Alaska Snow Survey Report

USDA Natural Resources Conservation Service

May 1, 2017

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

Federal
- U.S.D.A.- U.S. Forest Service
  - Chugach National Forest
  - Tongass National Forest
- U.S. Department of Commerce
  - NOAA, Alaska Pacific RFC Climate Monitoring and Diagnostics Laboratory
- U.S. Department of Defense
  - U.S. Army Corps of Engineers
  - U.S. Army Cold Regions Research and Engineers Laboratory
- U.S. Department of Interior
  - Bureau of Land Management
  - U.S. Geological Survey
  - U. S. Fish and Wildlife Service
  - National Park Service

Municipalities
- Anchorage
- Juneau

Private
- Alaska Avalanche Information Center
- Alaska Electric, Light and Power, Juneau
- Alyeska Resort, Inc.
- Alyeska Pipeline Service Company
- Anchorage Municipal Light and Power
- Chugach Electric Association
- Copper Valley Electric Association
- Homer Electric Association
- Ketchikan Public Utilities
- Prince William Sound Science Center

State of Alaska
- Alaska Department of Fish and Game
- Alaska Department of Transportation and Public Facilities
- Alaska Department of Natural Resources
  - Division of Parks
  - Division of Mining and Water
  - Division of Forestry
- Alaska Energy Authority
- Alaska Railroad
- Soil and Water Conservation Districts
  - Homer SWCD
  - Palmer SWCD
- University of Alaska
  - Agriculture and Forestry Experiment Station
  - Geophysical Institute
  - Water and Environment Research
  - Reindeer Research Program
  - Institute of Arctic Biology LTER

Alaska Public Schools
- Mantanuska-Susitna Borough School District
- Eagle School, Gateway School District

Canada
- Ministry of the Environment
  - British Columbia
- Department of the Environment
  - Government of the Yukon

United States Department of Agriculture

NRCS Natural Resources Conservation Service

Issued by:
Leonard Jordan, Acting Chief
Natural Resources Conservation Service
Washington, D.C.

Released by:
Robert Jones
State Conservationist
Natural Resources Conservation Service
Palmer, Alaska

Published by:
Daniel Fisher, Hydrologist
Tony DeMarco, Hydrologist
Dan Kenney, Hydrologic Technician
Snow, Water and Climate Staff
Natural Resources Conservation Service
Palmer, Alaska

Cover photo: Caribou follow a ridgeline in the White Mountains last month, near the Eagle Summit SNOTEL site.

Photo by Jon Oestriech, NRCS Snow Surveyor

Table of Contents

State General Overview……. 5,6

Streamflow Forecasts…….. 7

How Forecasts are Made……. 8

Basin Conditions and Data

- Upper Yukon Basin…….. 9,10
- Central Yukon Basin……. 11, 12
- Tanana Basin……. 13, 14
- Western Interior Basins……. 15, 16
- Arctic and Kotzebue Basin…….. 17, 18
- Norton Sound, Southwest, and Bristol Bay…….. 19, 20
- Copper Basin…….. 21, 22
- Matanuska - Susitna Basins……. 23, 24
- Northern Cook Inlet……. 25, 26
- Kenai Peninsula……. 27, 28
- Western Gulf..... ……. 29, 30
- Southeast..... ……. 31, 32

State Snowpack Map……. 33

Telephone Numbers and other contact information …….. 34

General Overview

SnowPack

The snowpack in most of the state started the meltout process with vigor and enthusiasm. Most locations lost snow over the month in greater amounts compared to average. Only a handful of sites gained SWE over the month and these tended to be higher sites near Prince William Sound.

Due to this accelerated meltout, many low lying parts of the state are effectively snow free. This includes the Y-K Delta, the upper Tanana and Copper Valley floors and the lower Yukon and Koyukuk Valleys. All these regions have much below normal snowpack. Low snowpack also characterizes the Seward Peninsula, the upper Kuskokwim, the Kenai Peninsula, Southeast and Southcentral Alaska. Fielding Lake snow course, near the Richardson Highway as it passes through the Alaska Range, was measured at its second lowest snowpack in 51 years.

The snow is low enough in the Susitna Basin that four sites saw new 22-29 year record lows. East Fork Chulitna snow course, near Broad Pass along the Parks Highway, was measured with 20" of snow depth with 5.9" of water content, 48% of normal and its lowest May 1 reading in its 22 year history. Fishhook Basin snow course, near Independence Mine State Park in the southern Talkeetna Mountains, was measured with 30" of snow and 10" of water content, 51% of normal, its lowest reading in its 29 year history.

The only part of the state with above normal snowpacks is in the central Tanana Valley near Fairbanks. The ten Chena River Basin sites average 144% of normal snowpack for May 1st.

Parts of the state with near normal snowpack conditions include the Arctic and northwest Alaska, much of the central Yukon Valley and upper Koyukuk basin.

Precipitation

Another dry month. Most of Alaska saw below normal precipitation during April. Many basins received less than half of average April precipitation.

Relatively speaking, the big precipitation winners during April are the eastern Kenai Peninsula, next to Prince William Sound, and parts of Southeast. These regions were still below normal, but not by as much. Several sites in the eastern Kenai were 70-80% of normal for the month, opposed to less than 50% on the western side. Sites in Southeast varied from below normal to above normal at Long Lake SNOTEL which benefited from storms right at the beginning and end of the month.

In the Interior, both the Koyukuk, Central Yukon and the Tanana Basins received between ¼ and about 1/3 normal precipitation for the month with minor storms at the beginning and end of the month. This pattern is similar to western Alaska as well.

General Overview Continued

Temperature

From below normal temperatures in March sprung above normal temperatures in April.

Above normal temperatures across the state hastened snowmelt in many locations, though a cold snap in the middle of the month delayed it by a week.

Most locations across the state were only moderately above normal. From Homer to Anchorage up to Fairbanks and Bettles and over to Whitehorse, monthly temperatures were 4°F or 5°F above normal for the month. Western Alaska was warmer. Both Bethel and Nome were around 10°F above normal for the month.

Cordova and Juneau were more moderated, being near normal, only 2°F above normal for the month.

Streamflow Forecasts

FORECAST POINT*	Percent of Ave. Flow	Period
Yukon River at Eagle	98	May - July
Porcupine River nr Int'l Boundary……	101	May - July
Yukon River near Stevens Village	100	May - July
Tanana River at Fairbanks	88	May - July
Tanana River at Nenana	86	May - July
Little Chena River near Fairbanks	114	May - July
Chena River near Two Rivers	118	May - July
Salcha near Salchaket	101	May - July
Kuskokwim River at Crooked Creek	78	May - July
Sagvanirktok River near Pump Station 3	94	May - July
Kuparuk River near Deadhorse	102	May - July
Gulkana River at Sourdough	58	May - July
Little Susitna River near Palmer	63	May - July
Talkeetna River near Talkeetna	84	May - July
Ship Creek near Anchorage	63	May - July
Kenai River at Cooper Landing	79	May - July
Taiya River near Skagway	80	May - July

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

FORECAST POINT	INDEX
Koyukuk River at Hughes……..	—
MF Koyukuk R near Wiseman ……..	+0.3
Slate Creek at Coldfoot……..	+0.6
Beaver Creek above Victoria Creek……..	—
Birch Creek below South Fork……..	—
Caribou Creek at Chatanika……..	-1.8
Susitna River near Gold Creek……..	-2.7
Chulitna River near Talkeetna……..	-3.0
Deshka River at mouth near Willow……..	-3.0
Montana Creek at Parks Highway……..	-2.5
Willow Creek near Willow……..	-2.8
Skwentna River at Skwentna……..	—
Chuitna River near Tyonek……..	—
Campbell Creek near Spenard……..	-2.8
Indian Creek at Indian……..	-2.8
Bird Creek at Bird Creek ……..	-2.8
Glacier Creek nr Girdwood ……..	-2.2
Six Mile Creek near Hope……..	-2.6
Resurrection Creek near Hope……..	—
Grouse Ck at Grouse Lake Outlet nr Seward ……..	-1.5
Anchor River near Anchor Point ……..	-2.0
Deep Creek near Ninilchik……..	-2.1
Ninilchik River near Ninilchik……..	-2.1
Fritz Creek near Homer……..	-2.1
Skagway River at Skagway……..	+1.1
Municipal Watershed C nr Petersburg ……..	-0.9
Gold Creek nr Juneau	—

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

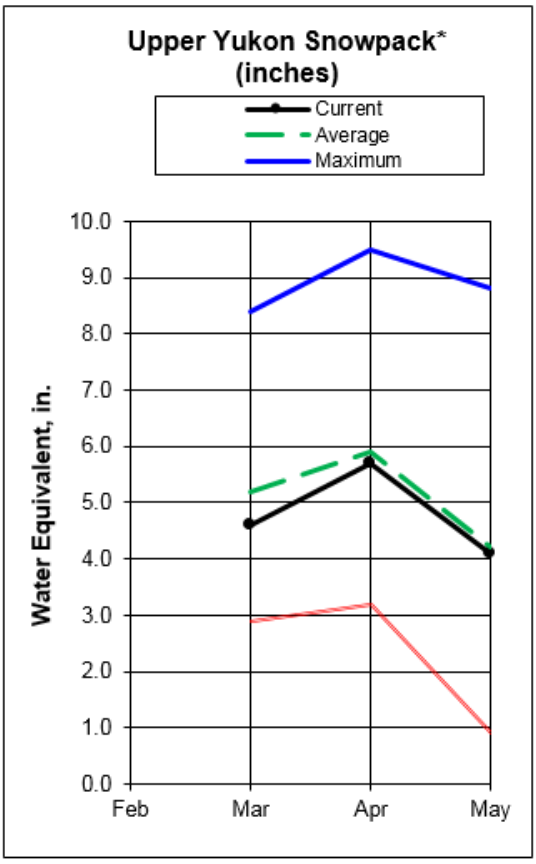
HOW FORECASTS ARE MADE

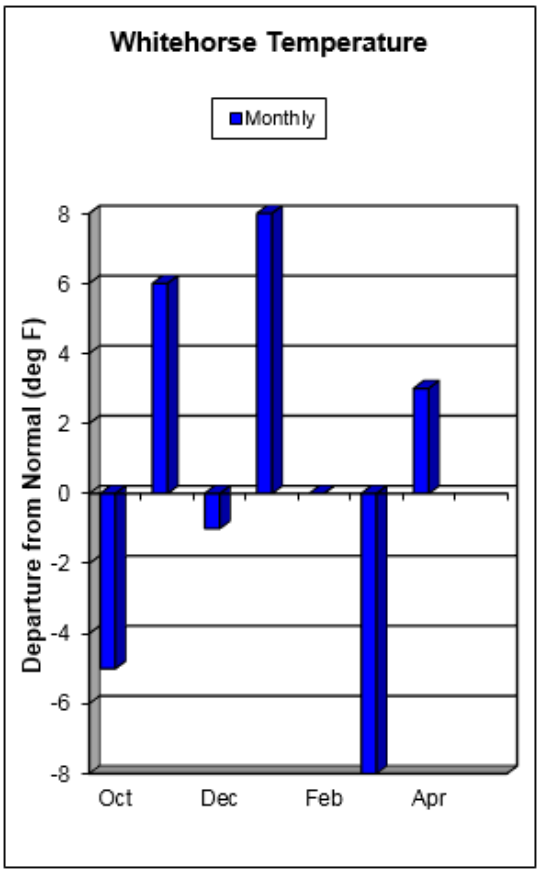
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual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

Upper Yukon Basin





Snow pack

The Upper Yukon Basin's 29 measured sites average 95% of normal. Sites ranged from well below normal in the southeast Yukon Territory to above normal in the White River drainage.

The snowpack upriver from Whitehorse is just below normal. The nine sites measured in the area average 87% of normal, ranging from 24% of normal at Morley Lake up to 158% of normal at Williams Creek.

Like last month, the most robust part of the basin was the White River drainage. The seven measured snow sites here averaged 188% of normal, mainly due to a delayed melt out. Their peak snowpack were near normal.

Further north, the Dawson area snow courses average 88% of normal. The three sites in this area had melted out by this time last year.

To the east, the Stewart and Pelly drainages have just below normal snowpacks. The 11 sites measured in these basins were 91% of normal, ranging from 72% of normal at Edwards Lake to 109% at Finlayson Airstrip.

Snowpack Data

Upper Yukon Basin

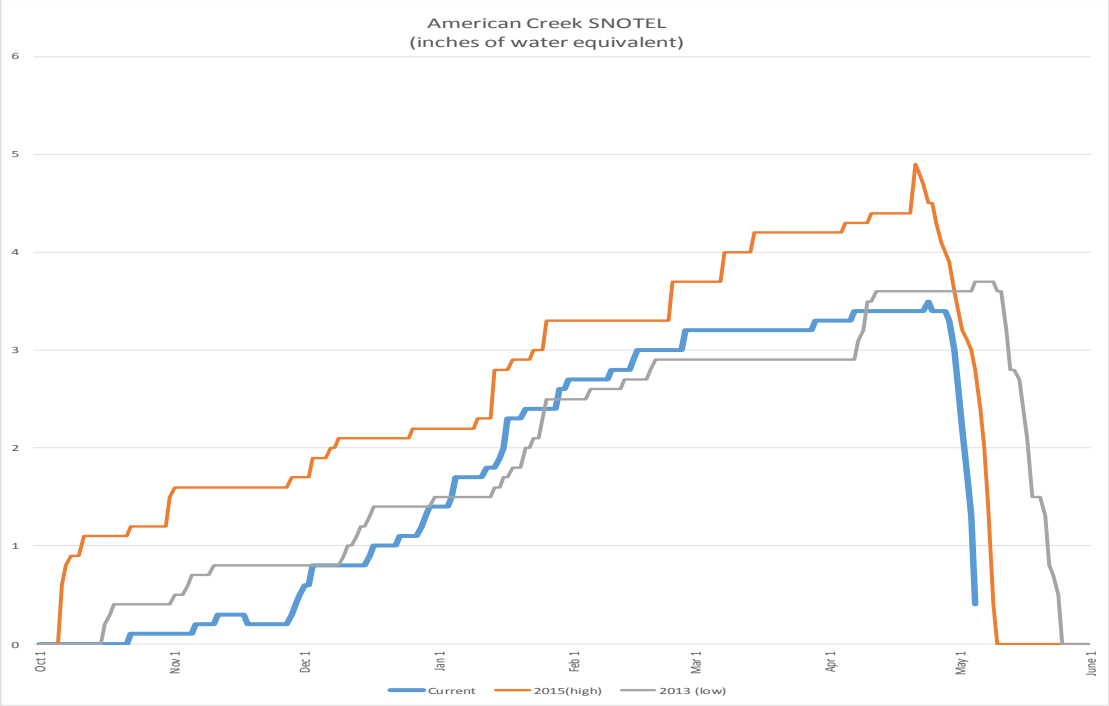
Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Beaver Creek	2150	4/25/2017	0	0.0	0	0.0	4	0.8
Blackstone River	1020	5/1/2017	0	0.0	0	0.0	---	---
Burns Lake	3650	4/27/2017	29	7.8	23	7.9	27	8.4
Burwash Airstrip	2660	4/25/2017	0	0.0	0	0.0	0	0.0
Calumet	4300	4/27/2017	23	6.5	25	8.0	33	7.3
Canyon Mine	1160	5/1/2017	9	2.4	0	0.0	---	---
Casino Creek	3495	4/25/2017	21	4.7	0	0.0	20	4.3
Eagle Plains	2330	5/1/2017	23	6.1	24	7.3	18	5.1
Eagle River	1115	5/1/2017	17	3.5	0	0.0	17	4.0
Edwards Lake	2720	5/1/2017	20	4.3	13	3.6	22	6.0
Finlayson Airstrip	3240	4/27/2017	10	2.4	0	0.0	8	2.2
Francis River	730	4/26/2017	7	1.7	2	0.6	---	---
Fuller Lake	3695	4/26/2017	28	6.7	26	8.8	27	8.1
Grizzly Creek	3200	4/27/2017	15	4.3	0	0.0	22	5.4
Hoole River	3400	4/27/2017	16	3.5	0	0.0	14	3.4
Hyland	855	4/26/2017	18	5.3	0	0.0	---	---
Jordan Lake	3050	4/27/2017	9	2.0	0	0.0	13	3.5
King Solomon Dome	3540	4/25/2017	19	5.1	0	0.0	18	4.9
Log Cabin (B.C.)	2900	4/25/2017	41	15.1	16	6.9	39	15.0
Macintosh	3805	*4/26/2017*	17	3.8	0	0.0	6	1.1
Mayo Airport	1770	*4/27/2017*	0	0.0	0	0.0	0	0.0
Meadow Creek	4050	4/26/2017	33	7.8	27	9.3	39	11.1
Midnight Dome	2805	5/1/2017	17	4.3	0	0.0	20	5.2
Montana Mtn.	3350	4/25/2017	18	4.7	0	0.0	17	4.9
Morley Lake	2700	4/25/2017	3	0.8	0	0.0	11	3.3
Mt. Berdoe	3395	4/26/2017	15	3.5	0	0.0	10	2.0
Mt. Mcintyre B	3600	4/28/2017	21	4.9	5	1.4	20	5.4
Mt. Nansen	3350	4/25/2017	10	2.0	0	0.0	0	0.0
Ogilvie River	550	5/1/2017	15	15.0	18	4.7	---	---
Old Crow	980	4/26/2017	22	4.6	19	5.5	19	4.0
Pelly Farm	1550	5/1/2017	0	0.0	---	---	0	0.0
Pine Lake Airstrip	995	4/25/2017	15	3.7	13	4.1	---	---
Plata Airstrip	2725	4/26/2017	16	5.1	9	2.7	19	5.9
Rackla Lake	3410	4/26/2017	32	8.2	26	6.9	30	8.2
Riffs Ridge	2130	5/1/2017	27	7.6	17	4.1	17	4.7
Rose Creek (Faro)	1080	4/25/2017	6	1.8	0	0.0	---	---
Russell Lake	3480	4/26/2017	27	7.3	23	7.0	30	8.6
Satasha Lake	3630	4/25/2017	13	2.5	0	0.0	2	0.6
Summit	985	4/26/2017	30	9.2	13	4.1	21	6.4
Tagish	3540	4/26/2017	17	4.2	2	0.8	16	4.6
Watson Lake Airport	685	4/26/2017	2	0.6	0	0.0	---	---
Whitehorse Airport	2300	4/28/2017	3	0.7	0	0.0	0	0.0
Williams Creek	3000	4/25/2017	13	3.0	0	0.0	6	1.9
Withers Lake	3200	4/26/2017	32	8.8	22	7.3	28	8.7

**Estimate*

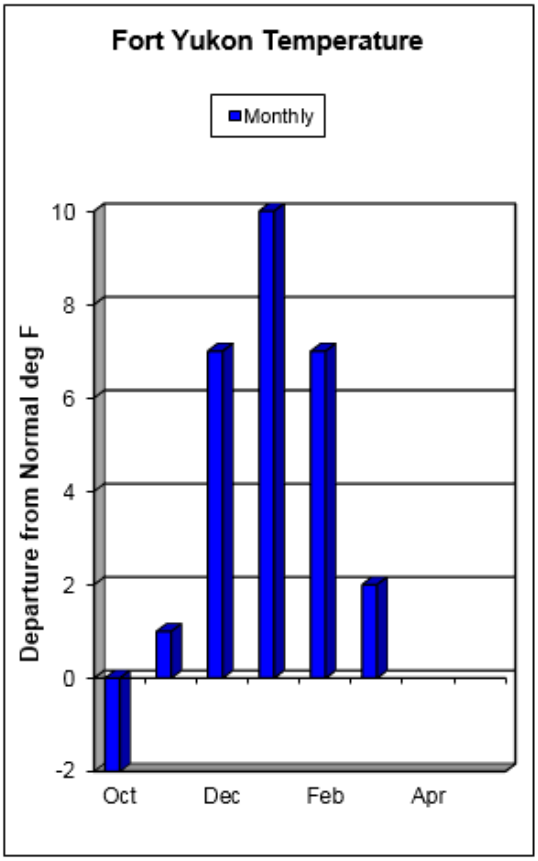
Streamflow Forecasts

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Yukon River At Eagle	May-Jul	98	110	86	31360	32000

Central Yukon Basin



American creek SNOTEL SWE chart showing highest year (2015), lowest (2013) and current. Site was installed in 2011.



Snow pack

Central Yukon Basin snowpacks range from near normal to above normal.

In the White Mountains, Upper Nome Creek SNOTEL still had 15" of snow on May 1st, which is about average for this time of the year.

Down in the Yukon Flats, the Fort Yukon SNOTEL site, which is often melted out by May 1st, still had 9" of snow, but was quickly melting out. Seven Mile snow course, near the Yukon Crossing had 17" of snow with 3.4" of water content, the same amount of water as last year at this time.

The Jack Wade Junction SNOTEL, near the junction of the Taylor and the Top-of-the-World Highways, caught 0.3" of precipitation during April and has 11" of snow with 3.2" of water content. Further north, near Eagle, the American Creek SNOTEL caught 0.1" of precipitation and still has 9" of snow with 2.6" of water content.

The four Porcupine River basin snow courses, in the Yukon Territories, averaged 122% of normal.

Central Yukon Basin

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
American Creek	1050	5/1/2017	9	2.6	4	0.7	---	---
Atigun Pass	4800	5/1/2017	46	---	47	---	---	---
Cathedral Creek	1800	4/30/2017	17	5.5*	---	---	---	---
Copper Creek	2000	4/30/2017	0	0.0	---	---	---	---
Crescent Creek	2600	4/30/2017	6	1.8*	---	---	---	---
Eagle Summit	3650	5/1/2017	9	---	24	---	---	---
Fort Yukon	430	5/1/2017	9	---	0	---	---	---
Hess Creek	1000	4/29/2017	21	5.6	19	4.0	10	2.6
Jack Wade Jct	3585	5/1/2017	11	3.2	21	6.3	---	---
Old Crow	980	4/26/2017	22	4.6	19	5.5	19	4.0
Seven Mile	600	4/29/2017	17	3.4	13	3.4	12	3.4
Step Mountain	2850	4/30/2017	19	6.3*	---	---	---	---
Thirty Mile	1350	4/29/2017	21	6.3	23	6.7	28	6.6
Three Fingers	3350	4/30/2017	22	6.3*	---	---	---	---
Upper Nome Creek	2520	5/1/2017	15	---	6	---	---	---

**Estimate*

Streamflow Forecasts

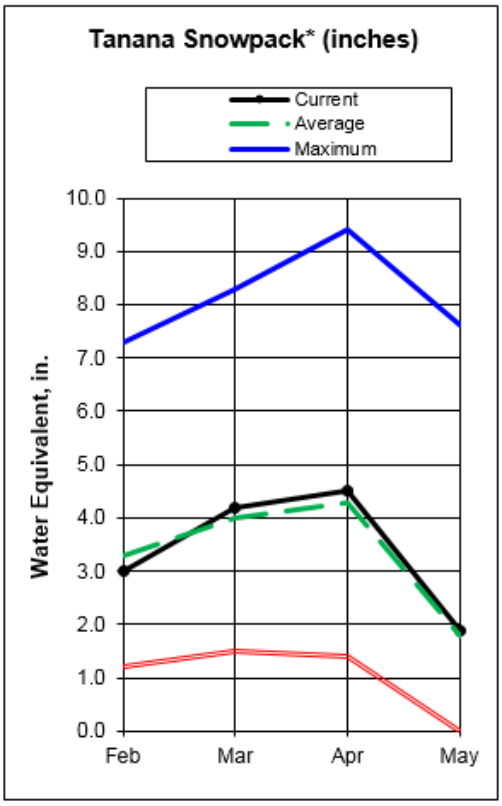
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Porcupine River near Intl Boundary	May-Jul	101	148	69	5660	5600
Yukon River near Stevens Village	May-Jul	100	113	87	46800	46800

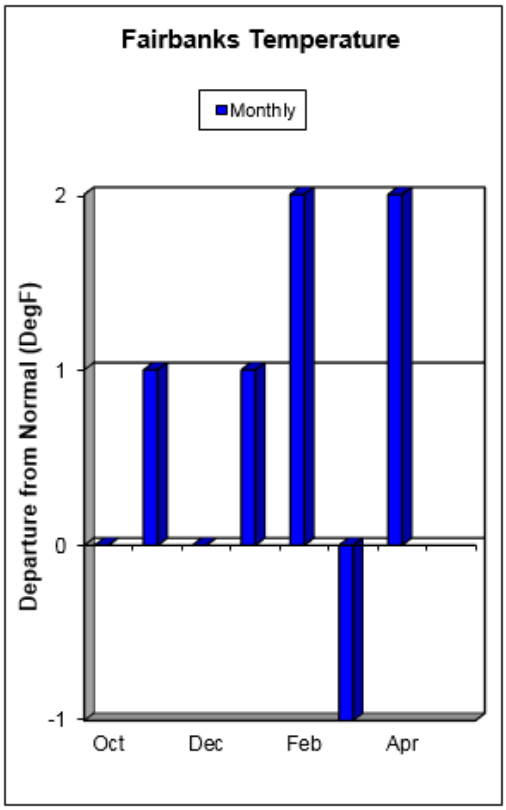
Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
American Creek	1050	3.3	3.9	---	---
Atigun Pass	4800	4.3	5.0	6.7	64%
Chandalar Camp	3300	4.2	4.8	5.2	81%
Eagle Summit	3650	4.0	5.8	5.9	68%
Fort Yukon	430	2.8	4.1	3.9	72%
Jack Wade Jct	3585	3.1	6.4	---	---
Upper Nome Creek	2520	7.0	6.1	6.5	108%

Tanana Basin





Snow pack

It was another dry month in the Tanana Basin. Like last month, most sites received less than half normal monthly precipitation and several sites didn't receive any measurable precipitation.

Snowpacks in the Tanana basin range from below normal in the upper basin to well above normal in the central basin.

Of the four snow courses in the Chatanika valley, two are melted out and two are much above normal. Faith Creek snow course has 15" of snow with 4.2" of water content, more than twice its median 2.0" of water content.

The Chena Basin sites are much above normal. The ten snow sites here average 144% of normal.

In the upper Tanana Basin, near Delta Junction, the snowpack is below normal. The only measurement site with snow left was Fielding Lake snow course. Fielding Lake is 45% of normal with 16" of snow depth hand 4.6" of water content. This ties with its second lowest May 1 in 57 years and lowest since 2010.

Further up the basin, near Tok, the snowpack continues to be dismal. The only measurement site with snow is Chisana, which only has 3" of snow with 1.0" of water content, 36% of normal.

Tanana Basin

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Bonanza Creek	1150	5/1/2017	16	5.2	0	0.0	0	0.0
Caribou Creek	1250	5/2/2017	0	0.0	---	---	0	0.0
Caribou Snow Pillow	900	5/2/2017	0	0.0	0	0.0	0	0.0
Chisana	3320	5/1/2017	3	1.0	0	0.0	---	2.8
Cleary Summit	2230	4/28/2017	22	6.5	14	3.7	19	4.9
Colorado Creek	700	5/1/2017	11	4.3	0	0.0	4	1.0
Fairbanks F.O.	450	5/1/2017	9	3.1	0	0.0	---	0.0
Faith Creek	1750	4/28/2017	15	4.2	0	0.0	7	2.0
Fielding Lake	3000	4/28/2017	16	4.6	25	9.6	34	10.2
Fort Greely	1500	4/27/2017	0	0.0	0	0.0	0	0.0
French Creek	1800	4/28/2017	18	4.9	0	0.0	13	3.6
Gerstle River	1200	4/27/2017	0	0.0	0	0.0	2	0.6
Granite Crk	1240	5/1/2017	0	0.0	0	0.0	---	0.0
Kantishna	1550	4/29/2017	7	2.0*	0	0.0	9	2.2
Lake Minchumina	730	4/29/2017	0	0.0	0	0.0	1	0.3
Mentasta Pass	2430	4/28/2017	0	0.0	0	0.0	14	3.9
Monument Creek	1850	5/1/2017	12	6.1	0	0.0	---	2.1
Mt. Ryan	2800	5/1/2017	13	4.3	1	0.8	---	4.7
Munson Ridge	3100	5/1/2017	31	10.2	18	6.8	---	7.9
Shaw Creek Flats	980	4/28/2017	0	0.0	0	0.0	0	0.0
Teuchet Creek	1640	5/1/2017	4	2.0	0	0.0	---	1.3
Tok Junction	1650	4/28/2017	0	0.0	0	0.0	0	0.0

**Estimate*

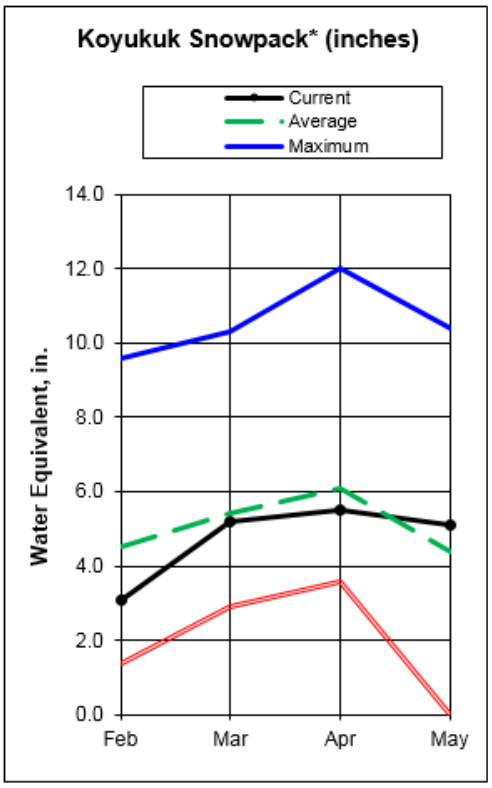
Streamflow Forecasts

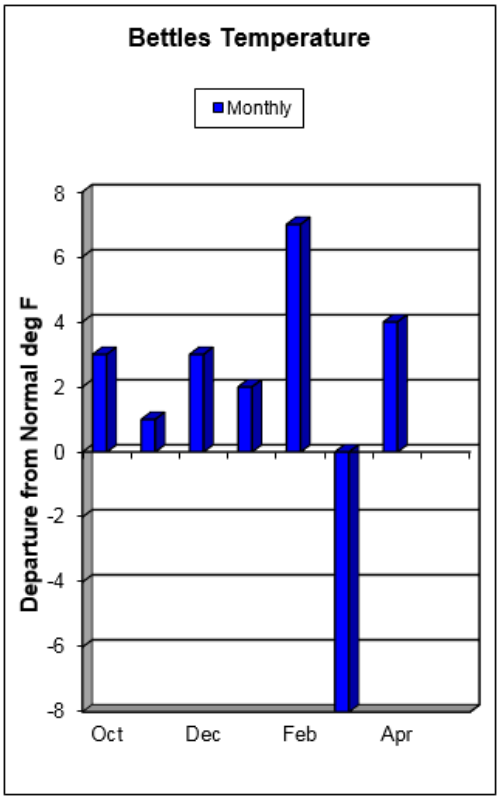
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Salcha River near Salchaket	May-Jul	101	134	72	600	595
Tanana River at Fairbanks	May-Jul	88	102	74	6190	7000
Chena River near Two Rivers	May-Jul	118	151	82	300	255
Little Chena River near Fairbanks	May-Jul	114	147	82	82	72
Tanana River at Nenana	May-Jul	86	101	72	7320	8470

Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Chisana	3320	2.9	3.7		
Fairbanks F.O.	450	6.5	4.3	4.9	133%
Granite Crk	1240	3.0	2.2	4.4	68%
Kantishna	1550	4.7	5.0	5.0	9400%
Little Chena Ridge	2000	4.9	4.3	6.2	79%
Nenana	415	4.3	3.5	---	---
Tok	1630	---	2.4	---	---
Upper Chena	2850	8.5	5.6	7.9	108%

Western Interior Basins





Snow pack

Koyukuk

The Koyukuk basin received very little precipitation during the month of April. Snowpacks in the upper basin are near normal while much of the lower basin has already melted out.

Kuskokwim

Much of the low lying areas of the Kuskokwim have melted out. Both Aniak SCAN and Telaquana Lake SNOTEL melted out on April 14th, a week later than last year. However, the snowpack in the headwater regions of the Kuskokwim remain varied.

Lower Yukon

The majority of snow sites in this region melted out during April and is generally considered snow-free.

Western Interior Basins

Snowpack Data

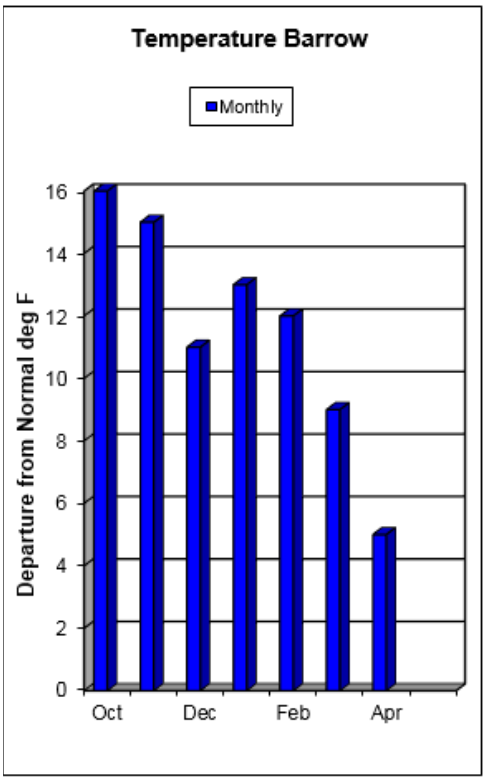
Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Koyukuk								
Bettles Field	640	5/1/2017	19	5.2	14	4.6	---	6.6
Cloverleaf	170	5/2/2017	0	0.0	---	---	---	---
Coldfoot	1040	5/1/2017	21	5.6	11	3.6	---	6.1
Colville Bend	170	5/2/2017	0	0.0	---	---	---	---
East Chalatna	430	4/28/2017	8	2.3*	---	---	---	---
Gobblers Knob	2030	5/1/2017	11	---	0	---	---	---
Huggins Creek	290	5/2/2017	6	1.7*	---	---	---	---
Jr Slough	160	5/2/2017	0	0.0	---	---	---	---
Kaldoyeit	750	4/28/2017	23	6.2*	---	---	10	2.8
Kanuti Chalatna	670	4/28/2017	9	2.6*	---	---	16	3.8
Kanuti Kilolitna	550	4/28/2017	5	1.6*	---	---	9	2.8
Minnkokut	580	4/28/2017	24	6.3*	---	---	26	6.6
Nolitna	560	4/28/2017	26	7.4*	---	---	14	---
Treat Island	190	5/2/2017	0	0.0	---	---	---	---
Kuskokwim								
Aniak	80	5/1/2017	0	0.0	0	0.0	---	---
Mcgrath	340	5/1/2017	0	0.0	---	---	9	3.0
Purkeypile Mine	2025	4/29/2017	12	3.5*	---	---	9	2.6
Telaquana Lake	1550	5/1/2017	0	0.0	---	---	---	---
Telaquana Lake SNOTEL	1275	5/1/2017	0	0.0	0	0.0	---	---
Lower Yukon								
Galena Ecological Site	128	5/2/2017	0	0.0	---	---	---	---
Hozatka Lake	206	5/1/2017	0	0.0	0.0	---	---	---
Middle Innoko	150	5/2/2017	0	0.0	---	---	0	0.0
Ninemile Island	140	5/2/2017	0	0.0	---	---	---	---
Pike Trap Lake	130	5/2/2017	0	0.0	---	---	---	---
Squirrel Creek	150	5/2/2017	0	0.0	---	---	---	---
Upper Innoko	180	5/2/2017	0	0.0	---	---	0	0.0
Wapoo Hills	220	5/2/2017	0	0.0	---	---	0	0.0

**Estimate*

Streamflow Forecasts

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Kuskokwim River at Crooked Creek	May-Jul	78	129	26	7290	9400

Arctic and Kotzebue Sound



Snow pack

Arctic

The Arctic had below normal precipitation during April. The snowpack at the measurement sites along the Dalton Highway are near normal.

Kotzebue

Like last month, Kotzebue received only a trace of precipitation during April and Kelly Station SNOTEL, on the Noatak River, recorded no measurable precipitation. Kelly Station SNOTEL has 17" of snow depth with 5.9" of water content.

Arctic and Kotzebue Sound

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Atigun Pass	4800	5/1/2017	46	---	47	---	---	---
Imnaviat Creek	3050	5/1/2017	30	---	22	---	---	---
Kelly Station	310	5/1/2017	17	5.9	0	0.0	---	---
Prudhoe Bay	30	5/1/2017	20	---	7	---	---	---
Sagwon	1000	5/1/2017	17	---	14	---	---	---

Streamflow Forecasts

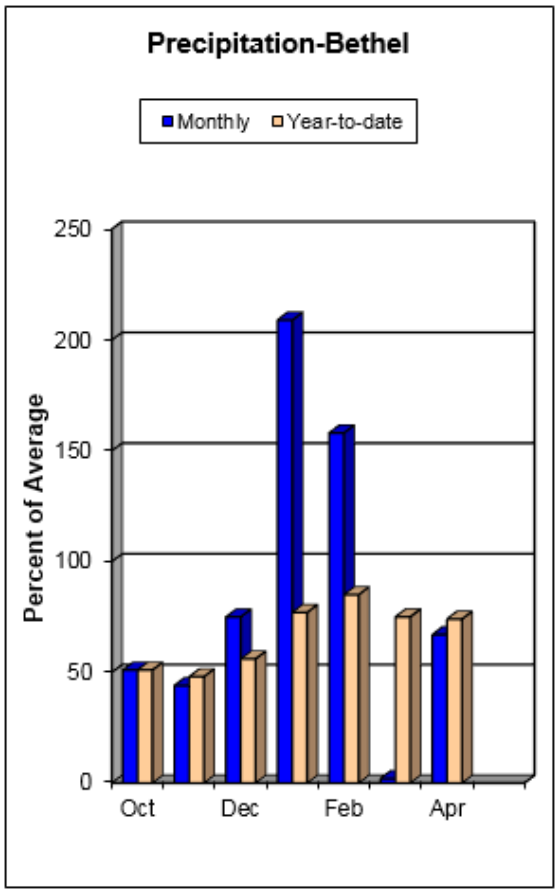
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Kuparuk River near Deadhorse	May-Jul	94	133	66	750	795
Sagavanirktok River near Pump Station 3	May-Jul	102	151	69	695	683

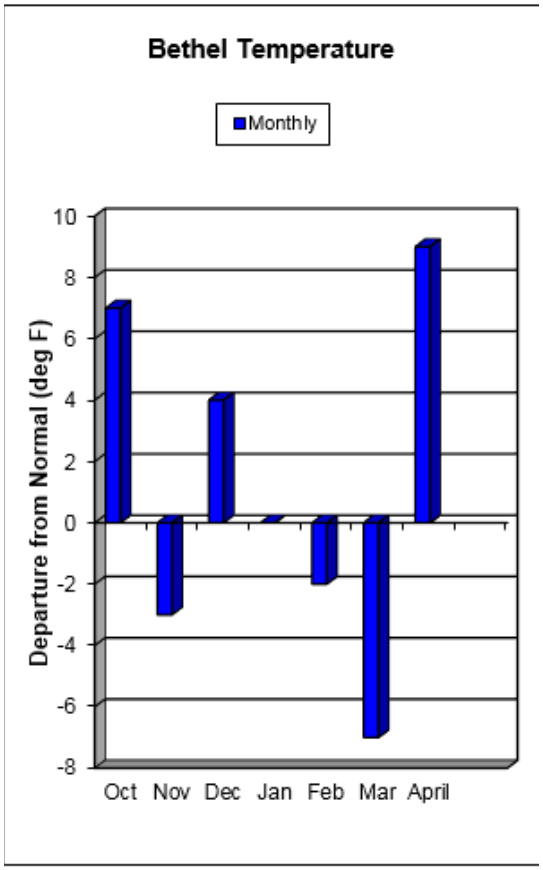
Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Arctic					
Atigun Camp	3400	2.8	2.2	3.0	93%
Atigun Pass	4800	4.3	5.0	6.7	64%
Imnaviat Creek	3050	2.9	2.2	3.3	88%
Prudhoe Bay	30	3.9	2.8	4.1	95%
Sagwon	1000	3.0	2.9	3.4	88%
Kotzebue Sound					
Port Red Dog	50	5.8	4.4	4.2	138%
Red Dog Mine	950	7.0	6.0	5.3	132%
Kelly Station	310	5.1	3.9	---	---

Norton Sound/Y-K Delta/Bristol Bay





Snow pack

Norton Sound

The Norton Sound area received little precipitation during March. Rocky Point SNOTEL dropped form 30" to 10" of snow during April.

Yukon Kuskokwim Delta

By May First, the Y-K Delta is generally considered snow-free.

Bristol Bay

The snowpack in the low lying portions of Bristol Bay basin have melted out. Port Alworth Snow Course was measured as snow free.

Norton Sound/Y-K Delta/Bristol Bay

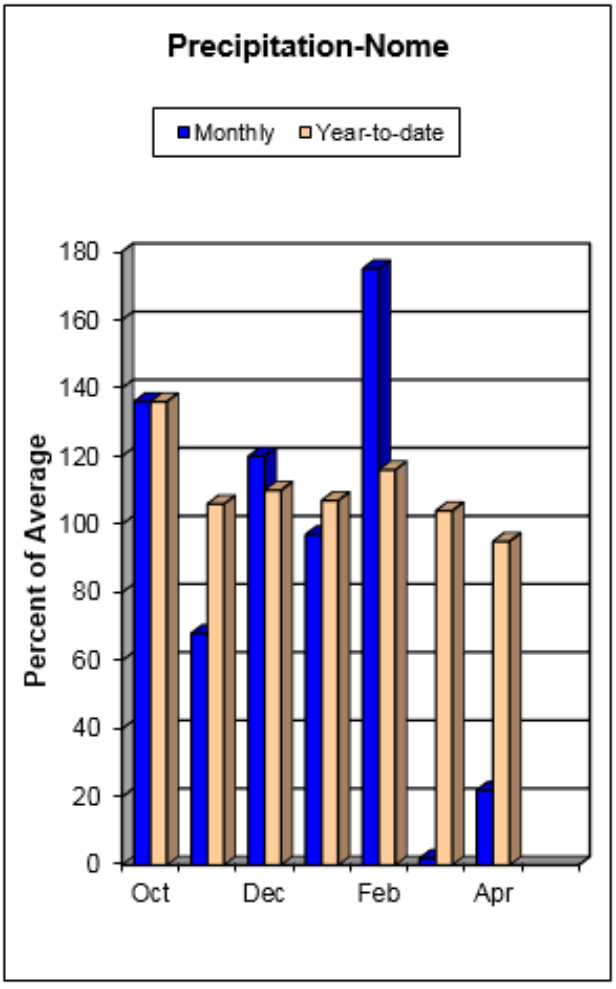
Snowpack Data

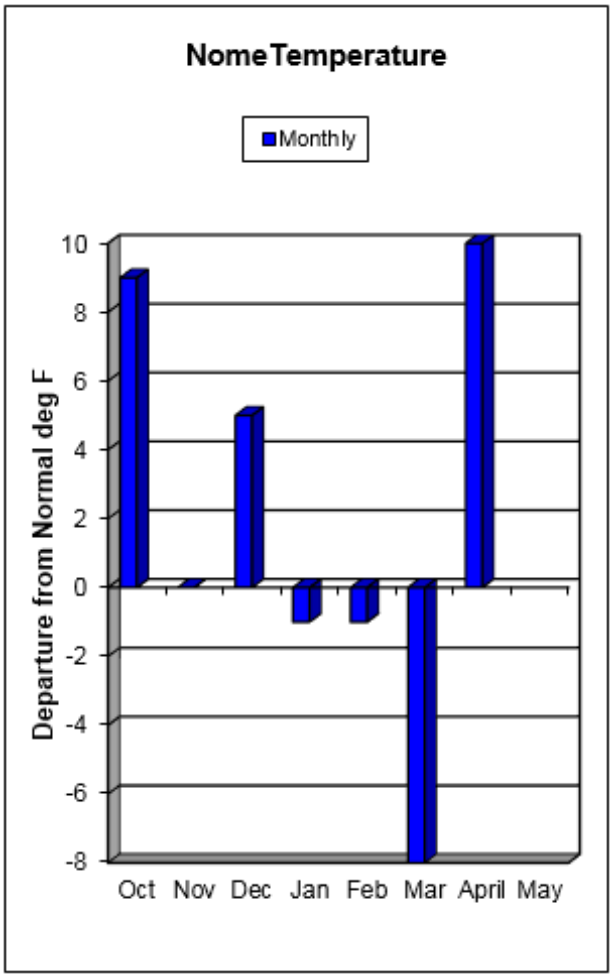
Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Bristol Bay								
Port Alsworth	270	5/1/2017	0	0.0	0	0.0	---	---
Norton Sound								
Johnsons Camp	25	5/1/2017	---	---	0	0.0	---	---
Pargon Creek	100	5/1/2017	2	0.6*	0	0.0	---	---
Rocky Point	250	5/1/2017	10	3.0*	4	---	---	---

**Estimate*

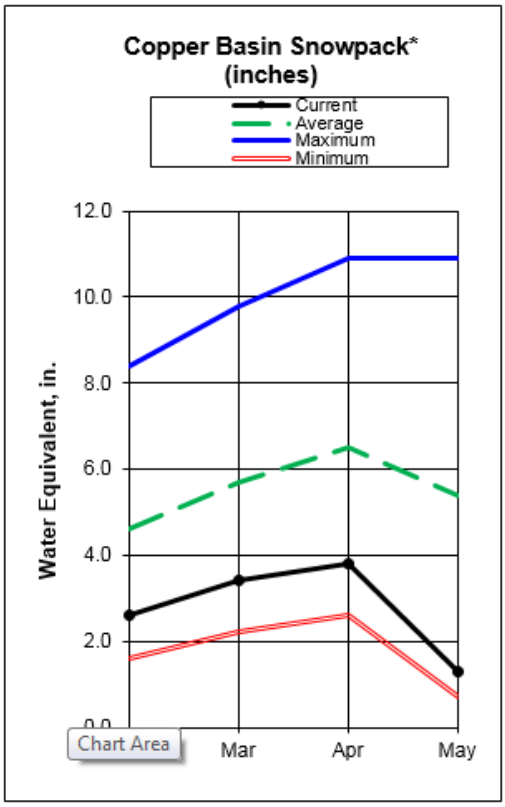
Precipitation

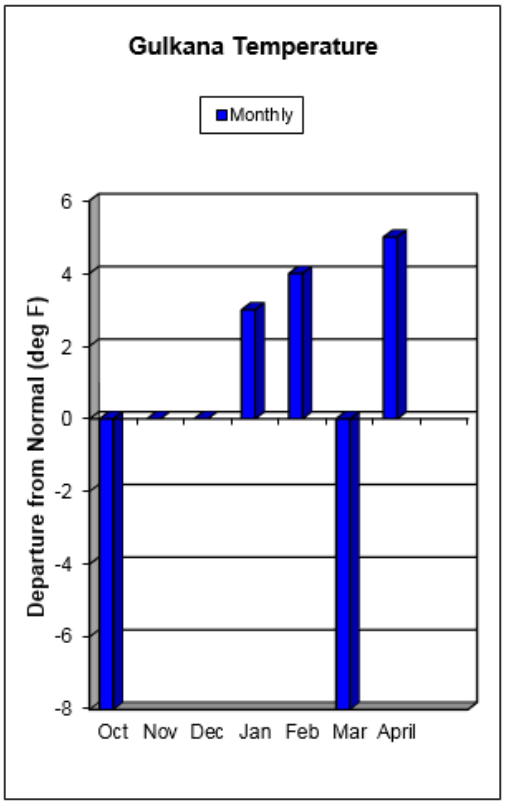
Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Norton Sound					
Pargon Creek	100	5.1	7.8	6.7	76%
Rocky Point	250	3.4	6.4	5.8	59%





Copper Basin





Snow pack

The Copper Basin snowpack continues to be below normal. Much of the Valley floor has melted out. The 10 sites measured averaged 51% of normal. Precipitation was minimal across most of the basin with most sites receiving a trace amount

The Alaska Range courses average 39% of normal and the basin floor snowpack was 30% of normal.

The new Nick's Valley SNOLITE site above Thompson Pass, at 4030' in elevation was measured with 89" of snow depth with 31.9" of water content on April 18th. By May 1st it gained 3 more inches of snow depth for a total depth of 92".

In the Wrangell Mountains, May Creek SNOTEL melted out on April 26th, a week later than last year, but a week earlier than usual.

Copper Basin

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Con-tent	Snow Depth	Water Con-tent	Snow Depth	Water Con-tent
Chistochina	1950	4/28/2017	0	0.0	0	0.0	0	0.0
Fielding Lake	3000	4/28/2017	16	4.6	25	9.6	34	10.2
Haggard Creek	2540	4/28/2017	6	2.2	0	0.0	14	4.3
Kenny Lake School	1300	5/1/2017	0	0.0	0	0.0	0	0.0
Little Nelchina	2650	5/1/2017	2	0.6	0	0.0	12	3.7
May Creek	1610	5/1/2017	0	0.0	0	0.0	---	2.0
Mentasta Pass	2430	4/28/2017	0	0.0	0	0.0	14	3.9
Nicks Valley Snow Course	4300	4/18/2017	89	31.9	*new site*	---	---	---
Nicks Valley SNOLITE	4300	5/1/2017	92	---	*new site*	---	---	---
Paxson	2650	4/28/2017	12	3.4	7	2.0	22	6.4
Tazlina	1250	5/1/2017	0	0.0	0	0.0	0	0.0
Tolsona Creek	2000	5/1/2017	1	0.2	0	0.0	0	0.0
Upper Tsaina River	1750	5/1/2017	38	13.7	37	15.9	---	19.2

**Estimate*

Streamflow Forecasts

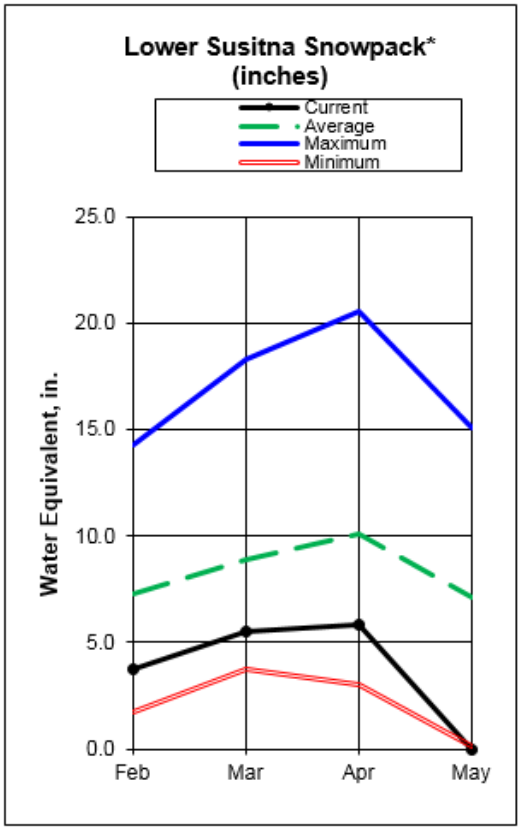
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Gulkana River at Sourdough	May-Jul	58	86	30	240	415

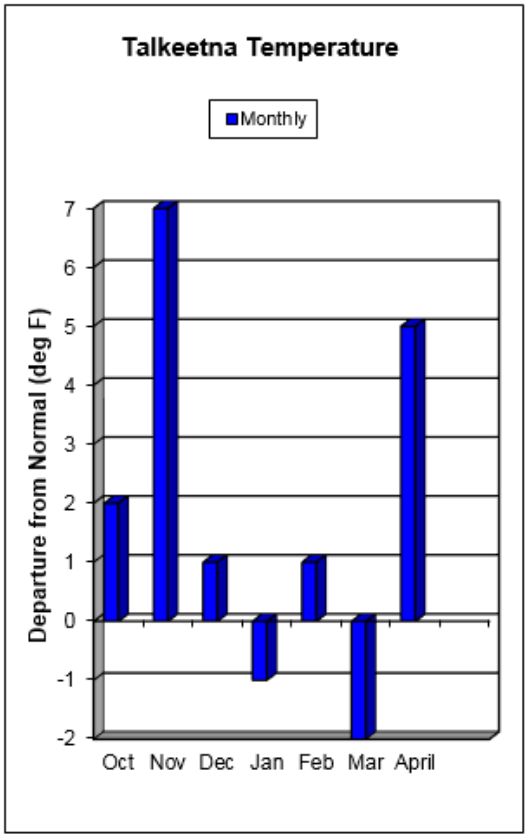
Precipitation

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
May Creek	1610	4.6	7.6	6.5	71%
Upper Tsaina River	1750	16.6	26.5	28.5	58%

Matanuska—Susitna Basin





Snow pack

Snowpacks across the Matanuska and Susitna basins are much below normal. The 28 different snow measurement sites average 38% of normal snowpack for this time of year, about half of last year's snowpack at this time.

The 6 sites measured in the lower Susitna basin were melted out. Only Chelatna Lake had a trace of snow left. This the fourth time -and the third year in a row- that the Su Valley High SNOTEL site has been melted out by May first.

Upper Susitna Basin was uniformly below normal, both east and west of the Talkeetna Mountains along with the Peters Hills. Along the Parks Highway, the Blueberry Hill and East Fork of the Chulitna snow courses set new, 22-year, record lows.

The upper Little Su basin fared little better. Both the Fishhook Basin and Independence Mine Snow Course set new record lows (29 and 21 years of record, respectively) with about 50% of normal snowpacks.

Matanuska—Susitna Basin

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Alexander Lake	160	*No Survey*	---	---	---	---	27	7.7
Alexander Lake SNOTEL	160	5/1/2017	0	0.0	0	0.0	---	---
Archangel Road	2200	5/1/2017	14	4.6	21	8.7	35	11.7
Birthday Pass	4020	5/1/2017	47	15.1	88	36.0	---	---
Blueberry Hill	1200	4/28/2017	11	4.1	23	9.3	40	14.1
Chelatna Lake	1450	4/29/2017	1	0.3*	0	0.0	30	9.6
Denali View	700	4/28/2017	0	0.0	0	0.0	27	9.1
Dunkle Hills	2700	4/29/2017	12	4.5*	31	12.4	---	---
Dutch Hills	3100	4/29/2017	38	14.2*	67	27.5	71	25.7
E. Fork Chulitna	1770	4/28/2017	20	5.9	38	14.2	42	12.4
Fishhook Basin	3300	5/1/2017	30	10.0	57	22.7	55	19.5
Halfway Slough	350	4/28/2017	0	0.0	0	0.0	---	---
Horsepasture Pass	4300	5/1/2017	12	---	17	5.1	---	---
Independence Mine	3550	5/1/2017	36	11.9	66	27.1	61	21.8
Independence Mine SNOTEL	3550	5/1/2017	22	9.9	46	16.9	—	14.6
Lake Louise	2400	5/1/2017	1	0.3	0	0.0	11	2.9
Little Susitna	1700	5/1/2017	6	1.8	3	1.2	21	8.2
Monahan Flat	2710	5/1/2017	15	4.4*	30	---	---	---
Nugget Bench	2010	4/29/2017	9	3.4*	8	3.1	42	13.9
Ramsdyke Creek	2220	4/29/2017	20	8.4*	40	16.8	57	19.7
Sheep Mountain	2900	5/1/2017	0	0.0	0	0.0	11	3.1
Susitna Valley High	375	5/1/2017	0	0.0	0	0.0	---	5.1
Talkeetna	350	4/28/2017	0	0.0	0	0.0	12	4.0
Tokositna Valley	850	5/1/2017	11	4.9	18	7.4	---	11.8
Willow Airstrip	200	4/28/2017	0	0.0	0	0.0	10	3.3

**Estimate*

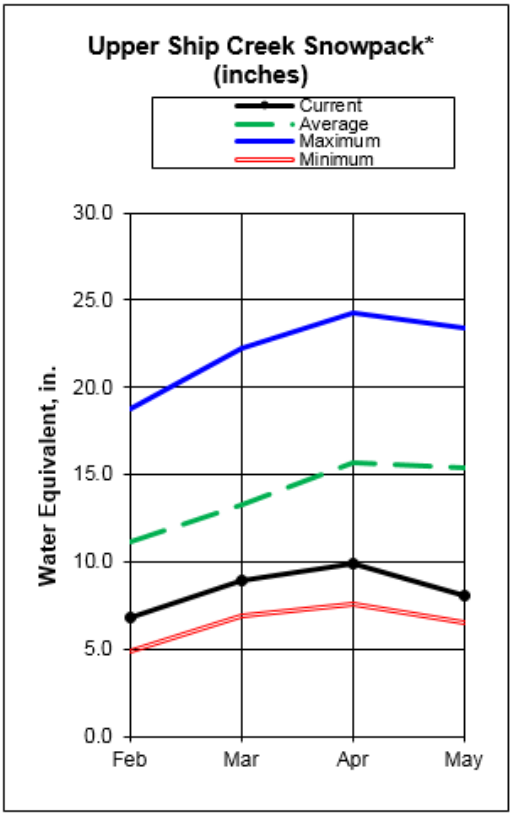
Streamflow Forecasts

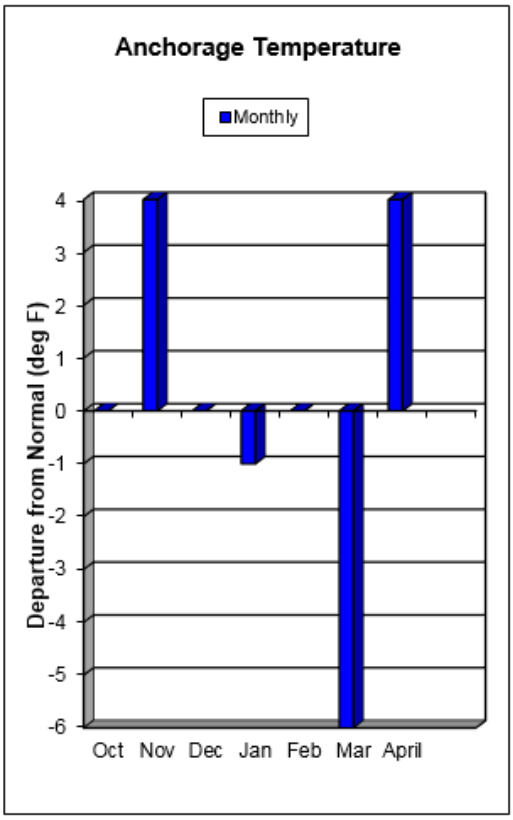
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Little Susitna River near Palmer	May-Jul	63	86	40	50	80
Talkeetna River near Talkeetna	May-Jul	84	101	67	1290	1530

Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Alexander Lake	160	8.1	17.8	---	---
Independence Mine	3550	11.6	23.4	18.0	64%
Monahan Flat	2710	5.2	7.0	8.6	60%
Susitna Valley High	375	6.7	13.9	13.4	50%
Tokositna Valley	850	10.4	23.6	21.4	49%

Northern Cook Inlet





Snow pack

The seven snow measuring sites in this area average 53% of normal, compared to 37% of normal last year at this time. Some low sites have melted out while high elevation sites remain low. At 54% of normal, Indian Pass SNOTEL site measured its third lowest snowpack in 37 years.

Portage Valley, near the end of Turnagain Arm, was the anomaly. It had 23" of snowdepth and 9.4" of water content which is considered 152% of normal.

Northern Cook Inlet

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Anchorage Hillside	2080	5/1/2017	8	4.0	0	0.0	---	10.8
Indian Pass	2350	5/1/2017	31	12.9	42	19.5	---	24.3
Kincaid Park	250	5/1/2017	0	0.0	0	0.0	0	0.0
Moraine	2100	5/1/2017	6	3.4	0	0.0	---	6.5
Mt. Alyeska	1540	5/1/2017	41	15.7	36	12.6	---	35.2
Portage Valley	50	5/3/2017	23	9.4	0	0.0	14	6.2
South Campbell Creek	1200	5/1/2017	0	0.0	0	0.0	10	3.4

**Estimate*

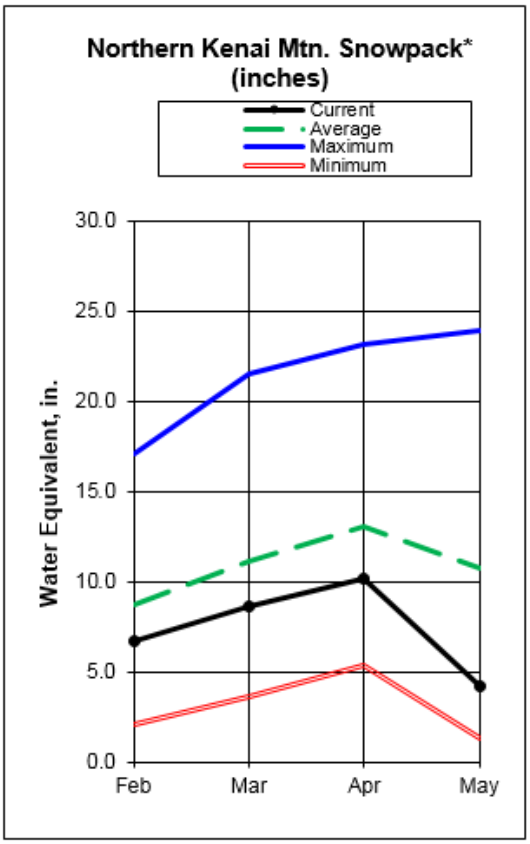
Streamflow Forecasts

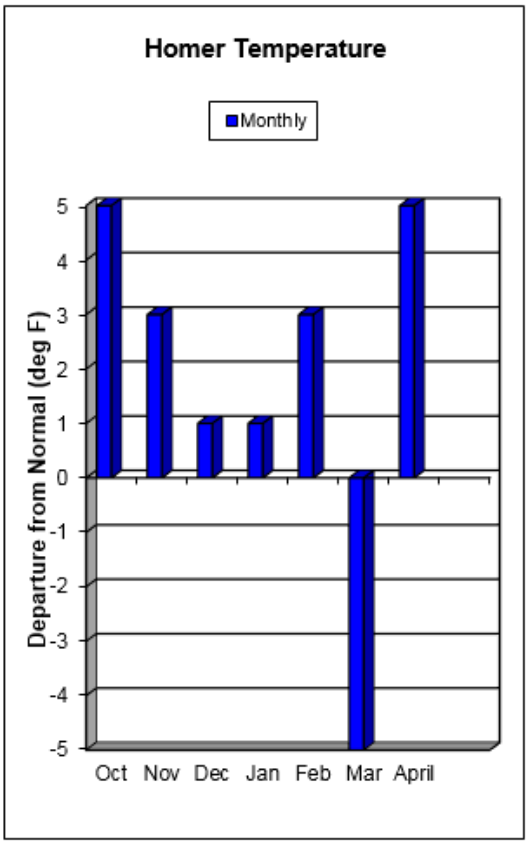
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Ship Creek near Anchorage	May-Jul	63	84	39	35	56

Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Anchorage Hillside	2080	10.0	11.1	15.5	65%
Indian Pass	2350	19.0	25.6	28.4	67%
Moraine	2100	7.6	10.8	12.7	60%
Mt. Alyeska	1540	32.1	61.4	52.9	61%

Kenai Peninsula





Snow pack

The snowpack on the Kenai Peninsula is much below normal. The nineteen snow sites on the Peninsula average 55% of normal.

Turnagain Pass SNOTEL has less than half the snow it did last year at this time. With only 49" of snow-depth and 19.7" of water (49% of normal), its May 1st reading is a new 35 year record low.

Most snowpack sites on the Peninsula are below half normal, with only those few sites exposed to the Gulf of Alaska, with more moderate readings. Grouse Creek Divide and Exit Glacier near Seward are 73% and 85% of normal, respectively. These site also received more April precipitation.

Kenai Peninsula

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Anchor River Divide	1653	5/1/2017	13	4.2	20	7.3	---	10.0
Bertha Creek	950	5/2/2017	32	10.0	17	6.4	50	17.7
Bridge Creek	1300	5/2/2017	19	6.1	0	0.0	32	10.6
Cooper Lake	1200	5/1/2017	18	5.8	10	2.3	---	12.0
Demonstration Forest	780	5/2/2017	0	0.0	0	0.0	13	4.6
Eagle Lake	1400	5/2/2017	18	6.1	9	3.2	24	9.0
Exit Glacier	400	5/1/2017	25	9.8	0	0.0	26	10.8
Exit Glacier	400	5/1/2017	25	9.4	0	0.0	---	11.0
Grandview	1100	5/1/2017	50	21.2	54	29.5	---	34.6
Grouse Creek Divide	700	5/1/2017	25	11.6	12	3.2	---	16.0
Jean Lake	620	5/3/2017	0	0.0	0	0.0	0	0.0
Kenai Moose Pens	300	5/1/2017	0	0.0	0	0.0	---	0.0
Kenai Summit	1390	5/2/2017	8	2.6	23	8.4	30	11.3
Lower Kachemak Creek	1915	5/1/2017	0	---	---	---	---	---
Mcneil Canyon	1320	5/1/2017	4	3.6	0	0.0	---	8.0
Middle Fork Bradley	2300	5/1/2017	39	---	75	---	---	---
Moose Pass	700	5/2/2017	0	0.0	0	0.0	0	0.0
Mt. Alyeska	1540	5/1/2017	41	15.7	36	12.6	---	35.2
Nuka Glacier	1250	5/1/2017	62	---	---	---	---	---
Port Graham	300	5/1/2017	0	0.0	0	0.0	---	4.0
Portage Valley	50	5/3/2017	23	9.4	0	0.0	14	6.2
Snug Harbor Road	500	5/3/2017	0	0.0	0	0.0	0	0.0
Summit Creek	1400	5/1/2017	9	3.6	10	3.4	---	6.7
Turnagain Pass	1880	5/1/2017	49	19.7	106	54.5	---	39.8

**Estimate*

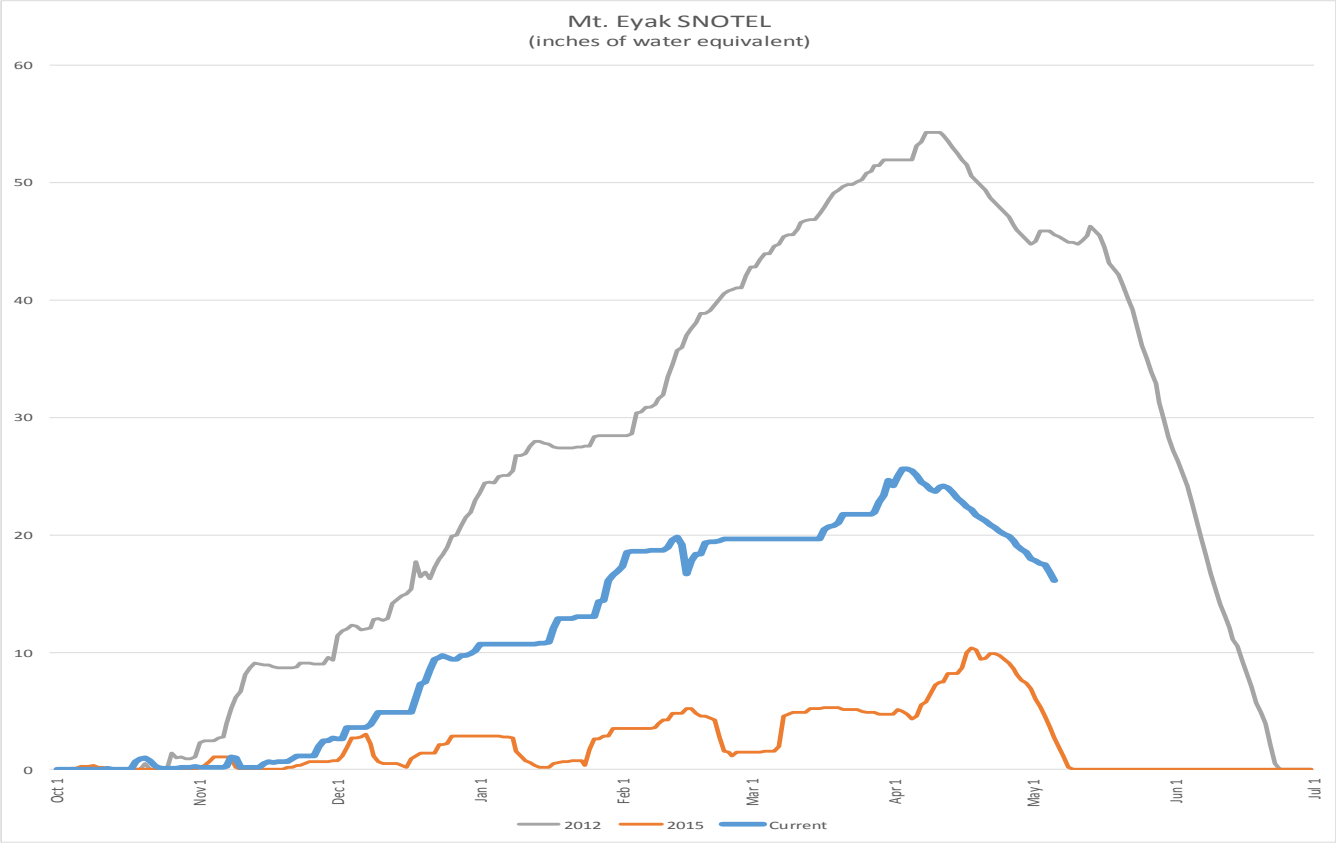
Streamflow Forecasts

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Kenai River at Cooper Landing	May-Jul	79	92	66	725	920

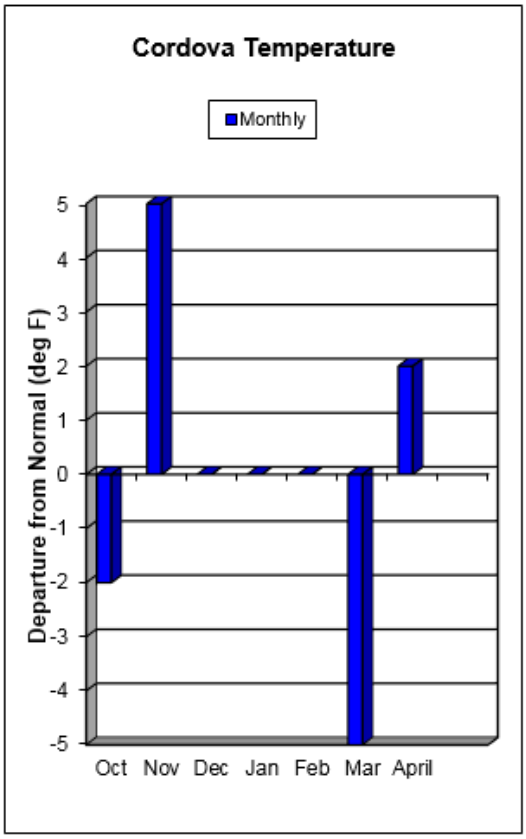
Precipitation

Site Name	Elev.	Inches Accumulated since October 1st			
		This Year	Last Year	1981-2010 Normal	% of Normal
Anchor River Divide	1653	13.9	24.1	18.5	75%
Cooper Lake	1200	16.9	29.9	27.1	62%
Grandview	1100	37.4	71.8	46.9	80%
Grouse Creek Divide	700	29.0	65.6	41.9	69%
Kachemak Creek	1660	33.7	74.7	41.7	81%
Kenai Moose Pens	300	5.7	8.1	8.9	64%
Mcneil Canyon	1320	13.9	22.1	17.9	78%
Middle Fork Bradley	2300	28.5	47.6	35.6	80%
Nuka Glacier	1250	42.2	83.7	60.8	69%
Port Graham	300	29.1	67.3	52.8	55%
Summit Creek	1400	11.8	21.9	17.1	69%
Turnagain Pass	1880	34.4	66.9	47.2	73%

Western Gulf



Mt. Eyak Snotel SWE chart showing highest year (2012), lowest (2015) and current water year.



Snow pack

Snowpacks remain below normal across Prince William Sound.

Esther Island SNOTEL, at 50ft elevation and on the western side of the Sound, melted out on April 28th. Sugarloaf Mountain SNOTEL, near Valdez, had 25" of snow on May 1st, the shallowest May 1 reading in its 10 year history.

On the east side of the Sound, Mt. Eyak above Cordova had 41" of snow with 17.8" of water content, its highest May 1 reading since 2013, though still only 63% of normal.

Western Gulf

Snowpack Data

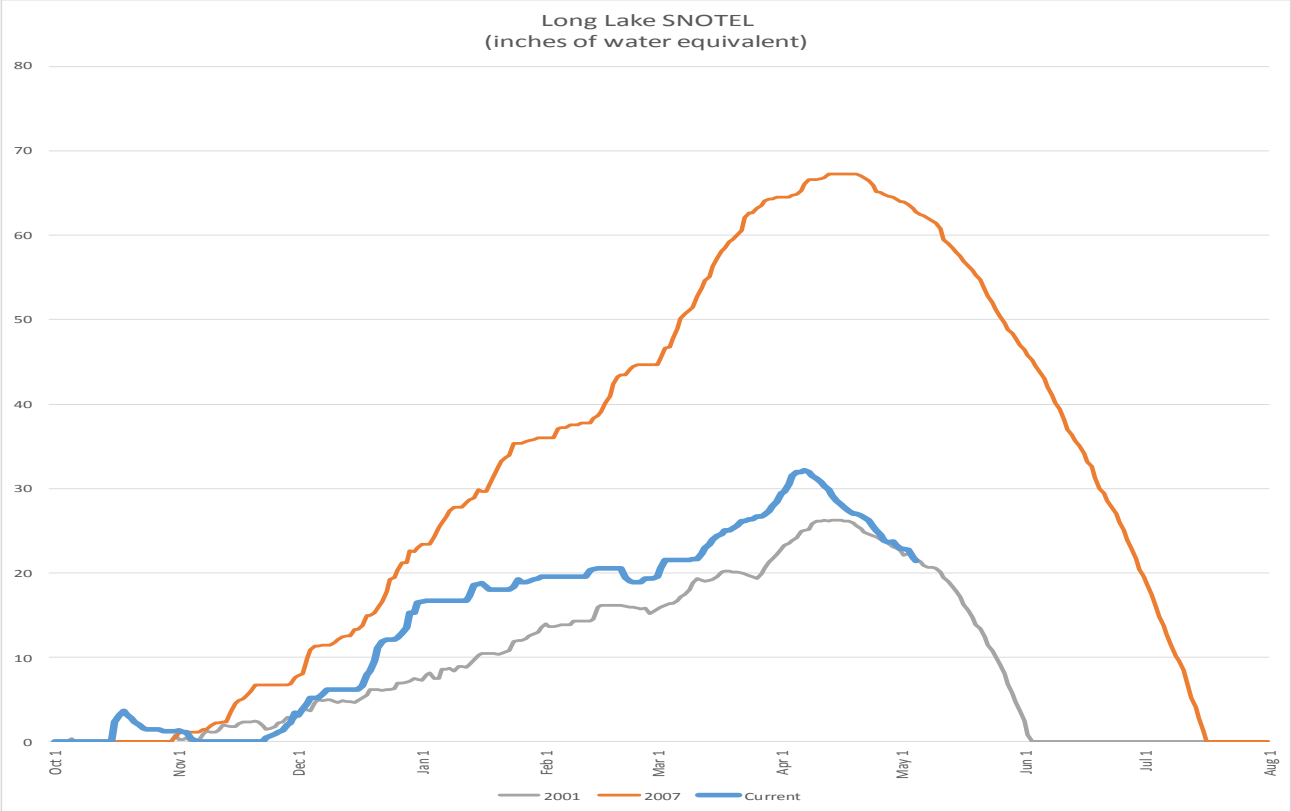
			This Year		Last Year		1981-2010 Normal	
Site Name	**Elev.**	**Date**	**Snow Depth**	**Water Content**	**Snow Depth**	**Water Content**	**Snow Depth**	**Water Content**
Exit Glacier	400	5/1/2017	25	9.8	0	0.0	26	10.8
Exit Glacier SNOTEL	400	5/1/2017	25	9.4	0	0.0	---	11.0
Grouse Creek Divide	700	5/1/2017	25	11.6	12	3.2	---	16.0
Mt. Eyak	1405	5/1/2017	41	17.8	3	1.2	---	28.1
Nuka Glacier	1250	5/1/2017	62	---	---	---	---	---
Upper Tsaina River	1750	5/1/2017	38	13.7	37	15.9	---	19.2

**Estimate*

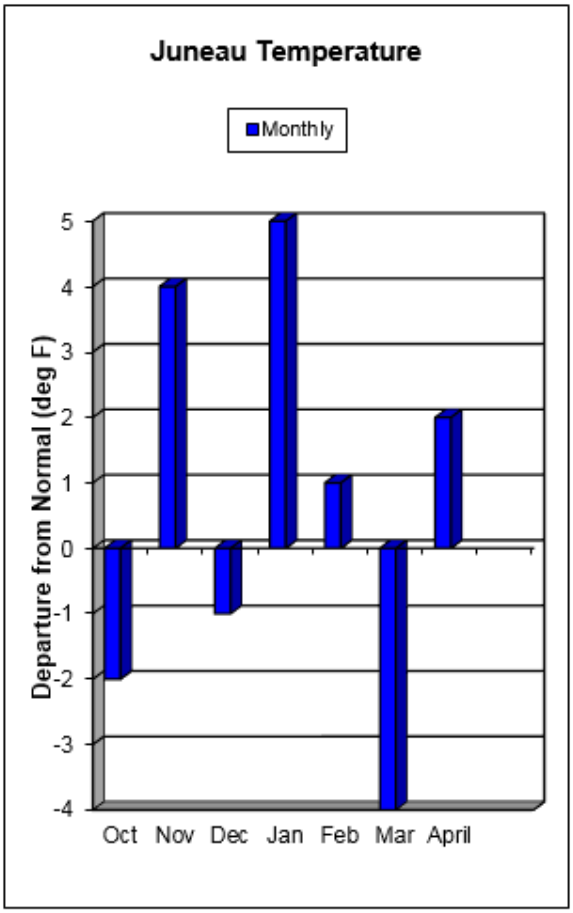
Precipitation

		Inches Accumulated since October 1st			
Site Name	**Elev.**	**This Year**	**Last Year**	**1981-2010 Normal**	**% of Normal**
Esther Island	50	64.3	142.1	89.0	72%
Grouse Creek Divide	700	29.0	65.6	41.9	69%
Mt. Eyak	1405	49.0	91.2	---	---
Nuchek	50	63.5	125.4	---	---
Nuka Glacier	1250	42.2	83.7	60.8	69%
Port San Juan	50	63.2	114.0	85.4	74%
Seal Island	20	26.7	60.4	---	---
Strawberry Reef	30	38.1	72.2	---	---
Sugarloaf Mtn	550	28.2	52.4	44.4	64%
Tatitlek	50	30.2	58.0	44.1	68%

Southeast



Long Lake Snotel SWE chart showing highest year (2007), lowest (2001) and current water year..



Snow pack

Snowpack in Southeast Alaska is below normal. Many low elevation sites have melted out and higher elevation sites remain around 60% normal. Long Lake SNOTEL still had 53" of snow with 22.9" of water content, 64% of normal.

Precipitation was low across most of the panhandle, though Long Lake SNOTEL record above normal precipitation, benefitting from storms at the very beginning and end of the month.

Southeast

Snowpack Data

Site Name	Elev.	Date	This Year		Last Year		1981-2010 Normal	
			Snow Depth	Water Content	Snow Depth	Water Content	Snow Depth	Water Content
Heen Latinee	2065	5/1/2017	31	10.3	10	4.1	---	---
Institute Creek	1350	4/28/2017	9	3.6	0	0.0	---	---
Long Lake	850	5/1/2017	54	22.9	25	11.1	---	35.8
Moore Creek Bridge	2250	5/1/2017	42*	17.4*	9	3.6	51	20.7
Petersburg Reservoir	550	4/28/2017	0	0.0	0.0	0.0	0	0.0
Petersburg Ridge, S.	1650	4/28/2017	38	16.2	0	0.0	52	22.4
Rainbow Falls	500	4/28/2017	0	0.0	0	0.0	---	---
Speel River	280	4/30/2017	12	6.8	0	0.0	50	22.0

**Estimate*

Streamflow Forecasts

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Taiya River near Skagway	May-Jul	80	99	60	365	459

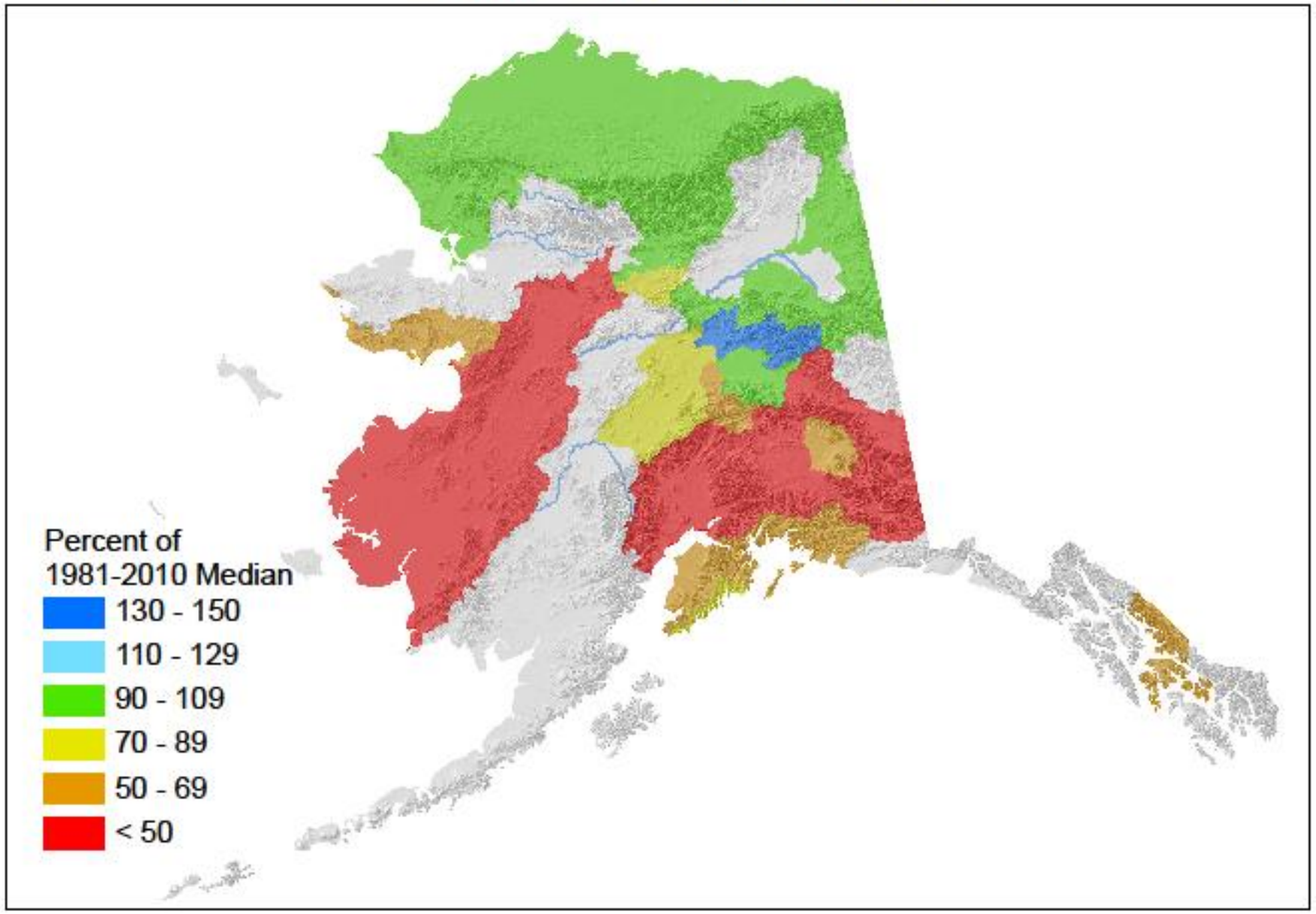
Precipitation Data

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1981-2010 Normal	% of Normal
Long Lake	850	91.8	107.1	104.6	88%
Heen Latinee	2065	37.1	40.5	---	---
Moore Creek Bridge	2250	24.9	31.0	29.6	84%

Alaska Snowpack as of May 1, 2017

Based on Snow Course and SNOTEL site Snow Water Content



USDA NRCS

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**

NRCS Snow Survey Office
Daniel Fisher, Hydrologist
800 West Evergreen Avenue
Palmer, Alaska 99645
Telephone: (907) 761-7746
Facsimile: (907) 761-7790
E-mail: Daniel.Fisher@ak.usda.gov

Delta Junction Work Unit
Michael Stephens, Conservationist
Telephone: (907) 895-4241 x 103
Facsimile: (855) 705-9787
E-mail: Michael.Stephens@ak.usda.gov

Fairbanks Hub Office
Joanne Kuykendall, Conservationist
Telephone: (907) 479-3159 x 1010
Facsimile: (855) 833-8625
E-mail: Joanne.Kuykendall@ak.usda.gov

Homer Work Unit
Karin Sonnen, Range Management Specialist
Telephone: (907) 235-8177 x 103
Facsimile: (855)711-9098
E-mail: Karin.Sonnen@ak.usda.gov

Central Hub Office
Katie Mattila, Conservationist
Telephone: (907) 373-6492 x 101
Facsimile: (855) 705-9788
E-mail: Keith.Griswold@ak.usda.gov