

Natural Resources Conservation Service

# Montana Water Supply Outlook Report January 1, 2012



Picture: Madison Plateau SNOTEL Site near West Yellowstone

# Water Supply Outlook Report and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

Brian Domonkos Water Supply Specialist Federal Building 10 East Babcock, Room 443 Bozeman, MT 59715 Phone 406-587-6991

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

## Montana Water Supply Outlook Report as of January 1, 2012

Across the state the month of December yielded well below average precipitation to a mountain snowpack that was close to average at the beginning of the month. Although year-to-date precipitation is near average, snowpack has fallen to nearly 80 percent of average.

#### **Snowpack**

Typical snowpack accumulation on January 1 for the Columbia is 45 percent of maximum snowpack; Missouri is 42 percent; and Yellowstone is 43 percent. State-wide mountain snow water content was 82 percent of average and 74 percent of last year. West of the Divide snowpack was 78 percent of average and 73 percent of last year. East of the Divide snowpack was 88 percent of average and 80 percent of last year.

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR
COLUMBIA KOOTENAI, MONTANA KOOTENAI, CANADA FLATHEAD, MONTANA FLATHEAD, CANADA UPPER CLARK FORK BITTERROOT LOWER CLARK FORK MISSOURI MISSOURI HEADWATERS JEFFERSON MADISON GALLATIN MISSOURI MAINSTEM HEADWATERS MAINSTEM HEADWATERS MAINSTEM SMITH-JUDITH-MUSSELSHELL SUN-TETON-MARIAS MILK (Bearpaw Mtns.) ST. MARY ST. MARY & MILK YELLOWSTONE LOWER YELLOWSTONE LOWER YELLOWSTONE	88         64         68         101         82         90         90         90         90         90         77         78         74         77         93         105         89         81         76         97         90         103	88         88         64         61         73         77         96         83         71         66         71         62         67         85         99         73         90         44         82         79         87         75         99
STATEWIDE	82	74

#### Precipitation

December mountain and valley precipitation across the state was 66 percent of average and 59 percent of last year, while the water year precipitation was 95 percent of average and 86 percent of last year. West of the Continental Divide, December mountain and valley precipitation was 62 percent of average and 55 percent of last year and the water year precipitation was 95 percent of last year. East of the Divide, December mountain and valley precipitation was 69 percent of average and 62 percent of last year and the water year precipitation was 69 percent of average and 62 percent of last year and the water year precipitation was 95 percent of last year and the water year precipitation was 95 percent of average and 85 percent of last year and the water year precipitation was 95 percent of average and 85 percent of last year.

	DI	ECEMBER	WAT	ER YEAR
RIVER BASIN	% OI	F AVERAGE	% OF	AVERAGE
COLUMBIA		62		95
				95 97
KOOTENAI				
FLATHEAD		56		87
UPPER CLARK FORK		69		98
BITTERROOT		76		105
LOWER CLARK FORK		58		93
MISSOURI		67		98
JEFFERSON		70		89
MADISON		68		91
GALLATIN		79		93
MISSOURI MAINSTEM		71		109
SMITH-JUDITH-MUSSELSHELL		58		112
SUN-TETON-MARIAS		68		103
MILK		43		88
ST. MARY		58		92
YELLOWSTONE		76		86
UPPER YELLOWSTONE		77		99
LOWER YELLOWSTONE		90		108
STATEWIDE	• • • •	66		95

#### **Reservoirs**

State-wide reservoir storage was 102 percent of average and 101 percent of last year. Reservoir storage west of the divide was 101 percent of average and 212 percent of last year. East of the Divide, reservoir storage was 102 percent of average and 100 percent of last year.

RIVER BASIN	% OF	AVERAGE	% OF LAST YEAR
COLUMBIA		101	212
KOOTENAI			
FLATHEAD		91	0
UPPER CLARK FORK		137	
BITTERROOT		105	
LOWER CLARK FORK			
MISSOURI		102	100
JEFFERSON		124	102
MADISON		119	103
GALLATIN		137	
MISSOURI MAINSTEM		101	100
SMITH-JUDITH-MUSSELSHELL		138	91
SUN-TETON-MARIAS		112	100
MILK		130	
ST. MARY		98	51
YELLOWSTONE		108	107
UPPER YELLOWSTONE		146	120
LOWER YELLOWSTONE		108	107
STATEWIDE		102	101

#### Streamflow

State-wide, streamflows are forecast to be 86 percent of average. West of the Divide streamflows are forecast to be 84 percent of average and east of the Divide are forecast to be 87 percent of average.

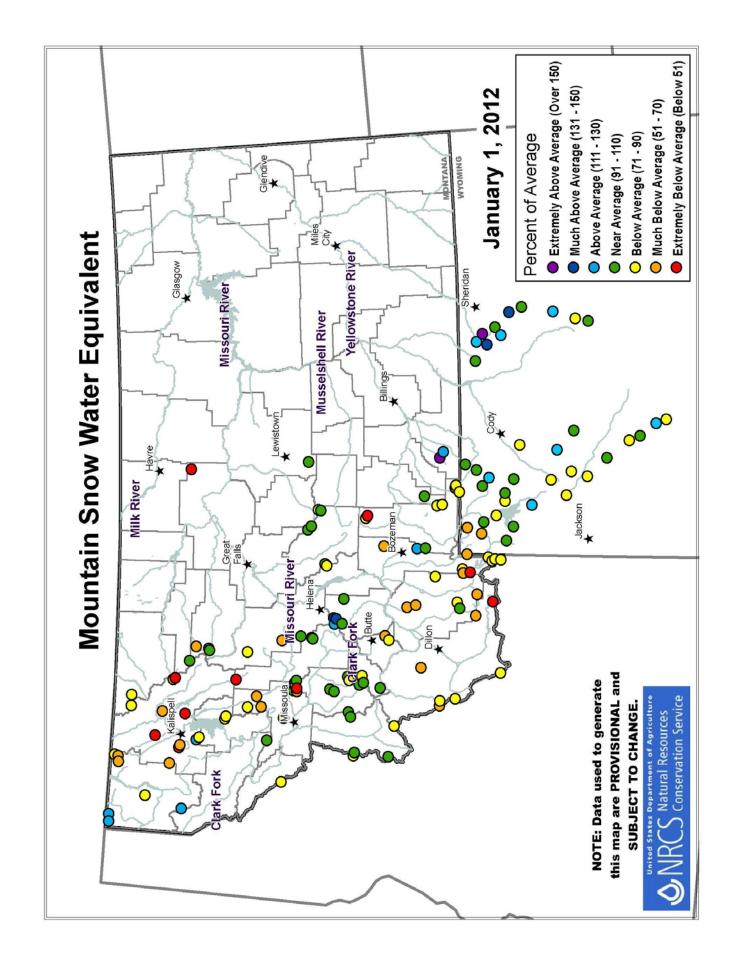
Following are streamflow forecasts for the period April 1 through July 31. THESE FORECASTS ASSUME NEAR NORMAL SPRING CONDITIONS AND DO NOT ACCOUNT FOR WELL BELOW AVERAGE (70% or less) OR WELL ABOVE AVERAGE (130% or more) SNOWMELT OR SPRING RAIN. The figures below are the combined averages of the individual forecast points within the particular basin. Specific forecast probabilities are available in each individual River Basin Report.

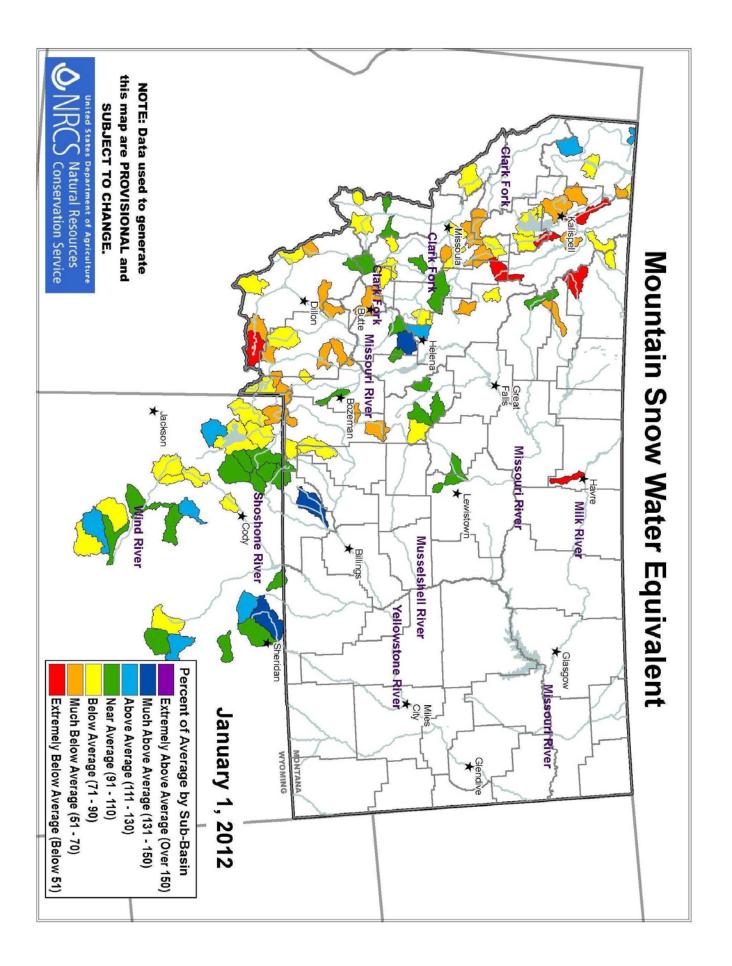
			il-July S YEAR		April-July LAST YEAR
RIVER BASIN	00		AVERAGE	00	
			0.4		104
COLUMBIA				•••••	104
KOOTENAI	•		79		94
FLATHEAD	•		83		116
UPPER CLARK FORK	•		88		99
BITTERROOT			91		95
LOWER CLARK FORK			82		99
MISSOURI			81		99
JEFFERSON			71		106
MADISON			83		111
GALLATIN			89		100
MISSOURI MAINSTEM			80		103
SMITH-JUDITH-MUSSELSHELL			77		97
SUN-TETON-MARIAS					82
	•				112
ST. MARY				•••••	98
YELLOWSTONE			99		97
UPPER YELLOWSTONE	•		90		107
LOWER YELLOWSTONE		1	_07		86
STATEWIDE	•		86		101

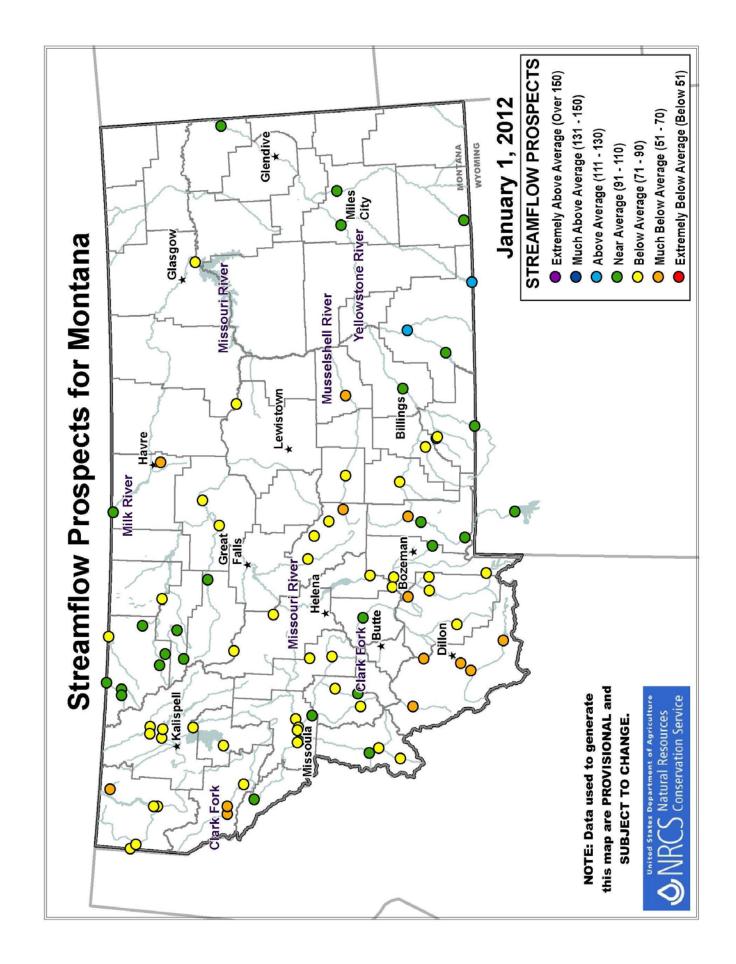
NOTE: The APRIL-JULY LAST YEAR % OF AVERAGE column above is what was forecast last year at this same time, NOT what actually occurred.

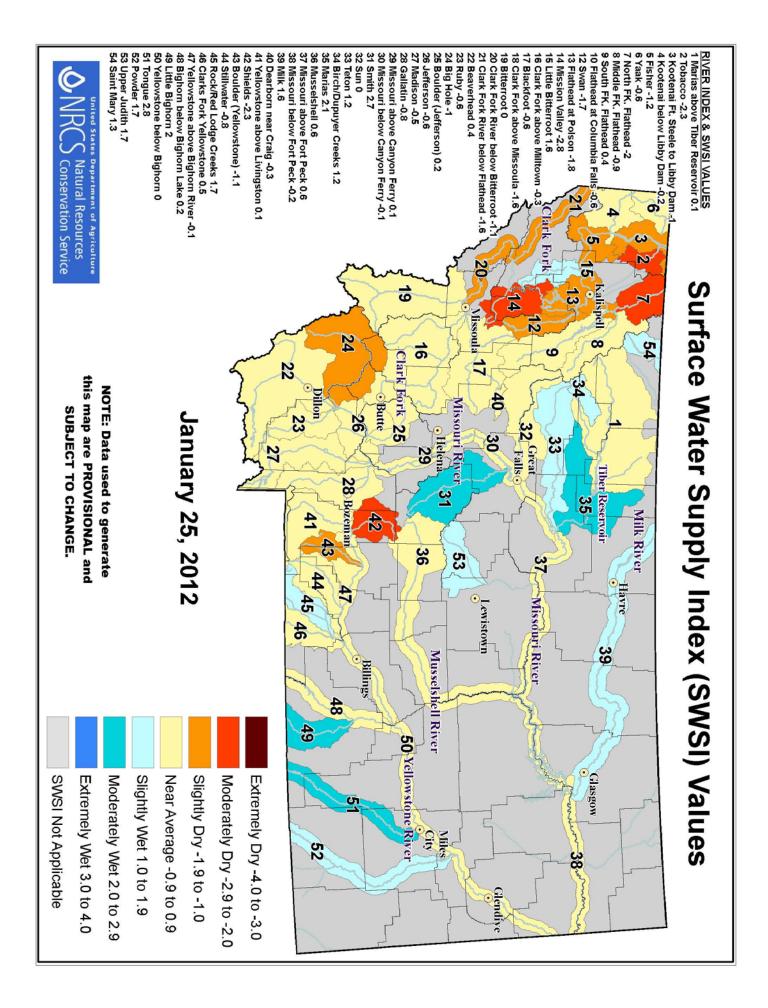
**Surface Water Supply Index** The Surface Water Supply Index (SWSI) is a measure of available surface water availability for the spring and summer months. Water users that rely on mountain precipitation can use the index to evaluate seasonal surface water supplies. The SWSI accounts for mountain snowpack, mountain precipitation, streamflow, reservoir storage, and soil moisture.

	SWSI RAT	TING	SURFACE WATER CONDITION
	+3.0 to	+4 0	Extremely Wet
	+2.0 to		Moderately Wet
	+1.0 to		Slightly Wet
	-1.0 to		Near Average
	-1.0 to		Slightly Dry
	-2.0 to		Moderately Dry
	-3.0 to		Extremely Dry
This Year	Last Year		
SWSI	SWSI		Basi
-2.3	-2.3	Tobacco	
	-0.4		i Ft. Steele to Libby Dam
	+0.8		i River below Libby Dam
-1.2	+1.1	Fisher	
-0.6	0.0	Yaak Ri	
-2.0	+0.7		ork Flathead River Fork Flathead River
-0.9	+1.3 +3.1		fork Flathead River
	+3.1 +1.6		d River at Columbia Falls
-1.7	+2.3	Swan Ri	
-1.7	+2.3 $+1.0$		d River at Polson
-2.8	+3.2	Mission	
+1.6	-2.0		Bitterroot River
-0.3	+0.4		ork River above Milltown
-0.6	+1.8	Blackfo	ot River
0.0	+0.7	Bitterr	oot River
-1.1	+0.9	Clark F	ork River below Bitterroot River
	+1.0	Clark F	ork River below Flathead River
+0.4	+2.0		ead River
	+1.8	Ruby Ri	
-1.0	+1.2	Big Hol	
+0.2	+0.5		River (Jefferson)
	+1.9		on River
-0.5 -0.8	+1.3 +1.0	Madison Gallati	
-0.8	+0.9		i River above Canyon Ferry
-0.1	+0.7		i River below Canyon Ferry
+2.7	+2.3	Smith R	1 1
0.0	-0.8	Sun Riv	er
+1.2	+0.4	Teton R	iver
+1.2	-0.4	Birch/D	upuyer Creeks
+1.7	+2.7	Upper J	udith River
+0.1	-0.3		River above Tiber
	+1.3		River below Tiber
+0.6	+1.7		hell River
+0.6	+0.8		i River above Ft. Peck
-0.2 +1.3	+1.0 +1.2	Missour St. Mar	i River below Ft. Peck
+1.5	+1.2	Milk Ri	£
-0.3	-1.1		n River near Craig
+0.1	+2.0		tone River above Livingston
-2.3	+2.4	Shields	
-1.1	+2.1	Boulder	River (Yellowstone)
-0.8	+0.6		ter River
	+0.7	Rock/Re	d Lodge Creeks
+0.5	+2.1		Fork River
-0.1	+1.8		tone River above Bighorn River
+0.2	+0.5		River below Bighorn Lake
+2.0	-0.5		Bighorn River
0.0	+1.2		tone River below Bighorn River
+2.8 +1.7	-0.6 -0.3	Tongue Powder	
±./	-0.3	rowaer.	XT AGT







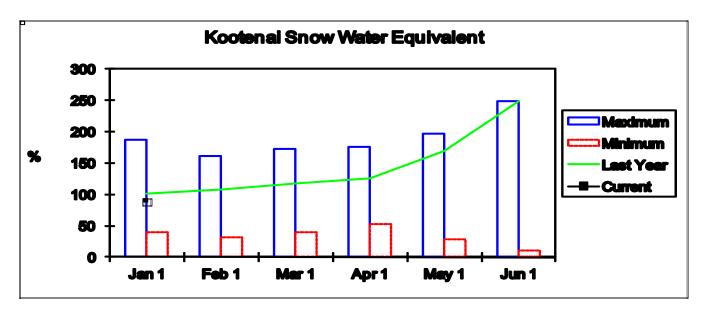


 SNOW COURSE			DEPTH	CONTENT	YEAR	71-00
ALBRO LAKE SNOTEL ASHLEY DIVIDE ASHLEY LAKE	8300	1/01/12	29	5.8	7.9	9.6
ASHLEY DIVIDE	4820	12/28/11	8	1.9	5.2	3.4
ASHLEY LAKE	4000	12/28/11	2	.5	2.8	2.6
BADGER PASS SNOTEL						
BANFIELD MTN SNOTEL						
BARKER LAKES SNOTEL						
BASIN CREEK SNOTEL	7180	1/01/12	14 10	2.6	3.9	3.7
BEAGLE SPGS SNOTEL		1/01/12	19	3.1	5.5	3./
BEAVER CREEK SNOTEL BISSON CREEK SNOTEL	4920	1/01/12	20 14	5.5 3.5 13.2	8 0	7.9 4 5
BLACK BEAR SNOTEL	7950	1/01/12	11 53	13.2	22 6	17 2
BLACK PINE SNOTEL BLACKTAIL	7100	1/01/12	23	4.7	5.6	5.2
BLACKTAIL	5650	1/02/12	20	5.3	8.8	6.8
BLACKTAIL MTN SNOTEI	5650	1/01/12		5.5		
BLOODY DICK SNOTEL	7550	1/01/12	25	4.2	5.6	5.6
BOULDER MTN SNOTEL	7950			8.1		
BOX CANYON SNOTEL	6700	1/01/12	20	3.9	5.5	4.5
BRACKETT CR SNOTEL	7320	1/01/12	23	4.7	11.0	8.9
BURNT MTN SNOTEL	5880	1/01/12	20	4.4	3.1	2.7
BRACKETT CR SNOTEL BURNT MTN SNOTEL CALVERT CR SNOTEL CARROT BASIN SNOTEL	6430	1/01/12	20	4.2	4.8	3.9
CARROT BASIN SNOTEL CHESSMAN RESERVOIR	9000	1/01/12	44	9.8	13.9 1 E	13.1
CLOVER MDW SNOTEL						
COLE CREEK SNOTEL						
COMBINATION SNOTEL						
COPPER BOTTOM SNOTEI	5200	1/01/12	11	3.3	5.6	5.3
COPPER CAMP SNOTEL	6950	1/01/12	64	23.0	23.3	
COPPER CAMP SNOTEL COYOTE HILL	4200	12/29/11	10	23.0 2.4 5.0	4.6	4.3
CRYSTAL LAKE SNOTEL	6050	1/01/12	21	5.0	9.1	5.4
DAISY PEAK SNOTEL	7600	1/01/12	19	4.0	5.1	4.7
DALY CREEK SNOTEL						
DARKHORSE LK. SNOTEI						
DEADMAN CR SNOTEL						
DISCOVERY BASIN	7050	1/01/12	10 10	3.3	4.7	4.2
DIVIDE SNOTEL DIX HILL	6400	1/01/12	21	3.2 4.6	6.1	4.0
DUPUYER CREEK SNOTEI		1/01/12	12	2.7	3.8	4.4
EMERY CREEK SNOTEL		1/01/12	14	4.3	7.7	7.0
FISHER CREEK SNOTEL		1/01/12	62	15.7	18.6	16.3
FLATTOP MTN SNOTEL		1/01/12	67	16.8	19.0	21.4
FROHNER MDWS SNOTEL	6480	1/01/12	20	4.5	3.9	3.4
GARVER CREEK SNOTEL	4250	1/01/12	23	6.2	5.4	5.2
GRAVE CRK SNOTEL	4300	1/01/12	20	4.9	7.2	7.7
HAND CREEK SNOTEL		1/01/12	17	3.9	6.4	5.9
HAWKINS LAKE SNOTEL		1/01/12	53	13.8	11.0	12.4
HEBGEN DAM	6550	12/29/11	13 24	2.3	5.2	5.1
HELL ROARING DIVIDE HOLBROOK	5770 4530	12/27/11 12/31/11	24 10	4.9 1.9	13.9 3.9	13.4 4.2
HOODOO BASIN SNOTEL		1/01/12	66	16.4	17.5	19.3
JOHNSON PARK	6450	12/30/11	11	2.7	3.4	2.8
KRAFT CREEK SNOTEL		1/01/12	15	4.9	7.1	6.9
LAKEVIEW RDG. SNOTEI		1/01/12	15	2.6	6.1	5.1
LEMHI RIDGE SNOTEL	8100	1/01/12	19	3.6	5.5	4.7
LICK CREEK SNOTEL	6860	1/01/12	25	6.1	4.9	5.3
LONE MOUNTAIN SNOTEI		1/01/12	29	6.5	10.8	7.9
LOWER TWIN SNOTEL	7900	1/01/12	29	5.9	8.7	8.8
LUBRECHT SNOTEL	4680	1/01/12	12	2.9	3.5	2.6
LUBRECHT FOREST NO		12/27/11	8 3	1.3	3.8	2.7
LUBRECHT FOREST NO 4 LUBRECHT FOREST NO 6		12/27/11 12/27/11	3 10	.8 1.7	2.7 3.3	1.4 1.6
LUBRECHT HYDROPLOT		12/27/11 12/27/11	10	1.9	3.3	2.5
MADISON PLT SNOTEL		1/01/12	38	8.8	14.6	11.2
MANY GLACIER SNOTEL		1/01/12	20	5.3	7.8	7.0

MARIAS PASS	5250	12/23/11	16	4.1	7.7	7.3
MONUMENT PK SNOTEL	8850	1/01/12	33	7.0	12.2	9.9
MOSS PEAK SNOTEL	6780	1/01/12	51	13.8	24.9	16.8
MT LOCKHART SNOTEL	6400	1/01/12	40	9.9	9.4	9.5
MULE CREEK SNOTEL	8300	1/01/12	27	4.7	7.8	6.9
N.E. ENTRANCE SNOTEL	7350	1/01/12	19	3.6	5.9	5.0
NEVADA RIDGE SNOTEL	7020	1/01/12	31	6.7	7.6	6.8
NEZ PERCE CMP SNOTEL	5650	1/01/12	23	5.5	6.0	6.1
N.F. ELK CR SNOTEL	6250	1/01/12	21	4.7	6.3	5.1
NF JOCKO SNOTEL	6330	1/01/12	42	11.2	19.9	19.4
NOISY BASIN SNOTEL	6040	1/01/12	36	9.0	28.1	19.8
OPHIR PARK	7150	1/01/12	24	5.1	7.6	6.6
PETERSON MDW SNOTEL	7200	1/01/12	21	4.2	4.2	4.4
PICKFOOT CRK SNOTEL	6650	1/01/12	23	5.1	6.0	5.2
PIKE CREEK SNOTEL	5930	1/01/12	25	5.3	8.7	12.0
PIPESTONE PASS	7200	12/30/11	7	1.3	2.1	2.2
PLACER BASIN SNOTEL	8830	1/01/12	40	7.9	10.2	8.7
POORMAN CR SNOTEL	5100	1/01/12	53	15.2	19.3	13.4
PORCUPINE SNOTEL	6500	1/01/12	11	2.4	3.8	2.8
ROCKER PEAK SNOTEL	8000	1/01/12	31	6.5	6.9	6.4
ROCKY BOY SNOTEL	4700	1/01/12	3	1.1	2.5	2.2
SACAJAWEA SNOTEL	6550	1/01/12	16	3.9	7.0	5.1
SADDLE MTN SNOTEL	7900	1/01/12	46	9.3	12.7	11.7
S.F. SHIELDS SNOTEL	8100	1/01/12	19	3.7	7.5	7.5
SHORT CREEK SNOTEL	7000	1/01/12	13	2.9	3.8	2.9
SHOWER FALLS SNOTEL	8100	1/01/12	46	10.0	10.9	10.1
SKALKAHO SNOTEL	7260	1/01/12	42	9.3	9.9	10.3
SLEEPING WOMAN SNTL	6150	1/01/12	28	7.1	8.4	6.9
SPUR PARK SNOTEL	8100	1/01/12	36	9.1	10.5	10.0
STAHL PEAK SNOTEL	6030	1/01/12	40	11.1	19.8	17.1
STORM LAKE	7780	12/30/11	24	5.7	5.0	5.5
STUART MOUNTAIN SNTL	7400	1/01/12	47	11.8	18.4	15.1
TEN MILE LOWER	6600	12/27/11	18	3.5	3.1	3.0
TEPEE CREEK SNOTEL	8000	1/01/12	20	4.1	7.6	6.0
TIZER BASIN SNOTEL	6840	1/01/12	25	5.2	4.2	4.8
TRUMAN CREEK	4060	12/28/11	9	2.5	4.1	2.0
TWELVEMILE SNOTEL	5600	1/01/12	30	7.9	6.1	7.5
TWENTY-ONE MILE	7150	12/28/11	21	4.2	7.6	7.3
TWIN LAKES SNOTEL	6400	1/01/12	55	15.6	15.0	17.5
WALDRON SNOTEL	5600	1/01/12	22	6.0	5.1	5.2
WARM SPRINGS SNOTEL	7800	1/01/12	38	8.5	9.7	9.4
WEASEL DIVIDE	5450	1/04/12	43	11.7	13.7	15.2
WEST YELL'ST SNOTEL	6700	1/01/12	22	4.7	7.3	5.9
WHIST THE ST SNOTEL WHISKEY CREEK SNOTEL	6800	1/01/12	28	6.1	10.1	7.5
WHITE MILL SNOTEL	8700	1/01/12	33	9.1	13.1	11.1
WOOD CREEK SNOTEL	5960	1/01/12	17	3.5	5.0	4.2
MOOD CIVERIA DIMOTER	5700		± /	5.5	5.0	7.4

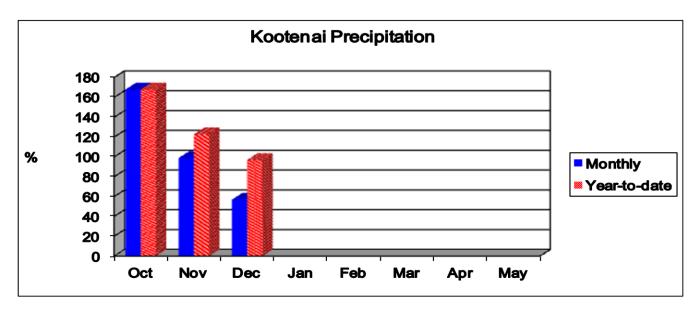
#### Kootenai River Basin in Montana

Snowpack conditions in the Kootenai River Basin as of January 1 were below average. Snow water content was 88 percent of average and 88 percent of last year. Snowpack in the Kootenai in Canada was above average. Snow water content was 64 percent of average and 64 percent of last year.



January maximum swe was established in 1997 and minimum was in 1977; February maximum swe was in 1997 and minimum swe was in 1977; March maximum swe was in 1972 and minimum swe was in 1977; April maximum swe was in 1974 and minimum swe was in 1977, and June maximum swe was in 2011 and minimum swe was in 1992. Average is for the period 1971 through 2000.

Mountain precipitation during December was 56 percent of average and 55 percent of last year. Valley precipitation during December was 63 percent of average and 50 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 97 percent of average and 90 percent of last year.



There was insufficient data provided to calculate storage for Lake Koocanusa.

Assuming average precipitation, April through July streamflows are forecast to average 79 percent.

Surface Water Supply Index (SWSI) was -2.3 in the Tobacco River; insufficient data in the Kootenai Ft. Steele to Libby Dam; insufficient data in the Kootenai River below Libby Dam; -1.2 in the Fisher River; and -0.6 in the Yaak River.

=	
	KOOTENAI RIVER BASIN in Montana
	Streamflow Forecasts - January 1, 2012
=	
	<pre>&lt;&lt;===== Drier ===== Future Conditions ====== Wetter ====&gt;&gt;</pre>

Forecast Point	Forecast	======================================						
	Period	90%	70%	50	~ ~	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
=								
Tobacco R nr Eureka	APR-JUL	56	79	95	70	111	134	136
	APR-SEP	63	89	106	71	123	149	150
Libby Reservoir Inflow (1,2)	APR-JUL	3480	4320	4700	83	5080	5920	5640
	APR-SEP	4260	5110	5500	83	5880	6730	6640
Fisher River nr Libby	APR-JUL	91	144	180	78	215	270	230
FISHER RIVER HE LIDDY		98		190	78	215	280	245
	APR-SEP	98	153	1 190	78	225	280	245
Yaak River nr Troy	APR-JUL	215	310	370	80	430	525	465
-	APR-SEP	235	325	390	80	455	545	490
Kootenai R at Leonia (1,2)	APR-JUL	4340	5400	5880	84	6360	7410	7040
	APR-SEP	5170	6240	6730	83	7220	8290	8120

KOOTENAI RIVER BASIN in Montana

=

KOOTENAI RIVER BASIN in Montana

Reservoir Storage (1000 AF) - End of December | Watershed Snowpack Analysis - January 1, 2012

= Reservoir	Usable   Capacity  	*** Usabl This Year	le Storag Last Year	e *** Avg	Watershed	Number of Data Sites	This Ye ====== Last Yr	
= LAKE KOOCANUSA		NO REPORT	2		KOOTENAY in CANADA	4	160	104
					KOOTENAI MAINTSTEM	3	97	96
					TOBACCO	3	68	69
					FISHER	1	61	66
					YAAK	2	122	114
					KOOTENAI in MONTANA	9	88	88
					KOOTENAI ab BONNERS FER	RY 13	103	91

.

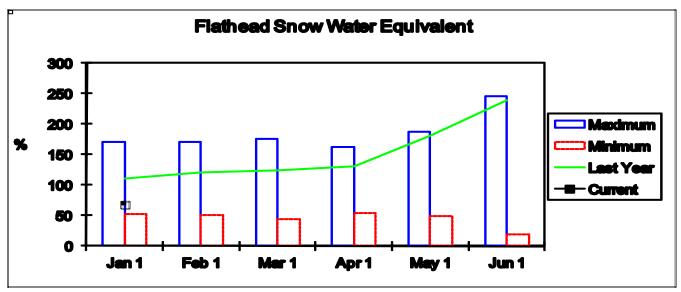
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 And a value used in place of average.

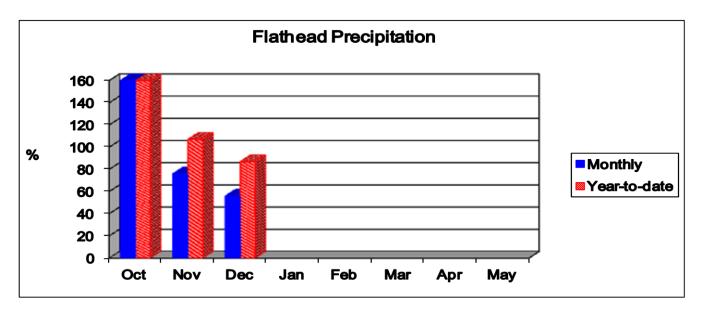
### **Flathead River Basin**

Snowpack conditions in the Flathead River Basin were well below average on January 1. Snow water content was 68 percent of average and 61 percent of last year. Snowpack in the Flathead of Canada is average based on one data site. Snow water content was 101 percent of average and 73 percent of last year.



January maximum swe was established in 1997 and minimum was in 2001; February maximum swe was in 1997 and minimum was in 2001; March maximum swe was in 1972 and minimum was in 2005; April maximum swe was in 1972 and minimum was in 2005; May maximum swe was in 1972 and minimum was in 1992; and June maximum swe was in 1974 and minimum was in 1992. Average is for the period 1971 through 2000.

Mountain precipitation during December was 57 percent of average and 52 percent of last year. Valley precipitation during December was 51 percent of average and 32 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 87 percent of average and 81 percent of last year.



There was insufficient data provided to calculate storages for Hungry Horse Reservoir and Flathead Lake.

Assuming average precipitation, April through July streamflows are forecast to average 83 percent.

Surface Water Supply Index (SWSI) was -2.0 in the North Fork Flathead River; -0.9 in the Middle Fork Flathead River; insufficient data in the South Fork Flathead River; insufficient data in the Flathead River at Columbia Falls; -1.7 in the Swan River; insufficient data in the Flathead River at Polson; -2.8 in the Mission Valley; +1.6 in the Little Bitterroot River.

=
FLATHEAD RIVER BASIN
Streamflow Forecasts - January 1, 2012

				- January 1, 2				
=		<<=====	Drier ====	== Future Con	nditions =:	===== Wetter	r ====>>	
Forecast Point	Forecast	========		= Chance Of E:	xceeding * :			
	Period	90%	70%	50		30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
				======================================		=================		
=								
NF Flathead R nr Columbia Falls	APR-JUL	965	1180	1320	82	1470	1680	1620
	APR-SEP	1080	1310	1460	81	1610	1840	1800
MF Flathead R nr West Glacier	APR-JUL	1030	1250	1410	89	1 1560	1780	1590
	APR-SEP	1120	1350	1510	87	1670	1900	1740
SF Flathead R nr Hungry Horse	APR-JUL	690	875	1000	80	1120	1310	1250
	APR-SEP	740	930	1060	80	1190	1380	1330
Hungry Horse Reservoir Inflow (1,2)		910 990	1310 1400	1490	75 75	1670 1780	2080 2190	2000
	APR-SEP	990	1400	1590	75	1 1/00	2190	2120
Flathead R at Columbia Falls (2)	APR-JUL	3200	3880	4340	81	4810	5490	5350
riachead it ac corampia rarib (1)	APR-SEP	3530	4250	4730	81	5210	5920	5820
				İ		i		
Ashley Ck nr Marion (2)	APR-JUL	2.5	4.1	5.2	72	6.3	7.9	7.2
	MARCH	0.0	0.5	0.8	80	1.2	1.7	1.1
Guine Davie Distant	100 TH	200	205	450	0.0		500	5.65
Swan R nr Bigfork	APR-JUL APR-SEP	320 370	395 455	450 515	80 80	505	580 660	565 645
	APR-SEP	370	455	1 212	80	575	000	045
Flathead Lake Inflow (1,2)	APR-JUL	3170	4380	4930	80	5480	6700	6180
	APR-SEP	3500	4780	5360	80	5940	7220	6700
				İ		Ì		
Mill Ck ab Bassoo Ck nr Niarada	APR-JUL	1.3	2.6	3.5	85	4.4	5.7	4.1
	APR-SEP	1.5	2.9	3.8	86	4.7	6.1	4.4
South Crow Ck nr Ronan	APR-JUL	6.5	8.0	9.0	89	10.0	11.5	10.1
South Crow CK III Ronan	APR-SEP	7.4	8.0 9.1	10.2	89	11.3	13.0	11.5
	MIR ODI	, <b>.</b> 1	5.1	10.2	05	11.5	10.0	11.5
Mission Ck nr St. Ignatius	APR-JUL	19.0	21	23	92	25	27	25
-	APR-SEP	22	25	27	90	29	32	30
				İ		ĺ		
Sf Jocko R nr Arlee	APR-JUL	16.4	22	26	87	30	36	30
	APR-SEP	18.8	25	29	85	33	39	34
NF Jocko R bl Tabor Feeder Canal	APR-JUL	20	24	   27	87	   30	34	31
M. DOCKO K DI TADOI FEEGEI CAHAI	APR-JUL APR-SEP	20	24 26	29	88	32	36	33
	MEN OUP	22	20		00	1 52	50	22
				, ===============		, ==============		

 FLATHEAD RIVER BASIN
 FLATHEAD RIVER BASIN

 Reservoir Storage (1000 AF) - End of December
 Watershed Snowpack Analysis - January 1, 2012

 FLATHEAD RIVER BASIN FLATHEAD RIVER BASIN

= Reservoir	Usable   Capacity  	*** Usab This Year	le Storag Last Year	e *** Avg ======	Watershed	Number of Data Sites		r as % of  Average
= CAMAS (4)	45.2	22.3		19.5	NF FLATHEAD in CANADA	1	0	47
LOWER JOCKO LAKE	6.4	0.0		0.1	NF FLATHEAD in MONTANA	6	67	67
MISSION VALLEY (8)	100.0	25.2		32.6	MIDDLE FORK FLATHEAD	5	83	73
HUNGRY HORSE		NO REPOR	ſ		SOUTH FORK FLATHEAD	3	38	49
FLATHEAD LAKE		NO REPOR	ſ		STILLWATER-WHITEFISH	4	40	44
					SWAN	4	49	62
					MISSION VALLEY	3	56	80
					LITTLE BITTERROOT-ASHL	EY 4	53	69
					JOCKO	3	64	73
					FLATHEAD in MONTANA	23	61	68
					FLATHEAD RIVER BASIN	24	61	67

.

= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

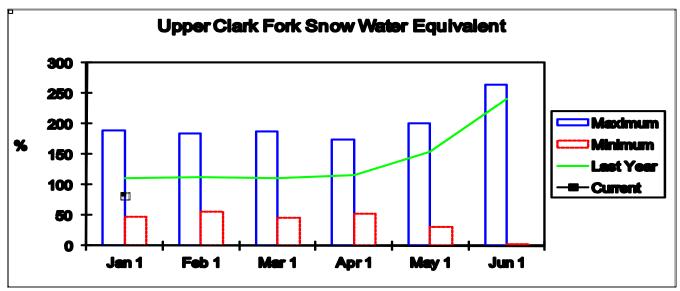
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

=

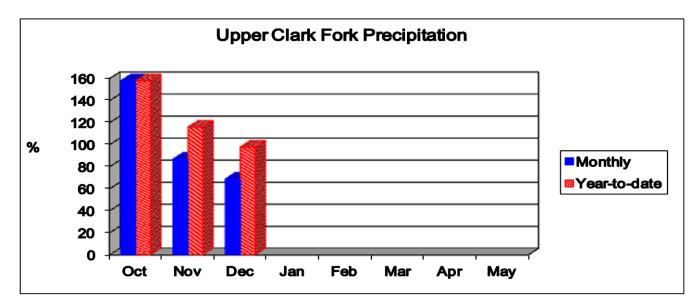
#### **Upper Clark Fork River Basin**

Snowpack conditions in the Upper Clark Fork River Basin were below average on January 1. Snow water content was 82 percent of average and 77 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum was in 1972 and minimum swe was in 1977; March maximum swe was in 1972 and minimum swe was in 2005; April maximum swe was in 1972 and minimum was in 2005; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1987. Average is for the period 1971 through 2000.

Mountain precipitation during December was 69 percent of average and 64 percent of last year. Valley precipitation during December was 67 percent of average and 47 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 98 percent of average and 92 percent of last year.



East Fork Rock Creek storage was 126 percent of average and 98 percent of last year; and Nevada Creek storage was 160 percent of average and 89 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 88 percent.

Surface Water Supply Index (SWSI) was -0.3 in the Clark Fork River above Milltown; and -0.6 in the Blackfoot River.

=	
	ORK RIVER BASIN

Streamflow Forecasts - January 1, 2012

=											
		<<======									
Forecast Point	Forecast										
	Period	90%	70%	50		30%	10%	30-Yr Avg.			
		1 ( )	(1000AF)		(% AVG.)		(1000AF)	(1000AF)			
				= = = = = = = = = = = = = =		=======					
=											
Little Blackfoot R nr Garrison	APR-JUL	28	52	68	90	84	108	76			
	APR-SEP	33	58	75	89	92	117	84			
Flint Ck nr Southern Cross	APR-JUL	5.7	9.8	12.6	92	15.4	19.5	13.7			
	APR-SEP	6.2	11.4	14.9	92	18.4	24	16.2			
Flint Ck bl Boulder Ck		23	39	50	89		77	5.6			
Flint CK bi Boulder CK	APR-JUL APR-SEP	23 31	39 50	50   63	89	61 61	95	56 71			
	APR-SEP	31	50	03	89	/0	95	/1			
Lower Willow Ck Reservoir Inflow (2)	ADD MAY	2.7	5.4	7.3	89	9.2	11.9	8.2			
LOWER WITTOW CK RESERVOID INFLOW (2,	APR-JUL	3.5	8.1	11.2	90	14.3	18.9	12.5			
	APR-00L	5.5	0.1	11.2	50	1 14.5	10.9	12.5			
MF Rock Ck nr Philipsburg	APR-JUL	38	49	57	89	65	76	64			
Mr Rock CK III FIIIIpaburg	APR-SEP	42	55	63	88	03 1 71	84	72			
	MIN DEI	12	55	05	00	, , , , , , , , , , , , , , , , , , , ,	01	12			
Rock Ck nr Clinton	APR-JUL	144	205	245	91	285	345	270			
	APR-SEP	166	230	275	90	320	385	305			
Clark Fork R ab Milltown	APR-JUL	235	405	520	86	635	805	605			
	APR-SEP	295	480	605	86	730	915	705			
				İ		İ					
Nevada Ck nr Helmville	APR-MAY	3.2	6.5	8.7	85	10.9	14.2	10.3			
	APR-JUL	5.7	11.0	14.6	84	18.2	24	17.3			
				ĺ		ĺ					
Blackfoot R nr Bonner	APR-JUL	350	525	645	80	765	940	805			
	APR-SEP	405	590	720	81	850	1040	890			
Clark Fork R ab Missoula	APR-JUL	670	975	1180	84	1390	1690	1410			
	APR-SEP	800	1120	1340	84	1560	1880	1600			
= UPPER CLARK FO	ם משעדם אם	ACTN		I.	UDDED	CLARK FORK RI	VED DAGIN				
Reservoir Storage (1000						nowpack Analys		ar 1 2012			
Reservoir Storage (1000											
=											
	Usable	*** Usabl	e Storage *	**		Numbe	r This	Year as % of			
Reservoir	Capacity	This	Last	Water	rshed	of					
		Year		70				Yr Average			

Reservoir	Capacity	This	Last	_	Watershed	of		
		Year	Year	Avg	Da	ta Sites	Last Yr	Average
=								
EAST FORK ROCK CREEK	15.6	10.3	10.5	8.2	CLARK FORK ab FLINT CREEK	8	84	91
GEORGETOWN LAKE		NO REPOR	Т		FLINT CREEK	5	91	93
LOWER WILLOW CREEK		NO REPOR	Т		ROCK CREEK	3	101	95
NEVADA CREEK	12.6	6.7	7.5	4.2	CLARK FORK ab BLACKFOOT	14	87	91
					BLACKFOOT	13	70	75
					UPPER CLARK FORK BASIN	24	77	82

j

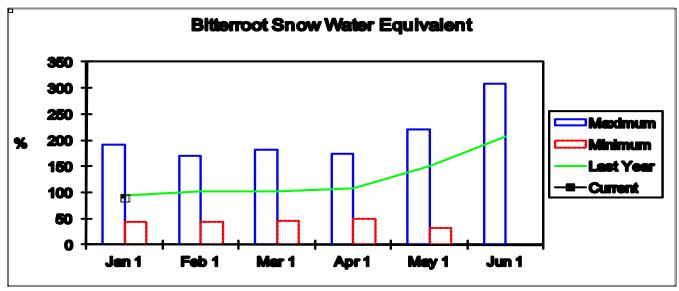
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 - Median value used in place of average.

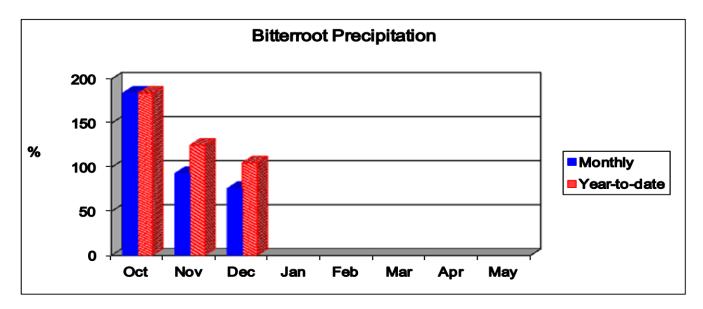
#### **Bitterroot River Basin**

Snowpack conditions in the Bitterroot River Basin were below average on January 1. Snow water content was 90 percent of average and 96 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1977; February maximum swe was in 1972 and minimum was in 1977; March maximum swe was in 1972 and minimum swe was in 1972 and 2005; April maximum swe was in 1972 and minimum swe was in 2005; May maximum swe was in 1972 and minimum swe was in 1972 and 1974 and 1974 and 1974 and minimum swe was in 1987, 1992, 1994, and 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 75 percent of average and 70 percent of last year. Valley precipitation during December was 87 percent of average and 66 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 105 percent of average and 99 percent of last year.



Painted Rocks Lake storage was 123 percent of average and 86 percent of last year and Como storage was 91 percent of average and 83 percent of last year.

Assuming near average precipitation, April through July streamflows are forecast to average 91 percent.

Surface Water Supply Index (SWSI) was 0.0 in the Bitterroot River.

	==
=	
BITTERROOT RIVER BASIN	
Streamflow Forecasts - January 1, 2012	

=								
		<<======	Drier ====:	== Future Co	nditions ==	===== Wetter	=====>>	
		İ					i	
Forecast Point	Forecast			= Chance Of E	xceeding * =			
	Period	90%	70%	50		30%	10%	30-Yr Avg.
	rerrou	(1000AF)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
				============		==============		
=								
WF Bitterroot R nr Conner (2)	APR-JUL	60	98	124	87	150	188	143
	APR-SEP	65	107	135	86	163	205	157
Bitterroot R nr Darby	APR-JUL	210	325	400	87	475	590	460
	APR-SEP	260	375	450	87	525	640	515
	11111 0001	200	575	1.50	07	525	010	515
Como Reservoir Inflow (2)	APR-JUL	55	66	74	95	82	93	78
COMO RESELVOIT INFIOW (2)		57	69	77	94	85	97	82
	APR-SEP	57	69	//	94	85	97	82
Bitterroot R nr Missoula	APR-JUL	690	970	1160	93	1350	1630	1250
	APR-SEP	755	1050	1250	91	1450	1740	1370

=

= BITTERROOT Reservoir Storage (100	BITTERROOT RIVER BASIN Watershed Snowpack Analysis - January 1, 2012							
= Reservoir	Usable   Capacity  	*** Usab This Year	le Storag Last Year	e *** Avg	Watershed	Number of Data Sites	This Year ====== Last Yr	
				======	= = = = = = = = = = = = = = = = = = =			
= PAINTED ROCKS LAKE	31.7	9.2	10.7	7.5	WEST FORK BITTERROOT	2	79	83
СОМО	34.9	8.1	9.8	8.9	EAST SIDE BITTERROOT	3	85	88
					WEST SIDE BITTERROOT	3	106	91
					BITTERROOT RIVER BASIN	7	96	90

. =

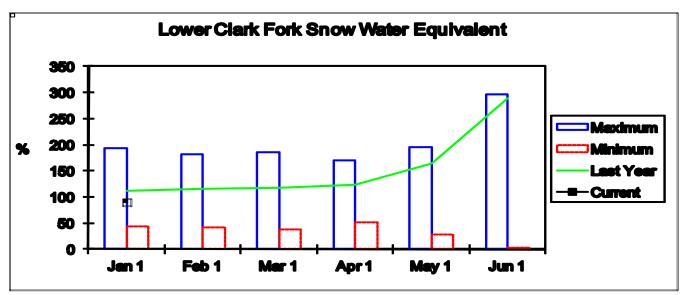
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 - Median value used in place of average.

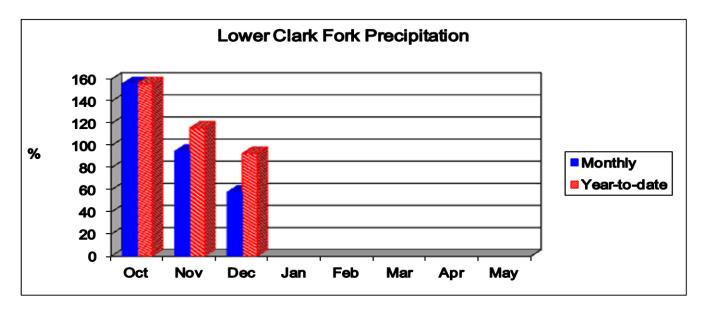
#### Lower Clark Fork River Basin

Snowpack conditions in the Lower Clark Fork River Basin were below average on January 1. Snow water content was 90 percent of average and 83 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1972 and minimum swe was in 1977; March maximum swe was in 1972 and minimum was in 2005; April maximum swe was in 1972 and minimum swe was in 2005; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum swe was in 1974 and minimum swe was in 1977. Average is for the period 1971 through 2000.

Mountain precipitation during December was 60 percent of average and 49 percent of last year. Valley precipitation during December was 45 percent of average and 31 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 93 percent of average and 86 percent of last year.



There was insufficient data to calculate storage for Noxon Rapids.

Assuming average precipitation, April through July streamflows are forecast to average 82 percent.

Surface Water Supply Index (SWSI) was -1.1 in the Clark Fork River below Bitterroot River and insufficient data in the Clark Fork River below Flathead River.

=
LOWER CLARK FORK RIVER BASIN
Streamflow Forecasts - January 1, 2012

=								
		<<=====	Drier ====	== Future Co	onditions ==	===== Wetter	<u>r</u> ====>>	
Forecast Point	Forecast	=======		= Chance Of E	xceeding * =			
	Period	90%	70%	50		30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
=								
Clark Fork R bl Missoula	APR-JUL	1470	2000	2360	89	2720	3250	2660
	APR-SEP	1680	2230	2610	88	2990	3540	2960
Clark Fork R at St. Regis (1)	APR-JUL	1980	2950	   3390	96	   3830	4800	3520
ciaix foix is at be. Regib (1)	APR-SEP	2260	3280	3740	96	4200	5210	3910
Clark Fork R nr Plains (1,2)	APR-JUL APR-SEP	5660 6380	7660 8490	8570 9440	85 85	9480 10400	11500 12500	10100 11100
	APR-SEP	0380	8490	9440	65	10400	12500	11100
Thompson R nr Thompson Falls	APR-JUL	56	103	135	66	167	215	205
	APR-SEP	70	120	154	67	188	240	230
Prospect Ck at Thompson Falls	APR-JUL	41	65	   81	70	97	121	116
FIOSPECE CK at Inompson Fails	APR-SEP	46	70	87	70	104	121	124
				İ				
Clark Fork at Whitehorse Rpds (1,2)		6410	8670	9700	86	10700	13000	11300
	APR-SEP	7270	9650	10700	86	11800	14200	12500
				 ===============		 =================		

=										
LOWER CLARK	LOWER CLARK FORK RIVER BASIN									
Reservoir Storage (1000 AF) - End of December					Watershed Snowpack Analysis - January 1, 2012					
=										
	Usable   *** Usable Storage ***				Number	This Year as % of				
Reservoir	Capacity	This	Last		Watershed	of				
		Year	Year	Avg		Data Sites	Last Yr	Average		
=										
NOXON RAPIDS		NO REPOR	т		LOWER CLARK FORK BASI	N 7	83	90		

= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

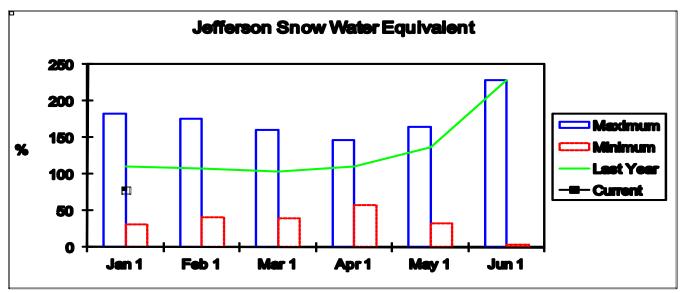
table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 - Median value used in place of average.

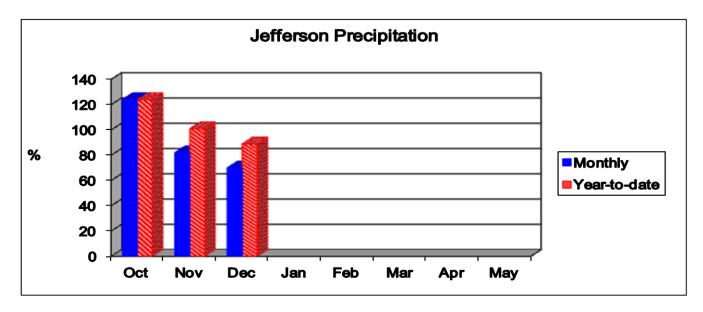
#### **Jefferson River Basin**

Snowpack conditions in the Jefferson River Basin were well below average on January 1. Snow water content was 78 percent of average and 71 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1972 and minimum was in 1977; April maximum swe was in 1997 and minimum was in 1977; May maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 2011 and minimum in 1987. Average is for the period 1971 through 2000.

Mountain precipitation during December was 71 percent of average and 64 percent of last year. Valley precipitation during December was 53 percent of average and 27 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 89 percent of average and 76 percent of last year.



Lima storage was 148 percent of average and 96 percent of last year; Clark Canyon storage was 119 percent of average and 104 percent of last year; and insufficient data on Ruby River storage.

Assuming average precipitation, April through July streamflows are forecast to average 71 percent.

Surface Water Supply Index (SWSI) was +0.4 in the Beaverhead River; insufficient data in the Ruby River; -1.0 in the Big Hole River; +0.2 in the Boulder River; and insufficient data in the Jefferson River near Three Forks.

=
JEFFERSON RIVER BASIN
Streamflow Forecasts - January 1, 2012

		==========	==================	==========							
=											
		<<=====	<<===== Drier ===== Future Conditions ====== Wetter ====>>								
Forecast Point	Forecast		======================================								
Porecase Porne	Period	90%	70%	- chance o	50%	30%	10%	30-Yr Avg.			
	rerroa	1	(1000AF)	(1000A	F) (% AVG.)		(1000AF)	(1000AF)			
		1 1 1		1 1		1 · · · · · · · · · · · · · · · · · · ·					
=				1		1					
Lima Reservoir Inflow (2)	APR-JUL	26	47	62	65	77	98	96			
	APR-SEP	24	48	65	63	82	106	104			
Clark Canyon Reservoir Inflow (2)	APR-JUL	30	45	75	57	115	173	131			
	APR-SEP	36	53	89	57	133	197	156			
				İ		İ					
Beaverhead R at Barretts (2)	APR-JUL	42	63	106	63	157	235	168			
	APR-SEP	50	76	126	63	185	275	200			
				1		1					
Ruby R Reservoir Inflow (2)	APR-JUL	37	57	70	83	83	103	84			
	APR-SEP	46	69	84	83	99	122	101			
Big Hole R at Wisdom	APR-JUL	30	44	76	63	111	162	121			
	APR-SEP	32	47	80	62	117	172	130			
Big Hole R nr Melrose	APR-JUL	168	320	425		530	680	610			
	APR-SEP	190	355	465	71	575	740	660			
Jefferson R nr Twin Bridges (2)	APR-JUL	210	355	525		695	945	785			
	APR-SEP	230	380	570	65	760	1040	880			
Boulder R nr Boulder	APR-JUL	44	62	74	95	86	104	78			
Boulder R III Boulder	APR-SEP	44	67	/4   80		93	112	85			
	APR-SEP	40	67	00	94	93	112	00			
Willow Ck Reservoir Inflow (2)	APR-JUL	5.0	7.6	12.4	69	17.2	24	17.9			
WILLOW CK REBEIVOIL INLIGW (2)	APR-SEP	5.6	8.6	13.8		19.0	27	20			
	AFK-SEP	5.0	0.0	1 13.0	09	1 19.0	27	20			
Jefferson R nr Three Forks (2)	APR-JUL	145	420	605	78	790	1060	780			
Serierbon k nr inree rorkb (2)	APR-SEP	145	450	655		860	1170	860			
	MIR OBI	115	150	055	70	1 000	11/0	000			
				, ===========		· ========================					
=											
JEFFERSON	I RIVER BASI	N		1	J	EFFERSON RIVER	BASIN				
Reservoir Storage (100	)0 AF) - End	of Decemb	er	i	Watershed S	nowpack Analys	is - Janua	ry 1, 2012			
=											
	Usable	*** Usab	le Storage *	**		Numbe	r This	Year as % of			
Reservoir	Capacity	This	Last	Wa	tershed	of					
		Year	Year A	vg		Data Si	tes Last	Yr Average			

Reservoir	Capacity	y This Last		Watershed	of				
	ĺ	Year	Year	Avg		Data Sites	Last Yr	Average	
				=======					
= LIMA	84.0	47.5	49.4	32.2	BEAVERHEAD	8	58	70	
LIMA	84.0	47.5	49.4	32.2	BEAVERHEAD	0	20	70	
CLARK CANYON	255.6	163.2	157.0	137.5	RUBY	5	69	72	
RUBY RIVER		NO REPOR	сT		BIGHOLE	9	75	78	
					BOULDER	4	89	95	
					JEFFERSON RIVER BASIN	21	71	78	
				İ			. –		

.

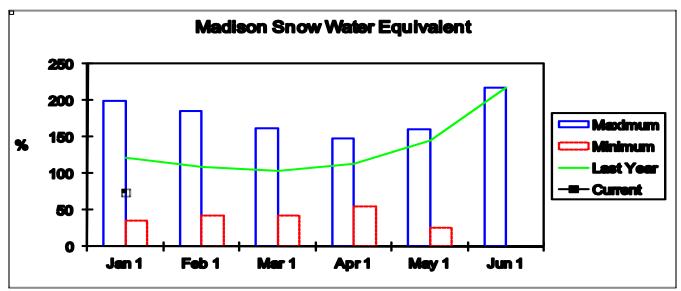
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

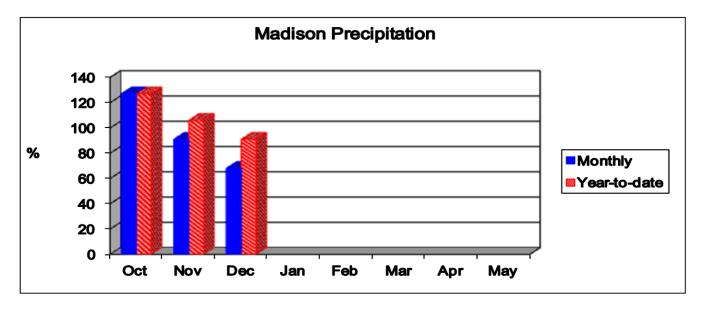
The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 Additional value used in place of average.

#### **Madison River Basin**

Snowpack conditions in the Madison River Basin were well below average on January 1. Snow water content was 74 percent of average and 62 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1977; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1997 and minimum was in 1977; April maximum swe was in 1997 and minimum swe was in 1977; May maximum swe was in 1997 and minimum swe was in 1977; and June maximum swe was in 2011 and minimum in 1987 and 2001. Average is for the period 1971 through 2000.



Mountain and valley precipitation during December was 68 percent of average and 58 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 91 percent of average and 75 percent of last year.

Ennis Lake storage was 95 percent of average and 105 percent of last year and Hebgen Lake storage was 121 percent of average and 103 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 83 percent.

Surface Water Supply Index (SWSI) was -0.5 for the Madison River.

					===========		=====	========			
=	=										
	MADISON RIVER BASIN										
		Streamflo	w Forecas	ts - Ja	nuarv 1, 2	2012					
=											
			= Drier =		Future Cor	nditions ==		Wetter	====>>	1	
			51101		r actare con	141010110		neccel			
Forecast Point	Forecast			==== Ch	ance Of Ex	xceeding * =:					
rorecabe rome	Period	90%	70%		509			30%	10%	- 30-1	Yr Avq.
	rerroa	(1000AF)			(1000AF)	- 1			(1000AF)		1000AF)
		1 ( )		· 1			,	,	,	· ·	,
_											
- Hebgen Reservoir Inflow (2)	APR-JUL	245	295	1	330	84		365	415		395
Hebgen Reservoir inflow (2)	APR-SEP	315	380		420	83		460	525		505
	APR-SEP	315	300		420	0.5		400	525		505
Ennis Reservoir Inflow (2)	APR-JUL	405	495		560	82		625	715		680
EINIS RESELVOIT INLIGW (2)	APR-JUL APR-SEP	405 515	495 625		700	82		775	885		850
	APR-SEP	515	625		/00	82		//5	885		850
				I		1					
_											
=	RIVER BASIN				1		DIGON	RIVER			
											0.01.0
Reservoir Storage (10						Watershed Sn					
				======							
=									_1 .		
	Usable		le Storag	e ***				Numbe			as % of
Reservoir	Capacity	This	Last		Waters	shed		of .			
		Year	Year	Avg				Data Si			Average
					========						
=											
ENNIS LAKE	41.0	29.9	28.5	31.5	MADISC	ON abv HEBGEI	N LAKE	б	59		79
HEBGEN LAKE	377.5	325.1	315.9	267.6	MADISC	ON blw HEBGED	N LAKE	8	64		70
					MADISC	ON RIVER BAS	IN	14	62		74
-											

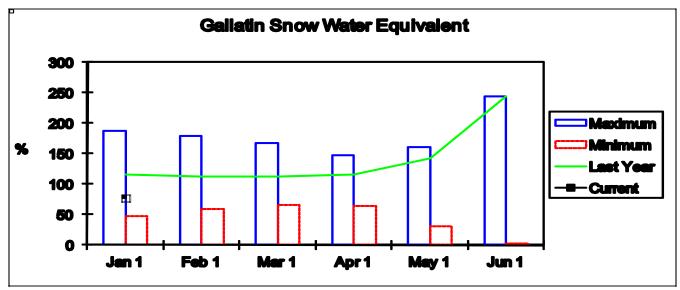
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 - Median value used in place of average.

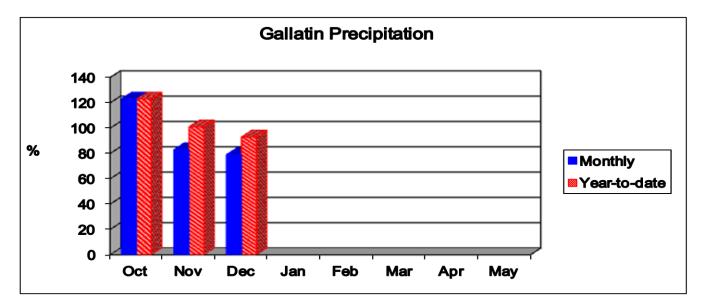
### **Gallatin River Basin**

Snowpack conditions in the Gallatin River Basin were below average on January 1. Snow water content was 77 percent of average and 67 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1966; February maximum swe was in 1997 and minimum was in 1977; March maximum swe was in 1997 and minimum was in 1977and 2005; April maximum swe was in 1997 and minimum was in 1987; May maximum swe was in 1970 and minimum swe was in 1987; and June maximum swe was in 2011 and minimum in 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 78 percent of average and 85 percent of last year. Valley precipitation during December was 85 percent of average and 75 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 93 percent of average and 77 percent of last year.



Middle Creek storage was 137 percent of average and 84 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 89 percent.

Surface Water Supply Index (SWSI) was -0.8 for the Gallatin River.

=	=										
			ALLATIN RIVE								
		Streamflow	w Forecasts	- Janı	uary 1,	2012					
=		1	= Drier ====					Mathema			
		<<=====	= Drier ====	:== P(	uture co	naitions =:		weller	/	^	
Forecast Point	Forecast			= Char	nce Of E	xceeding * :				=	
	Period	90%	70%		50			30%	10%		30-Yr Avq.
		(1000AF)	(1000AF)	(1	1000AF)	(% AVG.)	(1	000AF)	(1000A	F)	(1000AF)
				: =====	========		=====	======		======	
=											
Gallatin R nr Gateway	APR-JUL	270	335		380	86		425	490		440
	APR-SEP	320	395		445	86		495	570		515
Hyalite Reservoir Inflow (	2) APR-JUL	17.9	20	-	22	100		24	26		22
Hyalice Reservoir Initiow (	APR-JUL APR-SEP	21	20	-	22	100		24	20		22
	APR-SEP	21	23	-	20	100		21	25		25
Gallatin R at Logan	APR-JUL	220	330	i	405	82	i	480	590		495
5	APR-SEP	265	385	i	470	83	İ	555	675		570
				i			İ				
=											
	GALLATIN RIVER BASIN						ALLATIN				
Reservoir Sto	rage (1000 AF) - End	of Decembe	er			Watershed Si	nowpack	Analys	315 - Ja	nuary	1, 2012
-	Usable	*** Ilcab	le Storage *	**				Numbe	ъr П	hic Vo	ar as % of
Reservoir	Capacity	This	Last		Water	shed		of			
		Year	Year A	vq				Data Si	tes I	ast Yr	Average
				==== =	========			======			=======
=											
MIDDLE CREEK	10.2	5.6	6.7	4.1	UPPER	GALLATIN		4		61	72

HYALITE 2 102 105 BRIDGER 2 48 61 GALLATIN RIVER BASIN 8 67 77 .

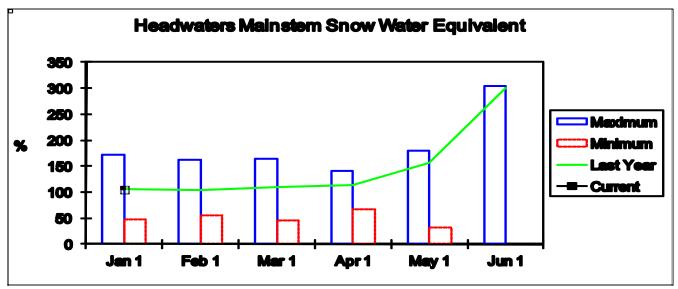
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 And a value used in place of average.

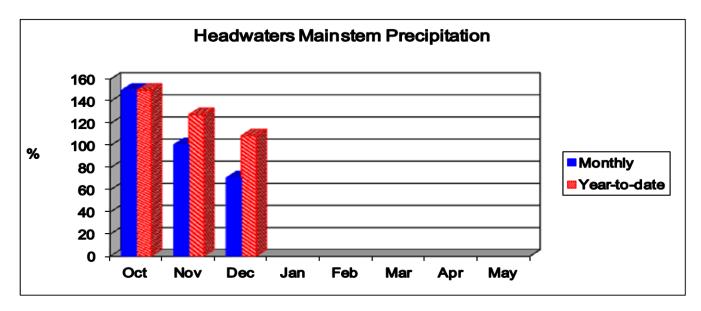
#### **Missouri Mainstem River Basin**

Snowpack conditions in the Headwaters Missouri Mainstem River Basin were near average on January 1. Snow water content was 105 percent of average and 99 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1977; February maximum swe was in 1972 and minimum swe was in 1977 and 1988; March maximum swe in 1972 and minimum swe was in 1977; April maximum swe was in 1972 and minimum swe was in 1961, 1966 and 2005; May maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1977; and June maximum swe was in 1975 and minimum swe was in 1975.

Mountain precipitation during December was 83 percent of average and 86 percent of last year. Valley precipitation during December was 50 percent of average and 23 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 109 percent of average and 88 percent of last year.



Canyon Ferry Lake storage was 98 percent of average and 103 percent of last year; Helena Valley storage was 129 percent of average and 105 percent of last year; insufficient data for Lake Helena storage; insufficient data for Hauser & Helena storage; Holter Lake storage was 101 percent of average and 100 percent of last year; and Fort Peck Lake storage was 101 percent of average and 100 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 80 percent.

Surface Water Supply Index (SWSI) was +0.1 in the Missouri River above Canyon Ferry; -0.1 in the Missouri River below Canyon Ferry; +0.6 in the Missouri River above Fort Peck; and -0.2 in the Missouri River below Fort Peck.

MISSOURI MAINSTEM RIVER BASIN Streamflow Forecasts - January 1, 2012

=	

		<<=====	Drier ====	== Future Co	nditions =:	===== Wetter	=====>>	
Forecast Point	Forecast	 		- Change Of F	vaeedina *			
Forecase Forme	Period	90%	70%			30%	10%	30-Yr Avg.
	101100	(1000AF)	(1000AF)		(% AVG.)	(1000AF)	(1000AF)	(1000AF)
			============	=======================================	================	=======================================		
=								
Missouri R at Toston (2)	APR-JUL	920	1270	1580	77	1890	2260	2050
	APR-SEP	1070	1490	1850	77	2210	2630	2390
Dearborn R nr Craig	APR-JUL	51	77	95	79	113	139	121
	APR-SEP	58	85	104	83	123	150	125
Missouri R at Fort Benton (2)	APR-JUL	1440	1990	2390	80	   2790	3370	2990
Missouri R at Fort Benton (2)	APR-JUL APR-SEP	1700	2400	2390	80	2790   3340	4030	3570
	APR-SEP	1700	2400	2070	80	3340	4030	3570
Missouri R nr Virgelle (2)	APR-JUL	1690	2330	2790	81	3250	3920	3450
······································	APR-SEP	1970	2760	3300	81	3840	4630	4060
				İ		İ		
Missouri R nr Landusky (2)	APR-JUL	1710	2430	2920	79	3410	4100	3690
	APR-SEP	2000	2840	3420	79	4000	4840	4350
Missouri R bl Fort Peck Dam (2)	APR-JUL	1760	2450	2950	79	3450	4170	3740
	APR-SEP	2020	2870	3440	79	4010	4860	4330
Lake Sakakawea Inflow (2)	APR-JUL	5190	7090	8380	86	9670	11600	9740
Lake Sakakawea IIIIIOw (2)	APR-SEP	5950	8150	9630	86	11100	13300	11200
	THIC ODF	5950	0100	1 2030	50	1 11100	1000	11200
				' ===============		, ===============		

MISSOURI MAINSTEM RIVER BASIN Watershed Snowpack Analysis - January 1, 2012

MISSOURI MAINSTEM RIVER BASIN Reservoir Storage (1000 AF) - End of December 1 

= Reservoir	Usable Capacity		able Stor Last Year	age *** Avg	Watershed	Number of Data Sites	This Yea:  Last Yr	r as % of Average
= CANYON FERRY LAKE	2043.0	1642.0	1596.0	1670.3	HEADWATERS MAINSTEM	7	99	105
HELENA VALLEY	9.2	6.2	5.9	4.8	SMITH-JUDITH-MUSSELSHE	LL 10	73	89
LAKE HELENA		NO REPO	ORT		SUN-TETON-MARIAS	7	90	81
HAUSER & HELENA		NO REPO	ORT		MAINSTEM ab FT PECK RE	S 23	84	90
HOLTER LAKE	81.9	80.7	80.9	80.0	MILK RIVER BASIN	1	44	50
FORT PECK LAKE	18910.0	15255.0	15280.0	15126.0	MISSOURI MAINSTEM BASI	N 23	85	93

= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

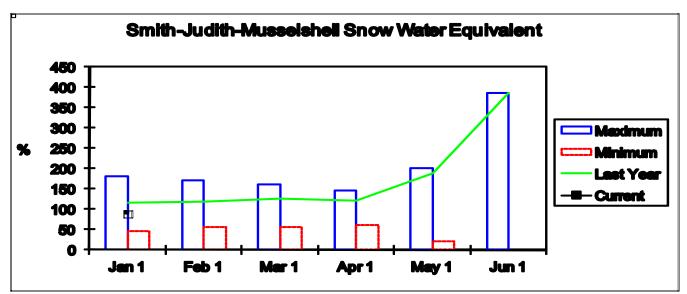
The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 Additional value used in place of average.

=

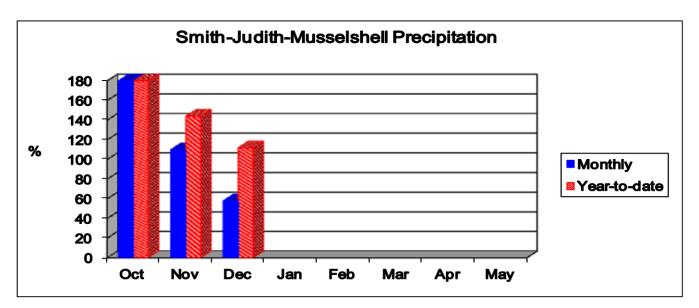
#### **Smith-Judith-Musselshell River Basins**

Snowpack conditions in the Smith-Judith-Musselshell River Basins were below average January 1. Snow water content was 89 percent of average and 73 percent of last year. Snow water content in the Smith River Basin was 88 percent of average and 76 percent of last year; the Judith River Basin was 91 percent of average and 74 percent of last year; and the Musselshell Basin River was 88 percent of average and 65 percent of last year.



January maximum swe was established in 1997 and minimum swe in 1988; February maximum swe was in 1978 and minimum swe was in 1987; March maximum swe was in 1978 and minimum swe was in 1987 and 2005; April maximum swe was in 1970 and minimum swe was in 1992; and May maximum swe was in 1970 and minimum swe was in 1987; and June maximum swe was in 2011 and minimum swe was in 1987, 1992, 1994, and 2001. Average is for the period 1971 through 2000.

Mountain and valley precipitation during December in the Smith-Belts was 62 percent of average and 66 percent of last year; in the Judith was 57 percent of average and 59 percent of last year; and in the Musselshell was 39 percent of average and 22 percent of last year. Mountain and valley water year precipitation for the greater basin, beginning October 1, 2010, was 112 percent of average and 90 percent of last year.



Smith River storage was 126 percent of average and 90 percent of last year; Ackley storage was 122 percent of average and 98 percent of last year; Bair storage was 157 percent of average and 100 percent of last year; Martinsdale storage was 86 percent of average and 48 percent of last year; and Deadman's Basin was 152 percent of average and 102 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 77 percent.

Surface Water Supply Index (SWSI) was +2.7 in the Smith River, +1.7 in the Upper Judith River, and +0.6 in the Musselshell River.

=
SMITH-JUDITH-MUSSELSHELL RIVER BASINS
Streamflow Forecasts - January 1, 2012

=								
		<<=====	Drier ====:	== Future Co	onditions =:	===== Wetter	====>>	
Forecast Point	Forecast							
	Period	90%	70%	-	)%	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
				======		= = = = = = = = = = = = = = = = = = =		
=								
Sheep Ck nr White Sulphur Springs	APR-JUL	9.7	13.1	15.4	90	17.7	21	17.1
	APR-SEP	11.6	15.5	18.2	91	21	25	20
				ĺ				
Smith R bl Eagle Ck (2)	APR-JUL	65	98	120	90	142	175	133
-	APR-SEP	66	104	130	87	156	194	149
NF Musselshell R nr Delpine	APR-JUL	1.3	3.0	4.1	89	5.2	6.9	4.6
	APR-SEP	1.6	3.5	4.8	89	6.1	8.0	5.4
SF Musselshell R ab Martinsdale	APR-JUL	11.2	16.9	28	54	43	65	52
bi Mabbeibheii k ab Maieinbaaie	APR-SEP	11.6	17.5	20	52	45	68	56
	MIR ODI	11.0	17.5	1 25	52	1 15	00	50
Musselshell R at Harlowton (2)	APR-JUL	22	31	I 56	73	81	119	77
Musselshell k at Hallowcon (2)	APR-SEP	22	30	57	73	84	124	81
	AFR-SEP	23	30	1 2/	70	04	124	01
Museelshell Dave Develop (C)	ADD THE	0.5	4.2		62	110	100	0.0
Musselshell R nr Roundup (2)	APR-JUL	25	43	62	63	117	199	99
	APR-SEP	24	41	60	59	116	198	102

SMITH-JUDITH-MUSS	SMITH-JUDITH-MUSSELSHELL RIVER BASINS							
Reservoir Storage (100	Watershed Snowpack Analysis - January 1, 2012							
=								
	Usable	*** Usał	le Storag	ge ***		Number	This Yea:	r as % of
Reservoir	Capacity	This	Last		Watershed	of		
		Year	Year	Avg		Data Sites	Last Yr	Average
=								
SMITH RIVER	10.6	7.2	8.0	5.7	SMITH	6	76	88
ACKLEY LAKE	7.0	3.9	4.0	3.2	HIGHWOOD	0	0	0
BAIR	7.0	5.5	5.5	3.5	JUDITH	4	74	91
MARTINSDALE	23.1	8.7	18.1	10.1	MUSSELSHELL	3	65	88
DEADMAN'S BASIN	72.2	66.7	65.1	44.0	SMITH-JUDITH-MUSSELSHEL	L 10	73	89

= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

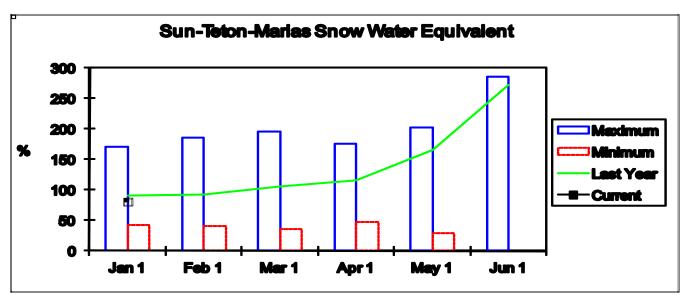
The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 Hedian value used in place of average.

=

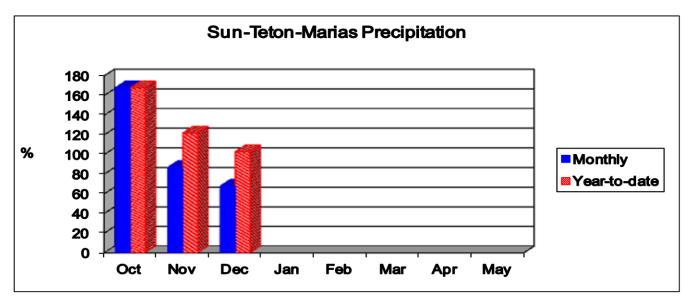
#### **Sun-Teton-Marias River Basins**

Snowpack conditions in the Sun-Teton-Marias River Basins were below average on January 1. Snow water content was 81 percent of average and 90 percent of last year. Snow water content in the Sun River Basin was 98 percent of average and 93 percent of last year; the Teton River Basin was 97 percent of average and 102 percent of last year; and the Marias River Basin was 71 percent of average and 85 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1972 and minimum swe was in 2001; March maximum swe was in 1972 and minimum swe was in 2005; April maximum swe was in 1972 and minimum swe was in 2005; May maximum swe was in 1972 and minimum swe was in 1977; and June maximum was in 1972 and minimum swe was in 1987, 1992, and 1998. Average is for the period 1971 through 2000.

Mountain and valley precipitation during December in the Sun was 62 percent of average and 52 percent of last year; in the Teton was 84 percent of average and 77 percent of last year; and in the Marias was 64 percent of average and 62 percent of last year. Mountain and valley water year precipitation for the greater basin, beginning October 1, 2010, was 103 percent of average and 125 percent of last year.



Gibson storage was 45 percent of average and 142 percent of last year; Pishkun storage was 111 percent of average and 93 percent of last year; Willow Creek storage was 129 percent of average and 111 percent of last year; Lower Two Medicine Lake storage was 72 percent of average; Four Horns Lake storage was 27 percent of average; Swift storage was 77 percent of average and 109 percent of last year; Lake Frances storage was 123 percent of average and 113 percent of last year; and Lake Elwell (Tiber) storage was 117 percent of average and 99 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 93 percent.

Surface Water Supply Index (SWSI) was 0.0 in the Sun River; +1.2 in the Teton River; +1.2 in the Birch/Dupuyer Creeks; +0.1 in the Marias above Tiber Reservoir.

=
SUNT-TETON-WARTAS PIVER PASTNS

SUN-TETON-MARIAS RIVER BASINS Streamflow Forecasts - January 1, 2012

=		<<=====	Drier ====	== Future Co	nditions ==	===== Wetter	: ====>>	
Forecast Point	Forecast	=======		= Chance Of E:	xceeding * =			
	Period	90%	70%	50	\$	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
Gibson Reservoir Inflow (2)	APR-JUL	285	355	405	88	455	525	460
	APR-SEP	320	395	445	88	495	570	505
Two Medicine R nr Browning (2)	APR-JUL	137	167	   187	91	205	235	205
	APR-SEP	145	175	195	91	215	245	215
Badger Ck nr Browning	APR-JUL	47	67	   81	94	95	115	86
5 5	APR-SEP	54	75	90	95	105	126	95
Swift Reservoir Inflow (2)	APR-JUL	40	52	   61	95	   70	82	64
	APR-SEP	50	64	73	95	82	96	77
Dupuyer Ck nr Valier	APR-JUL	5.2	8.3	13.2	94	18.1	25	14.0
	APR-SEP	6.0	9.6	15.0	96	20	28	15.7
Cut Bank Ck nr Browning	APR-JUL	43	59	   70	91	81	97	77
	APR-SEP	44	61	73	87	85	102	84
Marias R nr Shelby (2)	APR-JUL	177	295	375	90	455	575	415
	APR-SEP	190	310	395	90	480	600	440
Teton R nr Dutton	APR-JUL	21	34	53	104	72	100	51
	APR-SEP	24	41	61	103	81	111	59
				 ====================================		 =====================================		

=

SUN-TETON-MARIAS RIVER BASINS Reservoir Storage (1000 AF) - End of December | Watershed Snowpack Analysis - January 1, 2012

Reservoir	Usable   Capacity  	*** Usab This Year	ole Storage Last Year	e *** Avg	Watershed	Number of Data Sites	This Year ======== Last Yr	as % of ===== Average
= GIBSON	99.1	19.2	13.5	42.5	SUN	2	93	98
PISHKUN	32.0	20.0	21.4	18.0	TETON	3	102	97
WILLOW CREEK	32.2	28.3	25.6	22.0	MARIAS	4	85	71
LOWER TWO MEDICINE LAKE	11.9	6.3	3.6	8.7	SUN-TETON-MARIAS	7	90	81
FOUR HORNS LAKE	19.2	3.2	9.6	11.8				
SWIFT	30.0	10.9	10.0	14.2				
LAKE FRANCES	112.0	82.2	72.7	67.0				
LAKE ELWELL (TIBER)	1347.0	760.1	769.2	648.1				
					1			

= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

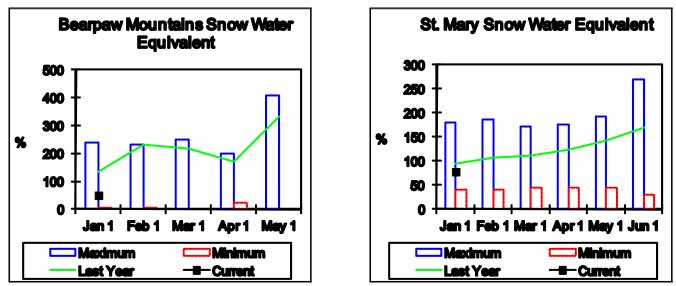
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.
 (3) - Median value used in place of average.

=

#### St. Mary and Milk River Basins

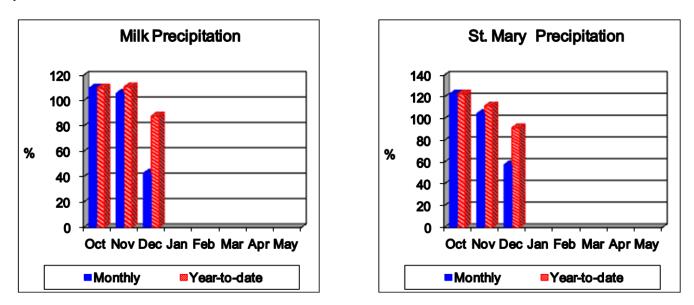
Snowpack in the Saint Mary River Basin was well below average on January 1. Snow water content was 78 percent of average and 82 percent of last year. The Milk River Basin (Bearpaw Mountains) was well below average. Snow water content was 50 percent of average and 44 percent of last year.



Bearpaw - January maximum swe was established in 1978 and minimum swe was in 1981; February maximum swe was 1978 and minimum was in 1973; March maximum swe was 1978 and minimum swe was 2005; April maximum swe was in 1985 and minimum swe was in 1973, 1983, and 1986; May maximum swe was 1975 and the minimum, 0.0, has occurred in several years. Average is for the period 1971 through 2000.

St. Mary - January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1972 and minimum swe was in 2001; March maximum swe was in 1972 and minimum swe was in 2005; April maximum swe was in 1967 and 1972 and minimum swe was in 2005; May maximum swe was in 19972 and minimum swe was in 1977; and June maximum swe was in 1972 and minimum swe was in 1972. Average is for the period 1971 through 2000.

Mountain and valley precipitation in the St. Mary River Basin during December was 58 percent of average and 64 percent of last year; and in the Milk River Basin during December was 43 percent of average and 34 percent of last year. Mountain and valley water year precipitation for both basins, beginning October 1, 2010, was 90 percent of average and 88 percent of last year.



Assuming average precipitation, April through July streamflows in the St. Mary are forecast to average 97 percent and the Milk to average 79 percent.

Lake Sherburne storage was 98 percent of average and 51 percent of last year; Fresno storage was 117 percent of average and 92 percent of last year; Beaver Creek storage was not available; and Nelson storage was 149 percent of average and 103 percent of last year.

Surface Water Supply Index (SWSI) was +1.3 for the St. Mary and +1.6 for the Milk River.

=
ST MARY and MILK RIVER BASINS

ST. MARY and MILK RIVER BASINS Streamflow Forecasts - January 1, 2012

=	

Forecast Point	Forecast	   ========		= Chance Of E	xceeding * =			
	Period	90%	70%	50		30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
				= = = = = = = = = = = = = = = = =	=========			
=								
Lake Sherburne Inflow (2)	APR-JUL	80	92	100	95	108	120	105
	APR-SEP	97	109	117	96	125	137	122
St. Mary R nr Babb (2)	APR-JUL	290	335	370	96	405	450	385
set har h h babb (2)	APR-SEP	350	400	435	97	470	520	450
St. Mary R at Int'l Boundary (2)	APR-JUL	315	385	435	100	485	555	435
	APR-SEP	390	460	510	99	560	630	515
Milk R at Western Crossing (3)	MAR-JUL	18.4	28	37	90	46	50	41
-	MAR-SEP	19.4	29	39	91	49	53	43
	APR-JUL	13.8	24	31	94	38	48	33
	APR-SEP	15.1	26	33	92	40	51	36
Milk R at Eastern Crossing (2,3)	MAR-JUL	38	51	78	94	93	107	83
	MAR-SEP	40	54	82	94	97	112	88
	APR-JUL	24	40	60	99	80	110	61
	APR-SEP	26	45	66	95	87	118	69
Beaver Ck nr Havre	MAR-JUL	2.0	3.6	5.0	52	7.7	11.6	9.6
Deaver on ht haves	APR-JUL	1.8	3.2	4.8	55	7.2	13.0	8.7

ST. MARY and MILK RIVER BASINS	ST. MARY and MILK RIVER BASINS
Reservoir Storage (1000 AF) - End of December	Watershed Snowpack Analysis - January 1, 2012
=	

Reservoir	Usable   Capacity  	*** Usabl This Year	le Storage Last Year	Avg	Watershed	Number of Data Sites	This Yea: ======= Last Yr	r as % of  Average
=								
LAKE SHERBURNE	64.3	23.0	44.7	23.5	ST. MARY	2	82	78
FRESNO	127.0	60.8	65.8	51.8	BEARPAW MOUNTAINS	1	44	50
BEAVER CREEK		NO REPORT	r		CYPRESS HILLS, CANADA	0	0	0
NELSON	66.8	53.3	51.5	35.7	MILK RIVER BASIN	1	44	50
					ST. MARY & MILK BASINS	5 3	79	76

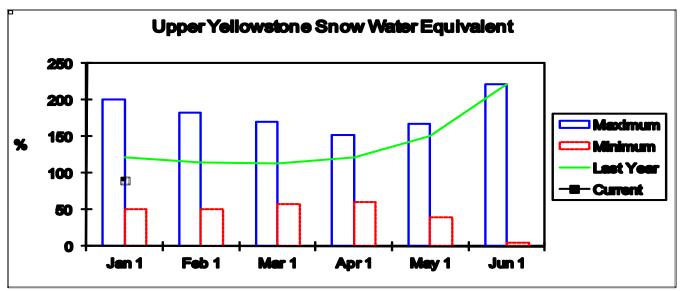
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 And a value used in place of average.

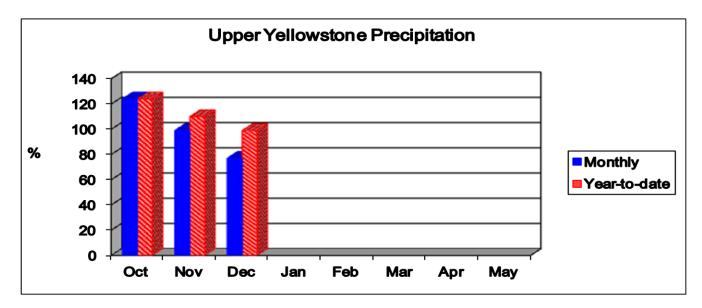
#### **Upper Yellowstone River Basin**

Snowpack conditions in the Upper Yellowstone River Basin were near average on January 1. Snow water content was 90 percent of average and 75 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 1988; February maximum swe was in 1997 and minimum swe was in 2001; March maximum swe was in 1997 and minimum swe was in 2001; May maximum swe was in 1997 and minimum swe was in 1987; and June maximum swe was 2011 and minimum swe was in 2001. Average is for the period 1971 through 2000.

Mountain precipitation during December was 79 percent of average and 64 percent of last year. Valley precipitation during December was 51 percent of average and 52 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 99 percent of average and 83 percent of last year.



Mystic Lake storage was 146 percent of average and 120 percent of last year and Cooney storage was not available.

Assuming average precipitation, April through July streamflows are forecast to average 90 percent.

Surface Water Supply Index (SWSI) was +0.1 in the Yellowstone River above Livingston; -2.3 in the Shields River; -1.1 in the Boulder River; -0.8 in the Stillwater River; insufficient data in the Rock/Red Lodge Creeks; +0.5 in the Clarks Fork River; and -0.1 in the Yellowstone River above Bighorn River.

=
UPPER YELLOWSTONE RIVER BASIN
Streamflow Forecasts - January 1, 2012

=		1	Decision	The based of the		===== Wetter		
		<<======	Drier ====	== Future Co	onditions =:	===== Wettei	=====>>	
Forecast Point	Forecast							
	Period	90%	70%	50		30%	10%	30-Yr Avg.
		(1000AF)		1 1 1 1 1 1	(% AVG.)	(1000AF)		(1000AF)
				= = = = = = = = = = = = = = =		= = = = = = = = = = = = = = = = = = =		
=		425	500				815	500
Yellowstone R at Yellowstone Lake	APR-JUL	435	520	575	98	630	715	590
	APR-SEP	575	680	755	94	830	935	805
Yellowstone R at Corwin Springs	APR-JUL	1240	1440	1580	96	1720	1920	1650
1 5	APR-SEP	1450	1690	1850	94	2010	2250	1970
				İ		İ		
Yellowstone R at Livingston	APR-JUL	1400	1640	1800	95	1960	2200	1900
	APR-SEP	1640	1920	2110	93	2300	2580	2280
Shields R nr Livingston	APR-JUL	31	47	77	53	118	178	145
	APR-SEP	34	52	85	53	130	196	162
Boulder R at Big Timber	APR-JUL	171	220	250	88	280	330	285
	APR-SEP	187	240	275	87	310	365	315
West Rosebud Ck nr Roscoe (2)	APR-JUL	43	49	53	88	57	63	60
West Rosebud CK III Roscoe (2)	APR-JUL APR-SEP	43 55	49 63	68	88	73	81	77
	APR-SEP	55	03	00	00	/3	01	11
Stillwater R nr Absarokee (2)	APR-JUL	325	385	430	87	475	535	495
berrinader it in instatorice (2)	APR-SEP	385	460	510	87	560	635	585
Clarks Fk Yellowstone R nr Belfry	APR-JUL	420	485	530	98	575	640	540
*	APR-SEP	460	530	580	98	630	700	595
				i		i		
Cooney Reservoir Inflow (2)	APR-JUL	30	42	50	106	58	70	47
	APR-SEP	40	52	61	107	70	82	57
Yellowstone R at Billings	APR-JUL	2320	2900	3230	92	3560	4140	3510
	APR-SEP	2720	3420	3800	92	4180	4880	4120
						1		
=								

UPPER YELLOWSTONE RIVER BASIN	UPPER YELLOWSTONE RIVER BASIN
Reservoir Storage (1000 AF) - End of December	Watershed Snowpack Analysis - January 1, 2012

= Reservoir	Usable   Capacity  	*** Usab This Year	le Storag Last Year	e ***       Avg	Watershed	Number of Data Sites	This Yea ======= Last Yr	r as % of ====== Average
= MYSTIC LAKE	21.0	13.6	11.3	9.3	YELLOWSTONE ab LIVINGS	TON 14	73	92
COONEY		NO REPORT	Г		SHIELDS	4	50	60
					BOULDER-STILLWATER	3	70	81
					RED LODGE-ROCK CREEK	2	167	136
					CLARK'S FORK	7	80	94
					UPPER YELLOWSTONE BASI	N 26	75	90

------

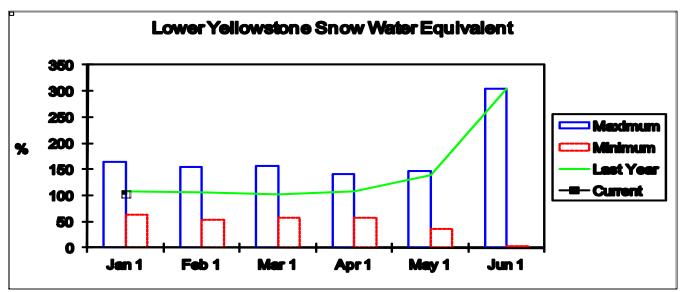
= \* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

The average is computed for the 1971-2000 base period.

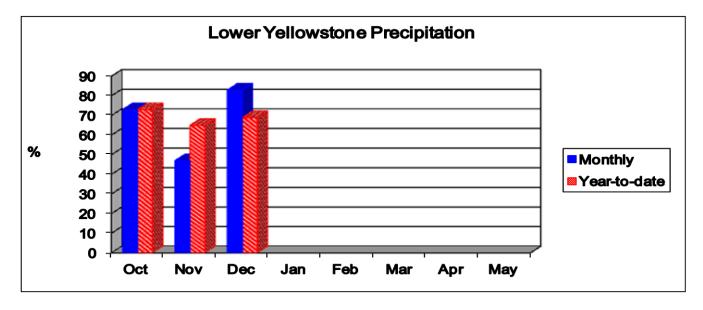
The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 - Median value used in place of average.

#### Lower Yellowstone River Basin

Snowpack conditions in the Lower Yellowstone River Basin were near average on January 1. Snow water content was 103 percent of average and 99 percent of last year.



January maximum swe was established in 1997 and minimum swe was in 2000; February maximum swe was in 1997 and minimum swe was in 2001; March maximum swe was in 1986 and minimum swe was in 2001; April maximum swe was in 1986 and minimum swe was in 2001; May maximum swe was in 1997 and minimum swe was in 1981; and June maximum swe was in 2011 and minimum swe was in 2001. Average is for the period 1971 through 2000.



Mountain and valley precipitation during December was 90 percent of average and 75 percent of last year. Mountain and valley water year precipitation, beginning October 1, 2010, was 118 percent of average and 111 percent of last year.

Bighorn Lake storage was 105 percent of average and 107 percent of last year and Tongue River storage was 237 percent of average and 105 percent of last year.

Assuming average precipitation, April through July streamflows are forecast to average 107 percent.

Surface Water Supply Index (SWSI) was +0.2 in the Bighorn River below Bighorn Lake; +2.0 in the Little Bighorn River; 0.0 in the Yellowstone River below Bighorn River; +2.8 in the Tongue River; and +1.7 in the Powder River.

=
LOWER YELLOWSTONE RIVER BASIN

Streamflow Forecasts - January 1, 2012 \_\_\_\_\_

		<====== Drier ===== Future Conditions ====== Wetter ====>>						====>>		
Forecast Point	Forecast	=======	======================================							
	Period	90%	70%		50		-	0%	10%	30-Yr Avg.
			(1000AF)			(% AVG.)			(1000AF)	(1000AF)
							======			
- Bighorn R nr St. Xavier (2)	APR-JUL	965	1310	I	1540	96	1	770	2110	1610
(	APR-SEP	1020	1410		1670	95		930	2320	1760
Tittle Diskers Dave Headin		91	122		143	112		164	195	128
Little Bighorn R nr Hardin	APR-JUL APR-SEP	107	141		143	114	1	187 187	220	144
	MIR DBI	107	111		101	111		107	220	111
Tongue R nr Dayton (2)	APR-JUL	75	95	i	109	114	j i	123	143	96
	APR-SEP	88	110		125	115		140	162	109
Big Goose Ck nr Sheridan	APR-JUL	43	55		63	121	1	71	83	52
big coope on hi bheiliddh	APR-SEP	50	63		71	118		79	92	60
Little Goose Ck nr Bighorn	APR-JUL	27	35		40	118		45	53	34
	APR-SEP	36	44		50	119	1	56	64	42
Tongue River Reservoir Inflow (2)	APR-JUL	153	220		265	121		310	375	220
-	APR-SEP	182	250		300	120	į –	350	420	250
Yellowstone R at Miles City (2)	APR-JUL	3480	4340		4880	91	5	420	6320	5360
Terrowscone k at Miles City (2)	APR-SEP	4050	5060		5680	92	-	300	7300	6210
				ĺ			i			
Powder R at Moorhead	APR-JUL	99	168		215	105	1	260	330	205
	APR-SEP	125	196		245	107		295	365	230
Powder R nr Locate	APR-JUL	104	188		245	104		300	385	235
	APR-SEP	128	220		280	108		340	430	260
Yellowstone R nr Sidney (2)	APR-JUL	3620	4450		5040	92		630	6490	5480
Terrowscone k in Stuney (2)	APR-SEP	4140	5080		5780	92	-	480	7430	6280
				İ			İ			
= LOWER YELLOWSTONE RIVER BASIN					LOWER YELLOWSTONE RIVER BASIN					
Reservoir Storage (1000 AF) - End of December					Watershed Snowpack Analysis - January 1, 2012					
=	77	*** *** 1-	1	ا بدید				NT		
Reservoir	Usable   Capacity				Watershed			Number This Year as		
Rebervori	capacity	Year		Avg	Matter	blica	D	ata Si		
= BIGHORN LAKE	1356.0	953.3	891.1 9	911.1	WIND	DIVED (Wrom	ing)	12	74	89
DIGUOKN LANE	1320.0	200.0	091.1 9	, TTTT	MIND	RIVER (Wyom	1113)	12	/4	69
TONGUE RIVER	79.1	53.3	50.9	22.5	SHOSH	ONE RIVER (	Wyoming)	6	87	95
					DIGUE			10	0.7	102
					BIGHC	RN RIVER (W	yoming)	16	97	103
				I						

LOWER YELLOWSTONE BASIN ( 32 99 103 ------

LITTLE BIGHORN (Wyoming) 2 120

7

6

166

111

TONGUE RIVER (Wyoming)

POWDER RIVER (Wyoming)

109

135

109

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 The value is natural volume - actual volume may be affected by upstream water management.
 Additional value used in place of average.

=

Issued by

Dave White Chief Natural Resources Conservation Service Service U.S. Department of Agriculture

#### Released by

Joyce Swartzendruber State Conservationist Natural Resources Conservation

Bozeman, Montana



Federal Building, Room 443 10 E. Babcock Bozeman, MT 59715 **Bozeman, MT** 

