



## Snow Survey and Water Supply Bulletin – May 15, 2011

The May 15<sup>th</sup> snow survey is now complete. Data from 44 snow courses and 55 snow pillows around the province and out-of-province sampling locations, and climate data from Environment Canada, have been used to form the basis for the following reports<sup>1</sup>.

### Weather

Weather patterns in May have been dominated by cooler than normal temperatures throughout British Columbia. Weather has been unsettled, and patterns are consistent with the La Niña cycle observed through the winter/spring.

### Snowpack

Typically the transition from snow accumulation to snow melt occurs at most locations in the province near the middle of April. However this year, the cool April and May has led to a delay in the onset of snow melt. As of May 15<sup>th</sup> most snow survey locations have transitioned to melt. The delay in the onset of melt is about 3-4 weeks later than normal for most of the province.

The ongoing delay in melt has led to increases in snow basin indices across the province. Snow basin indices represent the difference between a “normal” year and the current year for given sampling date, in this case May 15<sup>th</sup>. A note of caution in interpreting snow basin indices at this time of year is that with a delay in the onset of snow melt, differences between observed and normal snow pack levels can become large. This is because in a normal year snow water equivalents are lowering because the snow has melted, whereas this years’ snow pack has not melted so the snow water equivalents remain high.

Basin snow water indices for BC at May 15 vary from a low of 98% of normal in the Peace to a high of 276% of normal in the Similkameen. Well above normal snow packs (>120% of normal) are present across the province, except in the Upper Fraser, North Thompson, and Peace, where near normal or slightly above normal snowpack levels are observed.

### BC Snow Basin Indices – May 15, 2011

Basin	% of Normal	Basin	% of Normal
Upper Fraser	117%	Okanagan-Kettle	173%
Nechako	137%	Similkameen	276%
Middle Fraser	152%	South Coast	155%
Lower Fraser	141%	Vancouver Island	173%
North Thompson	110%	Peace	98%
South Thompson	125%	Skeena-Nass	139%
Columbia	109%		
Kootenay	201%		

1. Every effort is made to ensure that data reported on these pages are accurate. However, in order to update the graphs and indices as quickly as possible, some data may have been estimated. Please note that data provided on these pages are preliminary and subject to revision upon review.



## **Snow Survey and Water Supply Bulletin – May 15, 2011**

### **Water Supply Outlook**

In general, the main difference in water supply outlook and flood risk potential since the May 1<sup>st</sup> bulletin is the ongoing delay in the onset of snow melt. Delays in the snow melt season lead to increases in potential flood risk because more water is available for melt later in the season when warmer temperatures are more likely to occur.

Snow water equivalents have remained fairly similar to May 1<sup>st</sup> levels, with some variability across snow pack sampling locations. While the % of normal values have increased for most of the province, these increases are due to the delay in snowmelt, not the significant addition of water stored in the snow pack.

Based on elevated snow pack levels (>150% of normal) and delays in the melt season, increased flood risk is present in the Middle Fraser, Kootenay, Okanagan-Kettle, and Similkameen. Whether or not significant flooding occurs in these systems will depend primarily on the weather through the rest of May and June.

Additional areas noted in the May 1<sup>st</sup> snow bulletin include the Bulkley and Nicola Rivers, however additional analysis has not been completed for the May 15<sup>th</sup> bulletin for these systems. Continued elevated flood risk potential is expected in these areas.

Large peak flows in the Lower Fraser, South Coast and Vancouver Island regions are typically associated with major storm events in the fall and winter and not with spring snowmelt. Despite high snow packs in these regions, increased flood risk is not expected. An exception to this is in the Birkenhead River where there is an increased potential for flooding.

In regions of the Interior and northern BC with near or slightly above normal snow packs (Upper Fraser, Nechako, North Thompson, South Thompson, Columbia, Peace, Skeena/Nass), normal or slightly above normal flood risk and seasonal runoff is expected. With current snowpack levels and the on-going delay in melt, flooding is possible in these regions.

In the lower Fraser River Valley, on-going delay in melt is also increasing flood risk. The River Forecast Centre is forecasting a peak flow for the Fraser River at Hope of 9,000-11,000 m<sup>3</sup>/s under "normal" weather scenarios. The peak flow magnitude that we get on the Lower will depend on weather conditions over the next 1 to 6 weeks, and higher than anticipated flows could occur under adverse weather conditions (eg. extreme temperatures). For comparison the peak flow of the Fraser at Hope was 11,000 m<sup>3</sup>/s in 2007, and 6,000 m<sup>3</sup>/s in 2010.



## **Snow Survey and Water Supply Bulletin – May 15, 2011**

Snow conditions into the snowmelt period comprise only one part of the peak flow and water supply picture. Weather has a large influence on the timing and rate at which the snowpack melts, and will determine whether or not significant flooding occurs. The greatest risk for flooding occurs when there is still significant snow available for melt and weather brings well above normal temperatures and/or heavy rainfall. Current seasonal forecasts from Environment Canada are for normal to below normal temperatures, and normal to above normal precipitation through the May-July period. The La Niña cycle observed through the winter is breaking down, and the cooler, unsettled weather may be expected into June.

The River Forecast Centre continues monitor the snowpack, weather, and stream flow conditions throughout the province. The next update to the Snow Bulletin will be on June 8, 2011.

Produced by: BC River Forecast Centre  
May 24, 2011

## UPPER FRASER Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
PACIFIC LAKE	770	14-May	113	519	152			728	0	341	33
HEDRICK LAKE	1100	15-May	179	1024	137	663	964	1050	435	746*	11
LU LAKE	1310	15-May	78	403	296	113	282	445	0	136*	12
BARKERVILLE	1520	15-May	91	406	174	149	281	503	0	234	33
MC BRIDE (UPPER)	1580	14-May	115	480	131	334	433	752	24	367	43
MCKRIDE (UPPER)	1620	15-May	122	466	88	341	476	660	341	527*	4
REVOLUTION CREEK	1690	15-May	201	853	120	594	967	1249	228	713	25
DOMMOUNTAIN	1820	14-May	194	872	107	675	958	1168	385	813	38
DOMMOUNTAIN	1820	15-May	188	890	101	623	919	1208	611	881*	5
YELLOWHEAD	1860	15-May	111	582	101	592	465	825	139	579	14

## NECHAKO Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
TAHTSA LAKE	1300	15-May	N/A	1405	112	1250	1064	2347	671	1255	18
MOUNT PONDOSY	1400	15-May	N/A	815	126	543	524	1198	207	645	18
MOUNT WELLS	1490	15-May	N/A	584	115	447	732	951	171	510	19

## MIDDLE FRASER Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
BROOKMERE	980	15-May	24	77	220			208	0	35	26
BOSS MOUNTAIN MINE	1460	15-May	N/A	608	131	396	469	761	184	464	17
BRENDA MINE	1460	15-May	N/A	208	832	9	16	146	0	25	18
BARKERVILLE	1520	15-May	91	406	174	149	281	503	0	234	33
MOUNT TIMOTHY	1660	10-May	97	350	174	122	240	466	0	201	42
YANKS PEAK EAST	1670	15-May	187	977	122	602	1065	1125	398	800	14
PENFOLD CREEK	1680	14-May	255	1212	119	950	1067	1400	585	1019	41
GREEN MOUNTAIN	1780	15-May	N/A	1026	127	1177	485	1366	424	845	17
MISSION RIDGE	1850	15-May	N/A	539	141	451	386	878	0	382	24

## LOWER FRASER Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
BROOKMERE	1C01	980	15-May	24	77	220			208	0	35	26
DISAPPOINTMENT LAKE	1D18P	1040	15-May	N/A	2370	180	1396		1930P	730P	1317*	6
DOG MOUNTAIN	3A10	1080					786	1073	2920Z	0	1100	25
SPUZZUM CREEK	1D19P	1180	15-May	372	1954	137	1523	1001	2093	49	1422*	11
WAHLEACH LAKE	1D09P	1400	15-May	N/A	1183	123	1000	978	1624	335	960	19
CHILLIWACK RIVER	1D17P	1600	15-May	N/A	2123	162	1646	1601	2186	405	1312*	16
TENQUILLE LAKE	1D06P	1680	15-May	287	1509	152	1343	653	1699	469	990*	10

## NORTH THOMPSON Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
BLUE RIVER	1E01B	670	14-May	15	78				0	0	0*	9
BOSS MOUNTAIN MINE	1C20P	1460	15-May	N/A	608	131	396	469	761	184	464	17
MOUNT COOK	1E02P	1550	15-May	294	1441E	114	1358					9
AZURE RIVER	1E08P	1620	15-May	189	1212	99	1136	1046	1665	743	1230	14
ADAMS RIVER	1E07	1720	14-May	216	819	115	783	586	1158	280	712	39
KOSTAL LAKE	1E10P	1770	15-May	238	987	111	773	908	1357	568	887	26
TROPHY MOUNTAIN	1E03A	1860	14-May	186	692	114	657	592	1114	301	608	29

## SOUTH THOMPSON Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
ANGLEMONT	1F02	1190	14-May	53	250	250			361	0	100	18
CELISTA	1F06P	1500	15-May	216	1154	116	889	765	1155	488	822*	4
ADAMS RIVER	1E07	1720	14-May	216	819	115	783	586	1158	280	712	39
SILVER STAR MOUNTAIN	2F10	1840	15-May	206	914	138	613	722	1054	100	661	52
PARK MOUNTAIN	1F03P	1890	15-May	244	1215	131	802	968	1321	474	927	26
ENDERBY	1F04	1900	21-May	282	1269	117	1015	1002	1499	662	1089	48

## UPPER COLUMBIA Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
AZURE RIVER	1E08P	1620	15-May	189	1212	99	1136	1046	1665	743	1230	14
KICKING HORSE	2A07	1650	18-May	55	208	95			521	0	220	46
MOUNT REVELSTOKE	2A06P	1830	15-May	N/A	1572E	121	998	1088	1777	700	1297	18
MOLSON CREEK	2A21P	1980	15-May	N/A	1080	104	1103	1020	1707	602	1040	28

## LOWER COLUMBIA Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
FERGUSON	2D02	880	16-May	111	718	293			640	20	245	35
FARRON	2B02A	1220	17-May	41	167	152	16	78	222	0	110	31
BARNES CREEK	2B06P	1620	15-May	N/A	743	170	379	660	761	94	438	18
ST. LEON CREEK	2B08P	1800	15-May	N/A	1478	137	851	994	1568	639	1080	17
RECORD MOUNTAIN	2B09	1890					628	560	1367	83	676	36
EAST CREEK	2D08P	2030	15-May	N/A	930	98	754	731	1387	461	925	29

## EAST KOOTENAY Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
FERNIE EAST	2C07	1250	12-May	70	298	648	0	0	290	0	46	49
SULLIVAN MINE	2C04	1550	13-May	81	304	290	0	168	457	0	105	59
BANFIELD MOUNTAIN	MT05P	1710	15-May	145	550	180	140	396	569	0	305	13
MORRISSEY RIDGE	2C09Q	1800	15-May	N/A	1024	223	431	637	1091	0	460	27
MOYIE MOUNTAIN	2C10P	1930	15-May	N/A	682	267	130	428	552	0	255	30
HAWKINS LAKE	MT06P	1970	15-May	244	1099	156	539	742	1067	178	706	13
FLOE LAKE	2C14P	2090	15-May	N/A	934	122	671	698	1088	304	765	16

## WEST KOOTENAY Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
FERGUSON	2D02	880	16-May	111	718	293			640	20	245	35
NELSON	2D04	930	17-May	2	11	28			243	0	40	40
CHAR CREEK	2D06	1310	15-May	136	561	201	257	355	715	0	279	41
BUNCHGRASS MEADOW	WA01P	1520	15-May	198	860	148	496	640	1163	150	582	14
EAST CREEK	2D08P	2030	15-May	N/A	930	98	754	731	1387	461	925	29
REDFISH CREEK	2D14P	2104	15-May	419	1672	121	1301	972	1748	972	1380*	9

## KETTLE Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
FARRON	2B02A	1220	17-May	41	167	152	16	78	222	0	110	31
BIG WHITE MOUNTAIN	2E03	1680	15-May	166	640	164	380	402	732	0	390	45
GRAND CREEK	2E07P	1860	15-May	N/A	749	142	480	536	855	290	526*	13

## OKANAGAN Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
SUMMERLAND RESERVOIR	2F02	1280	13-May	29	115	359		0	218	0	32	45
VASEUX CREEK	2F20	1400					0	80	0	9	38	
TROUT CREEK	2F01	1430	12-May	58	210	700	0	11	307	0	30	58
TROUT CREEK (WEST)	2F01A	1430	12-May	70	243	419	58					2
BRENDA MINE	2F18P	1460	15-May	N/A	208	832	9	16	146	0	25	18
GREYBACK RESERVOIR	2F08	1550					146	69	323	0	100	39
ISINTOK LAKE	2F11	1680	12-May	68	226	290	0	10	386	0	78	45
MISSION CREEK	2F05P	1780	15-May	166	713	175	491	533	829	0	407	39
MOUNT KOBAN	2F12	1810	14-May	119	419	165	329	238	516	0	254	44
WHITEROCKS MOUNTAIN	2F09	1830	13-May	133	547	136	426	315	968	0	401	40
SILVER STAR MOUNTAIN	2F10	1840	15-May	206	914	138	613	722	1054	100	661	52

## SIMILKAMEEN Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
BROOKMERE	1C01	980	15-May	24	77	220			208	0	35	26
HAMILTON HILL	2G06	1490	18-May	70	306	510	6		434	0	60	33
MISSEZULA MOUNTAIN	2G05	1550	13-May	69	214	396	0	60	218	0	54	47
ISINTOK LAKE	2F11	1680	12-May	68	226	290	0	10	386	0	78	45
LOST HORSE MOUNTAIN	2G04	1920					135	222	577	0	192	44
BLACKWALL PEAK	2G03P	1940	15-May	210	1000	141	720	675	1481	199	706	43
HARTS PASS	WA09P	1980	15-May	287	1781	187	728	917	1748	345	952	13

## SOUTH COASTAL Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
PALISADE LAKE 3A09P	880	15-May	N/A	N/A	N/A	888	872	1189	0	309	4
DOG MOUNTAIN 3A10	1080					786	1073	2920Z	0	1100	25
ORCHID LAKE 3A19	1190					1726	1432	3730A	774	1900	29
ORCHID LAKE 3A19P	1190	15-May	486	2555	144	1616		2804	536	1770*	21
UPPER SQUAMISH RIVER 3A25P	1340	15-May	394	2669E	176	1621		2980E	709	1515	20
NOSTETUKO RIVER 3A22P	1500	15-May	50	943	248	653		908	19	381*	19
UPPER MOSELY CREEK 3A24P	1650	15-May	92	376	249	282	165	480	0	151*	22

## VANCOUVER ISLAND Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
JUMP CREEK 3B23P	1160	15-May	N/A	2199	226	1049	851	3500E	0	975	14
WOLF RIVER (UPPER) 3B17P	1490	15-May	N/A	2255	172	1911	881	2719E	213	1300	22

## NORTH COASTAL Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
TAHTSA LAKE 1B02P	1300	15-May	N/A	1405	112	1250	1064	2347	671	1255	18
BURNT BRIDGE CREEK 3C08P	1330	15-May	N/A	800	121	538		1444	206	661*	13

## SKAGIT Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
HARTS PASS WA09P	1980	15-May	287	1781	187	728	917	1748	345	952	13

## PEACE Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	
PACIFIC LAKE 1A11	770	14-May	113	519	152			728	0	341	33
AIKEN LAKE 4A30P	1040	15-May	N/A	127		0	113	214	0	0	24
PULPIT LAKE 4A09P	1310	15-May	N/A	349	152	168	460	576	49	230	20
PINE PASS 4A02P	1400	15-May	N/A	997	93	849	1107	1658	813	1073	19
KWADACHA RIVER 4A27P	1620	15-May	N/A	320	93	270	386	468	109	343*	24



## SKEENA/NASS Drainage Basin

Snow Course Name and Number	Elev. metres		May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
CEDAR-KITEEN	4B18P	885	15-May	117	495	109	9	825	972	9	454*	10
MCKENDRICK CREEK	4B07	1050	12-May	93	312	390			320	0	80	18
LU LAKE	4B15P	1310	15-May	78	403	296	113	282	445	0	136*	12
TSAI CREEK	4B17P	1360	15-May	242	1599	126	1308	1387	2138	810	1271*	13
HUDSON BAY MTN.	4B03A	1480	12-May	161	613	139	415	540	822	160	441	38
SHEDIN CREEK	4B16P	1480	15-May	202	968	100	568	1086	1241	568	964*	13

## YUKON Drainage Basin

Snow Course Name and Number	Elev. metres		May 15 2011			Historic, Water Equivalent (mm)					Yrs of Record	
			Snow Depth cm	Water Equiv. mm	% of Normal	2010 mm	2009 mm	Max. mm	Min. mm	Normal mm		
LOG CABIN	4E01	880				146		420	0	200	23	
A - SAMPLING PROBLEMS WERE ENCOUNTERED B - EARLY OR LATE SAMPLING C - EARLY OR LATE SAMPLING WITH PROBLEMS ENCOUNTERED E - ESTIMATED BASED ON AREAL AVERAGE * - PERIOD OF RECORD AVERAGE												