

Alaska Snow Survey Report

April 1, 2018

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Cover photo: The Resurrection River flows through the Kenai Mountains near the Exit Glacier Snow Course . Snow-pack in this region is below normal and Exit Glacier Snow Course was near record low.

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SnowPack

When it rains, it pours and when you have near record snowpack, the snow keeps on coming. At least it does when you're in the Copper and Tanana Valleys. More snowfall in March pushed several areas in the two basins to record or near record snowpacks. Haggard Creek snow course, north of Sourdough in the Copper Valley, measured its seconded wettest snowpack in 54 years of record, beat out only by 1979. Upper Chena Snow Course, upstream from Fairbanks, was measured with 57" of snow with 15.4" of water content, its most substantial snowpack since 1971.

Other areas with above normal snowpack include Northwest Alaska, the Koyukuk, the Kuskokwim and portions of the Matanuska-Susitna Basins.

Much of the Central Yukon Basin, including the Fortymile country and the Yukon Flats are near normal, along with portions of the North Slope.

The Gulf Coast, from Ketchikan to the Kenai drew the short straw for snowpack this year. Snowpack in these regions remains below normal. Exit Glacier Snow Course, near Seward, and Valdez Snow Course both reported their second lowest snowpack in 29 and 42 years, respectively (2015 was lowest).

Also with below normal snowpacks are most of the Kenai Peninsula and Cook Inlet along with the lower Susitna Basin. The Tanana Basin, near Tok, also persists into April with below normal snowpack.

Alaska Statewide Snowpack	# of Sites	Basin Index	
		Current Percent of Median	Last Year Percent of Median
Upper Yukon Basin	32	92	90
Central Yukon Basin	15	130	102
Tanana Basin	28	174	113
Koyukuk Basin	11	154	102
Kuskokwim Basin	3	143	79
Copper Basin	18	126	73
Matanuska-Susitna Basin	27	103	64
Northern Cook Inlet	16	67	74
Kenai Peninsula	23	60	75
Western Gulf of Alaska	10	68	83
Southeast Alaska	6	59	96

Precipitation

Precipitation was more patchy in March than February. However, some of the same general trends were present in both months. Southeast and much of Southcentral received below normal precipitation during the month. However, Northwest Alaska along with parts of the Arctic and Southwest Alaska had above normal precipitation as did the middle Tanana Valley, the Susitna Valley, and parts of the Copper River Valley.

Areas along the Gulf of Alaska from Ketchikan to the Kenai received 40-70% of normal precipitation. The twelve measurement sites on the Kenai averaged 57% of normal precipitation for the month.

Generally, most of the Interior received above normal precipitation during March with some sites reporting below normal conditions. The nine sites in the Tanana averaged 143% of normal. In Southcentral, the Matanuska and Susitna Valleys reported above normal precipitation, with sites receiving near normal to double average amounts. Northwest Alaska won the precipitation lottery for the month and sites there reported more than two to five times the average monthly precipitation.

Temperature

Temperatures stations across Alaska reported near normal to much above normal monthly temperatures for March. Stations in Southeast and Southcentral reported close to normal monthly temperatures while the Interior and Northern Alaska were much above normal.

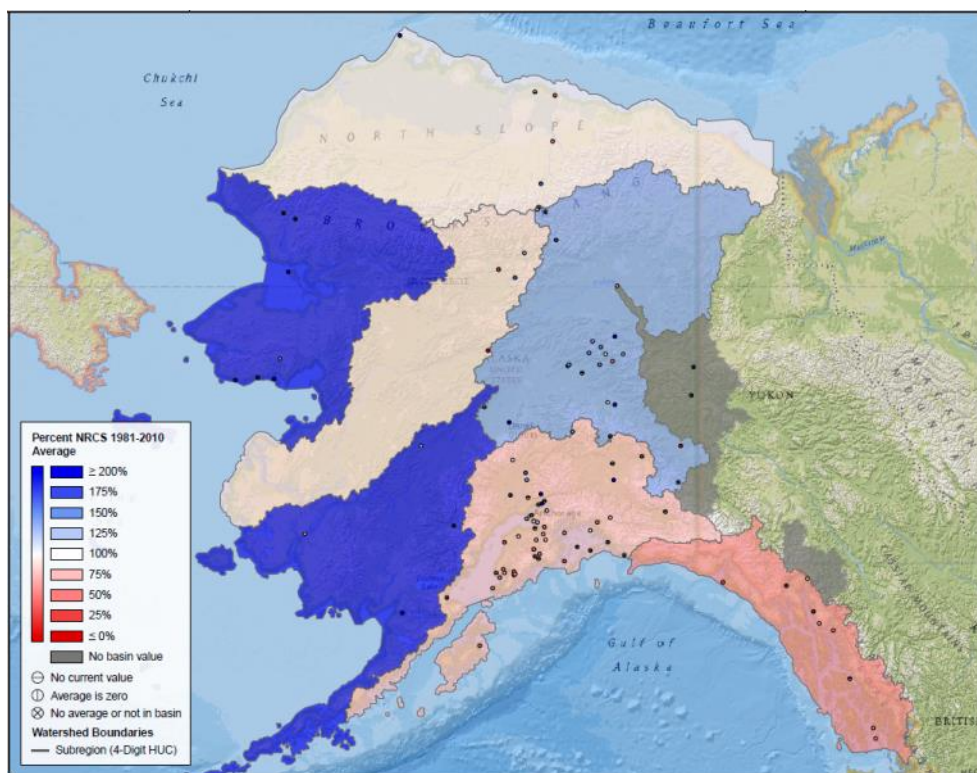
Juneau, Gulkana, Cordova and Whitehorse all reported normal monthly temperatures.

Anchorage, Homer, and Talkeetna were all nominally above normal for the month, each with a 3°F departure above normal.

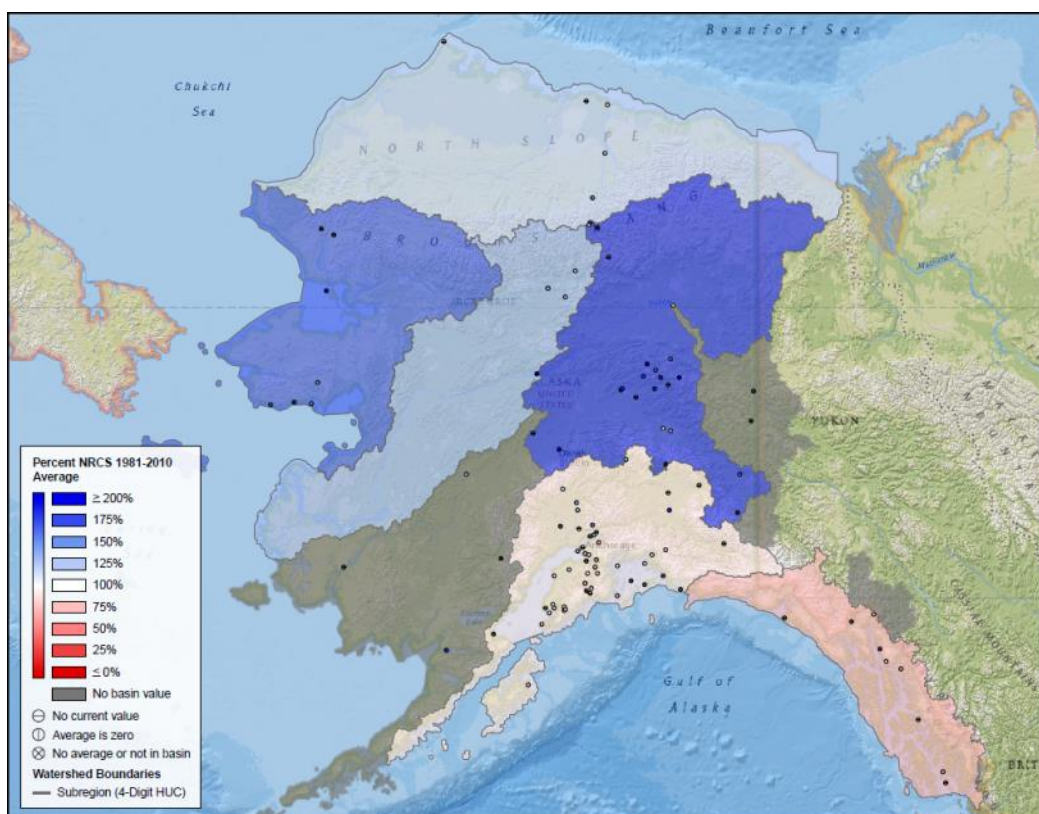
In the Interior, Fairbanks, Fort Yukon and Bettles were all recorded a monthly temperature 5-7°F above normal.

Like last month, both Bethel and Nome were well above normal and recorded an average monthly temperature of 10°F and 12°F above normal. Utqiagvik (Barrow) was 14°F above normal for the month.

Monthly Precipitation for March, 2018 (% of NRCS 81-2010 Average)

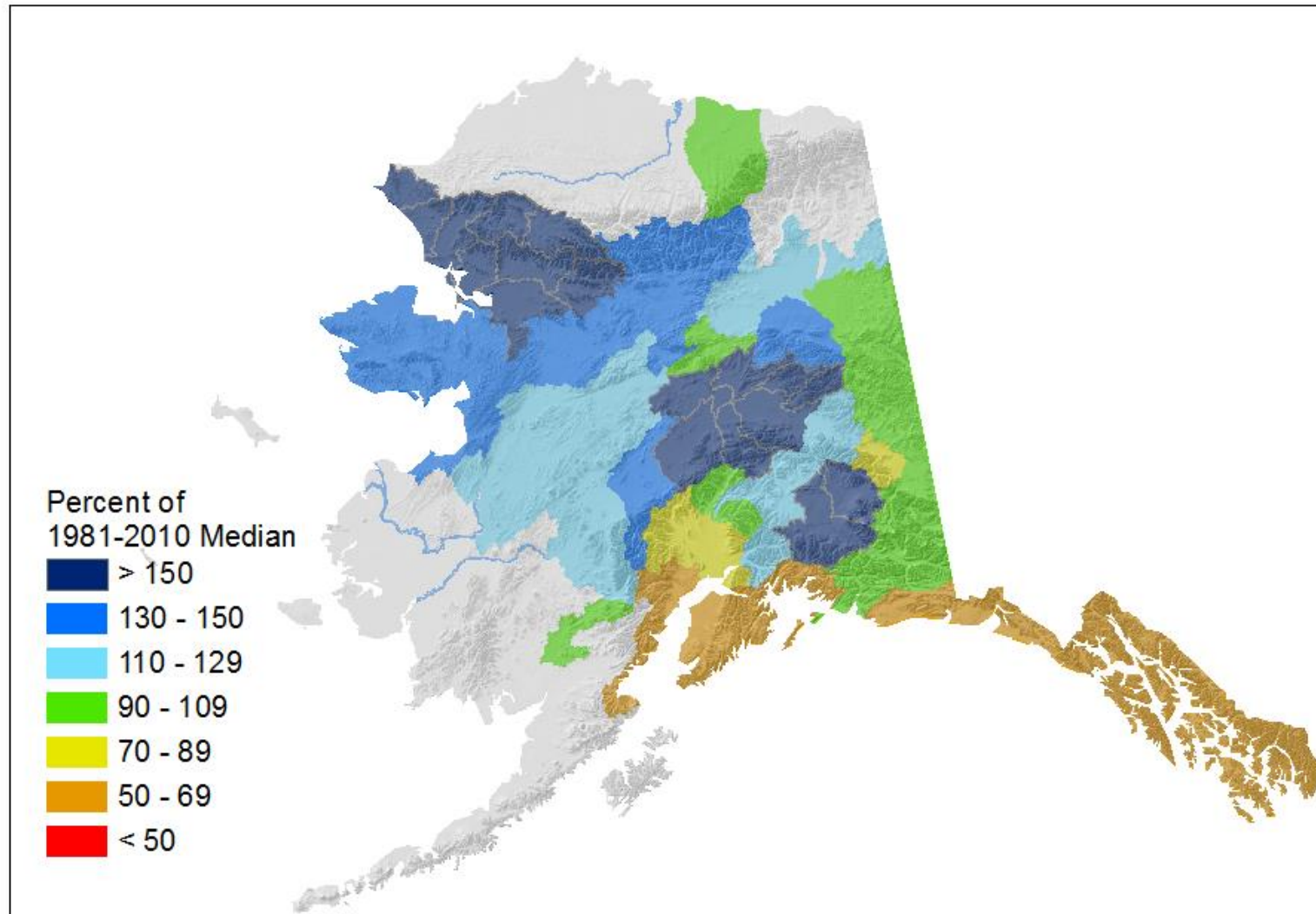


Water Year-to-date Precipitation (Oct. 1-March 31, 2018) (% of NRCS 81-2010 Average)



Alaska Snowpack as of April 1, 2018

Based on Snow Course and SNOTEL site Snow Water Content



FORECAST POINT***Percent of
Ave. Flow****Period**

Yukon River at Eagle	95	April - July
Porcupine River nr Int'l Boundary.....	106	April - July
Yukon River near Stevens Village	101	April - July
Tanana River at Fairbanks	110	April - July
Tanana River at Nenana	111	April - July
Little Chena River near Fairbanks	151	April - July
Chena River near Two Rivers	157	April - July
Salcha near Salchaket	130	April - July
Sagvanirktok River near Pump Station 3	151	April - July
Kuparuk River near Deadhorse	127	April - July
Gulkana River at Sourdough	135	April - July
Little Susitna River near Palmer	113	April - July
Talkeetna River near Talkeetna	108	April - July
Ship Creek near Anchorage	74	April - July
Kenai River at Cooper Landing	85	April - July
Taiya River near Skagway	84	April - July

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

FORECAST POINT**INDEX**

Koyukuk River at Hughes.....	1.2		
MF Koyukuk R near Wiseman	1.5		
Slate Creek at Coldfoot.....	1.8		
Beaver Creek above Victoria Creek.....	1.6		
Birch Creek below South Fork.....	0.4		
Caribou Creek at Chatanika.....	1.7		
Susitna River near Gold Creek.....	0.7		
Chulitna River near Talkeetna.....	-2.5		
Deshka River at mouth near Willow.....	-1.7		
Montana Creek at Parks Highway.....	-1.0		
Willow Creek near Willow.....	0.2		
Skwentna River at Skwentna.....	-2.5		
Chuitna River near Tyonek.....	-2.4		
Campbell Creek near Spenard.....	-2.0		
Indian Creek at Indian.....	-3.0		
Bird Creek at Bird Creek	-3.0		
Glacier Creek nr Girdwood	-2.4		
Six Mile Creek near Hope.....	-2.4		
Resurrection Creek near Hope.....	-2.5		
Grouse Ck at Grouse Lake Outlet nr Seward	-2.0		
Anchor River near Anchor Point	-2.6		
Deep Creek near Ninilchik.....	-2.5		
Ninilchik River near Ninilchik.....	-2.5		
Fritz Creek near Homer.....	-2.3		
Skagway River at Skagway.....	-1.5		
Municipal Watershed C nr Petersburg	-1.3		
Gold Creek near Juneau.....	-2.6		

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

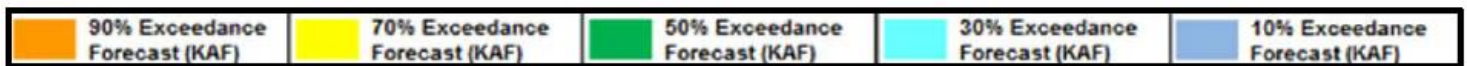
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual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

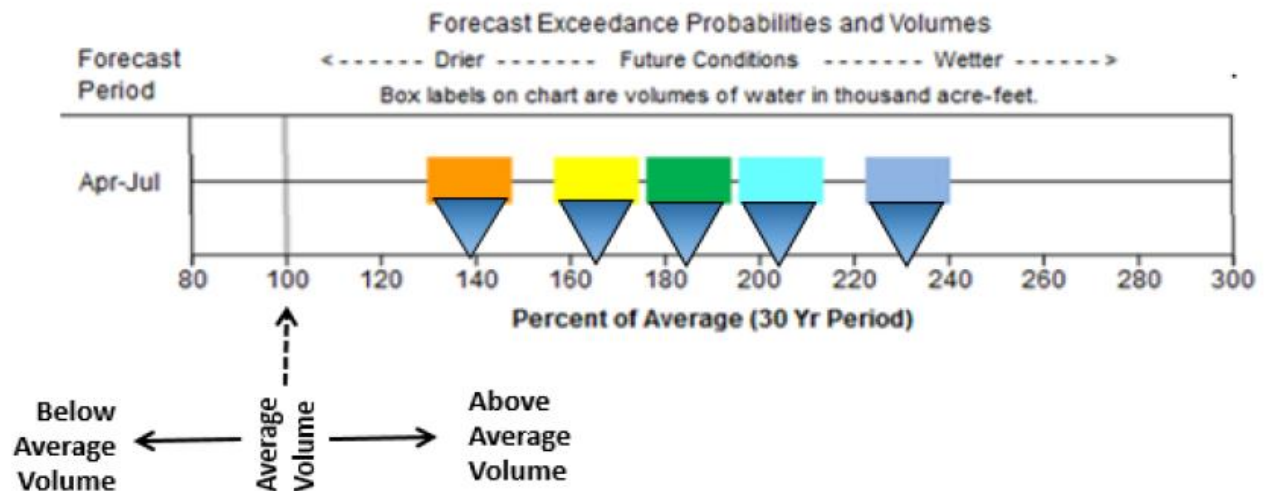
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast.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

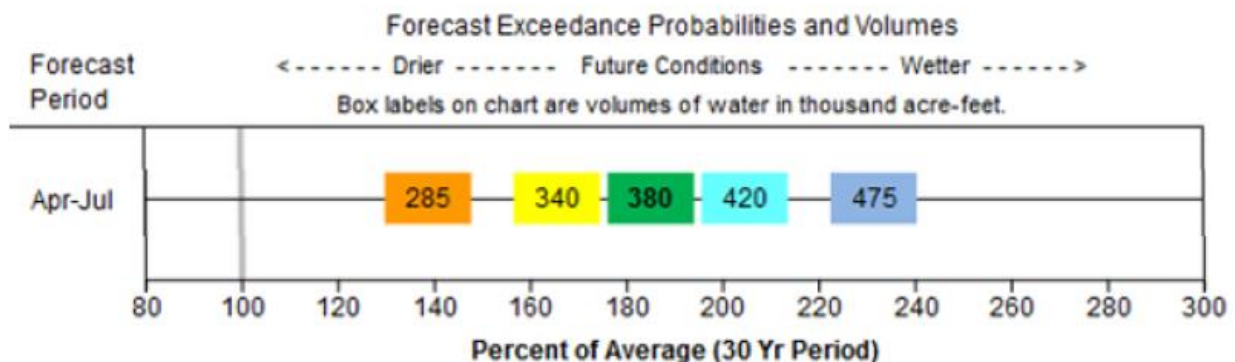
This graphic provides a visual alternative to the forecast tables the NRCS has presented for years. It gives both the volume and percent of average of each of the five forecast exceedances. The five colored boxes represent each forecast's five exceedances.



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.

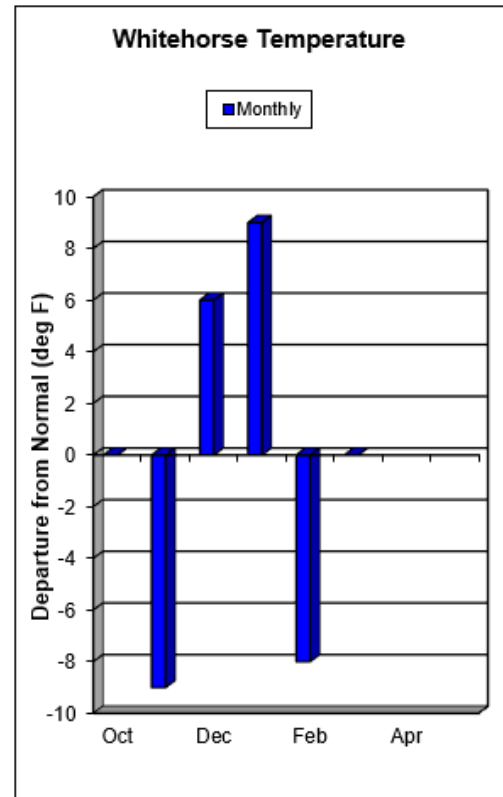
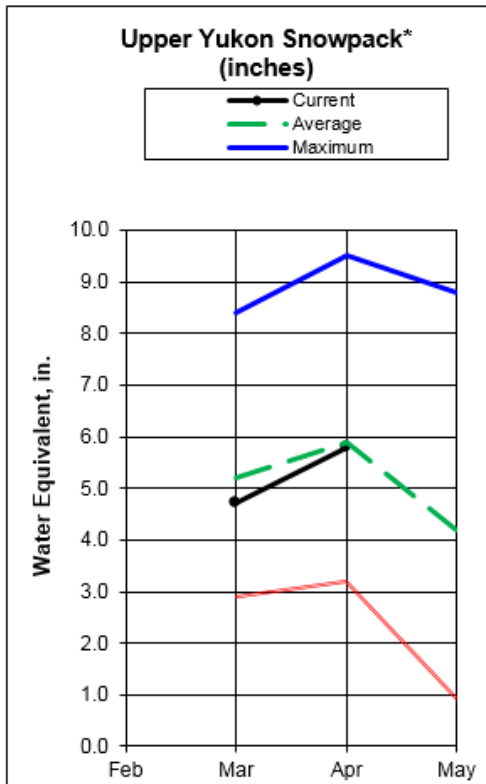


Boxes to the right of the gray 100% of average line represent above average volumes. Conversely, any boxes to the left of the gray 100% line represent below average volumes. In this case all forecast exceedances are for above average April-July volumes. Averages are based on the 1981-2010 period. The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



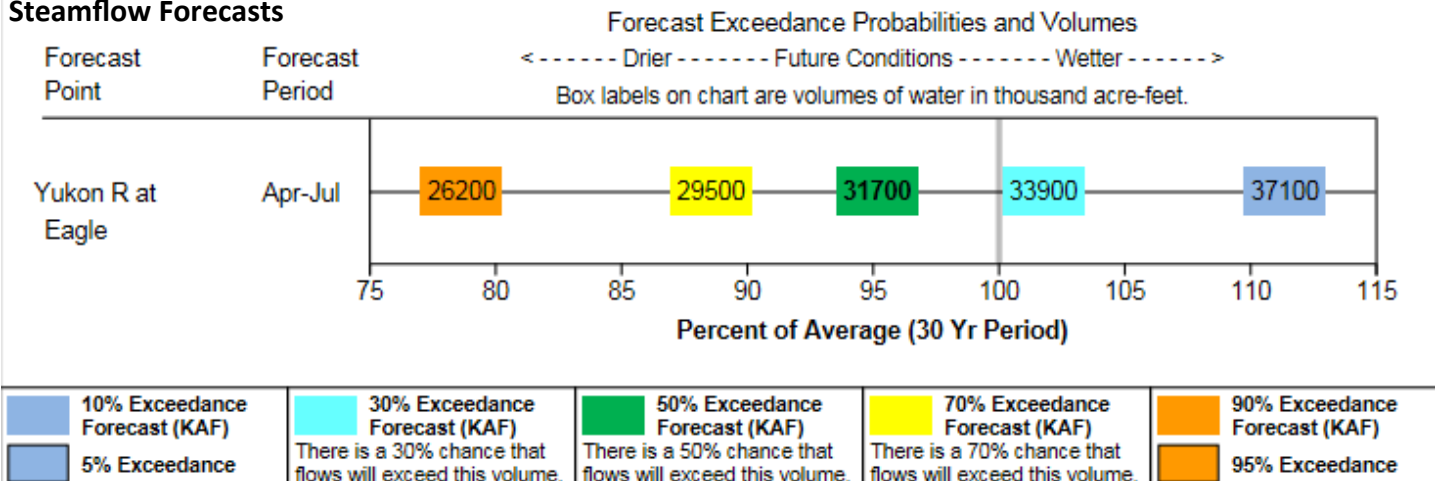
Snowpack

The snowpack in the Upper Yukon Basin remains variable this month, ranging from 60% normal to 160% of normal.

The White River Basin, in the southwestern portion of the Yukon Territory next to the border with Alaska, reported above normal snowpacks. The eight sites in this region averaged 129% of normal snowpack. Heading north along the border, the Dawson area had near normal snowpacks.

To the east, the snowpack diminishes, but remains variable. The 12 snow measurement sites in the Pelly and Stewart drainages average 78% of normal compared to 85% last year. The 10 sites upstream from Whitehorse average 89% of normal (the same as last year), but range from 60% to 120% of normal.

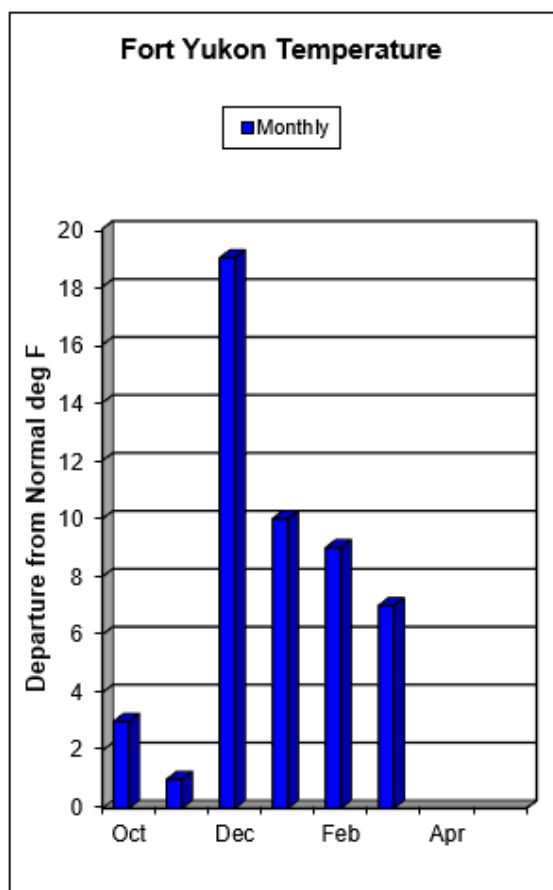
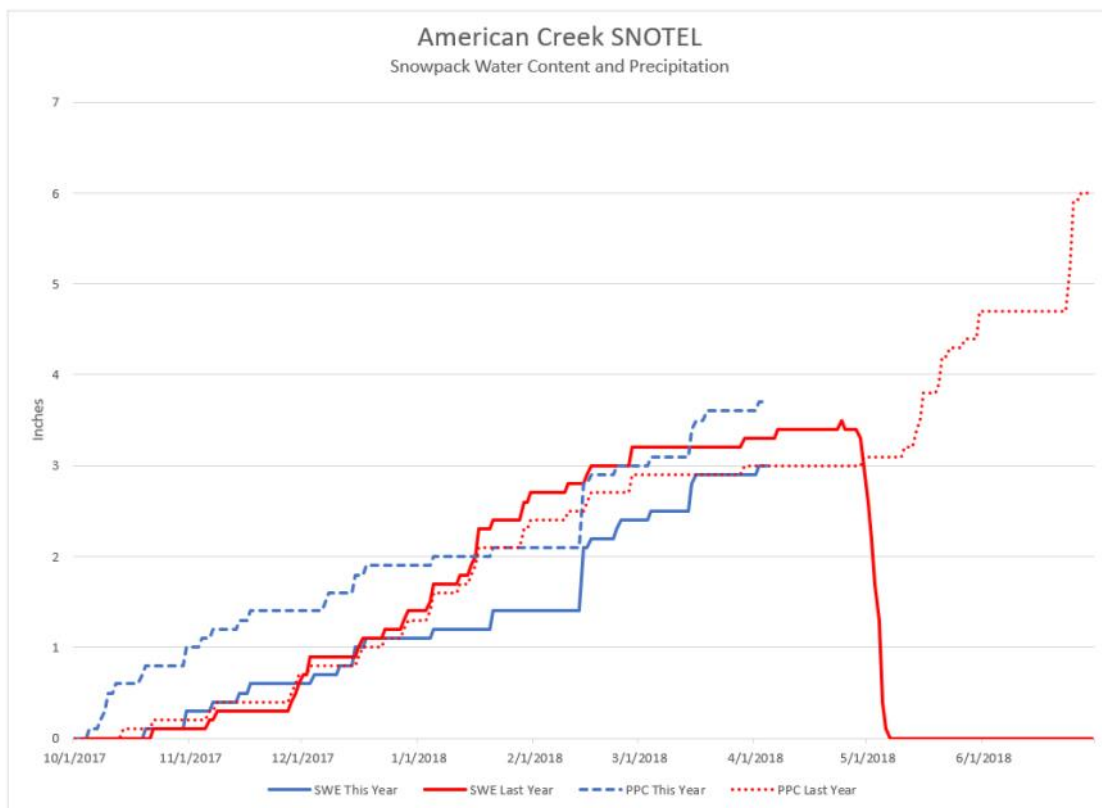
Steamflow Forecasts



Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Atlin	2395	16	24	20	3.0	4.9	5.0
Beaver Creek	2150	23	16	17	4.4	3.3	3.2
Blackstone River	1020	25	21	---	4.8	4.7	---
Burns Lake	3650	30	35	39	6.2	7.8	8.9
Burwash Airstrip	2660	11	9	10	2.1	1.7	1.8
Calumet	4300	29	28	36	6.1	6.5	7.5
Canyon Mine	1160	19	18	---	3.8	3.2	---
Casino Creek	3495	36	24	26	8.0	4.5	5.0
Chair Mountain	3500	29	21	20	6.0	4.0	3.5
Eagle Plains	2330	32	33	31	7.0	7.5	6.6
Eagle River	1115	32	---	26	6.8	---	5.2
Edwards Lake	2720	24	26	30	4.3	4.2	6.4
Finlayson Airstrip	3240	23	18	20	4.6	3.0	4.2
Francis River	730	25	23	---	4.2*	4.2	---
Fuller Lake	3695	27	33	33	4.9	6.8	7.7
Grizzly Creek	3200	28	29	31	6.3	5.7	6.8
Hoole River	3400	26	26	26	5.2	4.8	5.2
Hyland	855	29	27	---	5.3*	6.3	---
Jordan Lake	3050	26	20	25	4.8	3.8	5.2
King Solomon Dome	3540	31	29	30	6.8	6.0	6.3
Log Cabin (B.C.)	2900	41	55	50	11.2	16.8	15.7
Macintosh	3805	26	20	22	4.7*	3.8	4.0
Mayo Airport	1770	14	18	18	2.6*	3.5	4.2
Meadow Creek	4050	38	40	45	9.0	7.9	10.9
Midnight Dome	2805	30	30	28	6.3	6.0	5.8
Montana Mtn.	3350	26	27	26	5.7	5.4	5.9
Morley Lake	2700	23	17	26	5.0	3.3	5.8
Mt. Berdoe	3395	29	21	24	5.3	4.7	4.2
Mt. McIntyre B	3600	33	32	28	7.2	6.8	6.2
Mt. Nansen	3350	19	18	18	3.0	3.3	3.2
Ogilvie River	550	22	24	---	4.0	4.2	---
Pelly Farm	1550	17	12	16	4.2	3.3	3.0
Pine Lake Airstrip	995	32	22	---	6.8	3.7	---
Plata Airstrip	2725	26	28	33	5.5	5.5	7.6
Rackla Lake	3410	26	36	37	4.9	7.8	7.8
Riffs Ridge	2130	29	32	29	6.5	6.1	5.7
Rose Creek (Faro)	1080	24	21	---	4.4	4.2	---
Russell Lake	3480	35	36	37	7.6	7.1	8.9
Satasha Lake	3630	19	24	20	3.6	4.6	3.8
Summit	985	30	39	35	7.1	11.5	9.9
Tagish	3540	28	24	26	6.5*	5.1	6.0
Twin Creeks	2950	24	---	33	4.8	---	7.3
Watson Lake Airport	685	30	21	---	5.4*	4.2	---
Whitehorse Airport	2300	24	15	20	4.9	3.0	4.0
Williams Creek	3000	22	21	20	3.8	4.0	3.8
Withers Lake	3200	32	35	39	6.7	7.7	8.8

*Estimate

Central Yukon Basin



Snowpack

The snowpack in the Central Yukon Basin ranges between normal and above normal. Snowpack in the White Mountains is much above normal with all four mountain sites reporting their first, second, or third greatest snowpacks in their 27 years of record.

Up in the Fortymile country, the snowpack is near normal as is the snowpack in the Yukon Flats. Up the Porcupine, in the Yukon Territory, the snowpack ranges from near to above normal.

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
American Creek	1050	17	16	---	2.9	3.3	---
Atigun Pass	4800	53	49	---	---	---	---
Borealis	1330	33	24	25	8.4	5.8	4.8
Cathedral Creek	1800	31	29	---	5.9*	6.7	---
Chicken Airstrip	1650	14	13	16	3.2	2.4	3.2
Circle Hot Springs	860	22	18	24	4.0	3.1	4.1
Coal Creek	1000	23	17	---	4.3*	3.1	---
Crescent Creek	2600	18	14	---	3.4*	2.7	---
Eagle Summit	3650	23	10	---	---	---	---
Fort Yukon	430	21	15	---	---	---	---
Fort Yukon	430	19	16	20	3.6	2.7	3.6
Fossil	1400	36	23	24	8.9	5.7	4.8
Graphite Lake	600	22	18	---	4.2*	3.2	---
Hess Creek	1000	21	25	26	4.7*	5.7	5.0
Jack Wade Jct	3585	30	22	---	5.2	3.2	---
Lost Chicken Hill	2150	17	15	18	3.5	2.9	4.0
Lower Beaver Creek	400	25	25	---	4.8*	4.7	---
Mt. Fairplay	3100	21	20	21	4.4	3.8	4.6
Ptarmigan Creek	2270	32	28	24	6.9	5.6	4.4
Seven Mile	600	27	24	26	4.9	5.4	4.9
Stack Pup Creek	1620	22	19	25	4.2*	2.9	4.0
Step Mountain	2850	31	34	---	6.0*	6.9	---
Thirty Mile	1350	41	28	34	9.7*	7.2	7.6
Three Fingers	3350	34	27	---	6.9*	6.3	---
Upper Nome Creek	2520	49	30	---	---	---	---
Vunzik Lake	500	27	20	---	5.4*	3.5	---
Windy Gap	1900	49	29	26	13.3	7.1	5.7
Wolf	1200	33	23	23	8.3	5.8	4.2

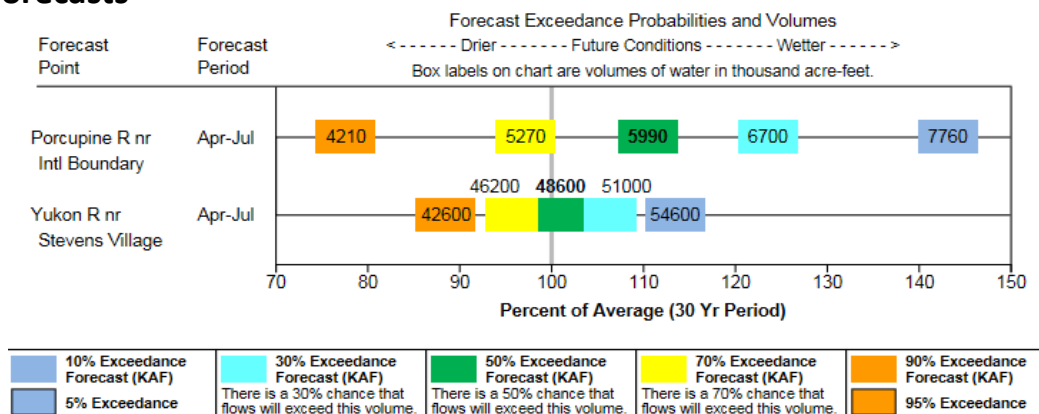
*Estimate

Precipitation

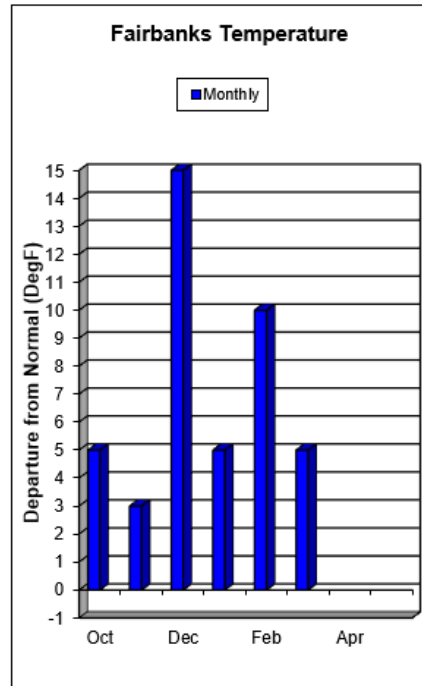
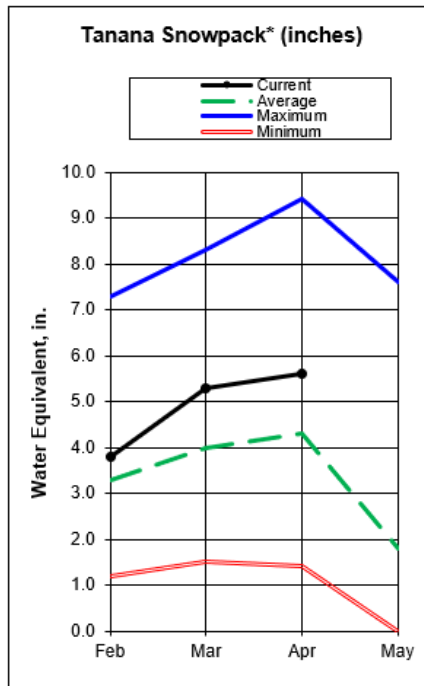
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
American Creek	1050	3.6	3.0	---	---
Atigun Pass	4800	6.5	4.1	5.6	116%
Eagle Summit	3650	8.5	3.8	5.3	160%
Fort Yukon	430	3.5	2.7	3.6	97%
Jack Wade Jct	3585	5.0	2.8	---	---
Upper Nome Creek	2520	11.9	6.7	5.2	229%

Streamflow Forecasts



Tanana Basin



Snowpack

For yet another month, the lower Tanana basin received bountiful snowfall. In March however, the snowfall also made it to the upper basin. All parts of the basin reported above and much above normal snowpack, except for the area around Tok which was below normal.

Several sites in the upper Chena Basin reported their second largest snowpacks on record. Upper Chena Snow Course was measured with 57" of snow with 15.4" of water content, its most substantial snowpack since 1971. Many other sites in the Chena were the deepest since 1991 and the 8 measured sites in the Chena Basin averaged 211% of normal.

This deep snow trend continues up and down valley. Many sites from Salcha down posted their heaviest snowpacks since 1993. But, like last month, the snowpack starts declining further up valley. But, unlike last month, the snowpack remains above normal and the snow around Delta Junction is around 125% of normal.

Further up valley, near Tok, the snowpack starts schisming with the snow around Tok being below normal, the snow near the Alaska Ranging being above normal, and the snow towards the Fortymile country being right at normal.

Precipitation

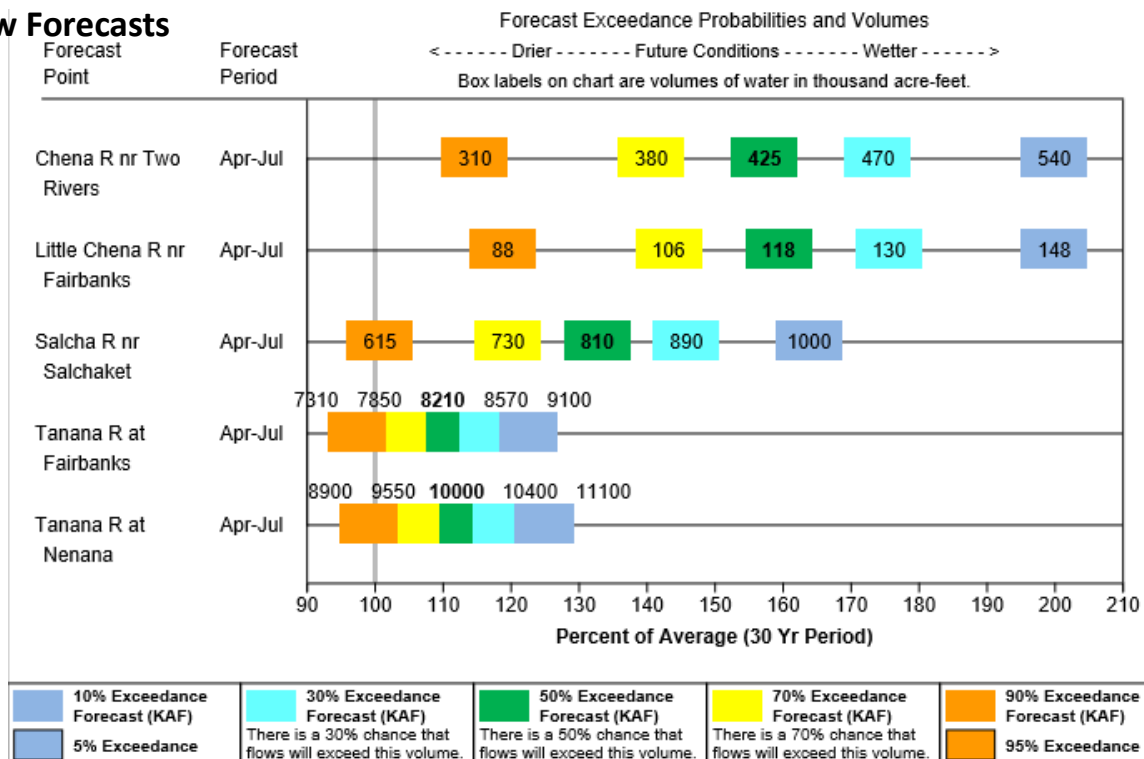
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Chisana	3320	5.5	2.9	---	---
Fairbanks F.O.	450	8.5	6.5	4.5	189%
Granite Crk	1240	5.1	3.1	4.1	124%
Kantishna	1550	12.2	4.5	4.6	265%
Little Chena Ridge	2000	9.9	4.9	5.4	183%
Nenana	415	5.7	4.1	---	---
Tok	1630	3.2	---	---	---
Upper Chena	2850	14.1	7.7	6.7	210%

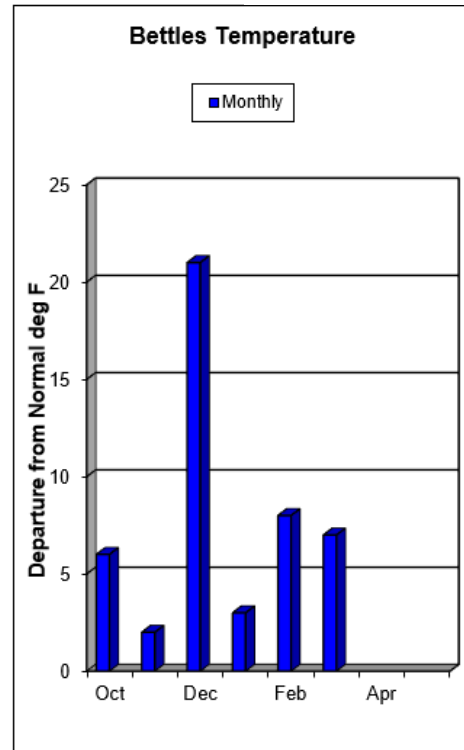
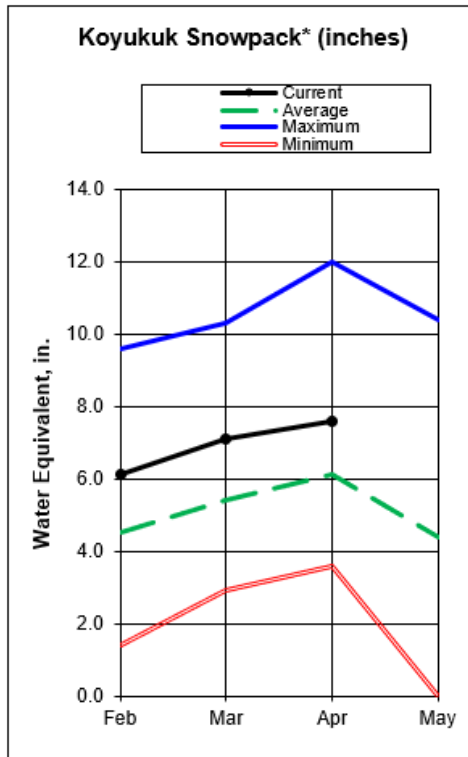
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Bonanza Creek	1150	33	28	21	7.9	6.9	4.0
Caribou Creek	1250	28	25	20	7.3	5.2	3.8
Caribou Snow Pillow	900	31	27	20	7.8	5.7	3.9
Chisana	3320	21	14	---	4.7	2.9	4.6
Cleary Summit	2230	45	32	28	11.8	6.3	5.2
Colorado Creek	700	37	28	20	9.0	6.4	3.6
Fairbanks F.O.	450	29	26	---	5.9	5.5	3.3
Faith Creek	1750	38	26	26	9.0	4.4	4.8
Fielding Lake	3000	43	21	---	10.5	5.2	---
Fielding Lake	3000	48	27	40	12.1	6.5	9.9
Fort Greely	1500	27	14	17	4.2	2.7	3.2
French Creek	1800	47	28	24	13.2	6.2	5.2
Gerstle River	1200	26	13	17	4.4	2.7	3.1
Granite Crk	1240	23	15	---	4.5	3.2	3.8
Jatahmund Lake	2180	---	16	18	---	2.5	3.0
Kantishna	1550	40	21	26	9.4*	4.3	5.1
Lake Minchumina	730	22	18	20	4.6*	3.2	3.8
Lost Creek	3030	26	10	18	4.9	1.8	3.7
Mentasta Pass	2430	32	15	27	7.8	3.6	6.2
Monument Creek	1850	38	29	---	8.9	8.3	4.6
Mt. Ryan	2800	40	23	---	10.3	5.3	5.1
Munson Ridge	3100	60	38	---	15.4	10.0	6.8
Paradise Hill	2200	---	14	17	---	3.0	3.6
Rock Creek Bottom	2250	30	20	18	6.9*	4.1	3.9
Shaw Creek Flats	980	26	19	14	4.6	4.3	2.9
Teuchet Creek	1640	28	22	---	6.9	5.2	3.8
Tok Junction	1650	14	15	20	2.4	2.8	3.5

*Estimate

Streamflow Forecasts



Western Interior Basins



Snowpack

Koyukuk

The Koyukuk had varied precipitation during March. Snowpack remains above normal and the seven sites measured in the basin average 136% of normal.

Kuskokwim

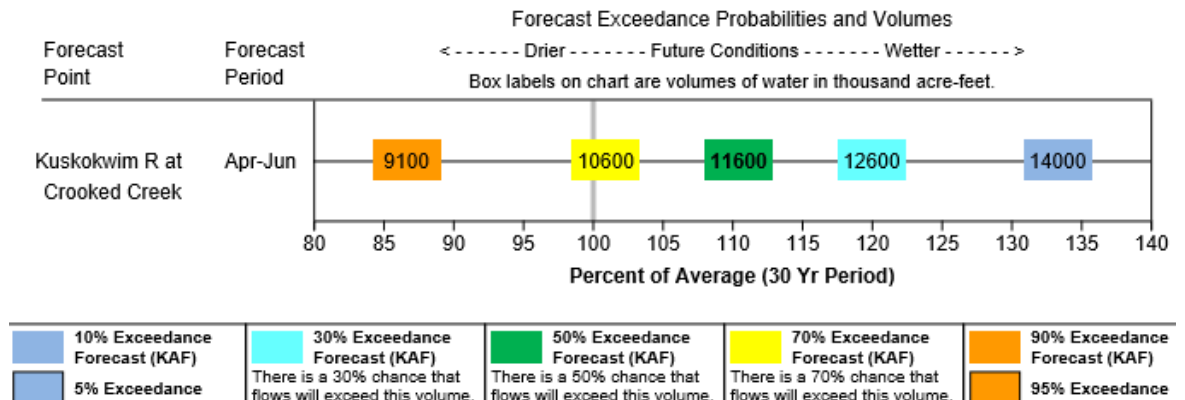
The Kuskokwim received a couple of early storms during March. Aniak SCAN reported 27" of snow depth on April 1st which is the most since 2013. While McGrath has near normal snowpack, the snowpack in the Kuskokwim headwaters is above normal. Both Telaquana Lake and Lake Minichumina snow courses were their deepest since 2012. Purkeypile Mine recorded its stoutest snowpack on record (30 of last 38 years).

Lower Yukon

The Galena Snow Course was measured with 24" of depth with 4.3" of water content. This is deeper than last year. This area has greater than normal snowpack.

Streamflow

Forecasts



Western Interior Basins

Snowpack Data

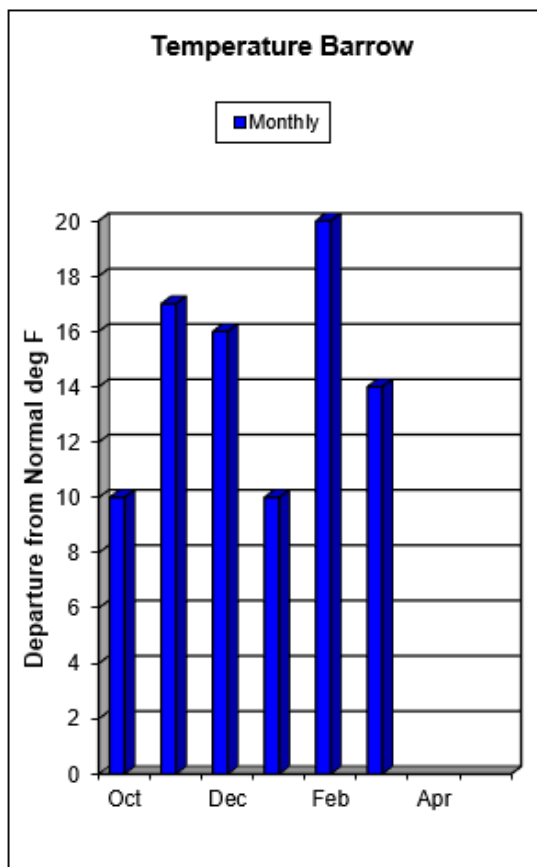
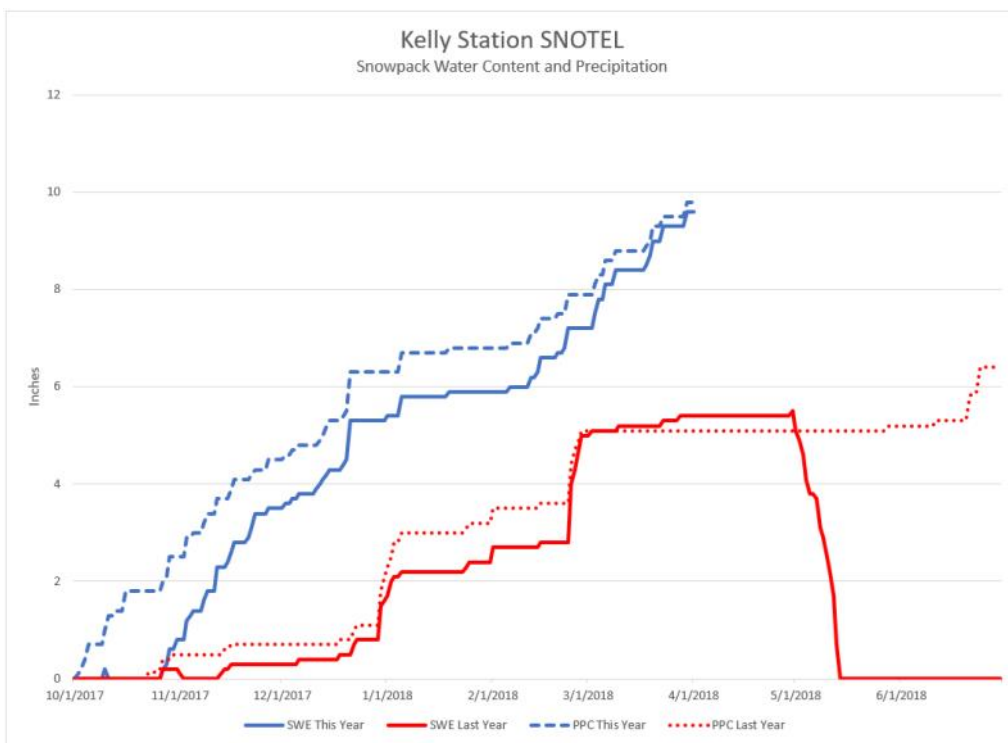
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Koyukuk							
Bettles Field	640	34	25	---	9.5	5.3	6.4
Bonanza Forks	1200	31	26	26	6.7*	6.4	5.2
Coldfoot	1040	34	28	---	8.3	5.8	6.4
Disaster Creek	1550	24	19	22	5.9*	4.0	4.0
East Chalatna	430	36	18	---	7.8*	3.7	---
Gobblers Knob	2030	18	16	---	---	---	---
Kaldoyeit	750	42	31	21	10.3*	6.0	4.2
Kanuti Chalatna	670	36	24	26	9.8*	5.2	5.3
Kanuti Kilolitna	550	26	17	22	6.6*	3.9	4.0
Minnkokut	580	45	32	34	11.2*	6.0	6.6
Nolitna	560	39	---	25	10.5*	---	5.3
Table Mountain	2200	24	21	23	5.3*	4.2	4.0
Kuskokwim							
Aniak	80	27	14	---	7.6*	3.6*	---
Mcgrath	340	27	13	27	5.1*	2.0*	5.6
Purkeypile Mine	2025	40	25	26	8.8	4.7	5.4
Telaquana Lake	1550	23	17	20	6.3	3.0	4.6
Telaquana Lake	1275	21	15	---	7.0	4.0	---
Lower Yukon							
Galena Ecological Site	128	24	16	---	4.3	3.0	---
Hozatka Lake	206	23	---	---	4.4*	---	---
<i>*Estimate</i>							

*Estimate

Precipitation

Site Name	Elev.	This Year	Inches Accumulated since October 1st		
			Last Year	1981-2010 Normal	% of Normal
Koyukuk					
Bettles Field	640	8.1	4.0	6.7	121%
Coldfoot	1040	7.9	4.5	6.3	125%
Gobblers Knob	2030	8.6	5.2	6.8	126%
Kuskokwim					
Aniak	80	13.5	5.8	---	---
Telaquana Lake	1275	11.3	4.3	---	---
Lower Yukon					
Hozatka Lake	206	7.4	---	---	---

Arctic and Kotzebue Sound



Snowpack

Arctic

The Arctic had mixed precipitation during March. Some areas received greater than normal precipitation and other below normal. The snowpack at the measurement sites along the Dalton Highway is near normal.

Kotzebue

Kotzebue received above normal precipitation for the month. Kelly Station SNOTEL, on the Noatak River, reported 40" of snow with 9.6" of water content, the most snow recorded since the site was reinstalled in 2011.

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Atigun Pass	4800	53	49	---	---	---	---
Imnaviat Creek	3050	38	34	---	---	---	---
Kelly Station	310	40	25	---	9.6	5.4	---
Prudhoe Bay	30	20	21	---	---	---	---
Sagwon	1000	14	20	---	---	---	---

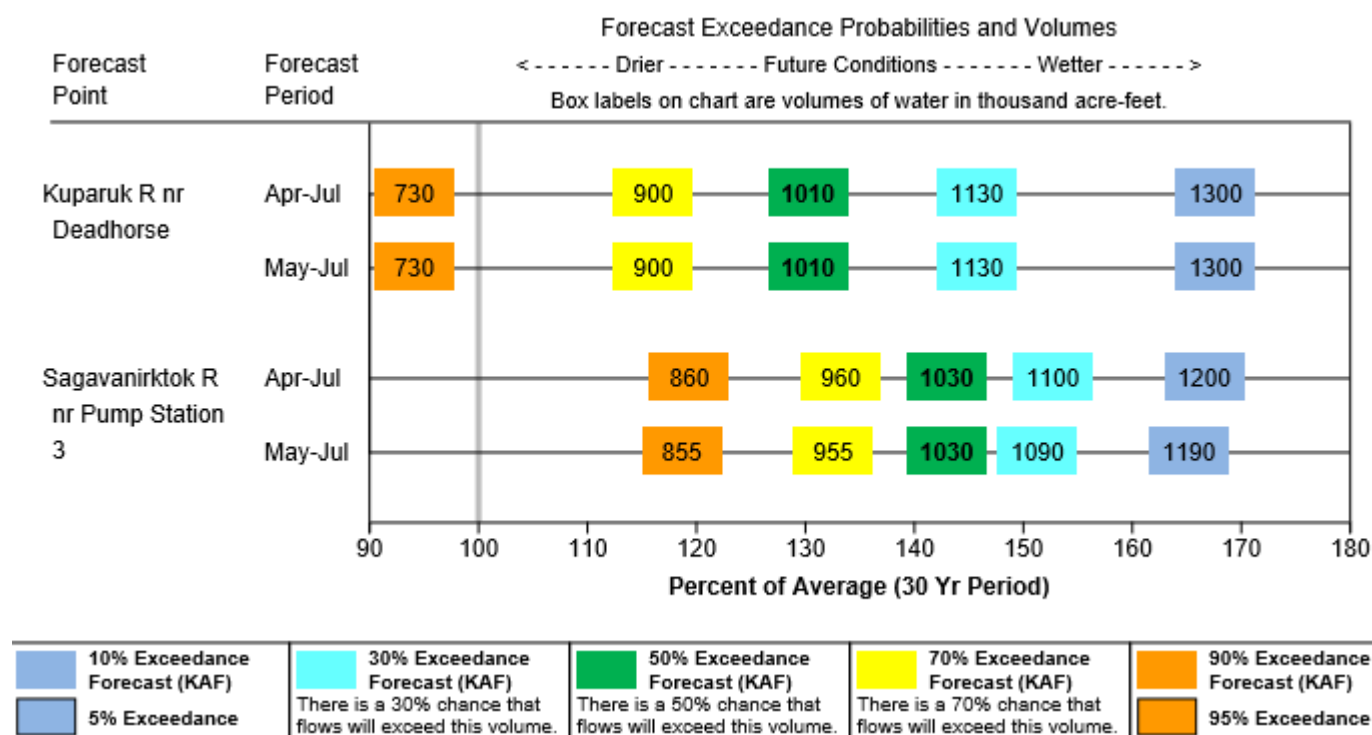
*Estimate

Precipitation

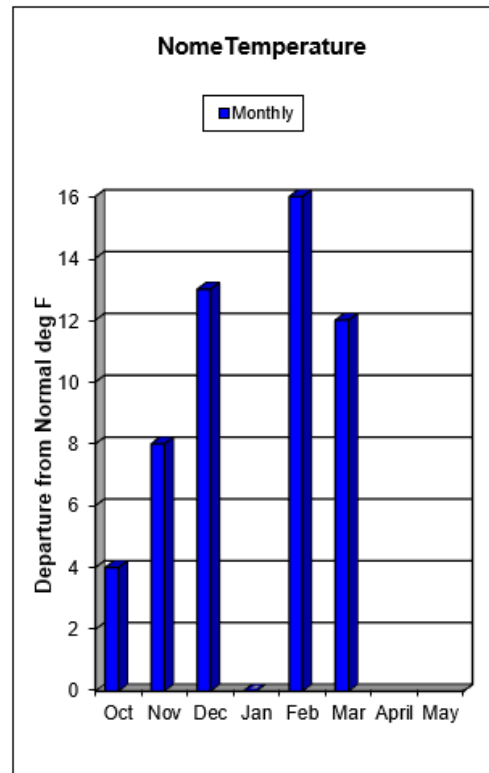
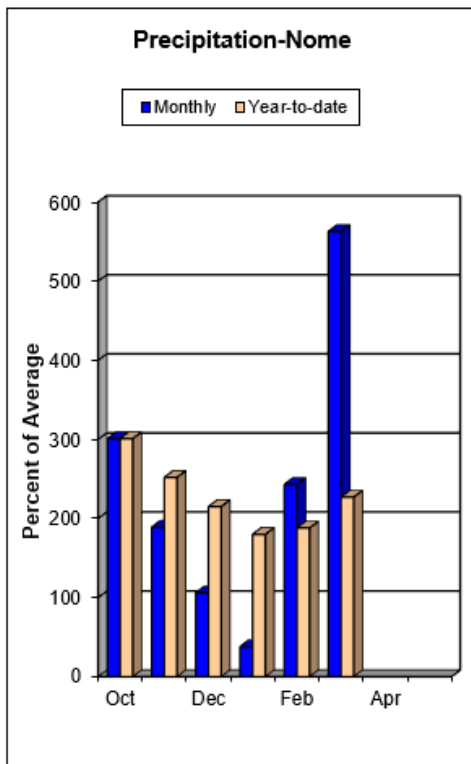
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Arctic					
Atigun Pass	4800	6.5	4.1	5.6	116%
Imnaviat Creek	3050	4.4	2.9	2.9	152%
Prudhoe Bay	30	4.1	3.5	3.5	117%
Sagwon	1000	3.4	2.8	3.0	113%
Kotzebue Sound					
Port Red Dog	50	11.1	5.7	3.5	318%
Red Dog Mine	950	7.6	6.8	4.3	178%
Kelly Station	310	9.8	5.1	---	---

Streamflow Forecasts



Norton Sound/Y-K Delta/Bristol Bay



Snowpack

Norton Sound

The Norton Sound Area received above normal precipitation during March which came as midmonth storms. The area has above normal snowpack and the deepest snowpack since 2009.

Yukon-Kuskokwim Delta

The Y-K Delta received slightly below normal precipitation during the month which mainly came as a couple of small snow storms. The Bethel NWS site snow has dropped to 5" of snow on the ground.

Bristol Bay

Bristol Bay received above normal precipitation during March. The largest event came as an early snow-storm.

Precipitation

Inches Accumulated since October 1st

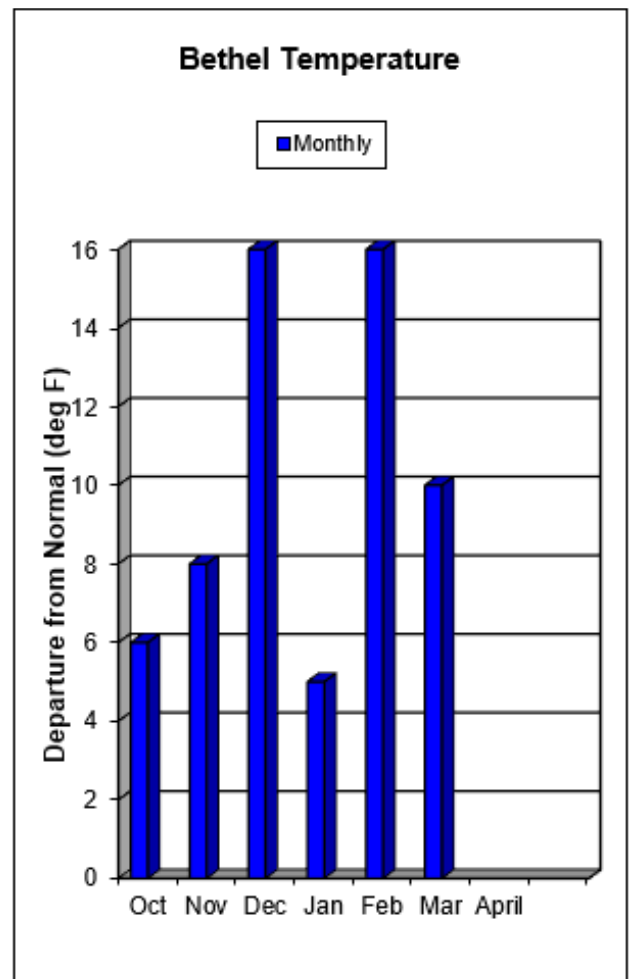
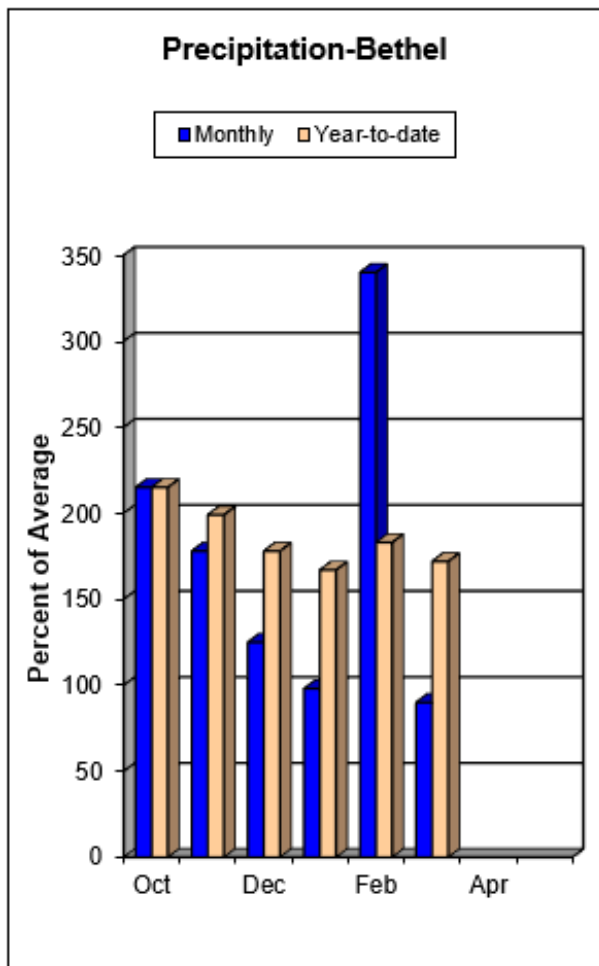
Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Norton Sound					
Pargon Creek	100	8.4	5.0	5.9	142%
Rocky Point	250	7.7	3.2	5.4	143%

Norton Sound/Y-K Delta/Bristol Bay

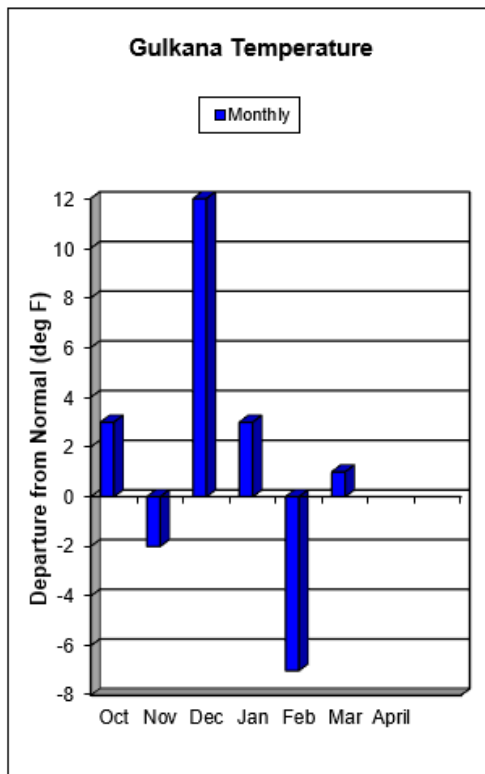
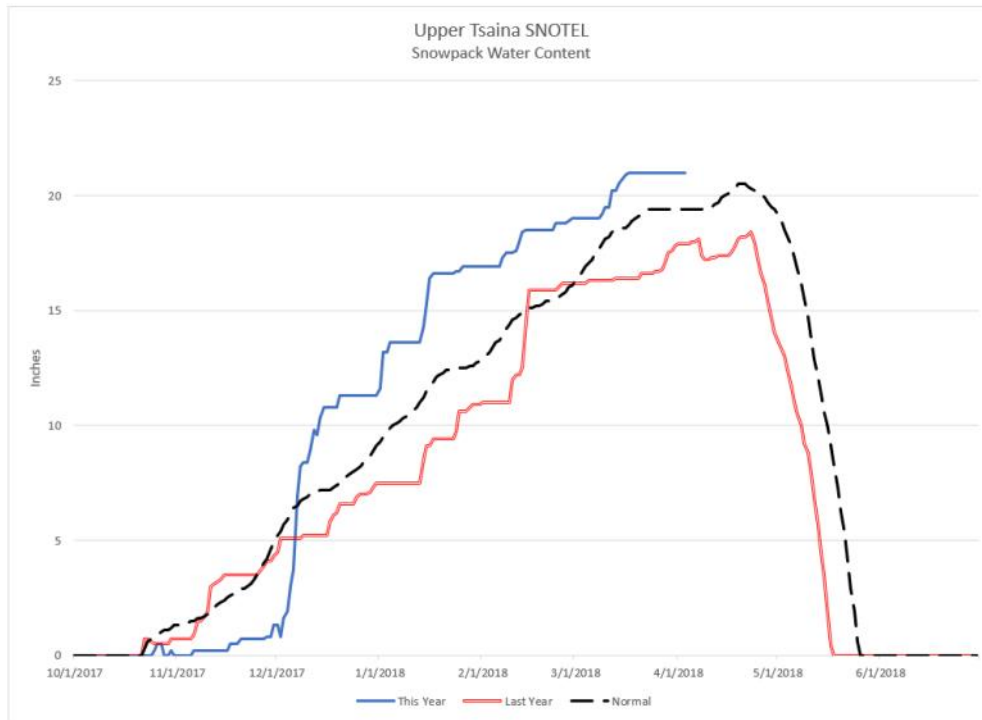
Snowpack Data

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Norton Sound							
Johnsons Camp	25	35	9	---	---	---	---
Pargon Creek	100	27	14	---	5.1*	2.5*	---
Rocky Point	250	41	30	---	7.7*	4.6*	---

*Estimate



Copper Basin



Snowpack

The Copper Basin snowpack made above average gains during March and is much above normal in most locations. Haggard Creek snow course, north of Sourdough, measured its seconded wettest snowpack in 54 years of record, beat out only by 1979.

Like last month, sites across the basin ranged from near normal in the Chugach Mountains to near twice of normal in the northern valley floor. The seven sites on the basin floor average 159% of normal.

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	29	14	20	6.5	2.8	3.5
Chokosna	1550	13	14	15	2.3	2.8	3.8
Copper Center	1264	28	19	---	6.6	4.0	---
Dadina Lake	2160	34	21	28	7.8*	4.1	6.3
Fielding Lake	3000	48	27	40	12.1	6.5	9.9
Fielding Lake	3000	43	21	---	10.5	5.2	---
Haggard Creek	2540	38	19	28	10.7	3.8	5.5
Kenny Lake School	1300	24	17	16	5.7	3.4	3.6
Little Nelchina	2650	30	19	26	6.9	3.2	5.2
Long Glacier	4820	53	---	---	14.4*	---	---
Lost Creek	3030	26	10	18	4.9	1.8	3.7
May Creek	1610	21	22	---	5.8	4.5	5.5
Mentasta Pass	2430	32	15	27	7.8	3.6	6.2
Monsoon Lake	3100	35	14	30	7.7*	2.4	6.4
Paxson	2650	43	22	31	10.5	4.9	6.9
Sanford River	2280	30	21	28	7.9*	4.2	6.0
St. Anne Lake	1990	31	21	23	6.4*	4.0	4.8
Tazlina	1250	24	17	14	6.4	3.6	3.8
Tebay Lake	1930	66	---	---	18.5*	---	---
Tolsona Creek	2000	28	18	22	6.1	3.2	4.2
Tsaina River	1650	60	46	56	18.6	13.5	17.0
Twin Lakes	2400	31	20	26	7.5*	3.6	6.4
Upper Tsaina River	1750	69	62	---	21.0	17.9	19.4
Worthington Glacier	2100	70	64	75	23.8	21.9	24.6

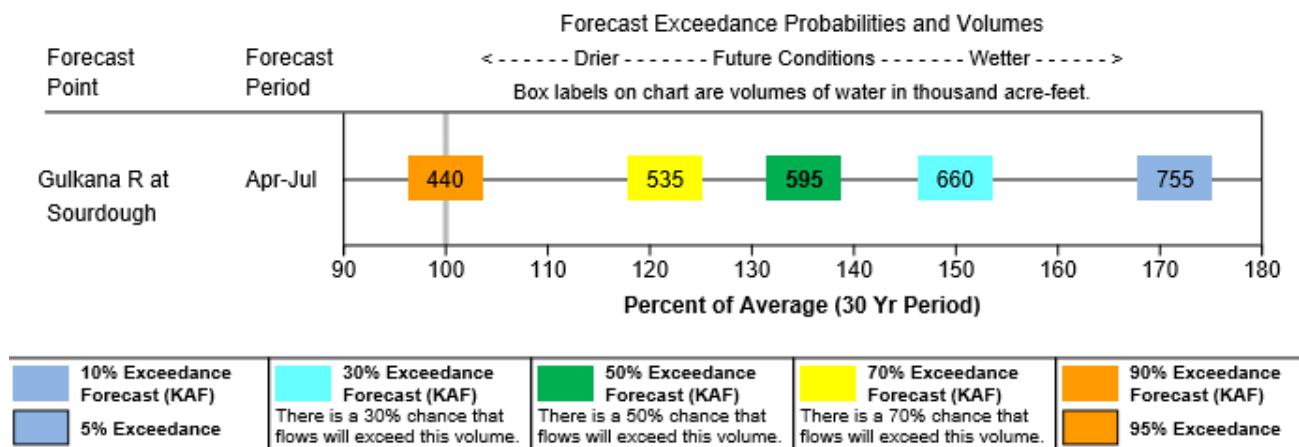
*Estimate

Precipitation

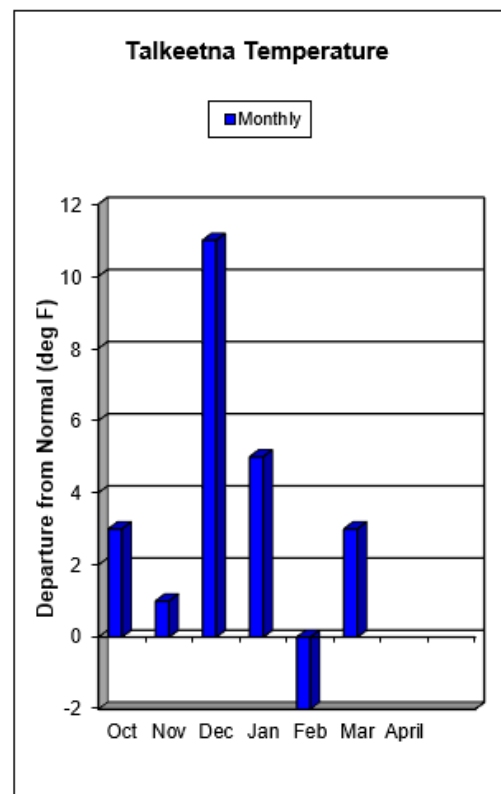
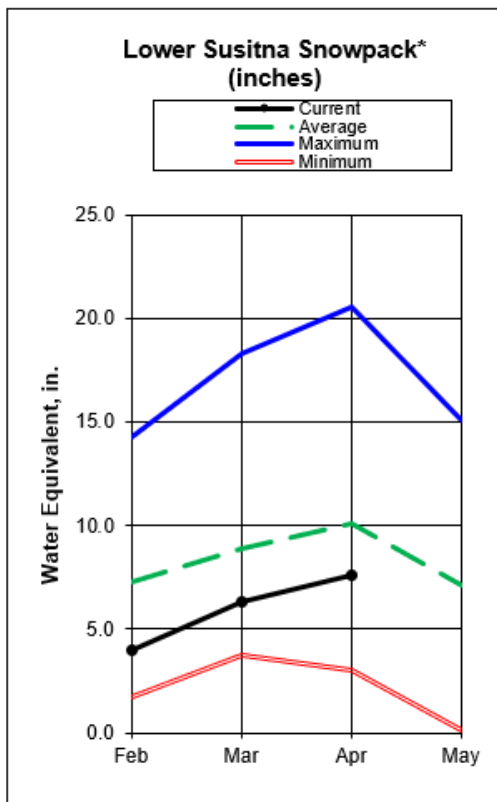
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
May Creek	1610	11.5	4.7	6.1	189%
Upper Tsaina River	1750	25.9	16.5	27.0	96%

Streamflow Forecasts



Matanuska—Susitna Basin



Snowpack

A series of storms, mainly early and the middle of month, brought above normal March precipitation to much of the Matanuska and Susitna Basins. The new snowfall brought the snowpack closer to normal in the eastern part of the lower valley. The western portion near Skwentna and the Peters Hills remains below normal, near 80%. The snowpack in the upper Susitna basin on the east side of the Talkeetna Mountains ranges from near normal to much above normal with many sites having twice the amount of snow as last year.

The Matanuska and Little Susitna Basins experienced a series of snow storms which continued to build on already above normal snowpacks. Near the headwaters of the Little Susitna River, the snowpacks are near 130% of average.

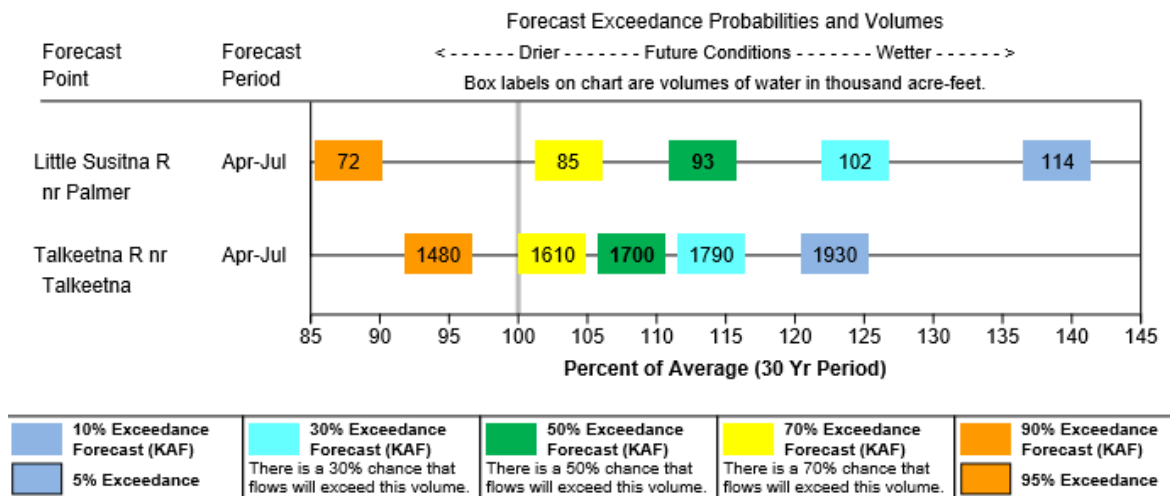
Precipitation

Site Name	Elev.	This Year	Inches Accumulated since October 1st		
			Last Year	1981-2010 Normal	% of Normal
Alexander Lake	160	14.1	8.3	---	---
Independence Mine	3550	24.2	11.0	15.3	158%
Monahan Flat	2710	9.6	4.8	8.1	119%
Susitna Valley High	375	14.6	6.7	11.9	123%
Tokositna Valley	850	20.3	10.2	19.0	107%

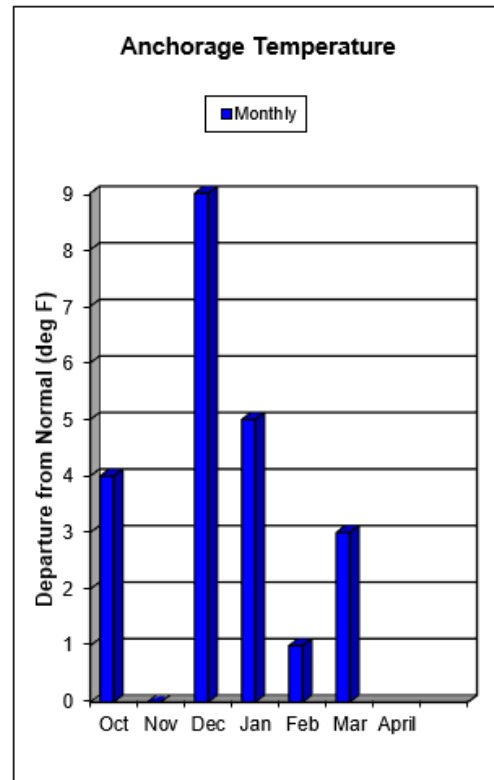
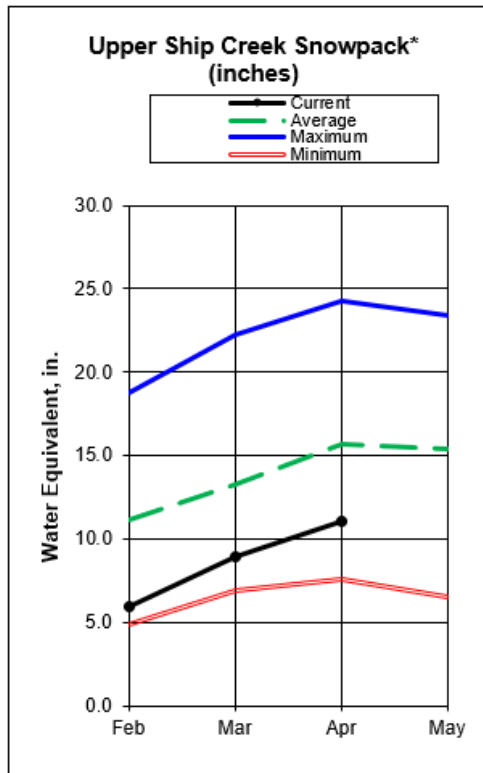
Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Alexander Lake	160	37	30	42	9.1*	6.3	12.0
Alexander Lake SNOTEL	160	29	24	---	7.1	5.0	---
Archangel Road	2200	58	38	44	16.0	9.8	12.2
Birthday Pass	4020	105	53	---	34.4	13.8	---
Blueberry Hill	1200	50	33	48	13.4	8.4	13.5
Chelatna Lake	1450	29	29	45	7.3*	6.5	11.0
Curtis Lake	2850	27	15	25	6.3*	3.2	4.6
Denali View	700	40	27	40	11.0	6.3	12.1
Dunkle Hills	2700	39	19	---	10.1*	5.2	---
Dutch Hills	3100	63	47	75	17.0*	11.2	24.8
E. Fork Chulitna	1770	54	33	47	14.2	7.6	12.1
Fishhook Basin	3300	78	43	55	21.8	10.8	17.8
Fog Lakes	2120	36	21	24	7.2*	3.9	5.2
Horsepasture Pass	4300	29	16	30	7.2*	2.8	6.9
Independence Mine	3550	89	46	64	26.9	11.7	19.8
Independence Mine SNOTEL	3550	71	40	---	19.0	10.6	11.3
Lake Louise	2400	28	17	22	5.9	2.7	4.6
Little Susitna	1700	49	36	39	12.6	8.3	10.1
Monahan Flat	2710	34	23	34	8.2*	5.0	7.4
Nugget Bench	2010	45	32	50	11.7*	8.7	14.6
Ramsdyke Creek	2220	59	45	64	16.0*	12.7	20.0
Sheep Mountain	2900	31	20	26	7.6	3.9	5.6
Skwentna	160	35	30	45	8.7	5.9	11.9
Square Lake	2950	28	16	21	5.9*	2.8	4.0
Susitna Valley High	375	27	24	---	7.1	6.0	8.6
Talkeetna	350	28	20	26	6.8	4.8	6.4
Tokositna Valley	850	48	38	---	13.2	9.9	12.4
Tyone River	2400	28	14	21	6.2*	2.8	5.0
Upper Oshetna River	3150	28	17	20	6.4*	3.1	4.6
Willow Airstrip	200	30	29	28	5.9	6.1	6.9

*Estimate

Streamflow Forecasts



Northern Cook Inlet



Snowpack

Precipitation was mixed in March with some areas receiving above and other areas below normal amounts for the month. Snowpack ranges from near normal in lower lying areas near Anchorage to only half of normal at Moraine SNOTEL above Eklutna Reservoir. Mount Alyeska SNOTEL reported its third lowest April measurement in 41 years. On the western side of the Inlet, snow is still below normal, but higher than last year.

Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Anchorage Hillside	2080	26	36	---	7.4	8.8	10.2
Arctic Ski Bowl	3000	39	34	40	11.4	9.2	12.8
Arctic Valley #1	500	12	26	14	2.9	5.7	3.6
Arctic Valley #2	1000	20	30	18	4.6*	5.6	4.8
Arctic Valley #3	1450	26	30	28	6.1	6.9	7.2
Arctic Valley #4	2030	28	30	28	6.7*	6.6	7.2
Chuitna Plateau	1540	---	46	76	---	13.5	27.9
Congahbuna Lake	550	32	27	38	7.9	6.6	10.6
Granite Point	250	9	14	16	2.4*	3.5	5.0
Indian Pass	2350	64	51	---	15.8	12.1	22.0
Kinkaid Park	250	15	28	16	3.9	6.0	4.4
Lone Ridge	1675	66	53	79	19.8*	16.6	32.3
Moraine	2100	19	26	---	4.8	6.4	9.0
Mt. Alyeska	1540	53	70	---	14.7	18.8	32.5
Portage Valley	50	28	69	40	9.0	18.7	14.6
South Campbell Creek	1200	18	32	28	4.0	6.0	6.9

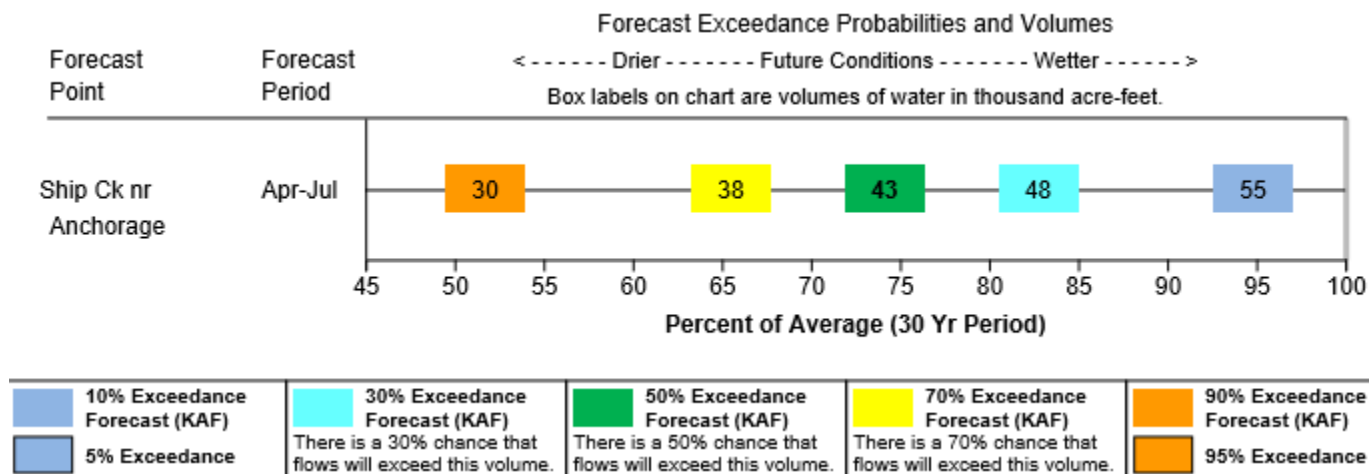
*Estimate

Precipitation

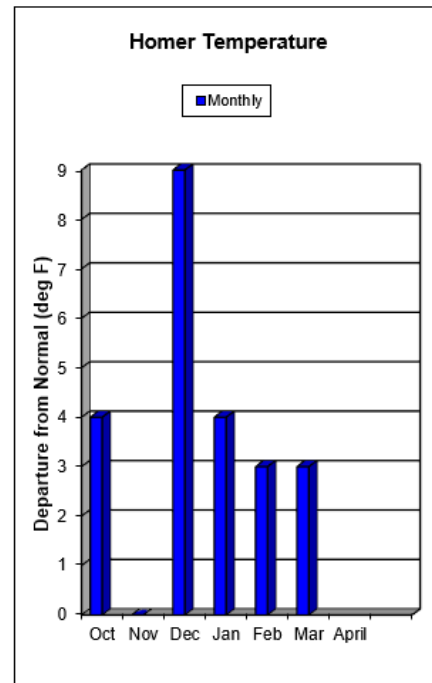
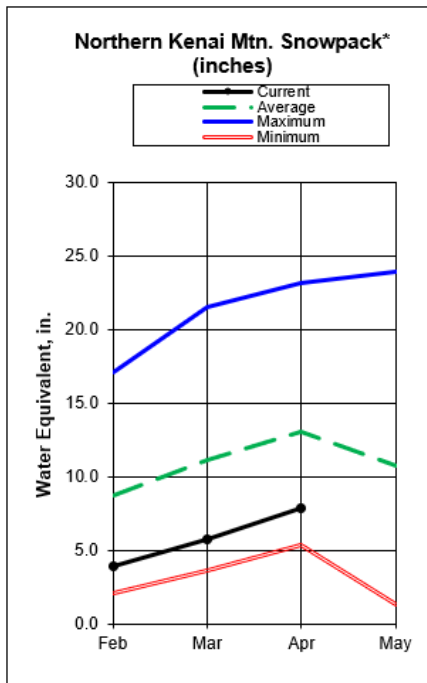
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchorage Hillside	2080	11.9	9.1	13.7	87%
Indian Pass	2350	25.3	19.4	25.4	100%
Moraine	2100	8.5	7.3	11.7	73%
Mt. Alyeska	1540	32.2	28.5	46.3	70%

Streamflow Forecasts



Kenai Peninsula

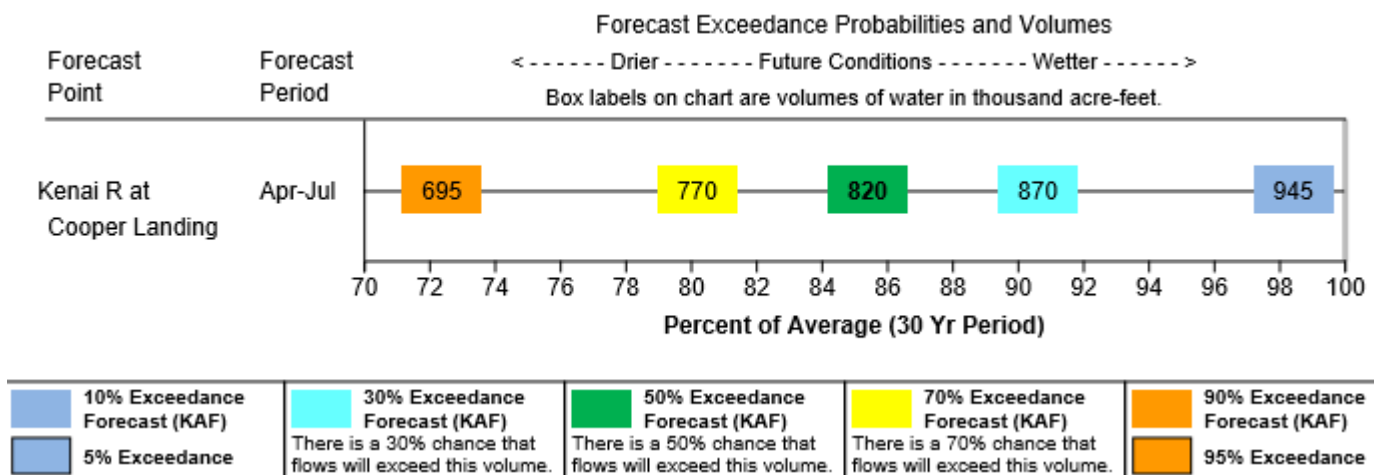


Snowpack

March was wetter than February, but most locations still received much below average precipitation. The twelve precipitation measurement sites on the Peninsula averaged only 57% of normal precipitation for the month.

The snowpack across the peninsula made small gains during the month but remains lackluster. On the whole the snowpack is less than it was last year at this time. The only exception are the sites in the far north Kenai Mountains, near Turnagain Arm. Generally, the western, drier half of the Peninsula is closer to normal than the eastern half. Exit Glacier Snow Course was measured with its second lowest snowpack in 30 years.

Streamflow Forecasts



Site Name	Elev.	Snow Depth (in)			Water Content (in)		
		Current	Last Year	1981-2010 Normal	Current	Last Year	1981-2010 Normal
Anchor River Divide	1653	44	35	---	12.6	9.1	11.9
Bertha Creek	950	34	49	53	9.2	11.4	16.6
Bridge Creek	1300	23	32	40	6.7	8.7	12.0
Cooper Lake	1200	28	44	---	9.8	12.4	14.0
Demonstration Forest	780	9	26	28	3.0	6.3	7.8
Eagle Lake	1400	32	41	42	9.2	10.7	11.9
Exit Glacier	400	28	55	51	8.6	16.7	18.2
Exit Glacier SNOTEL	400	30	59	---	8.4	17.3	18.4
Grandview	1100	54	71	---	13.4	19.0	32.0
Grouse Creek Divide	700	35	55	---	11.5	18.8	17.7
Indian Pass	2350	64	51	---	15.8	12.1	22.0
Jean Lake	620	8	20	15	2.4	3.9	3.3
Kachemak Creek	1660	26	40	---	8.5	13.5	---
Kenai Moose Pens	300	18	22	---	4.3	4.6	5.0
Kenai Summit	1390	34	40	48	9.8	9.2	14.8
Lower Kachemak Creek	1915	51	12	---	---	---	---
Mcneil Canyon	1320	26	34	---	6.8	8.5	10.6
Middle Fork Bradley	2300	53	54	---	---	---	---
Moose Pass	700	19	44	22	4.4	9.8	6.6
Mt. Alyeska	1540	53	70	---	14.7	18.8	32.5
Nuka Glacier	1250	44	50	88	16.2	17.7	34.6
Pass Creek	1200	26	31	33	6.6	6.7	9.0
Port Graham	300	---	27	---	3.0	8.5	8.7
Portage Valley	50	28	69	40	9.0	18.7	14.6
Resurrection Pass	2250	36	32	38	8.7	7.4	10.4
Snug Harbor Road	500	5	24	16	1.3	6.2	4.5
Summit Creek	1400	30	31	---	7.8	7.5	11.1
Turnagain Pass	1880	76	75	---	22.2	18.2	33.4

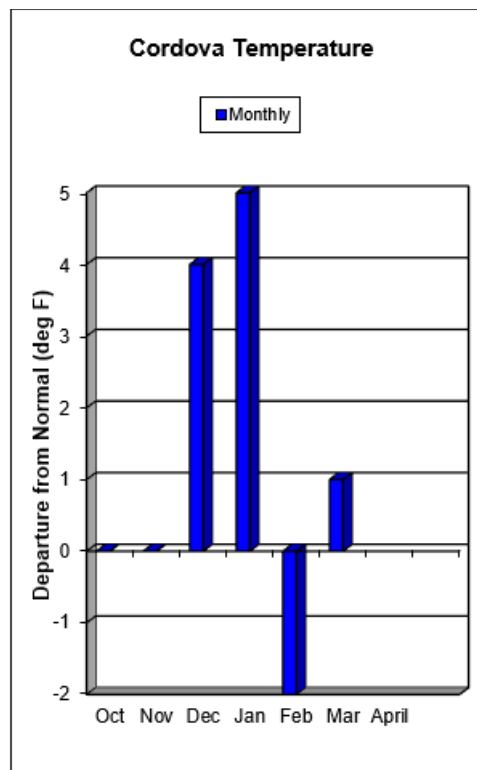
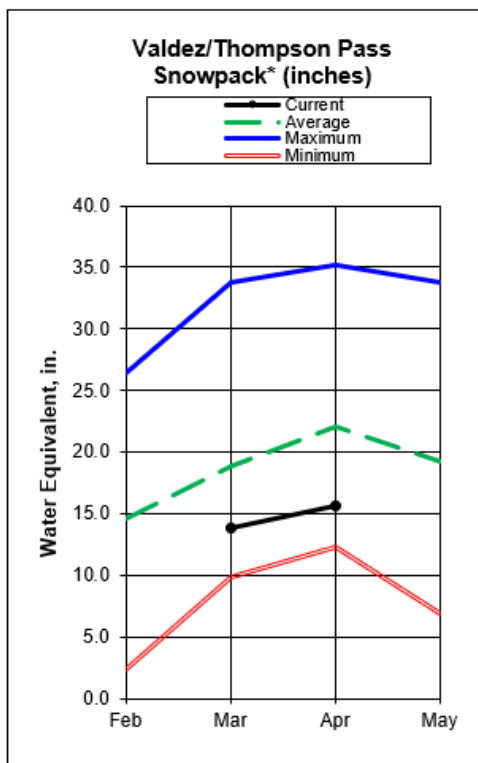
**Estimate*

Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Anchor River Divide	1653	17.3	13.9	16.9	102%
Cooper Lake	1200	20.7	19.3	25.2	82%
Grandview	1100	32.4	32.3	40.3	80%
Grouse Creek Divide	700	33.0	31.8	37.5	88%
Kachemak Creek	1660	40.8	32.9	37.7	108%
Kenai Moose Pens	300	9.1	5.4	8.2	111%
Mcneil Canyon	1320	14.2	13.5	16.6	86%
Middle Fork Bradley	2300	28.0	28.5	32.5	86%
Nuka Glacier	1250	44.0	38.5	54.3	81%
Port Graham	300	40.4	27.1	48.4	83%
Summit Creek	1400	15.9	11.0	15.8	101%
Turnagain Pass	1880	30.2	29.8	40.5	75%

Western Gulf – Prince William Sound



Snowpack

Like last month, precipitation across Prince William Sound was only half of average for March. Snowpacks are mixed with most sites having below normal snowpacks especially in the western Sound. Exit Glacier Snow Course, near Seward, and Valdez Snow Course both reported their second lowest snowpack in 29 and 42 years, respectively (2015 was lowest). However, the higher elevation snow packs near Thompson pass are near normal.

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	28	55	51	8.6	16.7	18.2
Exit Glacier SNOTEL	400	30	59	---	8.4	17.3	18.4
Grouse Creek Divide	700	35	55	---	11.5	18.8	17.7
Lowe River	600	42	40	50	12.7	11.9	17.0
Mt. Eyak	1405	31	74	---	11.9	26.2	28.4
Nicks Valley	4280	106	---	---	44.2	---	---
Nicks Valley SNOLITE	4280	101	95	---	---	---	---
Nuka Glacier	1250	44	50	88	16.2	17.7	34.6
Tsaina River	1650	60	46	56	18.6	13.5	17.0
Upper Tsaina River	1750	69	62	---	21.0	17.9	19.4
Valdez	50	30	43	51	10.2	14.0	15.7
Worthington Glacier	2100	70	64	75	23.8	21.9	24.6

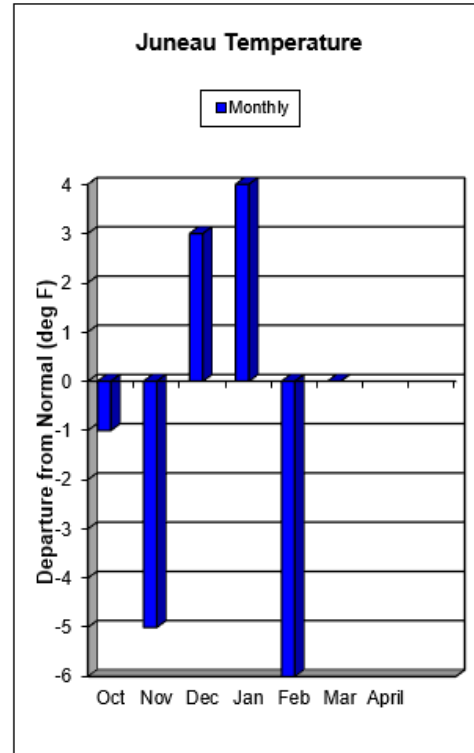
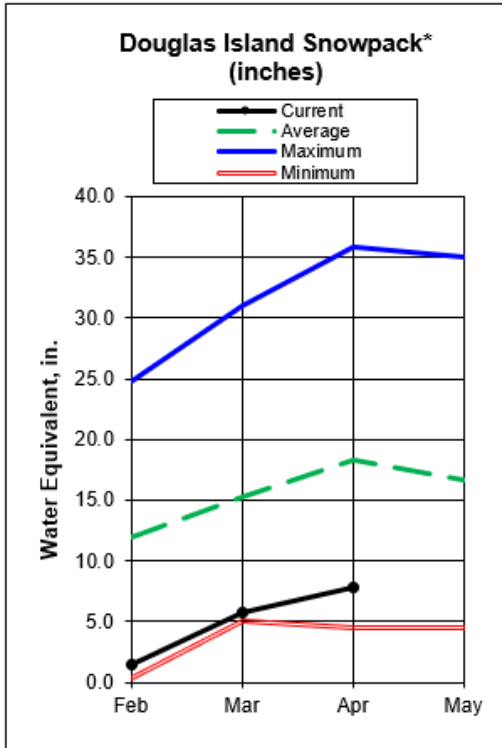
**Estimate*

Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Esther Island	50	77.5	58.2	80.5	96%
Grouse Creek Divide	700	33.0	31.8	37.5	88%
Mt. Eyak	1405	69.5	47.8	---	---
Nuchek	50	75.7	58.0	---	---
Nuka Glacier	1250	44.0	38.5	54.3	81%
Port Graham	300	40.4	27.1	48.4	83%
Seal Island	20	34.1	23.4	---	---
Strawberry Reef	30	39.3	34.8	---	---
Sugarloaf Mtn	550	43.8	27.0	40.5	108%
Tatitlek	50	42.8	28.7	40.0	107%

Southeast



Snowpack

March storms only brought around 75% of normal precipitation to Southeast. As such, snowpacks in Southeast only made unexceptional gains and several lower sites lost snowpack over the month.

The higher elevation snowpacks are the most below normal and many locations in the mountains only have half of last year's snowpack (which was often still below normal).

Lower elevation sites are a mixed bag. Some lower areas have paltry snowpacks while others have well above normal snowpacks. Petersburg Reservoir snow course, at 500' of elevation, has retained much of its snow it collected in February. This snow course is often melted out by now, but is currently 116% of its historical average.

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	42	78	83	12.7	30.2	30.4
Eagle Crest	1200	27	58	50	8.0	21.5	18.6
Fish Creek	500	10	9	11	2.8	2.9	2.7
Heen Latinee	2065	33	61	---	9.0	15.8	---
Institute Creek	1350	24	41	---	7.8	15.2	---
Lake Grace Pass†	1900	95	---	---	36.8	---	---
Long Lake	850	66	80	---	24.7	29.4	39.4
Mint Creek Ridge†	1900	64	---	---	22.0	---	---
Moore Creek Bridge	2250	29	---	65	7.5	---	21.3
Mount Ripinsky	2540	61	129	---	19.0	49.0	---
Petersburg Reservoir	550	21	18	1	8.0	7.0	0.2
Petersburg Ridge, S.	1650	41	68	74	13.9	23.2	27.4
Rainbow Falls	500	2	2	---	0.5	0.8	---
Speel River	280	54*	---	66	20.5*	---	26.5
West Creek	475	12	---	---	3.5	---	---

*Estimate

†Course measured 3/21/2018

Precipitation Data

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Long Lake	850	71.0	82.3	97.7	73%
Heen Latinee	2065	33.8	35.3	---	---
Moore Creek Bridge	2250	22.0	25.0	27.4	80%

Streamflow Forecasts

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Taiya River near Skagway	Apr-Jul	84	106	64	390	464

For further information contact:

NRCS Alaska web site: www.nrcs.usda.gov/wps/portal/nrcs/main/ak/snow/

NRCS Water and Climate Center web site: <http://www.wcc.nrcs.usda.gov/>

Alaska Meteor Burst Communication System (AMBCS) web site: www.ambcs.org

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