Minnesota Department of Natural Resources
Division of Ecological and Water Resources

Hydrologic Conditions Report

May 2020

Previous reports at: https://www.dnr.state.mn.us/current_conditions/hydro_conditions.html

- Precipitation for May 2020 in Minnesota ranged from well above normal in the southeast, near normal in the Twin Cities, and below normal for most of central and northern Minnesota. One of the wettest locations was at Altura in southeast Minnesota with 6.96 inches, 3.09 inches above normal for the month. The driest place recorded was at Melrose in central Minnesota with 0.67 inches or 2.59 inches below normal. Only 0.83 inches of rain fell at Morris, the eighth driest May there since records began in 1885. St. Cloud had the 9th driest May on record with 1.05 inches or 2.31 inches below normal. Overall the state was 3.06 inches, which is 0.27 inches below normal. The U. S. Drought Monitor map released on June 2, shows Abnormally Dry conditions over 56% of the state. Moderate Drought covers 18% of the state. The driest locations are in west central and north central Minnesota. The U.S. Drought Monitor index is a blend of science and subjectivity where drought categories (Moderate, Severe etc.) are based on several indicators.

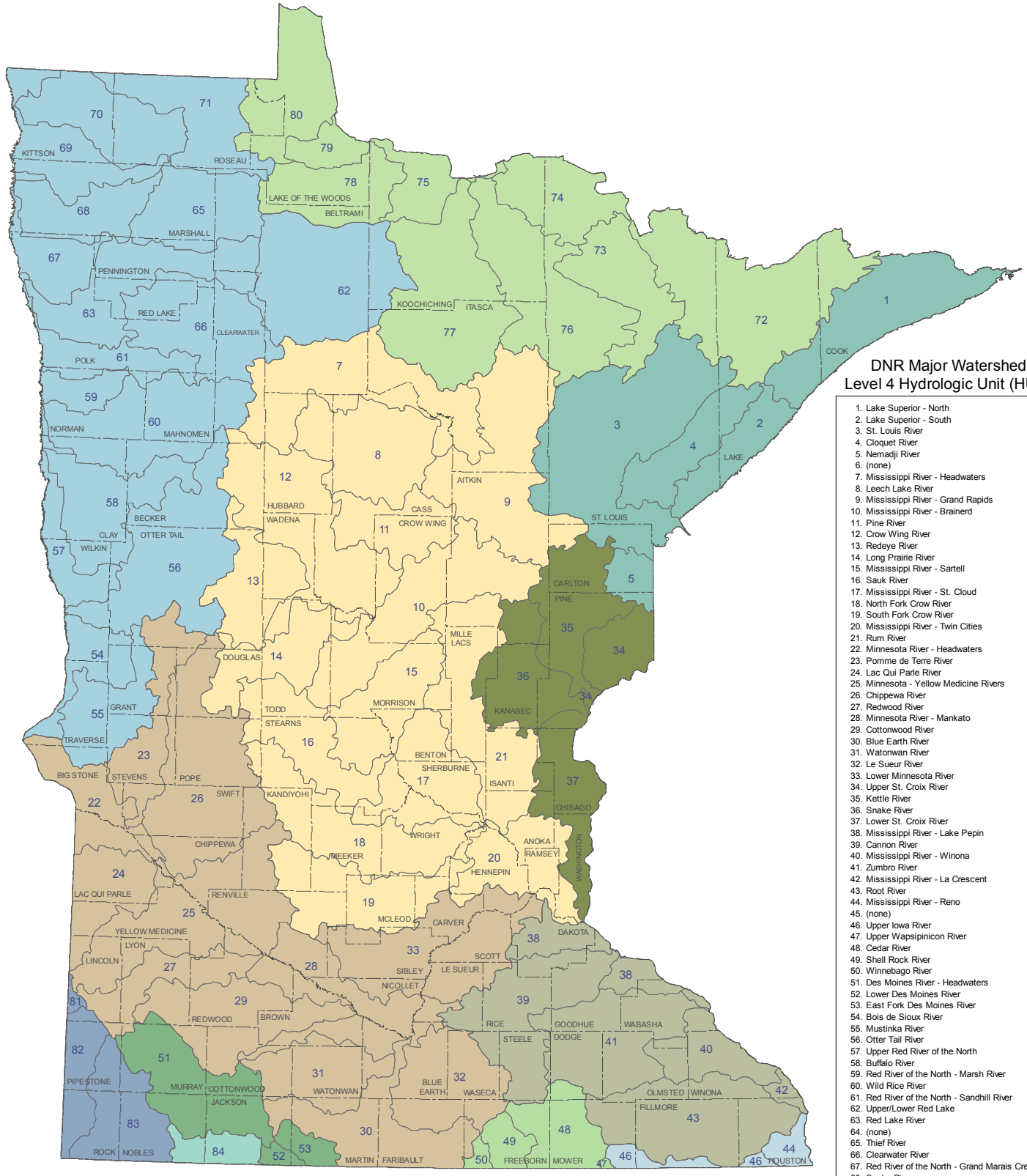
- A majority of stream gages throughout the state used in this report were ranked Normal (25-75th percentile) for May of this year. Gages in the southern quarter of the state were ranked Above Normal (75 – 90th percentile) and High (>90th percentile). One gage, Little Fork River at Little Fork, MN (major #76) ranked Below Normal (10 – 25th percentile).

- Only three of the 15 lakes in the Lake Level Status map showed High or Above Normal percentiles in May with the majority of those presented in the Normal percentile. Two lakes in NE Minnesota showed Low and Below Normal percentiles for this month. For the entire network, only about one fourth of the statewide gaged lakes had surveyed lake levels in May. These are lakes only in the southeast and metropolitan portions of the state. From this small group, 81% were above their average lake level for the entire historic record. Furthermore over 54% of this surveyed group were High or Above Normal when comparing May 2020 lake levels to their entire historic record. Lakes in Washington and Meeker Counties reached the highest reported lake level in May. There are very few lake level data available for lakes outside of southeast and Twin Cities metropolitan Minnesota.

- Four of the six total groundwater observation well measurements available for May were at Normal (25-75th percentile) or Above Normal water levels, with two wells ranked at High (>90th percentile) water level. In southeastern Minnesota, a well measuring the Jordan Sandstone aquifer moved from Above Normal (75-90th percentile) in April to High water level in May. A nearby well measuring the Prairie du Chien aquifer went from Above Normal water level in April to Normal water level in May. The lone well reporting Low (<10th percentile) water level is located in Marshall County and measures a buried artesian aquifer. This well regularly shows a declining trend.

The information in this report is provided by DNR through long term programs committed to recording and tracking the long term status of our water resources. The current conditions of precipitation, stream flows, lake levels, and groundwater levels in this report provide valuable information for natural and economic resource management on a state, county, and watershed level. If you have questions on the content of this report please contact DNR Climatology Office: climate@umn.edu

Minnesota Counties and Major Watershed Index



DNR Major Watershed - Level 4 Hydrologic Unit (HUC8)

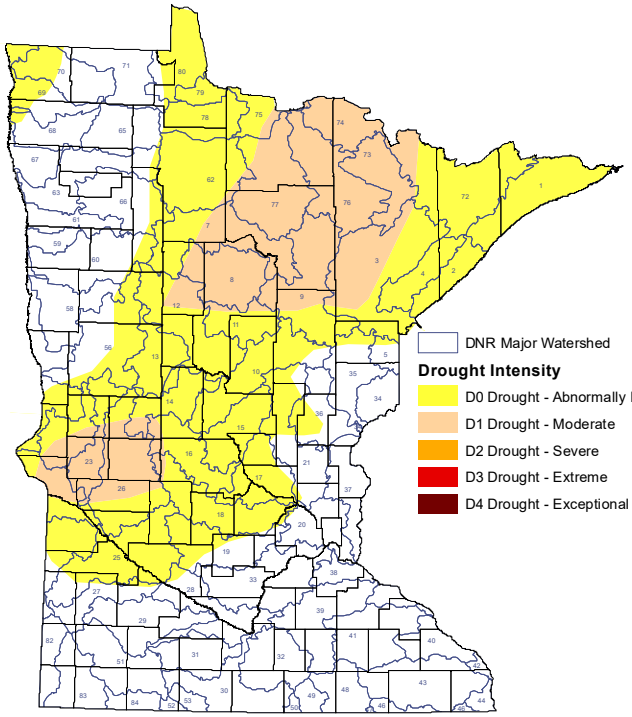
1. Lake Superior - North
2. Lake Superior - South
3. St. Louis River
4. Cloquet River
5. Nemadji River
6. (none)
7. Mississippi River - Headwaters
8. Leech Lake River
9. Mississippi River - Grand Rapids
10. Mississippi River - Brainerd
11. Pine River
12. Crow Wing River
13. Redeye River
14. Long Prairie River
15. Mississippi River - Sartell
16. Sauk River
17. Mississippi River - St. Cloud
18. North Fork Crow River
19. South Fork Crow River
20. Mississippi River - Twin Cities
21. Rum River
22. Minnesota River - Headwaters
23. Pomme de Terre River
24. Lac Qui Parle River
25. Minnesota - Yellow Medicine Rivers
26. Chippewa River
27. Redwood River
28. Minnesota River - Mankato
29. Cottonwood River
30. Blue Earth River
31. Watonwan River
32. Le Sueur River
33. Lower Minnesota River
34. Upper St. Croix River
35. Kettle River
36. Snake River
37. Lower St. Croix River
38. Mississippi River - Lake Pepin
39. Cannon River
40. Mississippi River - Winona
41. Zumbro River
42. Mississippi River - La Crescent
43. Root River
44. Mississippi River - Reno
45. (none)
46. Upper Iowa River
47. Upper Wapsipinicon River
48. Cedar River
49. Shell Rock River
50. Winnebago River
51. Des Moines River - Headwaters
52. Lower Des Moines River
53. East Fork Des Moines River
54. Bois de Sioux River
55. Mustinka River
56. Otter Tail River
57. Upper Red River of the North
58. Buffalo River
59. Red River of the North - Marsh River
60. Wild Rice River
61. Red River of the North - Sandhill River
62. Upper/Lower Red Lake
63. Red Lake River
64. (none)
65. Thief River
66. Clearwater River
67. Red River of the North - Grand Marais Creek
68. Snake River
69. Red River of the North - Tamarac River
70. Two Rivers
71. Roseau River
72. Rainy River - Headwaters
73. Vermilion River
74. Rainy River - Rainy Lake
75. Rainy River - Black River
76. Little Fork River
77. Big Fork River
78. Rapid River
79. Rainy River - Baudette
80. Lake of the Woods
81. Upper Big Sioux River
82. Lower Big Sioux River
83. Rock River
84. Little Sioux River

Level 2 Hydrologic Unit (HUC4)

- Cedar River
- Des Moines River
- Lower Mississippi River
- Minnesota River
- Mississippi - Upper Iowa Rivers
- Mississippi River - Headwaters
- Missouri - Big Sioux Rivers
- Missouri - Little Sioux Rivers
- Rainy River
- Red River of the North
- St. Croix River
- Western Lake Superior

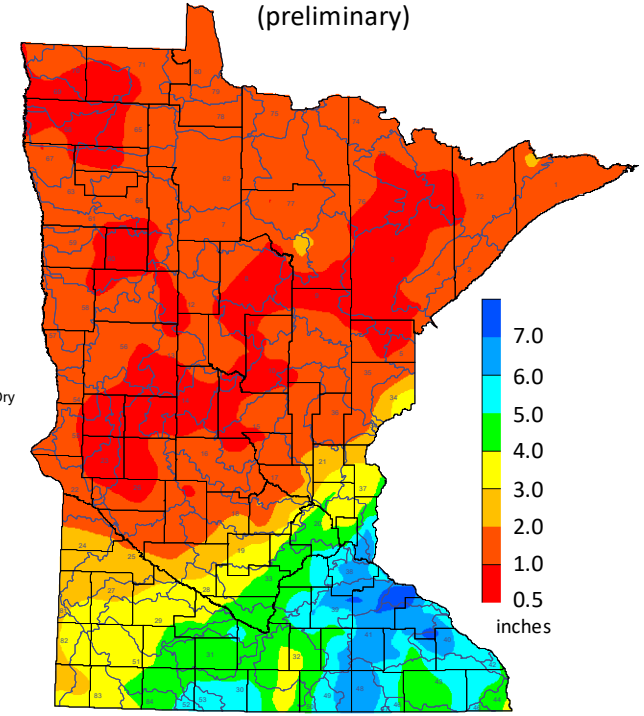
Climatology

U.S. Drought Monitor
June 2, 2020



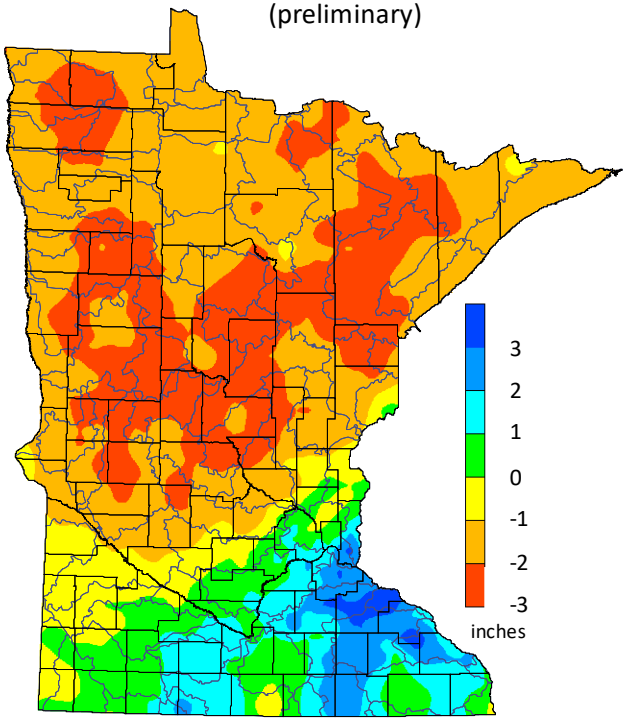
Total Precipitation
May 2020

(preliminary)

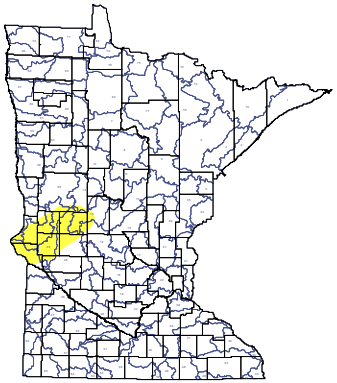


Total Precipitation
Departure from Normal:
May 2020

(preliminary)



May 5, 2020



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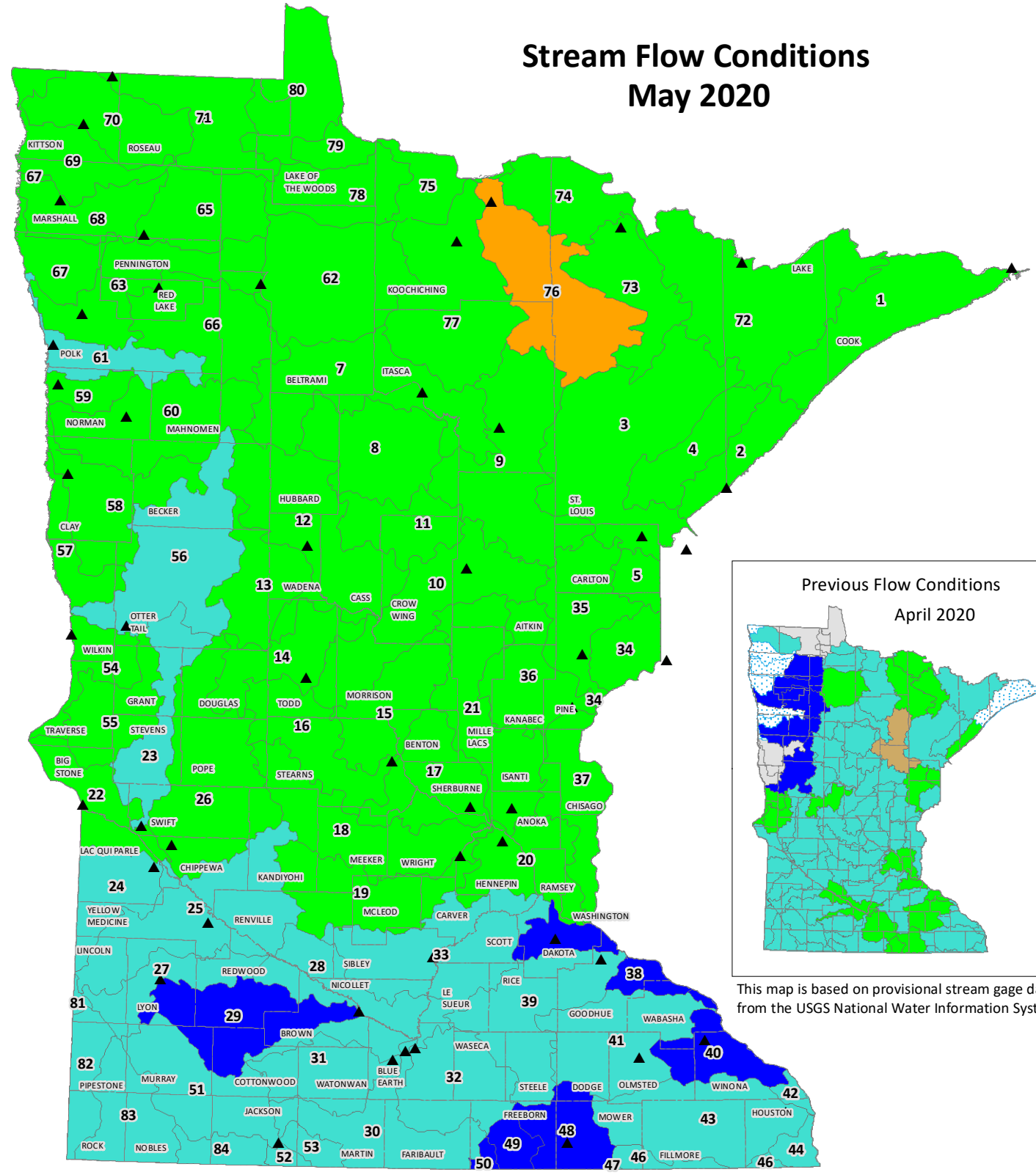
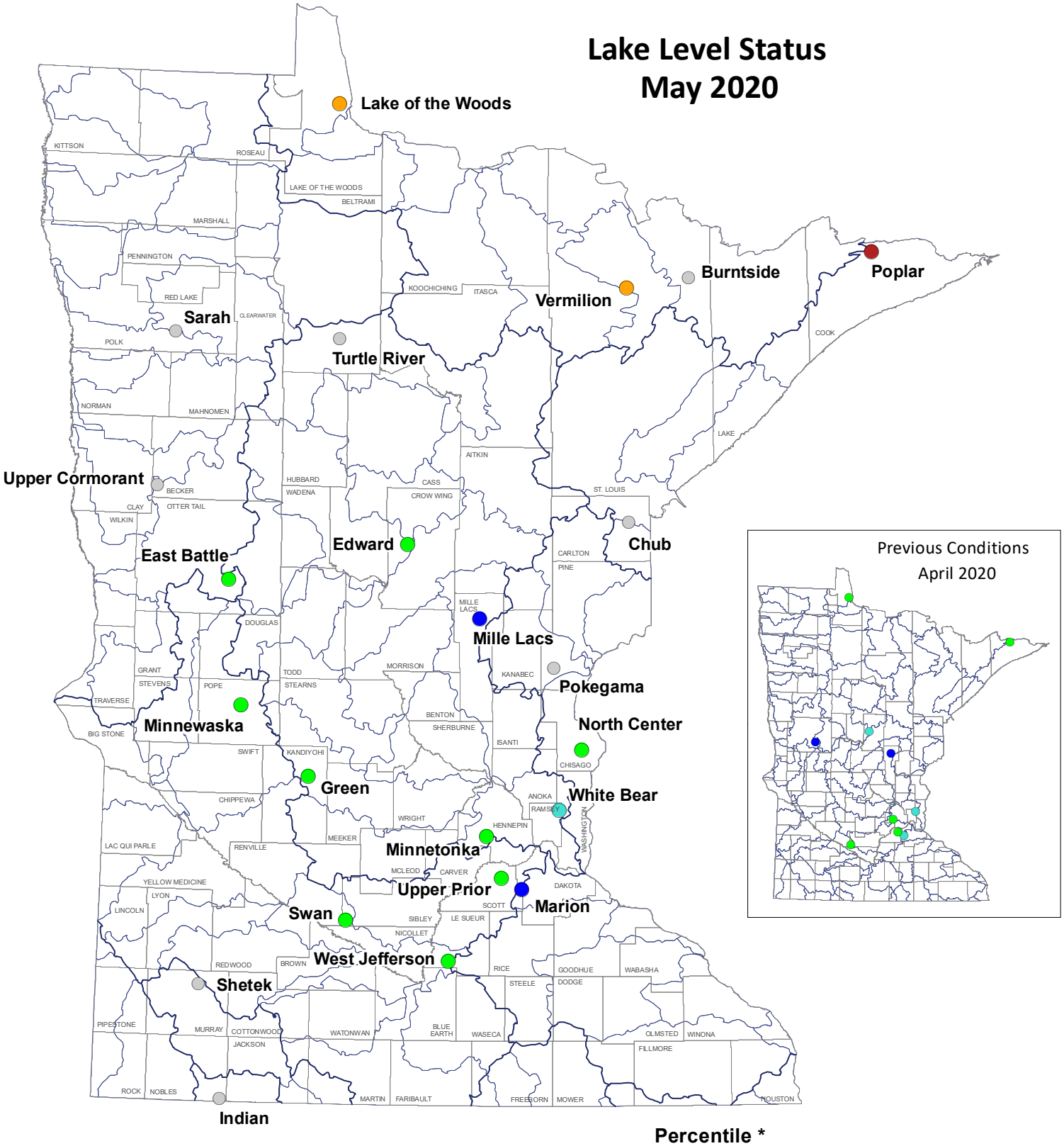
Surface Water: Stream Flow



This map is based on provisional stream gage data from the USGS National Water Information System

* Percentile ranking based on mean daily flows for the current month averaged and ranked with all historical mean daily flows for that month.
A watershed ranked at zero means that the present month flow is the lowest in the period of record; a ranking of 100 indicates the highest in the period of record.
A ranking at the 50th percentile (median) specifies that the present-month flow is in the middle of the historical distribution.

Surface Water: Lake Levels



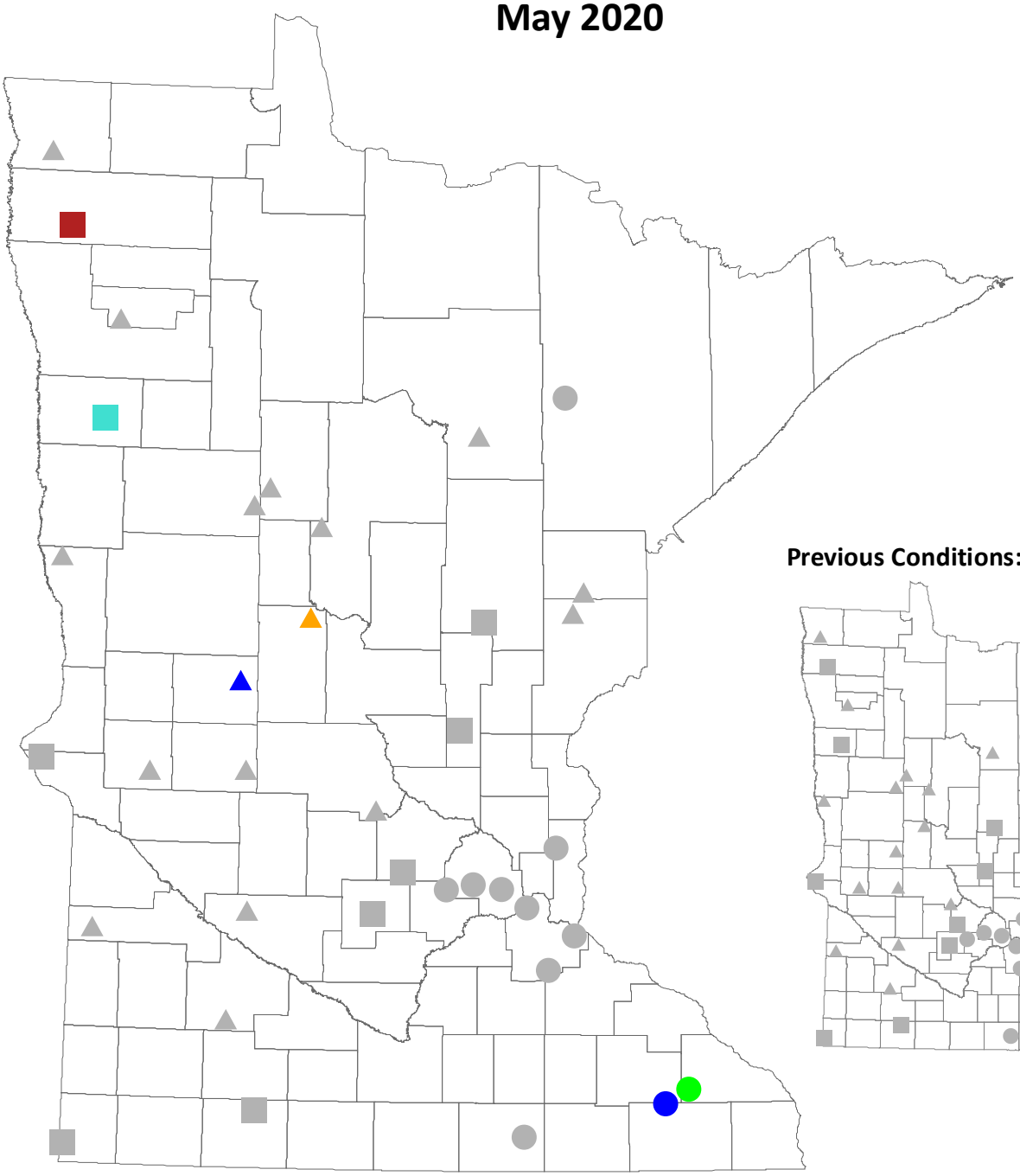
Percentile *

- High Water Levels (>90th percentile)
- Above Normal Water Levels (75 - 90th percentile)
- Normal Water Levels (25 - 75th percentile)
- Below Normal Water Levels (10 - 25th percentile)
- Low Water Levels (<= 10th percentile)
- No reading available
- Level 2 Hydrologic Unit
- DNR Major Watershed

* Percentile ranking based on last reported reading for the current month compared to all historical reported levels for that month. A lake ranked at zero means that the present reported level is the lowest in the period of record; a ranking of 100 indicates the highest in the period of record. A ranking at the 50th percentile (median) specifies that the present-month reported lake level is in the middle of the historical distribution.

Source data from: MN DNR Waters Lake Level Minnesota Monitoring Program

Groundwater Level Historical Rankings
May 2020



Previous Conditions: April 2020

* Percentile ranking based on last reported reading for the current month compared to all historical reported levels for that month. A water level ranked at zero means that the present reported level is the lowest in the period of record; a ranking of 100 indicates the highest in the period of record. A ranking at the 50th percentile (median) specifies that the present month reported water level is in the middle of the historical distribution.

Source data from: MN DNR Groundwater Level Monitoring Program

Percentile *

- High Water Levels (>90th percentile)
- Above Normal Water Levels (75 - 90th percentile)
- Normal Water Levels (25 - 75th percentile)
- Below Normal Water Levels (10 - 25th percentile)
- Low Water Levels (<= 10th percentile)
- No reading available

Aquifer Type

- Water Table
- Bedrock
- Buried Artesian