

YUKON SNOW SURVEY BULLETIN & WATER SUPPLY FORECAST

March 1, 2016

Prepared and issued by:
Water Resources Branch
Environment Yukon



PREFACE

The Yukon Snow Survey Bulletin and Water Supply Forecast is prepared and issued three times annually – after March 1st, April 1st and May 1st – by Environment Yukon’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 56 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 2016

There were no water network changes in 2016. 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 Yukon in the Snow Survey Program are:

B.C. Ministry of Environment, Water Stewardship Division,

Parks Canada

Yukon Department of Energy Mines and Resources, Compliance Monitoring and Inspections Branch

Yukon Department of Environment, Information Management and Technology Branch

Yukon Department of Highways and Public Works

YUKON TERRITORY SNOWPACK CONDITIONS AND RUNOFF PROJECTION

WEATHER

The winter of 2015 was significantly warmer and drier than normal as was 2014, but even more so. Winter air temperatures ranged from 3°C above normal in southern regions 6°C above normal in northern regions. Winter precipitation ranged from well below normal in southern regions to normal in northern regions. Slightly above normal precipitation was recorded in the Mayo area.

October

October 2015 was characterized by above normal air temperatures at all stations. The early fall was generally wet with normal or above normal precipitation amounts.

November

November was characterized by well above normal air temperatures reported at all stations, with greater anomalies in central and northern regions. Similar to October, precipitation was near normal or above in all regions.

December

Air temperature trends changed somewhat during the month of December with normal or slightly below normal values in southern regions and above values in central and northern regions, with the greatest anomalies in the north. Precipitation amounts were well below normal in most regions, with values generally ranging from 20 to 60 percent.

January

January was characterized again by well above normal temperatures throughout with anomaly values in the south ranging from 4 to 9°C above average, and, 5 to 12°C in central and northern regions.

February

February continued to be warm throughout the Territory with relatively consistent temperature anomalies of 4 to 8°C throughout. February precipitation was below normal, ranging from 20 to 60 percent, in central and northern regions and above

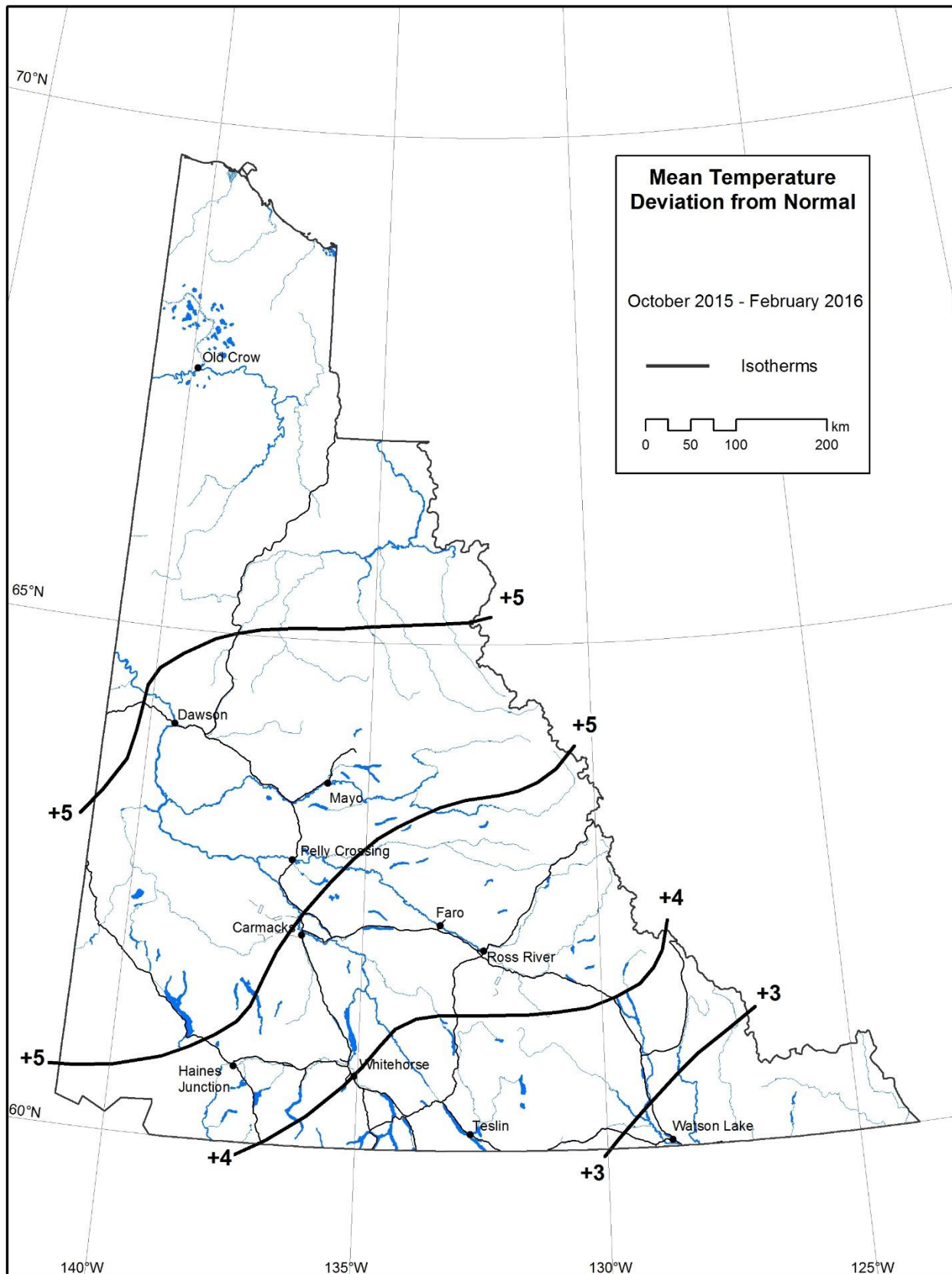
normal, ranging from 100 to 150 percent in southern regions.

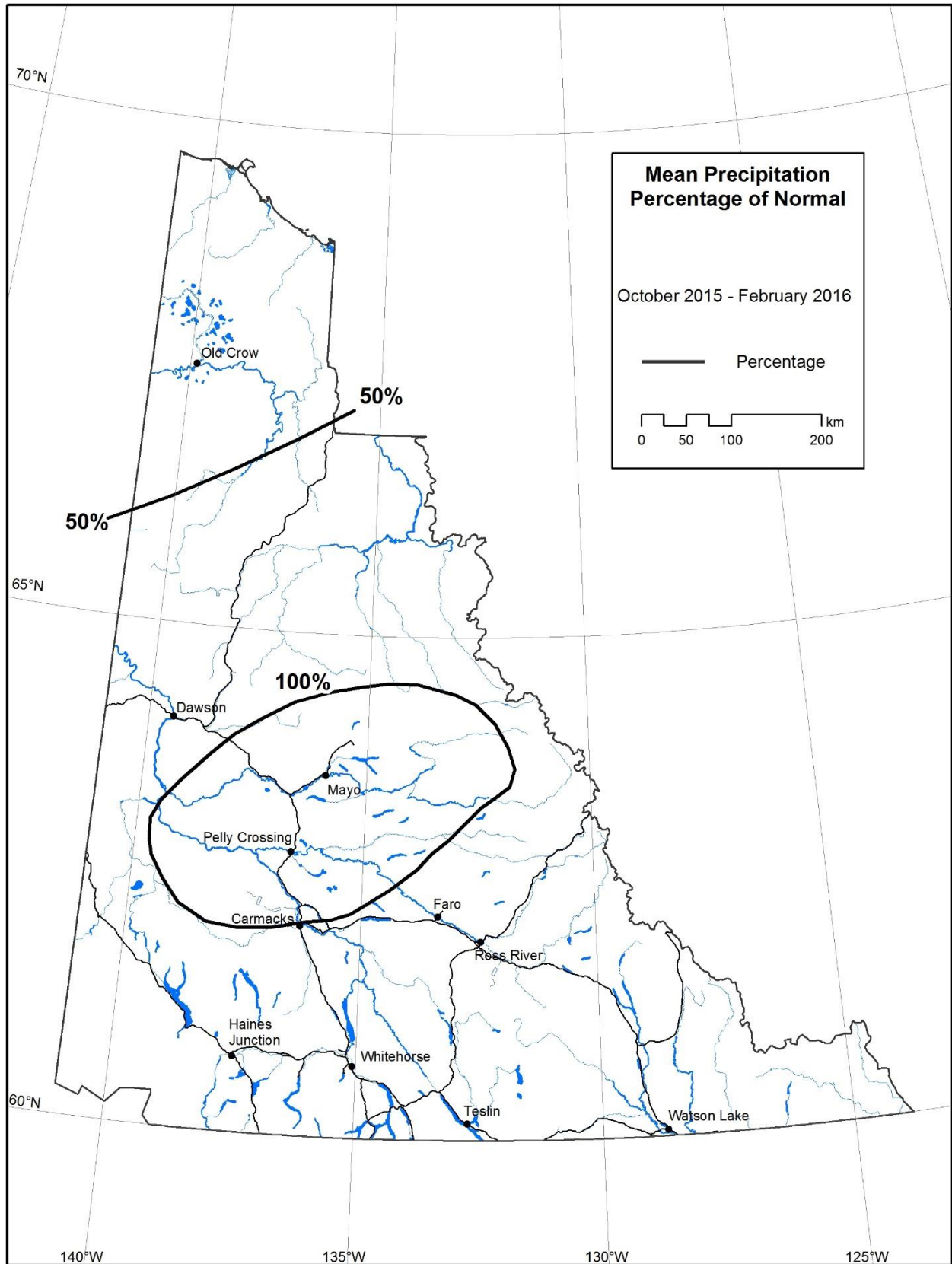
SNOWPACK

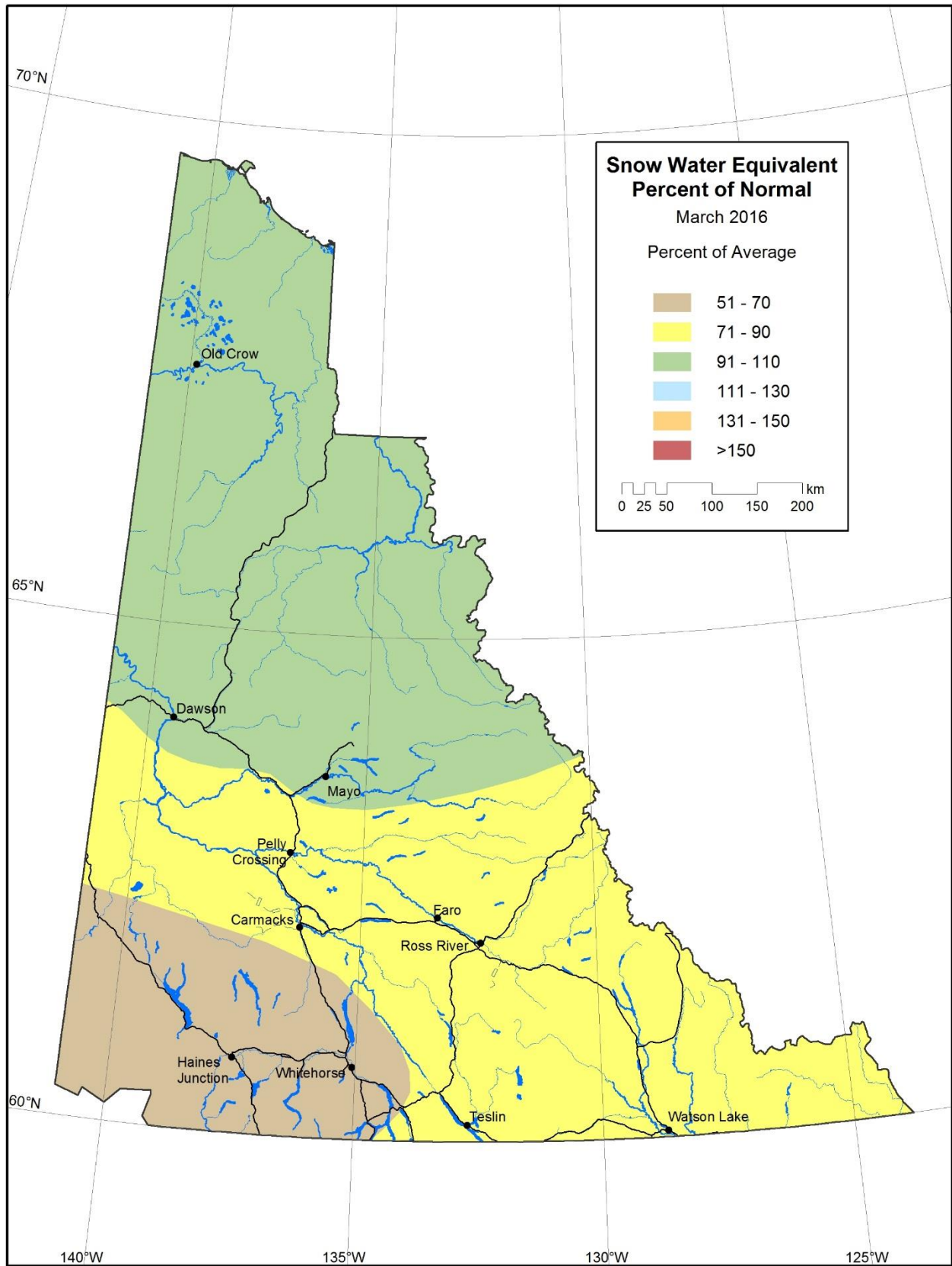
The March 1st Yukon snowpack was not as variable as most years. Snowpack values ranged from well below normal in southwestern Yukon, below normal in central and southeastern regions and near normal in northern regions. A small pocket of slightly above normal snowpack was observed in the Mayo area

STREAMFLOW

Streamflow conditions throughout Yukon are generally above normal with the exception of the upper Yukon River which is normal. The Liard and Alsek Rivers are slightly and moderately above normal respectively, while the Pelly, Stewart Peel and Porcupine Rivers are well above normal. Streamflow during this period represents winter base flow, which provides an indication of winter groundwater contributions.







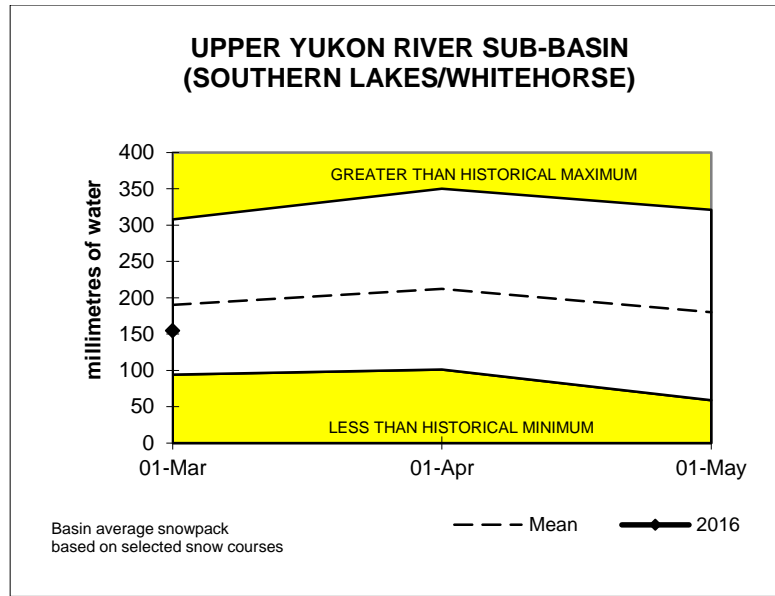
Yukon Snow Survey March 2016

YUKON RIVER BASIN

Snowpack conditions in the Yukon River basin range from normal in the northern portion of the basin to well below normal in southwestern regions. Overall conditions for the Yukon River basin are below normal.

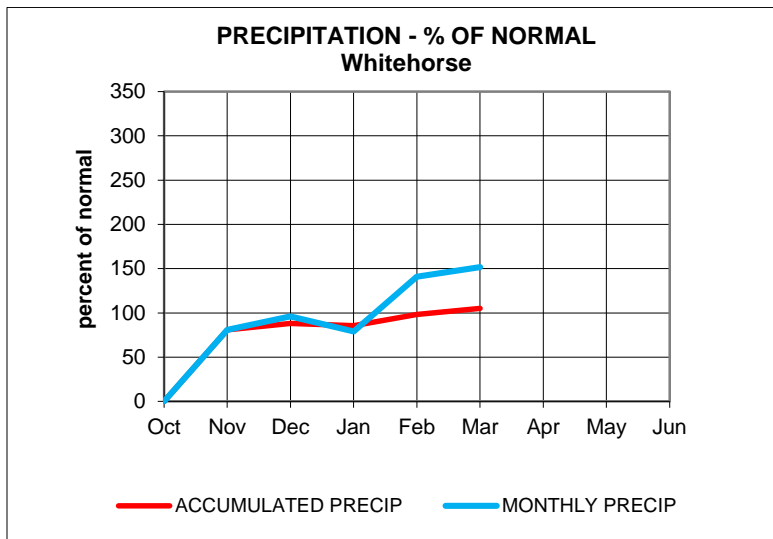
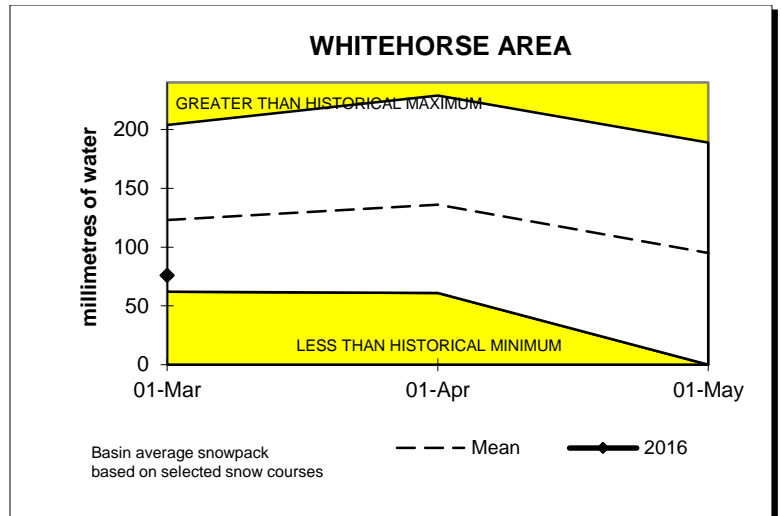
UPPER YUKON RIVER SUB-BASIN (SOUTHERN LAKES)

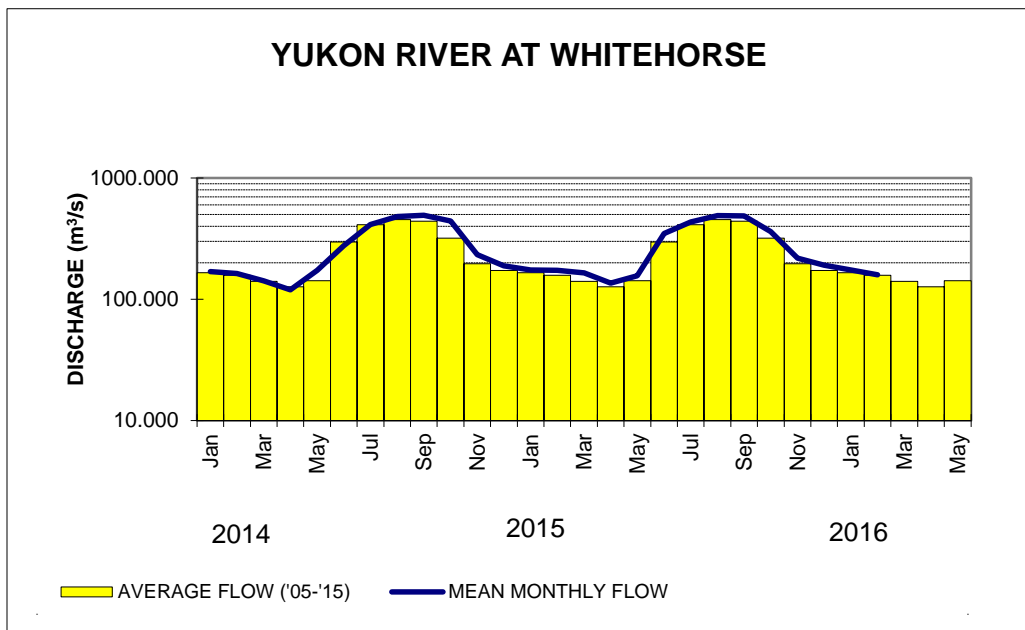
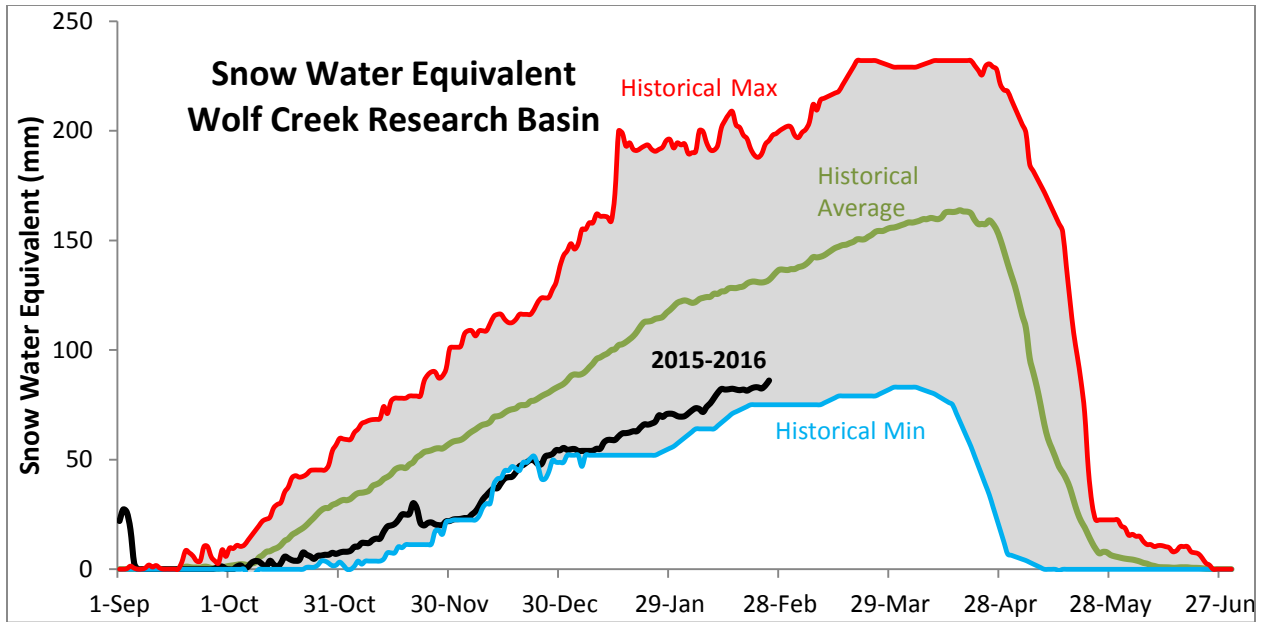
Snowpack conditions in the upper Yukon River watershed, are below normal. Values range from 58 percent of normal at Montana Mountain to 101 percent of normal at Log Cabin. The basin wide average has been estimated to be 82 percent of normal.



WHITEHORSE AREA

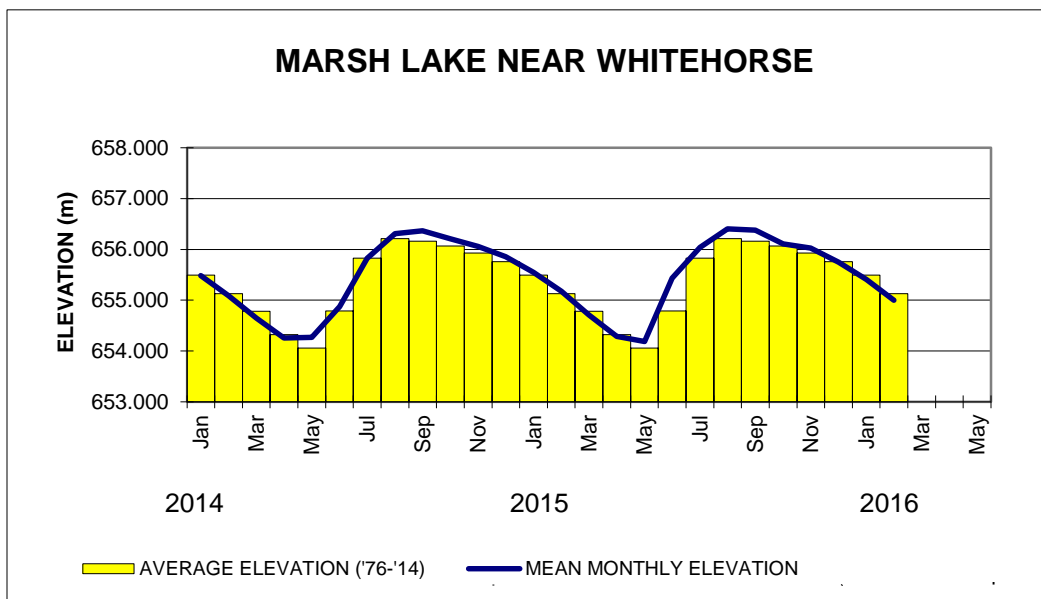
Snowpack conditions in the Whitehorse area are well below normal for March 1st. Values range from 58 percent of normal at Montana Mountain to 68 percent of normal at Whitehorse Airport. An area wide average is estimated to be 62 percent of normal.





YUKON RIVER and MARSH LAKE

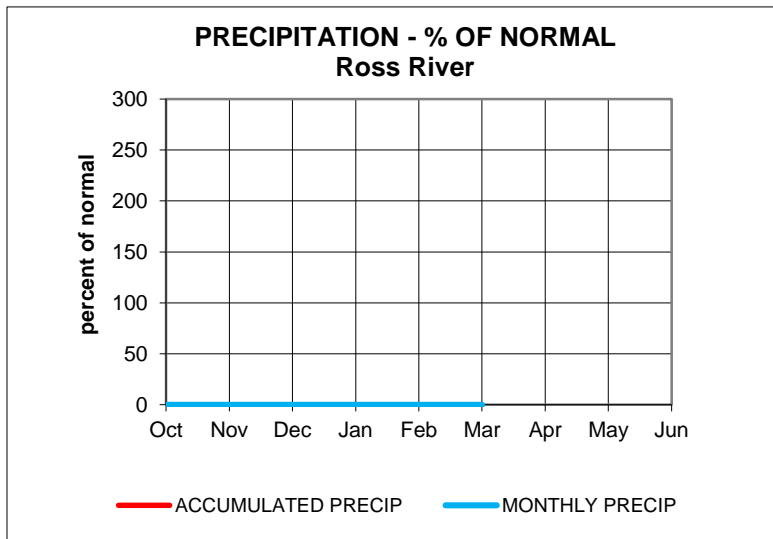
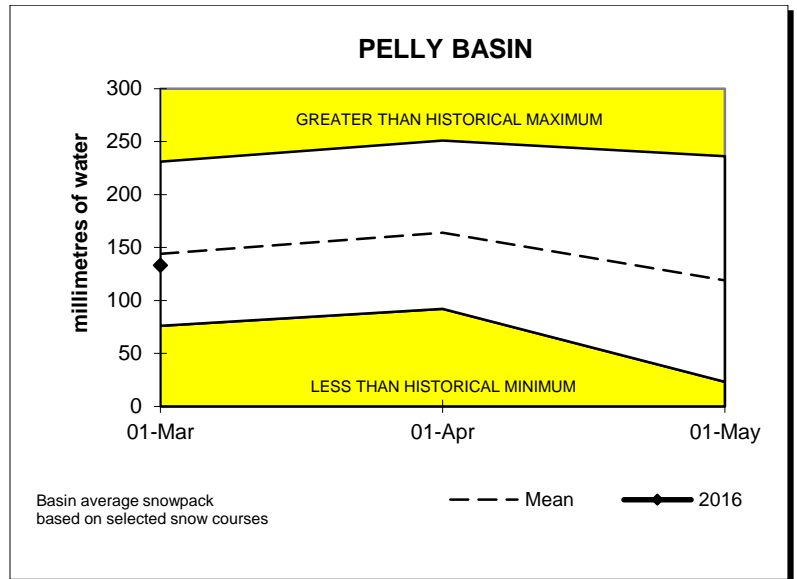
The mean elevation of Marsh Lake during February was 655.367 m or 0.010 m below normal. Yukon River at Whitehorse mean discharge during February was 101 percent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are each expected to be 76 and 77 percent of normal, respectively.



PELLY RIVER SUB-BASIN

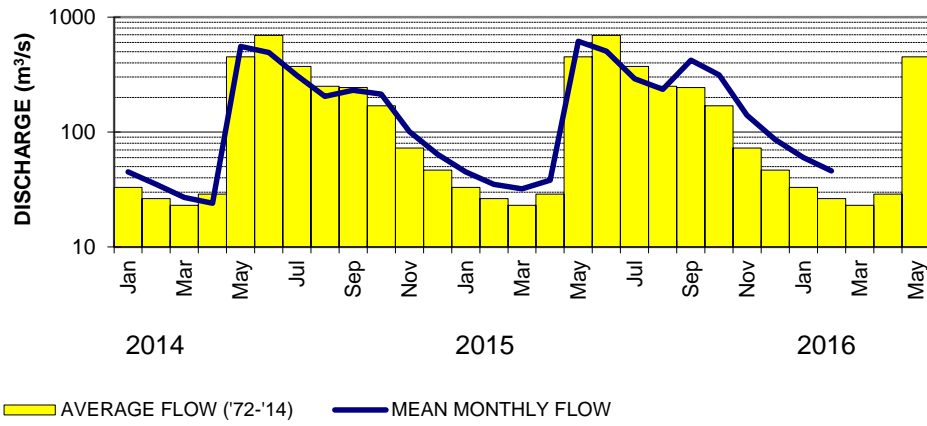
Snowpack conditions in the Pelly River watershed are below normal. Due to weather conditions only the Twin Creek snow course was sampled. A basin wide average has been estimated to be 93 percent of normal.

Mean February streamflow for the watershed was 174 percent of normal as indicated by the Pelly River below Vangorda Creek. Given normal summer meteorological conditions, volume runoff and peak flows are expected to be 86 percent and 87 percent of normal, respectively.



No precipitation data was reported for the period.

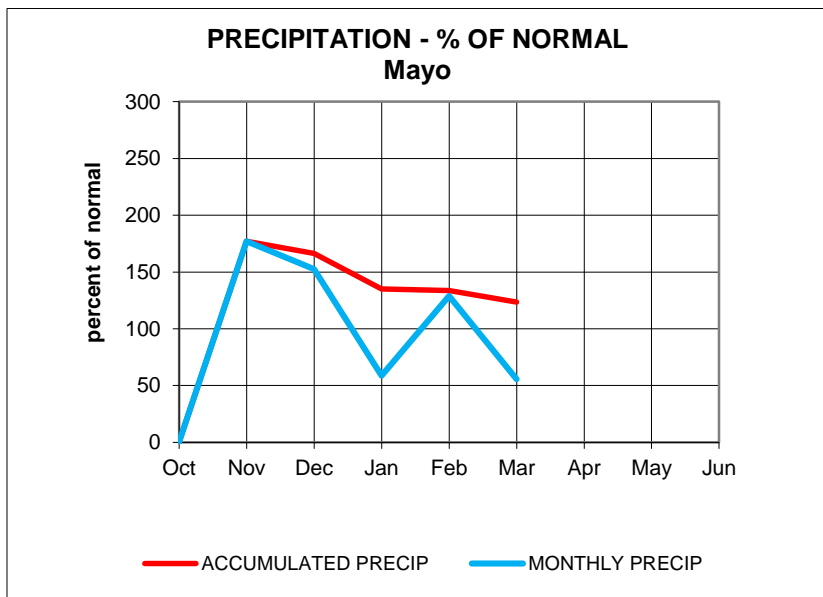
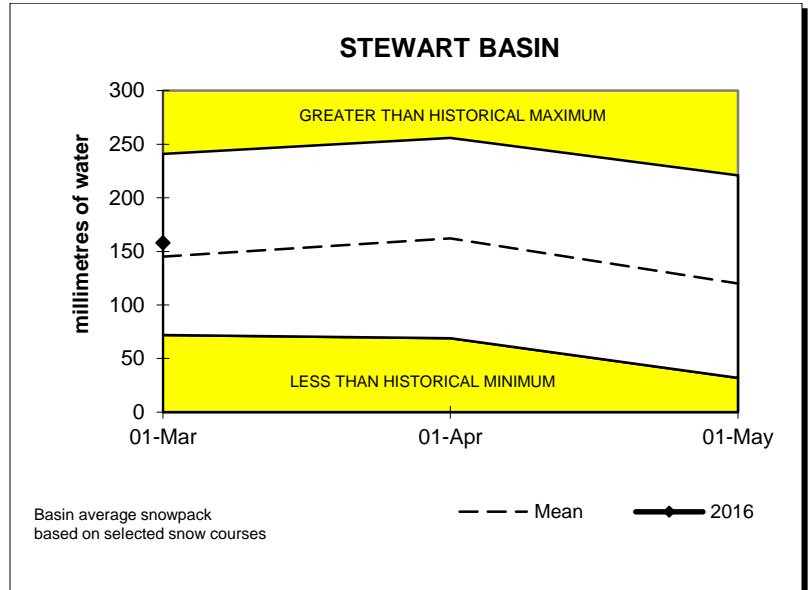
PELLY RIVER BELOW VANGORDA CREEK

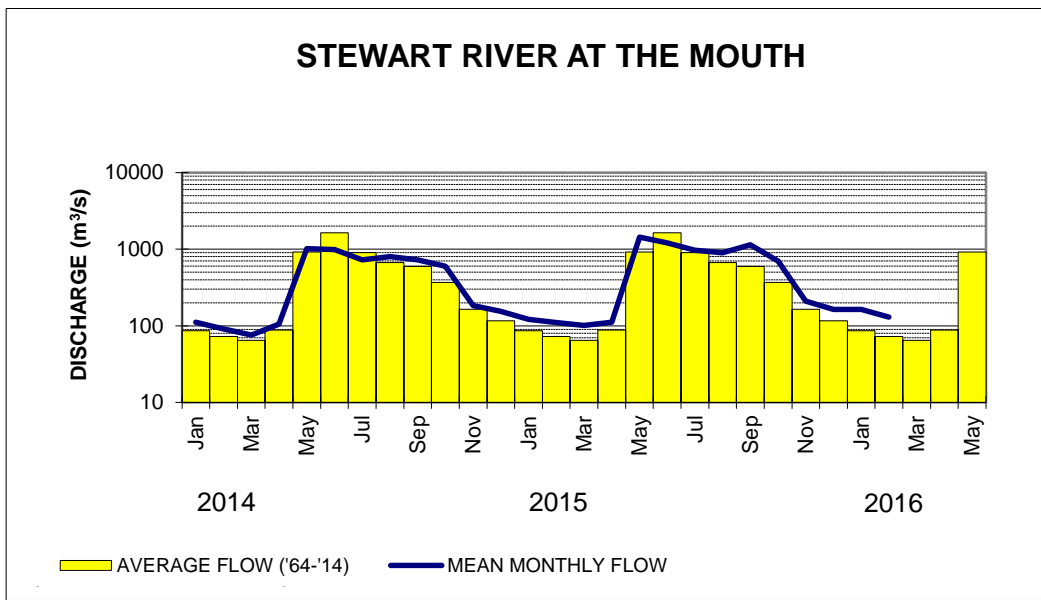
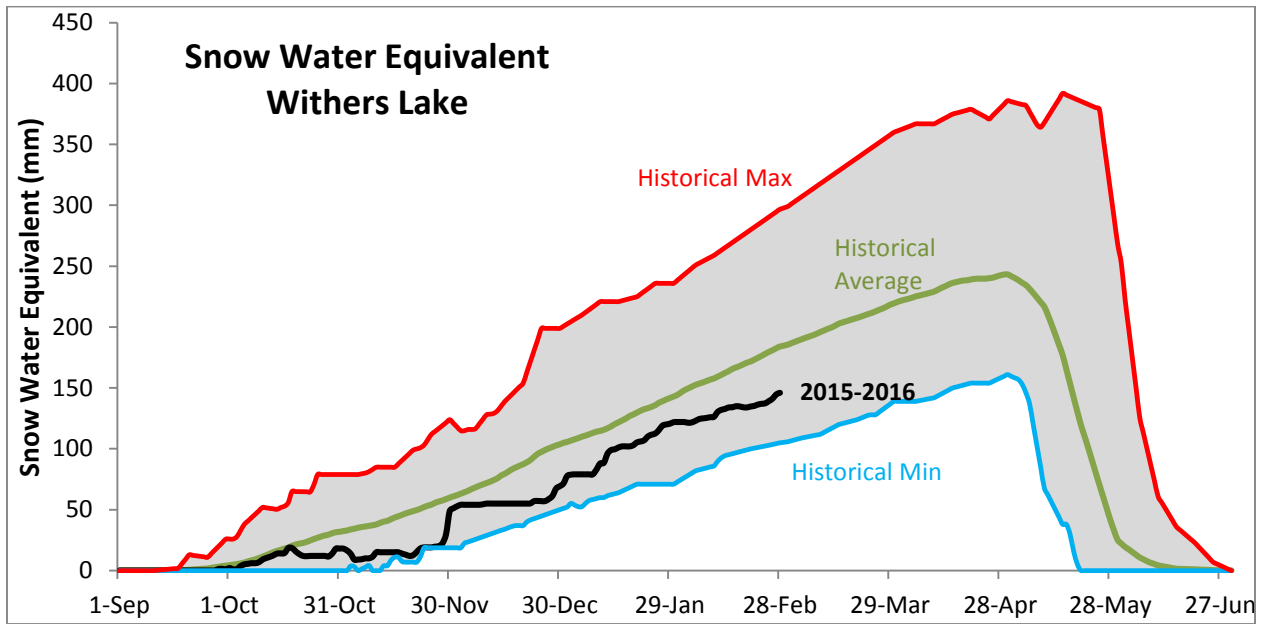


STEWART RIVER SUB-BASIN

Snowpack conditions in the Stewart River watershed are slightly above normal for March 1st. Values of snow water equivalent range from 116 percent of normal at Calumet to 126 percent of normal at Mayo Airport. A basin wide average has been estimated to be 105 percent of normal.

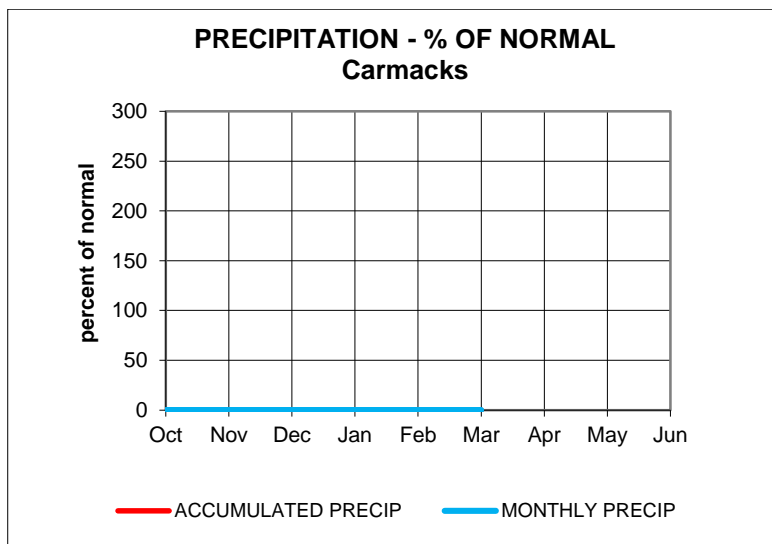
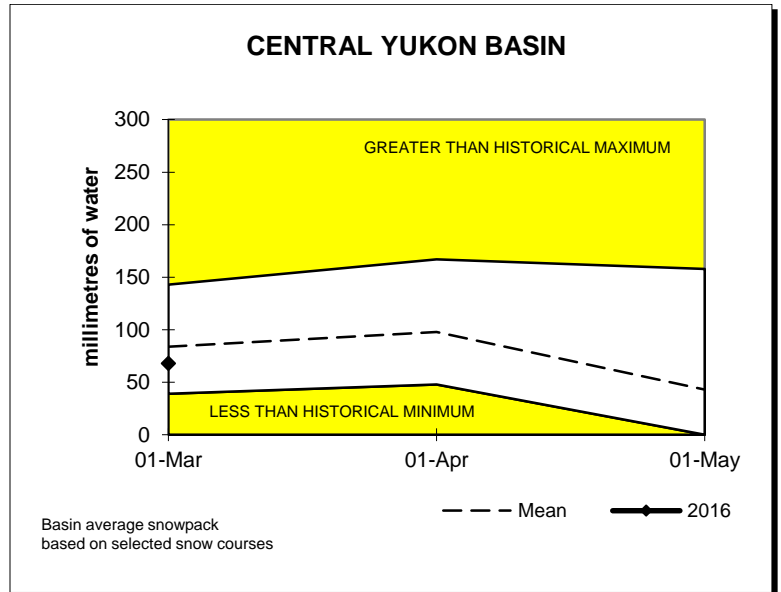
Mean February streamflow for the watershed was 180 percent of normal as indicated by the Stewart River at the Mouth. Given normal summer meteorological conditions, volume runoff and peak flows for the season are each expected to be 105 and 110 percent of normal, respectively.





CENTRAL YUKON RIVER BASIN (CARMACKS AREA)

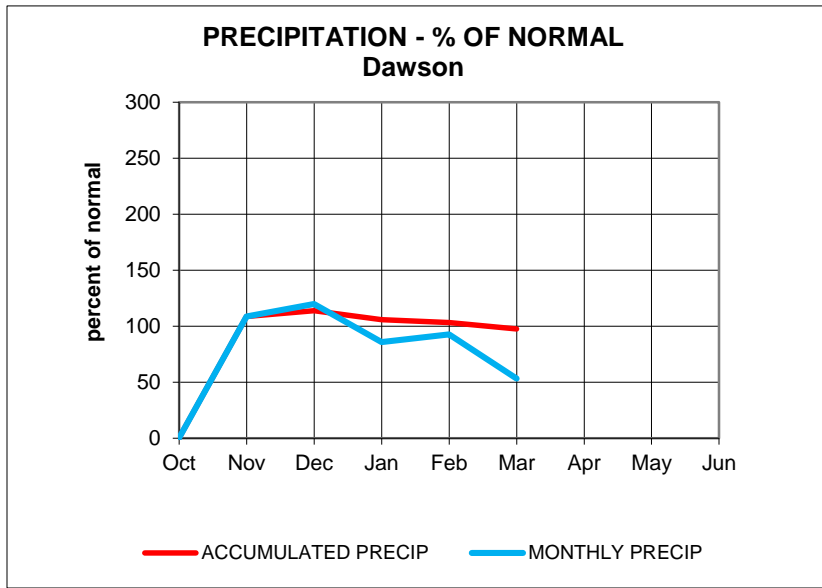
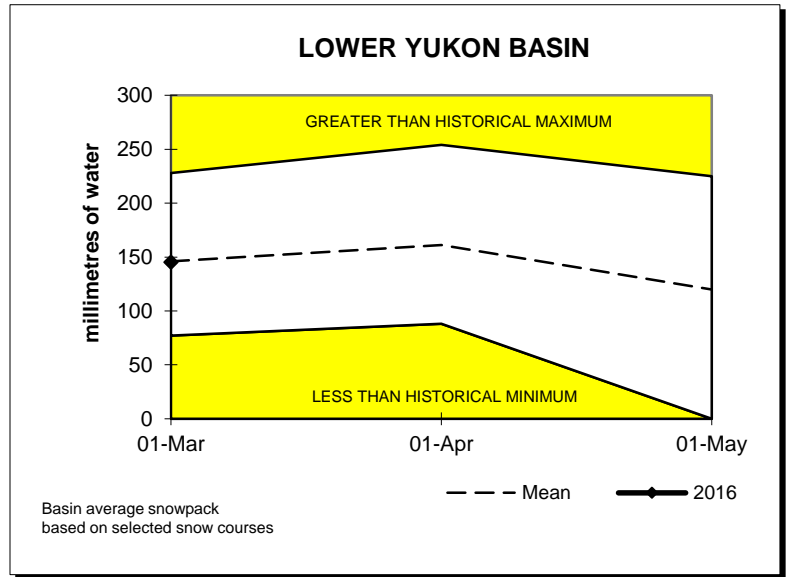
Snowpack conditions in the Carmacks area are below normal for March 1st. Values of snow water equivalent range from 74 percent of normal at MacIntosh to 89 percent of normal at Mt. Berdoe. An area wide average has been estimated to be 81 percent of normal.



No precipitation data was reported for the period.

LOWER YUKON RIVER BASIN (DAWSON AREA)

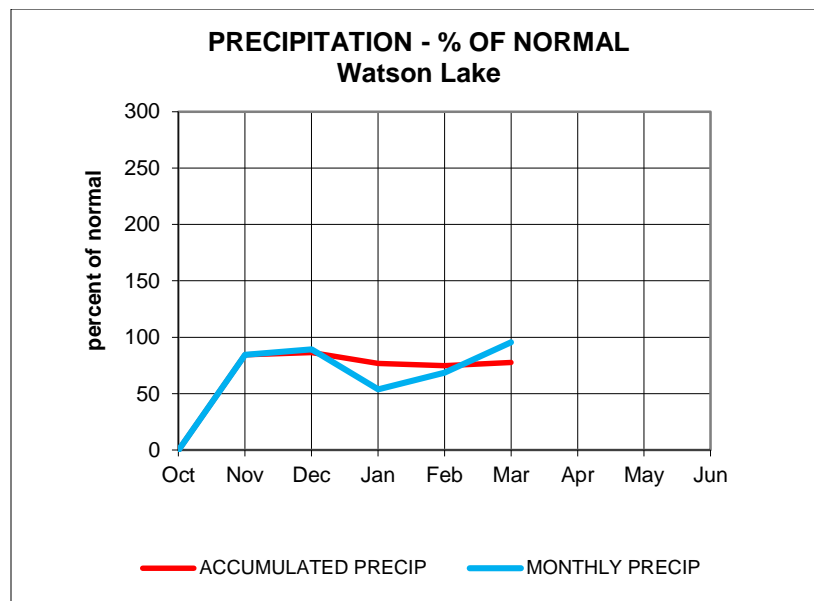
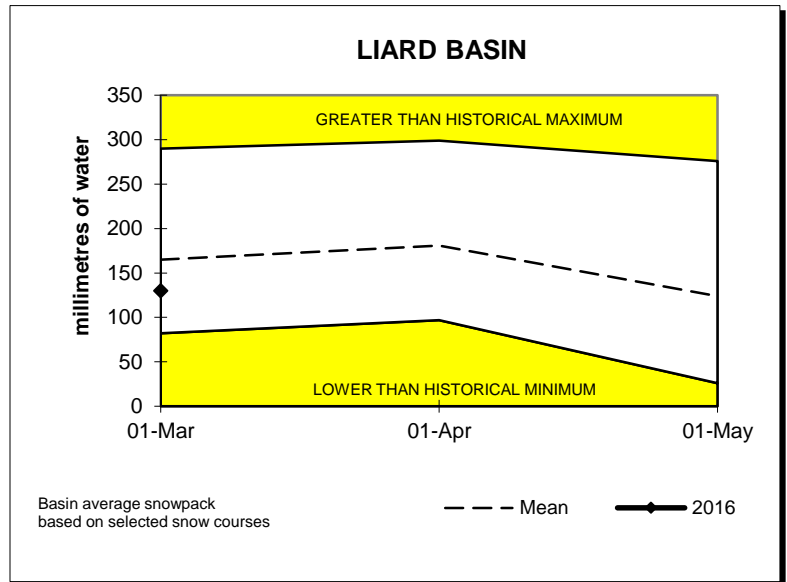
Snowpack conditions in the Dawson area are near normal for March 1st. Values of snow water equivalent range from 94 percent of normal at Grizzly Creek to 109 percent of normal at Midnight Dome. An area wide average has been estimated to be 99 percent of normal.



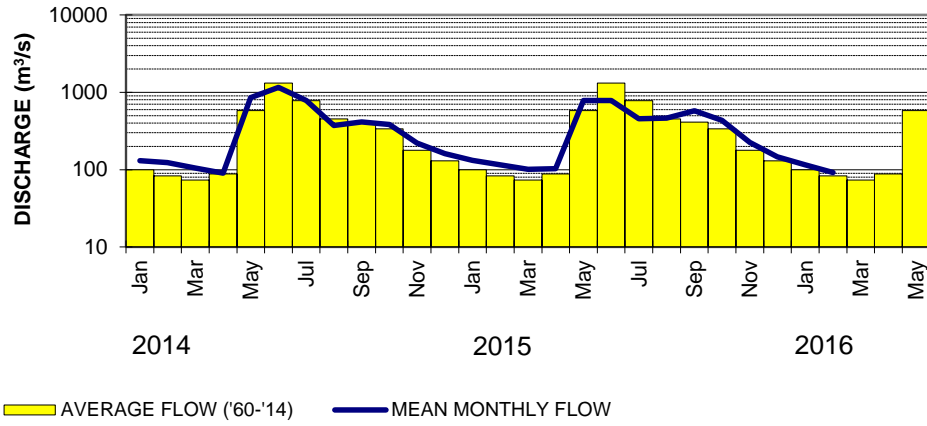
LIARD RIVER BASIN

Snowpack conditions within the Liard River watershed are well below normal. Values of snow water equivalent range from 72 percent of normal at Frances River to 93 percent of normal at Pine Lake Airstrip. A basin wide average has been estimated to be 80 percent of normal.

Mean February streamflow for the Liard River upstream of Upper Liard was 111 percent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 80 percent and 85 percent of normal, respectively.



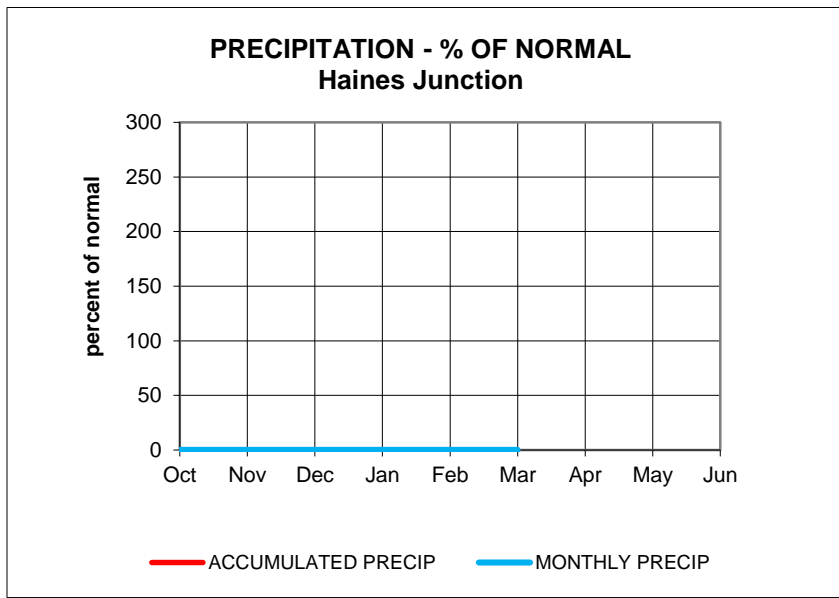
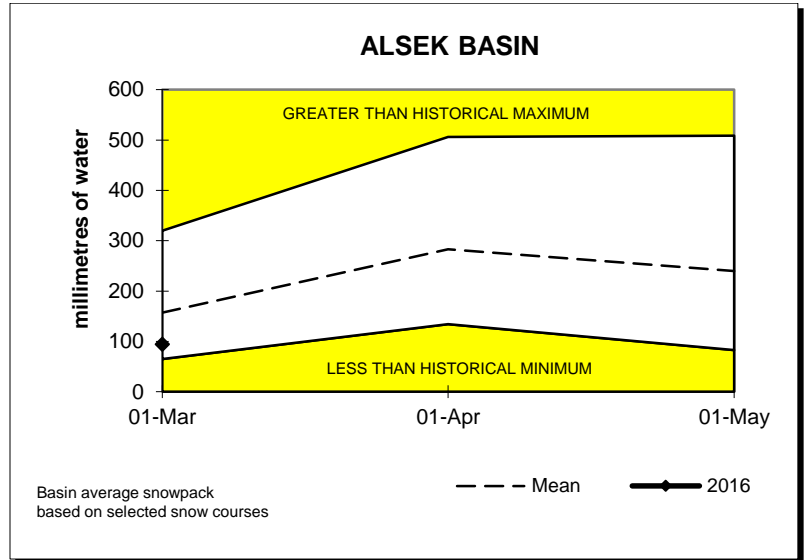
LIARD RIVER AT UPPER CROSSING



ALSEK RIVER BASIN

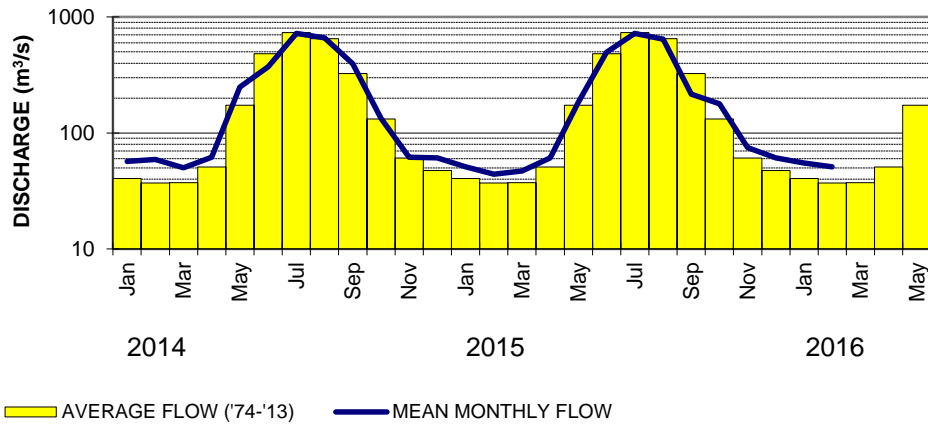
Snowpack conditions within the Alsek River watershed are well below normal for March 1st. Values of snow water equivalent range from 59 percent of normal at Alder Creek to 61 percent of normal at Canyon Lake. A basin wide average has been estimated to be 60 percent of normal.

Mean monthly streamflow for April as indicated by the Alsek River above Bates River was 137 percent 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 75 and 70 percent of normal, respectively.



No precipitation data was reported for the period.

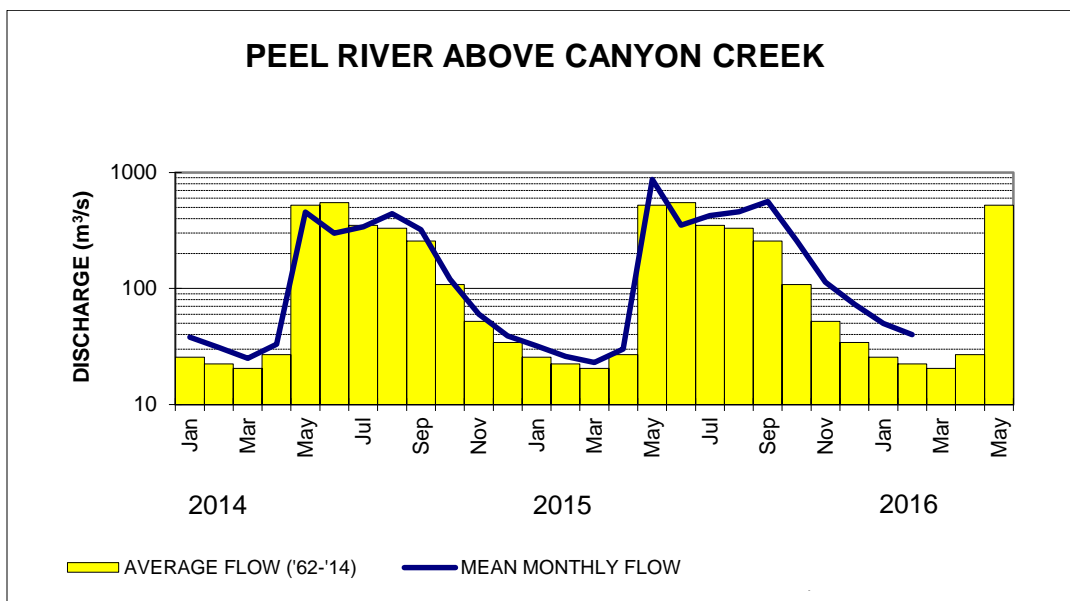
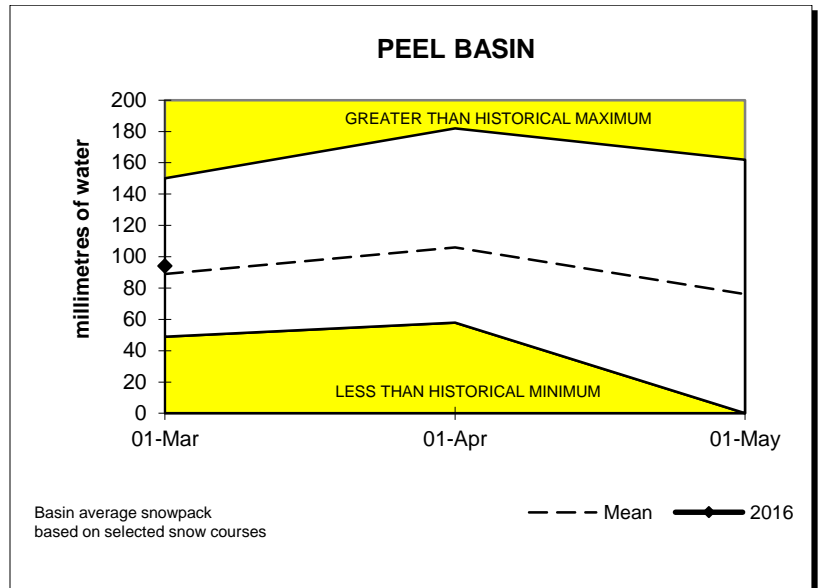
ALSEK RIVER ABOVE BATES RIVER



PEEL RIVER BASIN

Snowpack conditions in the Peel River watershed are above normal with values of snow water equivalent ranging from 106 percent of normal at Blackstone to 106 percent of normal at Ogilvie. A basin wide average has been estimated to be 106 percent of normal.

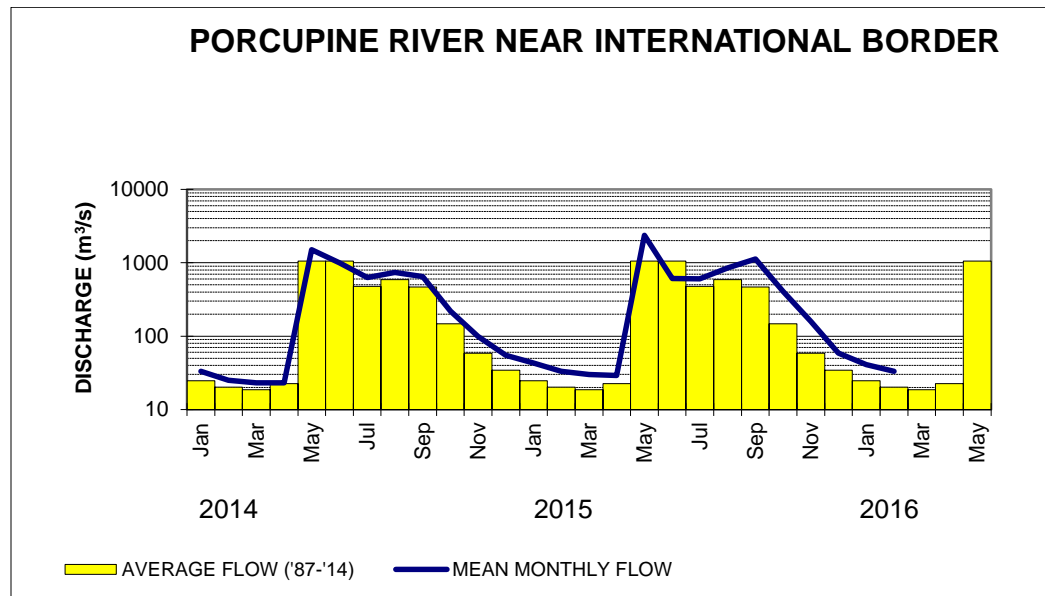
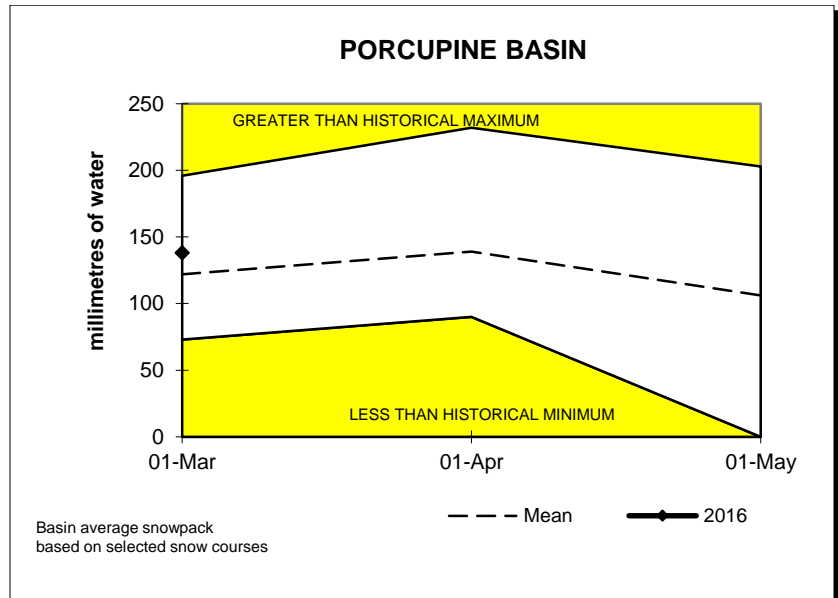
Mean monthly streamflow for February as indicated by the Peel River above Canyon Creek station was 179 percent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 105 and 110 percent of normal, respectively.



PORCUPINE RIVER BASIN

Snowpack conditions in the Porcupine River watershed are estimated to be near normal while only data from the Eagle Plains station which is reporting snow water equivalent of 94 percent of normal. A basin wide average has been estimated to be 100 percent of normal.

Mean February streamflow for the basin as indicated by the Porcupine River near the International Boundary is 163 percent of normal. There is no flow forecast available for March 1st.



Drainage Basin and Snow Course

For Sample Date: 2016-03-01

Name	Number	Elev (m)	Date of Survey	This Year		Water Content		Yrs of Rec
				Snow Depth (cm)	Water Content (mm)	Last Year (mm)	Average (mm)	
Alsek River Basin								
Canyon Lake	08AA-SC01	1160	2016-02-28	29	50	52	82	38
Alder Creek	08AA-SC02	768	2016-02-26	45.6	88	109	148	35
Aishihik Lake	08AA-SC03	945	2016-02-24	26.3	42	40	76	22
Haines Junction Farm	08AA-SC04	610	2016-02-24	26.7	43	62	91	16
Summit	08AB-SC03	1000	2016-02-24	68	144	147	241	36
Yukon River Basin								
Tagish	09AA-SC01	1080	2016-02-25	43.5	81	125	129	41
Montana Mountain	09AA-SC02	1020	2016-02-24	41.8	76	168	132	40
Log Cabin (B.C.)	09AA-SC03	884	2016-02-23	110.1	332 B	288	330	55
Atlin (B.C)	09AA-SC04	730	2016-03-01	40	87	68	110	50
Mt McIntyre B	09AB-SC01B	1097	2016-02-24	41.4	82	136	137	40
Whitehorse Airport	09AB-SC02	700	2016-02-24	32.5	63	81	93	51
Meadow Creek	09AD-SC01	1235	2016-02-24	81.4	200	274	250	39
Jordan Lake	09AD-SC02	930	No Surv			116	128	28
Morley Lake	09AE-SC01	824	2016-02-24	56.1	67	130	145	27
Mount Berdoe	09AH-SC01	1035	2016-03-02	47.4	86	95	97	40
Satasha Lake	09AH-SC03	1106	2016-03-01	39.4	58	67	85	29
Williams Creek	09AH-SC04	914	2016-03-01	49.9	76	81	89	20
Twin Creeks A	09BA-SC02A	900	2016-02-24	69	133	169	166	38
Hoole River	09BA-SC03	1036	No Surv			136	121	39
Burns Lake	09BA-SC04	1112	No Surv			194	198	29
Finlayson Airstrip	09BA-SC05	988	2016-02-26	47.9	87	75	93	29
Fuller Lake	09BB-SC03	1126	No Surv			N.S.	172	28
Russell Lake	09BB-SC04	1060	2016-02-25	83.5	188	208	203	29
Rose Creek	09BC-SC01	1080	2016-02-24	48.2	84	73	98	21
Mount Nansen	09CA-SC01	1021	2016-03-01	41.2	51	51	69	40
MacIntosh	09CA-SC02	1160	2016-03-01	44.1	60	49	81	40
Burwash Airstrip	09CA-SC03	810	2016-02-24	15.9	23	21	40	39
Beaver Creek	09CB-SC01	655	2016-02-25	39.7	49	44	74	41
Chair Mountain	09CB-SC02	1067	2016-02-25	31.8	35 E	77	85	22
Casino Creek	09CD-SC01	1065	2016-03-01	64.8	130	106	108	38
Pelly Farm	09CD-SC03	472	2016-02-26	35.7	77	84	76	29
Plata Airstrip	09DA-SC01	830	No Surv			192	170	36
Arrowhead Lake	09DA-SC02	1120	No Surv			N.S.	159	15
Withers Lake	09DB-SC01	975	2016-02-25	81	188	189	200	29
Rackla Lake	09DB-SC02	1040	2016-02-25	77.3	160	151	165	26
Yukon River Basin								
Mayo Airport A	09DC-SC01A	540	2016-02-25	55.2	113	76	90	46
Mayo Airport B	09DC-SC01B	540	2016-02-25	50.8	52	90	94	27
Edwards Lake	09DC-SC02	830	2016-02-25	63.6	132	152	146	28
Calumet	09DD-SC01	1310	2016-02-29	84.1	202	184	174	38
King Solomon Dome	09EA-SC01	1080	2016-02-29	71.5	143	158	149	41
Grizzly Creek	09EA-SC02	975	2016-03-01	72.1	146	185	155	40
Midnight Dome	09EB-SC01	855	2016-02-29	72.5	146	161	134	40
Boundary (Alaska)	09EC-SC02	1005	2016-03-03	78.74	165.1	112	115	40

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

Drainage Basin and Snow Course

For Sample Date: 2016-03-01

Name	Number	Elev (m)	Date of Survey	This Year		Water Content		
				Snow Depth (cm)	Water Content (mm)	Last Year (mm)	Average (mm)	Yrs of Rec
Porcupine River Basin								
Riff's Ridge	09FA-SC01	650	2016-03-01	69.1	141	224	129	29
Eagle Plains	09FB-SC01	710	2016-03-01	73.1	138	213	147	33
Eagle River	09FB-SC02	340	2016-03-01	61.5	73	182	112	33
Old Crow	09FD-SC01	299	No Surv			163	106	27
Liard River Basin								
Watson Lake Airport	10AA-SC01	685	2016-02-24	57.2	100	109	134	51
Tintina Airstrip	10AA-SC02	1067	No Surv			188	186	37
Pine Lake Airstrip	10AA-SC03	995	2016-02-25	73.6	190	184	204	39
Ford Lake	10AA-SC04	1110	No Surv			151	171	28
Frances River	10AB-SC01	730	2016-02-24	64.3	105	97	145	40
Hyland River	10AD-SC01	855	2016-02-25	66.3	125	154	155	40
Peel River Basin								
Blackstone River	10MA-SC01	920	2016-03-01	52.2	91	100	86	40
Ogilvie River	10MA-SC02	595	2016-03-01	57.5	97	137	91	40
Bonnet Plume Lake	10MB-SC01	1120	2016-02-25	76.9	159	143	150	26
Alaska Snow Courses								
Eaglecrest	08AK-SC01	305	2016-03-03	12.7	45.72	0	446	33
Moore Creek Bridge	08AK-SC02	700	2016-03-03	137.16	416.56	351	471	23

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

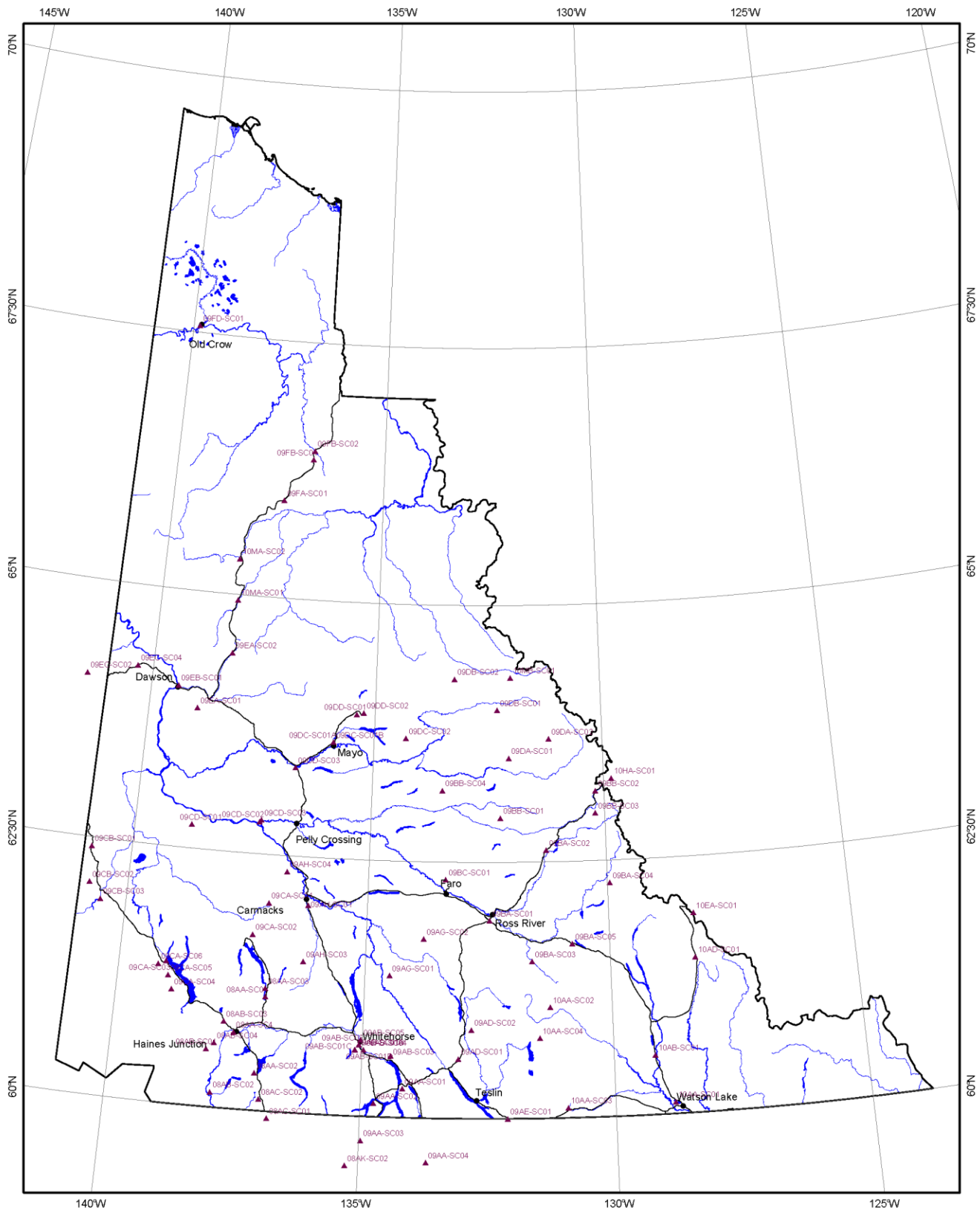
INDEX OF YUKON SNOW COURSES

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	09BA-SC2	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
Duke River	09CA-SC5	1310	61°15'	138°59'	6
Beaver Creek	09CB-SC1	655	62°25'	140°51'	2
Chair Mountain	09CB-SC2	1067	62°04'	140°48'	2
White River	09CB-SC3	823	61°55'	140°32'	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
Arrowhead Lake	09DA-SC2	1120	63°42'	131°10'	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
Boundary (Alaska)	09EC-SC2	1005	64°05'	141°27'	4
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-SC1	855	61°31'	128°16'	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
Clay Creek	08AB-SC2	670	60°09'	137°56'	6
Summit	08AB-SC3	1000	60°51'	137°47'	2
Profile Mountain	08AB-SC4	900	60°38'	137°56'	6
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'	6
ALASKA SNOW COURSES					
Eaglecrest	34J03	305	58°17'	134°32'	4
Moore Creek Bridge	34K02	701	59°31'	135°15'	4

Numbers refer to Agencies cooperating in the Yukon Snow Surveys:

1. Department of Environment, Government of Yukon
2. Dept of Energy Mines and Resources Yukon
3. British Columbia Ministry of Environment
4. USDA Natural Resources Conservation Service
5. Yukon Transportation and Highways
6. Parks Canada
7. Yukon Energy Corp.
8. Private Contract



Location of Water Resource Snow Courses