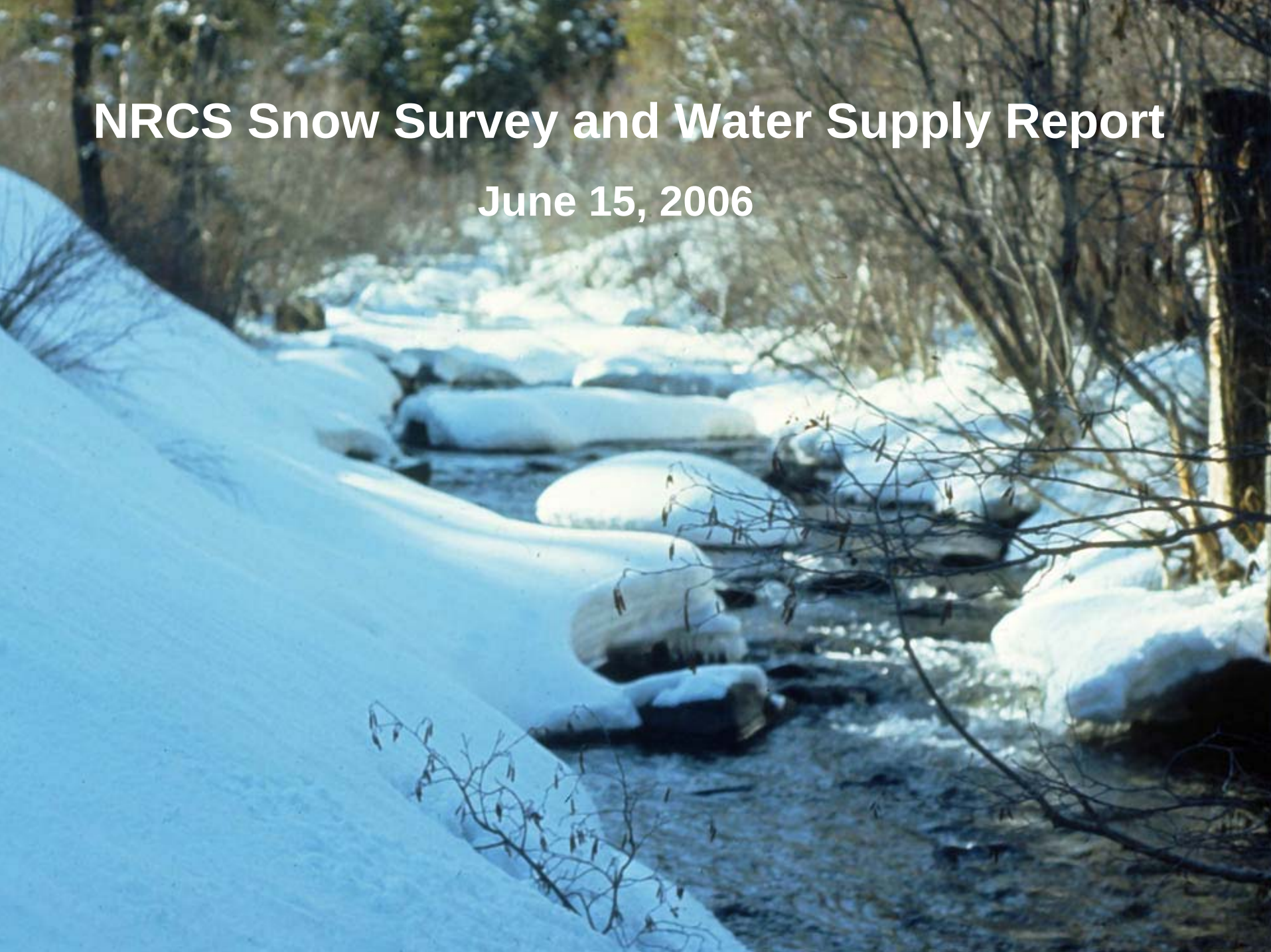
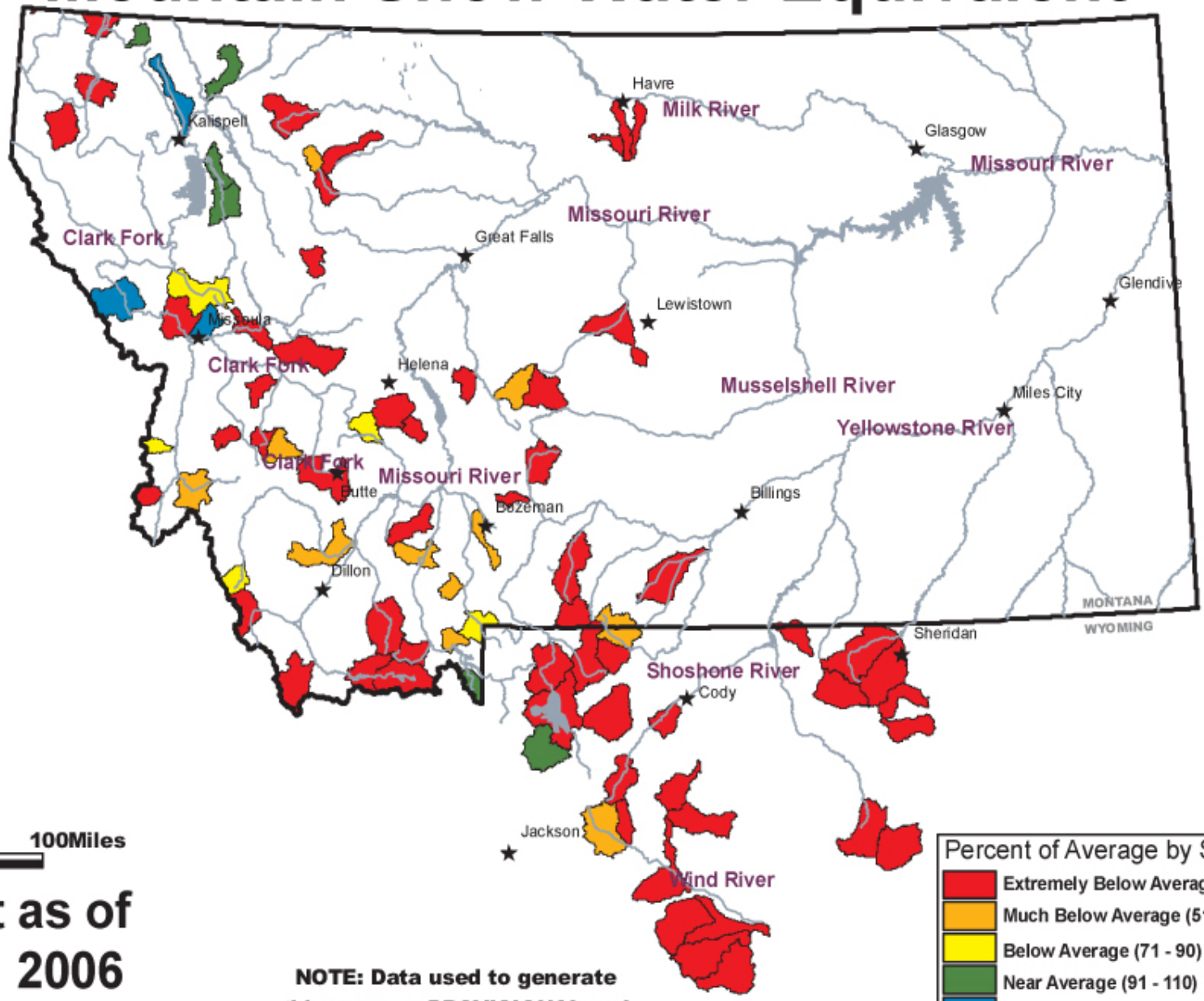
NRCS Snow Survey and Water Supply Report

June 15, 2006



Mountain Snow Water Equivalent



0 50 100Miles

Current as of June 1, 2006

NRCS Natural Resources Conservation Service

http://www.mt.nrcs.usda.gov

NOTE: Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE.

Percent of Average by Sub-Basin

- Extremely Below Average (Below 51)
- Much Below Average (51 - 70)
- Below Average (71 - 90)
- Near Average (91 - 110)
- Above Average (111 - 130)
- Much Above Average (131 - 150)
- Extremely Above Average (Over150)

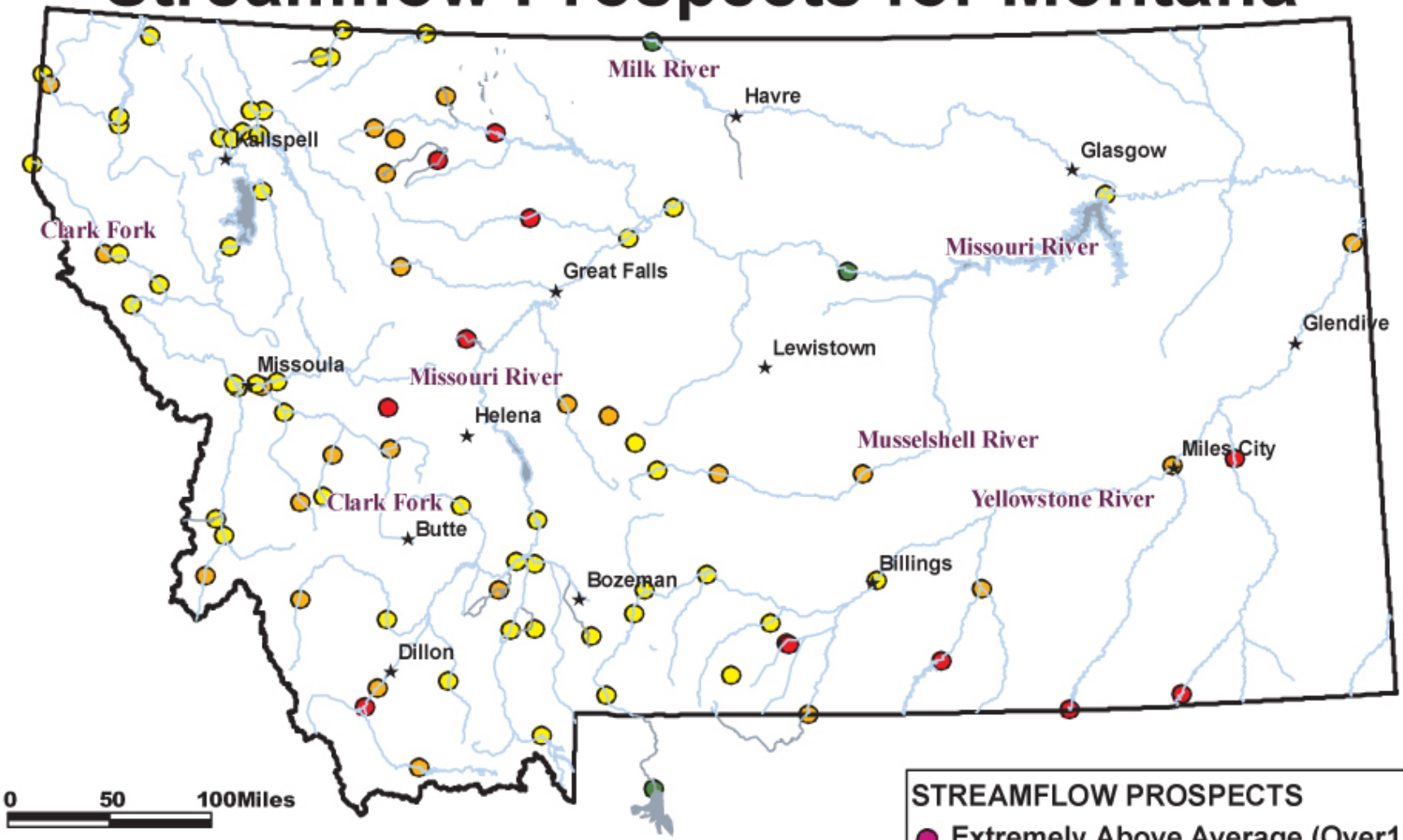
June 1, 2006 Snowpack

RIVER BASIN	% OF AVERAGE	% OF LAST YEAR	MAY % CHANGE
COLUMBIA	77	256	-23
KOOTENAI, MONTANA	72	382	-33
KOOTENAI, CANADA	65	145	-29
FLATHEAD, MONTANA	90	227	- 7
UPPER CLARK FORK	60	145	-38
BITTERROOT	53	---	-50
LOWER CLARK FORK	69	200	-36
MISSOURI	57	123	-43
MISSOURI HEADWATERS	64	122	-42
JEFFERSON	55	97	-53
MADISON	71	142	-34
GALLATIN	64	150	-35
MISSOURI MAINSTEM	43	126	-45
HEADWATERS MAINSTEM	42	109	-58
SMITH-JUDITH-MUSSELSHELL	34	73	-63
SUN-TETON-MARIAS	39	282	-38
ST. MARY	92	233	+ 8
ST. MARY & MILK	90	233	+ 8
YELLOWSTONE	40	64	-29
UPPER YELLOWSTONE	53	103	-30
LOWER YELLOWSTONE	21	30	-37
STATE-WIDE	67	173	-31

June 14, 2006 Snowpack

RIVER BASIN	% OF AVERAGE	% OF Ave LAST YEAR	% OF LAST YR
COLUMBIA	33	48	69
KOOTENAI, MONTANA	49	23	213
FLATHEAD, MONTANA	45	51	88
UPPER CLARK FORK	6	97	6
BITTERROOT	1	0	0
LOWER CLARK FORK	64	68	94
MISSOURI	14	95	15
MISSOURI HEADWATERS	28	104	27
JEFFERSON	15	119	13
MADISON	29	107	27
GALLATIN	28	87	32
MISSOURI MAINSTEM	0	86	0
HEADWATERS MAINSTEM	0	130	0
SMITH-JUDITH-MUSSELSHELL	0	149	0
SUN-TETON-MARIAS	0	26	0
ST. MARY	70	37	189
YELLOWSTONE	11	88	12
UPPER YELLOWSTONE	19	84	23
LOWER YELLOWSTONE	3	93	3
STATE-WIDE	32	67	48

Streamflow Prospects for Montana



STREAMFLOW PROSPECTS

- Extremely Above Average (Over150)
- Much Above Average (131 - 150)
- Above Average (111 - 130)
- Near Average (91 - 110)
- Below Average (71 - 90)
- Much Below Average (51 - 70)
- Extremely Below Average (Below 51)

Current as of June 1, 2006

NRCS Natural Resources Conservation Service
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NOTE: Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE.

June 1, 2006 Streamflow Forecasts

RIVER BASIN	June-July THIS YEAR % OF AVERAGE	June-July LAST YEAR % OF AVERAGE
COLUMBIA	63 to 73	49 to 57
KOOTENAI	64 to 76	50 to 58
FLATHEAD	66 to 76	47 to 54
UPPER CLARK FORK	54 to 66	57 to 68
BITTERROOT	69 to 79	45 to 51
LOWER CLARK FORK	67 to 76	41 to 48
MISSOURI	50 to 71	45 to 62
JEFFERSON	48 to 68	46 to 64
MADISON	77 to 86	63 to 71
GALLATIN	69 to 82	59 to 70
MISSOURI MAINSTEM	73 to 82	55 to 71
SMITH-JUDITH-MUSSELSHELL	39 to 66	39 to 64
SUN-TETON-MARIAS	35 to 53	28 to 43
MILK	42 TO 91	-- -- --
ST. MARY	67 to 84	55 to 72
YELLOWSTONE	57 to 70	64 to 77
UPPER YELLOWSTONE	66 to 79	58 to 72
LOWER YELLOWSTONE	44 to 57	72 to 85
STATE-WIDE	56 to 72	50 to 63

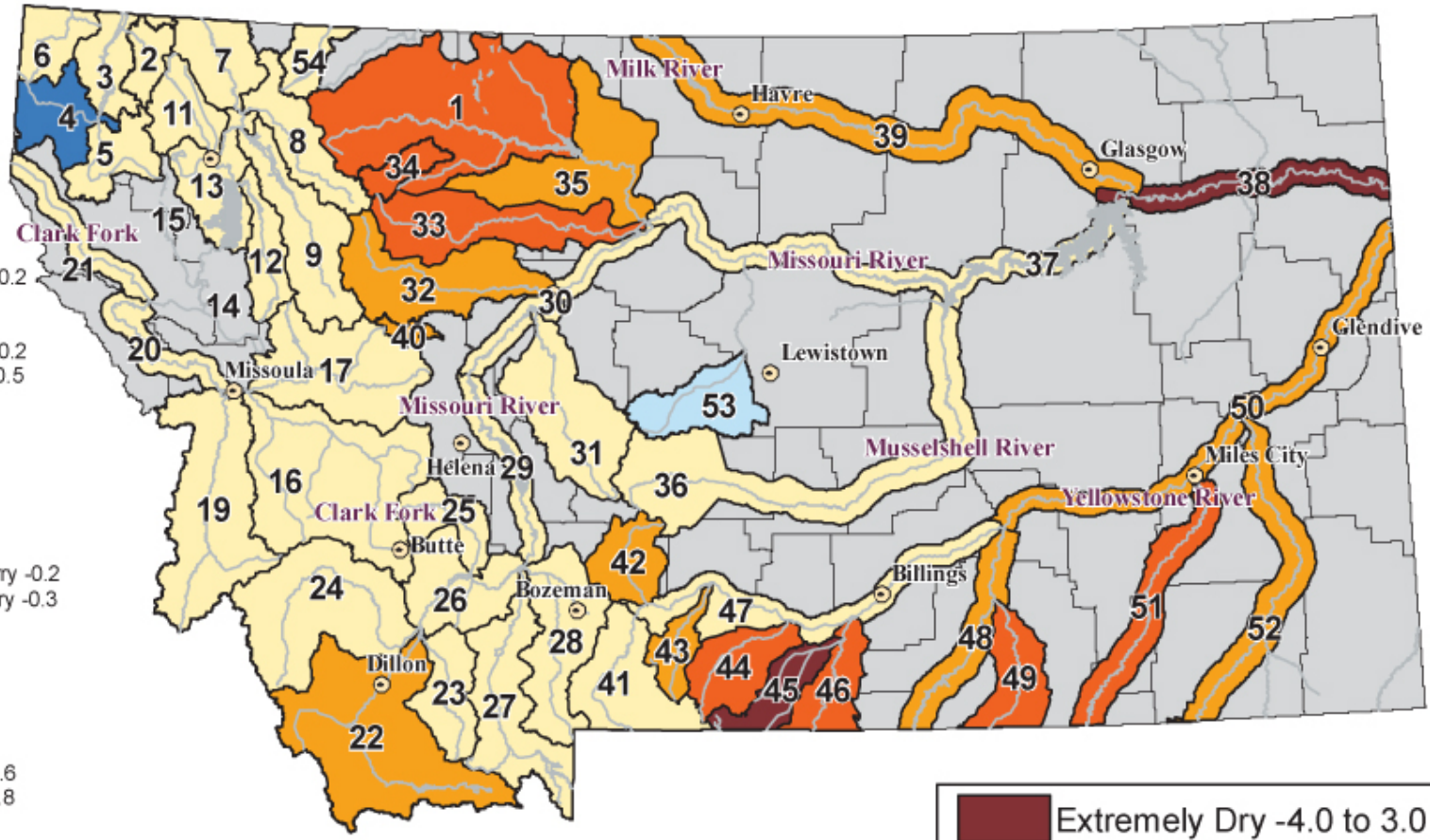
NOTE: The JUNE-JULY LAST YEAR % OF AVERAGE column above is last years forecasts on June 1, NOT of what actually occurred.

Surface Water Supply Index (SWSI) Values

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE

RIVER INDEX & SWSI VALUES

1 Marias above Tiber Reservoir -2
2 Tobacco -0.2
3 Kootenai Ft. Steele to Libby Dam 0.8
4 Kootenai below Libby Dam 3
5 Fisher 0.9
6 Yaak 0.9
7 North FK. Flathead 0.5
8 Middle FK. Flathead -0.4
9 South FK. Flathead 0
11 Stillwater/Whitefish 0.6
12 Swan 0.3
13 Flathead at Polson 0.6
14 Mission Valley
15 Little Bitterroot
16 Clark Fork above Milltown -0.2
17 Blackfoot 0.2
19 Bitterroot 0.5
20 Clark Fork below Bitterroot 0.2
21 Clark Fork below Flathead 0.5
22 Beaverhead -1.2
23 Ruby 0.5
24 Big Hole 0.4
25 Boulder (Jefferson) 0
26 Jefferson 0.4
27 Madison 0.5
28 Gallatin 0.5
29 Missouri above Canyon Ferry -0.2
30 Missouri below Canyon Ferry -0.3
31 Smith -0.6
32 Sun -1
33 Teton -2
34 Birch/Dupuyer Creeks -2.9
35 Marias -1.3
36 Musselshell -0.1
37 Missouriabove Fort Peck -0.6
38 Missouribelow Fort Peck -3.8
39 Milk -1.1
40 Dearbornnear Craig -1.6
41 Yellowstone above Livingston 0.3
42 Shields -1.2
43 Boulder(Yellowstone) -1.7
44 Stillwater -2.1
45 Rock/Red Lodge Creeks -3.7
46 Clarks Fork -2
47 Yellowstone above Bighorn -0.6
48 Bighorn below Bighorn Lake -1.7
49 Little Bighorn -2.9
50 Yellowstone below Bighorn -1.1
51 Tongue -2.9
52 Powder -1.3
53 Upper Judith River 1.5
54 Saint Mary River -0.1



Extremely Dry -4.0 to 3.0
Moderately Dry -2.9 to -2.0
Slightly Dry -1.9 to -1.0
Near Average -0.9 to 0.9
Sightly Wet 1.0 to 1.9
Moderately Wet 2.0 to 2.9
Extremely Wet 3.0 to 4.0
SWSI Not Apllicable

Current as of June 1, 2006

0 45 90 Miles

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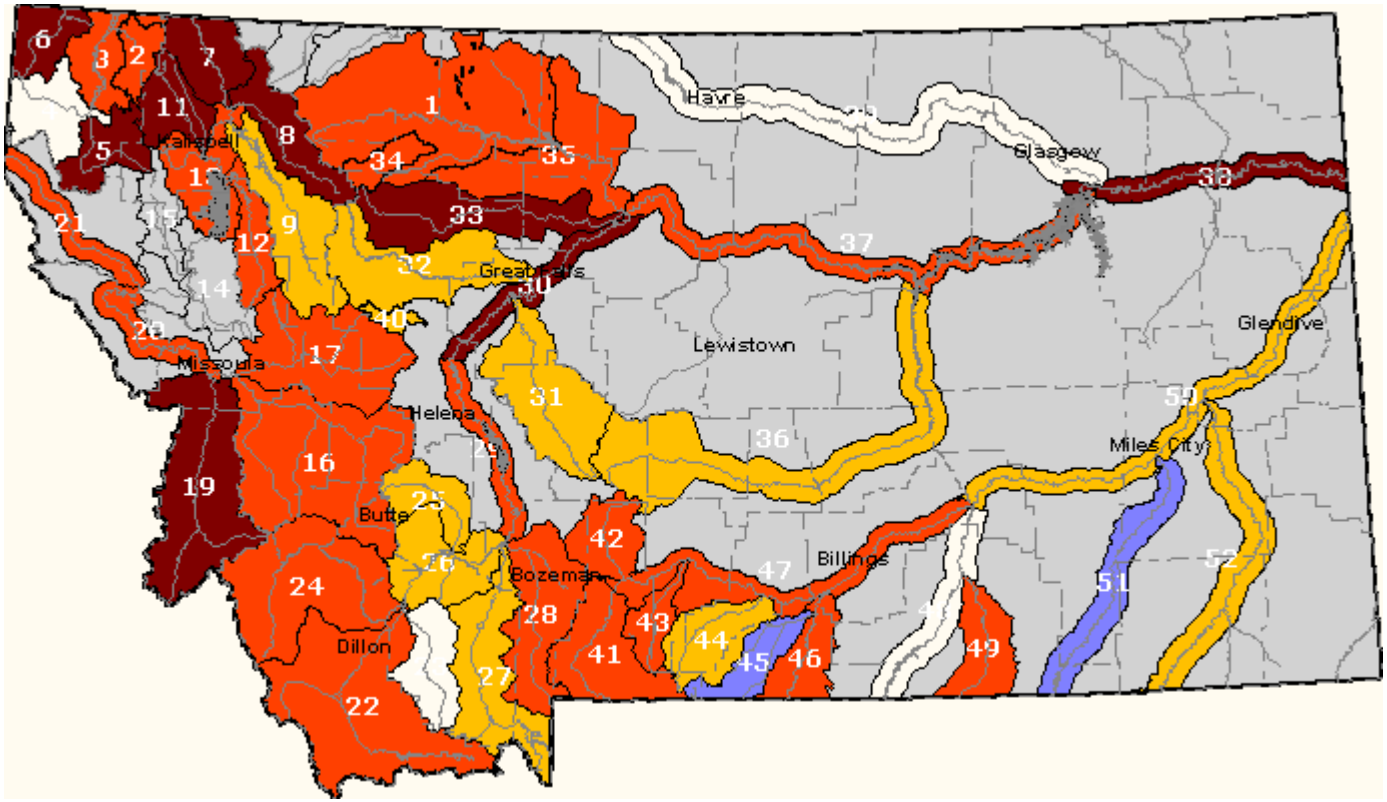
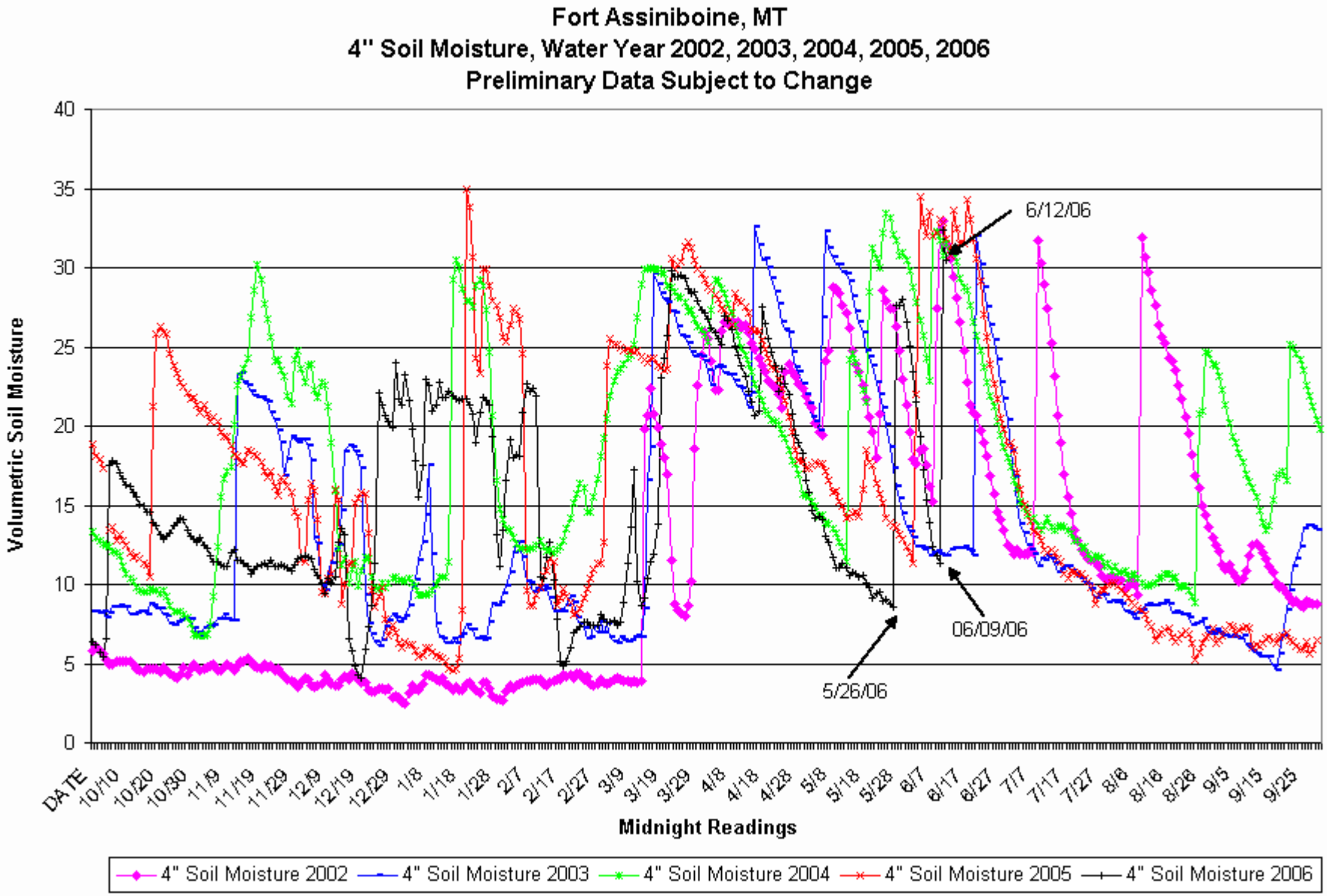
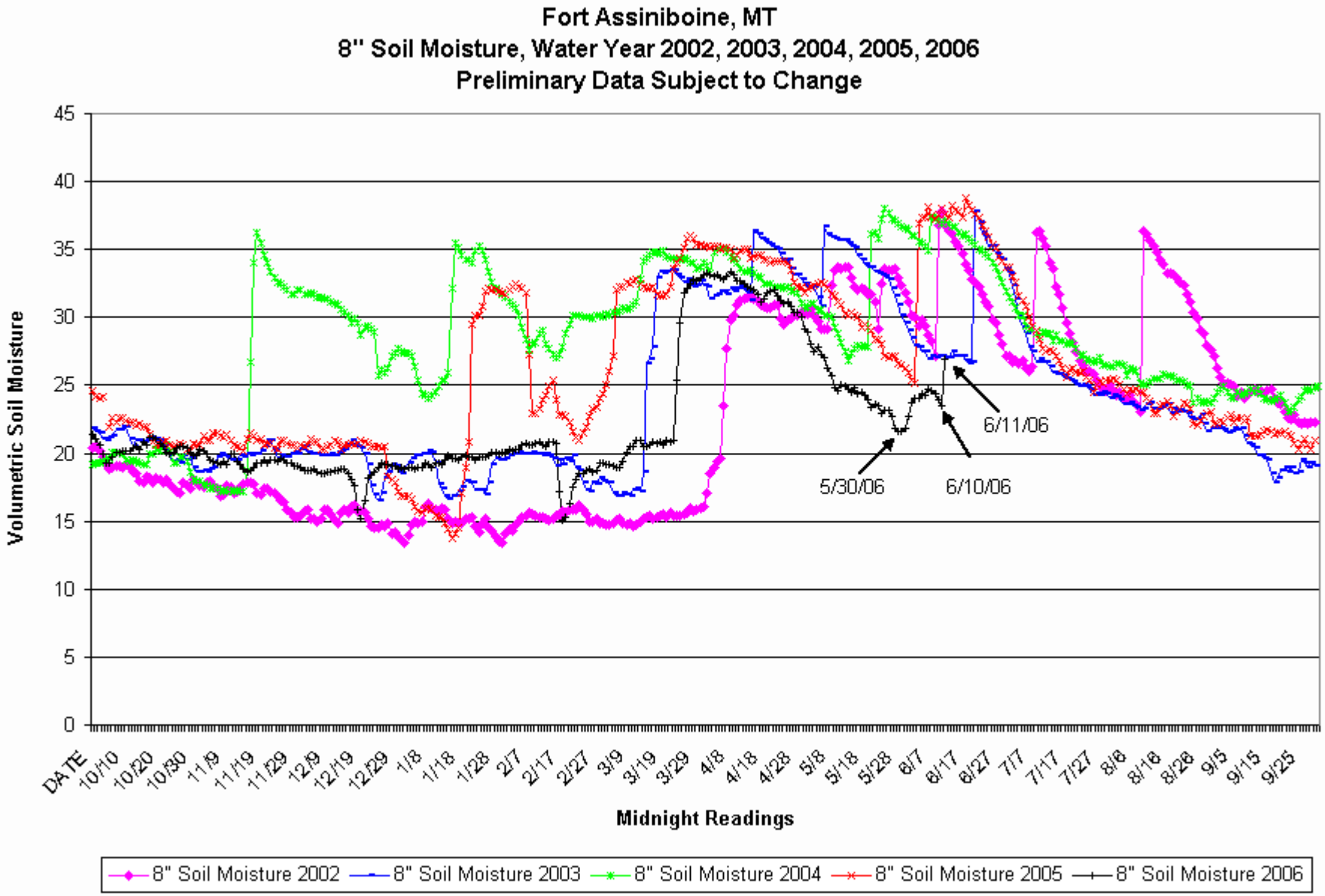
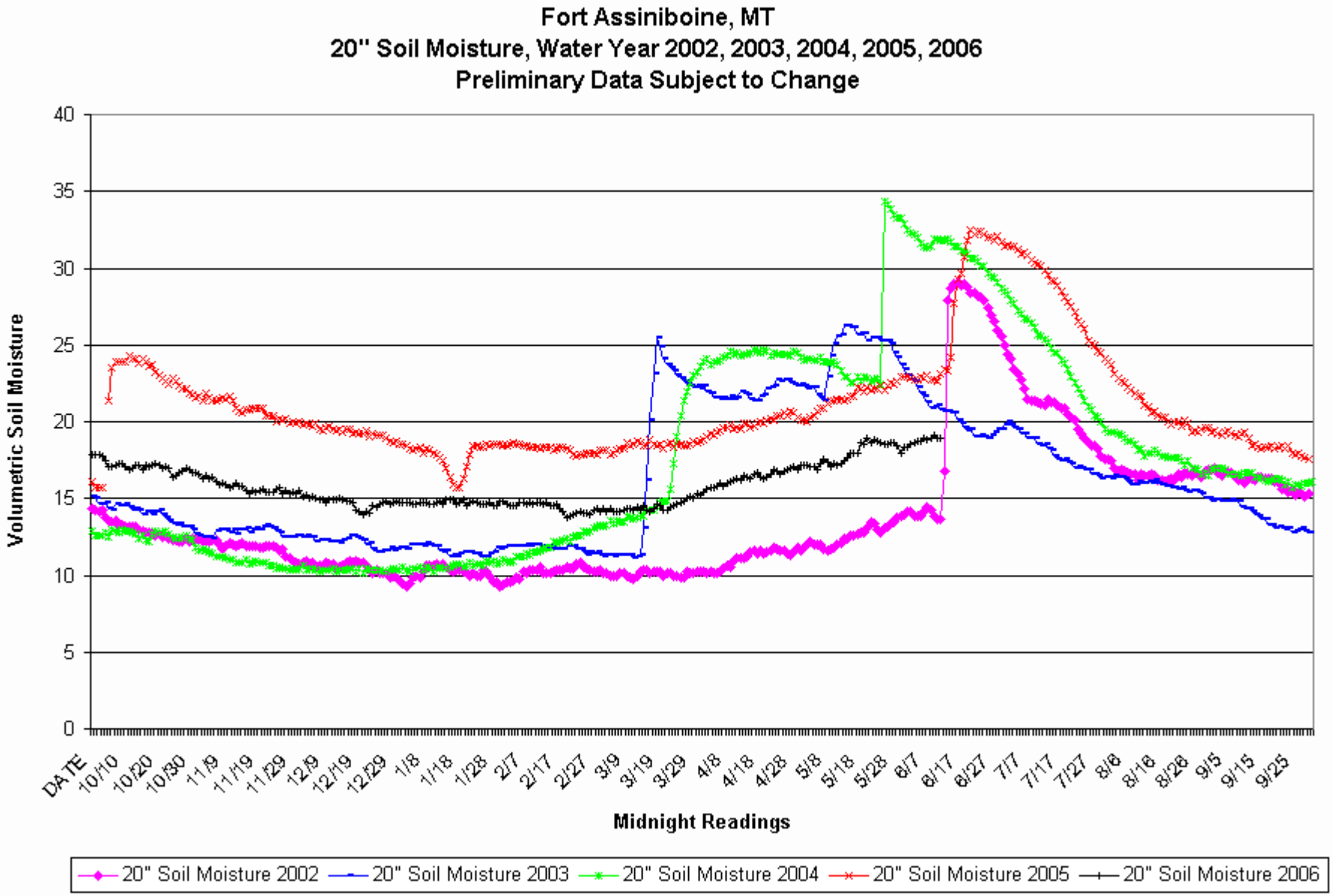


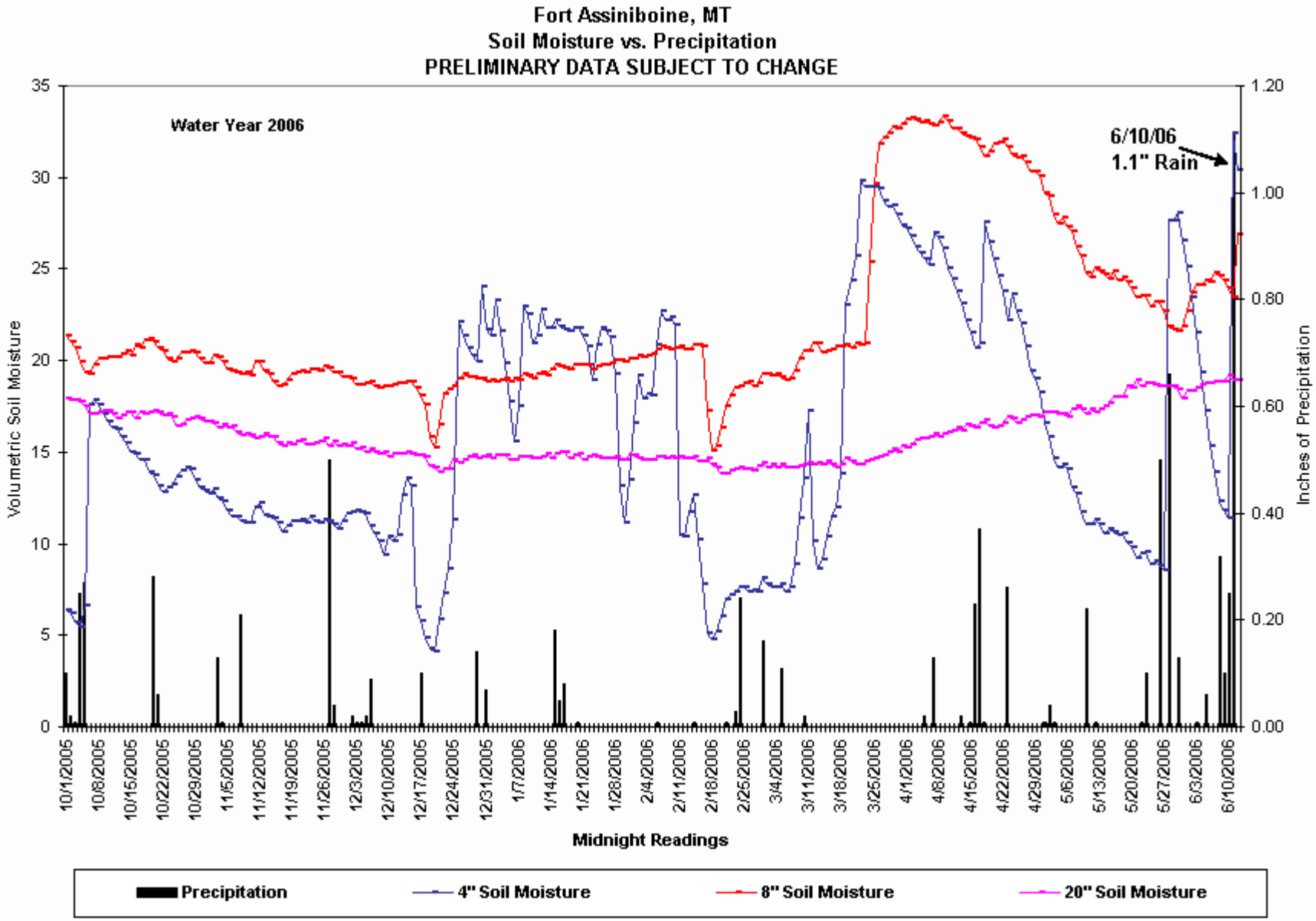
SWSI Map
June 1, 2005

- Extremely Dry -4 to -3
- Moderately Dry -2.9 to -2.0
- Slightly Dry -1.9 to -1.0
- Near Average -0.9 to 0.9
- Slightly Wet 1.0 to 1.9
- Moderately Wet 2.0 to 2.9
- Extremely Wet 3.0 to 4.0
- SWSI Not Applicable


Fort Assiniboine, MT
4" Soil Moisture, Water Year 2002, 2003, 2004, 2005, 2006
Preliminary Data Subject to Change
Volumetric Soil Moisture
40
35
30
25
20
15
10
5
0
6/12/06
06/09/06
5/26/06
DATE
10/10
10/20
10/30
11/9
11/19
11/29
12/9
12/19
12/29
1/8
1/18
1/28
2/7
2/17
2/27
3/9
3/19
3/29
4/8
4/18
4/28
5/8
5/18
5/28
6/7
6/17
6/27
7/7
7/17
7/27
8/6
8/16
8/26
9/5
9/15
9/25
Midnight Readings
4" Soil Moisture 2002
4" Soil Moisture 2003
4" Soil Moisture 2004
4" Soil Moisture 2005
4" Soil Moisture 2006


Fort Assiniboine, MT
8" Soil Moisture, Water Year 2002, 2003, 2004, 2005, 2006
Preliminary Data Subject to Change
Volumetric Soil Moisture
45
40
35
30
25
20
15
10
5
0
5/30/06
6/10/06
6/11/06
DATE
10/10
10/20
10/30
11/9
11/19
11/29
12/9
12/19
12/29
1/8
1/18
1/28
2/7
2/17
2/27
3/9
3/19
3/29
4/8
4/18
4/28
5/8
5/18
5/28
6/7
6/17
6/27
7/7
7/17
7/27
8/6
8/16
8/26
9/5
9/15
9/25
Midnight Readings
8" Soil Moisture 2002
8" Soil Moisture 2003
8" Soil Moisture 2004
8" Soil Moisture 2005
8" Soil Moisture 2006


Fort Assiniboine, MT
20" Soil Moisture, Water Year 2002, 2003, 2004, 2005, 2006
Preliminary Data Subject to Change
Volumetric Soil Moisture
40
35
30
25
20
15
10
5
0
DATE
10/10
10/20
10/30
11/9
11/19
11/29
12/9
12/19
12/29
1/8
1/18
1/28
2/7
2/17
2/27
3/9
3/19
3/29
4/8
4/18
4/28
5/8
5/18
5/28
6/7
6/17
6/27
7/7
7/17
7/27
8/6
8/16
8/26
9/5
9/15
9/25
Midnight Readings
20" Soil Moisture 2002
20" Soil Moisture 2003
20" Soil Moisture 2004
20" Soil Moisture 2005
20" Soil Moisture 2006


Fort Assiniboine, MT
Soil Moisture vs. Precipitation
PRELIMINARY DATA SUBJECT TO CHANGE
Water Year 2006
6/10/06
1.1" Rain
Volumetric Soil Moisture
Inches of Precipitation
Midnight Readings
Precipitation
4" Soil Moisture
8" Soil Moisture
20" Soil Moisture

SUMMARY

- Remaining snowpack is severely below average (32%) and half of last year at this time.
- Snowmelt peak flows generally occurred between May 20 and May 23, which is about 2 ½ to 3 ½ weeks earlier than average (last week of May to middle of June).
- June-July streamflows generally were forecast to be below to well below average (assuming average precipitation through July).
- Summer streamflows will be dependent upon frequent and timely rain to keep early water shortages from occurring, especially in south central and south eastern Montana and unregulated rivers and streams.