

YUKON SNOW SURVEY BULLETIN & WATER SUPPLY FORECAST

April 1, 2018



Prepared and issued by:
Water Resources Branch,
Department of Environment



PREFACE

The Yukon Snow Survey Bulletin and Water Supply Forecast is prepared and issued three times annually – after March 1, April 1 and May 1 – by the Department of Environment's Water Resources Branch. The bulletin provides a summary of winter meteorological and streamflow conditions for Yukon, as well as current snow depth and snow water equivalent observations for 57 locations. This information is used to make projections of total volume runoff for the summer period and an estimate of peak flow for the main river basins and sub-basins including the upper and lower Yukon, Pelly, Stewart, Liard, Alsek, Porcupine and Peel Rivers. Information about the bulletin, snowpack conditions or streamflow projections can be obtained by contacting:

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WATER NETWORK CHANGES for 2018

A new snow survey station, Hyland River B, was established in the Liard drainage for 2018. This bulletin, as well as earlier editions, is available online at: www.env.gov.yk.ca/snowbulletin

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Other agencies that contribute significantly to the Snow Survey Program by providing data, assistance and information for the bulletin are:

Data Collection Officer, Natural Resources Conservation Service, United States Department of Agriculture

Meteorologist, Wildland Fire Management, Yukon Department of Community Services, Whitehorse

Officer in Charge, Water Survey of Canada, Whitehorse

Water Management Engineer, Yukon Energy Corporation

Agencies cooperating with Environment in the Snow Survey Program are:

B.C. Ministry of Environment, Water Stewardship Division

North Yukon Renewable Resource Council

Parks Canada

*Yukon Department of Highways and Public Works
Yukon Department of Energy Mines and Resources, Compliance
Monitoring and Inspections Branch*

Yukon Department of Environment, Information Management and Technology Branch

YUKON TERRITORY SNOWPACK CONDITIONS AND RUNOFF PROJECTION

WEATHER

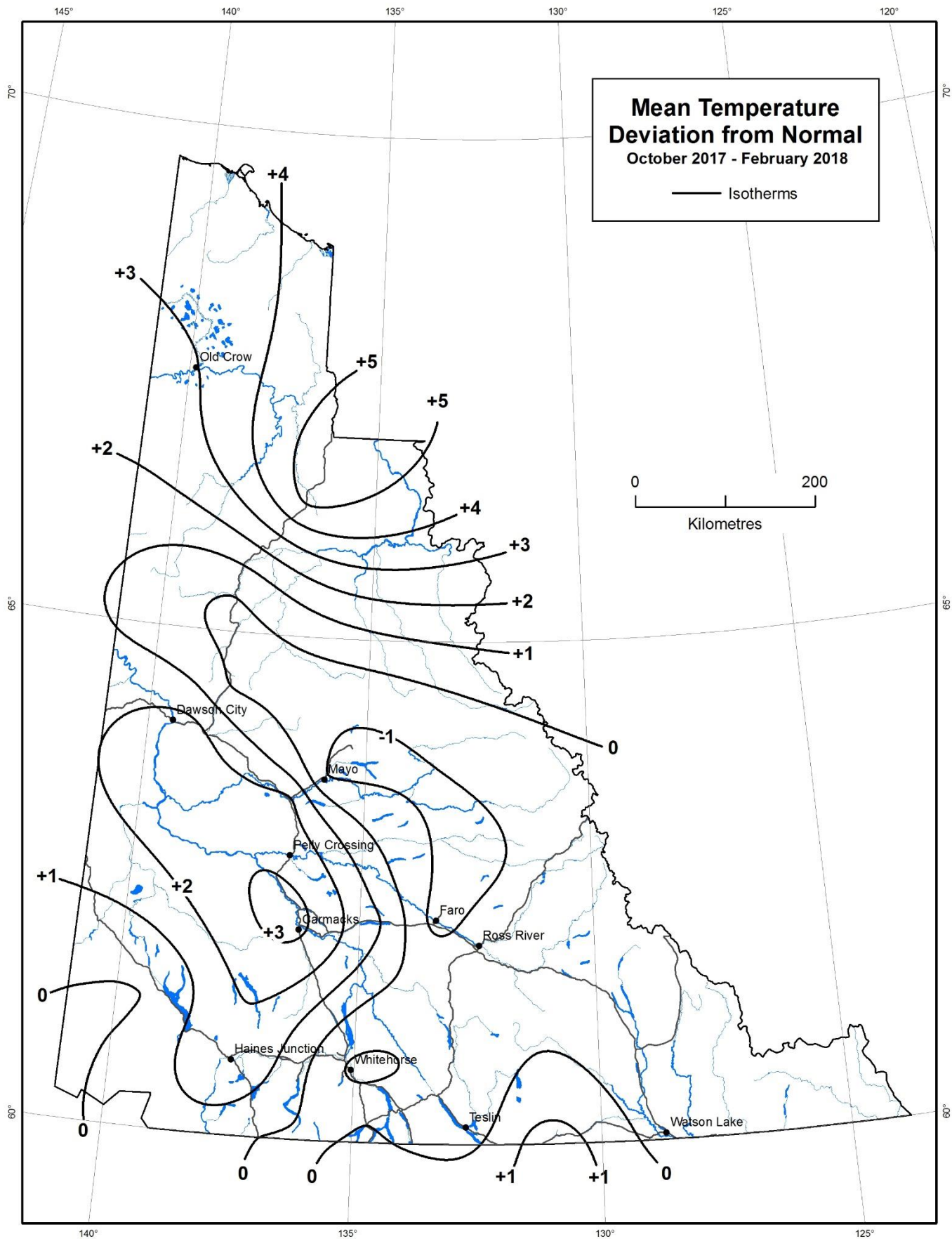
Colder than normal temperatures persisted across most of the territory early in the March followed, mid-month, by a rapid warming with temperatures well above freezing in all communities except for Old Crow. This period was followed closely by a storm system from the North, bringing record breaking snowfall events to Carmacks and Whitehorse, with double the normal March precipitation observed, along with Burwash and Watson Lake. Temperature anomalies were nearly balanced by the extremes of the month; Old Crow to Dawson and parts of central Yukon had mean March temperatures slightly warmer than normal while the remaining stations were near normal.

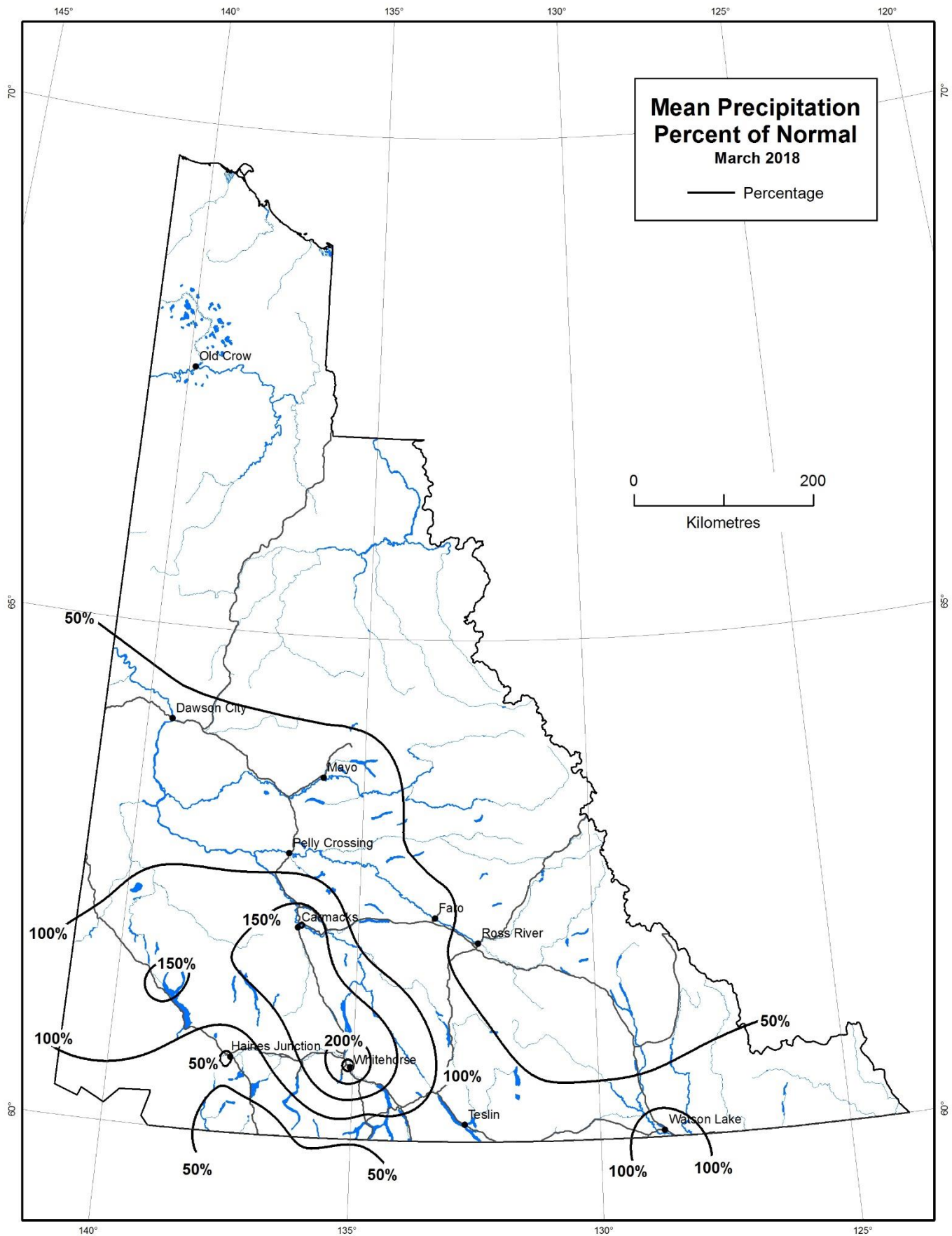
SNOWPACK

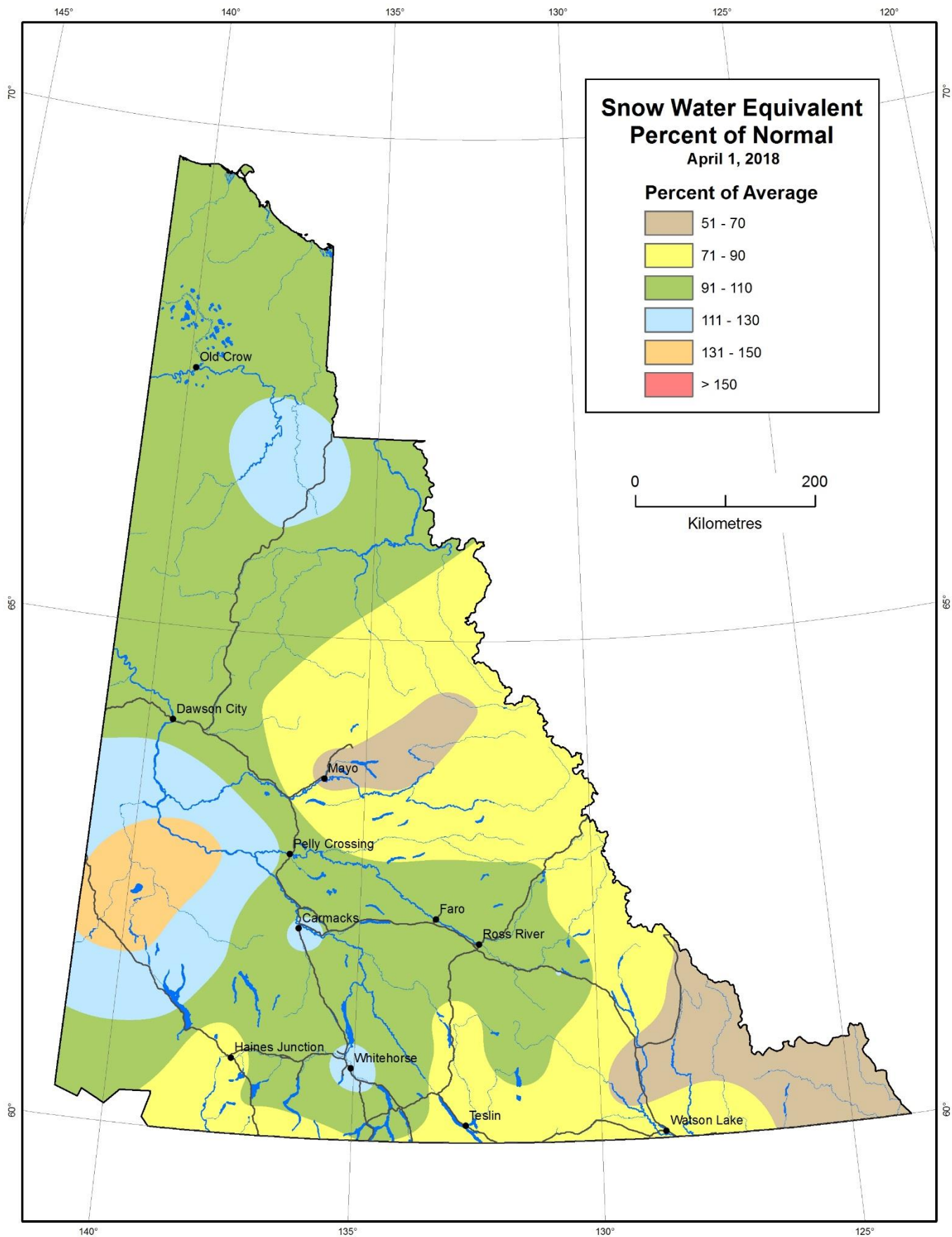
The April 1 snowpack is near normal in the far North and South-Central Yukon with isolated zones of higher than normal snow water equivalent around Carmacks, Whitehorse, and Eagle Plains. Lower than normal snowpack persists in the Stewart and Liard River watersheds, and across the South in Haines Junction, Teslin, and Watson Lake, while the normal or higher zone extends down to include Tagish. An area of much higher than normal snowpack exists in the White River area. Data from British Columbia and Alaska indicate below normal snowpack conditions to the immediate south and southwest of the territory as well.

STREAMFLOW

The Yukon River at Whitehorse as well as the Stewart and Liard experienced below normal streamflow during the Month of March. The Pelly, Peel, and Porcupine Rivers are all near normal with only the Alsek reporting well above normal flows for the month of March.





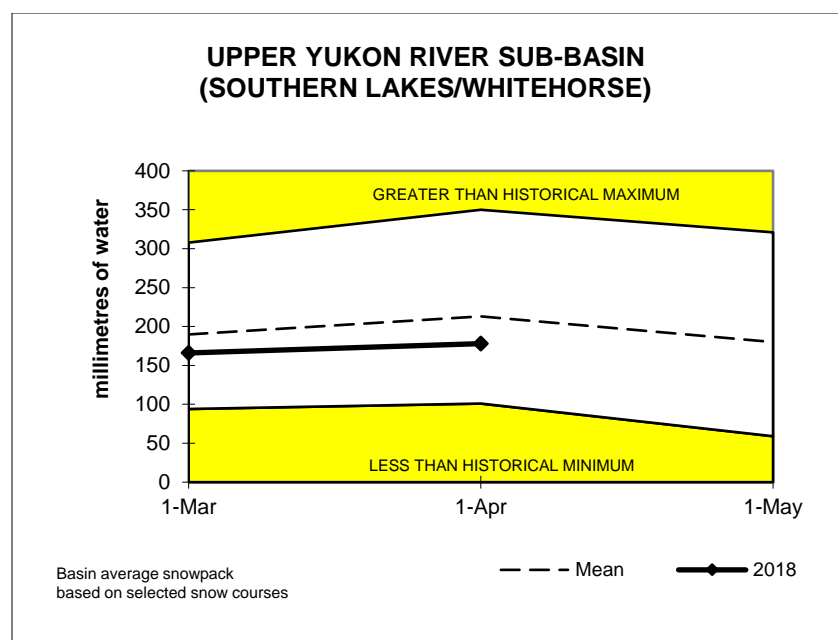


YUKON RIVER BASIN

April 1 snowpack conditions in the Yukon River basin are quite variable.

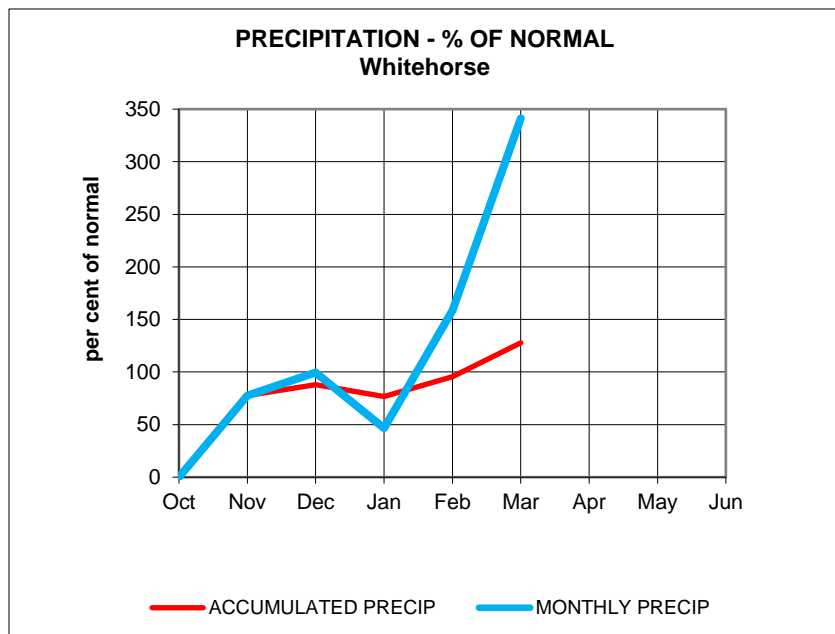
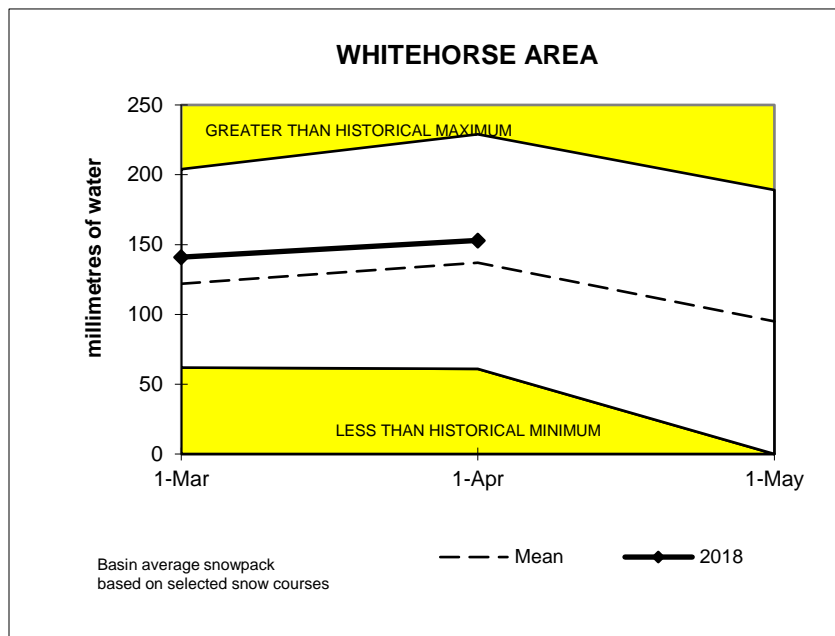
UPPER YUKON RIVER SUB-BASIN (SOUTHERN LAKES)

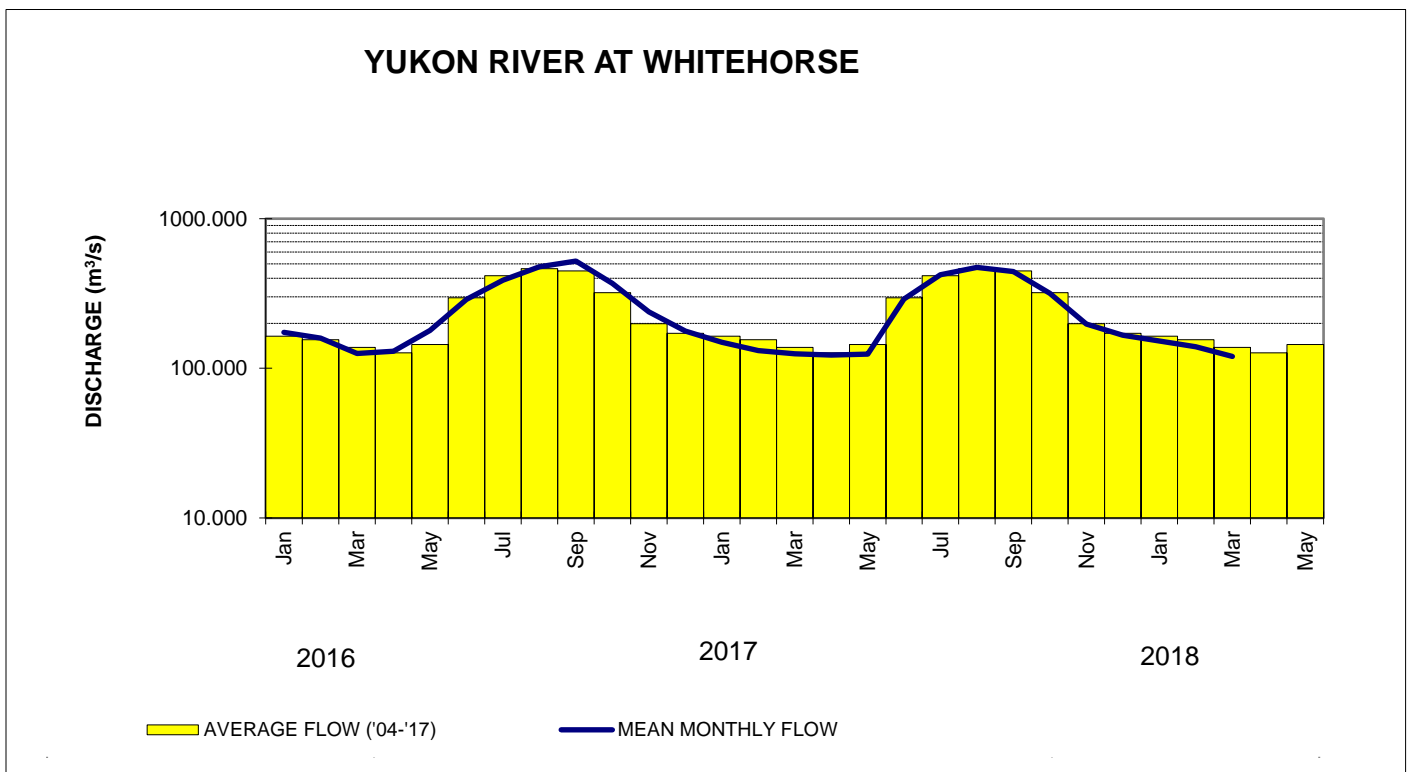
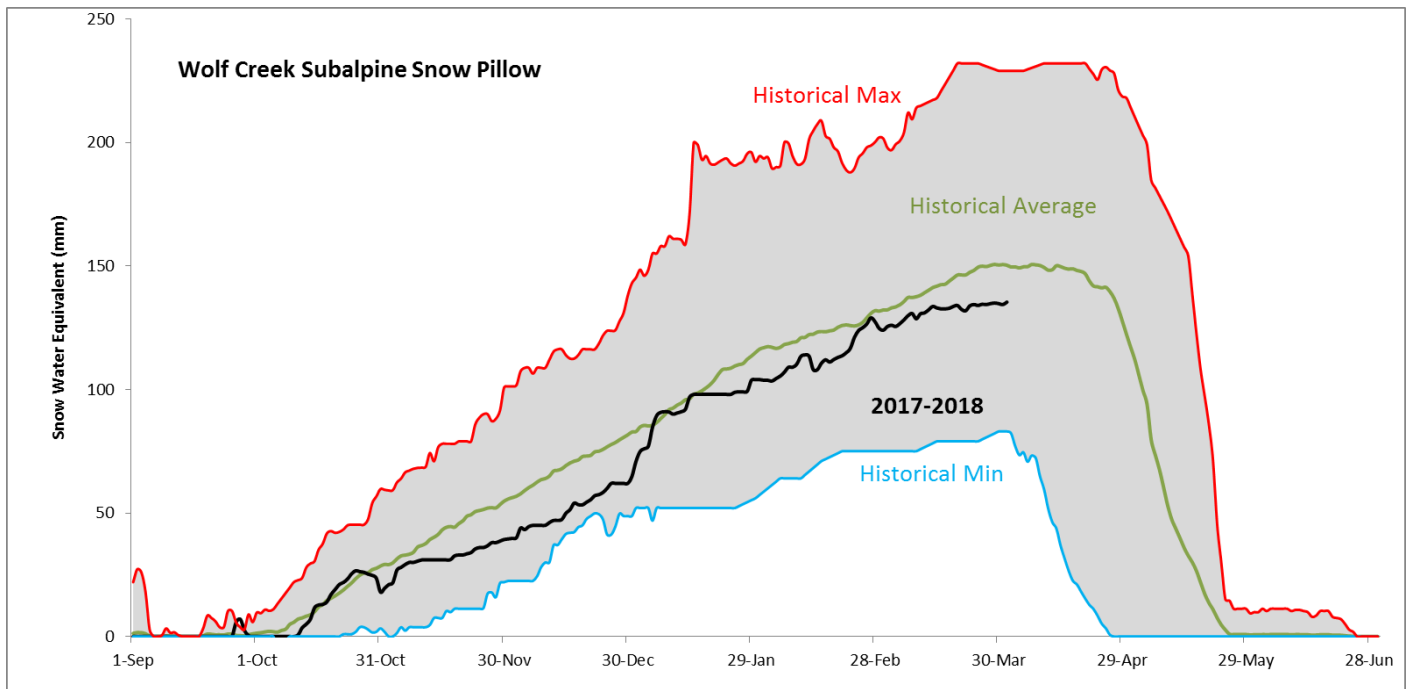
On average, snowpack conditions in the upper Yukon River watershed are slightly below normal. Values range from 63 per cent of normal at Atlin, B.C. to 109 per cent of normal at Tagish. The basin-wide average is estimated to be 84 per cent of normal.



WHITEHORSE AREA

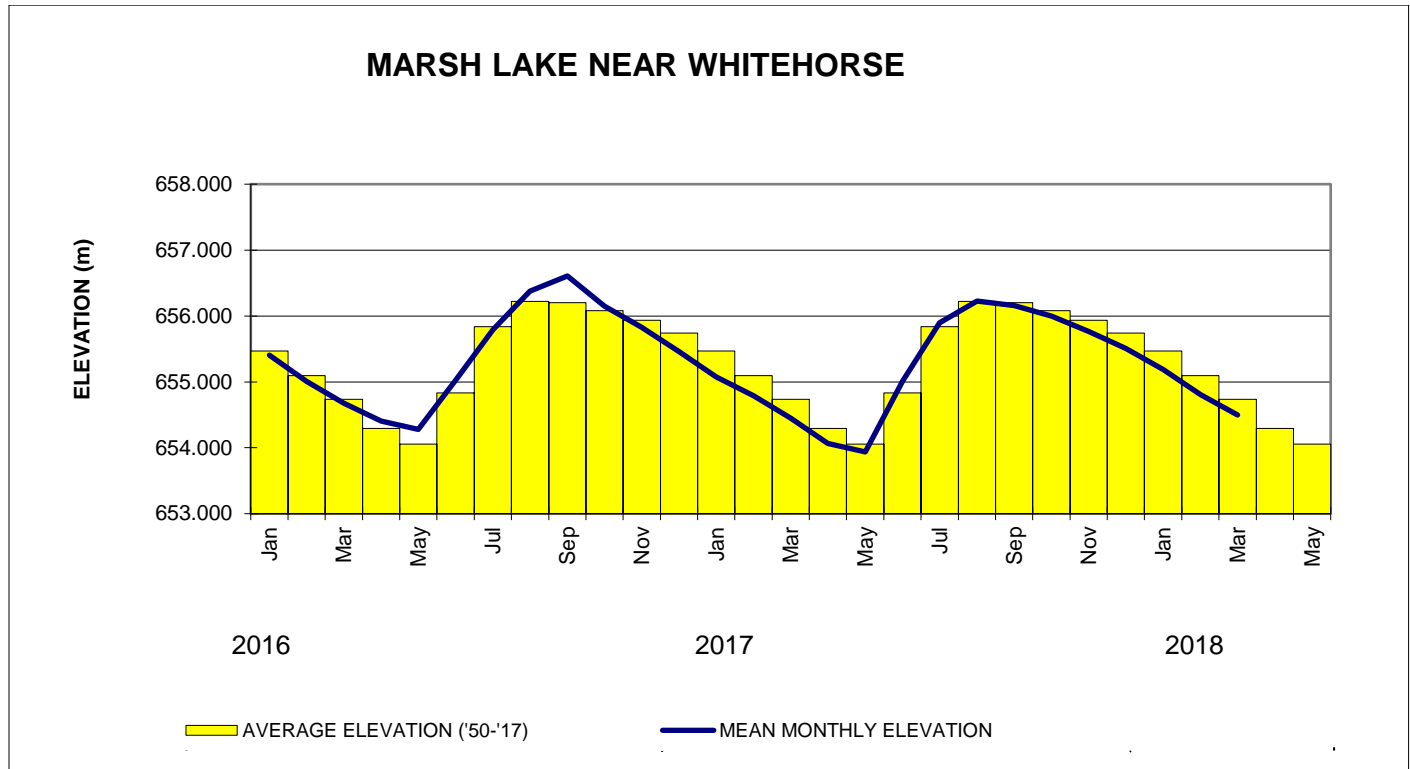
April 1 snowpack conditions in the Whitehorse area are slightly above normal. Values range from 101 per cent of normal at Montana Mountain to 122 per cent of normal at Whitehorse Airport. An area-wide average is estimated to be 112 per cent of normal.





YUKON RIVER and MARSH LAKE

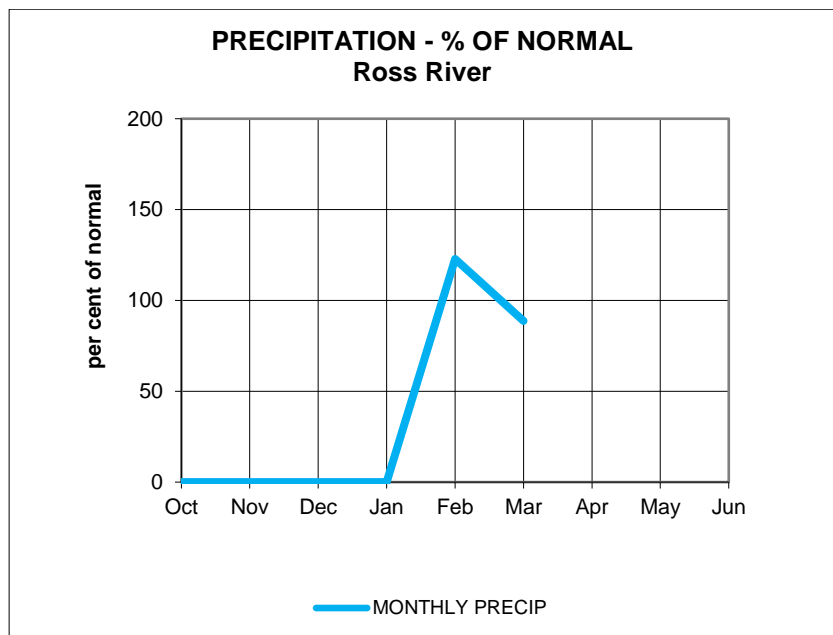
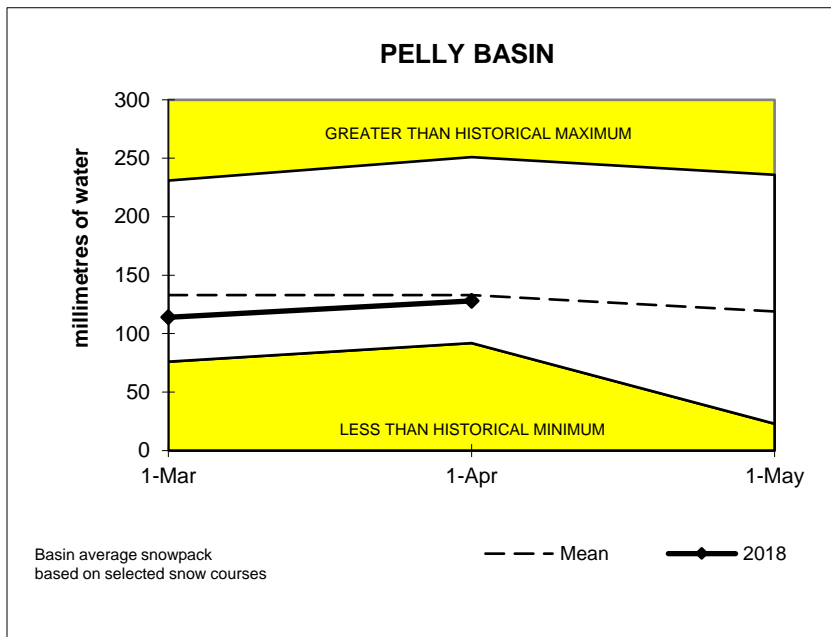
The mean elevation of Marsh Lake during March was 654.497 or 0.240 m below normal. Yukon River at Whitehorse mean discharge during March was 87 per cent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are each expected to be 85 and 90 per cent of normal, respectively. The Marsh Lake peak water level is expected to be near normal.



PELLY RIVER SUB-BASIN

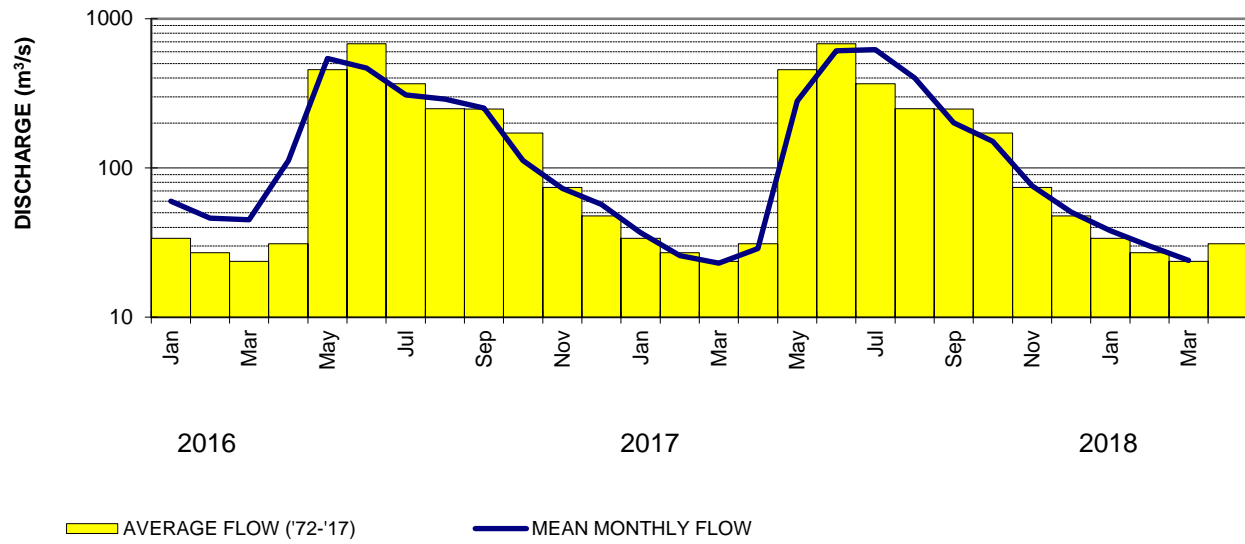
April 1 snowpack conditions in the Pelly River sub-basin are below normal. Values for snow water equivalent range from 97 per cent of normal at Twin Creeks to 96 per cent of normal at Hoole River. A basin-wide average has been estimated at 96 per cent of normal.

Mean March streamflow for the watershed was 101 per cent of normal as indicated by the Pelly River below Vangorda Creek. Given normal summer meteorological conditions, volume runoff and peak flows for the season are each expected to be 95 and 100 per cent of normal, respectively.



No precipitation data were reported for October to December 2017 or March 2018.

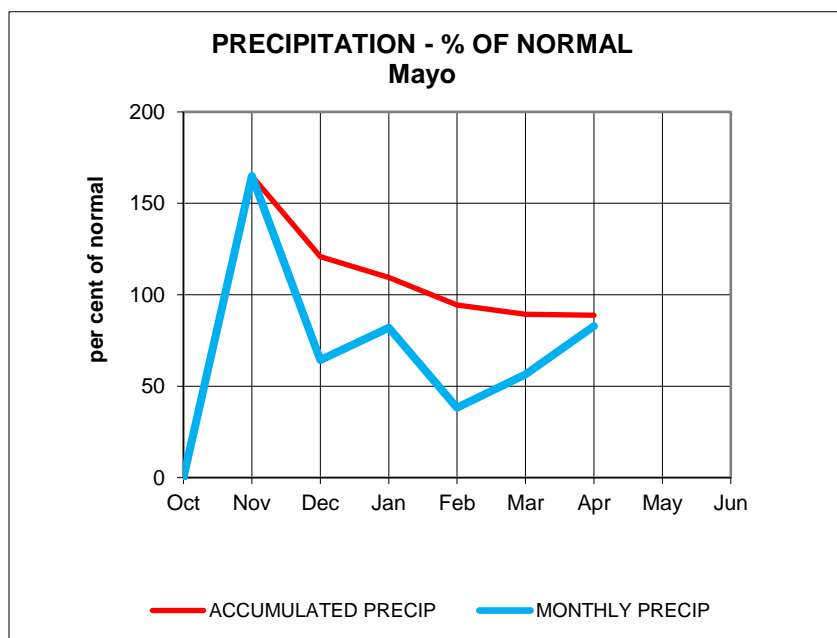
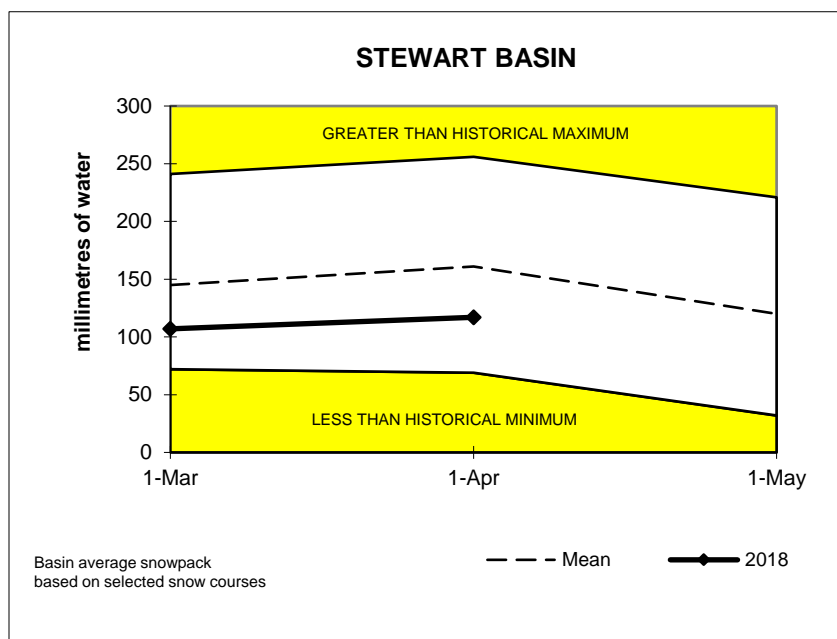
PELLY RIVER BELOW VANGORDA CREEK

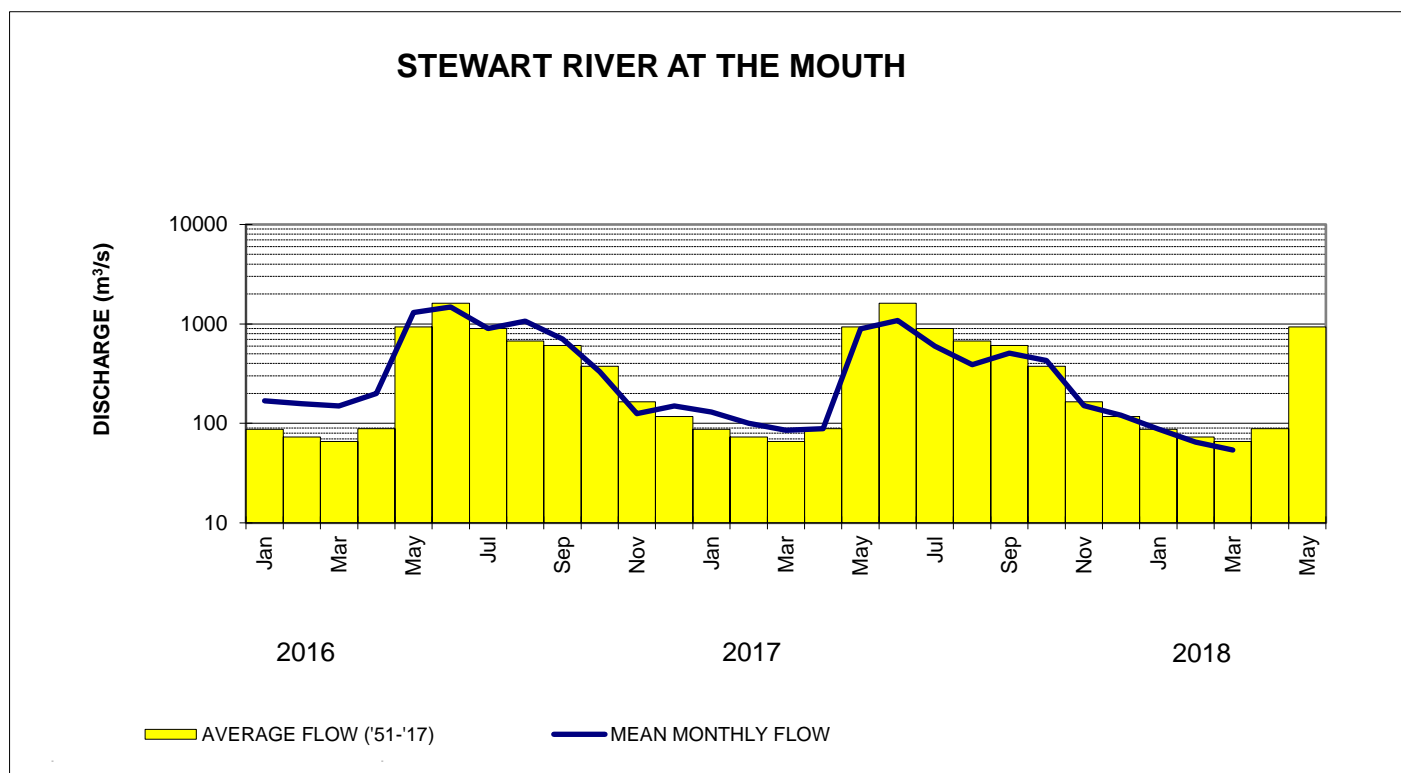
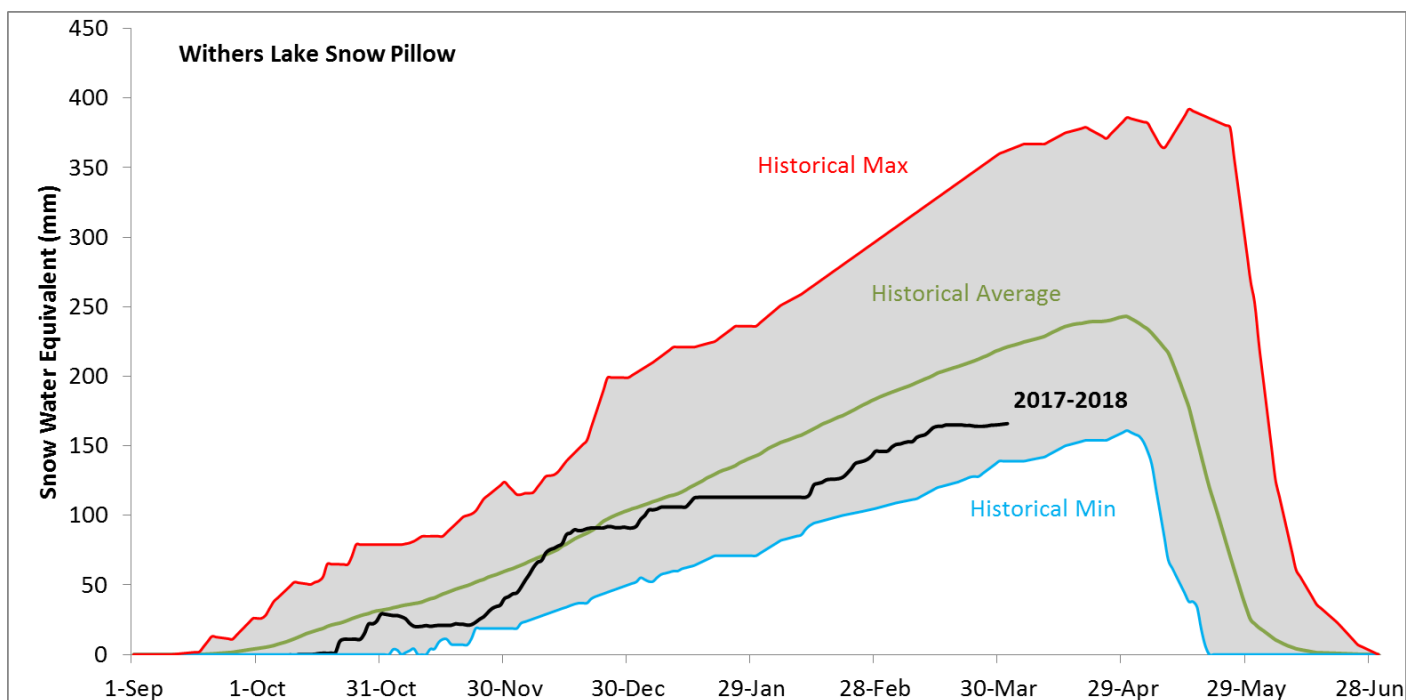


STEWART RIVER SUB-BASIN

April 1 snowpack conditions in the Stewart River watershed are well below normal. Values of snow water equivalent range from 58 per cent of normal at Mayo Airport to 79 per cent of normal at Calumet. A basin-wide average has been estimated to be 72 per cent of normal.

Mean March streamflow for the watershed was 82 per cent of normal as indicated by the Stewart River at the Mouth. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 75 and 80 per cent of normal, respectively.

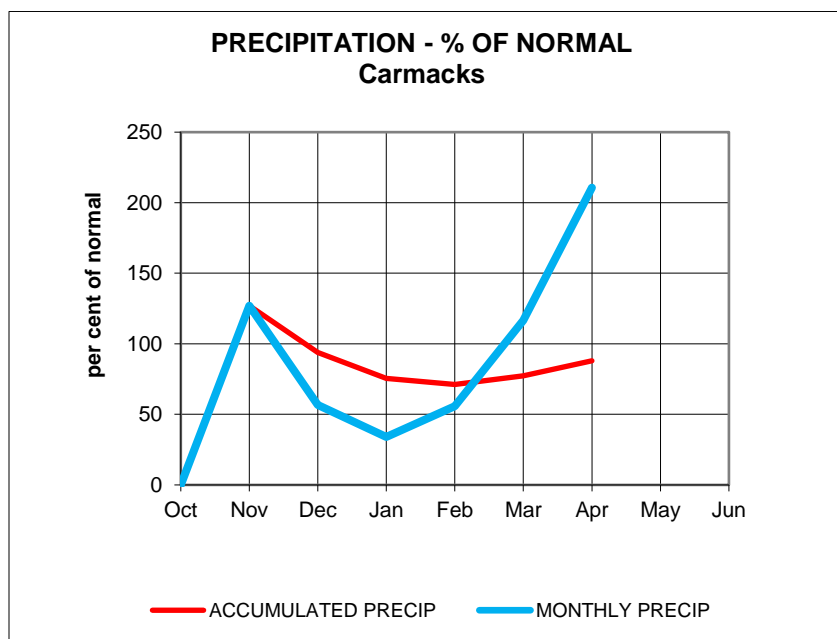
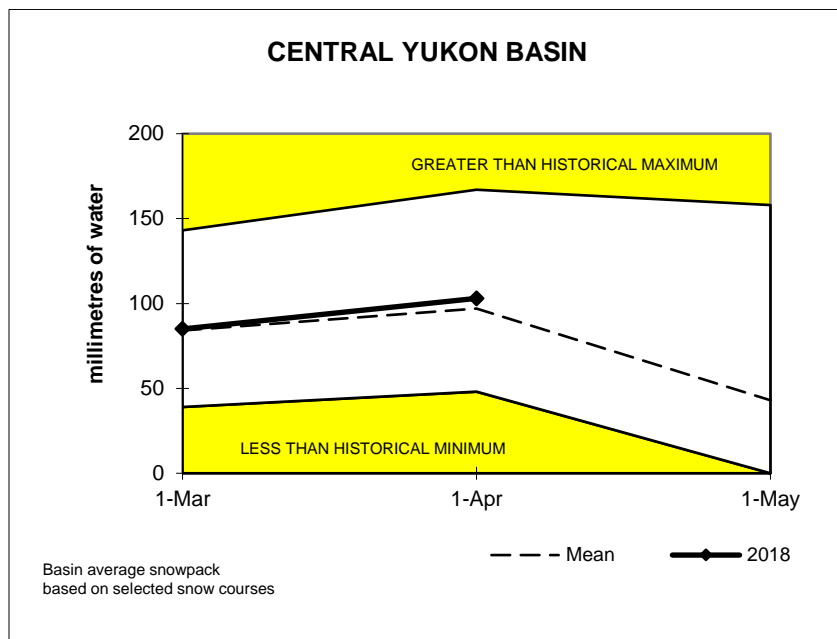




CENTRAL YUKON RIVER BASIN

(CARMACKS AREA)

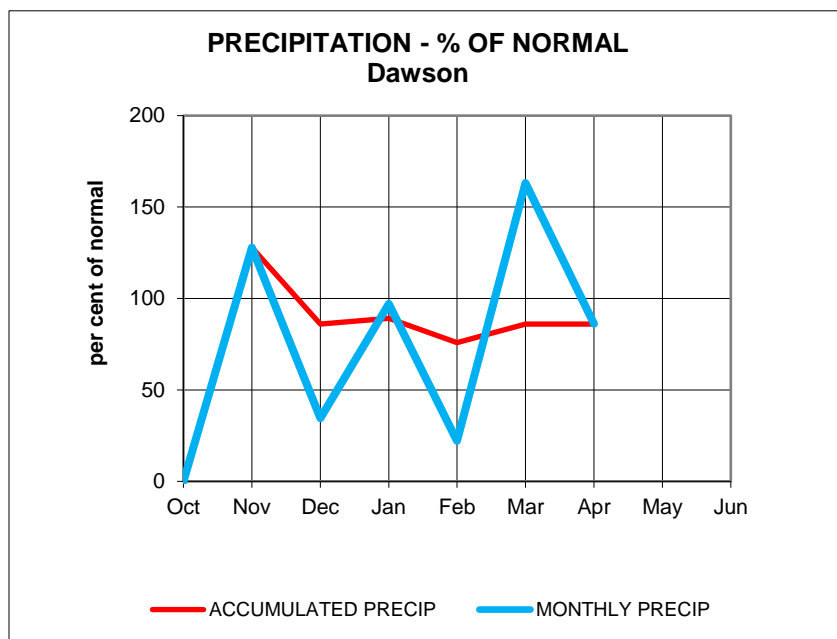
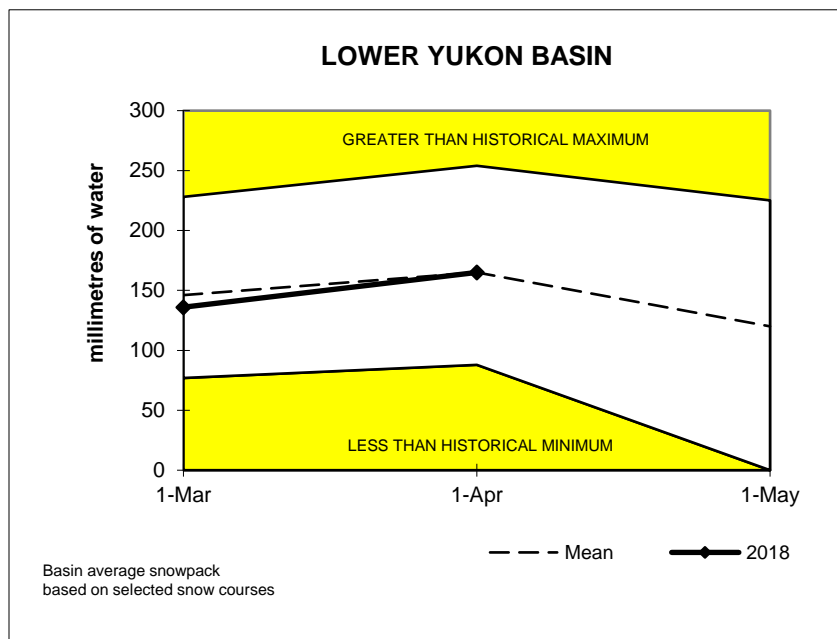
April 1 snowpack conditions in the Carmacks area are slightly above normal. Values of snow water equivalent range from 95 per cent of normal at Williams Creek to 124 per cent of normal at MacIntosh. An area-wide average has been estimated to be 106 per cent of normal.



LOWER YUKON RIVER BASIN

(DAWSON AREA)

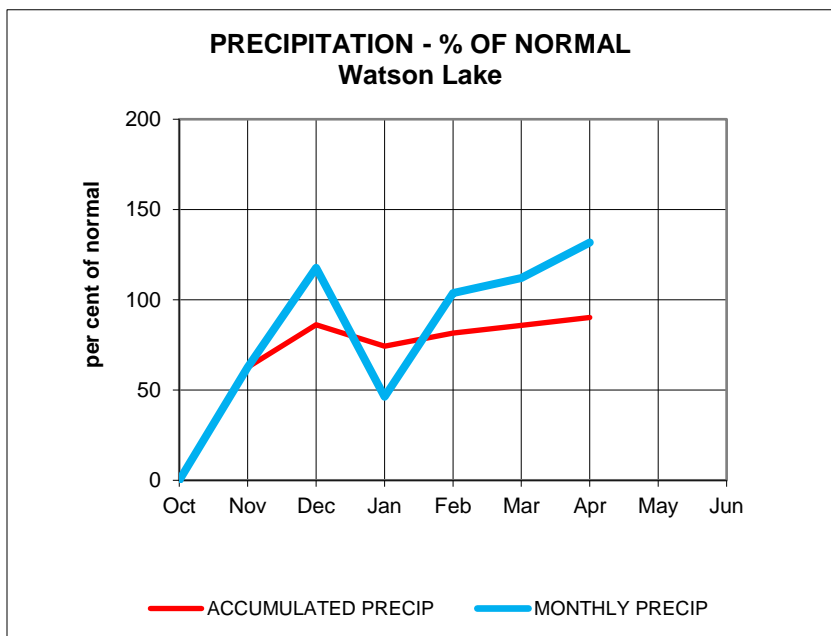
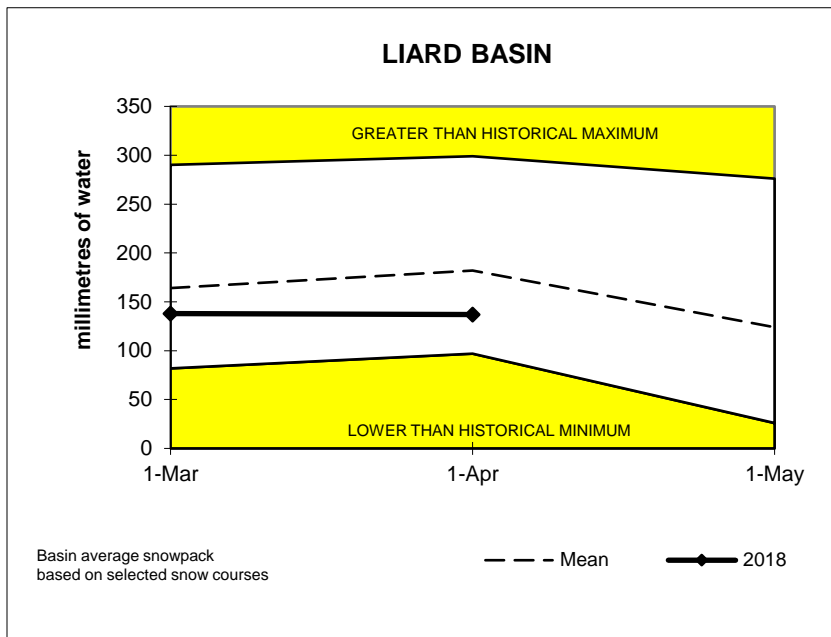
April 1 snowpack conditions in the Dawson area are normal. Values of snow water equivalent range from 90 per cent of normal at Grizzly Creek to 106 per cent of normal at King Solomon Dome. An area-wide average has been estimated to be 100 per cent of normal.



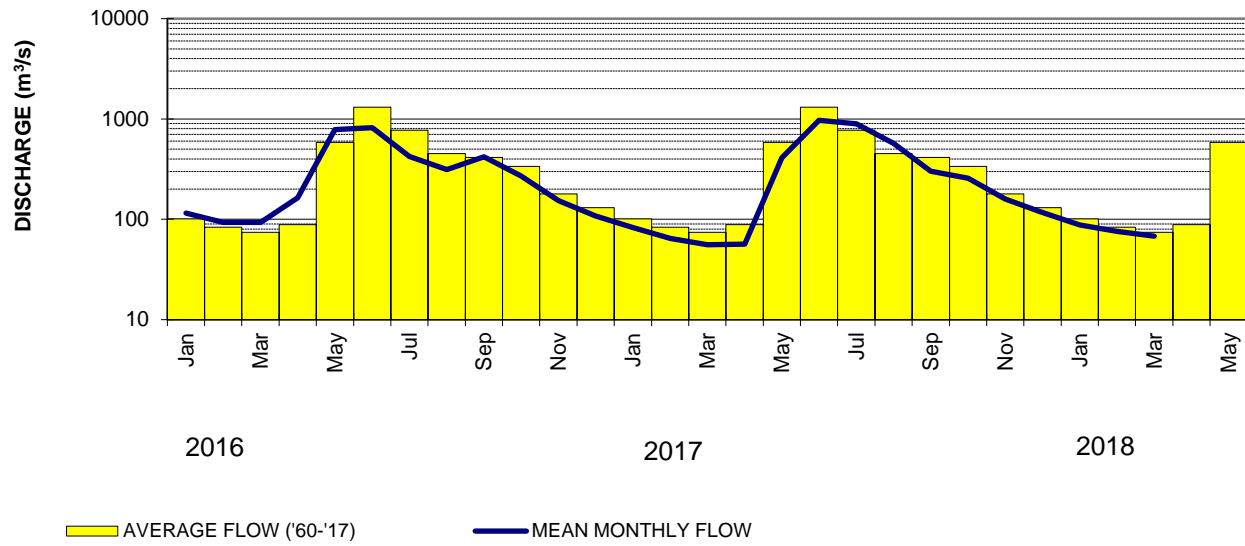
LIARD RIVER BASIN

April 1 snowpack conditions within the Liard River watershed are well below normal. Values of snow water equivalent range from 55 per cent of normal at Frances River to 88 per cent of normal at Tintina Airport. A basin-wide average has been estimated to be 75 per cent of normal.

Mean March streamflow for the Liard River upstream of Upper Liard was 92 per cent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 80 and 85 per cent of normal, respectively.



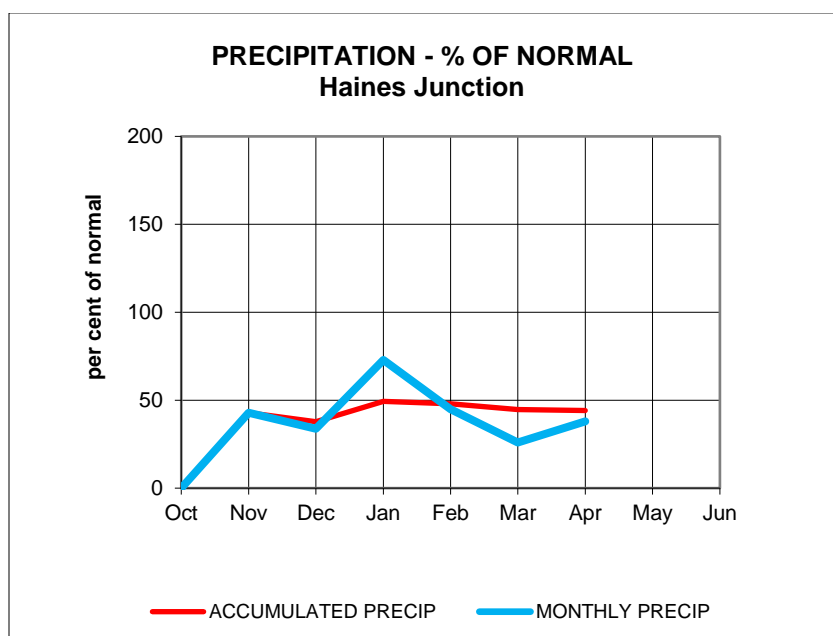
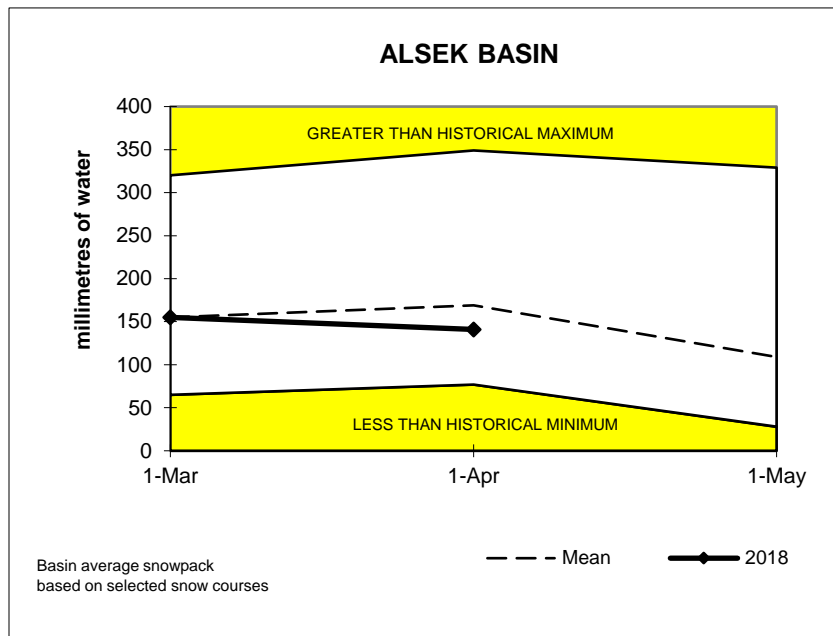
LIARD RIVER AT UPPER CROSSING



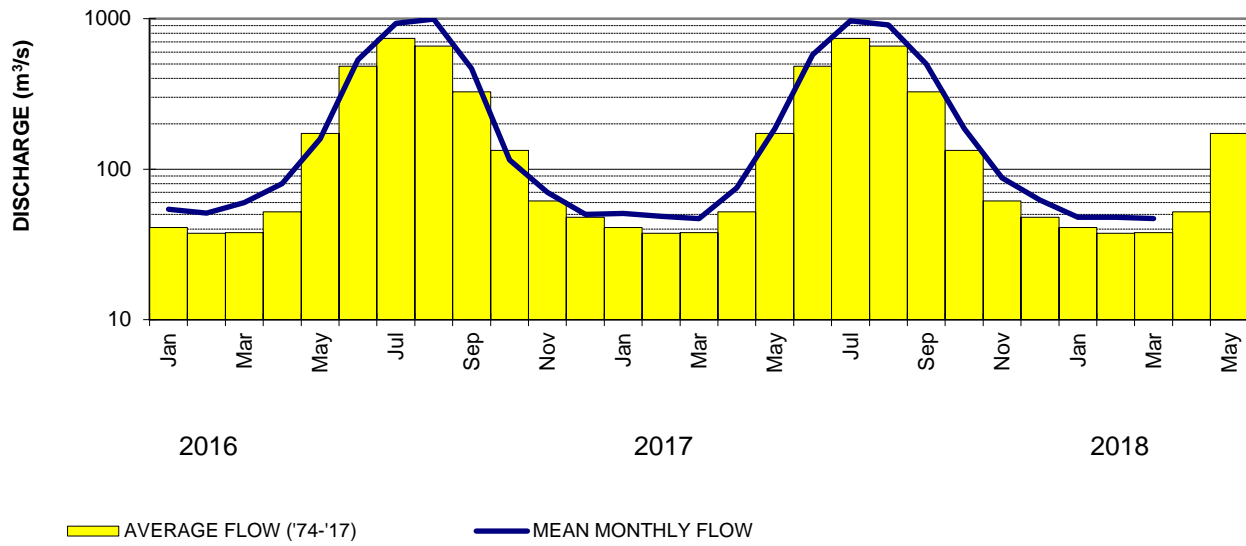
ALSEK RIVER BASIN

April 1 snowpack conditions within the Alsek River watershed are below normal. Values of snow water equivalent range from 70 per cent of normal at Summit to 103 per cent of normal at Canyon Lake. A basin-wide average has been estimated to be 83 per cent of normal.

Mean monthly streamflow for March at the Alsek River above Bates River was 124 per cent of normal. The Alsek River is primarily a glacial regime type, which is largely dependent on summer temperatures. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 85 and 90 per cent of normal, respectively.



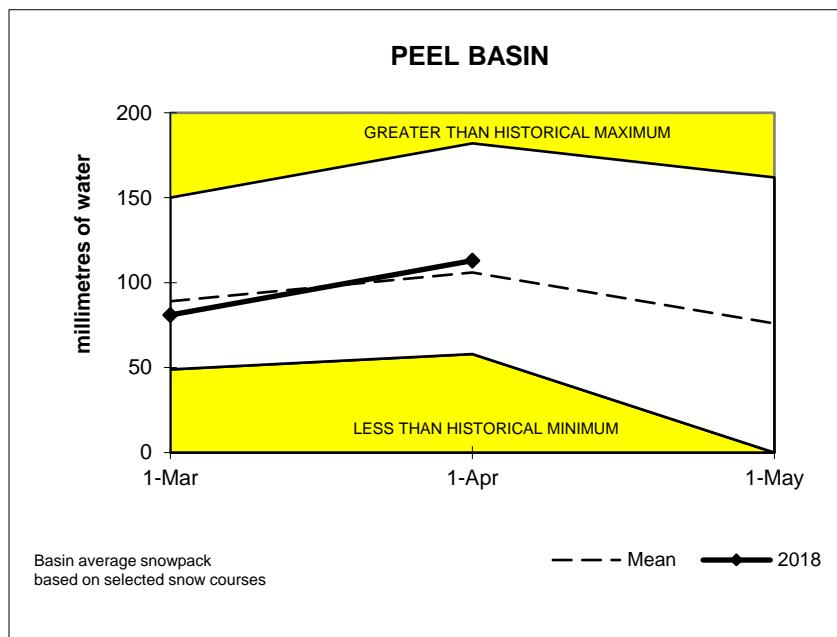
ALSEK RIVER ABOVE BATES RIVER



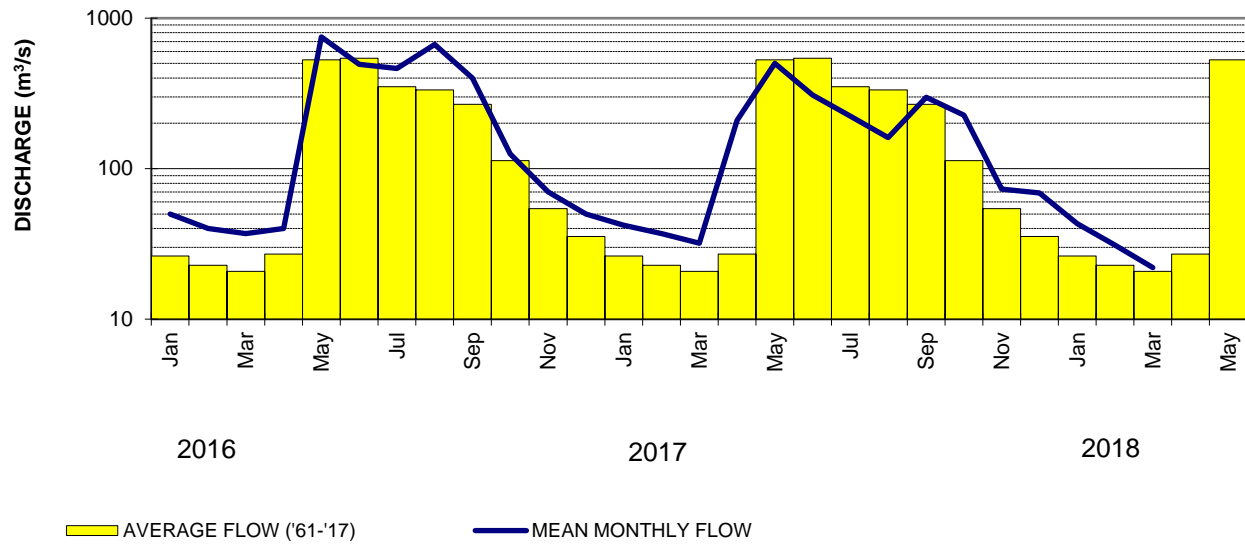
PEEL RIVER BASIN

April 1 snowpack conditions in the Peel River watershed are slightly above normal. Values of snow water equivalent range from 95 per cent of normal at Ogilvie River to 117 per cent of normal at Blackstone River. A basin-wide average has been estimated to be 106 per cent of normal.

Mean monthly streamflow for March, as indicated by the Peel River above Canyon Creek station, was 106 per cent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 105 and 110 per cent of normal, respectively.



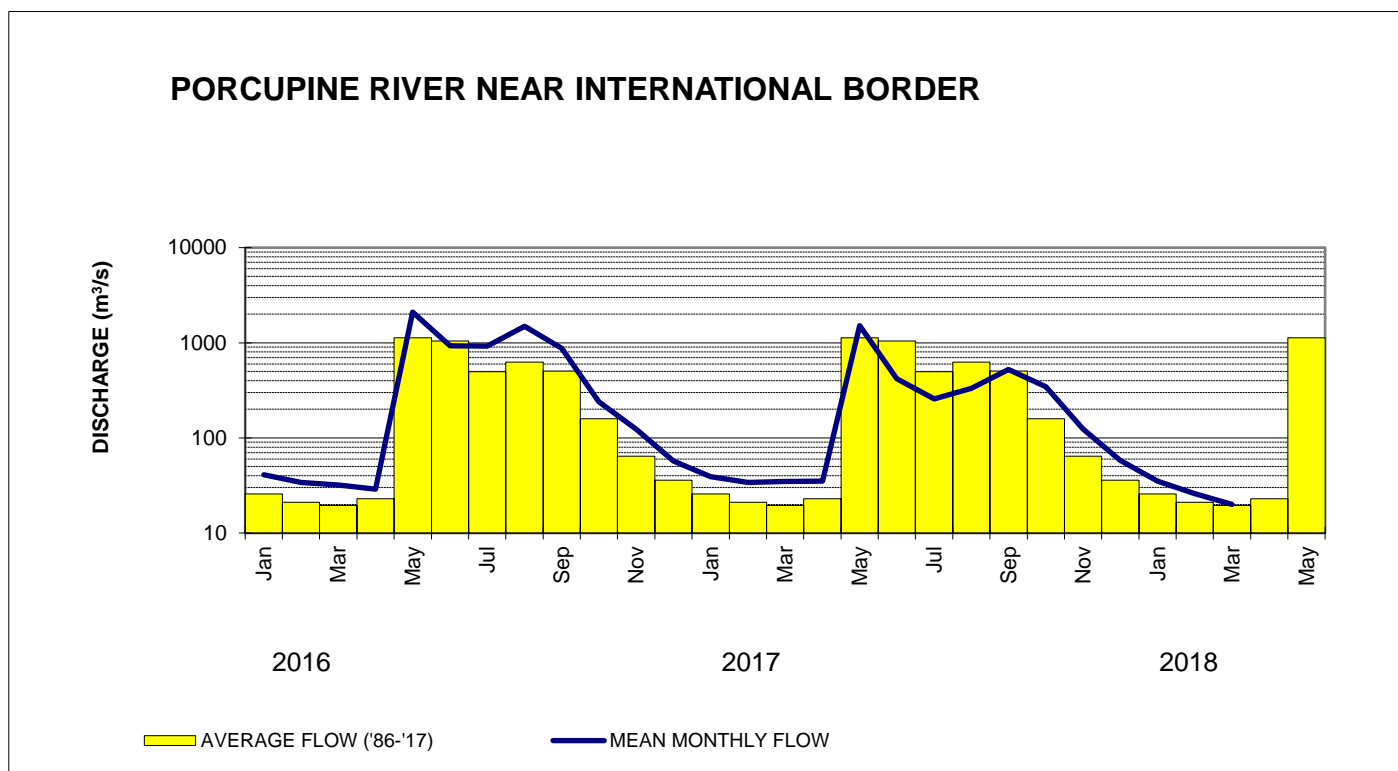
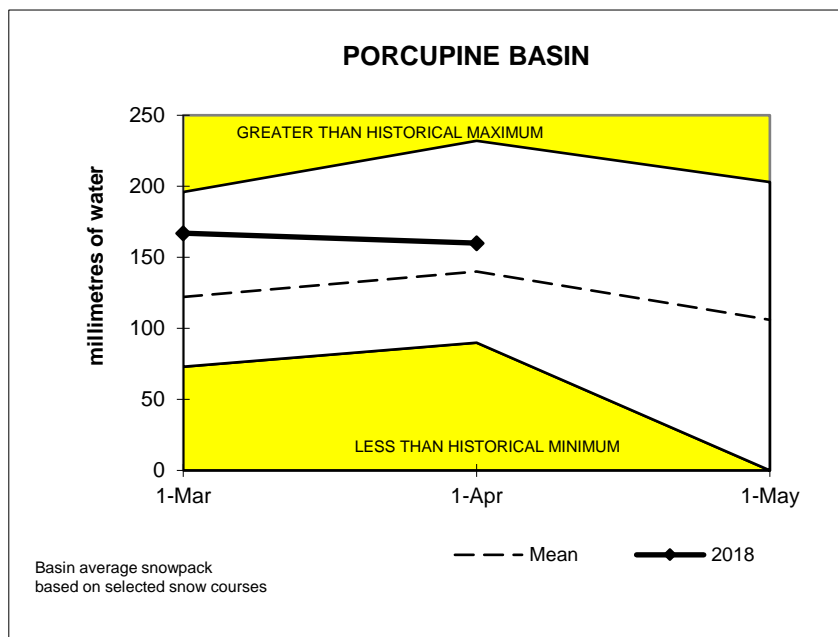
PEEL RIVER ABOVE CANYON CREEK



PORCUPINE RIVER BASIN

April 1 snowpack conditions in the Porcupine River watershed are above normal. Snow water equivalent values range from 108 per cent of normal at Old Crow and Eagle Plains to 126 per cent of normal at Eagle River. A basin-wide average has been estimated to be 114 per cent of normal.

Mean March streamflow for the basin, as indicated by the Porcupine River near the International Border, was 103 per cent of normal. There is no flow forecast available for April 1st.



Drainage basin and snow course

For Sample Date: 2018-04-01

Name	Number	Elevation (m)	Date of survey	This year snow depth (cm)	Water content (mm)	Last year (mm)	Water content average	Years of record
Alsek River Basin								
Canyon Lake	08AA-SC01	1160	2018-03-30	48	96	81	93	39
Alder Creek	08AA-SC02	768	2018-03-27	68	146	142 E	157	38
Aishihik Lake	08AA-SC03	945	2018-03-30	41	75	97	80	24
Haines Junction Farm	08AA-SC04	610	2018-03-27	34	76	125	98	18
Summit	08AB-SC03	1000	2018-03-27	75	180	292	258	38
Yukon River Basin								
Tagish	09AA-SC01	1080	2018-03-28	71	160	130	147	42
Montana Mountain	09AA-SC02	1020	2018-03-28	66	144	137	142	41
Log Cabin (B.C.)	09AA-SC03	884	2018-03-26	103	285	427	377	58
Atlin (B.C.)	09AA-SC04	730	2018-03-27	40	75	92	119	53
Mt McIntyre B	09AB-SC01B	1097	2018-03-28	85	182	173	156	42
Whitehorse Airport	09AB-SC02	700	2018-03-26	61	124	76	102	51
Meadow Creek	09AD-SC01	1235	2018-03-27	96	228	200	282	41
Jordan Lake	09AD-SC02	930	2018-03-28	66	121	81	138	31
Morley Lake	09AE-SC01	824	2018-03-28	59	126	83	150	30
Mount Berdoe	09AH-SC01	1035	2018-03-29	73	135	103 E	109	42
Satasha Lake	09AH-SC03	1106	2018-03-29	48	91	118	100	31
Williams Creek	09AH-SC04	914	2018-03-29	55	96	102 E	101	23
Twin Creeks B	09BA-SC02B	900	2018-03-27	62	123	127	120	2
Hoole River	09BA-SC03	1036	2018-03-28	67	133	123	139	41
Burns Lake	09BA-SC04	1112	2018-03-27	77	158	197	224	32
Finlayson Airstrip	09BA-SC05	988	2018-03-28	58	118	76	106	31
Fuller Lake	09BB-SC03	1126	2018-03-27	68	124	173	198	31
Russell Lake	09BB-SC04	1060	2018-03-27	89	193	181	230	31
Rose Creek	09BC-SC01	1080	2018-03-29	60	113	106 E	111	24
Mount Nansen	09CA-SC01	1021	2018-03-29	48	77	83 E	80	42
MacIntosh	09CA-SC02	1160	2018-03-29	65	105	96	99	42
Burwash Airstrip	09CA-SC03	810	2018-03-27	29	54	44	42	41
Beaver Creek	09CB-SC01	655	2018-03-26	59	113	84	86	43
Chair Mountain	09CB-SC02	1067	2018-03-26	74	153	102 E	98	28
Casino Creek	09CD-SC01	1065	2018-03-29	92	202	115 E	127	40
Pelly Farm	09CD-SC03	472	2018-03-29	42	106	59	78	32
Plata Airstrip	09DA-SC01	830	2018-03-27	65	139	140	190	40
Withers Lake	09DB-SC01	975	2018-03-27	81	170	195	231	32
Rackla Lake	09DB-SC02	1040	2018-03-27	66	124	198	192	31
Mayo Airport A	09DC-SC01A	540	2018-03-29	36	56	88	97	48

Code "E" - Estimate, Code "B" - Survey date is outside of valid sampling range

Drainage basin and snow course

For Sample Date: 2018-04-01

Name	Number	Elevation (m)	Date of survey	This year snow depth (cm)	Water content (mm)	Last year (mm)	Water content average	Years of record
Yukon River Basin								
Mayo Airport B	09DC-SC01B	540	2018-03-29	40	64	80	105	30
Edwards Lake	09DC-SC02	830	2018-03-27	60	109	107	162	31
Calumet	09DD-SC01	1310	2018-03-29	73	155	165	195	39
King Solomon Dome	09EA-SC01	1080	2018-03-27	78	172	153	163	42
Grizzly Creek	09EA-SC02	975	2018-03-28	72	161	145	178	42
Midnight Dome	09EB-SC01	855	2018-03-27	75	161	152	154	43
Boundary (Alaska)	09EC-SC02	1005	2018-03-29	66	137	N.S.	136	47
Porcupine River Basin								
Riff's Ridge	09FA-SC01	650	2018-03-28	74	165	156	148	30
Eagle Plains	09FB-SC01	710	2018-03-28	82	178	191	165	34
Eagle River	09FB-SC02	340	2018-03-28	81	172	N.S.	136	33
Old Crow	09FD-SC01	299	2018-03-29	72	130 E	119	120	36
Liard River Basin								
Watson Lake Airport	10AA-SC01	685	2018-03-27	76	120	107	140	53
Tintina Airstrip	10AA-SC02	1067	2018-03-28	85	183	158	207	40
Pine Lake Airstrip	10AA-SC03	995	2018-03-28	81	172	82	225	42
Ford Lake	10AA-SC04	1110	2018-03-28	91	191	135	192	31
Frances River	10AB-SC01	730	2018-03-29	63	88	107	160	43
Hyland River	10AD-SC01	855	2018-03-28	73	121	160	178	41
Hyland River B	10AD-SC01B	880	2018-03-28	78	131	N/A	N/A	N/A
Peel River Basin								
Blackstone River	10MA-SC01	920	2018-03-28	64	123	120	105	42
Ogilvie River	10MA-SC02	595	2018-03-28	55	102	107	107	40
Bonnet Plume Lake	10MB-SC01	1120	2018-03-27	66	125	182	180	31
Alaska Snow Courses								
Eaglecrest	08AK-SC01	305	2018-04-02	69	203	546	503	36
Moore Creek Bridge	08AK-SC02	700	2018-04-03	74	191	N.S.	530	25

Code "E" - Estimate, Code "B" - Survey date is outside of valid sampling range

Index of Yukon snow courses

Name	Number	Elevation (m)	Latitude	Longitude	Agency
Yukon River Basin					
Tagish	09AA-SC1	1080	60°17'	134°11'	2
Montana Mountain	09AA-SC2	1020	60°08'	134°44'	2
Log Cabin (B.C.)	09AA-SC3	884	59°46'	134°58'	2
Atlin (B.C.)	09AA-SC4	730	59°34'	133°42'	3
Mt. McIntyre B	09AB-SC1B	1097	60°39'	135°08'	1
Whitehorse Airport	09AB-SC2	700	60°42'	135°04'	1
Meadow Creek	09AD-SC1	1235	60°35'	133°05'	2
Jordan Lake	09AD-SC2	930	60°52'	132°50'	2
Morley Lake	09AE-SC1	824	60°00'	132°07'	2
Mount Berdoe	09AH-SC1	1035	62°02'	136°14'	2
Satasha Lake	09AH-SC3	1106	61°29'	136°16'	2
Williams Creek	09AH-SC4	914	60°21'	136°43'	2
Twin Creeks B	09BA-SC2B	900	62°37'	131°16'	2
Hoole River	09BA-SC3	1036	61°32'	131°36'	2
Burns Lake	09BA-SC4	1112	62°17'	129°57'	2
Finlayson Airstrip	09BA-SC5	988	61°42'	130°46'	2
Fuller Lake	09BB-SC3	1126	62°58'	130°46'	2
Rose Creek	09BC-SC01	1080	62°20'	133°23'	2
Russell Lake	09BB-SC4	1060	63°12'	133°29'	2
Mount Nansen	09CA-SC1	1021	62°02'	137°03'	2
Macintosh	09CA-SC2	1160	61°43'	137°20'	2
Burwash Airstrip	09CA-SC3	810	61°23'	139°03'	2
Beaver Creek	09CB-SC1	655	62°25'	140°51'	2
Chair Mountain	09CB-SC2	1067	62°04'	140°48'	2
Casino Creek	09CD-SC1	1164	62°44'	138°48'	2
Casino Creek	09CD-SC1	1164	62°44'	138°48'	2
Pelly Farm	09CD-SC3	472	62°50'	137°20'	8
Plata Airstrip	09DA-SC1	830	63°31'	132°03'	2
Plata Airstrip	09DA-SC1	830	63°31'	132°03'	2
Withers Lake	09DB-SC1	975	63°59'	132°18'	2
Rackla Lake	09DB-SC2	1040	64°17'	133°15'	2
Mayo Airport A	09DC-SC1A	540	63°38'	135°53'	2
Mayo Airport B	09DC-SC1B	540	63°38'	135°53'	2
Edwards Lake	09DC-SC2	830	63°42'	134°18'	2
Calumet	09DD-SC1	1310	63°55'	135°24'	2
King Solomon Dome	09EA-SC1	1080	63°52'	138°56'	2
Grizzly Creek	09EA-SC2	975	64°26'	138°16'	2
Midnight Dome	09EB-SC1	855	64°04'	139°24'	2

Name	Number	Elevation (m)	Latitude	Longitude	Agency
Liard River Basin					
Watson Lake Airport	10AA-SC1	685	60°07'	128°50'	2
Tintina Airstrip	10AA-SC2	1067	61°05'	131°15'	2
Pine Lake Airstrip	10AA-SC3	995	60°06'	130°56'	2
Ford Lake	10AA-SC4	1110	60°47'	131°28'	2
Frances River	10AB-SC1	730	60°35'	129°11'	2
Hyland River	10AD-SC02	855	61°31'	128°16'	2
Hyland River B	10AD-SC02B	880	61°43'	128°18'	2
Alsek River Basin					
Canyon Lake	08AA-SC1	1160	61°07'	136°59'	7
Alder Creek	08AA-SC2	768	60°22'	137°06'	2
Aishihik Lake	08AA-SC3	945	61°12'	137°00'	7
Haines Junction Farm	08AA-SC4	610	60°45'	137°34'	2
Summit	08AB-SC3	1000	60°51'	137°47'	2
Peel River Basin					
Blackstone River	10MA-SC1	920	64°57'	138°15'	2
Ogilvie River	10MA-SC2	595	65°21'	138°18'	2
Bonnet Plume Lake	10MB-SC1	1120	64°18'	132°00'	2
Porcupine River Basin					
Riff's Ridge	09FA-SC1	650	65°57'	137°22'	2
Eagle Plains	09FB-SC1	710	66°22'	136°44'	2
Eagle River	09FB-SC2	340	66°27'	136°43'	2
Old Crow	09FD-SC1	299	67°34'	139°51'	9
Alaska Snow Courses					
Eaglecrest	08AK-SC01	305	58°17'	134°32'	4
Moore Creek Bridge	08AK-SC02	701	59°31'	135°15'	4
Boundary	09EC-SC02	1005	64°05'	141°27'	4

Numbers refer to agencies cooperating in the Yukon snow survey:

1. Yukon Department of Environment
2. Yukon Department of Energy Mines and Resources
3. British Columbia Ministry of Environment
4. USDA Natural Resources Conservation Service
5. Yukon Department of Highways and Public Works
6. Parks Canada
7. Yukon Energy Corp.
8. Private Contract
9. North Yukon Renewable Resource Council
10. Inactive

Location of water resource snow courses

