

# MASSACHUSETTS RIVER OVERVIEW

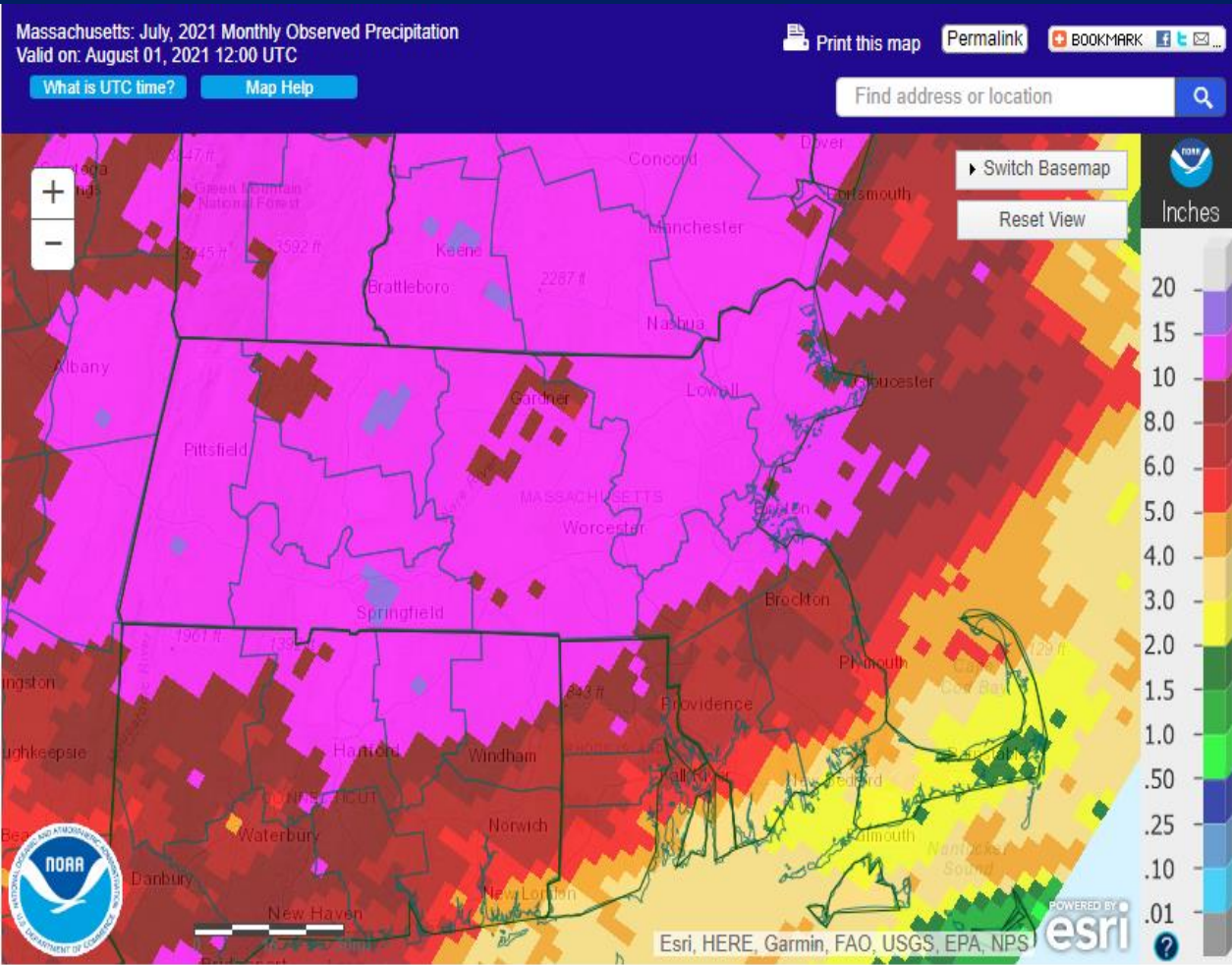


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5 August 2021

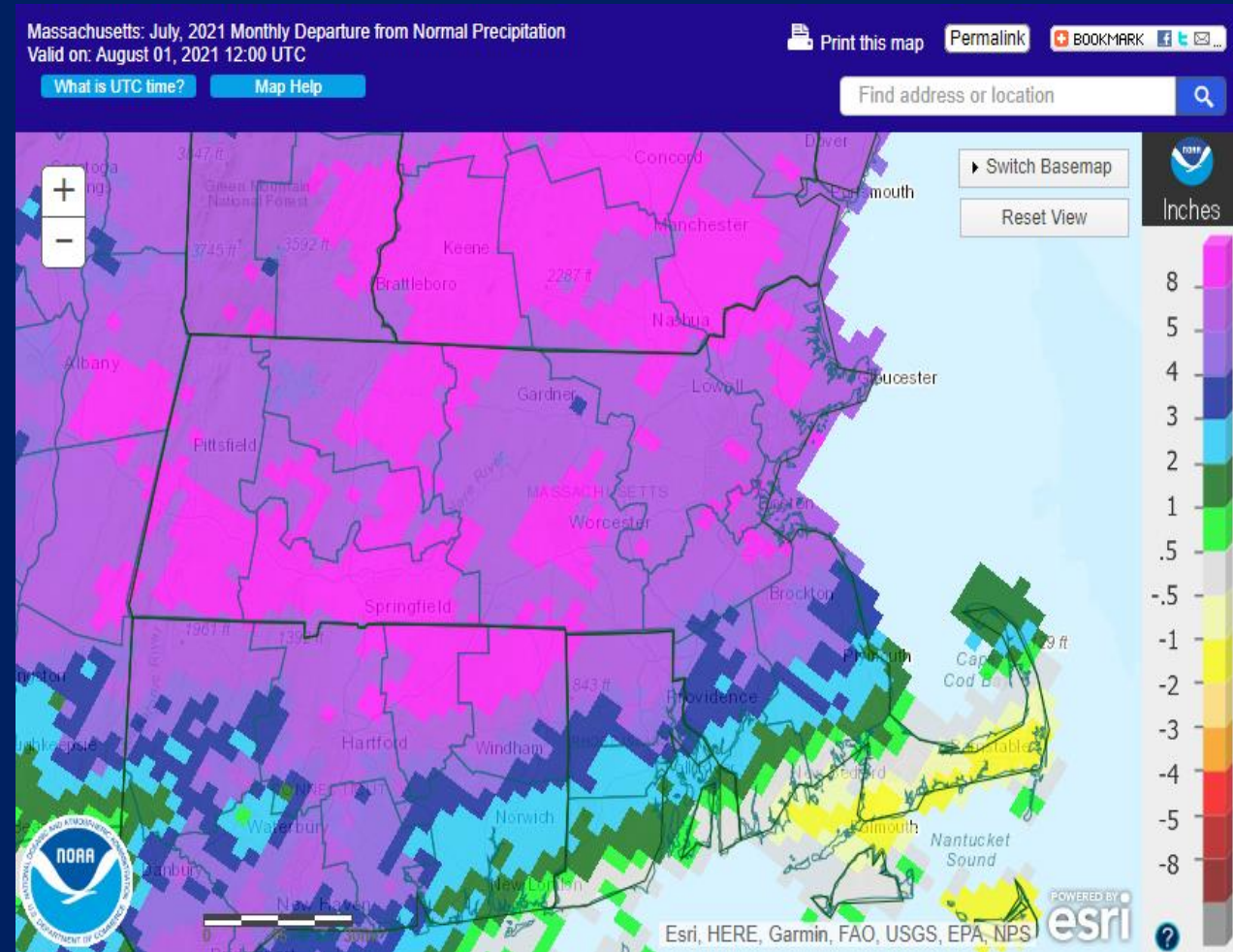
# OVERVIEW

- Amazing July 2021 Rainfall Review
- Current River Flows
- River Forecast Outlook
- Conclusions

# JULY 2021 RAINFALL REVIEW



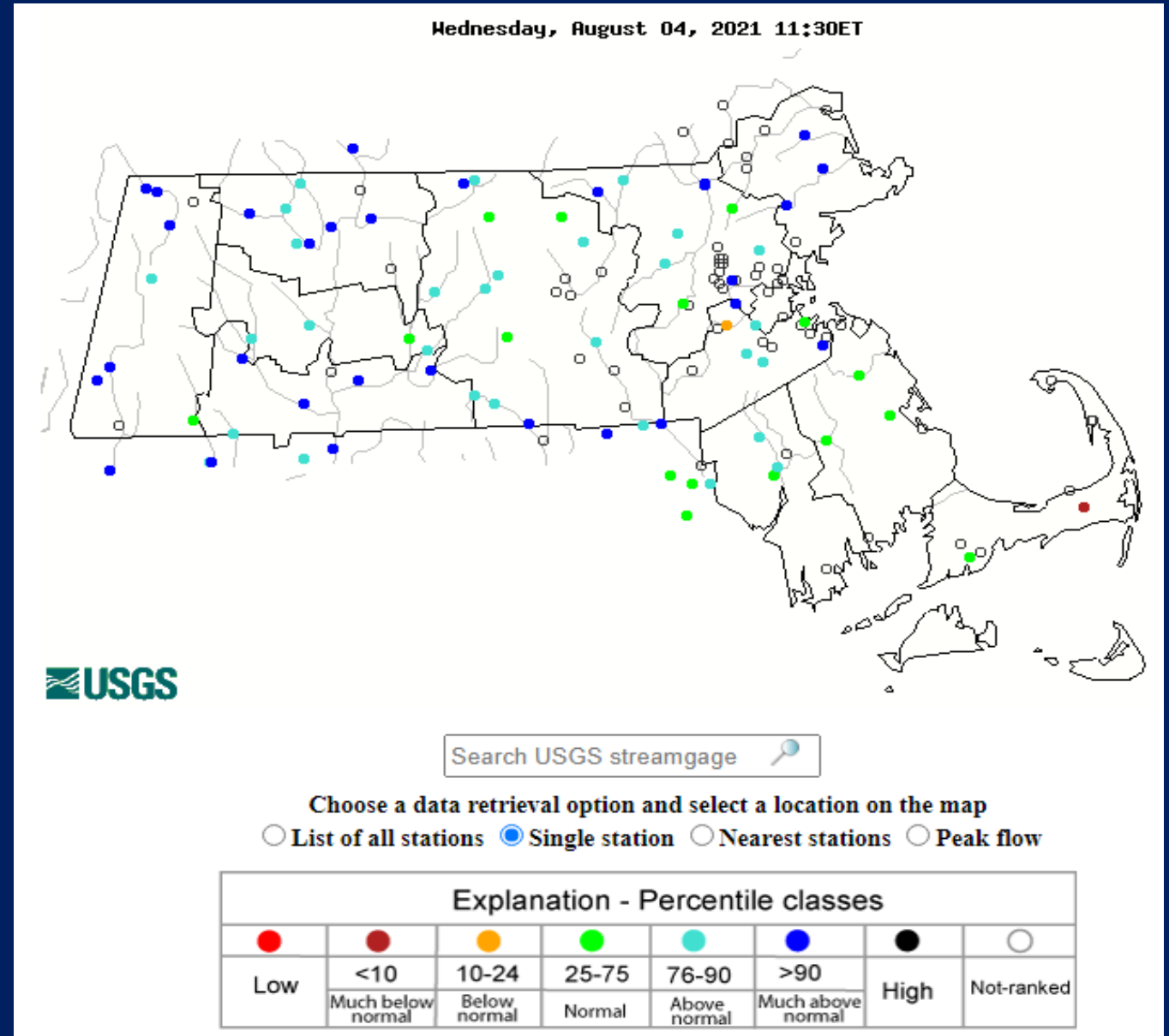
- 10 to 15 inches common across all but southeast Mass
- Just 1.5 - 2.5 inches Hyannis to Chatham on the Cape
- Less than 2 inches on Nantucket



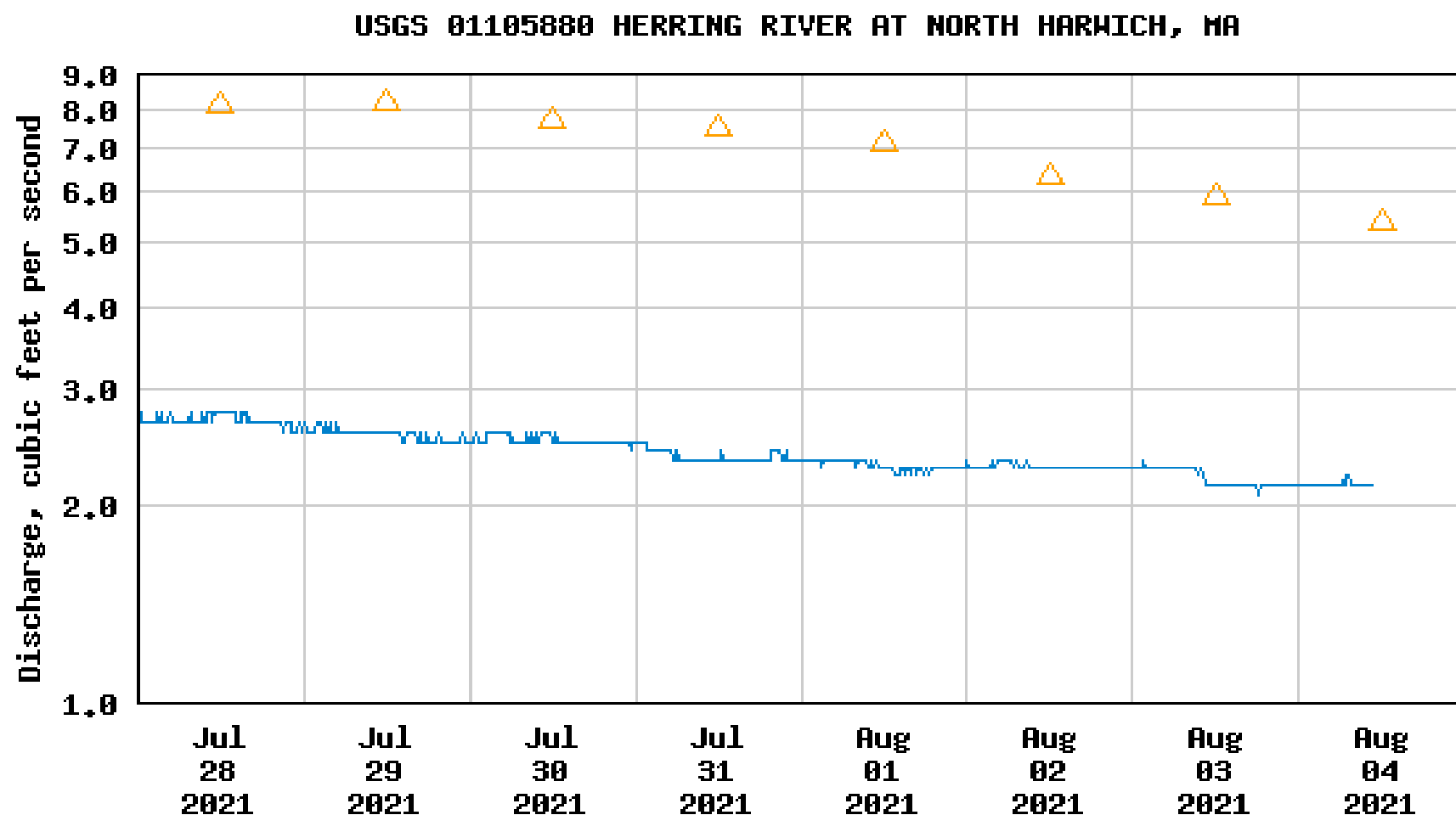
- 5 to 8+ inches above normal for all but southeast Mass
- 1 to 2 inch deficits for portions of Cape Cod and Nantucket

# CURRENT RIVER FLOWS

- Flows are doing great for mid-summer except across portions of Cape Cod where long term precipitation deficits continue.



# Herring River at North Harwich



---- Provisional Data Subject to Revision ----

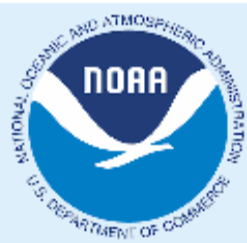
△ Median daily statistic (36 years) — Discharge



# NAEFS ENSEMBLE RIVER FORECAST OUTLOOK

- A 42 member ensemble run for all NERFC forecast points to give us an idea of the possible range of river flows
  - Basically 42 slightly different initial conditions lead to 42 different forecasts based on rainfall and temperature.
- Will show results for the Connecticut River at Montague ( MNTM3 ) the Merrimack River at Lowell ( LOWM3 ) and the Neponset River at Norwood ( NRW3 ).

# NAEFS – MNTM3

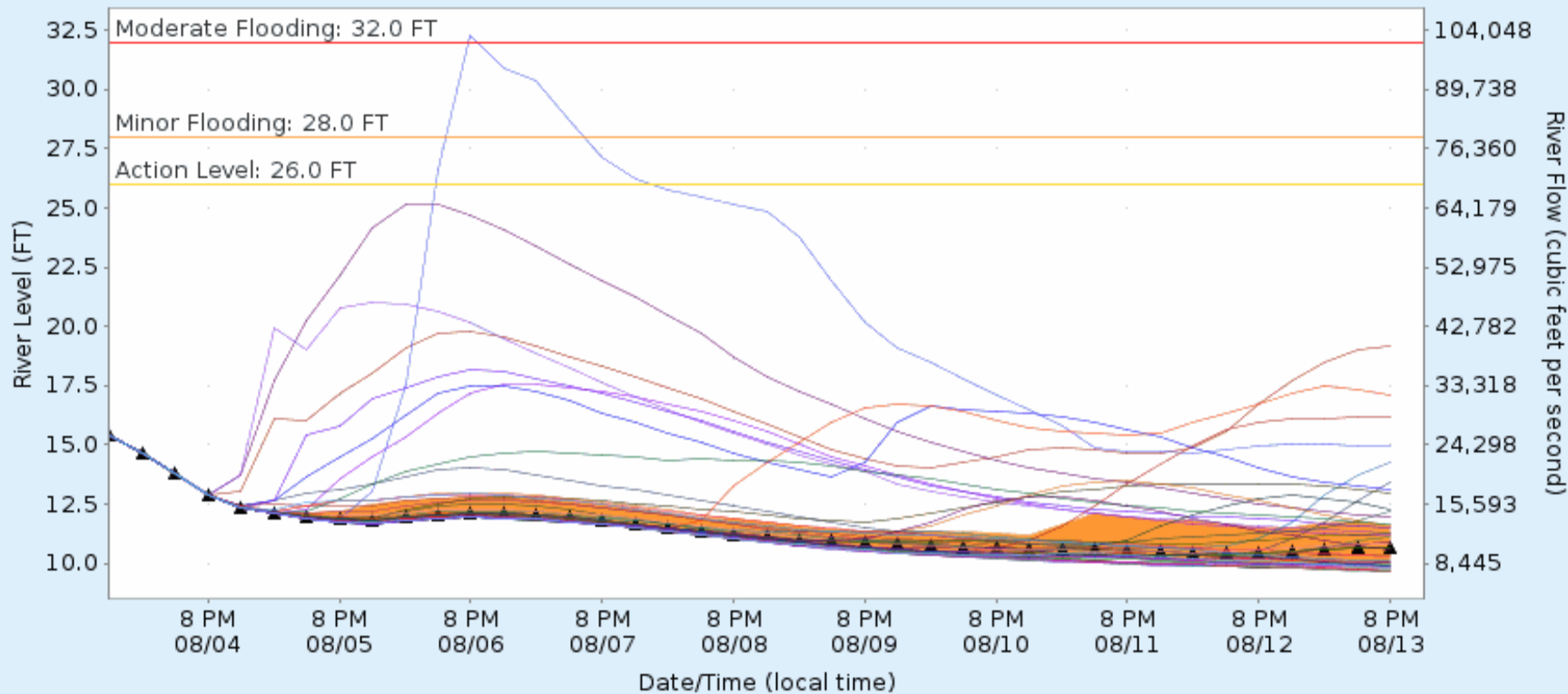


## 7 Day NAEFS River Level Simulations

Used to Estimate the Chance of Flooding and the Range of Possible River Levels  
Each Line Shows an Individual Model Simulation (42 Total)



### Connecticut River at Montague, MA (MNTM3)



- Individual Model Simulations (42 Total)
- ▲ Median River Level (Simulations indicate a 50% Chance of Exceeding this Level)
- More Likely Range (Simulations indicate a 40% chance river levels will fall within this range)

Tremendous uncertainty yesterday regarding last nights and today's rainfall.

Median flow is off the bottom of the graph at 4990 CFS.

# NAEFS – LOWM3

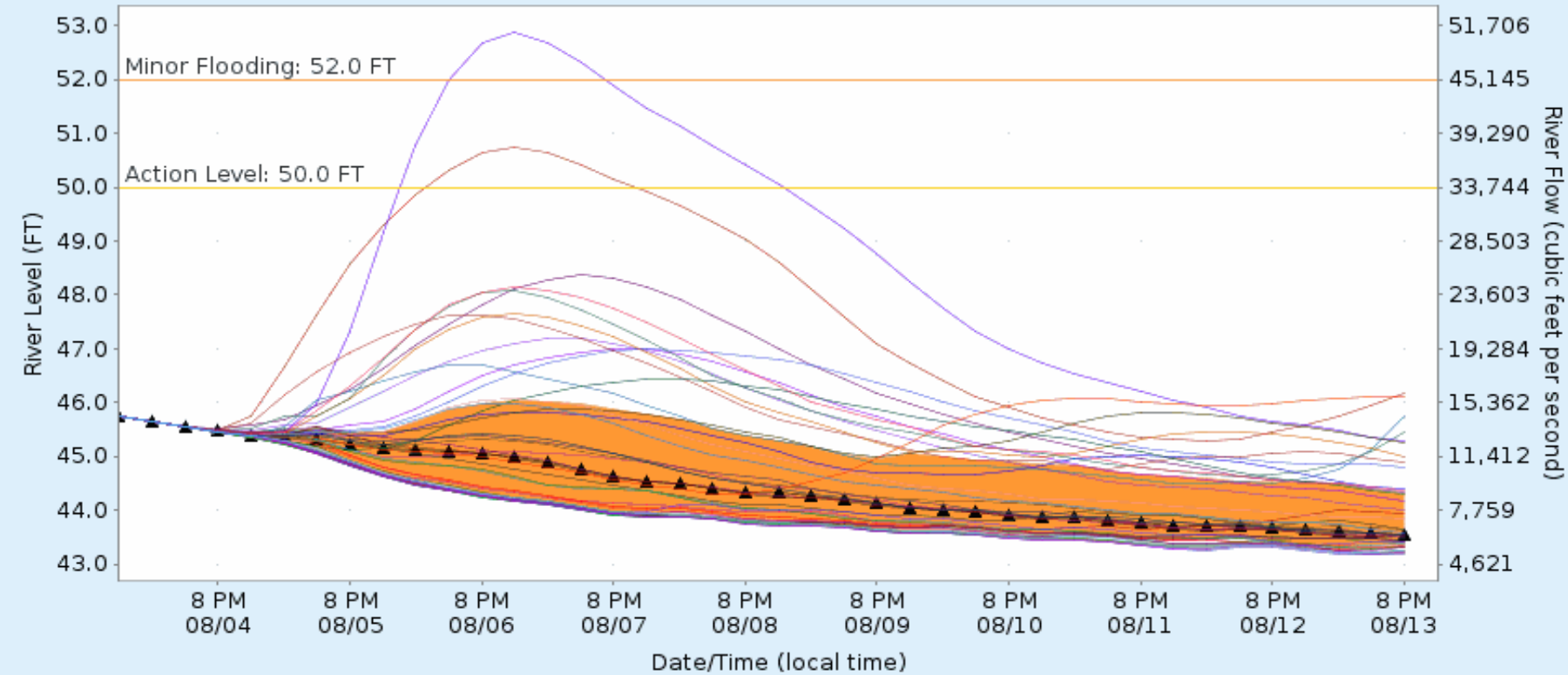


## 7 Day NAEFS River Level Simulations

Used to Estimate the Chance of Flooding and the Range of Possible River Levels  
Each Line Shows an Individual Model Simulation (42 Total)



### Merrimack River at Lowell, MA (LOWM3)



- Individual Model Simulations (42 Total)
- ▲ Median River Level (Simulations indicate a 50% Chance of Exceeding this Level)
- More Likely Range (Simulations indicate a 40% chance river levels will fall within this range)

Again...tremendous uncertainty in the short term rainfall forecast from yesterday ( highly unusual )

Median flow is below the bottom of the graph at 2420 CFS



# NAEFS – NRW3

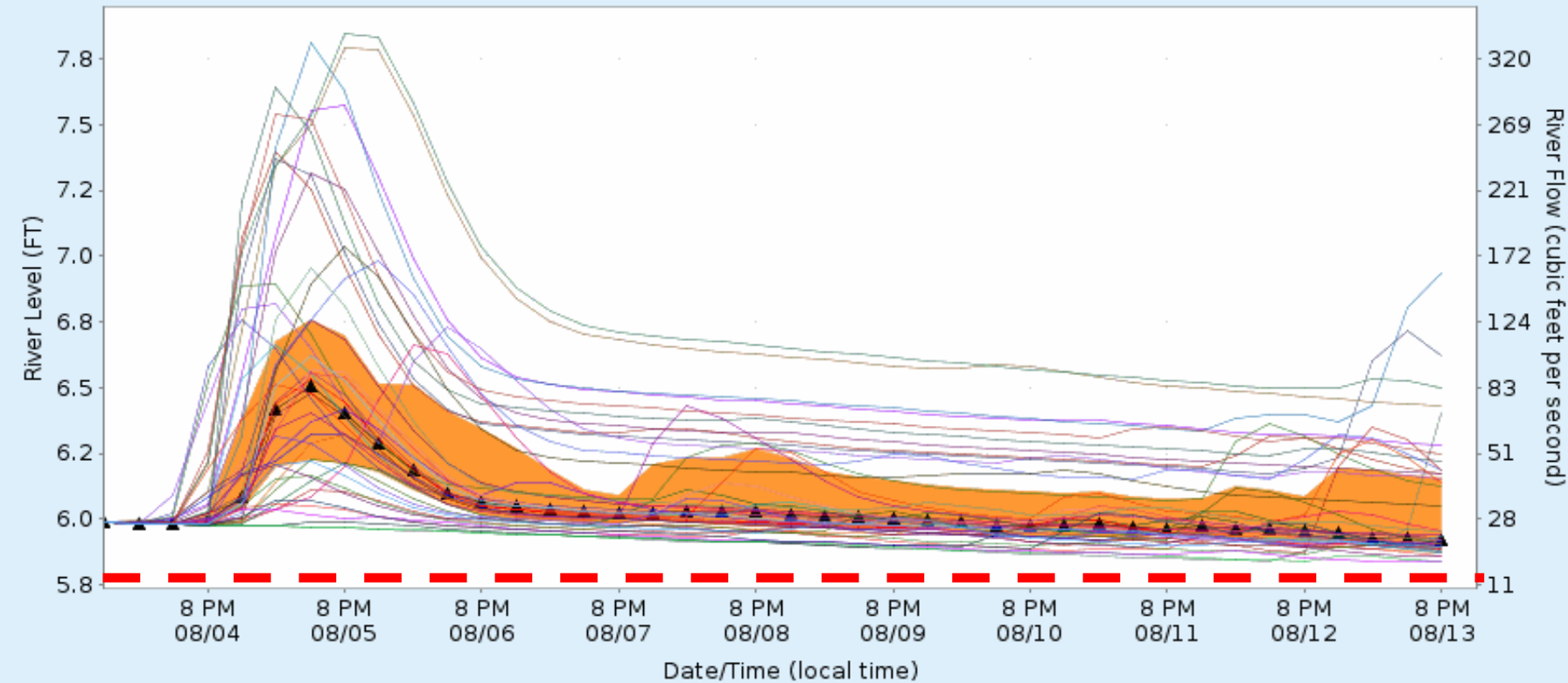


## 7 Day NAEFS River Level Simulations

Used to Estimate the Chance of Flooding and the Range of Possible River Levels  
Each Line Shows an Individual Model Simulation (42 Total)



### Neponset River at Norwood, MA (NRWM3)



Median flow ( red dashed line ) is 12 CFS

- Individual Model Simulations (42 Total)
- ▲ Median River Level (Simulations indicate a 50% Chance of Exceeding this Level)
- More Likely Range (Simulations indicate a 40% chance river levels will fall within this range)

# CONCLUSIONS

- Most rivers and streams will remain comfortably above normal at least into the middle of August courtesy of the massive July rains.
- Cape Cod continues to see stressed rivers...streams and groundwater...especially in the stretch from Hyannis to Chatham.
- Little threat for any type of drought expansion away from Cape Cod and Nantucket into early September.