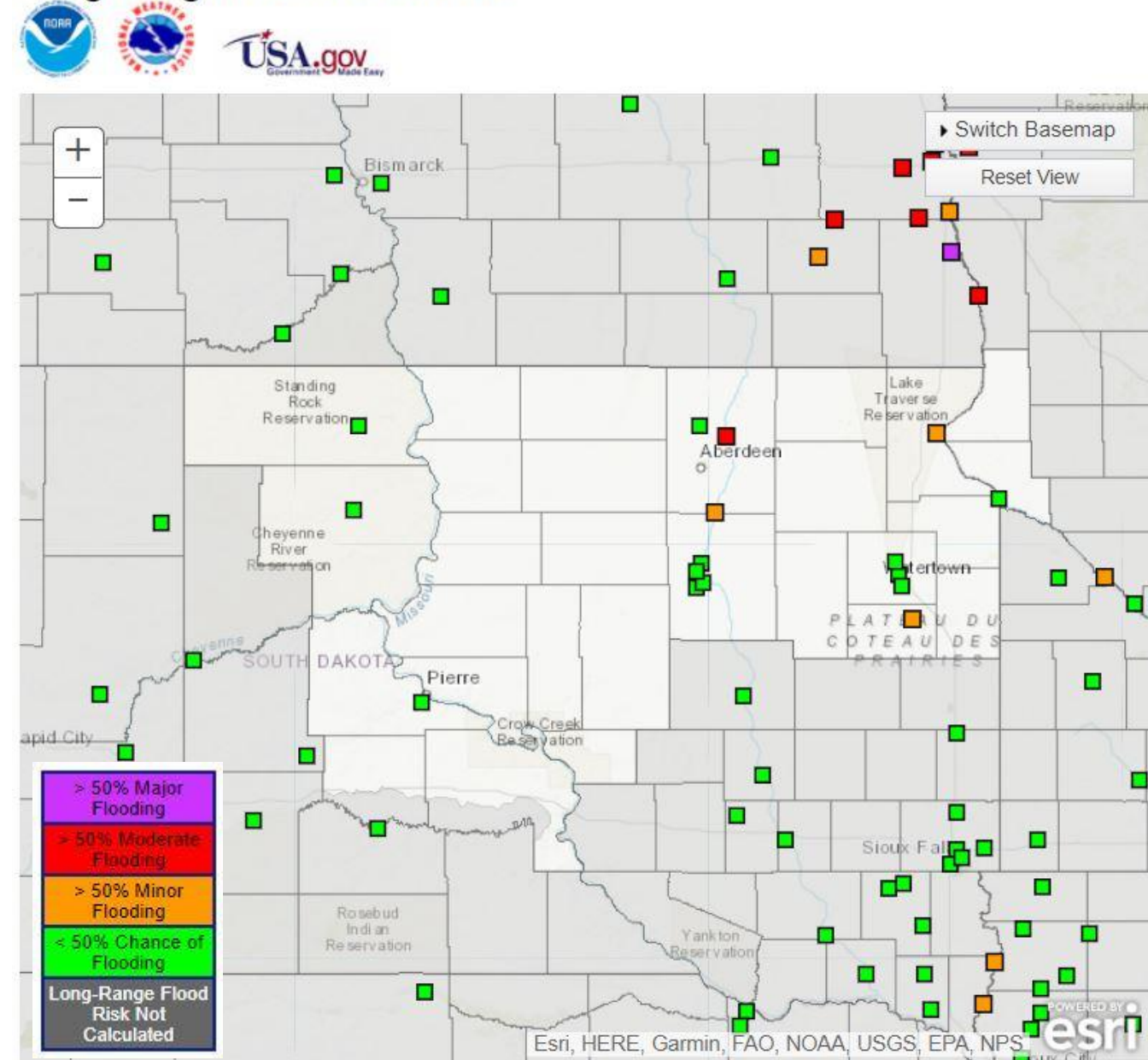## Key Messages

➔ Due to the dry conditions across the area this winter and the lack of any significant snow cover over most of the area, the chances for minor, moderate, or major flooding across much of the region are below normal.

➔ The exception is across the James River basin in Brown County, where the chances are above normal for minor to moderate flooding due to the more extensive and wet snowpack in the upper portions of the basin in North Dakota.

➔ The flood threat through this spring, both in location and severity, will largely be determined by future rain or snowfall.

Next Scheduled Briefing

➔ The is the last routine flood outlook. However, real time information can be found at weather.gov/abr.

Long-Range River Flood Risk

> 50% Major Flooding
> 50% Moderate Flooding
> 50% Minor Flooding
< 50% Chance of Flooding
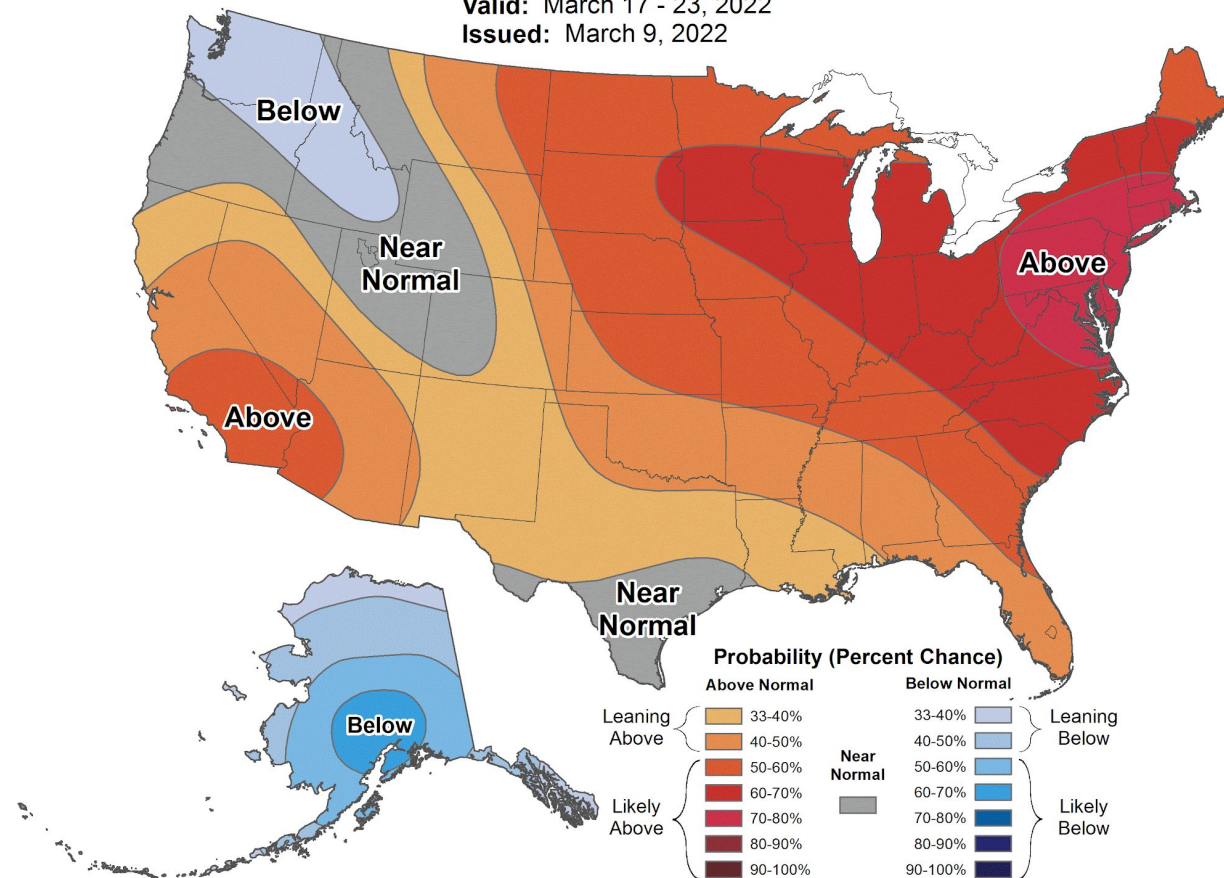Long-Range Flood Risk Not Calculated

Overview

➔ The outlook for the next two weeks is for increased chances for above normal temperatures and near to below normal precipitation. The 90 day outlook for March through May shows equal chances for below, near or above normal precipitation, and slightly increased chances for above normal temperatures.

National Oceanic and Atmospheric Administration
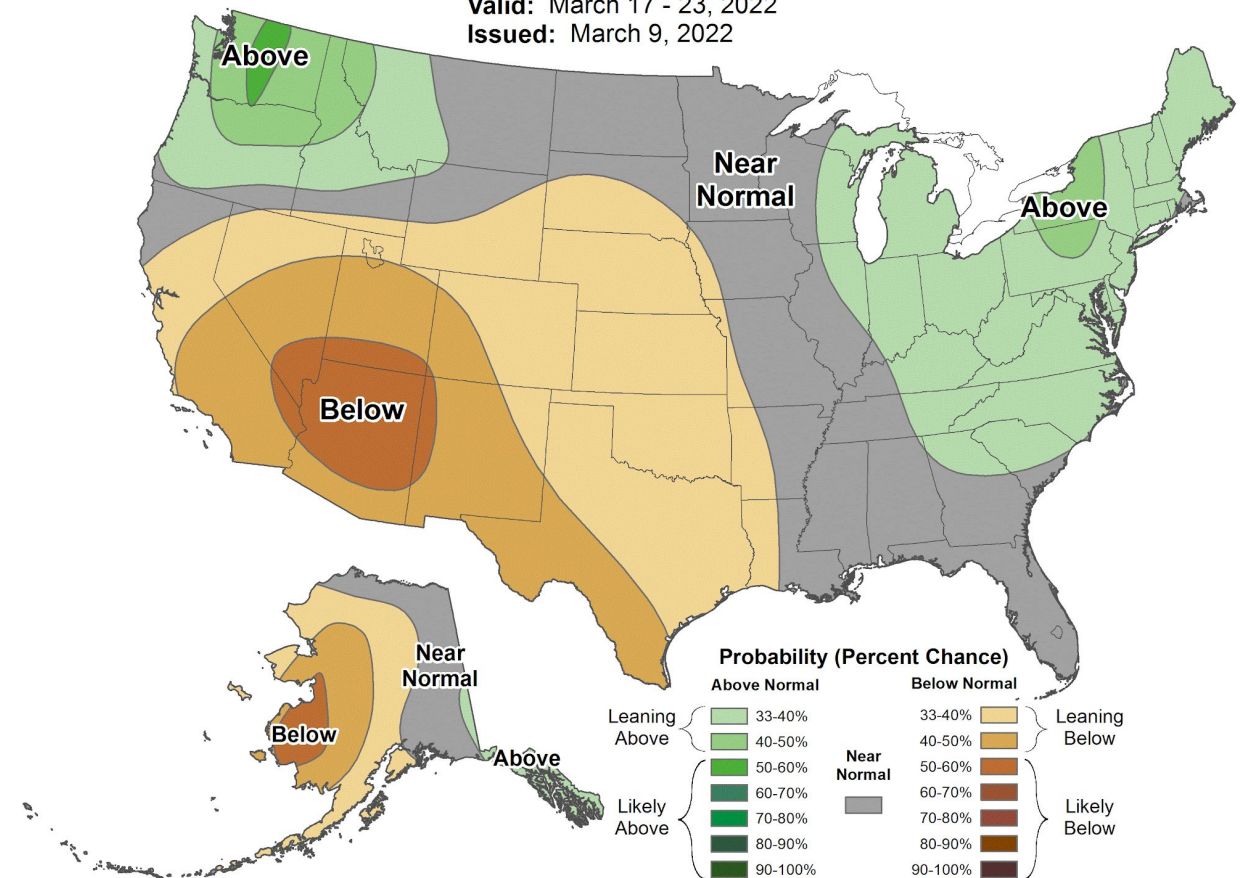U.S. Department of Commerce

National Weather Service
Aberdeen, SD

Overview

➡ Snowpack is highly variable across the area.

➡ The higher amounts continue to be along the North Dakota border from Britton eastward to west central Minnesota, where the current snowpack ranges from 7 to 15 inches.

➡ Areas along and south of Interstate 90 currently have 1 to 2 inches of snow pack.

➡ The remainder of the area has no snowpack.

Modeled Snow Depth

Inches of depth

	>	150
100	to	150
75	to	100
50	to	75
40	to	50
30	to	40
20	to	30
16	to	20
12	to	16
8.0	to	12
4.0	to	8.0
2.0	to	4.0
trace	to	2.0

Not Estimated

Elevation in feet

	>	13124
8203	to	13124
3281	to	8203
3	to	3281
	<	3
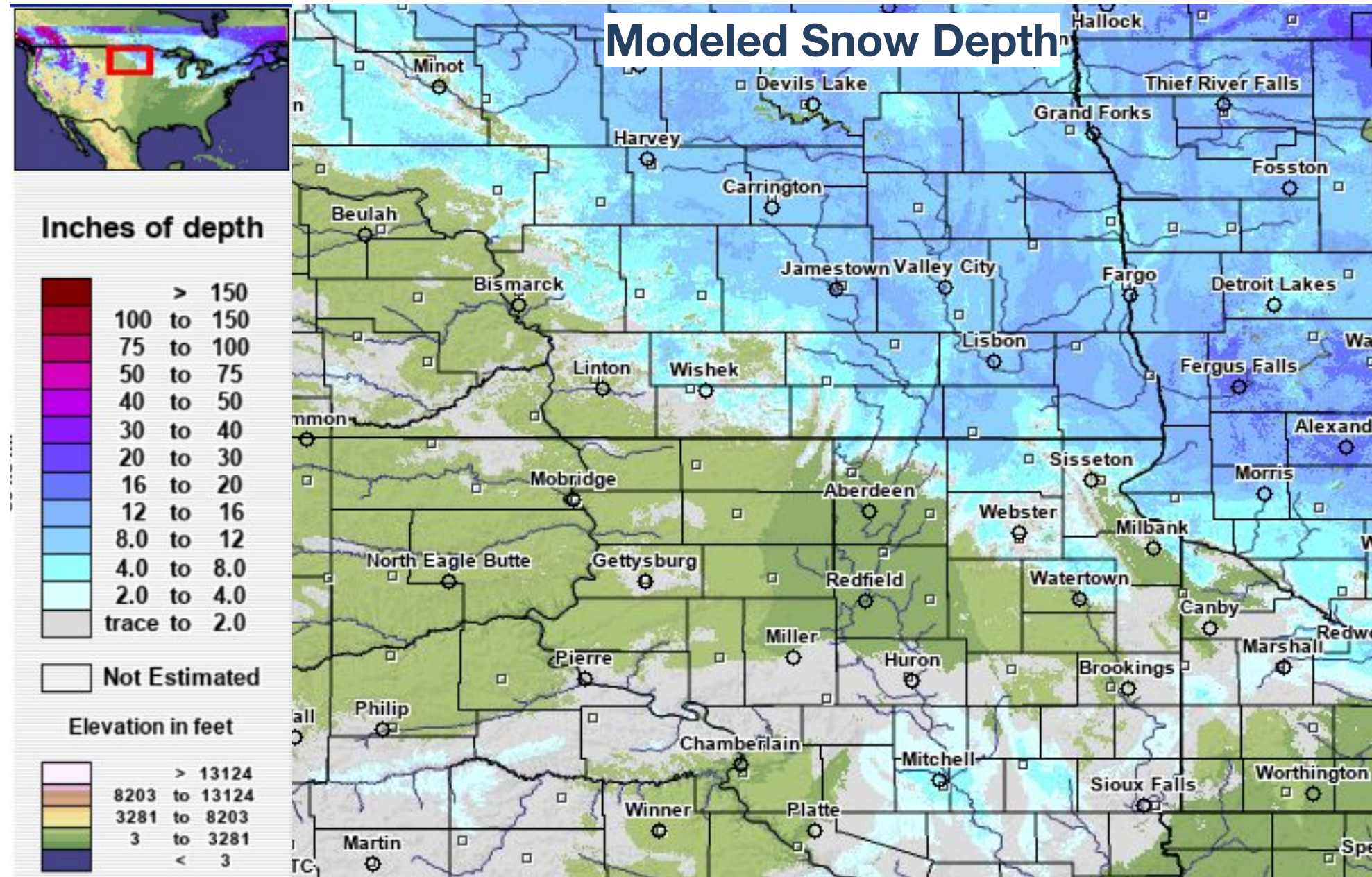
Overview

➔ Along the North Dakota border from Britton eastward into west central Minnesota the water equivalent of this snowpack is generally 1 to 3 inches.

➔ The remainder of the area has a water equivalent of 0.5 inch or less.

Modeled Snow Water Equivalent
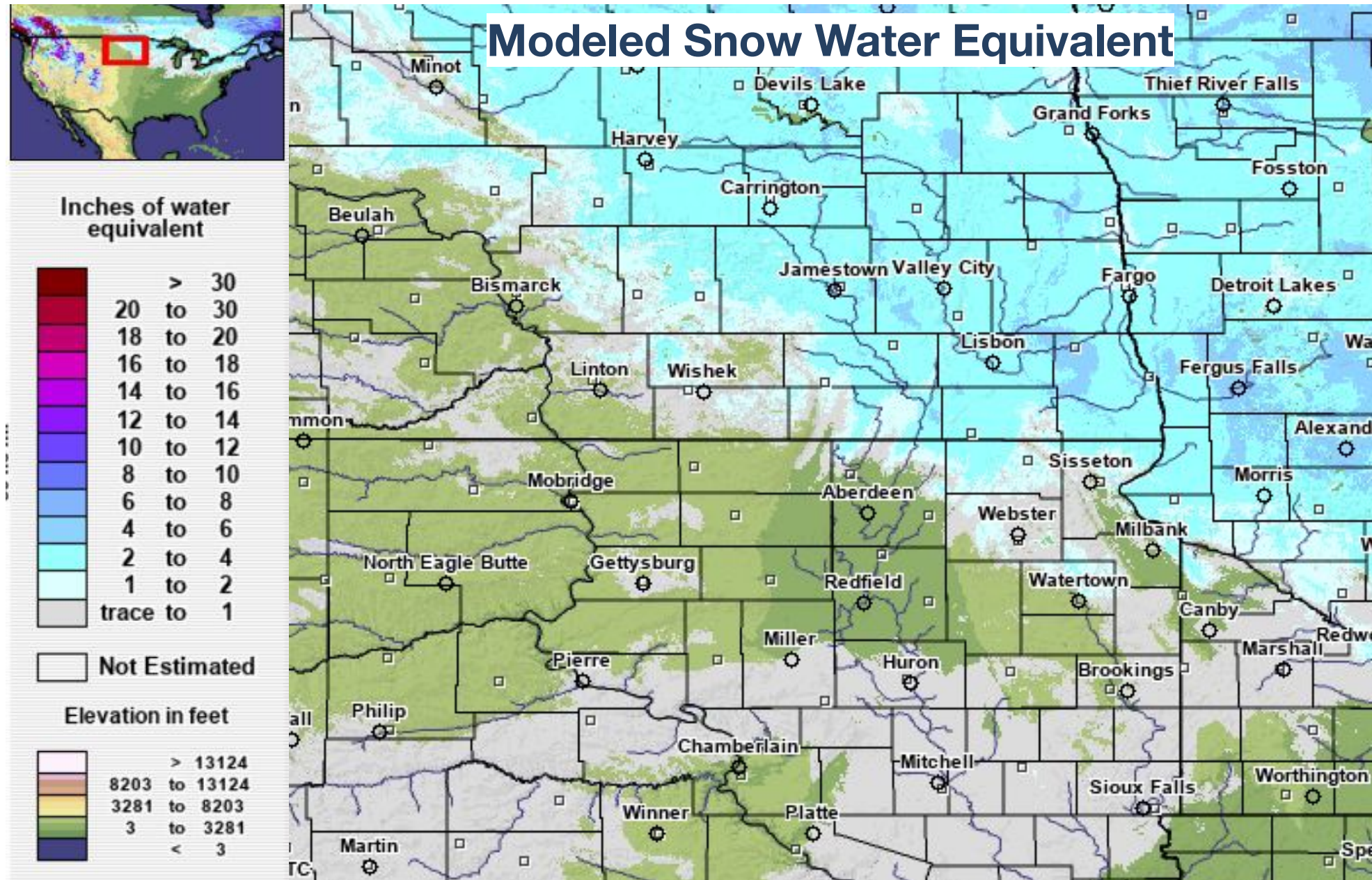
Overview

➔ Soil moisture is below normal across central South Dakota, and above normal across the east.

➔ Frost depths are generally in the 1 to 4 foot range.

➔ Portions of central South Dakota are currently in Abnormally Dry to Severe drought conditions.

Calculated Soil Moisture Ranking Percentile
MAR 09, 2022
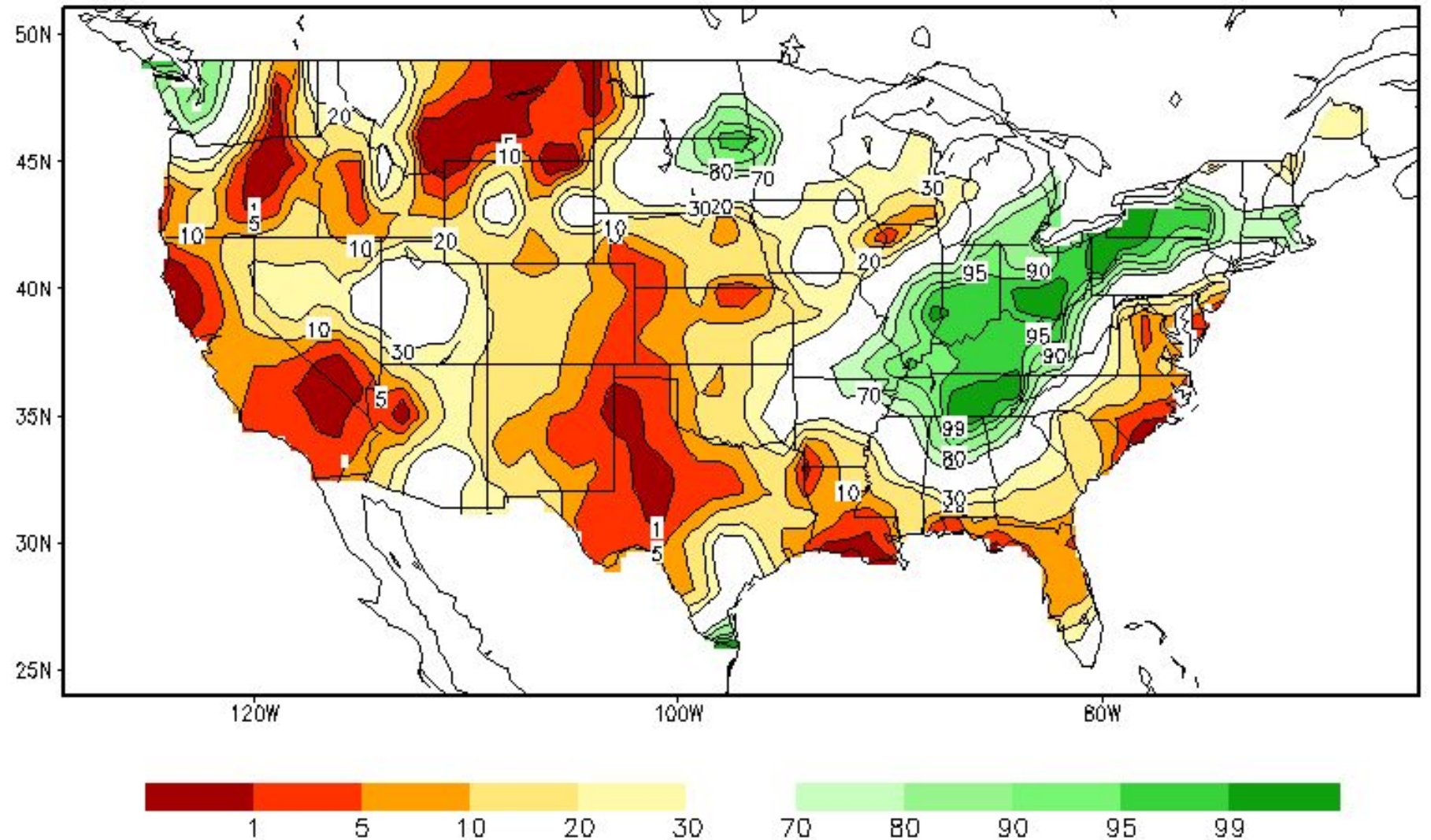
Overview

➔ All of the rivers in the area are iced over.

➔ River levels and flows are generally running near to below normal across the region.

➔ The threat for break-up ice jams does exist as we head into this spring, but the threat is low. Any potential ice jam flooding will be determined by how fast the ice melts and how much additional flow can get into the rivers to raise and break up the existing ice cover before it melts.

AHPS Observed Gauge Map

Overview

➔ In Table 1 to the right, the current (CS) and historical (HS) or normal probabilities of exceeding minor, moderate, and major flood stages are listed for the valid time period.

➔ CS values indicate the probability of reaching a flood category based on current conditions.

➔ HS values indicate the probability of reaching a flood category based on historical or normal conditions.

➔ When the value of CS is more than HS, the probability of exceeding that level is higher than normal. When the value of CS is less than HS, the probability of exceeding that level is lower than normal.

```
...Table 1--Probabilities for minor...moderate and major flooding...
               Valid Period:  03/12/2022  - 06/10/2022

                                        :    Current and Historical
                                        :     Chances of Exceeding
                                        :        Flood Categories
                                        :       as a Percentage (%)
                         Categorical    :
                       Flood Stages (FT):   Minor     Moderate    Major
Location               Minor  Mod  Major:  CS   HS    CS   HS    CS   HS
--------               -----  ----- -----: ---  ---   ---  ---   ---  ---
:Elm River
Westport                14.0  16.0  19.0 :   6   28   <5   22   <5    9
:James River
Columbia                13.0  16.0  18.0 :  81   58   52   48   27   33
Stratford               14.0  17.0  18.5 :  73   61   46   55   16   35
:Snake Creek
Ashton                  11.5  13.0  16.0 :  14   52   11   43    6   34
:James River
Ashton                  13.0  14.0  16.0 :  47   59   38   58   31   46
:Turtle Creek
Redfield                 7.0  10.0  15.0 :  22   54   17   46   10   33
:James River
Redfield                20.0  22.0  25.0 :  14   45   11   44    8   42
:Big Sioux River
Watertown               10.0  11.0  12.0 :  <5   17   <5   <5   <5   <5
Watertown Sioux C        9.0  10.0  12.0 :  42   33   12   22   <5   <5
Watertown Broadwa       10.5  11.0  13.5 :  45   33   40   33   <5   <5
Castlewood               9.0  11.0  16.0 :  50   35   23   29   <5   <5
:Grand River
Little Eagle            15.0  17.0  21.0 :  <5   27   <5   17   <5    6
:Moreau River
Whitehorse              21.0  23.0  25.0 :  <5   19   <5   16   <5   11
:Bad River
Fort Pierre             21.0  25.0  27.0 :   6   10   <5    5   <5   <5
:Little Minnesota River
Peever                  17.0  22.0  24.0 :  62   25    7   <5   <5   <5
:Minnesota River
Big Stone Lake         971.5 973.0 975.0 :  11    6   <5   <5   <5   <5
```

National Weather Service
Aberdeen, SD

Overview

➔ In Table 2 to the right, the 95 through 5 percent columns indicate the probability of exceeding the listed stage levels (FT) for the valid time period.

```
...Table 2--Exceedance Probabilities...
                              Chance of Exceeding Stages
                                  at Specific Locations
                            Valid Period: 03/12/2022  - 06/10/2022
Location                95%    90%    75%    50%    25%    10%     5%
--------              ------ ------ ------ ------ ------ ------ ------
:Elm River
Westport                5.5    5.7    5.9    6.8    8.9   11.8   14.2
:James River
Columbia               12.1   12.4   13.2   16.3   18.2   18.9   19.6
Stratford              12.7   12.9   13.9   16.6   18.1   18.6   19.7
:Snake Creek
Ashton                  2.5    2.5    2.8    3.8    6.4   13.3   18.0
:James River
Ashton                  7.3    7.5    8.4   11.8   16.9   18.5   24.9
:Turtle Creek
Redfield                3.1    3.1    3.1    3.7    5.8   14.9   16.4
:James River
Redfield                6.7    6.8    7.6   10.6   14.9   22.5   30.5
:Big Sioux River
Watertown               6.0    6.6    7.0    7.5    8.6    9.5    9.9
Watertown Sioux C       6.4    7.0    7.3    8.1    9.4   10.3   10.9
Watertown Broadwa       7.6    8.2    8.7    9.7   11.5   12.6   13.0
Castlewood              7.3    7.6    8.1    9.0   10.6   12.1   12.3
:Grand River
Little Eagle            2.4    2.4    4.3    6.0    8.8    9.7   11.7
:Moreau River
Whitehorse              2.6    2.7    4.5    5.7    7.5    9.8   12.1
:Bad River
Fort Pierre             1.4    2.0    3.5    6.2   11.4   18.5   22.8
:Little Minnesota River
Peever                 15.2   15.6   16.5   17.4   19.0   20.6   22.3
:Minnesota River
Big Stone Lake        968.0  968.0  968.1  968.6  969.8  971.8  972.3
```

Non-Exceedance Probabilities

Overview

➔ In Table 3 to the right, the 95 through 5 percent columns indicate the probability of falling below the listed stage levels (FT) for the valid time period.

```
...Table 3--Nonexceedance Probabilities...

                             Chance of Falling Below Stages
                                   at Specific Locations
                           Valid Period: 03/12/2022  - 06/10/2022
Location            95%     90%     75%     50%     25%     10%      5%
--------           ------  ------  ------  ------  ------  ------  ------
:Elm River
Westport            4.4     4.4     4.4     4.4     4.4     4.4     4.4
:James River
Columbia            4.9     4.8     4.8     4.8     4.8     4.8     4.8
Stratford           6.1     6.1     6.1     6.1     6.1     6.1     6.1
:Snake Creek
Ashton              2.5     2.5     2.5     2.5     2.5     2.5     2.5
:James River
Ashton              3.4     3.4     3.3     3.3     3.3     3.3     3.3
:Turtle Creek
Redfield            3.1     3.1     3.1     3.1     3.1     3.1     3.1
:James River
Redfield            3.2     3.2     3.2     3.1     3.1     3.1     3.1
:Big Sioux River
Watertown           4.2     4.2     4.1     3.7     3.6     3.6     3.6
Watertown Sioux C   4.0     4.0     3.9     3.4     3.0     3.0     3.0
Watertown Broadwa   5.3     5.3     5.2     4.8     4.6     4.5     4.5
Castlewood          5.2     5.1     5.1     4.7     4.5     4.3     4.1
:Grand River
Little Eagle        2.3     2.3     2.3     2.3     2.2     2.1     2.1
:Moreau River
Whitehorse          2.4     2.4     2.3     2.3     2.3     2.1     2.1
:Bad River
Fort Pierre         1.0     1.0     1.0     1.0     1.0     1.0     1.0
:Little Minnesota River
Peever             10.1    10.1    10.1    10.1     9.9     9.6     9.6
:Minnesota River
Big Stone Lake    967.3   967.3   967.3   967.3   967.3   967.3   967.3
```

These long-range probabilistic outlooks contain forecast values that are calculated using multiple season scenarios from 30 or more years of climatological data, including current conditions of the river, soil moisture, snow cover, and 30 to 90 day long-range outlooks of temperature and precipitation. By providing a range of probabilities, the level of risk associated with long-range planning decisions can be determined.

These probabilistic forecasts are part of the National Weather Service's advanced hydrologic prediction service.

Visit our website weather.gov/abr or water.weather.gov/ahps2/long_range.php?wfo=ABR for more weather and water information.

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

National Weather Service
Aberdeen, SD