Ministry of Forests, Lands and Natural Resource Operations

Snow Survey and Water Supply Bulletin – June 15, 2011

The June 15th snow survey is now complete. This is the final survey for the 2011 snow season. Data from 4 manual snow courses and 55 snow pillows around the province as well as out-of-province sampling locations, and climate data from Environment Canada, have been used to form the basis for the following report[1].

Weather

Weather patterns shifted in June to near normal temperatures and slightly below normal precipitation. Atmospheric circulation patterns associated with La Niña have still been persisting through June, but are now weakening. The National Ocean and Atmospheric Administration (NOAA) is indicating that the El Nino Southern Oscillation (ENSO) has now shifted to the neutral phase from the cool phase La Niña, which has persisted through the winter-spring of 2010-2011.

Snowpack

With the delay in the snowmelt season this year, snow water equivalent measurements are typically higher than normal for this time of year. The seasonal weather in June has allowed for the steady melt of the snowpack. Low to mid-elevation snow has largely melted out across the province. At higher elevations, high snow packs still persist, particularly in the Lower Fraser, North Thompson, South Thompson, Kootenay, South Coast and Vancouver Island. Province-wide, an average of 45% of the peak snow pack level has melted at the automated snow pillow sites. In a typical year, 65% of the peak snow pack would be melted by June 15th.

Water Supply Outlook

Major rivers in the province have been flowing above seasonal levels due to high snowpacks, delayed melt, and wet weather through the spring. Freshet peak flows have occurred on a number of rivers, and these have typically been above normal. Examples include:

- Bulkley River at Quick (WSC 08EE004) peaked at approximately 880 m^3/s on May 27th, just over a 20-year flow level.
- Skeena River at Usk (08EF001) peaked at approximately 5200 m^3/s on June 3rd just above a 2-year flow.
- Fraser River at Shelley (08KB001) peaked at approximately 3400 m^3/s on May 25th, just above a 2-year flow level.
- Kettle River near Westbridge (08NN013) peaked at approximately 290 m^3/s on June 8th, at approximately a 10-year flow level.

With high snow pack levels, the volume of runoff has created high lake level conditions in many regions of the province, and in particular on Stuart Lake, Okanagan Lake, Shuswap Lake and Kootenay Lake. As the snow disappears from the mid and upper elevations, inflows into lakes have been declining, or are expected to decline through the rest of June. Lake levels are expected to reach peak levels within the last 2 weeks in June.

---

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.

Ministry of Forests, Lands and Natural Resource Operations

Snow Survey and Water Supply Bulletin – June 15, 2011

River levels are expected to remain elevated through the remainder of the freshet season, with above normal flows through most river systems. With significant snow packs still present in the Lower Fraser, North Thompson, South Thompson, Upper Columbia, West Kootenay, and South Coast, flows in these regions could still reach levels higher than have been observed so far this year. The likelihood of extreme peak flows, however, is fairly low at this point given the level of melt that has been observed. Whether or not significant additional high flows occur in these systems will depend on the weather conditions through the rest of June and the early part of July.

Current flow on the Fraser River at Hope (08F005) is 8940 m^3/s. While the likelihood of extreme peak flows is now low, there is still a possibility of flows reaching or exceeding the current high level for this year (9500 m^3/s) given adverse weather conditions. Under the current weather forecast, flows on the Fraser River at Hope are likely to remain in the 7000-9300 m^3/s range for the remainder of June.

Produced by: BC River Forecast Centre, June 22, 2011

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.

UPPER FRASER Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
HEDRICK LAKE	1A14P	1100	15-Jun	25	153	437	7	256	293	0	35*	11
LU LAKE	4B15P	1310	15-Jun	N/A	11		0	0	0	0	0*	12
BARKERVILLE	1A03P	1520	15-Jun	0	0		0	0	37	0	0	18
MCBRIDE (UPPER)	1A02P	1620	15-Jun	N/A	0		0	0	0	0	0*	5
REVOLUTION CREEK	1A17P	1690	15-Jun	N/A	381	159	144	477	724	0	240	25
DOME MOUNTAIN	1A19P	1820	15-Jun	66	413	95	285	600	694	278	433*	5
YELLOWHEAD	1A01P	1860	15-Jun	N/A	89	39	202	23	641	0	229	14

NECHAKO Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
TAHTSA LAKE	1B02P	1300	15-Jun	N/A	741	114	613	552	1871	0	649	18
MOUNT PONDOSY	1B08P	1400	15-Jun	N/A	145		0	0	481	0	0	17
MOUNT WELLS	1B01P	1490	15-Jun	N/A	38		0	82	320	0	0	19

MIDDLE FRASER Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BOSS MOUNTAIN MINE	1C20P	1460	15-Jun	N/A	56		0	0	131	0	0	17
BRENDA MINE	2F18P	1460	15-Jun	N/A	4		0	0	0	0	0*	18
BARKERVILLE	1A03P	1520	15-Jun	0	0		0	0	37	0	0	18
YANKS PEAK EAST	1C41P	1670	15-Jun	76	547	174	24	315	754	0	315	14
GREEN MOUNTAIN	1C12P	1780	15-Jun	N/A	650	328	652	0	933	0	340	17
MISSION RIDGE	1C18P	1850	15-Jun	N/A	15		0	0	253	0	0	24

LOWER FRASER Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
DISAPPOINTMENT LAKE	1D18P	1040	15-Jun	N/A	1922	348	886		966P	0P	552*	6
DOG MOUNTAIN	3A10	1080	17-Jun	237	1296	270	310		2088Z	0	480	25
SPUZZUM CREEK	1D19P	1180	15-Jun	259	1628	206	1061		1403	0	789*	11
WAHLEACH LAKE	1D09P	1400	15-Jun	N/A	1012	253	750	518	1185	0	400	18
CHILLIWACK RIVER	1D17P	1600	15-Jun	N/A	1837	250	1054	724	1759	0	735*	16
TENQUILLE LAKE	1D06P	1680	15-Jun	137	1088	238	904	0	1182	0	457*	10

NORTH THOMPSON Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BOSS MOUNTAIN MINE	1C20P	1460	15-Jun	N/A	56		0	0	131	0	0	17
MOUNT COOK	1E02P	1550	15-Jun	172	1144E	173	949	664	1155	281	660*	10
AZURE RIVER	1E08P	1620	15-Jun	N/A	820E	121	587	394	1489	94	680	14
KOSTAL LAKE	1E10P	1770	15-Jun	N/A	802	236	370	96	1285	0	340	26

SOUTH THOMPSON Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
CELISTA	1F06P	1500	15-Jun	97	545	311	289	45	379	0	190*	4
PARK MOUNTAIN	1F03P	1890	15-Jun	156	866	189	548	480	1095	0	458	25
ENDERBY	1F04	1900					767	623	1326	62	715	32

UPPER COLUMBIA Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
AZURE RIVER	1E08P	1620	15-Jun	N/A	820E	121	587	394	1489	94	680	14
MOUNT REVELSTOKE	2A06P	1830	15-Jun	N/A	1147E	143	525	458	1801	0	800	18
MOLSON CREEK	2A21P	1980	15-Jun	N/A	563	104	679	458	1163	0	540	26

LOWER COLUMBIA Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BARNES CREEK	2B06P	1620	15-Jun	N/A	210		0	0	169	0	0	18
ST. LEON CREEK	2B08P	1800	15-Jun	N/A	1189	226	416	390	1351	0	525	17
RECORD MOUNTAIN	2B09	1890	14-Jun	93	44	20	160	0	949	0	220	22
EAST CREEK	2D08P	2030	15-Jun	N/A	810	123	409	214	1163	0	525	27

EAST KOOTENAY Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BANFIELD MOUNTAIN	MT05P	1710	15-Jun	11	5	100	0	0	8	0	5	13
MORRISSEY RIDGE	2C09Q	1800	15-Jun	N/A	454		0	0	458	0	0	26
MOYIE MOUNTAIN	2C10P	1930	15-Jun	N/A	60		0	0	25	0	0	21
HAWKINS LAKE	MT06P	1970	15-Jun	49	26	14	0	0	683	0	185	14
FLOE LAKE	2C14P	2090	15-Jun	N/A	548	127	413	188	862	0	432	16

WEST KOOTENAY Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BUNCHGRASS MEADOW	WA01P	1520	15-Jun	15	37		0	0	394	0	0	13
GRAY CREEK (LOWER)	2D05	1550	15-Jun	55	272	544			282	0	50	17
GRAY CREEK (UPPER)	2D10	1910	15-Jun	100	528	196			825	0	270	14
EAST CREEK	2D08P	2030	15-Jun	N/A	810	123	409	214	1163	0	525	27
REDFISH CREEK	2D14P	2104	15-Jun	323	1605	180	971	484	1421	484	894*	9

KETTLE Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
GRANO CREEK	2E07P	1860	15-Jun	79	502	437	8	0	503	0	115*	13

OKANAGAN Drainage Basin

Snow Course Name and Number		Elev. metres		Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BRENDA MINE	2F18P	1460	15-Jun	N/A	4		0	0	0	0	0*	18
MISSION CREEK	2F05P	1780	15-Jun	85	383		155	0	424	0	0	39
MOUNT KOBAU	2F12	1810	11-Jun	67	301	485			206	0	62*	6

SIMILKAMEEN Drainage Basin

Snow Course Name and Number		Elev. metres	Date of	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
BLACKWALL PEAK	2G03P	1940	15-Jun	130	668	277	308	0	1031	0	240	43
HARTS PASS	WA09P	1980	15-Jun	52	78	31	186	20	1267	0	254	12

SOUTH COASTAL Drainage Basin

Snow Course Name and Number		Elev. metres	Date of	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
PALISADE LAKE	3A09P	880	15-Jun	N/A	N/A	N/A	N/A		494	0	8*	3
DOG MOUNTAIN	3A10	1080	17-Jun	237	1296	270	310		2088Z	0	480	25
ORCHID LAKE	3A19	1190					1528		1910	0	1150	30
ORCHID LAKE	3A19P	1190	15-Jun	362	1884	164	1116		2074	0	1150*	19
UPPER SQUAMISH RIVER	3A25P	1340	15-Jun	343	1918E	234	1147		1463	131	820	20
NOSTETUKO RIVER	3A22P	1500	15-Jun	N/A	273	1517	0	60	116	0	18*	20
UPPER MOSELY CREEK	3A24P	1650	15-Jun	N/A	0		0	0	0	0	0*	22

VANCOUVER ISLAND Drainage Basin

Snow Course Name and Number		Elev. metres		Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
JUMP CREEK	3B23P	1160	15-Jun	250	1415	832	274	0	930	0	170	14
WOLF RIVER (UPPER)	3B17P	1490	15-Jun	N/A	1832	316	1554	34	1554	0	580	22

NORTH COASTAL Drainage Basin

Snow Course Name and Number		Elev. metres	Date of	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
TAHTSA LAKE	1B02P	1300	15-Jun	N/A	741	114	613	552	1871	0	649	18
BURNT BRIDGE CREEK	3C08P	1330	15-Jun	N/A	132	111	0		728	0	119*	13

SKAGIT Drainage Basin

Snow Course Name and Number		Elev. metres	Date of	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
HARTS PASS	WA09P	1980	15-Jun	52	78	31	186	20	1267	0	254	12

PEACE Drainage Basin

Snow Course Name and Number		Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
AIKEN LAKE	4A30P	1040	15-Jun	N/A	3		0	0	0	0	0*	24
PULPIT LAKE	4A09P	1310	15-Jun	N/A	1		0	0	0	0	0	20
PINE PASS	4A02P	1400	15-Jun	N/A	322	74	207	466	1082	0	435	19
KWADACHA RIVER	4A27P	1620	15-Jun	N/A	0	0	0	0	454	0	69*	22

LIARD Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
NOTE: No Surveys currently done in this basin.											

SKEENA/NASS Drainage Basin

Snow Course Name and Number		Elev. metres		Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2009 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
CEDAR-KITEEN	4B18P	885	15-Jun	N/A	0	0	0	0	113	0	23*	10
LU LAKE	4B15P	1310	15-Jun	N/A	11		0	0	0	0	0*	12
TSAI CREEK	4B17P	1360	15-Jun	125	918	147	669	808	1778	0	626*	13
HUDSON BAY MTN.	4B03A	1480					20		673	0	108	32
SHEDIN CREEK	4B16P	1480	15-Jun	66	428	110	0	372	896	0	390*	13

STIKINE/TAKU Drainage Basin

Snow Course Name and Number	Elev. metres	Date of Survey	Jun 15 2011 Snow Depth cm	Jun 15 2011 Water Equiv. mm	Jun 15 2011 % of Normal	Historic, Water Equivalent (mm) 2010 mm	2008 mm	Max. mm	Min. mm	Normal mm	Yrs of Record
NOTE: No Surveys currently done in this basin.											

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