake	850	102.6	73.9	85.9	119%
Heen Latinee	2065	32.2	34.0	---	---
Moore Creek Bridge	2250	29.6	22.6	23.7	125%

Streamflow Forecast

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Taiya River near Skagway	Mar-Jul	111	129	91	545	491

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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