

YUKON SNOW SURVEY BULLETIN & WATER SUPPLY FORECAST

March 1, 2011

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 1, April 1 and May 1 - 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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NETWORK CHANGES for 2011

There have been no network changes in 2011. This bulletin can now be accessed on the web at: http://environmentyukon.gov.yk.ca/monitoringenvironment/snow_survey.php

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It is recommended that reference to this report be made in the following form:

Yukon Snow Survey Bulletin and Water Supply Forecast
Water Resources Branch
Department of Environment
Government of Yukon
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Meteorologist, Wildland Fire Management, Yukon Department of Community Services, Whitehorse

Officer in Charge, Water Survey of Canada, Whitehorse.

Agencies cooperating with Environment Yukon in the Snow Survey Program are:

Client Service and Inspections Branch, Yukon Department of Energy Mines and Resources

Information Management and Technology, Yukon Department of Environment

B.C. Ministry of Environment, Water Stewardship Division

USDA Natural Resources Conservation Service

Yukon Department of Highways and Public Works

Parks Canada

The Yukon Energy Corporation

YUKON TERRITORY SNOWPACK CONDITIONS AND RUNOFF PROJECTION

WEATHER

October 2010 to February 2011 winter temperatures were near or slightly higher than normal throughout the Territory. Temperatures were near normal in south central and interior Yukon and 1 to 2 degrees above normal in southwestern, southern and northern Yukon.

Winter precipitation was variable with below normal values in central and northeastern regions, normal in southwestern, southeastern and northwestern regions and above normal south central Yukon.

October

October temperatures were above normal with values close to two degrees above normal in central Yukon. Precipitation amounts in southwestern Yukon were above normal on north facing slopes. In central and northern Yukon precipitation amounts were well below normal while the southeast received near normal amounts.

November

November temperatures were extremely warm with values four to six degrees above normal in many areas. There was well above normal precipitation in all regions except southeast Yukon where near normal amounts were observed.

December

December temperatures were generally well below normal throughout the Territory. Precipitation throughout the Territory was variable with snowfall amounts ranging from 40% to 170% of normal. Above normal amounts were observed in southern regions, below normal amounts in central regions and normal amounts in northern regions.

January

The season's temperature variability continued with January temperatures well above normal throughout the Territory. Precipitation amounts were below normal in northern Yukon. Precipitation was variable throughout the rest of the Territory with below normal amounts generally observed in central and western regions and above normal amounts observed in southern and eastern regions.

February

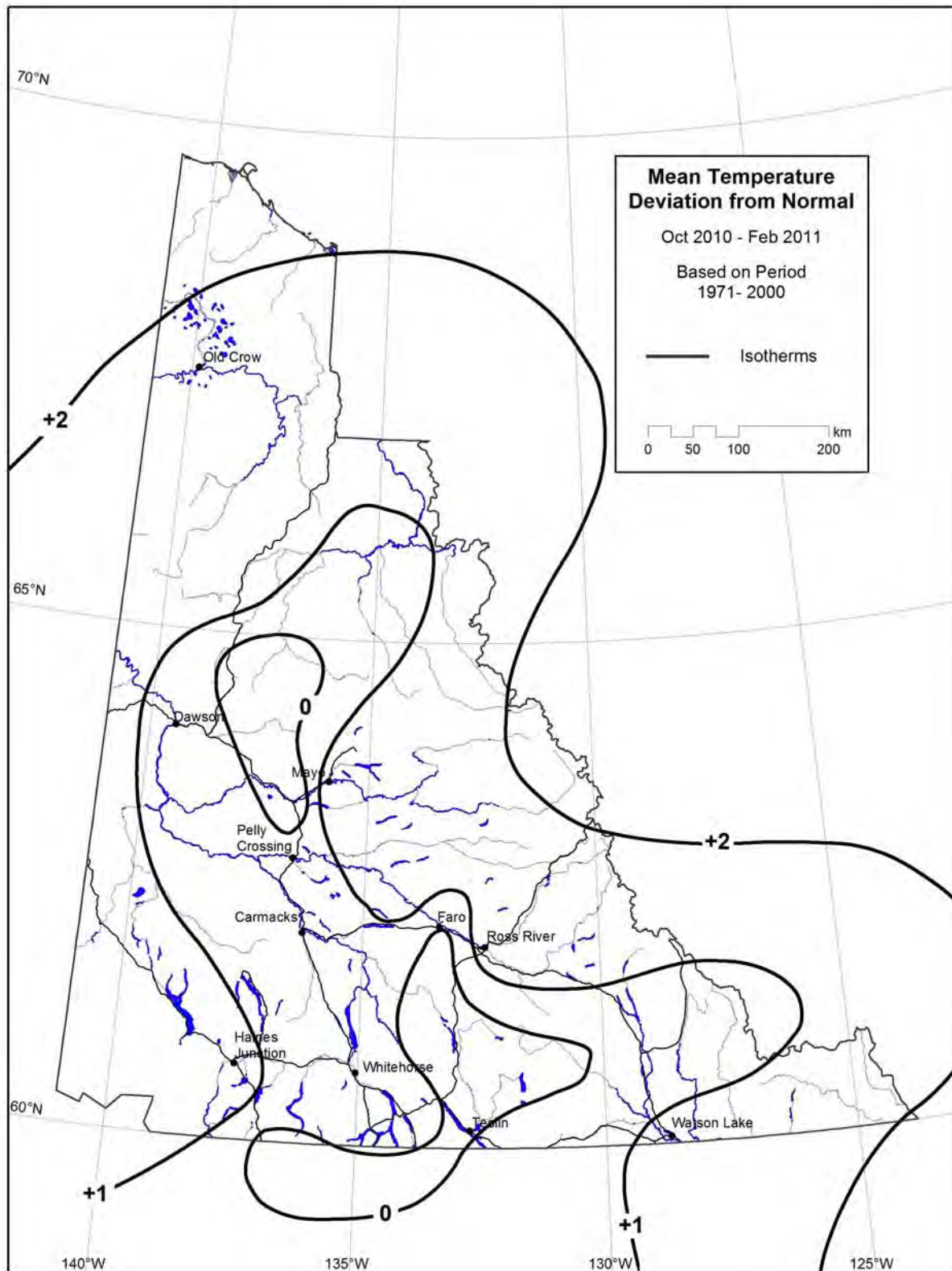
February temperatures throughout the Territory were above normal at the beginning of the month but dropped to below normal during the middle of the month with the monthly average below normal. Precipitation amounts were again variable throughout the Territory with normal to below normal amounts in northern Yukon, below normal in south central and southwest regions and generally above normal amounts in other regions.

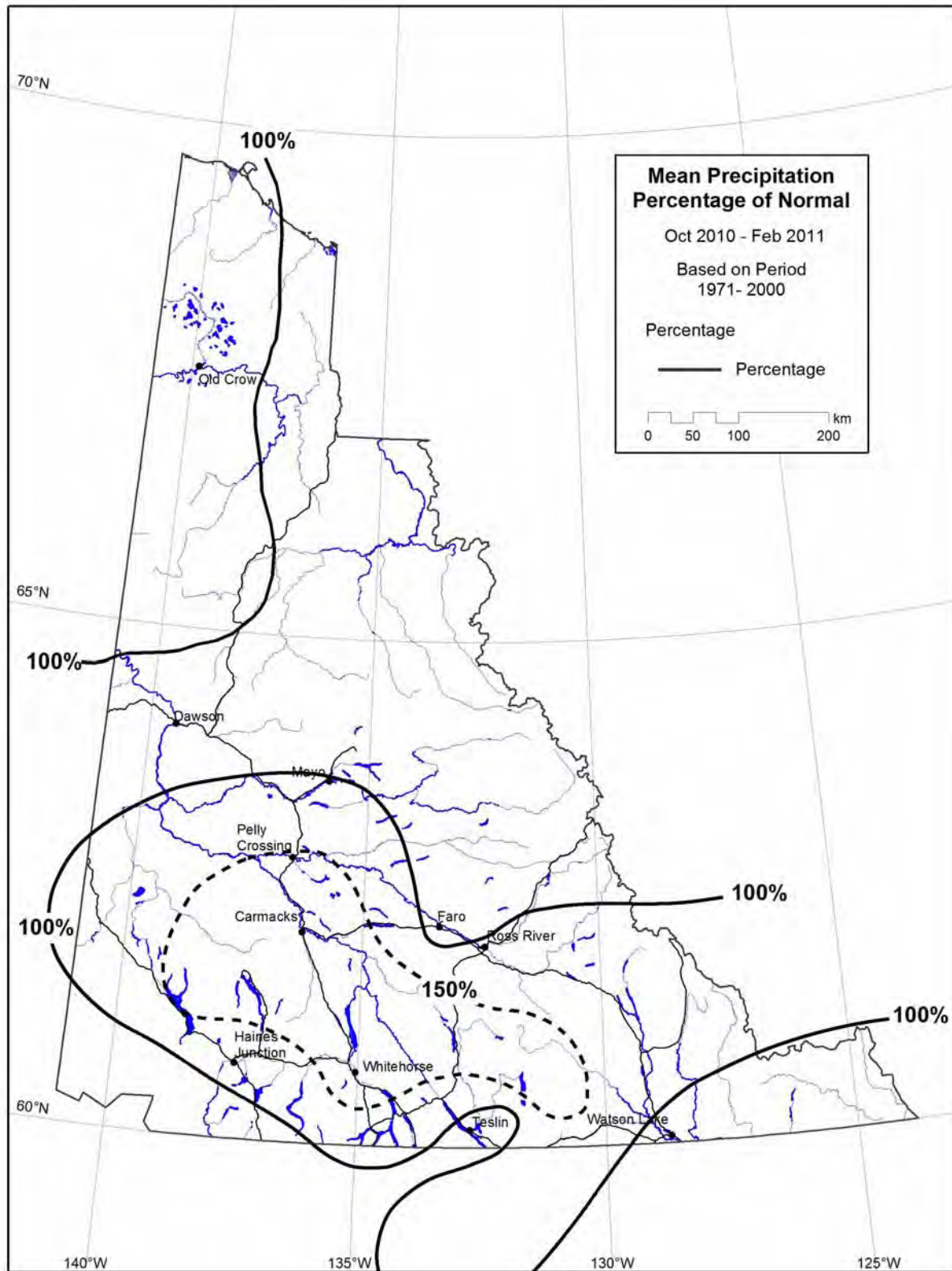
SNOWPACK

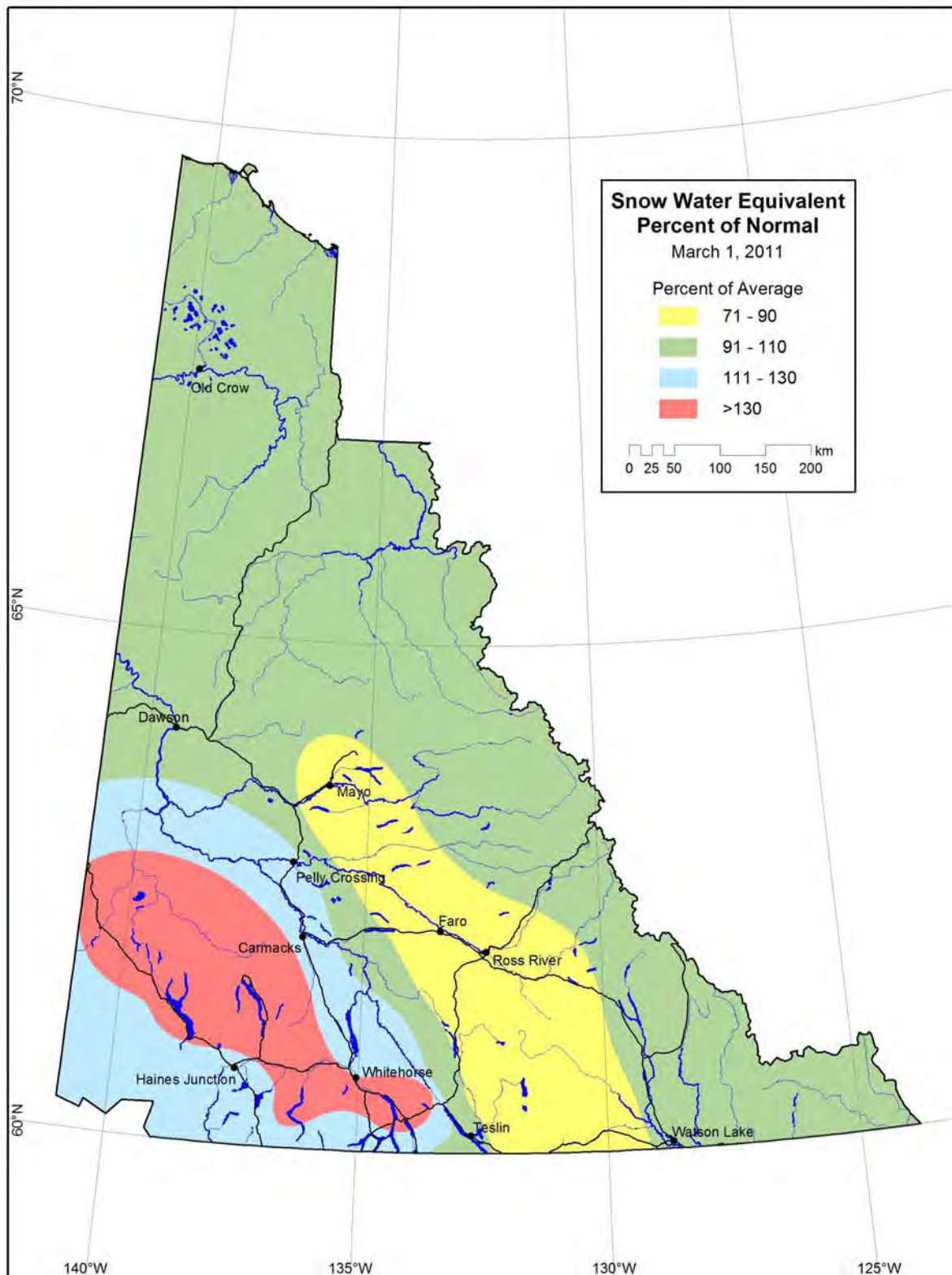
The March 1 Yukon snowpack is quite variable, though much of the Territory is around normal. Exceptions include a large pocket of below normal snowpack through interior Yukon which extends from Swift River in the south, to the Mayo region and including Ross River and Faro. Another exception is a large pocket of significantly above normal snowpack in southwest Yukon extending from the Whitehorse region northwestward to Beaver Creek.

STREAMFLOW

March 1st streamflow conditions within the Yukon are normal throughout much of the Territory with the exception of eastern regions which are below normal. Streamflow during this period represents winter baseflow, which provides an indication of winter groundwater contributions.





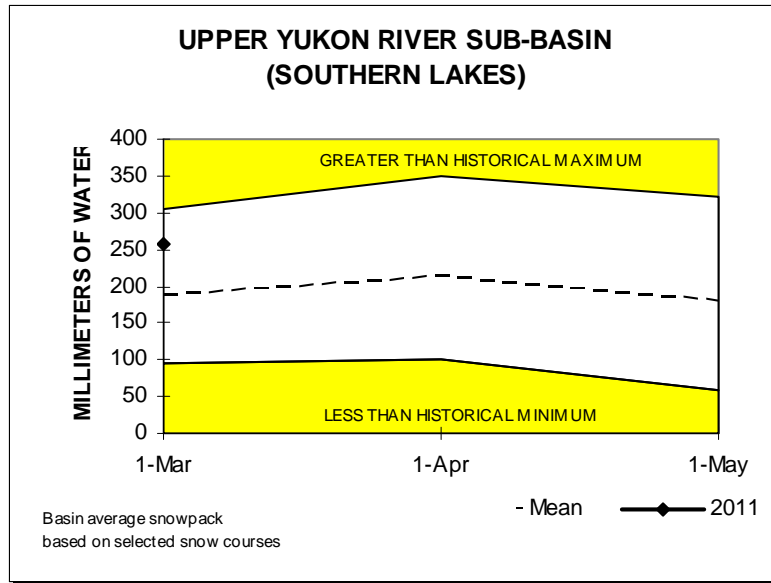


YUKON RIVER BASIN

Snowpack conditions in the Yukon River Basin range from well above normal through much of the western portion of the basin to slightly below normal in the eastern portion of the basin. There is a small pocket of record high snowpack west of Carmacks. Overall conditions for the Yukon River Basin are slightly above normal.

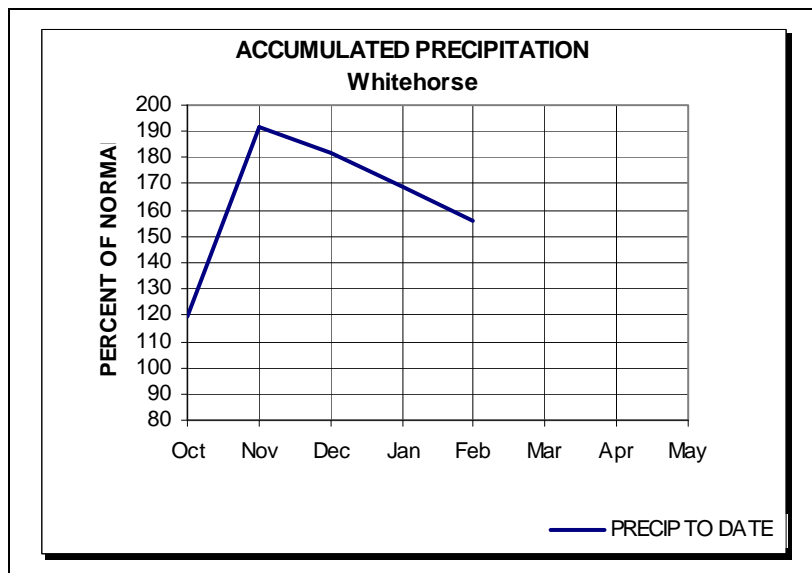
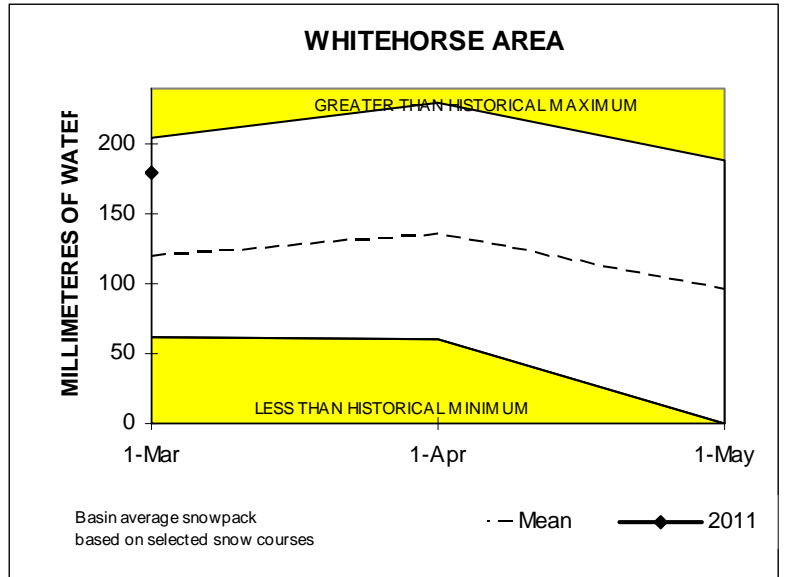
UPPER YUKON RIVER SUB-BASIN (SOUTHERN LAKES/WHITEHORSE)

Snowpack conditions in the Upper Yukon River watershed are near normal. Values range from 74 percent of normal at Atlin to 159 percent of normal at Tagish. A basin wide average has been estimated to be 125 percent of normal.

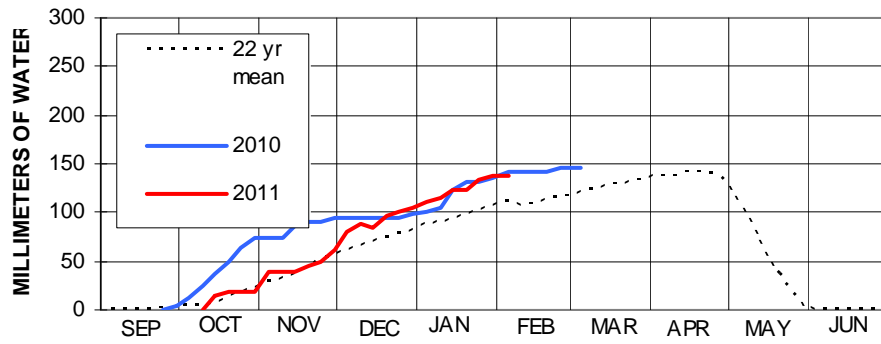


WHITEHORSE AREA

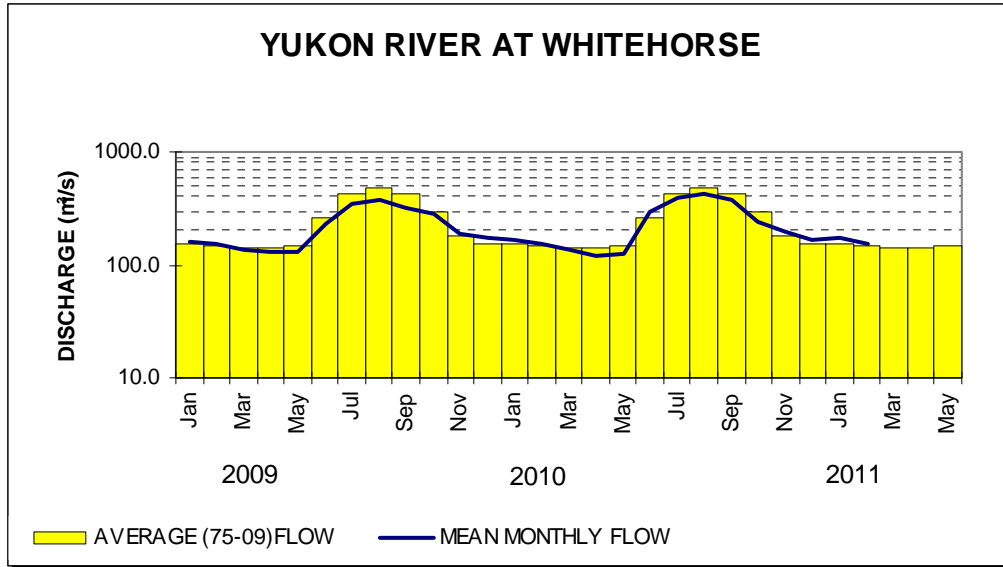
Snowpack conditions in the Whitehorse area are significantly above normal for March 1st. Values range from 122 percent of normal at the Whitehorse Airport to 167 percent of normal at Mount McIntyre which has a 35 year record snowpack. An area wide average is estimated to be 150 percent of normal.



SNOW PILLOW STATION DATA
TAGISH, No: 09AA-SC1

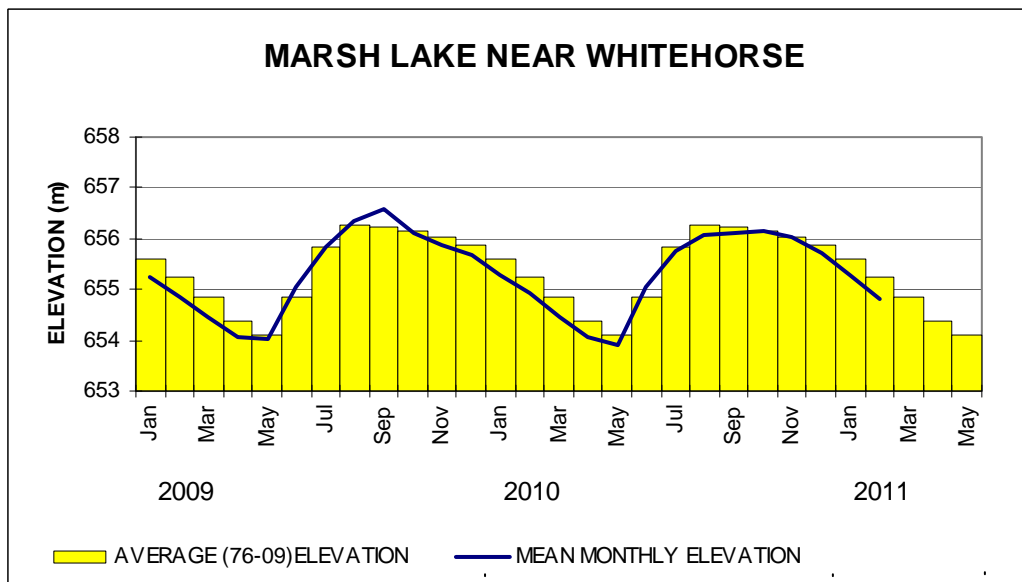


LAT 60° 17' LONG 134° 11'
ELEVATION 1080 metres
DRAINAGE YUKON BASIN



YUKON RIVER and MARSH LAKE

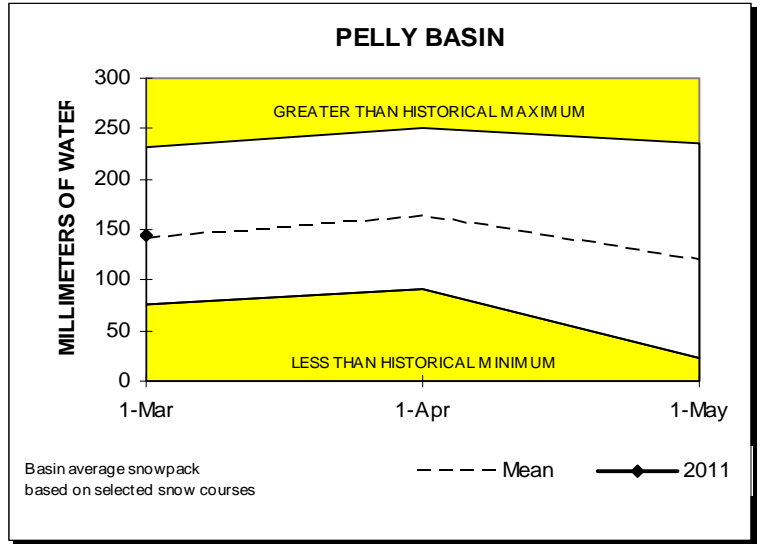
The elevation of Marsh Lake during February was 654.816 m or 0.447 m below normal. Yukon River at Whitehorse mean discharge during February was 104 percent of normal. Given normal summer meteorological conditions, volume runoff and peak flows for the season are expected to be 115 percent and 113 percent of normal respectively.



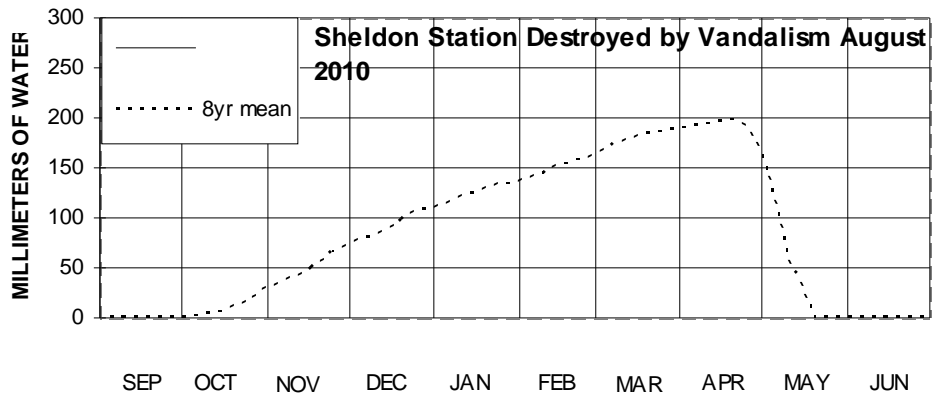
PELLY RIVER SUB-BASIN

Snowpack conditions in the Pelly River watershed are near normal. Values of snow water equivalent range from 110 percent of normal at Twin Creeks to 94 percent of normal at Hoole River. A basin wide average has been estimated to be 105 percent of normal.

Mean February streamflow for the watershed was 154 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 90 percent and 93 percent of normal respectively.

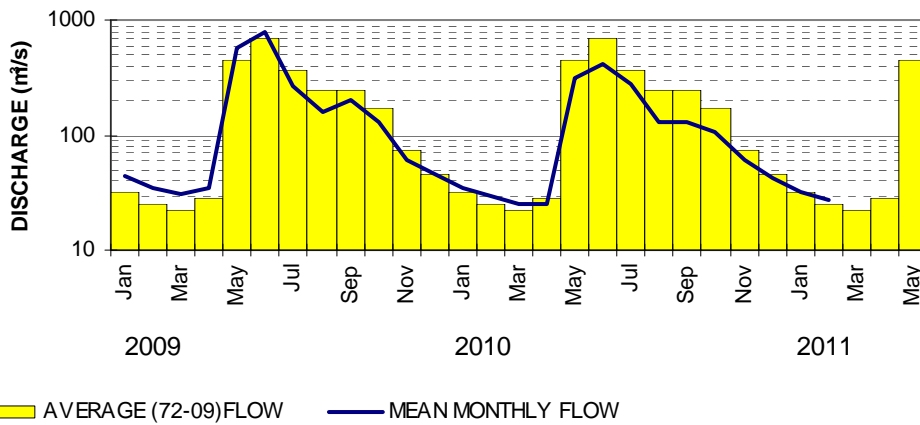


**SNOW PILLOW STATION DATA
MT SHELDON, 09BASC6**



LAT 62° 16' LONG 139° 12'
ELEVATION 900 metres
DRAINAGE PELLY BASIN

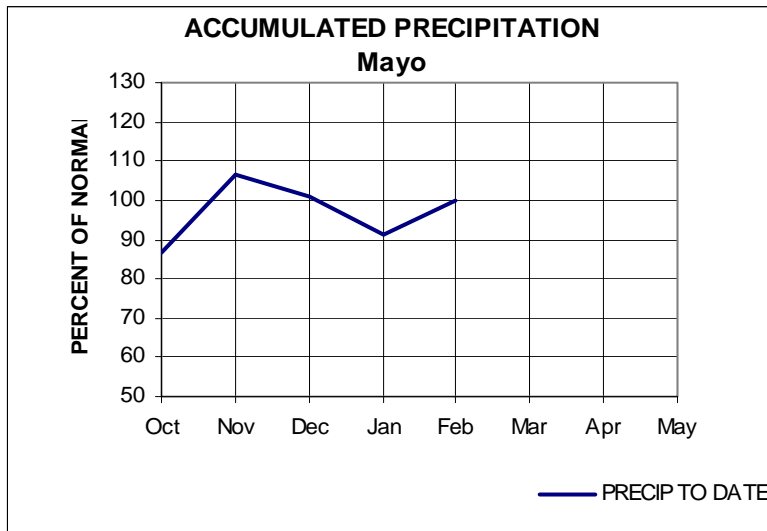
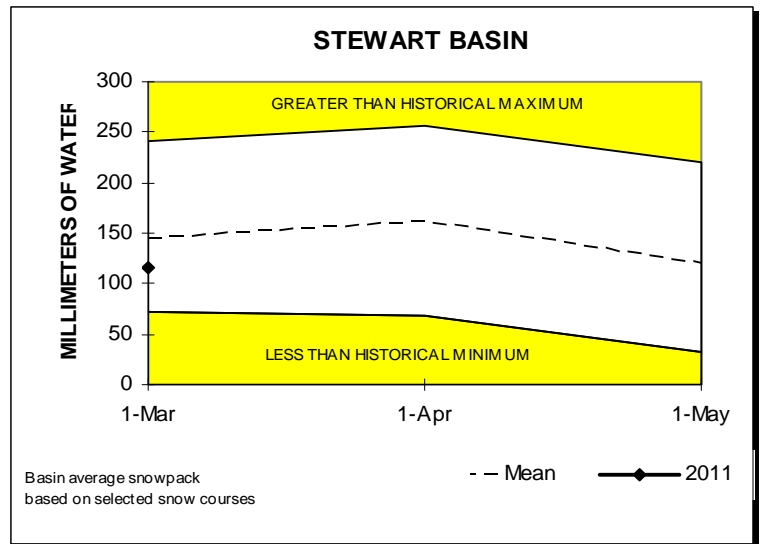
PELLY RIVER BELOW VANGORDA CREEK



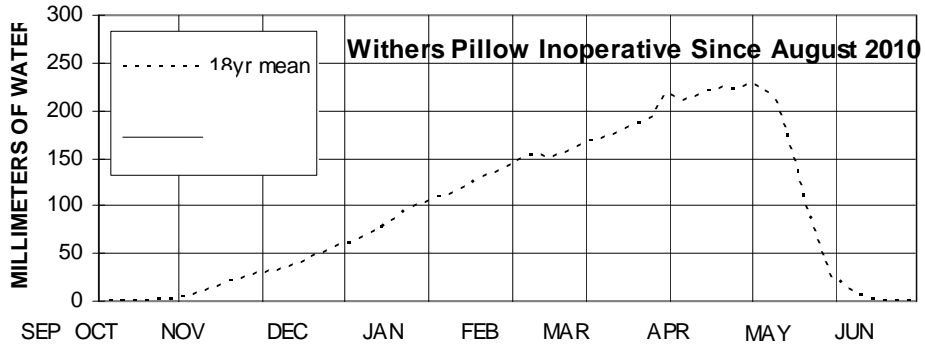
STEWART RIVER SUB-BASIN

Snowpack conditions in the Stewart River watershed are slightly below normal for March 1st. Values of snow water equivalent range from 79 percent of normal at Calumet to 104 percent of normal at the Mayo Airport. A basin wide average has been estimated to be 87 percent of normal.

Mean February streamflow for the watershed was 113 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 expected to be 105 percent and 105 percent of normal respectively.

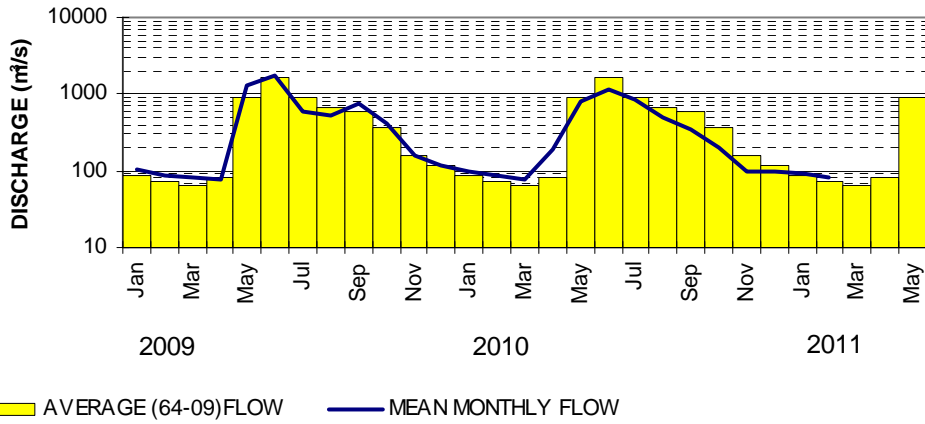


**SNOW PILLOW STATION DATA
WITHERS LAKE, No: 09DB-SC1**



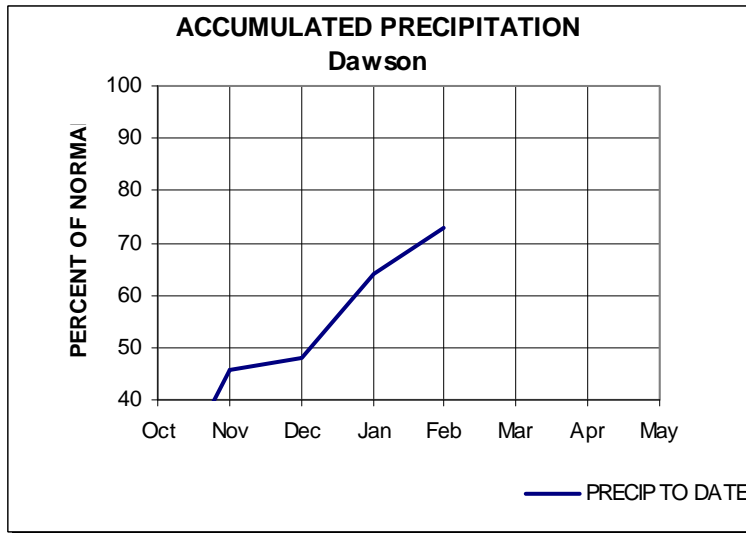
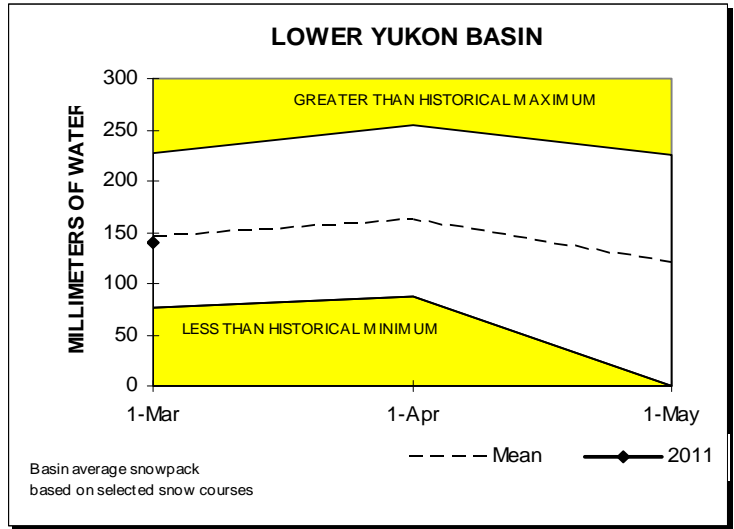
LAT 63° 59' LONG 132° 18'
ELEVATION 975 metres
DRAINAGE STEWART BASIN

STEWART RIVER AT THE MOUTH



LOWER YUKON RIVER BASIN (DAWSON AREA)

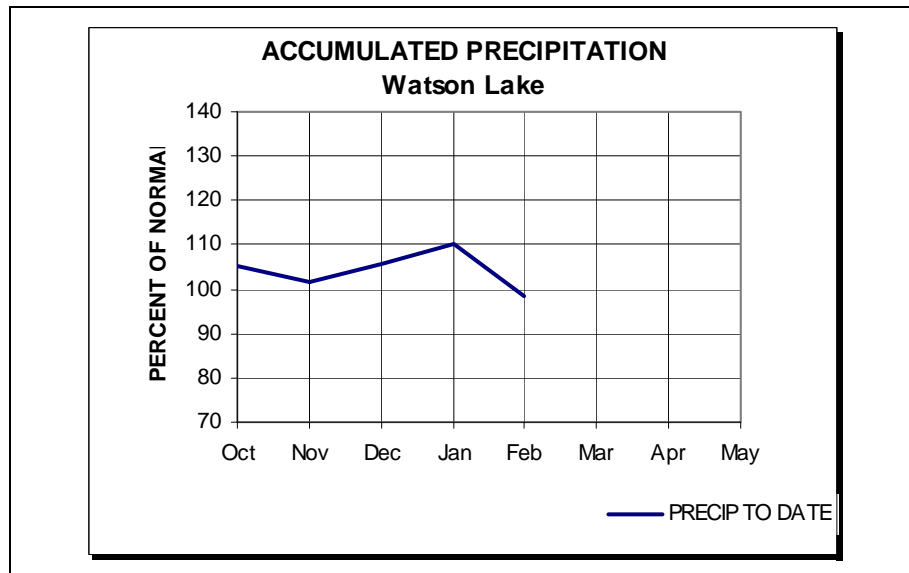
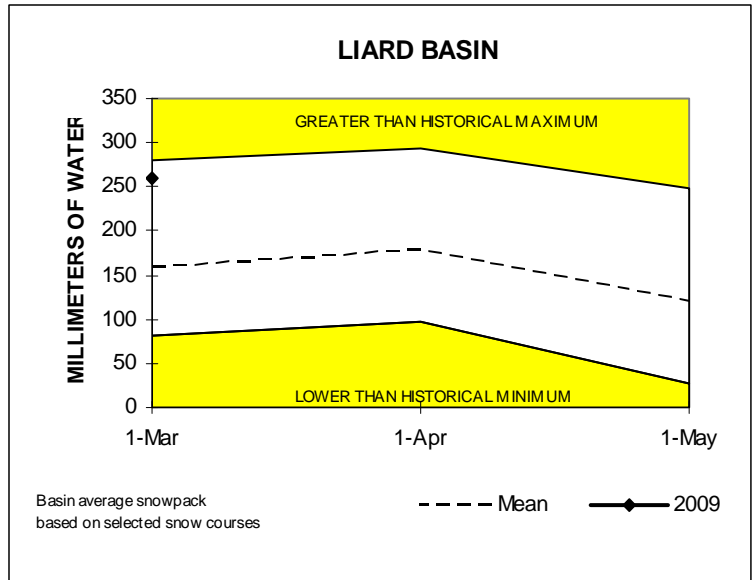
Snowpack conditions in the Dawson area are variable but overall near normal for March 1st. Values of snow water equivalent range from 67 percent of normal at Grizzly Creek to 116 percent of normal at Midnight Dome. An area wide average has been estimated to be 98 percent of normal.



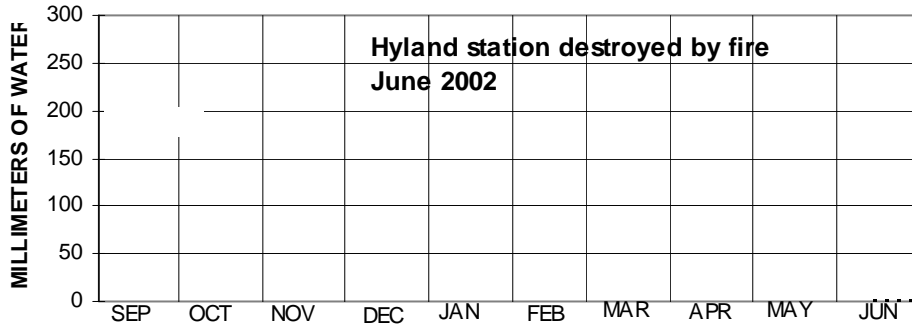
LIARD RIVER BASIN

Snowpack conditions within the Liard River watershed are variable but overall normal. Values of snow water equivalent range from 78 percent of normal at Tintina Airstrip to 127 percent of normal at Watson Lake Airport. A basin wide average has been estimated to be 100 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 105 percent and 105 percent of normal.

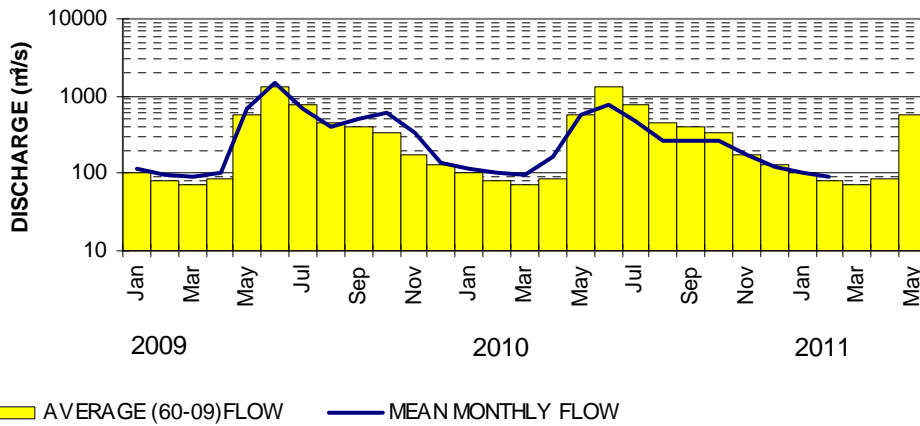


**SNOW PILLOW STATION DATA
HYLAND RIVER, No: 10AD-SC1**



LAT 61° 31' LONG 128° 16'
ELEVATION 855 metres
DRAINAGE LIARD BASIN

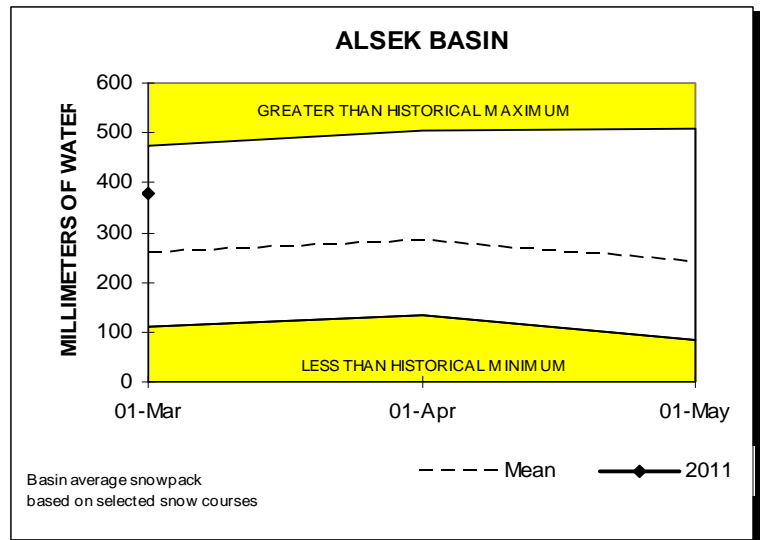
LIARD RIVER AT UPPER CROSSING

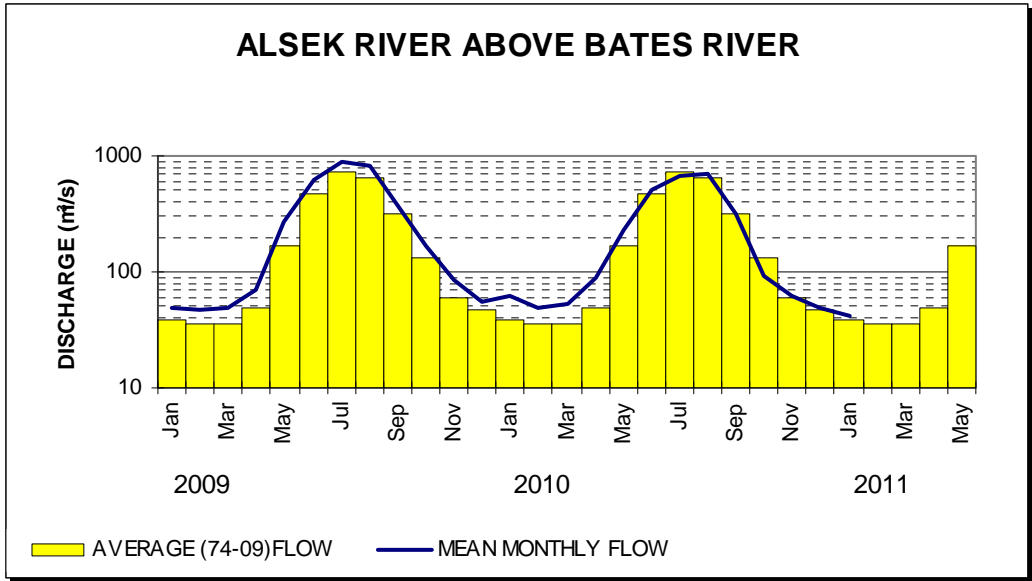


ALSEK RIVER BASIN

Snowpack conditions within the Alsek River watershed are significantly above normal for March 1st. Values of snow water equivalent range from 101 percent of normal at Alder Creek to 181 percent of normal at Canyon Lake which is a 33 year record. A basin wide average has been estimated to be 130 percent of normal.

Mean monthly streamflow for February as indicated by the Alsek River above Bates River was 109 percent of normal. The Alsek River is primarily a glacial regime type, which is largely dependent on summer temperatures. Given normal summer meteorological conditions however, volume runoff and peak flows for the season are expected to be 140 and 145 percent of normal respectively.

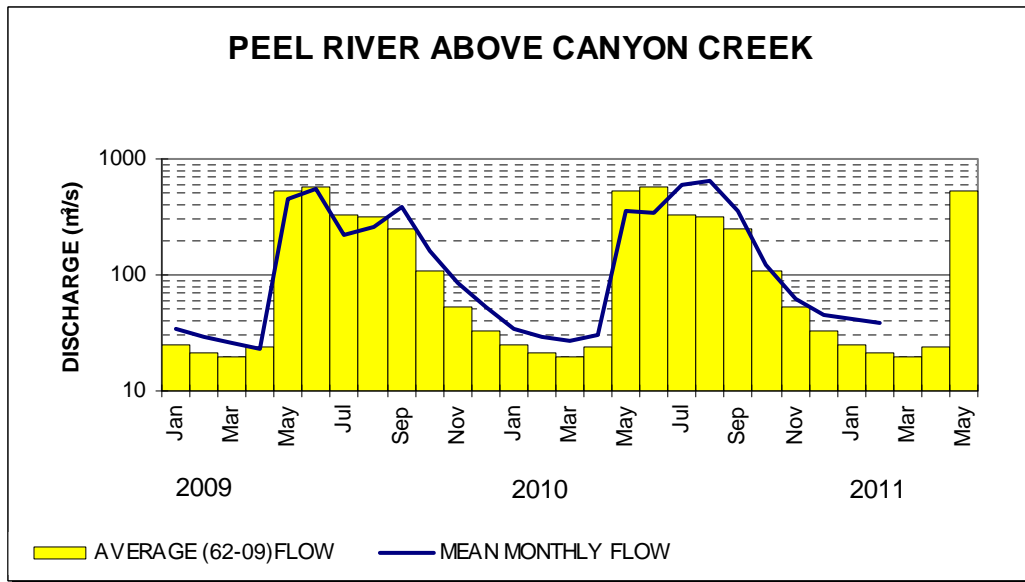
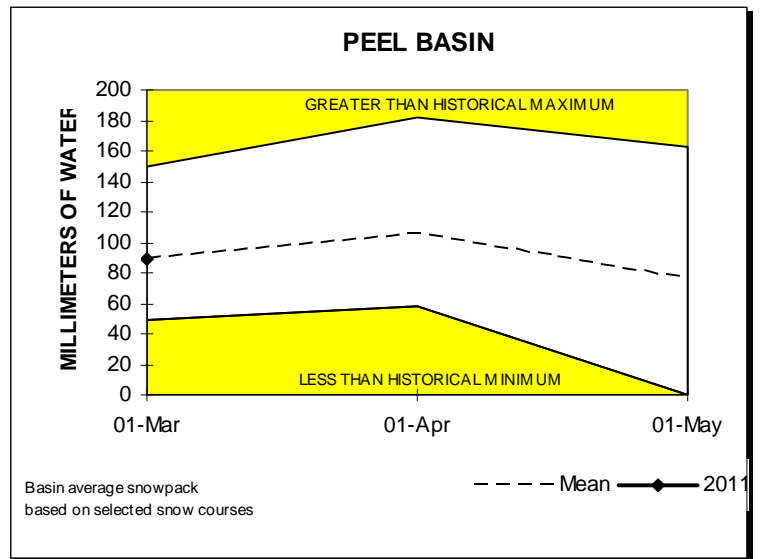




PEEL RIVER BASIN

Snowpack conditions in the Peel River watershed are normal with values of snow water equivalent ranging from 98 percent of normal at Blackstone to 106 percent of normal at Ogilvie. A basin wide average has been estimated to be 102 percent of normal.

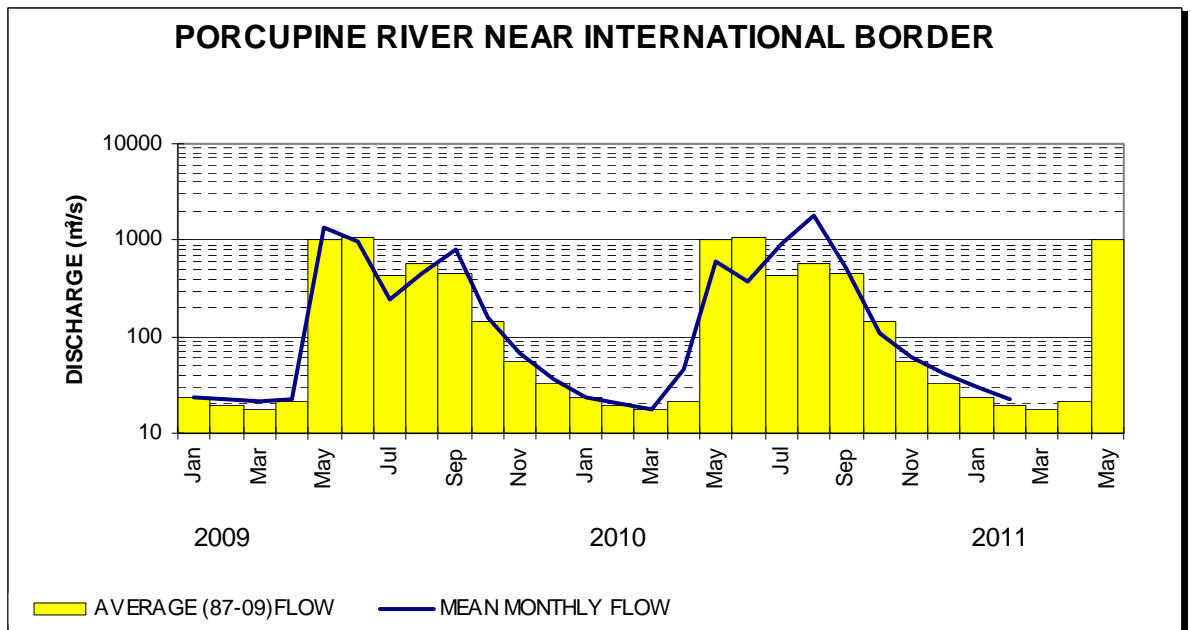
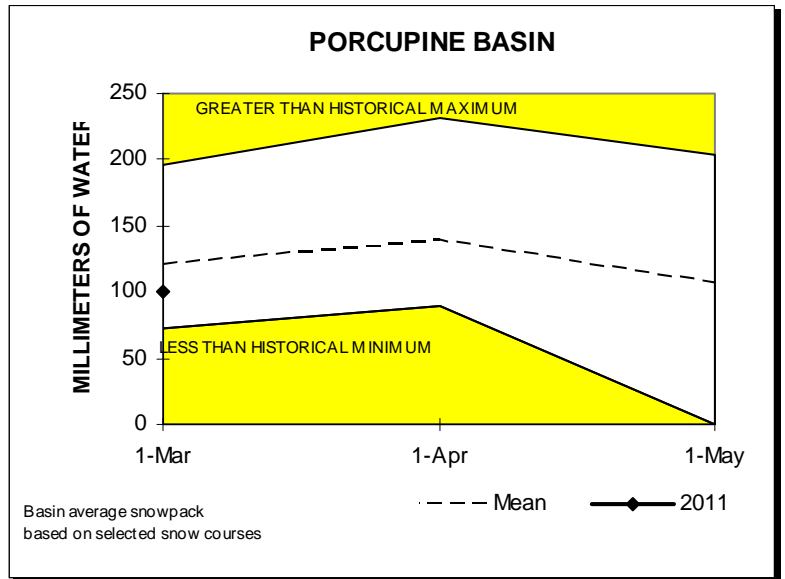
Mean monthly streamflow for February as indicated by the Peel River above Canyon Creek station was 182 percent of normal. Peel River volume and peak flow forecasts are not available at this time.



PORCUPINE RIVER BASIN

Snowpack conditions in the Porcupine River watershed are normal with values of snow water equivalent ranging from 89 percent of normal at Eagle Plains to 110 percent of normal at Eagle River. A basin wide average has been estimated to be 101 percent of normal.

Mean February streamflow for the basin as indicated by the Porcupine River near the International Boundary is 118 percent of normal. Porcupine River volume and peak flow forecasts are not available at this time.



Drainage Basin and Snow Course

For Sample Date: 2011-03-01

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	2011/02/24	68	145	95	80	33
Alder Creek	08AA-SC02	768	2011/02/27	71	147	116	145	30
Aishihik Lake	08AA-SC03	945	2011/02/24	62	136	53	71	17
Haines Junction Farm	08AA-SC04	610	2011/03/01	57	123	95	92	11
Clay Creek	08AB-SC02	670	No Surv			568	567	29
Summit	08AB-SC03	1000	2011/03/01	114	321	253	247	31
Profile Mountain	08AB-SC04	900	No Surv			310	285	24
Yukon River Basin								
Tagish	09AA-SC01	1080	2011/02/24	83	202	128	127	36
Montana Mountain	09AA-SC02	1020	2011/02/23	78	184	141	129	35
Log Cabin (B.C.)	09AA-SC03	884	2011/02/23	129	364	332	325	50
Atlin (B.C)	09AA-SC04	730	2011/02/28	52	83	94	112	46
Mt McIntyre B	09AB-SC01B	1097	2011/02/24	89	219	168	131	35
Whitehorse Airport	09AB-SC02	700	2011/02/24	51	111	82	91	46
Meadow Creek	09AD-SC01	1235	2011/02/24	112	276	273	242	34
Jordan Lake	09AD-SC02	930	2011/02/25	55	89	125	128	23
Morley Lake	09AE-SC01	824	2011/02/23	65	116	103	144	22
Mount Berdoe	09AH-SC01	1035	No Surv			128	95	36
Satasha Lake	09AH-SC03	1106	2011/02/23	68	149	82	82	24
Williams Creek	09AH-SC04	914	2011/02/23	72	153	96	83	16
Twin Creeks	09BA-SC02	900	2011/02/27	86	180	119	163	33
Hoole River	09BA-SC03	1036	2011/02/25	81	110	118	117	34
Burns Lake	09BA-SC04	1112	2011/02/25	104	183	140	192	24
Finlayson Airstrip	09BA-SC05	988	2011/02/25	56	92	108	92	24
Fuller Lake	09BB-SC03	1126	2011/02/27	94	198	173	168	24
Russell Lake	09BB-SC04	1060	2011/02/27	120	295	171	196	24
Rose Creek	09BC-SC01	1080	2011/03/01	73	80	N.S.	96	16
Mount Nansen	09CA-SC01	1021	2011/02/23	60	112	76	66	35
MacIntosh	09CA-SC02	1160	2011/02/23	72	143	100	80	35
Burwash Airstrip	09CA-SC03	810	2011/02/24	40	73	44	40	34
Duke River	09CA-SC05	1310	No Surv			97	91	24
Beaver Creek	09CB-SC01	655	2011/02/23	69	117	54	72	36
Chair Mountain	09CB-SC02	1067	No Surv			N.S.	83	18
White River	09CB-SC03	823	No Surv			N.S.	61	5
Casino Creek	09CD-SC01	1065	2011/02/23	74	151	76	104	33
Pelly Farm	09CD-SC03	472	2011/02/25	48	90	48	73	24

Printed on 07 Mar 2011 from the Environment Yukon Snow Survey System
Code "E" - Estimate, Code "B" - Survey date is outside of valid sampling range

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Drainage Basin and Snow Course

For Sample Date: 2011-03-01

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)	
Yukon River Basin								
Plata Airstrip	09DA-SC01	830	No Surv			130	164	32
Arrowhead Lake	09DA-SC02	1120	No Surv			123	159	15
Withers Lake	09DB-SC01	975	No Surv			157	199	25
Rackla Lake	09DB-SC02	1040	No Surv			140	166	22
Mayo Airport A	09DC-SC01A	540	2011/02/23	55	90	76	89	41
Mayo Airport B	09DC-SC01B	540	2011/02/23	55	84	52	94	23
Edwards Lake	09DC-SC02	830	No Surv			114	146	24
Calumet	09DD-SC01	1310	2011/02/23	88	139	110	175	33
King Solomon Dome	09EA-SC01	1080	2011/02/28	83	166	106	146	36
Grizzly Creek	09EA-SC02	975	2011/03/01	65	103	109	153	35
Midnight Dome	09EB-SC01	855	2011/02/28	78	152	110	131	35
Boundary (Alaska)	09EC-SC02	1005	No Surv			102	115	36
Porcupine River Basin								
Riff's Ridge	09FA-SC01	650	2011/03/01	80	152	118	123	24
Eagle Plains	09FB-SC01	710	2011/03/01	78	161	116	146	28
Eagle River	09FB-SC02	340	2011/03/01	63	98	80	110	28
Old Crow	09FD-SC01	299	No Surv			114	103	25
Liard River Basin								
Watson Lake Airstrip	10AA-SC01	685	2011/03/01	64	165	113	130	46
Tintina Airstrip	10AA-SC02	1067	2011/02/25	89	142	188	183	32
Pine Lake Airstrip	10AA-SC03	995	2011/02/23	81	174	175	202	34
Ford Lake	10AA-SC04	1110	2011/02/25	83	120	168	170	23
Frances River	10AB-SC01	730	2011/02/23	62	148	120	142	35
Hyland River	10AD-SC01	855	2011/03/01	78	181	121	149	35
Peel River Basin								
Blackstone River	10MA-SC01	920	2011/03/01	54	84	56	86	35
Ogilvie River	10MA-SC02	595	2011/03/01	61	94	70	89	35
Bonnet Plume Lake	10MB-SC01	1120	No Surv			131	151	23
Alaska Snow Courses								
Eaglecrest	08AK-SC01	305	2011/02/28	170	195	307	442	29
Moore Creek Bridge	08AK-SC02	700	No Surv			465	472	19

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'	1
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'	1
Hoole River	09BA-SC3	1036	61°32'	131°36'	1
Burns Lake	09BA-SC4	1112	62°17'	129°57'	1
Finlayson Airstrip	09BA-SC5	988	61°42'	130°46'	1
Fuller Lake	09BB-SC3	1126	62°58'	130°46'	1
Rose Creek	09BC-SC01	1080	62°20'	133°23'	1
Russell Lake	09BB-SC4	1060	63°12'	133°29'	1
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	1065	62°44'	138°48'	2
Pelly Farm	09CD-SC3	472	62°50'	137°20'	8
Plata Airstrip	09DA-SC1	830	63°31'	132°03'	1
Arrowhead Lake	09DA-SC2	1120	63°42'	131°10'	1
Withers Lake	09DB-SC1	975	63°59'	132°18'	1
Rackla Lake	09DB-SC2	1040	64°17'	133°15'	1
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'	1
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'	1
Pine Lake Airstrip	10AA-SC3	995	60°06'	130°56'	2
Ford Lake	10AA-SC4	1110	60°47'	131°28'	1
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'	6
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
Summitt	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'	1
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'	5
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