



MASSACHUSETTS RIVER OVERVIEW



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MA Drought Management
Task Force

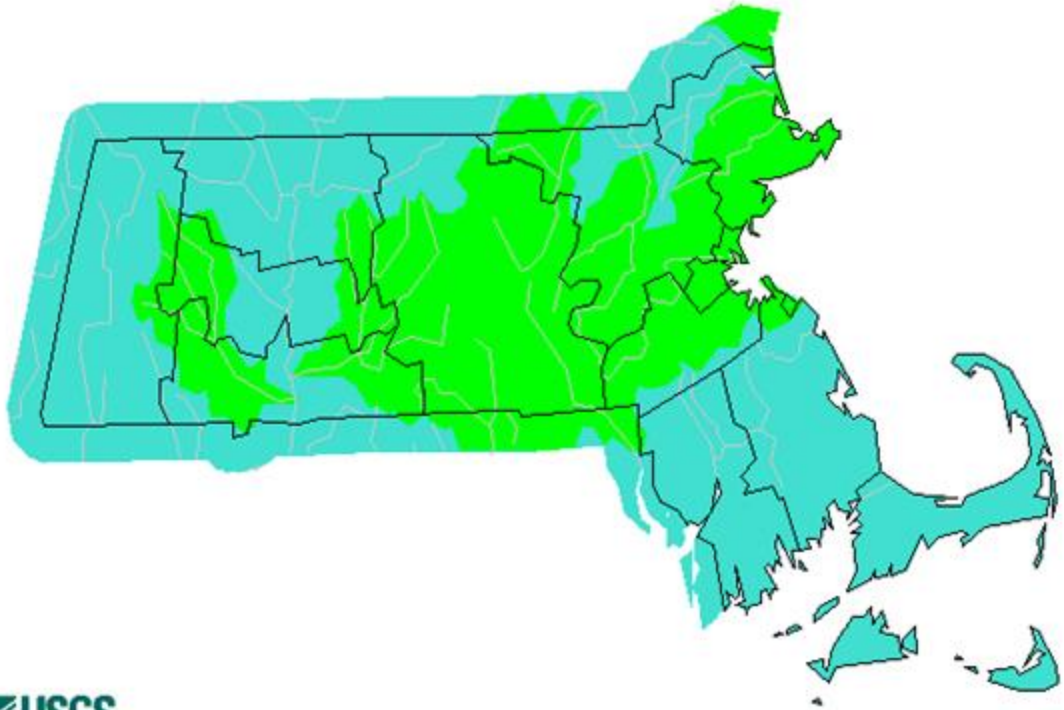
06 February 2025

OUTLINE

- Snapshot of Massachusetts River Flows.
- NERFC River Forecast Outlook Focus: Northeastern/Central and Western Massachusetts.
- Examine current and 10 day ensemble precipitation, streamflow and snow water simulations.
- Conclusions

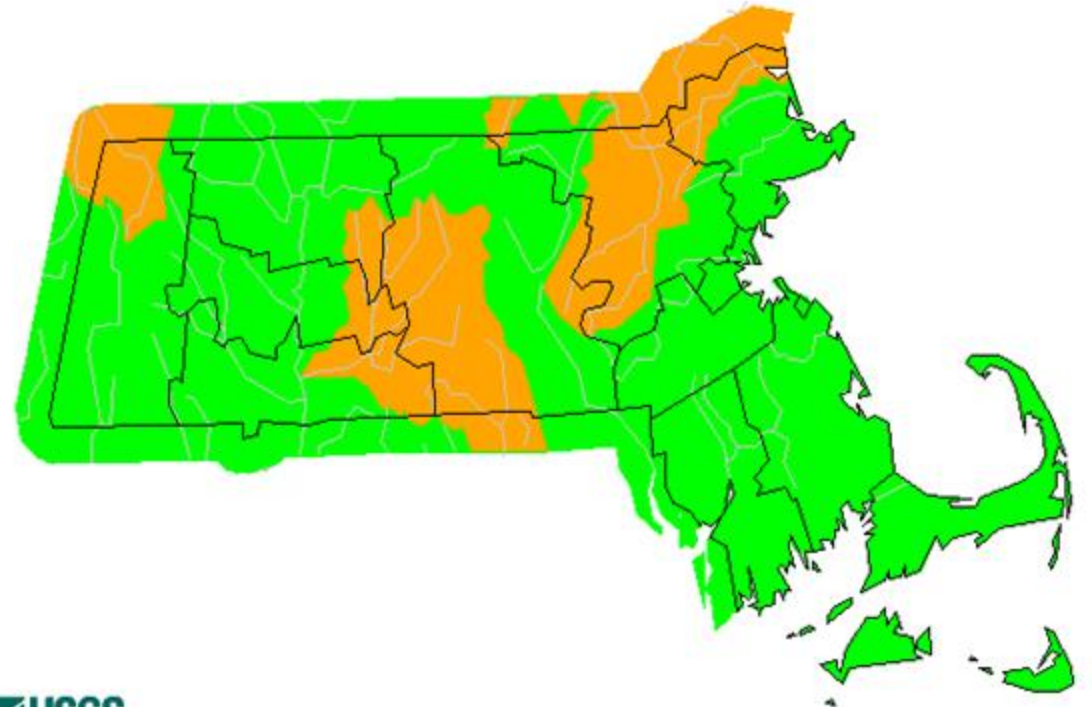
MASSACHUSETTS RIVER FLOWS

Wednesday, January 01, 2025



USGS

Friday, January 31, 2025



USGS

Explanation - Percentile classes

Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

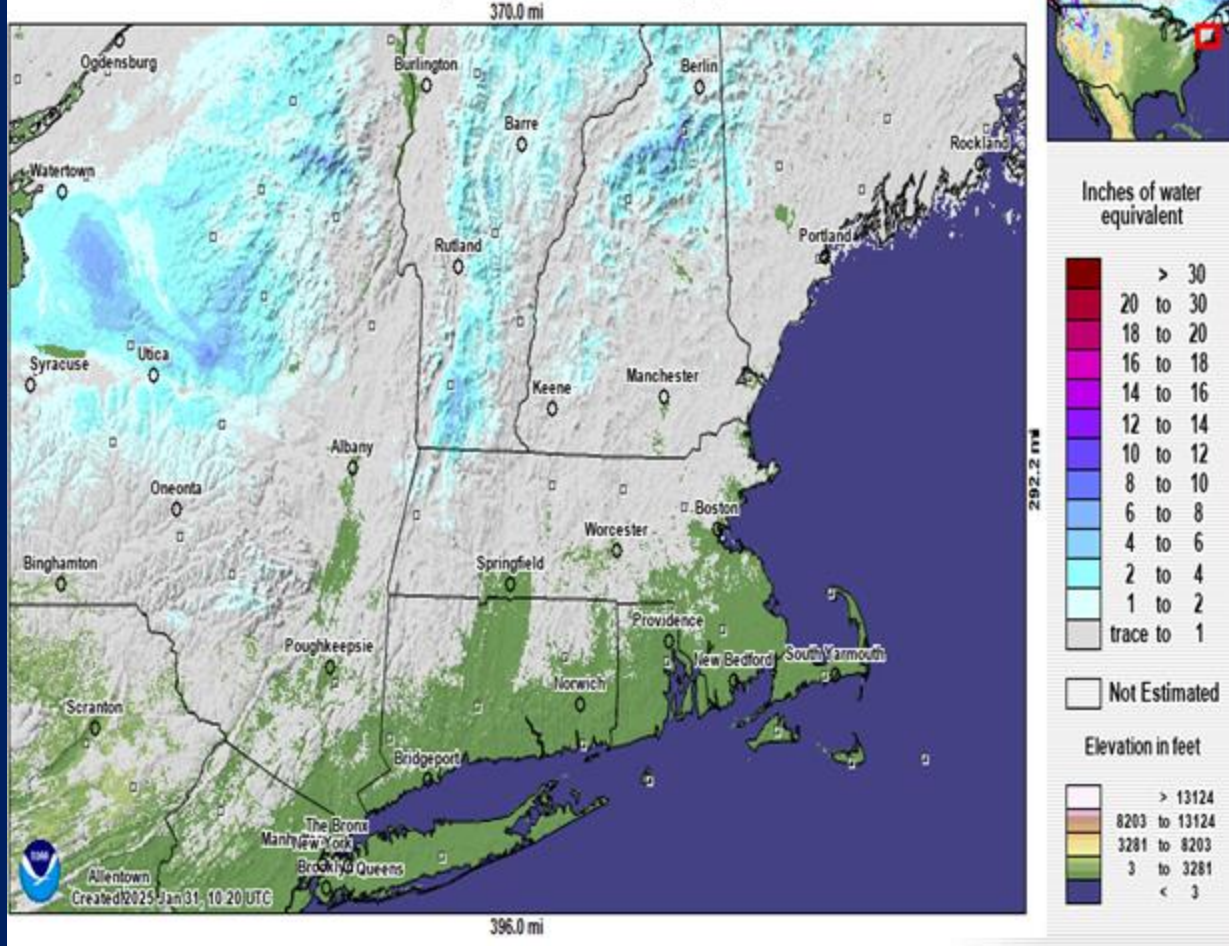
Explanation - Percentile classes

Low	<10	10-24	25-75	76-90	>90	High	No Data
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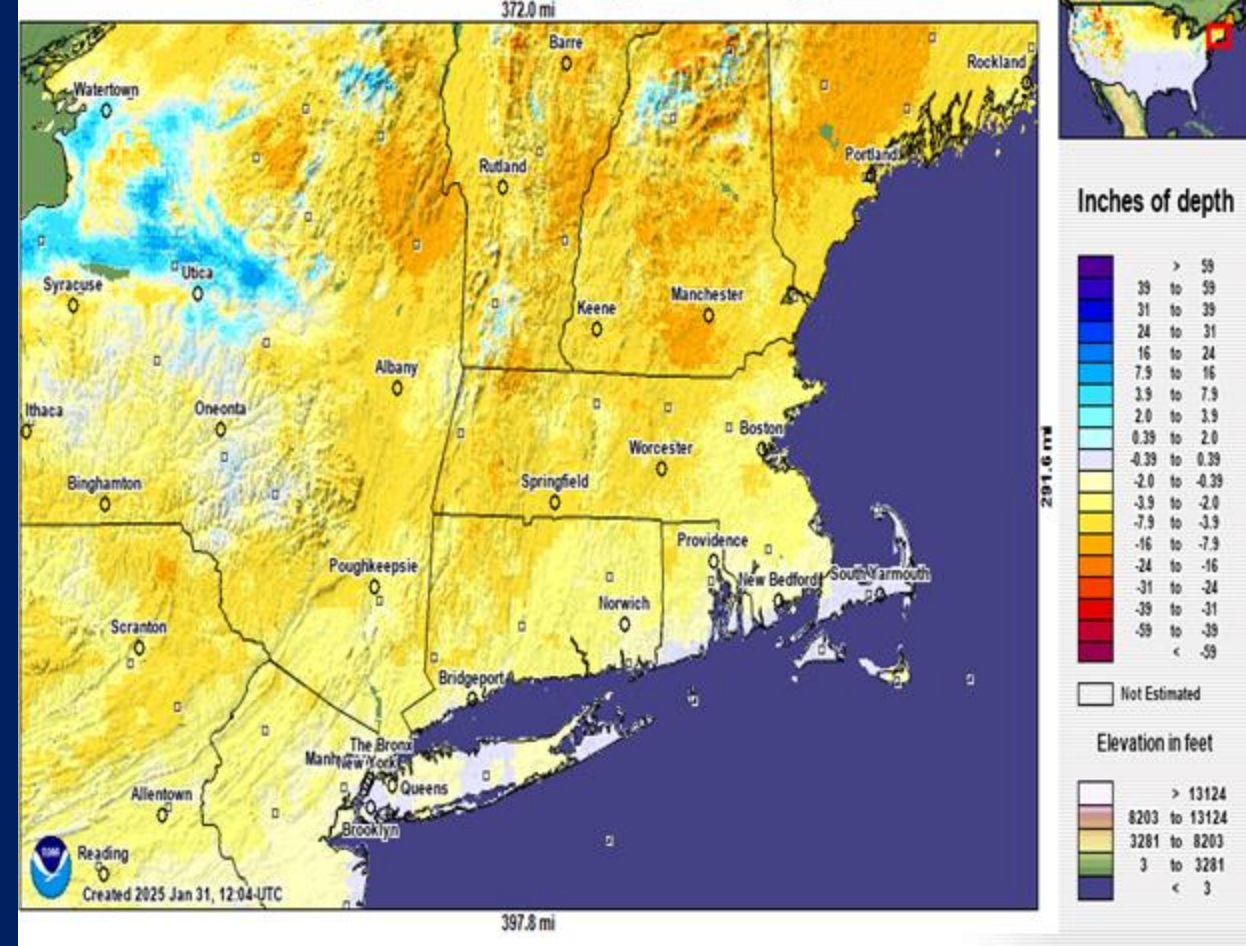
- From January 1 to January 31, 2025: Flows relative to normal for January have decreased across the Commonwealth. Near to above normal streamflows had decreased to near to below normal levels.
- January precipitation (liquid equivalent) departures generally ranged from two to three inches below normal.

Snowpack conditions January 31, 2025

Modeled Snow Water Equivalent for 2025 January 31, 6:00 UTC



Modeled Snow Depth Departure from Normal (Daily) for 2025 January 31, 6:00 UTC



- Snow water equivalents and snow depths were below normal across the state of Massachusetts - highest across northern Berkshire County.

NAEFS ENSEMBLE RIVER FORECAST OUTLOOK

- A 52 member ensemble run for all NERFC forecast points to give us an idea of the possible range of river flows out 10 days.
 - Basically 52 slightly different initial conditions in the weather models lead to 52 different river forecasts based on rainfall and temperature.
- Will show results for...
 - Squannacook River at West Groton (WGT)

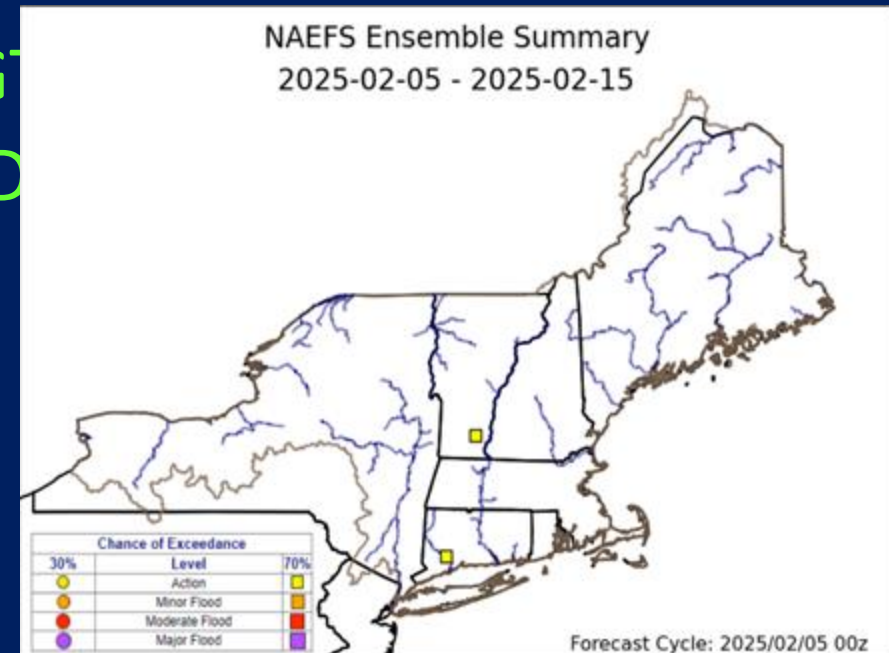
Meteorological Model Ensemble River Forecast Status for Northeast River Forecast Center

This table provides the status of hydrologic information generated using various meteorological model ensemble forcings for the NERFC.

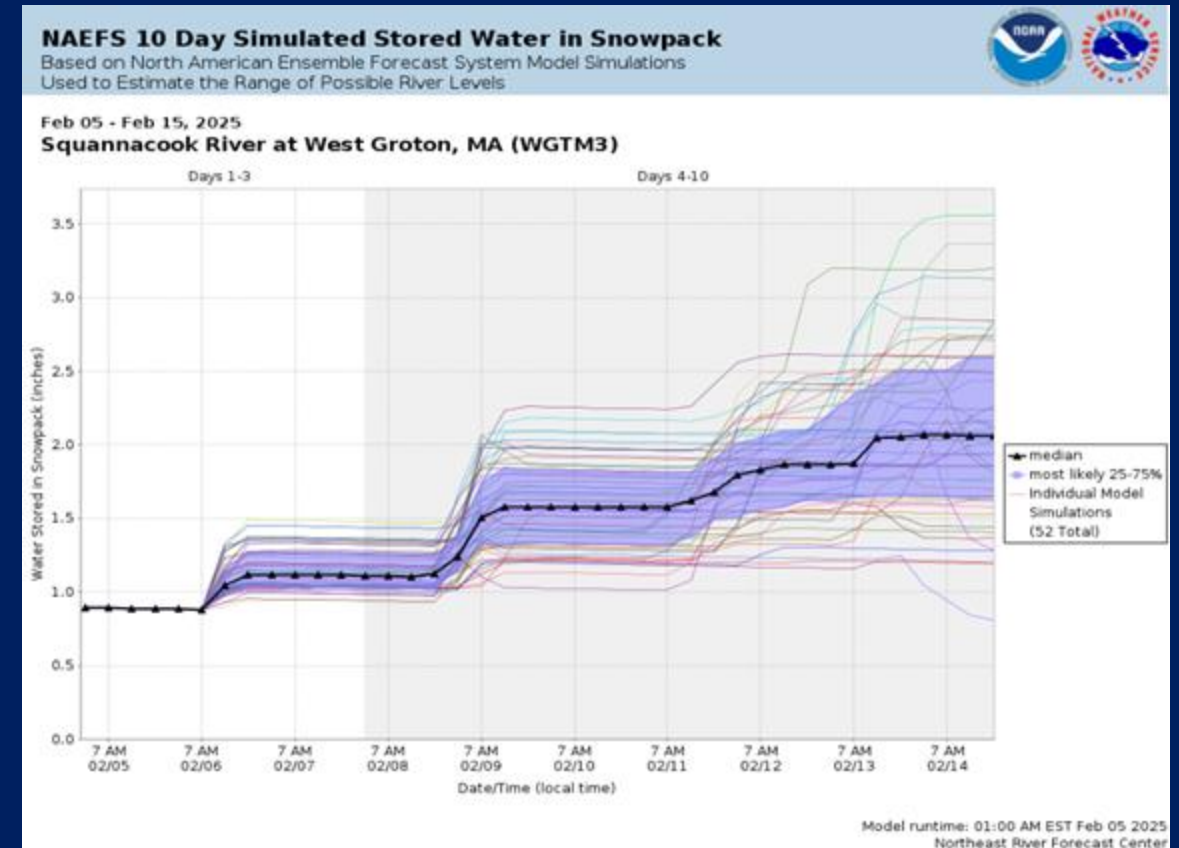
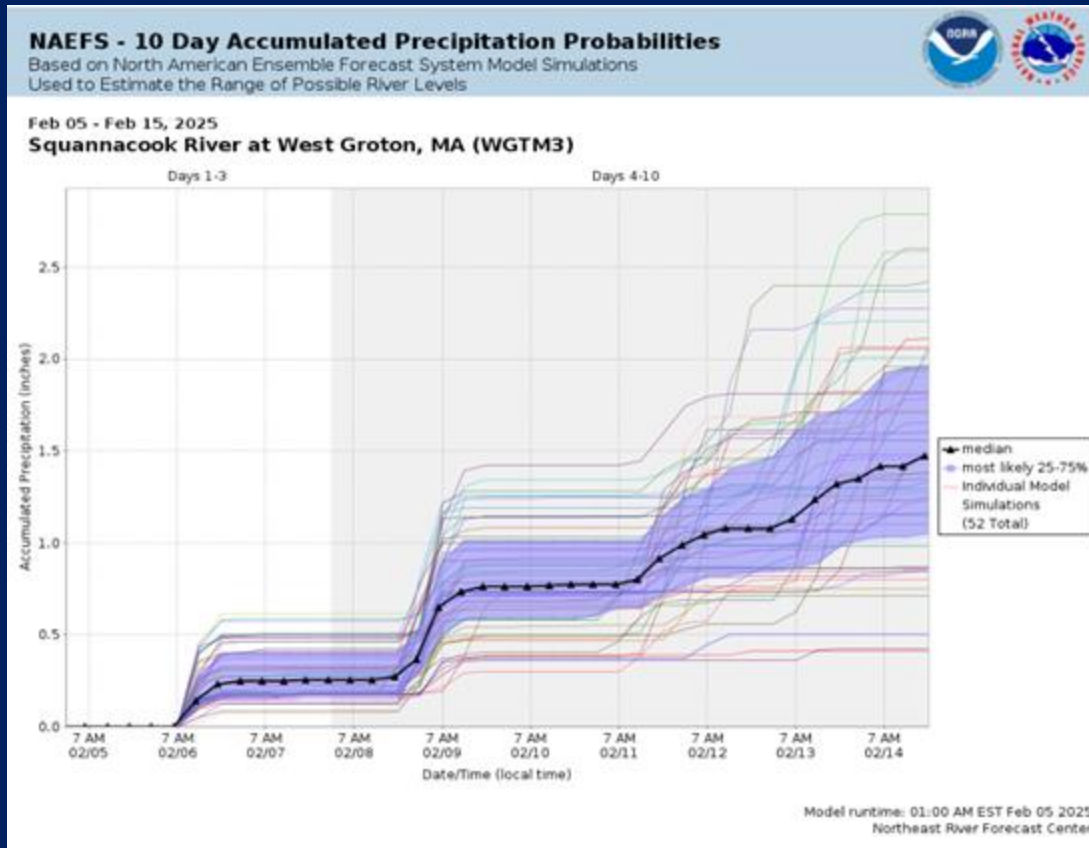
System	Last Updated	Fcst Cycle	Analysis Period	Fcst Hours	Members
GEFS	2025-02-05 13:34 UTC	2025-02-05 06 UTC	2025-02-05 - 2025-02-15	240	31
NAEFS	2025-02-05 11:12 UTC	2025-02-05 00 UTC	2025-02-05 - 2025-02-15	240	52
HEFS	2025-02-05 01:26 UTC	2025-02-04 12 UTC	2025-02-05 - 2025-02-14	240	65

Any questions? Contact [NERFC](#)

For the official NWS hydrologic forecasts, please visit the [National Water Prediction Service web site \(NWPS\)](#).



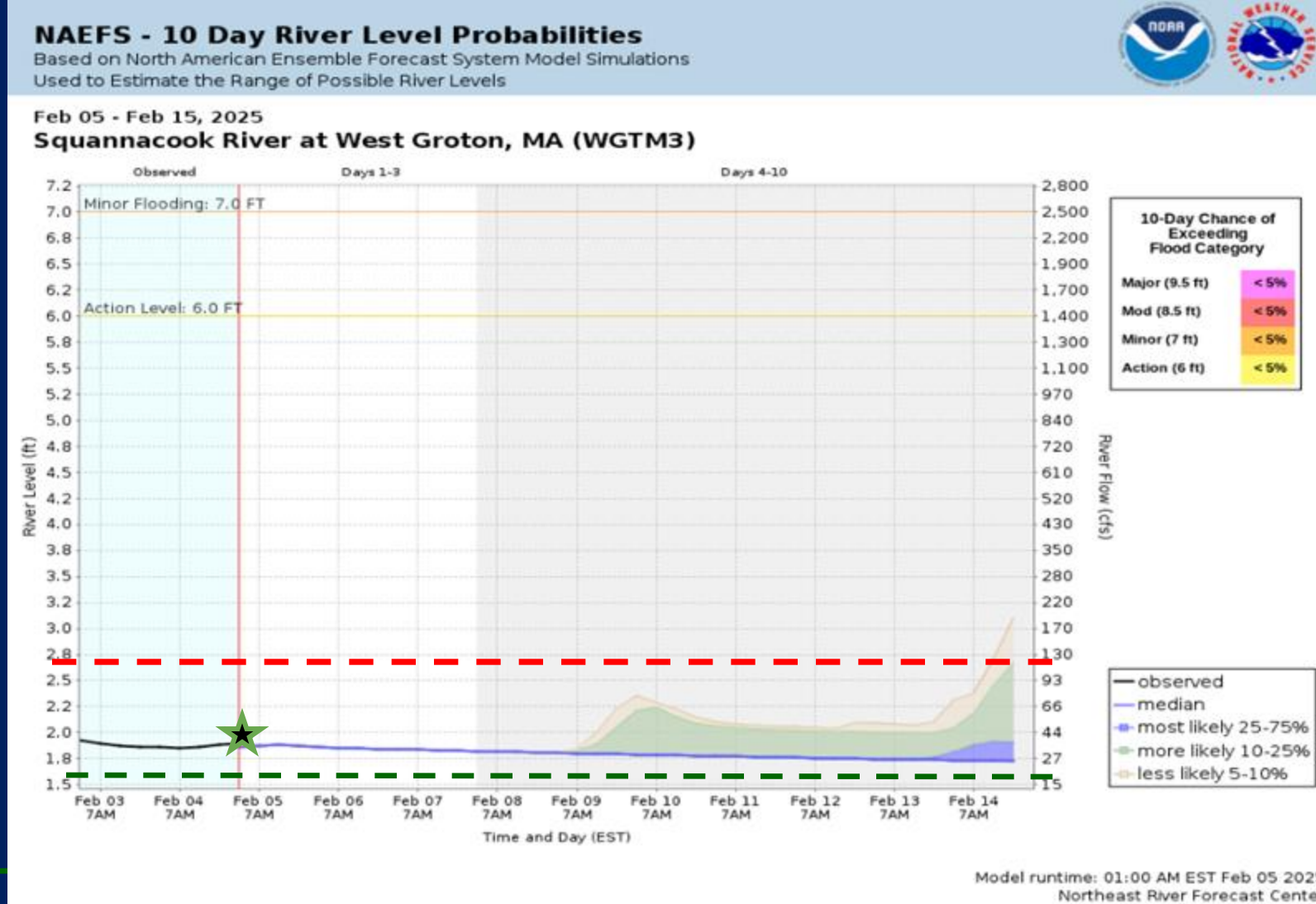
NAEFS Precipitation and Simulated Snow Water - WGTM3



> Over the next 10 days...median forecast precipitation is 1.50" including today's precipitation. Most likely probabilities range from 1.00" to 2.00".

> Over the next 10 days...median snowpack water contents are forecast to increase around 1.50" including today's event. Most likely values 1.75" to 2.50".

NAEFS – WGTM3

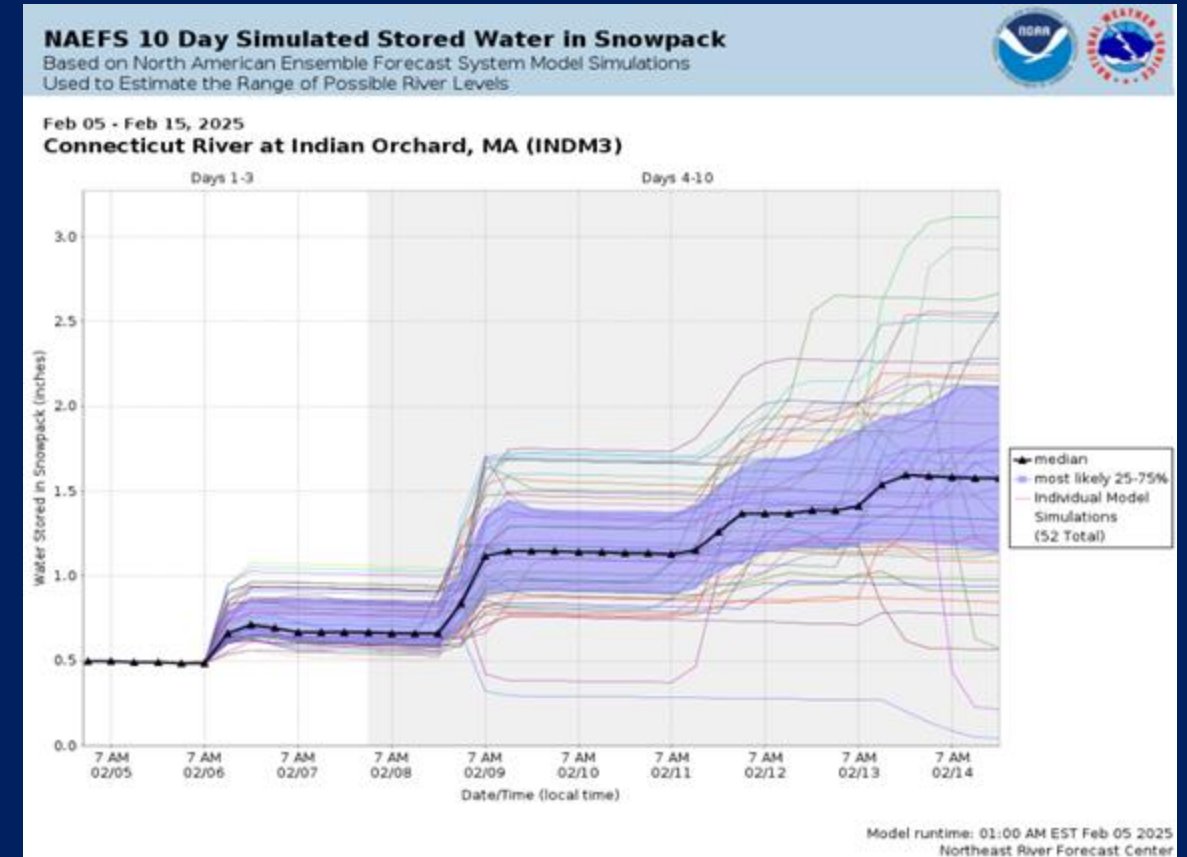
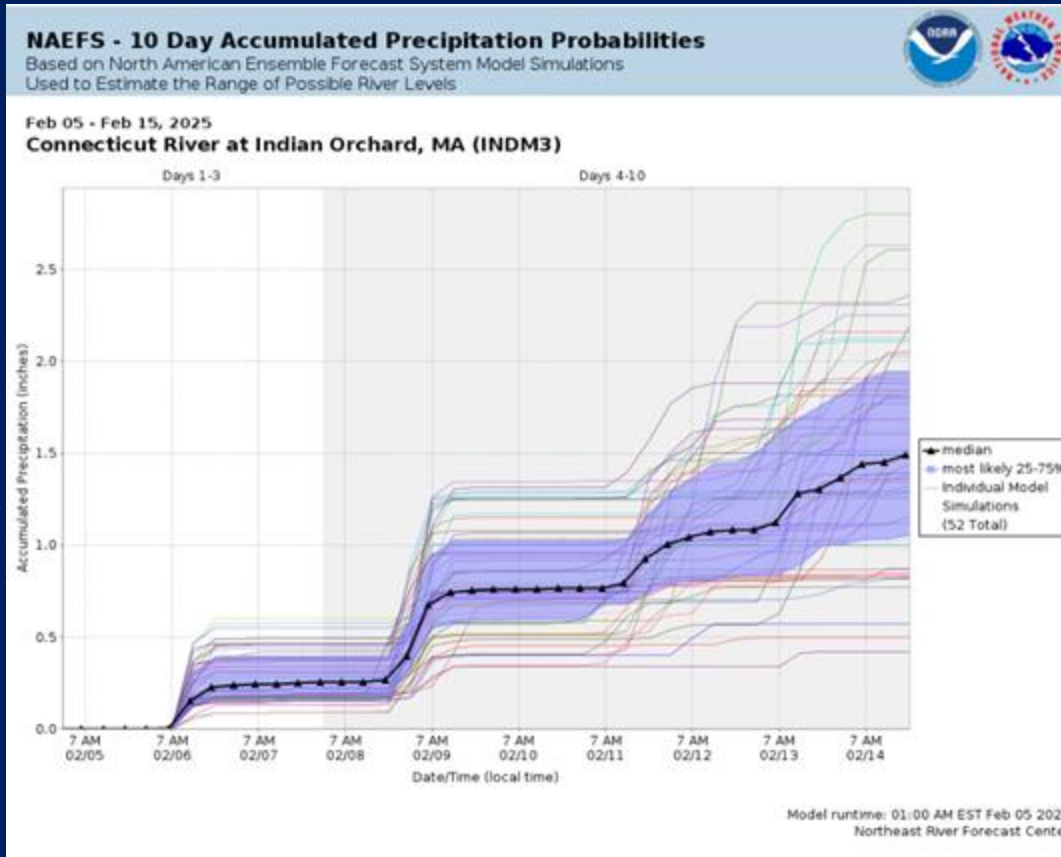


> Currently at 10th percentile level for early February.

> Most likely river flows are forecast to remain just above minimum levels (green dashed line) and below median levels (red dashed line) into mid February.

> Some signal that flows could approach median streamflow levels related to future precipitation and melt runoff amounts.

NAEFS Precipitation and Simulated Snow Water - INDM3



> Over the next 10 days...median forecast precipitation is 1.50" including today's precipitation. Most likely probabilities range from 1.00" to 2.00".

> Over the next 10 days...median snowpack water contents are forecast to increase around 1.00" including today's event. Most likely values 1.25" to 2.25".

NAEFS – INDM3

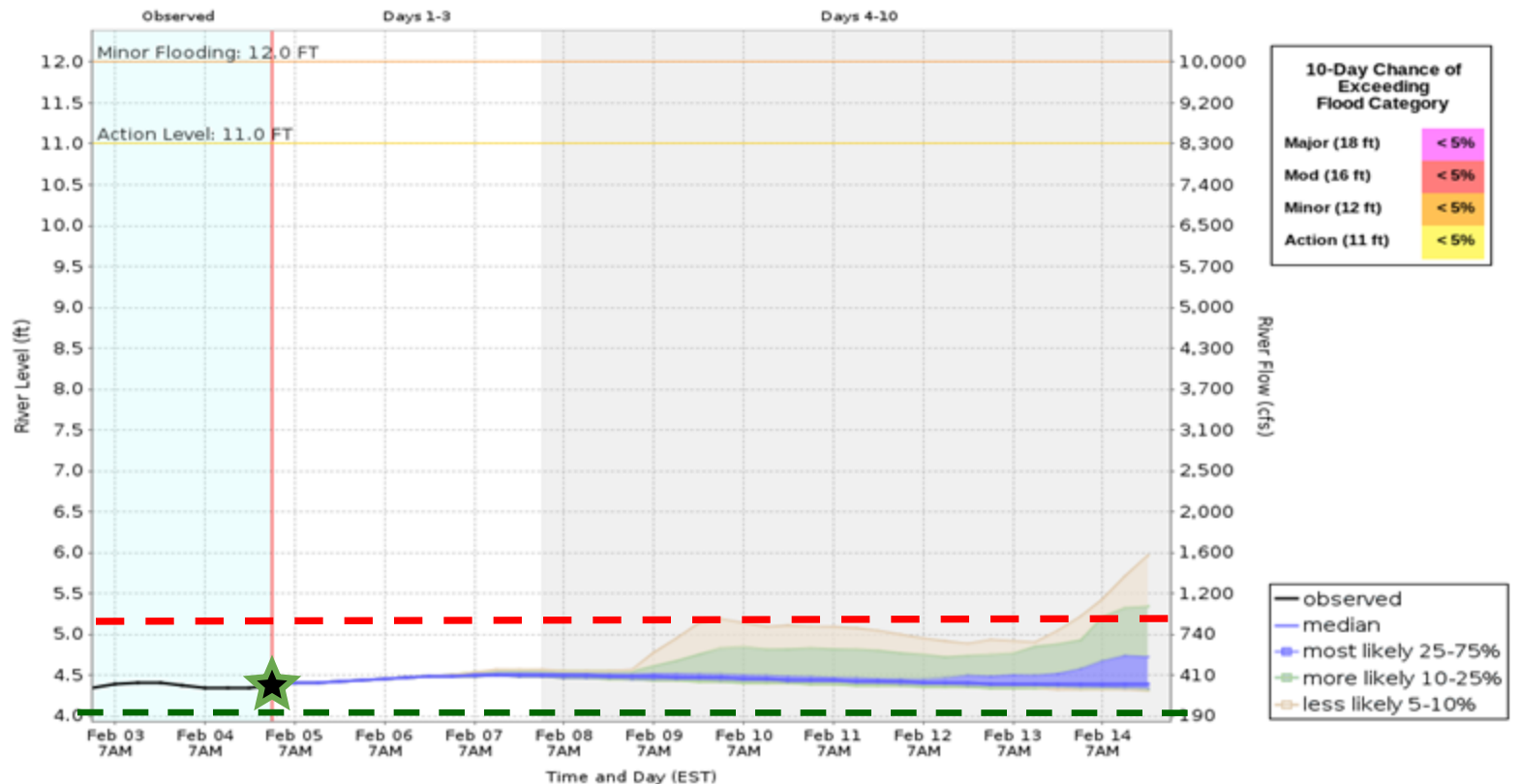


NAEFS - 10 Day River Level Probabilities

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels

Feb 05 - Feb 15, 2025

Connecticut River at Indian Orchard, MA (INDM3)



Model runtime: 01:00 AM EST Feb 05 2025
Northeast River Forecast Center

> Currently 10-25th percentile level for early February.

> Most likely river flows are forecast to remain above minimum levels (green dashed line) and below median levels (red dashed line) into mid February.

> Some signal that flows could approach median streamflow levels related to future precipitation and melt runoff amounts.

CONCLUSIONS

- During January...river flows have shown a decline across most of the Commonwealth and were ranging from below normal to near normal.
- Snow water and snow depth values were below normal across the state at the end of January.
- The weather pattern should remain active over the next 10 days. Ensemble data indicates the possibility for some hydrologically significant precipitation which will result in an increase in areal snowpack. Future runoff could approach median levels depending on the amount of precipitation and melt but the most likely outlook is for gradual streamflow increases into mid February.

[weather.gov/nerfc](https://www.weather.gov/nerfc)