Alaska Snow Survey Report

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

April 1, 2021

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- Tongass National Forest

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- Eagle School, Gateway School District

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- Ministry of the Environment
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- Department of the Environment
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United States Department of Agriculture

NRCS Natural Resources Conservation Service

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Cover Photo: Angela Coleman, Dean Anderson, and Keegan Krantz head to the Indian Pass SNOTEL site to groundtruth measurements mid-March. On April 1st, Indian Pass SNOTEL had 78" of snow with 25.6" of water content, 116% of normal. Photo by Tony DeMarco.

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General Overview

SnowPack

March brought above average gains to snowpack across much of the state. Snowpack is mixed across the state, with most of the state having near or above normal snowpack conditions. However, regions of the northern Interior retain below normal snowpack conditions as do pockets in Southcentral.
In Southeast, snowpack made good gains for the second month in a row. Petersburg Reservoir made its largest March gain on record. Measured snowpack conditions are well above normal. In the north panhandle, Moore Creek Bridge set a new 32-year record and just over the border in British Columbia, Log Cabin Snow Course set a new all time 62-year record.

March shepherded in average snowfall to the western Kenai Peninsula and below average snowfall to the eastern peninsula. As a result, all snowpack monitoring stations on the Kenai Peninsula are near to above normal. Both Grouse Creek Divide SNOTEL, near Seward, and Anchor River Divide SNOTEL, near Homer, have recorded their second highest snowpacks, their highest since 2015.

Snowpack further north, near Anchorage, after above average March snowfall, is above normal. The eleven sites here average 121% of normal.

The Susitna basin had a mixed March. The Little Susitna and Matanuska Valleys received copious storms, but the Chulitna and lower Susitna had a more moderate month. Snowpack is below normal in the Chulitna basin but is near or above normal in the rest of the Susitna.

The Copper Valley generally made greater-than-average snowpack gains. The western basin is near normal, while the eastern half is above normal. The Chokosna Snow Course, near the road to McCarthy, reported its second highest snowpack in its 28 years and the highest since 2004.

The Tanana saw above average snowpack increases. Snowpack in the Tanana is near normal in the upper valley and above normal in the lower valley. The upper Koyukuk remains below normal while increased snowfall in the lower basin had brought the snowpack up to near and above normal conditions. The lower Koyukuk, like the Lower Yukon, has above normal snow depths for this time of year. The snowpack in the Kuskokwim is much above normal. Telaquana Lake Snow Course, which began in 1992, beat out last year to set a new record high. Aniak SCAN, with 33” of snow depth, reported its deepest snowpack since it began in 2013.

		Basin Index	
		Current	Last Year
Alaska Statewide Snowpack	**# of Sites**	**Percent of Median**	**Percent of Median**
Upper Yukon Basin	33	135	135
Central Yukon Basin	6	92	117
Tanana Basin	23	117	179
Koyukuk Basin	2	73	132
Kuskokwim Basin	2	166	170
Copper Basin	18	105	110
Matanuska-Susitna Basin	24	104	155
Northern Cook Inlet	11	121	94
Kenai Peninsula	19	128	64
Western Gulf of Alaska	9	106	85
Southeast Alaska	5	153	131

General Overview

Precipitation

Much of Alaska received average to above average precipitation during March. The only widespread region with below average precipitation was the northern Gulf of Alaska, including Prince William Sound and the eastern Kenai Peninsula. Prince William Sound only received about half of average monthly precipitation.

Shifting slightly to the west, Cook Inlet and the Susitna area received near normal precipitation, though Independence Mine in the Little Susitna Basin reported nearly twice average monthly amounts.

Further north, Tanana Basin sites reported between 80% to 213% of average March snowfall with an overall average of 153% of normal. We see some of this precipitation variability in the central Yukon and Arctic, as well. However, western Alaska was pretty uniform in having much above average precipitation with sites ranging from 200-400% of average.

Temperature

Much of the state was near to below normal for March. Generally, March started with a brief spree into above normal temperatures only to quickly cool off and dance between moderate and cool temperatures.

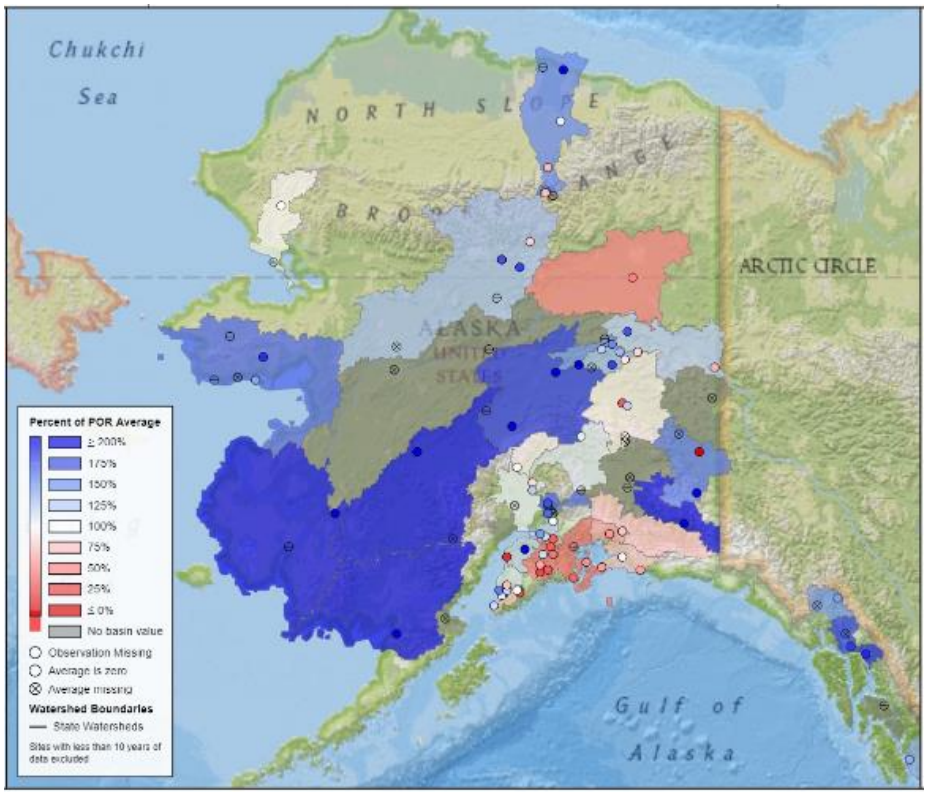
Southcentral Alaska was the greatest departure from normal. Talkeetna was 7°F below average for March, while Anchorage and Gulkana and Homer were 6°F and 5°F and 4°F below average, respectively. The rest of the state rang in the month with only moderately below average temperatures. In Southeast, Juneau was 1°F below average for the month, as was Bethel and Nome in western Alaska. In the Interior, Fairbanks was 3°F below normal, along with Bettles. Fort Yukon and Whitehorse both had 2°F departures below average for the month.

The only part of the state which had an above normal average March temperature was, unsurprisingly, the Arctic. Utqiaġvik was 5°F above normal for March.

Alaska Statewide Precipitation Maps

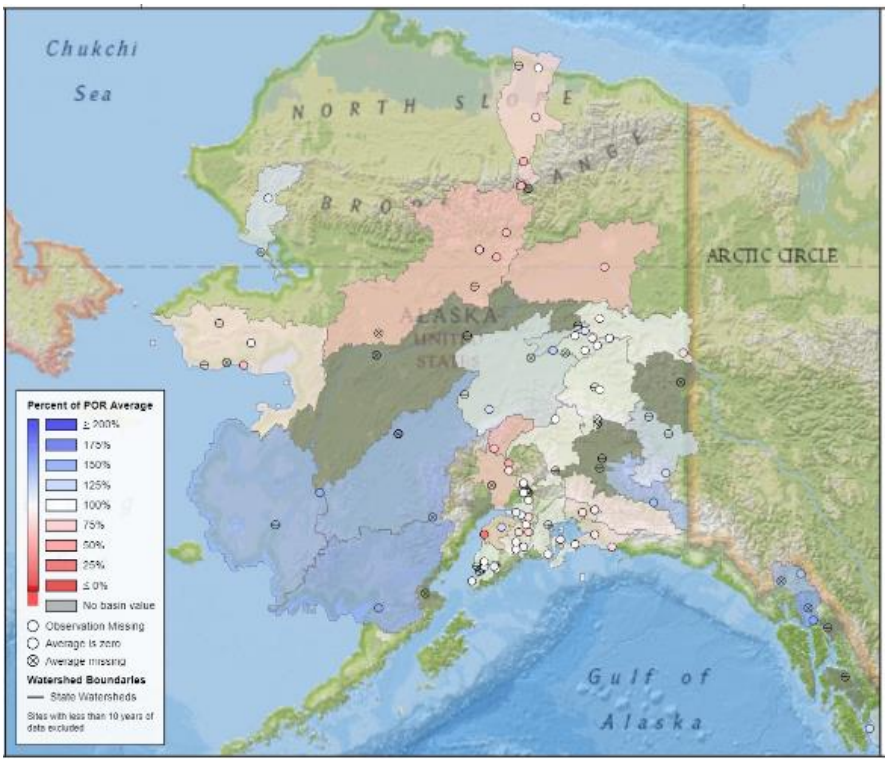
Monthly Precipitation for March, 2021

(% of NRCS 81-2010 Average)



Water Year-to-date Precipitation (Oct. 1-March 31st, 2021)

(% of NRCS 81-2010 Average)



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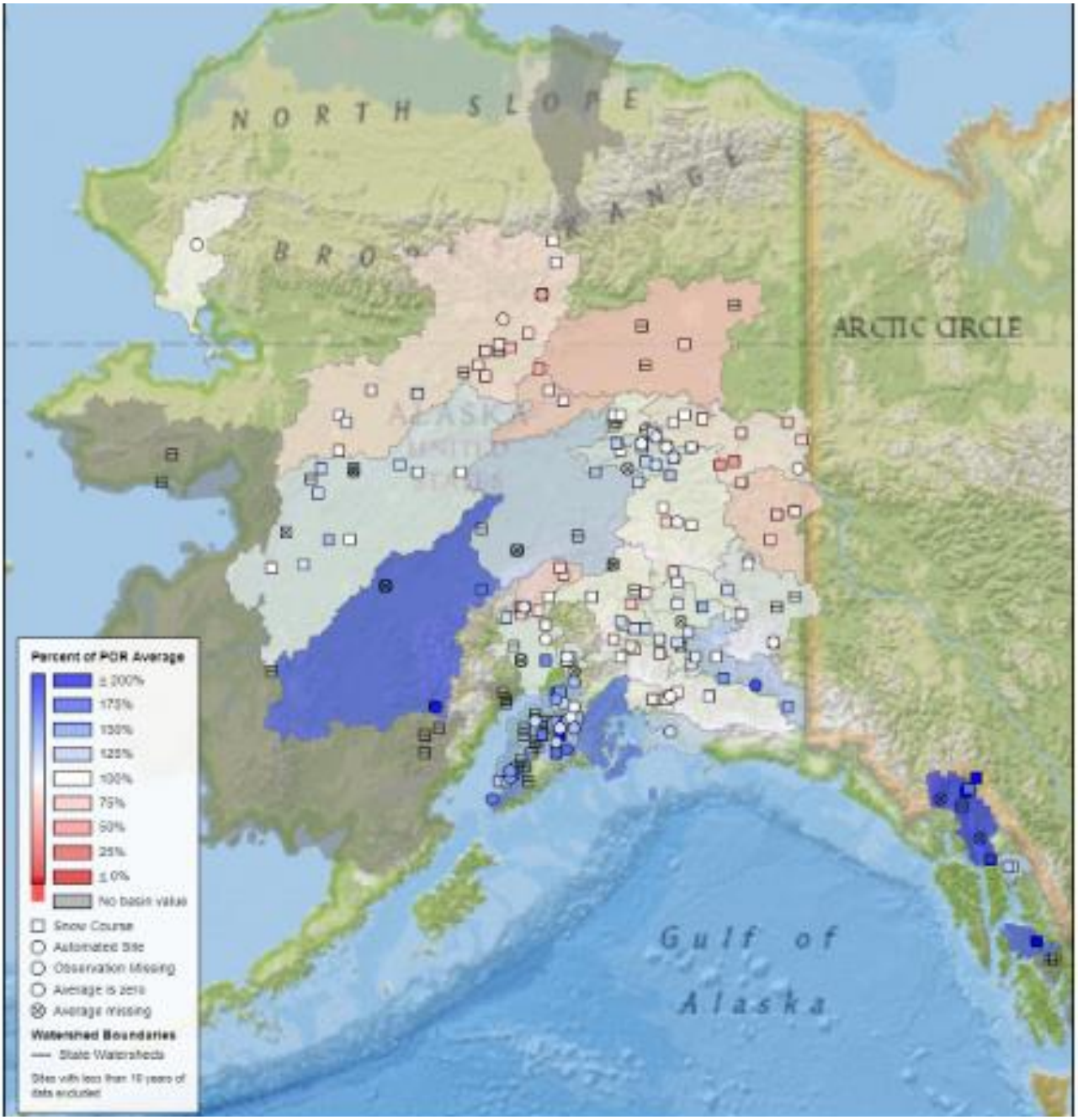
0 50 100 200 300 400 500 Miles

Created 2-03-2021

Alaska Statewide Snowpack Map

Based on April 1st, 2021 Snow Water Equivalent



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Streamflow Forecasts

FORECAST POINT*	Percent of Ave. Flow	Period
Yukon River at Eagle	106	April - July
Porcupine River nr Int'l Boundary……	92	April - July
Yukon River near Stevens Village	109	April - July
Tanana River at Fairbanks	103	April - July
Tanana River at Nenana	102	April - July
Little Chena River near Fairbanks	106	April - July
Chena River near Two Rivers	111	April - July
Salcha near Salchaket	105	April - July
Kuskokwim River at Crooked Creek	115	April - July
Sagvanirktok River near Pump Station 3	98	April - July
Kuparuk River near Deadhorse	80	April - July
Gulkana River at Sourdough	116	April - July
Little Susitna River near Palmer	100	April - July
Talkeetna River near Talkeetna	98	April - July
Ship Creek near Anchorage	119	April - July
Kenai River at Cooper Landing	108	April - July
Bradley Lake Inflow	94	April - July
Taiya River nr Skagway	120	April - July

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

FORECAST POINT	INDEX
Koyukuk River at Hughes……..	-1.5
MF Koyukuk R near Wiseman ……..	-2.0
Slate Creek at Coldfoot……..	-2.0
Beaver Creek above Victoria Creek……..	—
Birch Creek below South Fork……..	-1.0
Caribou Creek at Chatanika……..	0.0
Susitna River near Gold Creek……..	0.0
Chulitna River near Talkeetna……..	-2.5
Deshka River at mouth near Willow……..	-1.5
Montana Creek at Parks Highway……..	-1.0
Willow Creek near Willow……..	0.5
Skwentna River at Skwentna……..	-1.0
Chuitna River near Tyonek……..	—
Campbell Creek near Spenard……..	2.0
Indian Creek at Indian……..	0.0
Bird Creek at Bird Creek ……..	0.0
Glacier Creek nr Girdwood ……..	2.0
Six Mile Creek near Hope……..	2.5
Resurrection Creek near Hope……..	1.5
Grouse Ck at Grouse Lake Outlet nr Seward ……..	2.5
Anchor River near Anchor Point ……..	0.5
Deep Creek near Ninilchik……..	1.5
Ninilchik River near Ninilchik……..	1.5
Fritz Creek near Homer……..	2
Skagway River at Skagway……..	3.0
Municipal Watershed C nr Petersburg ……..	2.5
Gold Creek near Juneau……..	2.5

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.

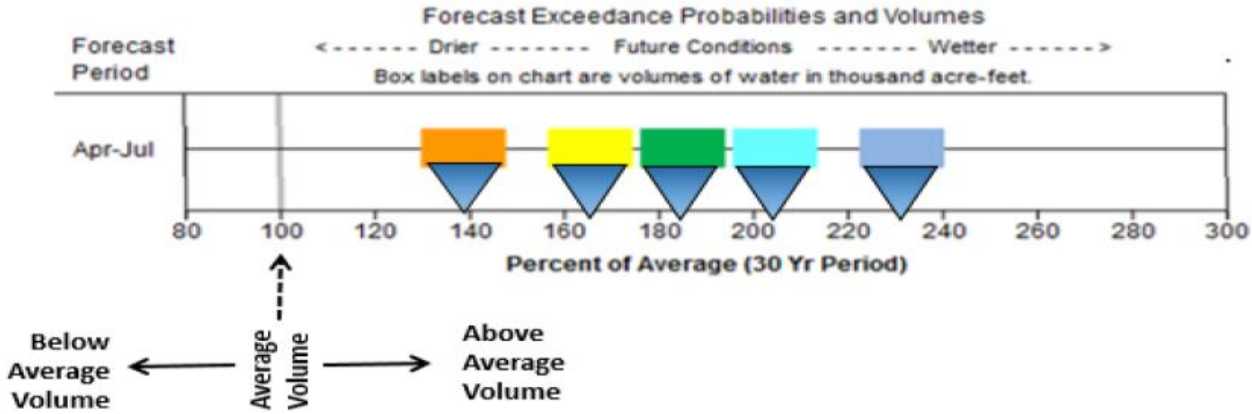
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast.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

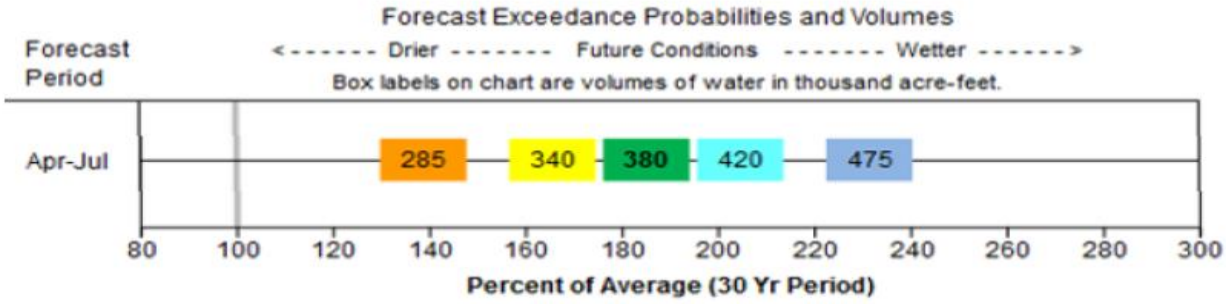
This graphic provides a visual alternative to the forecast tables the NRCS has presented for years. It gives both the volume and percent of average of each of the five forecast exceedances.

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

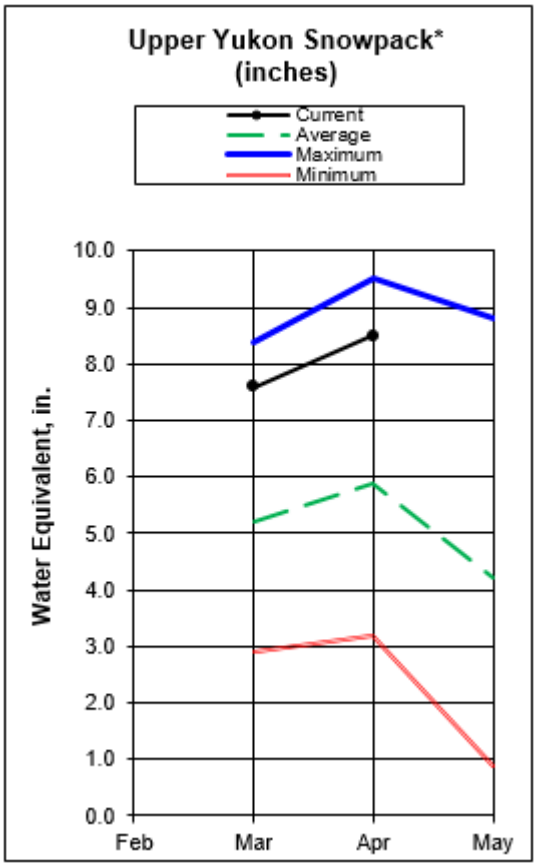


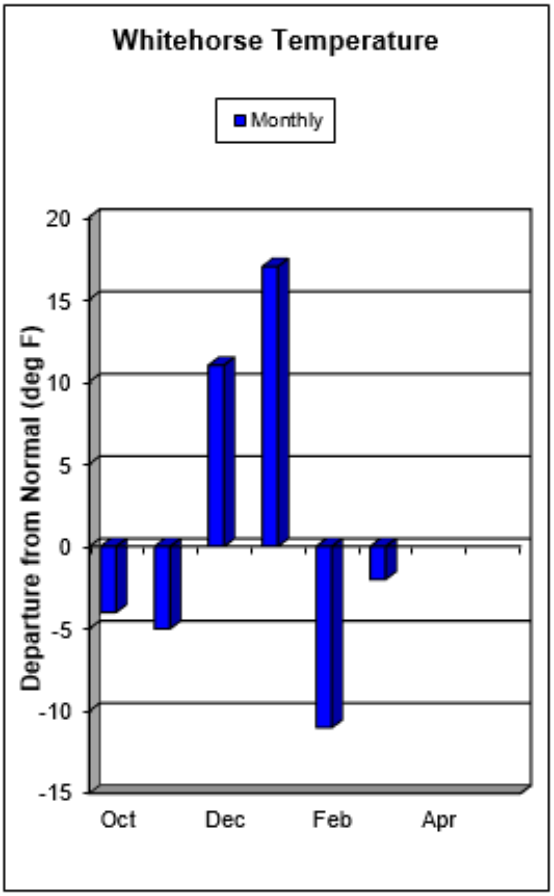
box) and increase with wetter conditions (right of green box).

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.Fisher2@usda.gov

Upper Yukon Basin





Snowpack

Snowpack in the Upper Yukon generally made greater than average gains during March. Snowpack in the upper Yukon remains above normal. The 31 sites in this area index to 135% of normal, the same as last year, though the distribution is different. Several sites are recording record highs including Summit (24 years), Rose Creek (25 years), Hoole River (44 years), Morley Lake (35 years), Montana Mountain (47 years), and Log Cabin (62 years).

The snowpack in the headwaters of the Yukon is substantial with the 10 sites above Whitehorse averaging 164% of normal and significantly higher than last year. Snowpack lessens somewhat going north. The Stewart-Pelly basins are 120% of normal and the White River basin is 127% of normal, both less than last year. The area around Dawson is 112% of average, down from 157% last year.

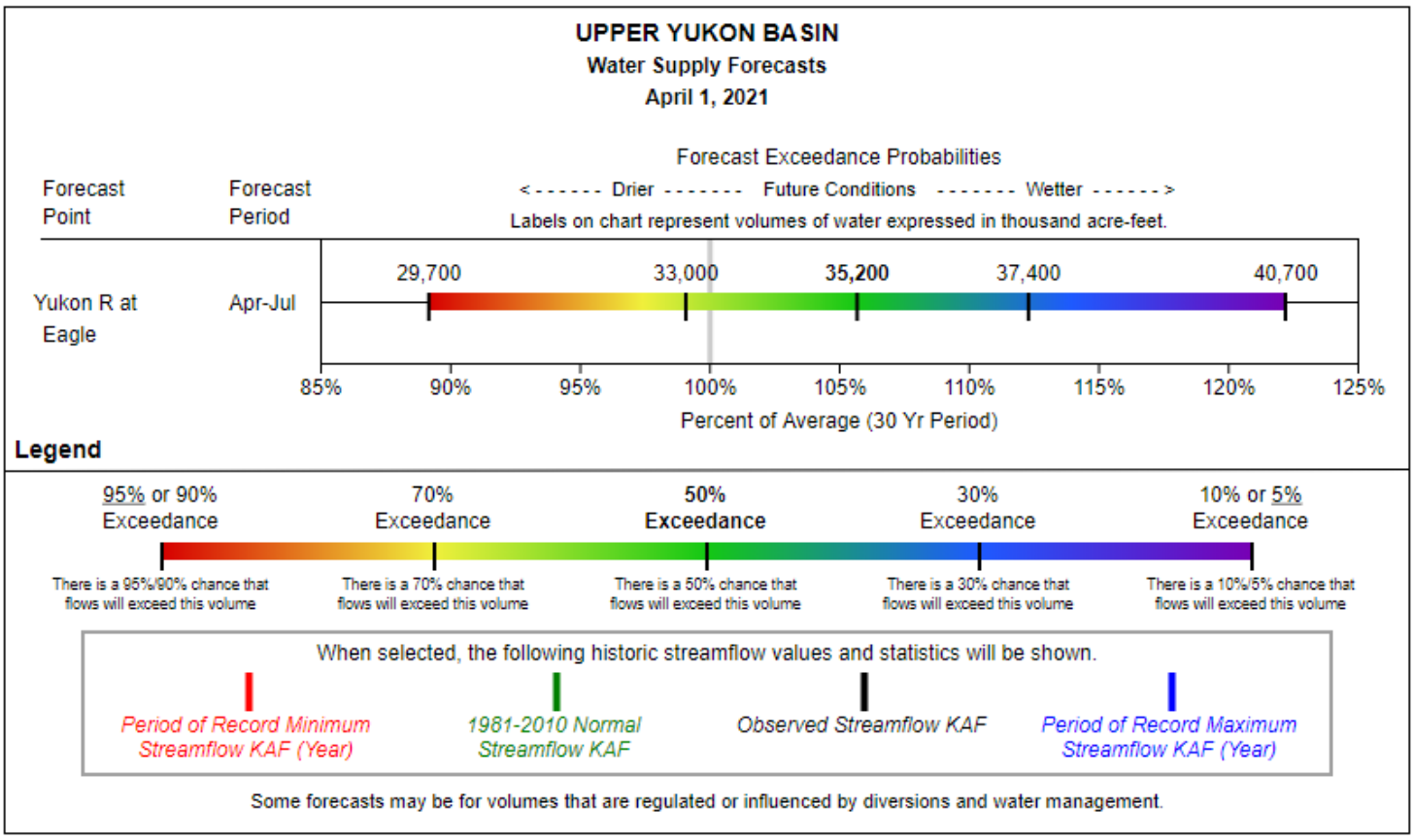
Upper Yukon Basin

Snowpack Data

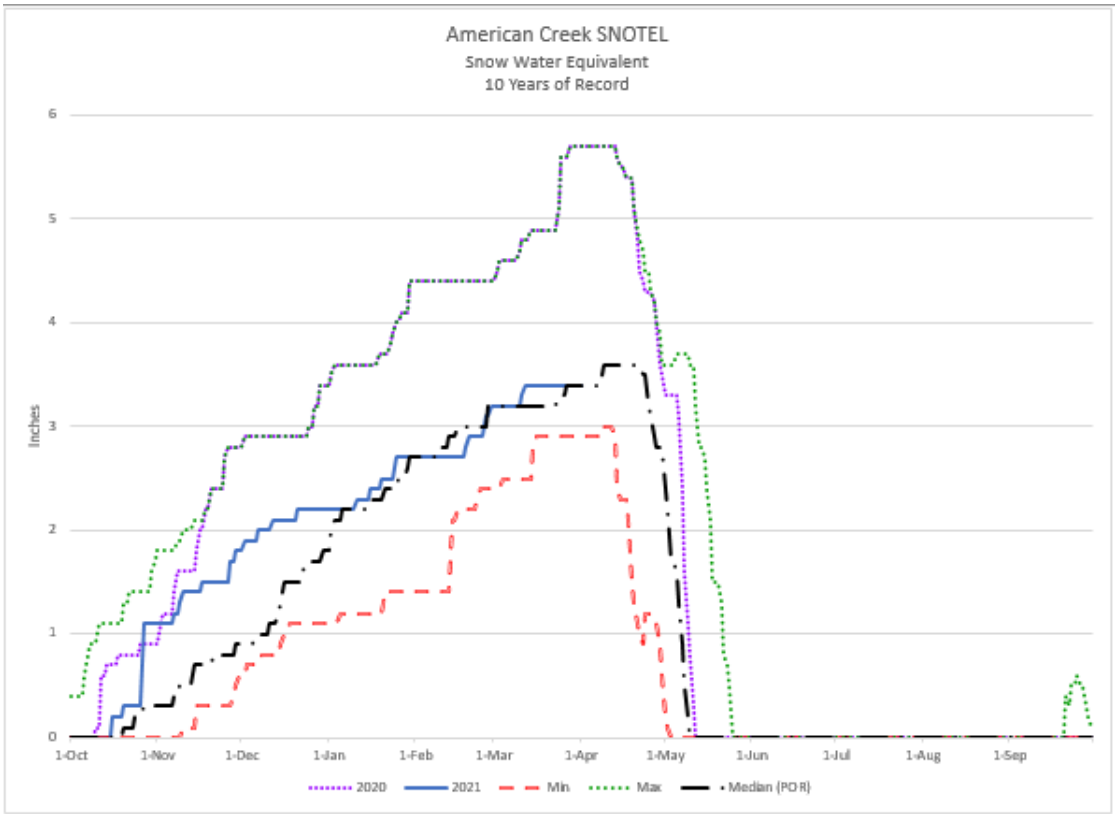
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Beaver Creek	2150	27	19	17	5.2	3.3	3.2
Blackstone River	1020	26	30	---	4.8	6.5	---
Burns Lake	3650	48	48	39	11.5	12.6	8.9
Burwash Airstrip	2660	13	13	10	2.1	2.5	1.8
Calumet	4300	40	54	36	7.2	12.0	7.5
Canyon Mine	1160	24	18	---	5.4	3.1	---
Casino Creek	3495	32	37	26	6.1	7.3	5.0
Chair Mountain	3500	25	26	20	4.8*	5.1	3.5
Eagle Plains	2330	30	35	31	5.8	7.4	6.6
Eagle River	1115	29	27	26	4.8	5.3	5.2
Edwards Lake	2720	37	35	30	8.5	7.9	6.4
Finlayson Airstrip	3240	30	31	20	6.7	6.8	4.2
Francis River	730	42	36	---	8.5	7.8	---
Fuller Lake	3695	40	39	33	8.7	9.8	7.7
Grizzly Creek	3200	34	43	31	7.4	10.9	6.8
Hoole River	3400	44	37	26	10.6	9.3	5.2
Hyland	855	45	47	---	11.0	11.2	---
Jordan Lake	3050	36	35	25	8.5	9.0	5.2
King Solomon Dome	3540	34	44	30	7.1*	8.8	6.3
Macintosh	3805	23	25	22	4.1	5.3	4.0
Mayo Airport	1770	14	33	18	3.1*	6.8	4.2
Meadow Creek	4050	55	50	45	13.9	13.5	10.9
Midnight Dome	2805	34	44	28	6.6	9.9	5.8
Montana Mtn.	3350	43	28	26	10.7	6.7	5.9
Morley Lake	2700	38	29	26	9.6	6.5	5.8
Mt. Berdoe	3395	33	31	24	5.5	6.3	4.2
Mt. Mcintyre B	3600	41	34	28	9.2	7.6	6.2
Mt. Nansen	3350	22	23	18	4.0	4.4	3.2
Ogilvie River	550	25	30	---	4.8	6.7	---
Old Crow	980	25	26	24	4.2	5.3	4.4
Pelly Farm	1550	23	23	16	4.5	7.0	3.0
Pine Lake Airstrip	995	48	43	---	12.0	13.1	---
Plata Airstrip	2725	44	42	33	9.7	9.9	7.6
Rackla Lake	3410	35	43	37	6.7	10.2	7.8
Riffs Ridge	2130	28	34	29	5.1	7.1	5.7
Rose Creek Faro	1080	32	31	---	6.8	6.6	---
Russell Lake	3480	44	46	37	9.8	10.5	8.9
Satasha Lake	3630	26	22	20	4.7	4.8	3.8
Summit	985	55	34	35	16.8	8.2	9.9
Tagish	3540	38	28	26	9.2	6.0	6.0
Twin Creeks	2950	39	36	33	8.7	8.7	7.3
Watson Lake Airport	685	35	26	---	7.6	5.0	---
Whitehorse Airport	2300	31	22	20	7.1	4.9	4.0
Williams Creek	3000	28	26	20	5.0	5.7	3.8
Withers Lake	3200	43	46	39	9.7	11.5	8.8

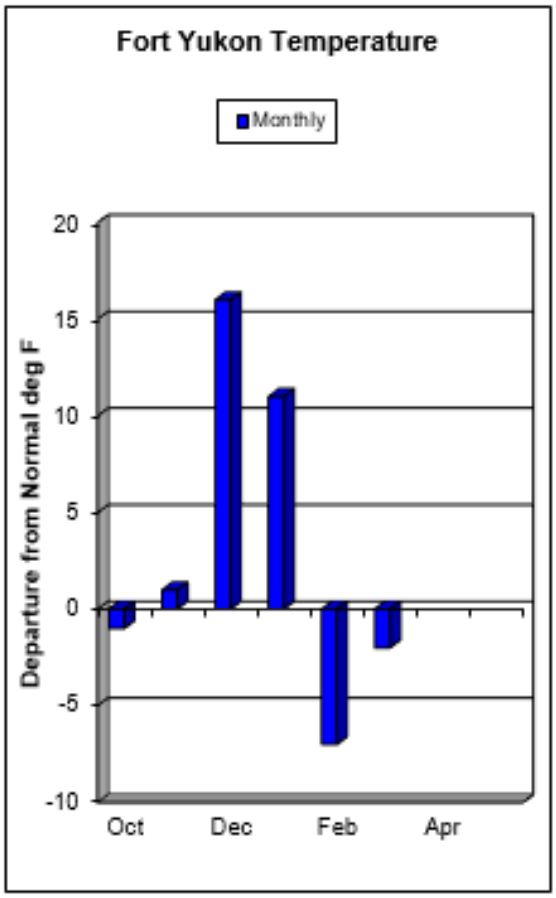
**Estimate*

Streamflow Forecasts



Central Yukon Basin





Snowpack

After receiving below normal March precipitation, snowpack in the Central Yukon Basin is slightly below normal. The Yukon Flats, upper Porcupine, and the Fortymile region all have below normal snowpack, while the White Mountains and their foothills have above normal snowpack.

Central Yukon Basin

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
American Creek	1050	17	31	---	3.4	5.7	---
Atigun Pass	4800	41	39	---	---	---	---
Boundary	3500	27	---	26	4.7	---	5.3
Cathedral Creek	1800	27	48	---	4.6*	9.4	---
Chicken Airstrip	1650	16	---	16	2.5	---	3.2
Circle Hot Springs	860	23	27	24	3.8	5.3	4.1
Coal Creek	1000	20	30	---	3.1	5.5	---
Copper Creek	2000	11	23	---	1.8*	4.6	---
Crescent Creek	2600	12	29	---	2.0*	5.9	---
Eagle Summit	3650	15	6	---	---	---	---
Fort Yukon SNOTEL	430	17	21	---	---	---	---
Fort Yukon	430	19	---	20	2.8	---	3.6
Hess Creek	1000	26	---	26	4.8	---	5.0
Jack Wade Jct	3585	30	38	---	4.4	7.3	---
Lost Chicken Hill	2150	20	---	18	3.1	---	4.0
Mt. Fairplay	3100	21	---	21	3.5	---	4.6
Old Crow	980	25	26	24	4.2	5.3	4.4
Ptarmigan Creek	2270	30	32	24	5.0*	6.9	4.4
Seven Mile	600	23	---	26	4.8	---	4.9
Stack Pup Creek	1620	23	25	25	3.9*	4.8	4.0
Step Mountain	2850	25	56	---	4.3*	11.2	---
Thirty Mile	1350	29	---	34	5.0	---	7.6
Three Fingers	3350	28	---	---	4.8*	---	---
Windy Gap	1900	35	---	26	6.3	---	5.7
Wolf	1200	27	---	23	5.0	---	4.2

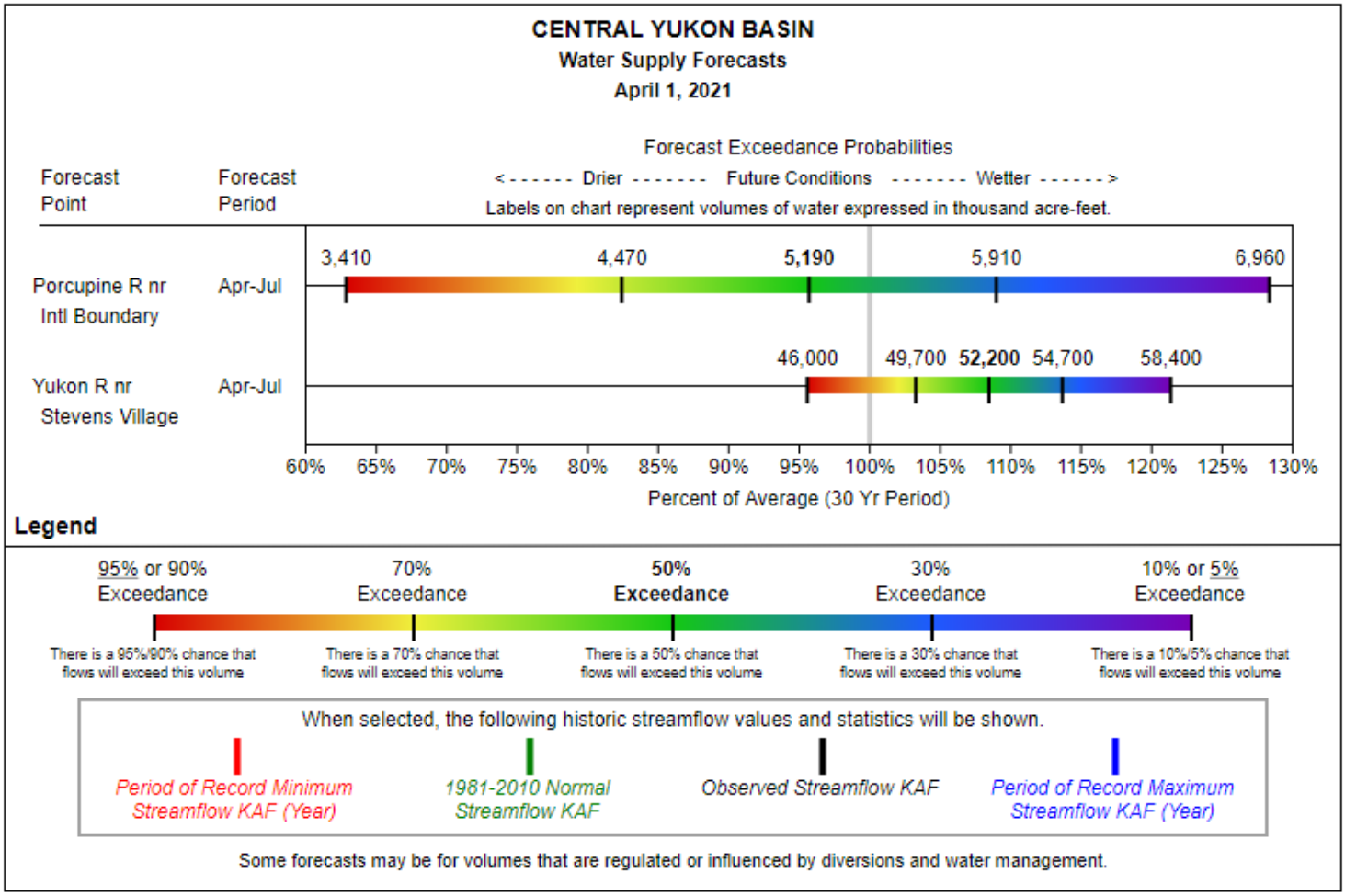
**Estimate*

Precipitation

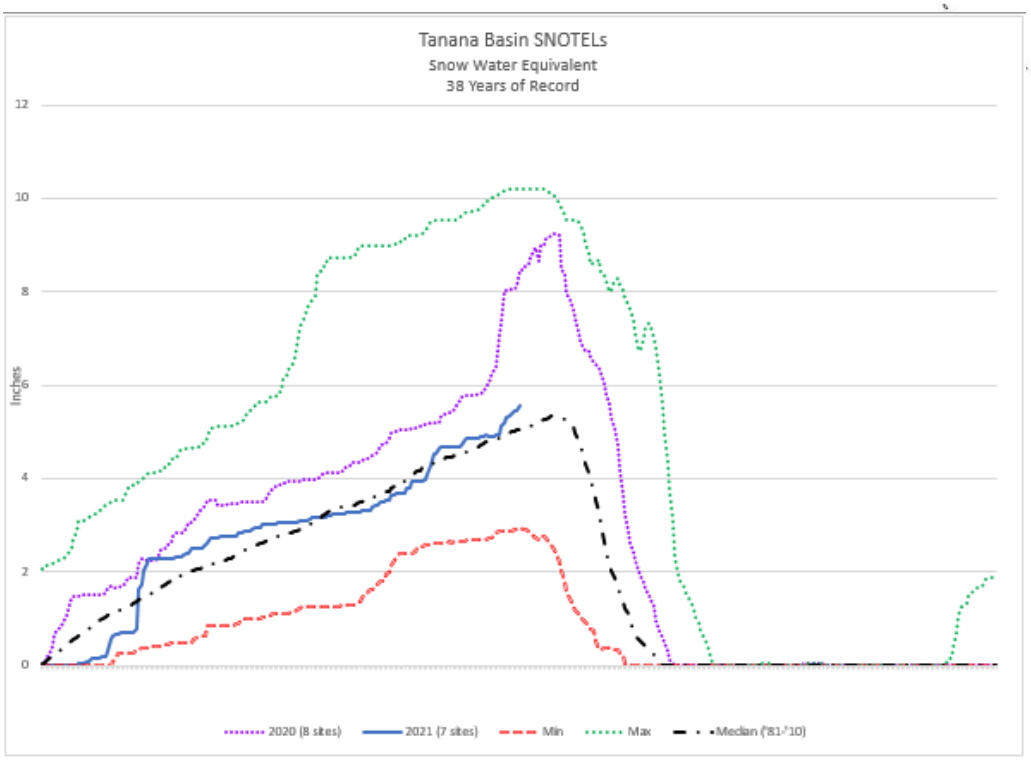
Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
American Creek	1050	3.3	6.3	---	---
Atigun Pass	4800	4.0	5.8	5.6	71%
Chandalar Shelf	3300	2.6	5.9	4.5	58%
Eagle Summit	3650	5.1	8.0	5.3	96%
Fort Yukon	430	2.7	4.0	3.6	75%
Jack Wade Jct	3585	5.0	7.6	---	---
Upper Nome Creek	2520	---	11.6	5.2	---

Streamflow Forecasts



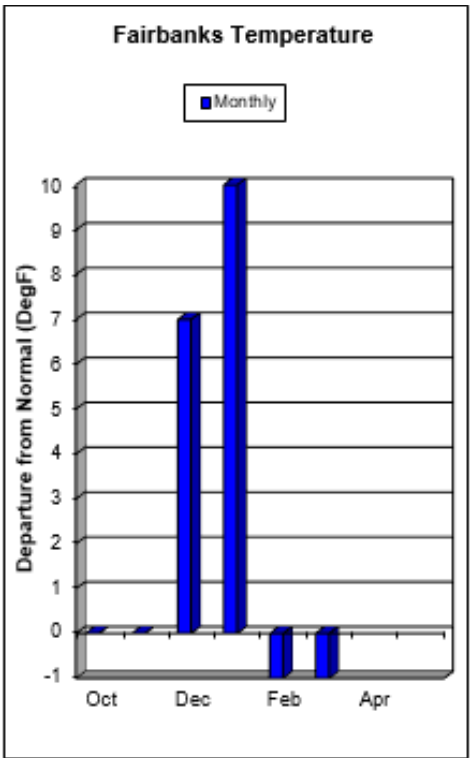
Tanana Basin



Snowpack

The Tanana made above average gains in snowpack over March. This has resulted in the basin snowpack being near normal in the upper valley and above normal in the lower valley. The 23 snow monitoring sites in the valley index to 116% of normal, which is less than last year at this time. The only part of the basin with more snow than last year is the very headwaters, above Tok.

The 10 Chena Valley sites average 126% of normal. Up valley, the Delta Junction area snowpack is 108% of normal and the snowpack above Tok averages to 101%



Tanana Basin

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Bonanza Creek	1150	31	---	21	6.2	---	4.0
Caribou Creek	1250	29	---	20	5.7	---	3.8
Caribou Snow Pillow	900	30	---	20	5.7	---	3.9
Chisana	3320	20	17	---	3.8	4.0	4.6
Cleary Summit	2230	35	53	28	6.3	12.2	5.2
Colorado Creek	700	30	33	20	5.5	6.5	3.6
Faith Creek	1750	32	38	26	5.2	8.0	4.8
Fielding Lake	3000	48	76	40	9.7	22.5	9.9
Fielding Lake SNOTEL	3000	37	59	---	7.7	17.4	---
Fort Greely	1500	19	31	17	2.8	5.8	3.2
French Creek	1800	34	48	24	7.0	11.3	5.2
Gerstle River	1200	18	31	17	3.2	5.7	3.1
Granite Crk	1240	24	33	---	4.2	7.3	3.8
Lost Creek	3030	20	16	18	3.3	2.8	3.7
Mentasta Pass	2430	36	38	27	7.3	8.1	6.2
Monument Creek	1850	27	41	---	5.4	8.5	4.6
Mt. Ryan	2800	34	46	---	6.6	10.7	5.1
Munson Ridge	3100	47	62	---	9.2	12.5	6.8
Shaw Creek Flats	980	18	28	14	3.0	5.8	2.9
Teuchet Creek	1640	24	31	---	4.8	7.2	3.8
Tok Junction	1650	23	27	20	3.7	5.2	3.5

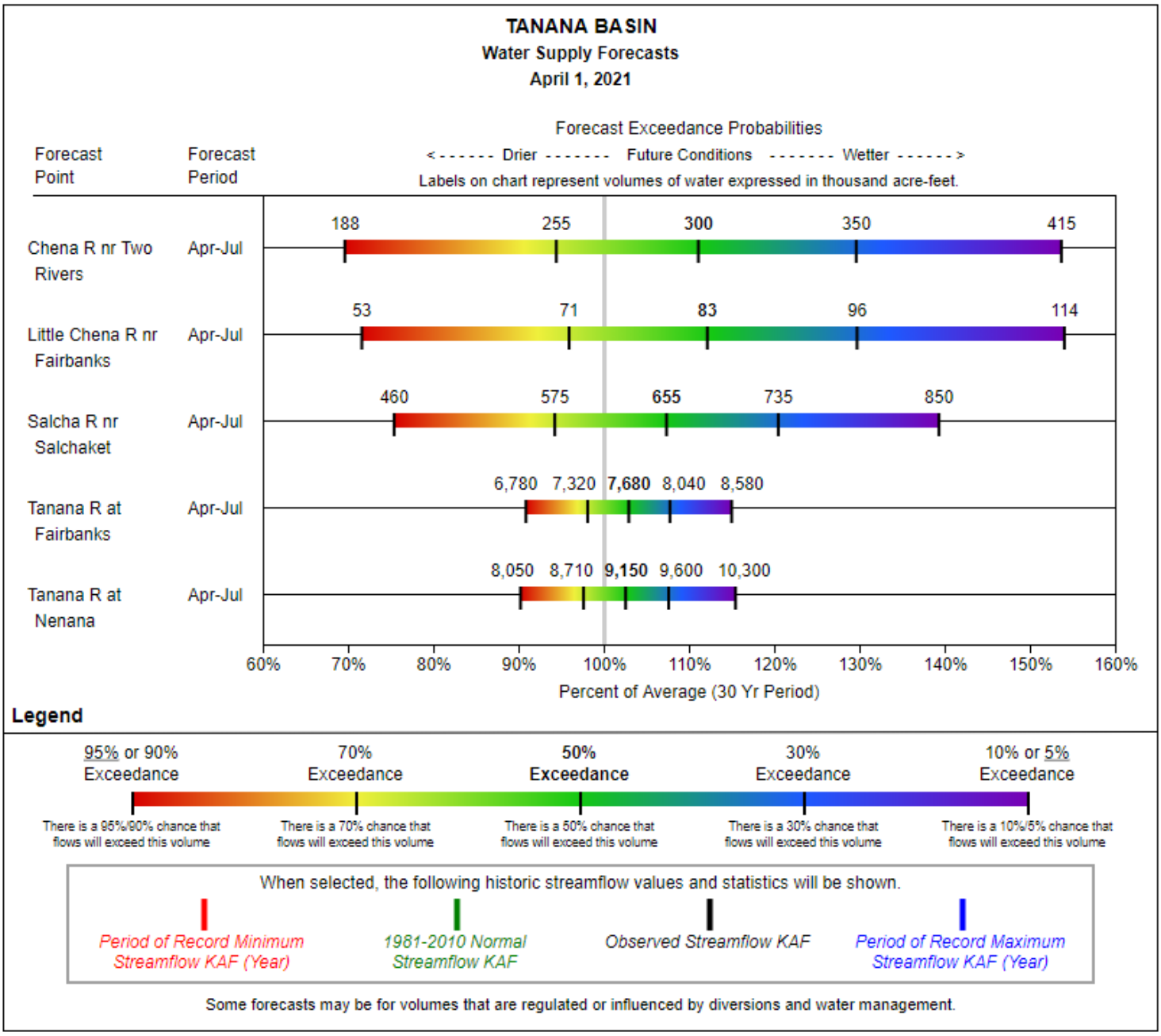
**Estimate*

Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Chisana	3320	4.4	4.8	---	---
Chena Lakes	500	5.5	---	---	---
Fielding Lake	3000	8.3	16.6	---	---
Granite Crk	1240	4.1	8.2	4.1	100%
Kantishna	1550	7.0	10.3	4.6	152%
Little Chena Ridge	2000	5.5	9.4	5.4	102%
Mt. Ryan	2800	6.5	10.3	5.7	114%
Munson Ridge	3100	7.9	13.2	7.6	104%
Nenana	415	4.7	7.6	---	---
Teuchet Creek	1640	4.6	7.3	4.3	107%
Upper Chena	2850	7.2	12.1	6.7	107%

Streamflow Forecasts



Legend

95% or 90% Exceedance — There is a 95%/90% chance that flows will exceed this volume

70% Exceedance — There is a 70% chance that flows will exceed this volume

50% Exceedance — There is a 50% chance that flows will exceed this volume

30% Exceedance — There is a 30% chance that flows will exceed this volume

10% or 5% Exceedance — There is a 10%/5% chance that flows will exceed this volume

When selected, the following historic streamflow values and statistics will be shown.

Period of Record Minimum Streamflow KAF (Year)

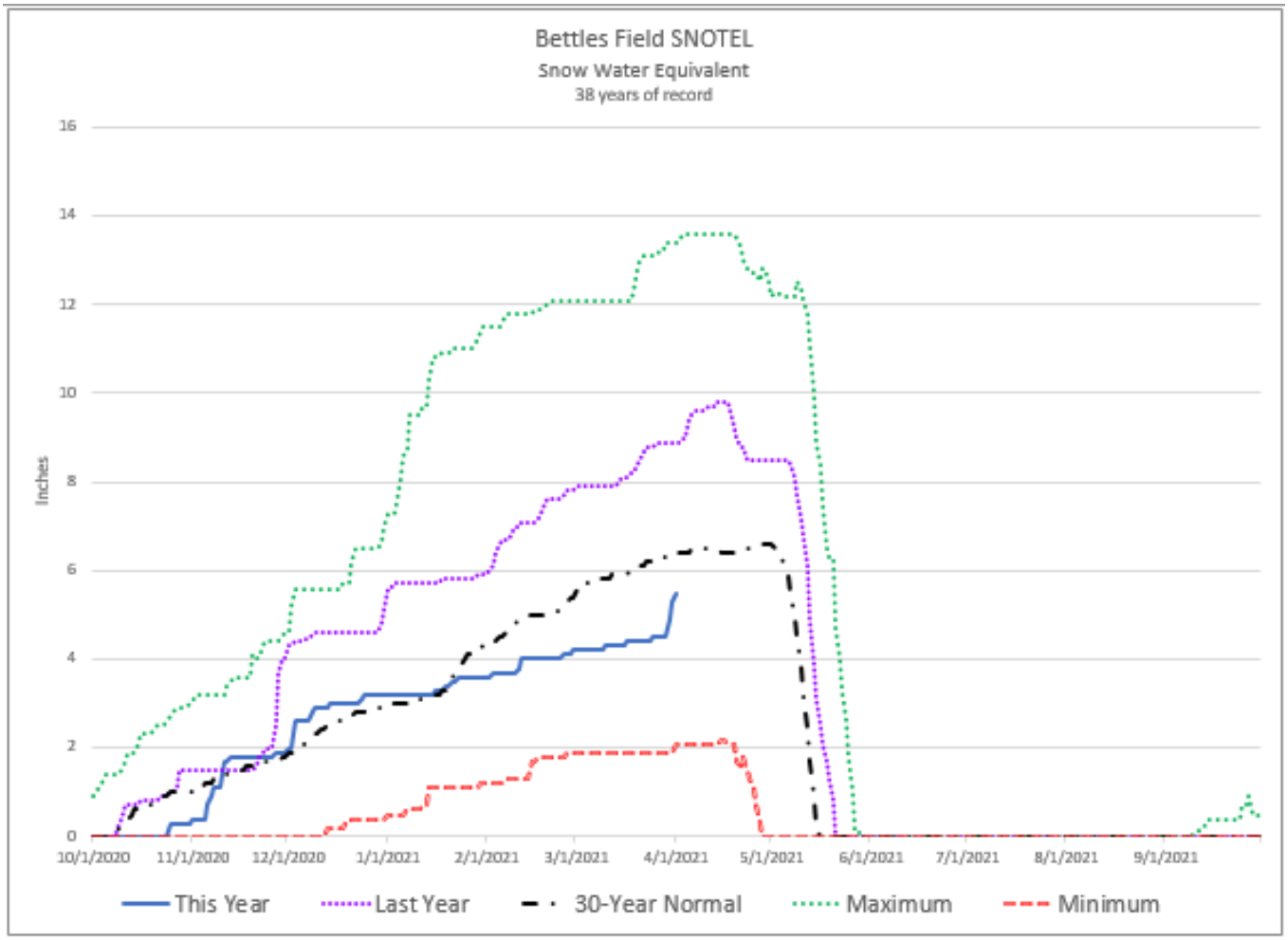
1981-2010 Normal Streamflow KAF

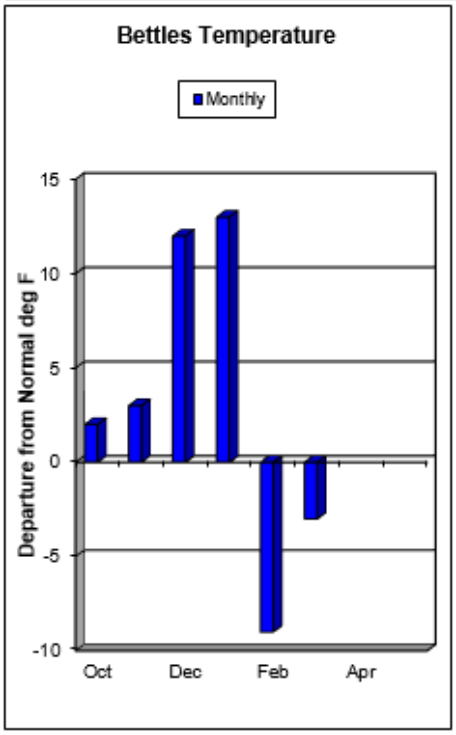
Observed Streamflow KAF

Period of Record Maximum Streamflow KAF (Year)

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

Western Interior Basins





Snowpack

Koyukuk

March brought above average precipitation to the Koyukuk which translates into above normal March snowpack gains. However, the basin still has below normal snowpack. Like last month, snowpack is lowest on the eastern side while further west the snowpack increases to slightly above normal with above average snow depths.

Kuskokwim

The Kuskokwim had a wet March with sites receiving twice average precipitation. Snowpack is above normal. Telaquana Lake Snow Course, which began in 1992, beat out last year to set a new record high with 36" of snow and 8.4" of water content. Aniak SCAN, with 33" of snow depth, reported its deepest snowpack since it began in 2013.

Lower Yukon

Snowpack in the lower Yukon is above average. March storms brough snow depths up to well above normal for this time of year.

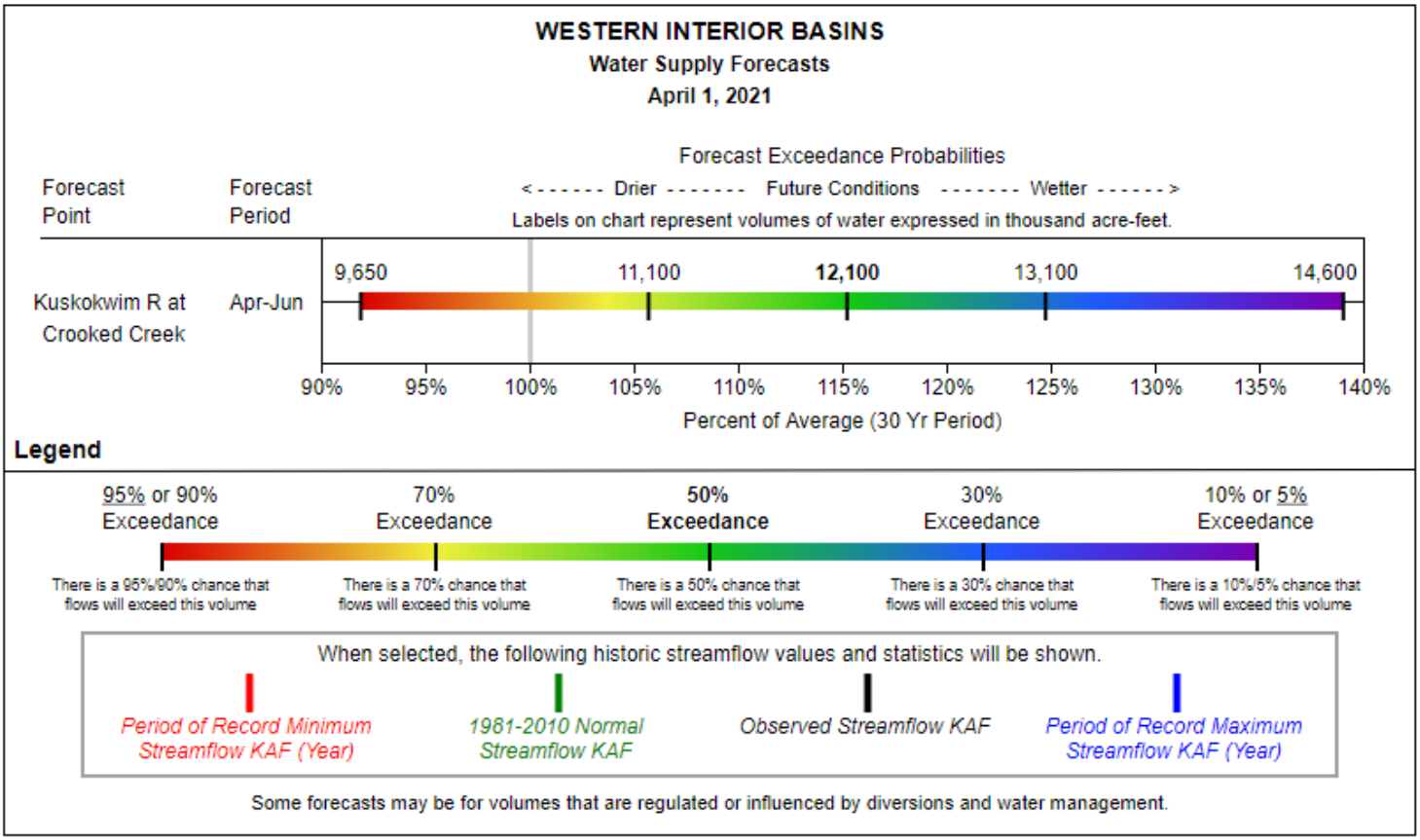
Western Interior Basins

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Koyukuk							
Bettles Field	640	32	38	---	5.5	8.9	6.4
Bonanza Forks	1200	24	---	26	4.7	---	5.2
Cloverleaf	170	36	29	---	6.8*	8.7	---
Coldfoot	1040	26	37	---	3.8	8.0	6.4
Colville Bend	170	32	30	---	6.2*	7.1	---
Disaster Creek	1550	19	---	22	4.5	---	4.0
Gobblers Knob	2030	8	12	---	---	---	---
Huggins Creek	290	42	40	---	7.8*	9.1	---
Jr Slough	160	36	29	---	6.2*	7.1	---
Kaldoyeit	750	21	---	21	4.2*	---	4.2
Kanuti Chalatna	670	26	---	26	5.3*	---	5.3
Kanuti Kilolitna	550	22	---	22	4.0*	---	4.0
Minnkokut	580	34	---	34	6.6*	---	6.6
Nolitna	560	25	---	25	5.3*	---	5.3
Table Mountain	2200	18	---	23	4.5	---	4.0
Treat Island	190	23	36	---	4.2*	7.8	---
Kuskokwim							
Aniak	80	33	21	---	---	---	---
McGrath	340	41*	44	---	11.0	16.5	---
Purkeypile Mine	2025	38	43	26	8.2	9.4	5.4
Telaquana Lake	1550	36	32	20	8.4	7.6	4.6
Telaquana Lake SNOTEL	1275	32	26	---	9.0	7.2	---
Lower Yukon							
Bullfrog	100	43	42	---	9.0*	11.7	---
Deer Creek	195	42	48	---	8.1*	11.6	---
Galena Ecological Site	128	28	---	---	5.2	---	---
Hozatka Lake	206	25	22	---	---	---	---
Little Mud River	855	25	39	---	4.7*	9.4	---
Lower Nowitna River	205	32	41	---	5.6*	9.9	---
Middle Innoko	150	48	39	34	9.0*	10.6	7.7
Pike Trap Lake	130	20	16	---	3.8*	5.0	---
Squirrel Creek	150	47	36	---	9.2*	9.8	---
Upper Innoko	180	39	41	32	7.6*	11.3	7.4
Wapoo Hills	220	55	51	36	11.2*	14.1	7.7
Yankee Slough	100	47	42	41	8.9*	11.8	9.4

**Estimate*

Streamflow Forecasts

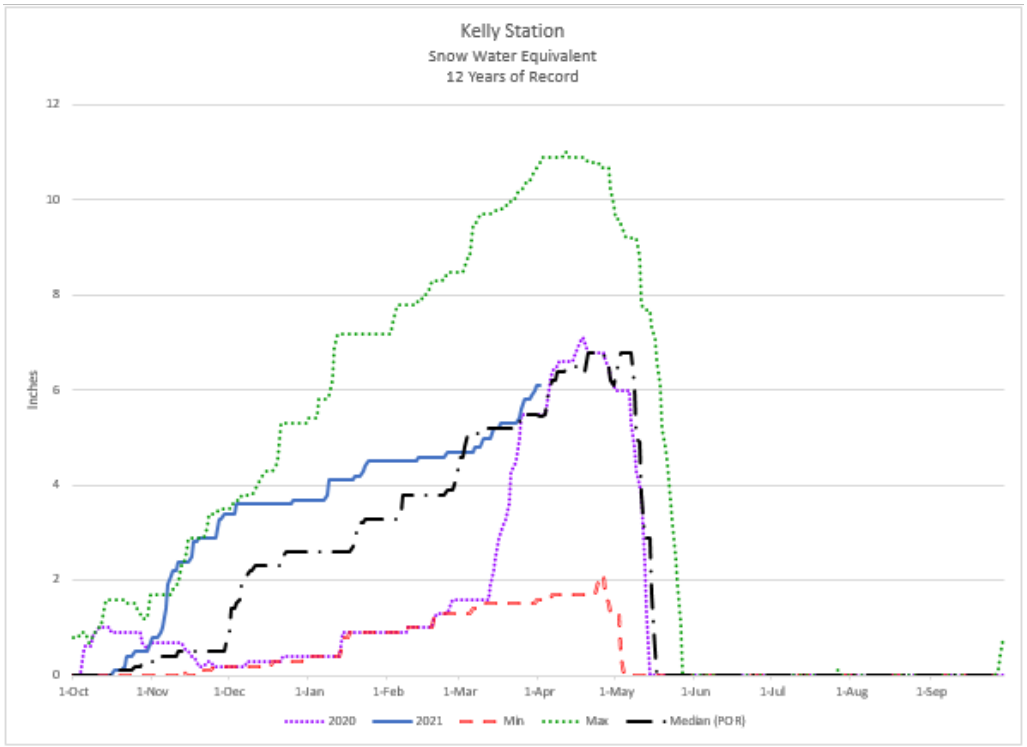


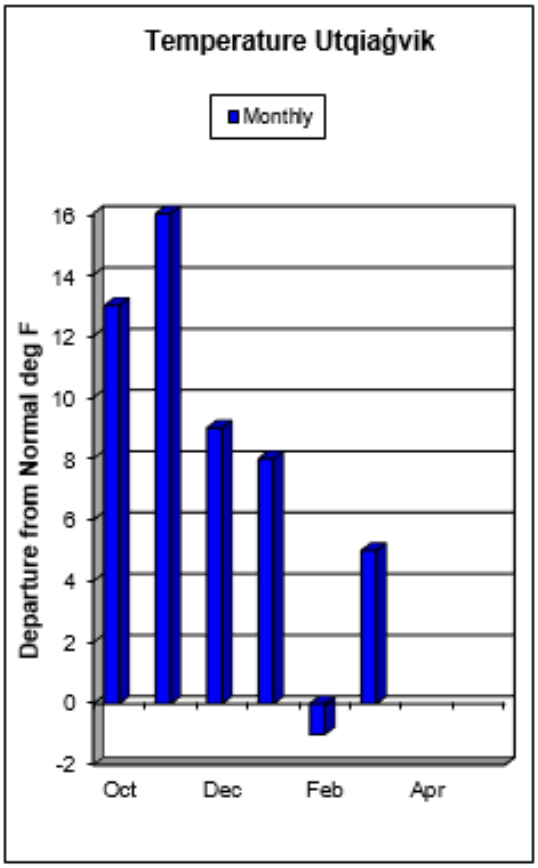
Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Koyukuk					
Bettles Field	640	5.4	10.0	6.7	81%
Coldfoot	1040	4.5	9.2	6.3	71%
Galena AK	410	5.5	8.3	---	---
Gobblers Knob	2030	4.9	9.5	6.8	72%
Hozatka Lake	206	5.2	6.7	---	---
Kuskokwim					
Aniak	80	11.6	11.3	---	---
McGrath	340	9.3	15.8	---	---
Telaquana Lake	1275	9.9	11.9	---	---

Arctic and Kotzebue Sound





Snowpack

Arctic

The stations along the Dalton Highway reported variable precipitation during March, ranging from above to below average. Reported snow depths are slightly below average.

Kotzebue

Kelly Station SNOTEL, on the Noatak, received near normal March precipitation and has a snowpack right at its 12-year average. Kotzebue reported abundant March precipitation.

Arctic and Kotzebue Sound

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Atigun Pass	4800	41	39	---	---	---	---
Imnaviat Creek	3050	22	23	---	---	---	---
Kelly Station	310	30	27	---	6.1	5.5	---
Prudhoe Bay	30	9	13	---	---	---	---
Sagwon	1000	21	12	---	---	---	---

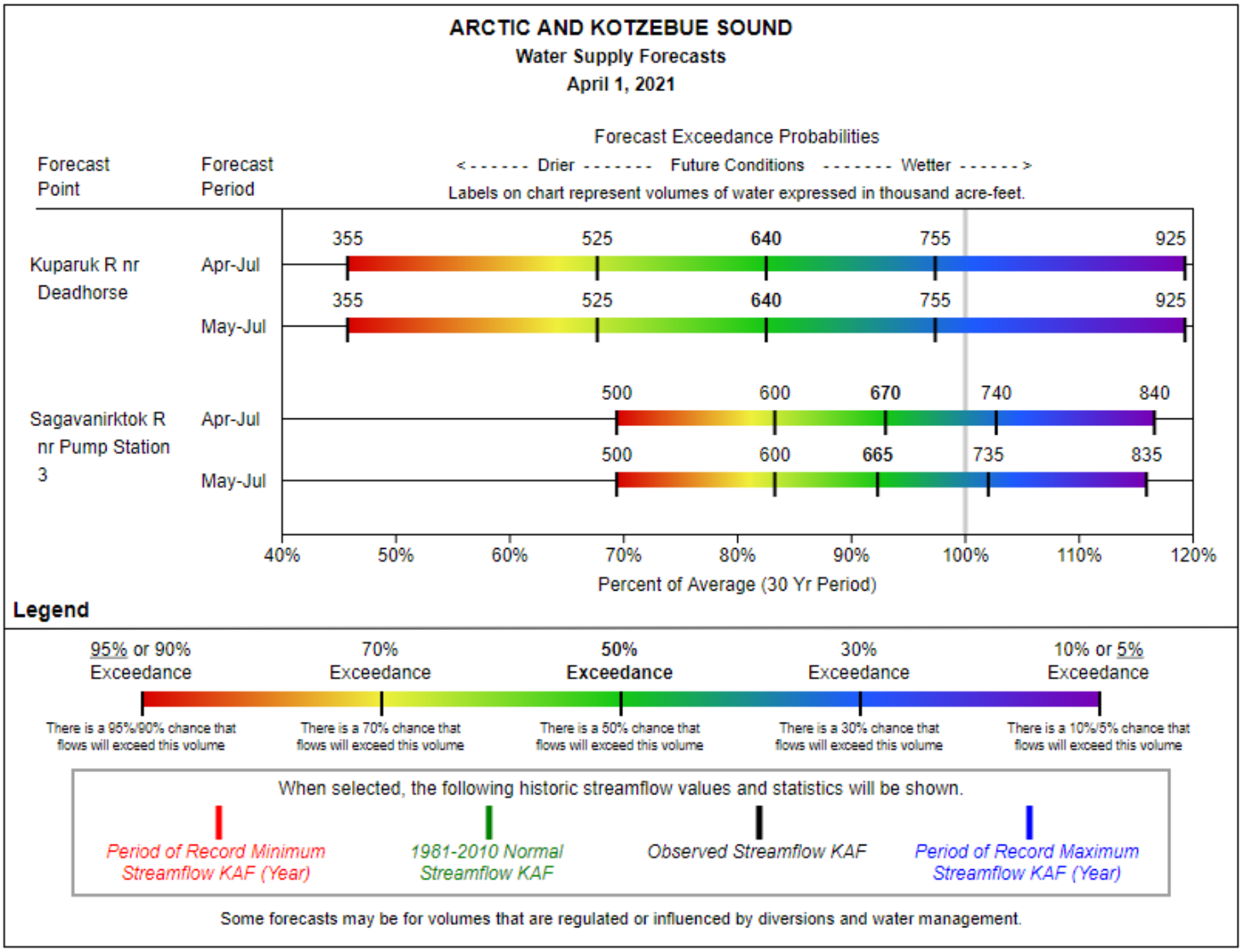
**Estimate*

Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Arctic					
Atigun Camp	3400	1.6	3.3	2.5	64%
Atigun Pass	4800	4.0	5.8	5.6	71%
Imnaviat Creek	3050	2.2	2.6	2.9	76%
Prudhoe Bay	30	3.1	3.0	3.5	89%
Sagwon	1000	2.5	2.8	3.0	83%
Kotzebue Sound					
Port Red Dog	50	2.3	---	3.2	72%
Red Dog Mine	950	4.5	---	3.9	115%
Kelly Station	310	7.3	7.4	---	---

Streamflow Forecasts



Legend

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70% Exceedance — There is a 70% chance that flows will exceed this volume

50% Exceedance — There is a 50% chance that flows will exceed this volume

30% Exceedance — There is a 30% chance that flows will exceed this volume

10% or 5% Exceedance — There is a 10%/5% chance that flows will exceed this volume

When selected, the following historic streamflow values and statistics will be shown.

Period of Record Minimum Streamflow KAF (Year)

1981-2010 Normal Streamflow KAF

Observed Streamflow KAF

Period of Record Maximum Streamflow KAF (Year)

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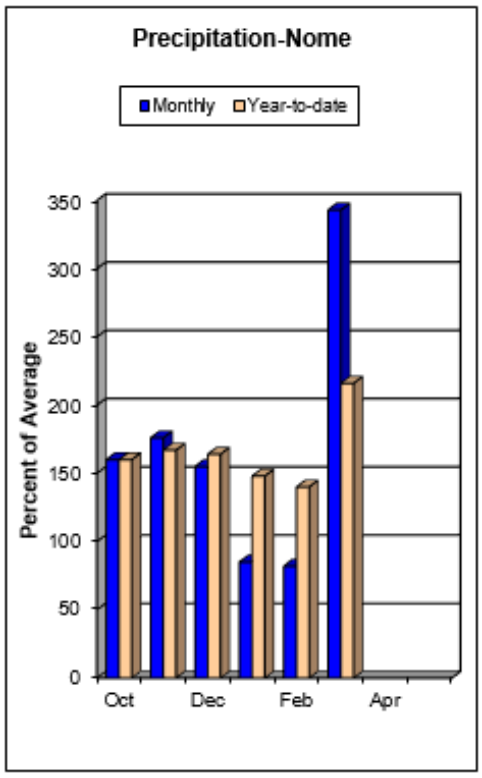
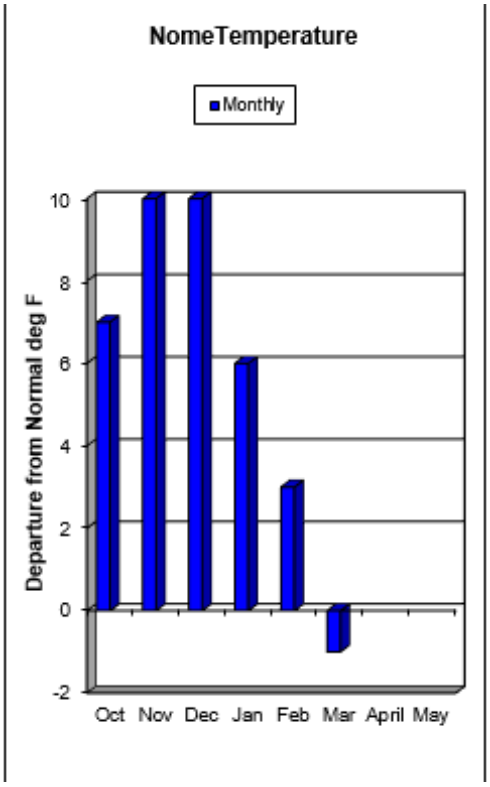
Norton Sound/Y-K Delta/Bristol Bay





Snowpack

The Seward Peninsula had above average precipitation during March. Snow depths are now above average and deeper than last year.

Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

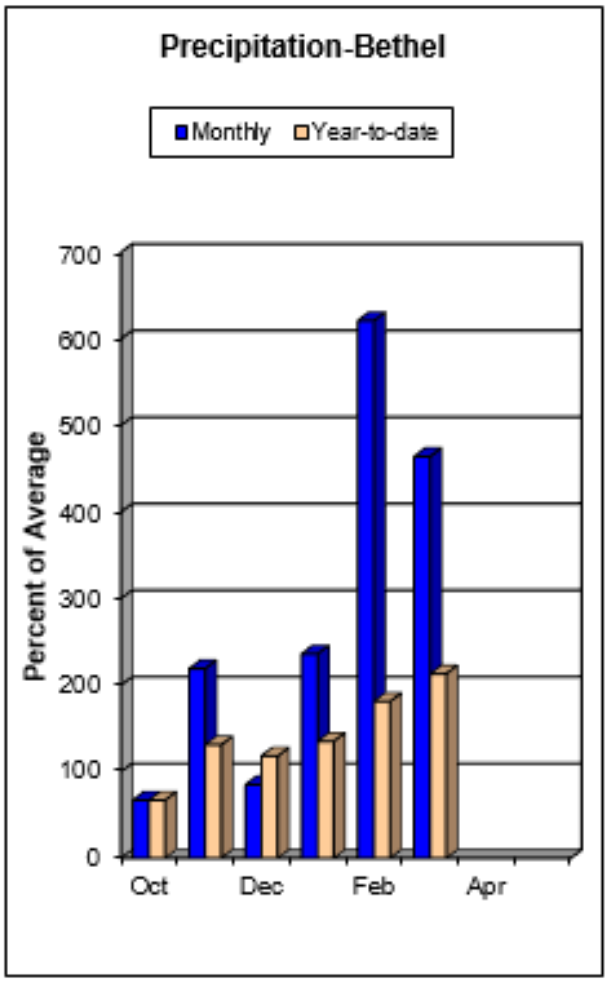
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Norton Sound					
Pargon Creek	100	6.4	6.7	5.9	108%
Rocky Point	250	3.9	5.2	5.4	72%

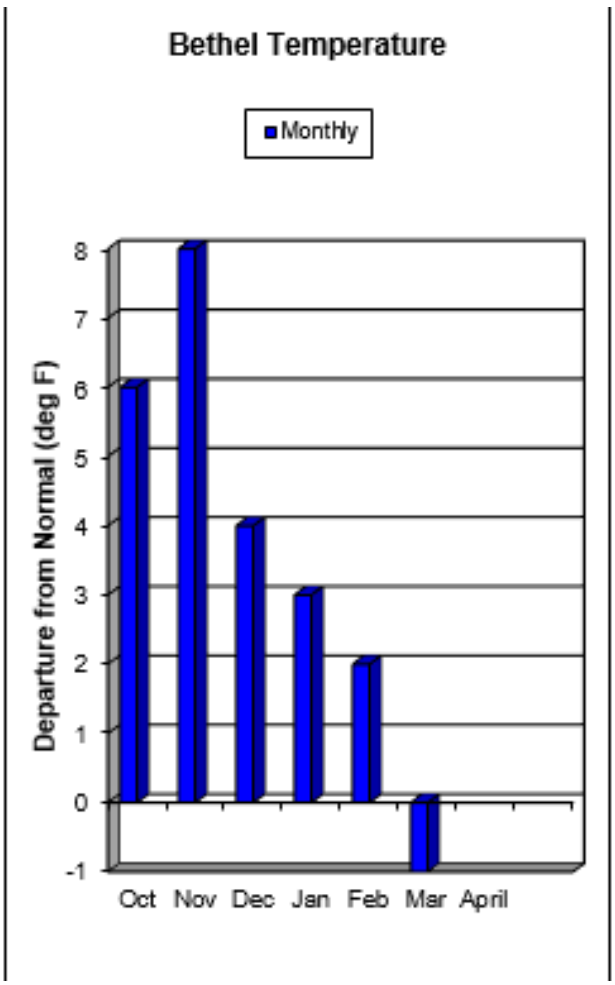
Norton Sound/Bristol Bay

Snowpack Data

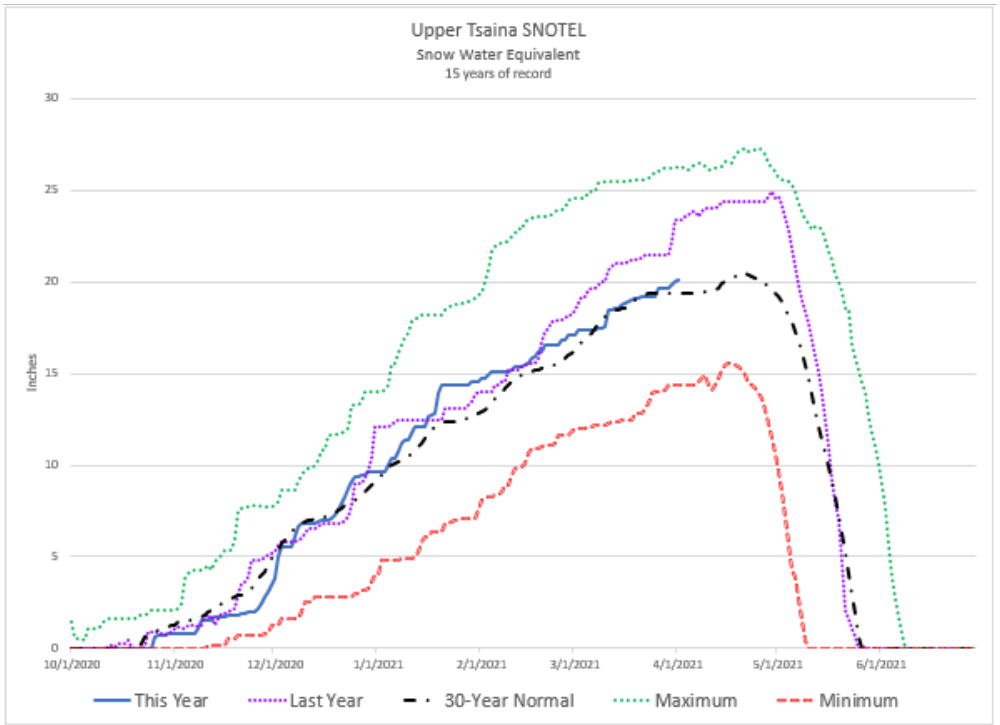
Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Norton Sound							
Johnsons Camp	25	29	12	---	---	---	---
Pargon Creek	100	17	---	---	---	---	---
Rocky Point	250	41	26	---	---	---	---

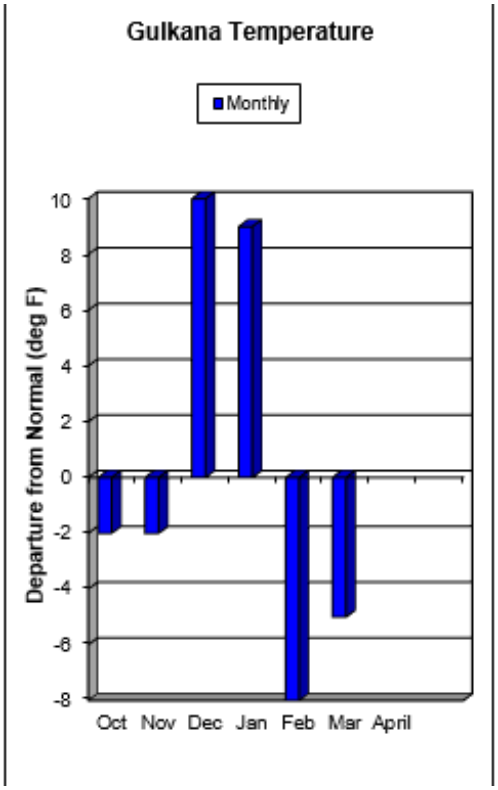
**Estimate*





Copper Basin





Snowpack

The Copper Basin received above average March precipitation resulting in above normal monthly snowpack gains. Snowpack in the Copper ranges from slightly above normal in most locations to over 150% of normal up the Chitina River valley. The Chokosna Snow Course, near the road to McCarthy, reported its second highest snowpack in its 28 years and the highest since 2004. May Creek SNOTEL reported its stoutest snowpack in its 14-year record.

Copper Basin

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Chistochina	1950	29	21	20	5.4	3.1	3.5
Chokosna	1550	23	14	15	5.2	2.6	3.8
Copper Center	1264	25	25	---	4.7	5.4	---
Dadina Lake	2160	33	24	28	6.4*	4.7	6.3
Fielding Lake	3000	48	76	40	9.7	22.5	9.9
Fielding Lake SNOTEL	3000	37	59	---	7.7	17.4	---
Gulkana River	1830	24	22	---	6.2	6.0	---
Haggard Creek	2540	35	34	28	6.4	7.1	5.5
Kenny Lake School	1300	21	17	16	4.1	3.3	3.6
Little Nelchina	2650	23	25	26	4.4	5.2	5.2
Long Glacier	4820	50	49	---	10.0*	14.2	---
Lost Creek	3030	20	16	18	3.3	2.8	3.7
May Creek	1610	37	24	---	8.6	5.5	5.5
Mentasta Pass	2430	36	38	27	7.3	8.1	6.2
Monsoon Lake	3100	26	35	30	5.4*	8.1	6.4
Notch	2643	19	17	---	4.0*	3.6	---
Paxson	2650	40	47	31	7.6	10.9	6.9
Sanford River	2280	35	31	28	6.4	7.5	6.0
St. Anne Lake	1990	26	23	23	4.6*	4.7	4.8
Tazlina	1250	20	23	14	4.5	5.3	3.8
Tebay Lake	1930	69	60	---	18.7*	17.1	---
Tolsona Creek	2000	26	25	22	4.7	5.3	4.2
Tsaina River	1650	56	52	56	15.8	15.8	17.0
Twin Lakes	2400	26	23	26	5.0	5.7	6.4
Upper Tsaina River	1750	73	80	---	20.1	23.4	19.4
Worthington Glacier	2100	76	72	75	26.3	26.0	24.6

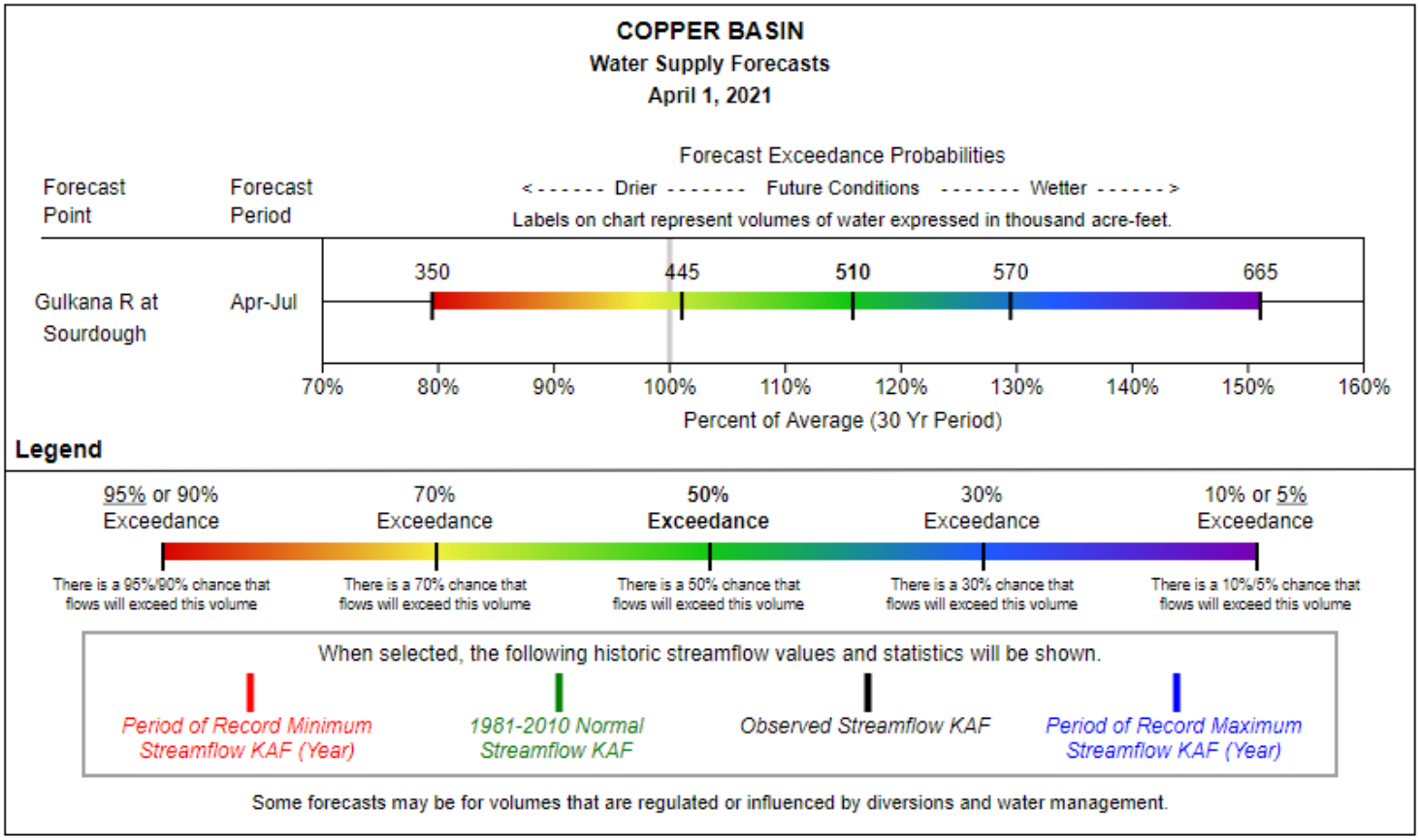
**Estimate*

Precipitation

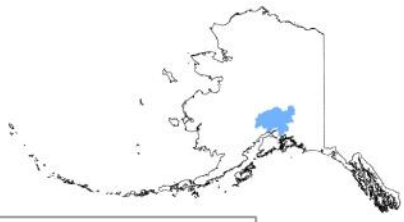
Inches Accumulated since October 1st (as of April 1, 2021)

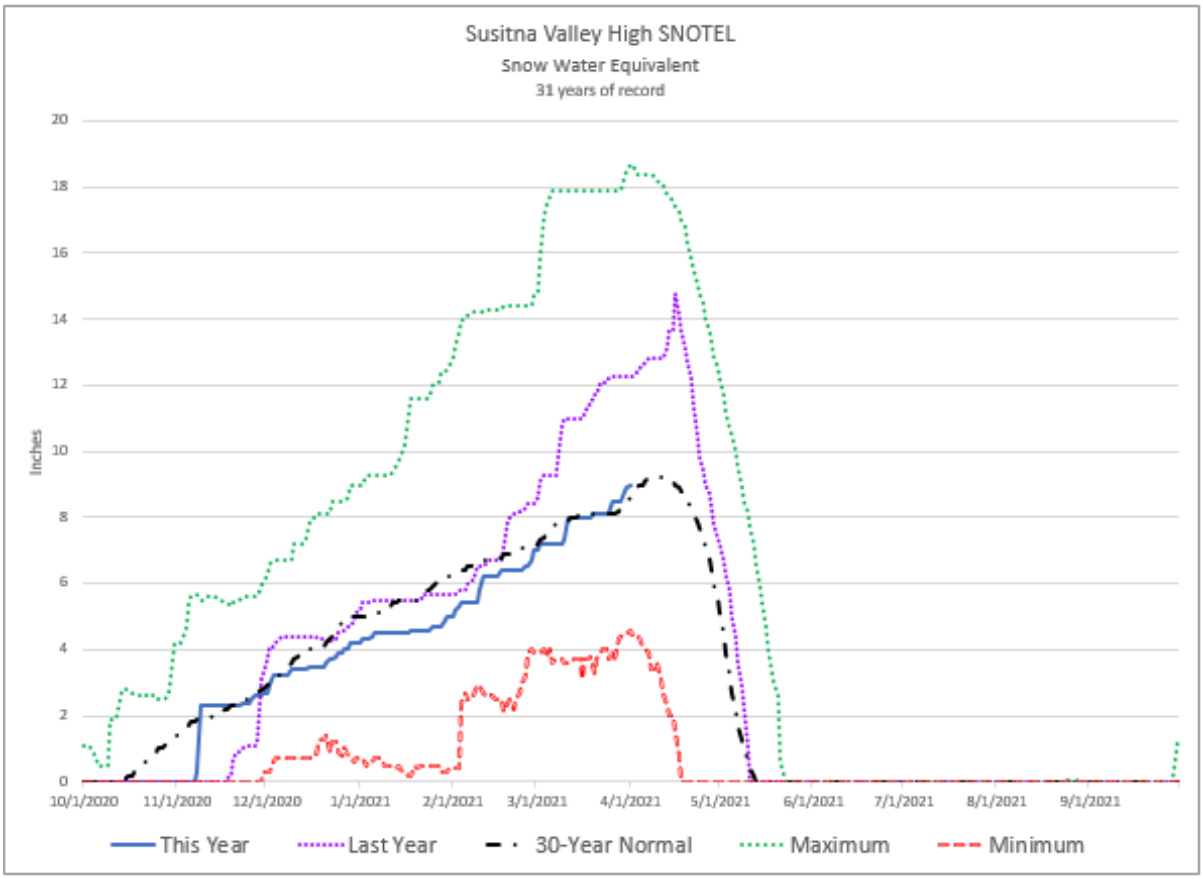
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Gulkana River	1830	7.0	6.0	---	---
May Creek	1610	8.5	6.6	6.1	139%
Upper Chena	2850	7.2	12.1	6.7	107%

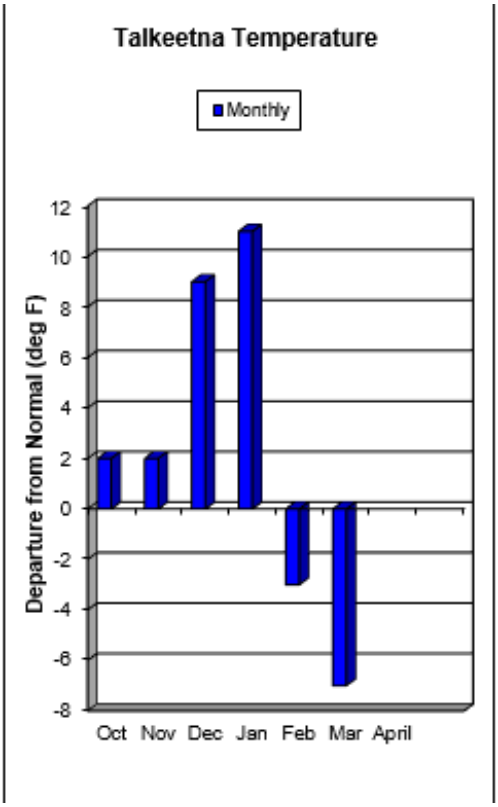
Streamflow Forecasts



Matanuska—Susitna Basin







Snowpack

The lower Susitna Basin received average March precipitation, while further east storms stacked up in the Matanuska and Little Su Valleys which received over half again average March precipitation. Snowpack gains were below normal in the lower Susitna Valley but were above normal in the Little Su, Matanuska, and upper Chulitna Basins. Snowpack gains were mixed in the upper basin on the east side of the Talkeetna Mountains. Snowpack is near normal in most of the basin, except for the upper Chulitna, where the snowpack is below normal.

Precipitation

Matanuska—Susitna Basin

Inches Accumulated since October 1st (as of April 1, 2021)

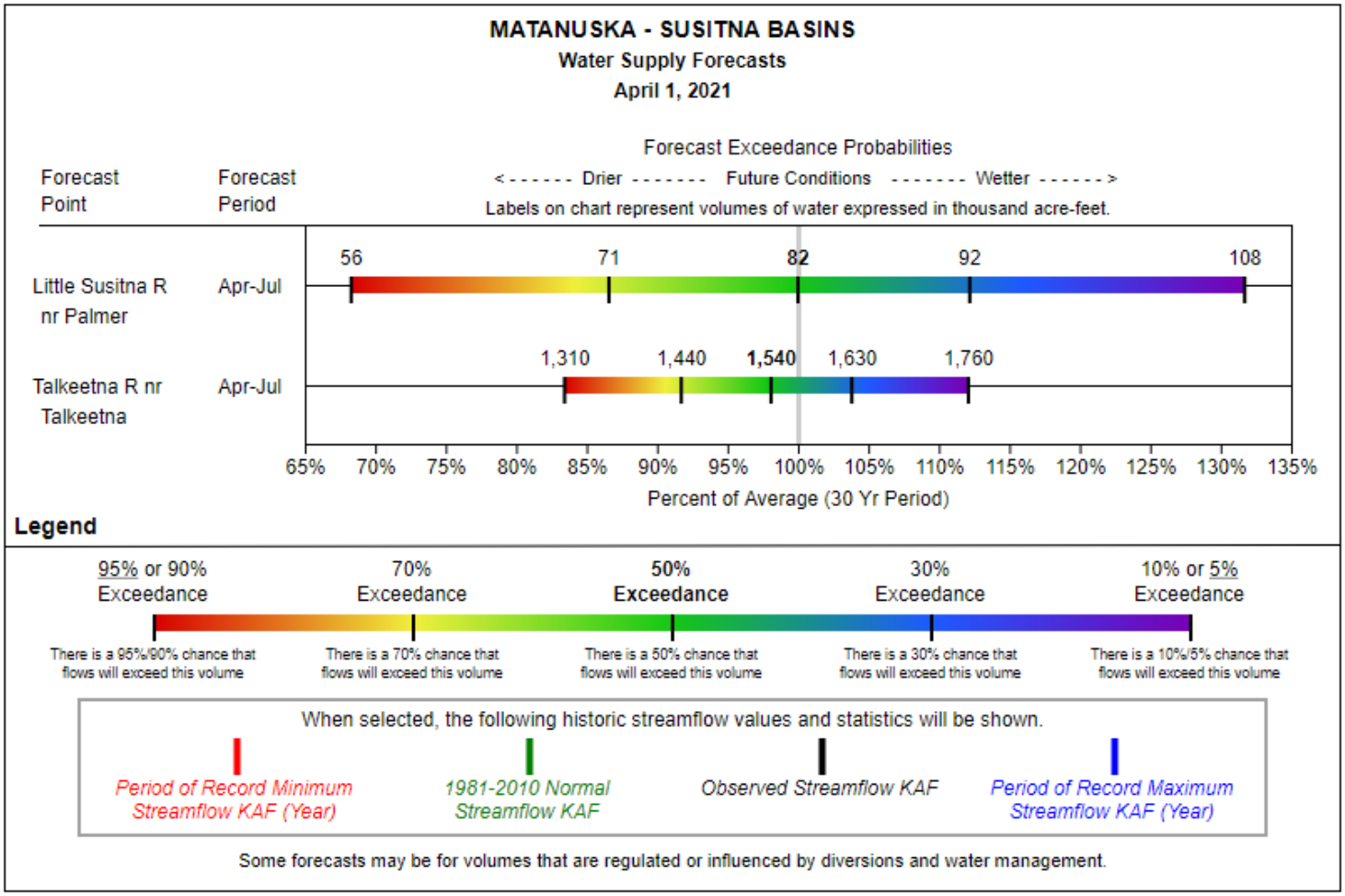
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Alexander Lake	160	13.4	19.7	---	---
Frostbite Bottom	2700	16.1	23.8	---	---
Independence Mine	3550	16.6	26.5	15.3	109%
Monahan Flat	2710	7.6	12.7	8.1	94%
Spring Creek	580	7.7	9.4	---	---
Susitna Valley High	375	11.1	20.1	11.9	93%
Tokositna Valley	850	15.4	33.4	19.0	81%

Snowpack Data

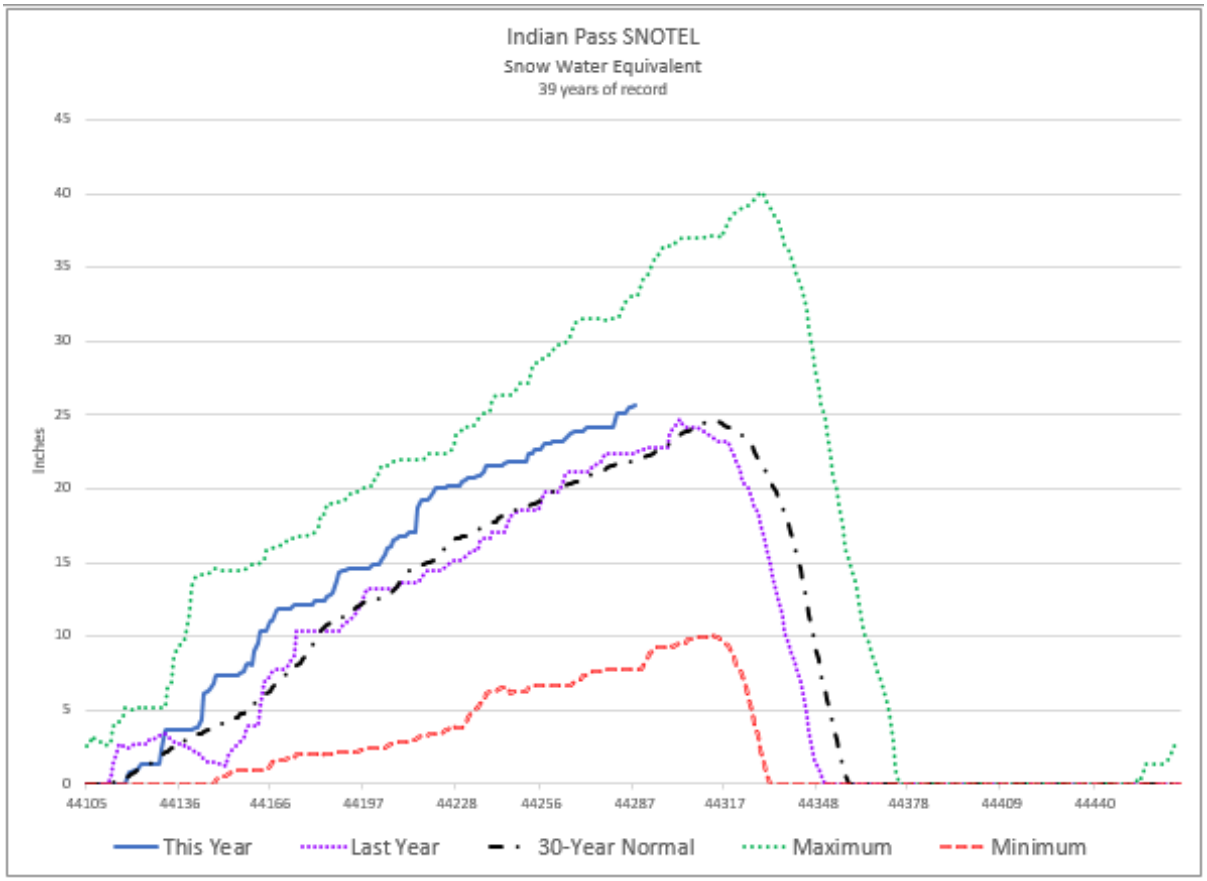
		Snow Depth			Water Content		
Site Name	Elev.	Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Alexander Lake	160	37	46	---	10.1	13.6	---
Archangel Road	2200	63	63	44	15.6	16.8	12.2
Birthday Pass	4020	84	130	---	27.0	49.7	---
Blueberry Hill	1200	62	74	48	14.7	21.7	13.5
Chelatna Lake	1450	50	53	45	13.0*	14.6	11.0
Curtis Lake	2850	30	29	25	5.2*	5.8	4.6
Denali View	700	44	58	40	10.7	15.2	12.1
Dunkle Hills	2700	38	68	---	9.5*	19.7	---
Dutch Hills	3100	68	102	75	17.8*	35.7	24.8
E. Fork Chulitna	1770	58	71	47	11.4	22.0	12.1
Fishhook Basin	3300	66	99	55	20.0	31.2	17.8
Fog Lakes	2120	30	41	24	5.7*	9.0	5.2
Frostbite Bottom	2700	61	67	---	16.1	20.9	---
Horsepasture Pass	4300	29	36	30	6.1*	7.6	6.9
Independence Mine	3550	70	103	64	20.4	32.7	19.8
Independence Mine SNOTEL	3550	62	88	---	15.3	24.6	11.3
Lake Louise	2400	30	25	22	5.3	5.1	4.6
Little Susitna	1700	60	52	39	14.0	14.0	10.1
Monahan Flat	2710	35	46	---	7.2	10.1	---
Nugget Bench	2010	48	70	50	12.0*	22.1	14.6
Ramsdyke Creek	2220	59	99	64	15.6*	34.7	20.0
Sheep Mountain	2900	30	31	26	5.9	7.1	5.6
Square Lake	2950	29	32	21	4.9*	6.3	4.0
Susitna Valley High	375	40	48	---	9.0	12.3	8.6
Talkeetna	350	34	43	26	7.3	10.6	6.4
Tokositna Valley	850	60	82	---	15.1	23.4	12.4
Tyone River	2400	18	22	21	3.6*	5.3	5.0
Upper Oshetna River	3150	27	32	20	4.9*	6.9	4.6
Upper Sanona Creek	3100	28	30	28	4.7*	5.9	5.6
Willow Airstrip	200	44	42	28	10.9	10.0	6.9

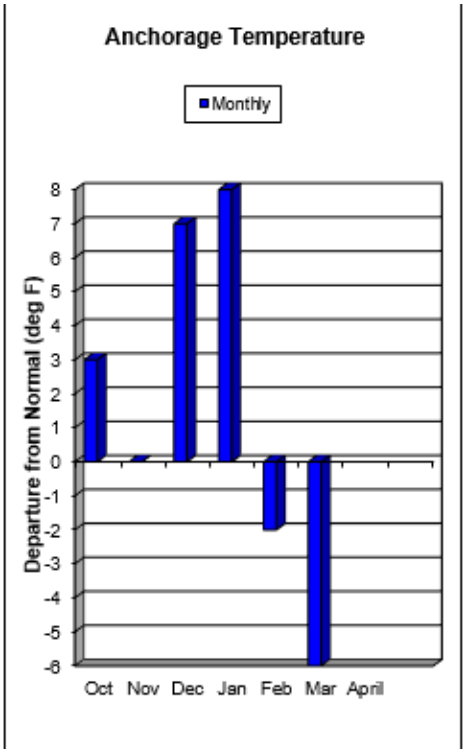
**Estimate*

Streamflow Forecasts



Northern Cook Inlet





Snowpack

The Northern Cook Inlet Region generally received above normal March precipitation. March snowpack gains ranged from near to twice normal. Snowpack is above normal, with the reporting 11 sites averaging 121% of median. Anchorage Hillside SNOTEL, with 16 years of record, is reporting its second wettest snowpack, its deepest snowpack since 2012.

Northern Cook Inlet

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Anchorage Hillside	2080	48	36	---	12.9	10.7	10.2
Arctic Ski Bowl	3000	53	48	40	18.5	17.2	12.8
Arctic Valley #1	500	26	11	14	5.4	3.1	3.6
Arctic Valley #2	1000	---	20	18	---	5.4	4.8
Arctic Valley #3	1450	42	32	28	10.3	8.8	7.2
Arctic Valley #4	2030	42	32	28	10.5	9.0	7.2
Indian Pass	2350	78	69	---	25.6	22.4	22.0
Kincaid Park	250	25	20	16	5.4	4.3	4.4
Moraine	2100	38	28	---	8.3	7.1	9.0
Mt. Alyeska	1540	97	56	---	32.8	17.4	32.5
Portage Valley	50	54	49	40	18.2	17.7	14.6
South Campbell Creek	1200	39	21	28	9.5	4.5	6.9

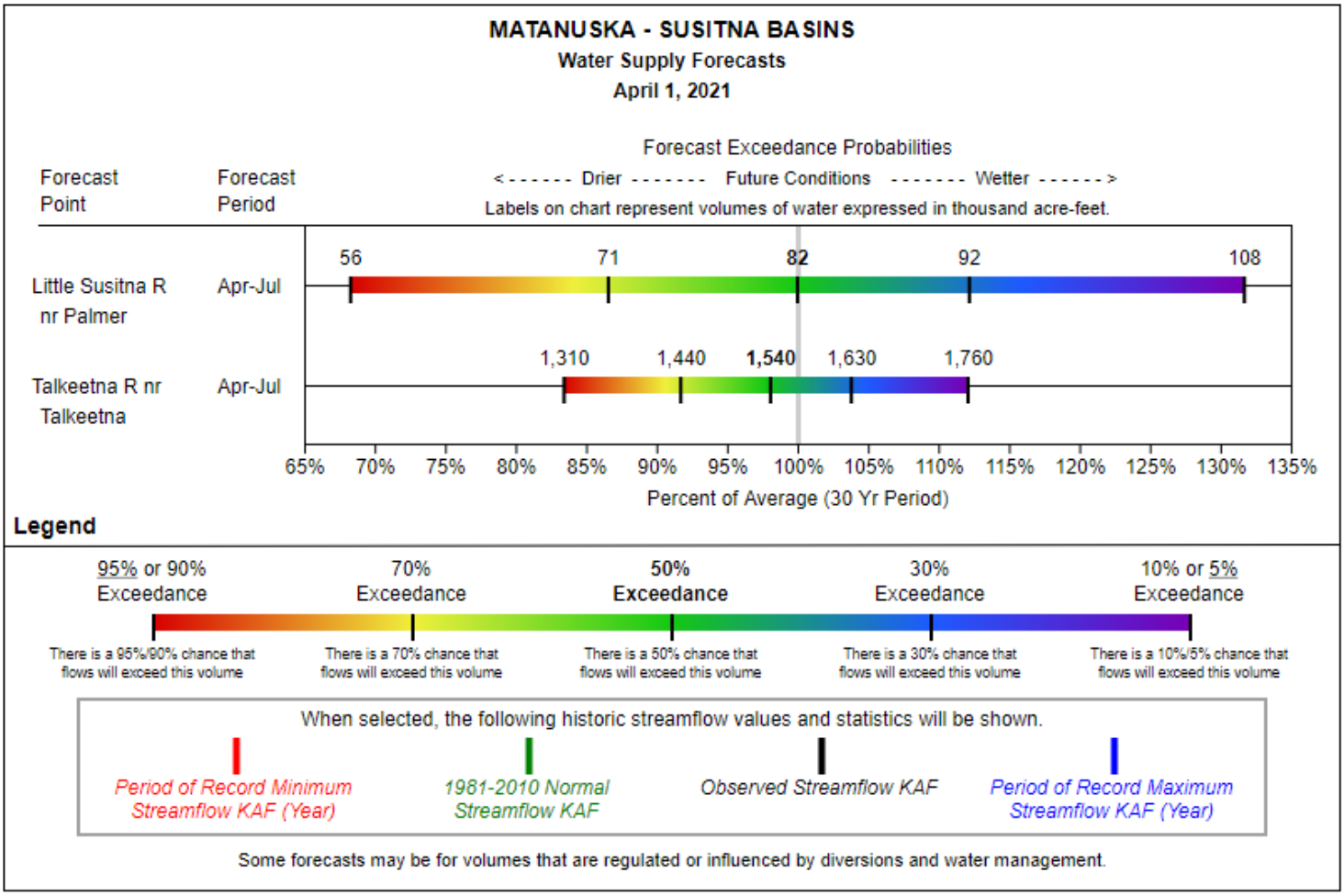
**Estimate*

Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchorage Hillside	2080	14.5	18.0	13.7	106%
Indian Pass	2350	27.3	34.7	25.4	107%
Moraine	2100	10.5	11.7	11.7	90%
Mt. Alyeska	1540	38.6	40.1	46.3	83%
Spring Creek	580	7.7	9.4	---	---

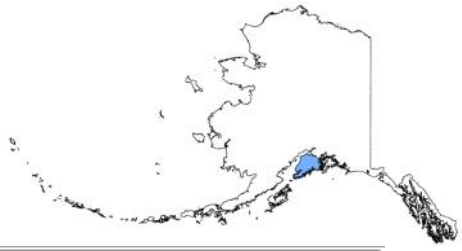
Streamflow Forecasts

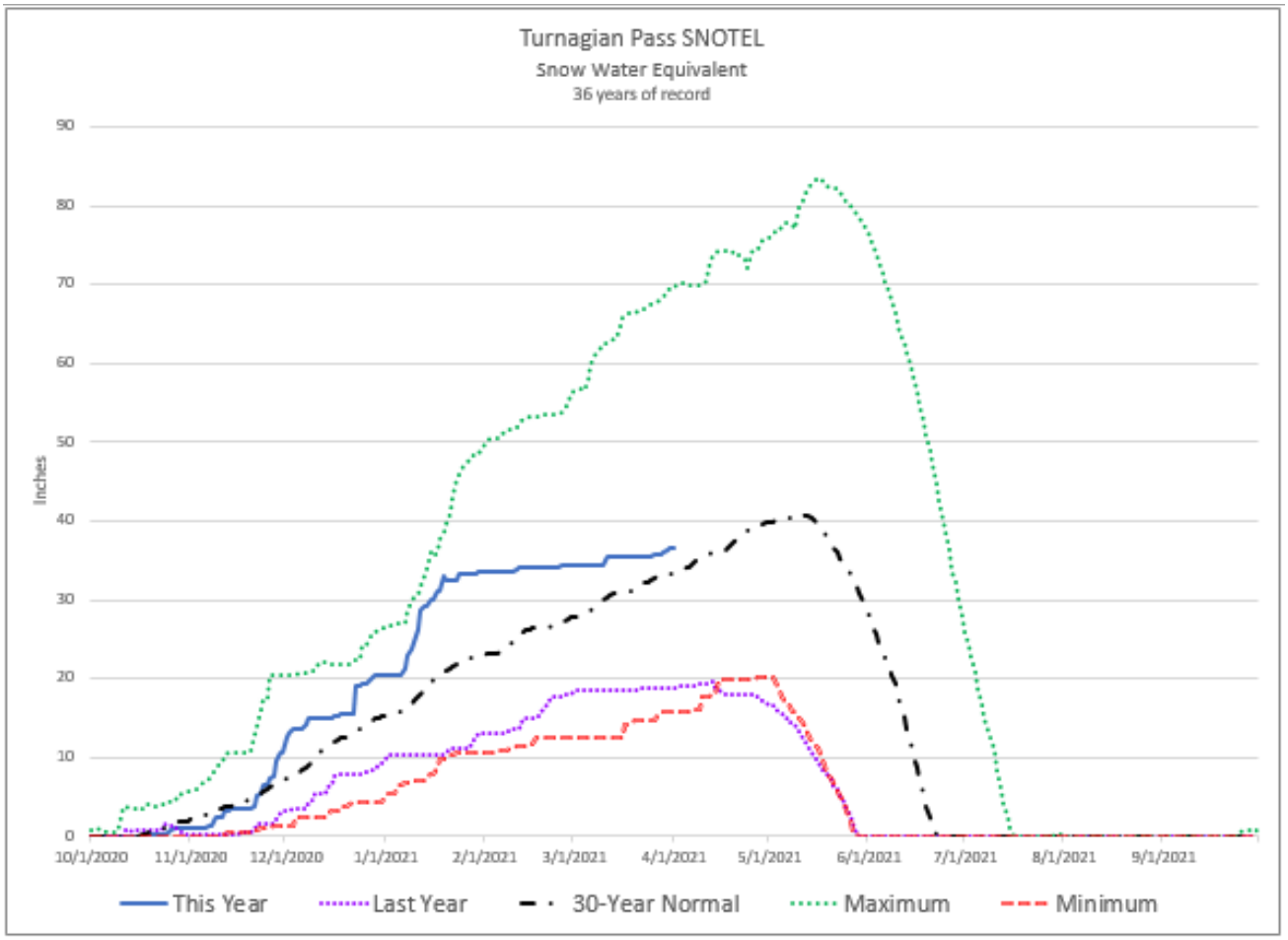


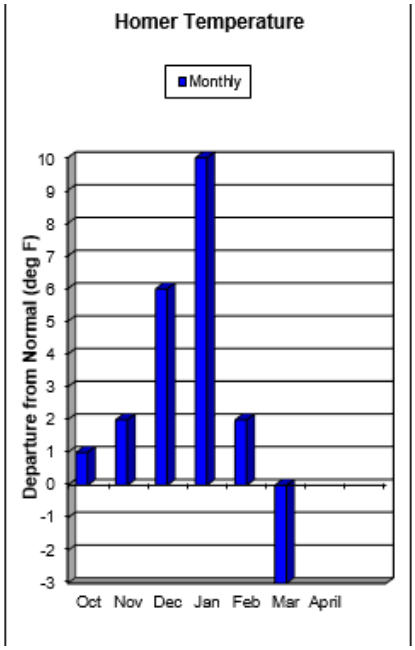
Legend

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

Kenai Peninsula







Snowpack

The western side of the Kenai Peninsula, next to Cook Inlet, saw above normal monthly precipitation, while the eastern side of the peninsula, experienced below average precipitation. The result is that snowpack across the peninsula is above normal. All snowpack monitoring stations are above normal ranging from 109% of normal at Turnagain Pass SNOTEL to 214% of normal at Moose Pass. Both Grouse Creek Divide SNOTEL, near Seward, and Anchor River Divide SNOTEL, near Homer, have recorded their second highest snow-packs, their highest since 2015.

Kenai Peninsula

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Anchor River Divide	1653	55	37	---	17.7	9.6	11.9
Bertha Creek	950	75	36	53	22.9*	10.3	16.6
Bridge Creek	1300	46	29	40	14.2	7.8	12.0
Cooper Lake	1200	61	36	---	17.6	9.2	14.0
Demonstration Forest	780	32	27	28	10.0	6.9	7.8
Eagle Lake	1400	57	31	42	19.1	8.2	11.9
Exit Glacier	400	65	31	51	19.9	10.0	18.2
Exit Glacier SNOTEL	400	70	32	---	21.6	9.2	18.4
Grandview	1100	104	46	---	35.9	13.0	32.0
Grouse Creek Divide	700	68	29	---	25.7	8.8	17.7
Jean Lake	620	23	18	15	5.8	4.7	3.3
Kenai Moose Pens	300	27	26	---	5.5	6.1	5.0
Kenai Summit	1390	63	33	48	19.6	9.0	14.8
Lower Kachemak Creek	1915	73	30	---	---	---	---
Mcneil Canyon	1320	49	29	---	14.6	8.1	10.6
Middle Fork Bradley	2300	89	29	---	---	---	---
Moose Pass	700	49	20	22	14.1*	4.2	6.6
Mt. Alyeska	1540	97	56	---	32.8	17.4	32.5
Pass Creek	1200	46	---	33	12.2	---	9.0
Port Graham	300	44	31	---	12.0	11.2	8.7
Portage Valley	50	54	49	40	18.2	17.7	14.6
Resurrection Pass	2250	45	---	38	13.3	---	10.4
Snug Harbor Road	500	23	11	16	6.2	3.7	4.5
Summit Creek	1400	50	28	---	12.2	6.9	11.1
Turnagain Pass	1880	112	62	---	36.4	18.9	33.4

**Estimate*

Kenai Peninsula

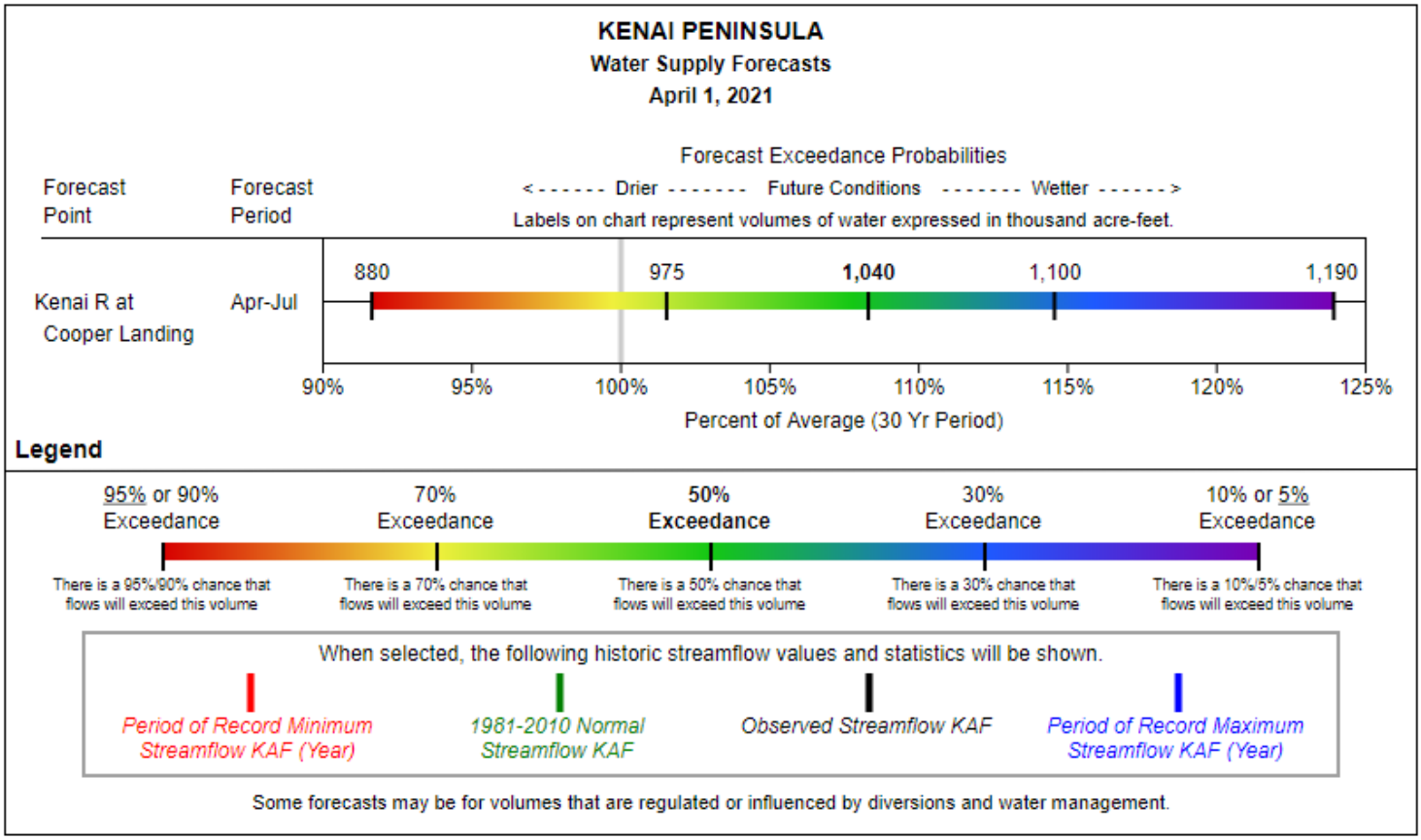
Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

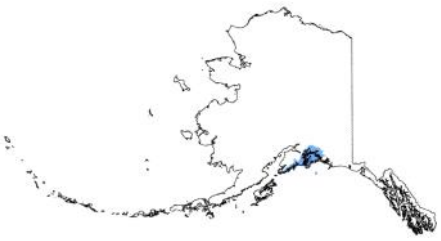
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchor River Divide	1653	18.0	25.1	16.9	107%
Cooper Lake	1200	24.9	27.7	25.2	99%
Exit Glacier	400	52.5	49.9	---	---
Grandview	1100	33.5	37.1	40.3	83%
Grouse Creek Divide	700	40.6	34.1	37.5	108%
Kenai Moose Pens	300	9.6	11.3	8.2	117%
Lower Kachemak Creek	1915	38.3	---	---	---
Mcneil Canyon	1320	17.3	18.8	16.6	104%
Middle Fork Bradley	2300	35.4	42.6	32.5	109%
Nuka Glacier	1250	52.1	---	54.3	96%
Port Graham	300	48.8	52.8	48.4	101%
Summit Creek	1400	14.4	18.2	15.8	91%
Turnagain Pass	1880	39.6	31.5	40.5	98%

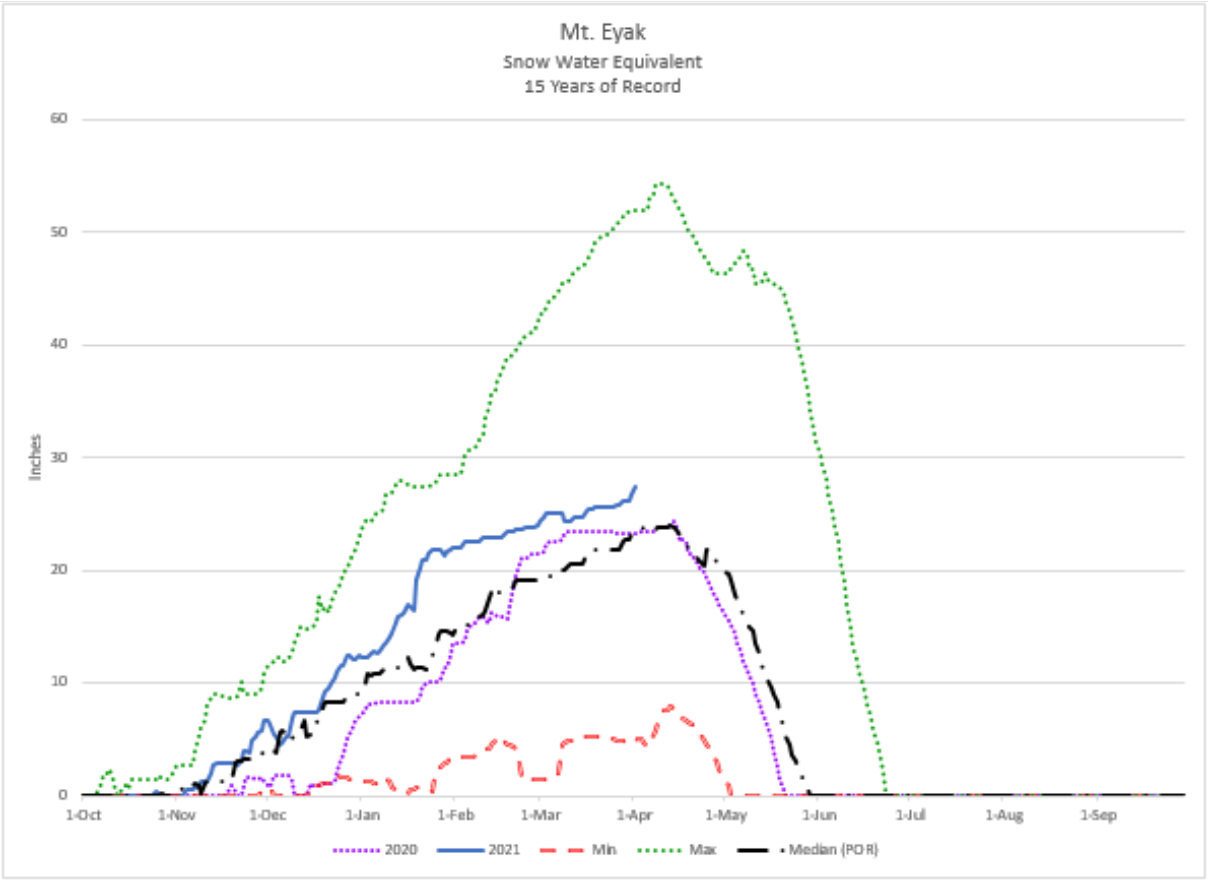
Streamflow Forecasts

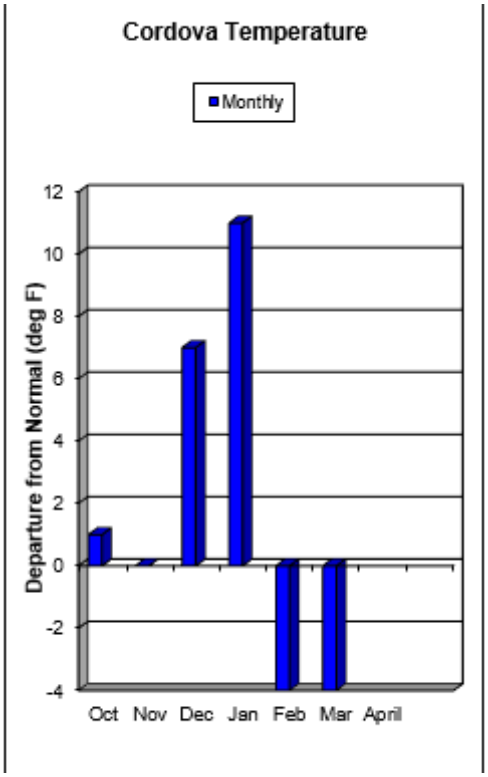
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Bradley Lake Inflow	Apr-Jul	94	112	76	185	197



Western Gulf – Prince William Sound







Snowpack

After a drier than average February, Prince William Sound has had a drier than average March. Many locations received only half average monthly precipitation. Snowpack gains were less than normal for the month. This results in a snowpack slightly below normal near Valdez but nearer normal at higher elevations. The western Sound retains an above normal snowpack.

Western Gulf — Prince William Sound

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Exit Glacier	400	65	31	51	19.9	10.0	18.2
Exit Glacier SNOTEL	400	70	32	---	21.6	9.2	18.4
Grouse Creek Divide	700	68	29	---	25.7	8.8	17.7
Lowe River	600	56	52	50	16.6	17.2	17.0
Mt. Eyak	1405	100	68	---	27.5	23.2	28.4
Nicks Valley	4280	101	126	---	---	---	---
Sugarloaf Mountain	550	83	---	78	24.5*	---	27.4
Tsaina River	1650	56	52	56	15.8	15.8	17.0
Upper Tsaina River	1750	73	80	---	20.1	23.4	19.4
Valdez	50	52	48	51	14.3	16.2	15.7
Worthington Glacier	2100	76	72	75	26.3	26.0	24.6

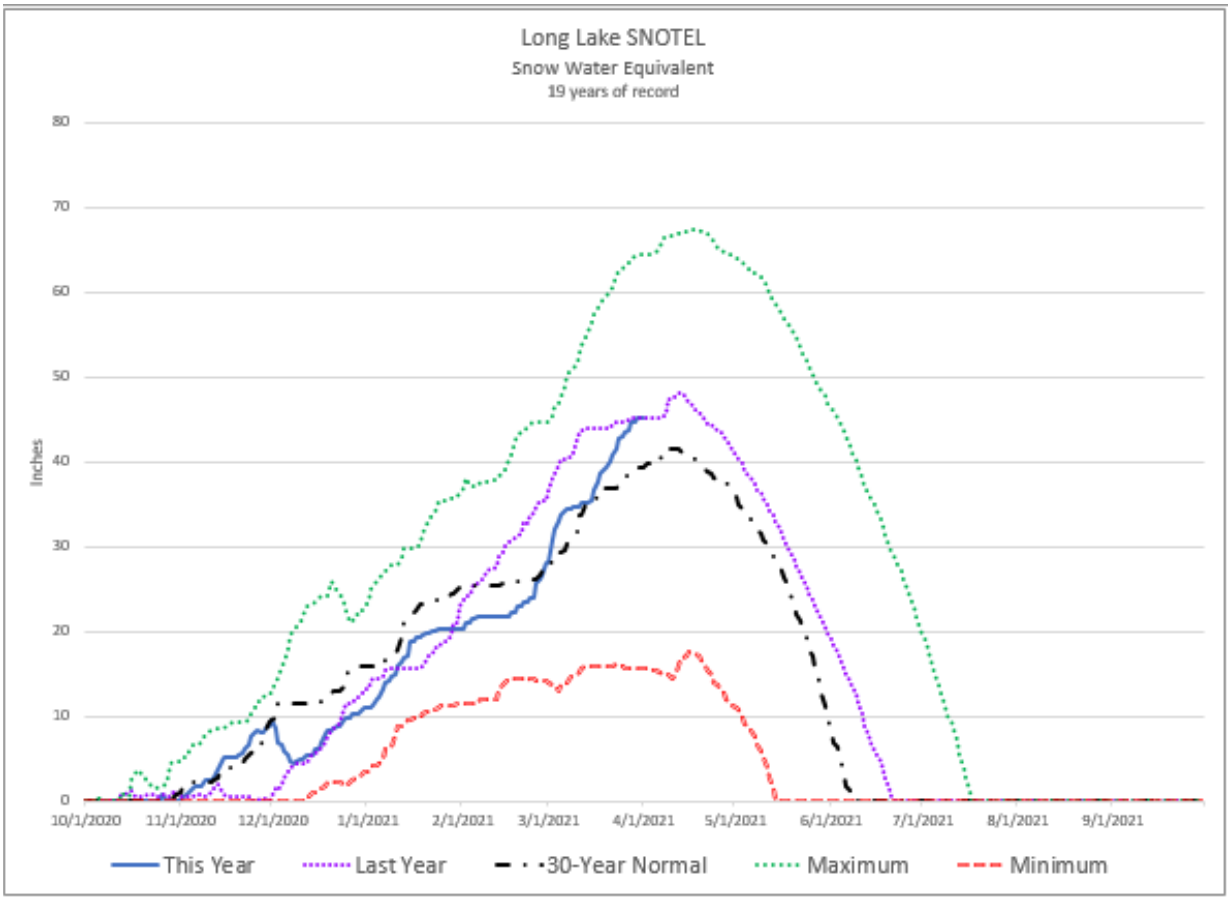
**Estimate*

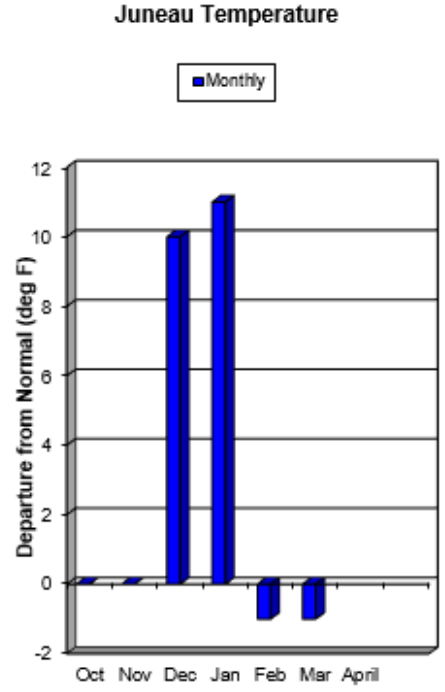
Precipitation

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Esther Island	50	80.1	79.0	80.5	100%
Exit Glacier	400	52.5	49.9	---	---
Grouse Creek Divide	700	40.6	34.1	37.5	108%
Mt. Eyak	1405	62.8	76.9	---	---
Nuchek	50	77.3	85.7	---	---
Port San Juan	50	71.1	72.6	75.7	94%
Strawberry Reef	30	37.7	42.5	---	---
Sugarloaf Mtn	550	38.7	50.3	40.5	96%
Tatitlek	50	38.8	47.8	40.0	97%

Southeast





Snowpack

Snow and precipitation came abundantly to Southeast Alaska in March. Monthly precipitation totals ranged from near average at Ketchikan to twice normal further up in the panhandle. Much of it came as snow. Petersburg Reservoir Snow Course experienced its single largest March snowpack gain this year with 9.1" of additional snow water during the month. All snow measurement sites experienced above average monthly gains, which resulted in an April 1st snowpack well above normal in most locations. Moore Creek Bridge Snow Course, with 32 years of measurements, set a new all-time record with 99" of snow and 32.5" of water content, about 150% of normal.

Southeast

Snowpack Data

Site Name	Elev.	Snow Depth			Water Content		
		Current	Last Year	1981-2010 Median	Current	Last Year	1981-2010 Median
Cropley Lake	1650	136	108	83	47.8*	39.0	30.4
Eagle Crest	1200	101	84	50	35.7	30.0	18.6
Fish Creek	500	34	26	11	10.2	8.6	2.7
Heen Latinee	2065	89	68	---	25.7	24.8	---
Long Lake	850	138	117	---	45.3	45.3	39.4
Moore Creek Bridge	2250	99	64	65	32.5	24.4	21.3
Petersburg Reservoir	550	50	---	1	14.3	---	0.2
Petersburg Ridge, S.	1650	142	---	74	43.5	---	27.4
Speel River	280	103	---	66	34.6*	---	26.5
West Creek	475	55	41	---	18.6	13.8	---

**Estimate*

Precipitation Data

Inches Accumulated since October 1st (as of April 1, 2021)

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Heen Latinee	2065	48.6	48.3	---	---
Long Lake	850	110.3	110.0	97.7	113%
Moore Creek Bridge	2250	35.2	30.9	27.4	128%

Streamflow Forecast

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Taiya River near Skagway	Apr-Jul	120	140	99	555	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/**

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