

NATIONAL WEATHER SERVICE MANUAL 10-913

MAY 24, 2022

***Operations and Services
Water Resources Services Program, NWSPD 10-9
RIVER FORECAST CENTER PRODUCT EXAMPLES***

NOTICE: This publication is available at: <https://www.nws.noaa.gov/directives/>.

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SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-913, “*River Forecast Center Product Examples*,” dated March 13, 2017.

The following revisions were made to this manual:

- 1) In Sections 2-9 and 11-12, more recent product examples were provided.
- 2) In Section 6, the county Flash Flood Guidance (FFG) product example was removed because River Forecast Centers are no longer issuing this type of FFG.
- 3) In Section 8.2, an example of a graphical Hydrometeorological Discussion was added.
- 4) Section 10 pertaining to the Significant River Flood Outlook Product was added.

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May 10, 2022

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Director,
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River Forecast Center Product Examples

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1. Introduction

This document provides examples of River Forecast Center (RFC) products described in the [NWS Instruction 10-912, River Forecast Center Products Specification](#). Although RFC products have become more standardized, more than one format is provided for several of the following products. These examples cover the more common types of formats used and should not be taken as the only prescribed formats.

2. Deterministic Hydrologic Forecast (RVF)

2.1 Example #1 - In Standard Hydrologic Exchange Format (SHEF) with Crest Forecast

FGUS52 KALR 011326
 RVFTAE
 RIVER FORECAST
 NATIONAL WEATHER SERVICE
 NWS SOUTHEAST RIVER FORECAST CENTER; PEACHTREE CITY GA
 925 AM EDT MON NOV 01 2021

THIS IS A NWS GUIDANCE PRODUCT FROM THE SOUTHEAST RIVER FORECAST CENTER. PUBLIC FORECASTS AND WARNINGS ARE ISSUED BY NWS WEATHER FORECAST OFFICES.

: FORECAST GROUP IS Apalachicola
 :
 : FORECASTS INCLUDE 48-HOUR FUTURE RAINFALL IN 6 HOUR INCREMENTS
 :

:*****

:W.F. GEORGE, GA - CHATTAHOOCHEE RIVER

:
 :LATEST INFLOW DISCHARGE M CMS M
 .ER FOGG1 1101 E DC202111010925/DH14/QIIFZZ/DIH6
 :FLOW FORECAST / 8AM / 2PM / 8PM / 2AM
 .E1 : 1101 : / 2.86 / 3.40 / 4.53
 .E2 : 1102 : / 5.09 / 5.11 / 5.13 / 5.15
 .E3 : 1103 : / 5.17 / 5.19 / 5.22 / 5.27
 .E4 : 1104 : / 5.34 / 5.43 / 5.62 / 5.92
 .E5 : 1105 : / 6.26 / 6.54 / 6.73 / 6.85
 .E6 : 1106 : / 6.93

:
 :

:*****

:ALBANY, GA - FLINT RIVER

:ACTION STAGE 16.0 FT MINOR STAGE 26.0 FT
 :MODERATE STAGE 31.0 FT MAJOR STAGE 42.0 FT

:
 :LATEST RIVER STAGE 3.6 M AT 0900 AM EDT ON NOV 01

.ER ABNG1 1101 E DC202111010925/DH14/HGIFFZZ/DIH6
 :RIVER FORECAST / 8AM / 2PM / 8PM / 2AM
 .E1 : 1101 : / 4.1 / 4.8 / 5.5
 .E2 : 1102 : / 5.3 / 5.3 / 5.2 / 5.1
 .E3 : 1103 : / 5.1 / 5.0 / 5.0 / 4.9
 .E4 : 1104 : / 4.9 / 4.9 / 4.8 / 4.8
 .E5 : 1105 : / 4.8 / 4.8 / 4.8 / 4.7
 .E6 : 1106 : / 4.7

.ER ABNG1 1101 E DC202111010925/DH14/PPQFZ/DIH6
 :QPF FORECAST / 8AM / 2PM / 8PM / 2AM
 .E1 : 1101 : / 0.00 / 0.00 / 0.00 / 0.00
 .E2 : 1102 : / 0.00 / 0.00 / 0.00 / 0.00
 .E3 : 1103 : / 0.00

.AR ABNG1 1101 E DC202111010925/DH14/PPVFZ/DVH48/0.00

:
 :FORECASTER COMMENTS...
 :

:*****

```

:WOODRUFF DAM, FL - APALACHICOLA RIVER
:
:LATEST INFLOW DISCHARGE M CMS M
.AR :CREST: WDRF1 1102 E DC202111010925/DH14/QIIFFXZ 17.56
: Crest near 17.56 CMS around 2PM EDT on Tue, Nov 2
.ER WDRF1 1101 E DC202111010925/DH14/QIIFZZ/DIH6
:FLOW FORECAST / 8AM / 2PM / 8PM / 2AM
.E1 : 1101 : / 16.79 / 17.10 / 17.25
.E2 : 1102 : / 17.43 / 17.56 / 17.51 / 17.50
.E3 : 1103 : / 17.36 / 16.91 / 16.41 / 16.15
.E4 : 1104 : / 15.98 / 15.80 / 15.62 / 15.43
.E5 : 1105 : / 15.23 / 15.04 / 14.84 / 14.67
.E6 : 1106 : / 14.51
:
:

```

:*****

```

:WOODRUFF DAM, FL - APALACHICOLA RIVER
:ACTION STAGE 56.0 FT MINOR STAGE 63.0 FT
:MODERATE STAGE 69.0 FT MAJOR STAGE 74.0 FT
:

```

:LATEST TAILWATER ELEV 44.2 M AT 0845 AM EDT ON NOV 01

```

.ER WDRF1 1101 E DC202111010925/DH14/HTIFFZZ/DIH6
:RIVER FORECAST / 8AM / 2PM / 8PM / 2AM
.E1 : 1101 : / 44.1 / 43.9 / 43.6
.E2 : 1102 : / 43.5 / 43.5 / 43.4 / 43.4
.E3 : 1103 : / 43.4 / 43.3 / 43.3 / 43.3
.E4 : 1104 : / 43.3 / 43.2 / 43.2 / 43.2
.E5 : 1105 : / 43.2 / 43.2 / 43.1 / 43.0
.E6 : 1106 : / 43.0

```

```

.ER WDRF1 1101 E DC202111010925/DH14/PPQFZ/DIH6
:QPF FORECAST / 8AM / 2PM / 8PM / 2AM
.E1 : 1101 : / 0.00 / 0.00 / 0.00
.E2 : 1102 : / 0.00 / 0.00 / 0.00 / 0.00
.E3 : 1103 : / 0.00

```

.AR WDRF1 1101 E DC202111010925/DH14/PPVFZ/DVH48/0.00

:FORECASTER COMMENTS...

:*****

```

:BLOUNTSTOWN, FL - APALACHICOLA RIVER
:ACTION STAGE 13.0 FT MINOR STAGE 17.0 FT
:MODERATE STAGE 23.5 FT MAJOR STAGE 26.0 FT
:

```

:LATEST RIVER STAGE 7.4 M AT 0815 AM EDT ON NOV 01

```

.ER BLOF1 1101 E DC202111010925/DH14/HGIFFZZ/DIH6
:RIVER FORECAST / 8AM / 2PM / 8PM / 2AM
.E1 : 1101 : / 7.3 / 7.2 / 7.1
.E2 : 1102 : / 6.9 / 6.8 / 6.6 / 6.5
.E3 : 1103 : / 6.4 / 6.4 / 6.3 / 6.3
.E4 : 1104 : / 6.2 / 6.2 / 6.2 / 6.1
.E5 : 1105 : / 6.1 / 6.1 / 6.0 / 6.0
.E6 : 1106 : / 5.9

```

```

.ER BLOF1 1101 E DC202111010925/DH14/PPQFZ/DIH6
:QPF FORECAST / 8AM / 2PM / 8PM / 2AM
.E1 : 1101 : / 0.00 / 0.00 / 0.00
.E2 : 1102 : / 0.00 / 0.00 / 0.00 / 0.00
.E3 : 1103 : / 0.00

```

```
.AR BLOF1 1101 E DC202111010925/DH14/PPVFZ/DVH48/0.00
:
:FORECASTER COMMENTS...
:
:
:*****
:
.AR ALR 1101 E DT202111010925/YIIRZ 15 : JD
:
$$
:
:...END of MESSAGE...
```

2.2 Example #2 - In Text Followed by SHEF

FGUS56 KRSA 311502
RVFCC

CENTRAL COAST FORECAST
NATIONAL WEATHER SERVICE / CALIFORNIA NEVADA RFC / SACRAMENTO CA
CALIFORNIA DEPARTMENT OF WATER RESOURCES / SACRAMENTO CA
801 AM PDT SUN OCT 31 2021

NEXT ISSUANCE: MONDAY, NOVEMBER 01, 2021 AT 9AM PDT

FORECASTS THROUGH: FRIDAY, NOVEMBER 05, 2021 AT 5AM PDT

ALL LOCATIONS ARE EXPECTED TO REMAIN BELOW CRITICAL LEVELS

SPECIAL NOTES-

| RIVER | LOCATION (NWSLI) | STAGE (FT) | FLOW (CFS) | TIME (PT) | DATE (MM/DD/YY) | LEAD TIME |
|---------------|---------------------|---------------|---------------|--------------|--------------------|--------------|
| PAJARO RIVER | | OBS | 1.9 | 5 AT | 7AM | 10/31/21 |
| | CHITTENDEN | >MS | 25.0 | | NOT EXPECTED | (24) |
| | (AROC1) | >FS | 32.0 | | NOT EXPECTED | |
| | | MAX | 1.9 | | AT CURRENT TIME | |
| SALINAS RIVER | | OBS | 12.3 | 0 AT | 7AM | 10/31/21 |
| | PASO ROBLES | >MS | 23.0 | | NOT EXPECTED | (18) |
| | (PRBC1) | >FS | 29.0 | | NOT EXPECTED | |
| | | MAX | 12.3 | | AT CURRENT TIME | |
| SALINAS RIVER | | OBS | 2.7 | 79 AT | 7AM | 10/31/21 |
| | BRADLEY | >MS | 12.0 | | NOT EXPECTED | (24) |
| | (BRDC1) | >FS | 14.0 | | NOT EXPECTED | |
| | | MAX | 2.7 | | AT CURRENT TIME | |
| SALINAS RIVER | | OBS | 4.1 | 0 AT | 7AM | 10/31/21 |
| | SPRECKLES | >MS | 20.0 | | NOT EXPECTED | (24) |
| | (SPRC1) | >FS | 23.0 | | NOT EXPECTED | |
| | | MAX | 4.1 | | AT CURRENT TIME | |
| CARMEL RIVER | | OBS | 2.4 | 11 AT | 7AM | 10/31/21 |
| | | | | | | (18) |

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| | | | | | | | | | |
|-----------------|-----|-----|-------|--------------|----------|----|--------|--|--|
| ROBLES DEL RIO | >MS | 7.5 | | NOT EXPECTED | | | | | |
| (RDRC1) | >FS | 8.5 | | NOT EXPECTED | | | | | |
| | MAX | 2.4 | 11 AT | CURRENT TIME | | | | | |
| GUADALUPE RIVER | OBS | 1.0 | 0 AT | 7AM | 10/31/21 | | (24) | | |
| ALMADEN EXPRWY | >MS | 7.5 | | NOT EXPECTED | | | | | |
| (GUDC1) | >FS | 9.5 | | NOT EXPECTED | | | | | |
| | MAX | 1.6 | 15 AT | 7PM | 11/01/21 | IN | 35 HRS | | |
| COYOTE CREEK | OBS | 2.1 | 13 AT | 7AM | 10/31/21 | | (18) | | |
| MADRONE | >MS | 6.0 | | NOT EXPECTED | | | | | |
| (CYTC1) | >FS | 7.0 | | NOT EXPECTED | | | | | |
| | MAX | 2.1 | 14 AT | 9AM | 11/04/21 | IN | 97 HRS | | |

DEFINITIONS:

OBS MOST RECENT OBSERVATION (MAY BE ESTIMATED)
 MS MONITOR STAGE
 FS FLOOD STAGE
 MAX MAXIMUM FORECAST WITHIN PERIOD
 LEAD TIME FORECASTS WITHIN THIS PERIOD (HOURS) ARE CONSIDERED RELIABLE ENOUGH
 TO INITIATE PHYSICAL MITIGATION EFFORTS.
 * EVENT EXCEEDS MS/FS/DS WITHIN LEAD TIME PERIOD

SIM 10/31/2021 @ 1453 UTC

NOTE: ALL TIMES IN SHEF ENCODED MESSAGES BELOW ARE UTC

```
.A AROC1 20211031 Z DH14/HG 1.9
.ER AROC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01
.ER1 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER2 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER3 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER4 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER5 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER6 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER7 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER8 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER9 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER10 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/
.ER11 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.9/ 1.8/ 1.8/ 1.8/
.ER12 1.8/ 1.8/ 1.8/ 1.8/ 1.8/ 1.8/ 1.8/ 1.8/ 1.8/ 1.8/
```

```
.A PRBC1 20211031 Z DH14/HG 12.3
.ER PRBC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01
.ER1 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER2 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER3 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER4 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER5 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER6 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER7 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER8 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER9 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER10 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER11 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
.ER12 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/ 12.3/
```

```
.A BRDC1 20211031 Z DH14/HG 2.7
.ER BRDC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01
```

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| | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|
| .ER1 | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ |
| .ER2 | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.7/ | 2.6/ |
| .ER3 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER4 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER5 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER6 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER7 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER8 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER9 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER10 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER11 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |
| .ER12 | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ | 2.6/ |

.A SPRC1 20211031 Z DH14/HG 4.1

.ER SPRC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01

| | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|
| .ER1 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER2 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER3 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER4 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER5 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER6 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER7 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER8 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER9 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER10 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER11 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |
| .ER12 | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ | 4.1/ |

.A RDRC1 20211031 Z DH14/HG 2.4

.ER RDRC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01

| | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|
| .ER1 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER2 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER3 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER4 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER5 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER6 | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ | 2.4/ |
| .ER7 | 2.4/ | 2.4/ | 2.4/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |
| .ER8 | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |
| .ER9 | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |
| .ER10 | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |
| .ER11 | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |
| .ER12 | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ | 2.3/ |

.A GUDC1 20211031 Z DH14/HG 1.0

.ER GUDC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01

| | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|
| .ER1 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER2 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER3 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.1/ | 1.2/ |
| .ER4 | 1.3/ | 1.4/ | 1.5/ | 1.6/ | 1.6/ | 1.6/ | 1.5/ | 1.4/ | 1.4/ | 1.3/ |
| .ER5 | 1.3/ | 1.3/ | 1.3/ | 1.2/ | 1.1/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER6 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER7 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER8 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER9 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER10 | 1.0/ | 1.1/ | 1.2/ | 1.2/ | 1.3/ | 1.3/ | 1.3/ | 1.4/ | 1.5/ | 1.5/ |
| .ER11 | 1.5/ | 1.5/ | 1.4/ | 1.3/ | 1.1/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |
| .ER12 | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ | 1.0/ |

.A CYTC1 20211031 Z DH14/HG 2.1

```
.ER CYTC1 20211031 Z DH16/DC202110311453/DUE/HGIFE/DIH01
.ER1 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER2 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER3 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER4 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER5 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER6 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER7 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER8 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER9 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER10 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER11 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
.ER12 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/ 2.1/
```

END

3. Contingency River Forecast (CRF)

3.1 Example #1 - Product with Extended Time Window for Quantitative Precipitation Forecast (QPF)

FGUS53 KKRK 081643
CRFELK

CONTINGENCY RIVER FORECAST
NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO
1637Z Mon Apr 8 2019

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS ELPLAT

: *****CONTINGENCY FORECAST USING 120 HOURS OF QPF*****

: *****
: *** THESE FORECASTS ARE SIGNIFICANTLY AFFECTED BY QPF ***
: *****

: ==> This forecast includes obsd precip & 120 hours of QPF <==

| RIVER/STATION | FS | TDY | F O R E C A S T |
|--------------------|------|------|--|
| N FK ELKHORN RIVER | | | |
| PIERCE NE 2SE | 12.0 | 6.8E | CREST NEAR 10.8 FT 04/12 PM 2nd CREST NEAR 10.7 FT 04/16 AM |
| ELKHORN RIVER | | | |
| WINSLOW NE 2E | 17.0 | 11.3 | CREST NEAR 14.2 FT 04/12 PM |

: _____

: PIERCE NE 2SE - N FK ELKHORN RIVER HSA - OAX
: FLOOD STAGE 12.0 FT FCST ISSUANCE STAGE 10.0 FT
: MODERATE FLOOD STAGE 14.0 FT MAJOR FLOOD STAGE 16.0 FT
: LATEST ESTIMATED RIVER STAGE 6.8 FT AT 1200Z ON 0408

: Obs Stage / 00Z / 06Z / 12Z / 18Z
: 0407 / / / / 6.9

: 0408 / M / M / M

.AR : CREST : PRCN1 20190413 Z DC201904081637/DH00/HGIC1X 10.8
 .AR : CREST : PRCN1 20190416 Z DC201904081637/DH12/HGIC1X 10.7
 .AR PRCN1 20190408 DH1200/HGIPX 6.80E

.ER PRCN1 20190408 Z DC201904081637/DH18/HGIC1/DIH6

| | | | | |
|--------------|--------|--------|--------|-------|
| :Stage Fcst/ | 00Z / | 06Z / | 12Z / | 18Z |
| .E1 :0408: | | | | / 6.7 |
| .E2 :0409:/ | 6.7 / | 6.6 / | 6.6 / | 6.5 |
| .E3 :0410:/ | 6.5 / | 6.4 / | 6.5 / | 6.5 |
| .E4 :0411:/ | 6.5 / | 6.5 / | 6.6 / | 7.2 |
| .E5 :0412:/ | 8.2 / | 9.1 / | 10.1 / | 10.7 |
| .E6 :0413:/ | 10.8 / | 10.5 / | 9.9 / | 9.1 |
| .E7 :0414:/ | 8.4 / | 7.8 / | 7.5 / | 7.4 |
| .E8 :0415:/ | 7.6 / | 8.2 / | 8.9 / | 9.6 |
| .E9 :0416:/ | 10.2 / | 10.6 / | 10.7 / | 10.6 |
| .E10 :0417:/ | 10.3 / | 9.7 / | 9.2 / | 8.7 |
| .E11 :0418:/ | 8.2 / | 7.8 / | 7.4 / | 7.2 |
| .E12 :0419:/ | 7.0 / | 6.8 / | 6.7 / | 6.6 |
| .E13 :0420:/ | 6.5 / | 6.4 / | 6.4 / | 6.3 |
| .E14 :0421:/ | 6.2 / | 6.2 / | 6.1 / | 6.0 |

:Local observed 6-hr basin-averaged precip (inches) (PAST 24 hours):

| | | | | | |
|---|--------|--------|--------|-------|--------|
| : | / | 00Z / | 06Z / | 12Z / | 18Z |
| : | 0407 | | | | / 0.00 |
| : | 0408 / | 0.00 / | 0.00 / | 0.00 | |

:
 :Local observed 24-hr basin-averaged precip total
 : QPE Total Ending Apr 08: 0.00 inches

:Local forecast 6-hr basin-averaged precip (inches) (NEXT 120 hours):

| | | | | | |
|---|--------|--------|--------|--------|--------|
| : | / | 00Z / | 06Z / | 12Z / | 18Z |
| : | 0408 | | | | / 0.00 |
| : | 0409 / | 0.00 / | 0.00 / | 0.00 / | 0.00 |
| : | 0410 / | 0.00 / | 0.05 / | 0.13 / | 0.01 |
| : | 0411 / | 0.15 / | 0.81 / | 0.35 / | 0.36 |
| : | 0412 / | 0.24 / | 0.10 / | 0.05 / | 0.02 |
| : | 0413 / | 0.01 / | 0.00 / | 0.00 | |

:Local forecast 120-hr basin-averaged precip total

: QPF Total Ending Apr 13: 2.28 inches

:WINSLOW NE 2E - ELKHORN RIVER HSA - OAX
 :FLOOD STAGE 17.0 FT FCST ISSUANCE STAGE 14.0 FT
 :MODERATE FLOOD STAGE 20.0 FT MAJOR FLOOD STAGE 24.0 FT
 :LATEST RIVER STAGE 11.3 FT AT 1545Z ON 0408

| | | | | |
|--------------|--------|--------|--------|--------|
| :Obs Stage / | 00Z / | 06Z / | 12Z / | 18Z |
| : | 0408 | | | / 11.2 |
| : | 0408 / | 11.3 / | 11.2 / | 11.2 |

.AR : CREST : WLON1 20190413 Z DC201904081637/DH00/HGIC1X 14.2

.ER WLON1 20190408 Z DC201904081637/DH18/HGIC1/DIH6

| | | | | |
|--------------|--------|--------|--------|--------|
| :Stage Fcst/ | 00Z / | 06Z / | 12Z / | 18Z |
| .E1 :0408: | | | | / 11.1 |
| .E2 :0409:/ | 11.1 / | 11.1 / | 11.0 / | 10.9 |
| .E3 :0410:/ | 10.8 / | 10.7 / | 10.6 / | 10.6 |
| .E4 :0411:/ | 10.5 / | 10.4 / | 10.6 / | 11.0 |

```
.E5 :0412:/ 11.9 / 13.0 / 13.9 / 14.2
.E6 :0413:/ 14.2 / 14.1 / 13.8 / 13.4
.E7 :0414:/ 13.1 / 12.7 / 12.4 / 12.2
.E8 :0415:/ 12.1 / 12.0 / 11.9 / 11.9
.E9 :0416:/ 11.9 / 11.9 / 11.9 / 11.8
.E10 :0417:/ 11.8 / 11.9 / 11.9 / 11.9
.E11 :0418:/ 12.0 / 11.9 / 11.9 / 11.8
.E12 :0419:/ 11.8 / 11.8 / 11.7 / 11.7
.E13 :0420:/ 11.7 / 11.7 / 11.7 / 11.7
.E14 :0421:/ 11.7 / 11.7 / 11.6 / 11.6
```

```
:Local observed 6-hr basin-averaged precip (inches) (PAST 24 hours):
:      / 00Z / 06Z / 12Z / 18Z
: 0407 /      /      /      / 0.00
: 0408 / 0.00 / 0.00 / 0.00
```

```
:Local observed 24-hr basin-averaged precip total
: QPE Total Ending Apr 08: 0.00 inches
```

```
:Local forecast 6-hr basin-averaged precip (inches) (NEXT 120 hours):
:      / 00Z / 06Z / 12Z / 18Z
: 0408 /      /      /      / 0.00
: 0409 / 0.00 / 0.00 / 0.00 / 0.00
: 0410 / 0.00 / 0.00 / 0.08 / 0.00
: 0411 / 0.08 / 0.54 / 0.38 / 0.25
: 0412 / 0.19 / 0.07 / 0.03 / 0.01
: 0413 / 0.00 / 0.00 / 0.00
```

```
:Local forecast 120-hr basin-averaged precip total
: QPF Total Ending Apr 13: 1.63 inches
```

```
:*****
```

```
:COMMENT
```

```
:
:
:HSA - Hydrologic Service Area
:LBF - NWS Weather Forecast Office North Platte, Nebraska
:OAX - NWS Weather Forecast Office Omaha, Nebraska
:GID - NWS Weather Forecast Office Hastings, Nebraska
:OBS - Observed
:EST - Estimated
:M - Missing
:Stage Fcst - River Stage forecast including future precipitation
:Flow Fcst - River Flow forecast including future precipitation
:Precip - Precipitation
:QPE - Observed radar estimated precipitation
:QPF - Forecasted mean areal precipitation for local basin
```

```
$$
```

```
: rlw
:...END of MESSAGE...
```

4. Streamflow Guidance (ESG)

4.1 Example #1 - Spring Flood Potential Outlook

FGUS61 KTAR 142102 CCA
ESGTAR

Winter/Spring Flood Potential Outlook
National Weather Service
Northeast River Forecast Center Norton MA
500 PM EDT Wed Apr 14 2021

...For Official National Weather Service Use Only...

Winter/Spring Flood Potential for the northeastern U.S. /8/

The Winter/Spring Flood Potential for the northeastern United States is below normal across most of the region...except locally near normal across portions of the Catskills...southern Adirondacks...Berkshires...Litchfield Hills...southern Green Mountains and White Mountains.

The potential for flooding due to ice jams has passed for the season.

...CLIMATE GUIDANCE...

Above normal average temperatures and below normal precipitation characterized the beginning of April across most of the Northeast.

Average temperatures from April 1-11 ranged from +3 to +9 degrees above normal with the greatest departure at Buffalo NY and lowest departure at Bridgeport CT.

Precipitation total departures from April 1-11 ranged up to 1.50 inches below normal with the greatest departures found in southern New England. Slight above normal departures were found at Rochester NY and Caribou ME. Precipitation total departures for the year to date were ranging from 1.50 to 5 inches below normal...except close to normal at Caribou ME.

Snow totals to date in mid-April were slightly above normal at Caribou ME.

The El Nino Southern Oscillation (ENSO) remains in La Nina phase. Usually the Pacific jet stream or northern branch prevails during this phase...occasionally varying in its strength and location. The three month Oceanic Nino Index decreased to -0.9 Celsius from January through March 2021. The weekly Oceanic Nino Index value as of April 12 was -0.5 Celsius in the Nino 3.4 region. The Climate Prediction Center discussion indicates a transition to ENSO neutral phase is likely in the next month or so.

A significant shift in the jet stream pattern recently occurred across the northeastern United States. The northern Atlantic oscillation (NAO) teleconnection switched to negative phase allowing for a blocking pattern to develop. Although this did occur...colder air that arrived was either short lived or modified. Meanwhile the Pacific North American (PNA) teleconnection in its negative phase had encouraged ridging across the southeastern U.S. and a lack of east coast cyclogenesis. Precipitation totals have generally been below normal so far in April. However a cutoff low system April 10-12 helped enhance precipitation totals in portions of western and southern New York State. A change to near normal temperatures occurred due to a backdoor cool front and weak surface high pressure. Below normal temperatures are forecast in the short term due to another cutoff low pressure system...but temperatures should rebound again for a time early next week.

A change in the shorter term teleconnection phases is forecast. The Climate Prediction Center ensemble NAO forecasts indicate a switch from strongly

negative to near neutral or slightly positive phase during the third week of April...with ensemble PNA forecasts near neutral or slightly positive. Less certainty is noted heading towards the end of April. There is some signal that cooler than normal temperatures may return again later in the month.

A frontal system and coastal low pressure is expected to develop during the transition 4/15-17. Some beneficial QPF amounts 1-2+ inches are anticipated along with some significant interior high elevation snow accumulation possible in eastern New York and New England. A frontal system and another coastal low is forecast to develop around April 20 to April 21. At this time it appears any significant precipitation may spare the region with this system.

Heading into week two there will be additional chances for precipitation as frontal systems approach the region. Timing and phasing of these low systems becomes more uncertain during week two. Currently there is no strong signal for additional significant precipitation in the long term but this will be examined as the jet stream pattern remains active.

The 6 to 14 day outlook from the Climate Prediction Center 20-28 April 2021 generally indicates likely chances for cooler than normal temperatures in the west...near equal chances of below...near normal or above normal temperatures across the east...and chances for some above normal precipitation.

...OBSERVED SNOW DEPTHS AND WATER EQUIVALENTS...

The ground is bare across most of the Northeast at the time of this report. The exception is the elevations at or above 2000 feet which still have some snow cover...across the Adirondacks of New York...Green and White Mountains of New Hampshire and Vermont and into western and northern Maine. Otherwise areal coverage is rather limited at this time. A heavy wet snow is forecast near term across some of these same high terrain areas. Even the valley areas of eastern New York and New England may receive some snow accumulation.

...New York State...

The ground was bare across most of the region at the time of this report. Some light snow cover is located across wooded areas of the summits in the northern Adirondacks. Snow water is hydrologically insignificant in this region.

...Southern New England...

The ground was bare across the region at the time of this report.

...Northern New England...

Snow cover is mostly confined to the high peaks in the region at the time of this report. Snow water equivalents range from 1 to locally 3+ inches in these areas.

...Vermont...

The ground is mostly bare. Most of any snow cover is located across the high peaks and summits. Mount Mansfield elevation 4400 ft reported a snow depth of 16 inches as of 13 April 2021. This is well below the long term average of 69 inches for the date.

...New Hampshire and Maine...

The ground is mostly bare. Most of any snow cover is currently located across

the high peaks and summits of northern New Hampshire and western and northern Maine. From WFO Gray Maine...Gray Knob elevation approximately 4379 ft reported a 19 inch snow depth and Hermit Lake elevation 3742 ft reported a 30 inch snow depth on 12 April 2021.

...SOIL MOISTURE AND GROUNDWATER CONDITIONS...

During late March and start of April...rain and significant snowmelt moistened soils across the Tug Hill plateau and Adirondack mountain regions of northern New York state and northern New England. However over the long term...some dry antecedent conditions continue.

The latest Palmer Drought Severity Index (PDSI) examines antecedent moisture states from past weeks to months. The latest PDSI from 10 April 2021 indicates moderate drought conditions across northern New Hampshire...much of Vermont west of the green mountain spine as well as southern Vermont. In addition moderate drought conditions were found across the Champlain Valley regions of New York and Vermont...near the Adirondacks...and the upper Genesee valley in western New York. A more persistent area of severe drought continues to be indicated across the Saint Lawrence River Valley in far northern portions of New York State. Some short term improvement had occurred due to snowmelt and precipitation at the end of March and beginning of April.

Taking a look at groundwater monitoring wells across the region courtesy of the United States Geological Survey (USGS)...

Groundwater levels across New England are generally near normal and in some cases above normal. Some above normal groundwater levels were found in Maine.

Groundwater levels in New York State are averaging near normal to below normal. Below normal groundwater levels were particularly found in western New York and the Saint Lawrence valley of northern New York where some concerns remain heading through spring.

...New York State...

Near normal to below normal groundwater levels were found across most of the state.

Hyde Park in the lower Hudson valley and Upton on Long Island were reporting between the 25th and 50th percentile levels for the time of year as of 11 April 2021. SUNY Albany was reporting close to the 50th percentile level for the time of year.

Gainesville in the Genesee valley region of western New York was near lowest median levels as of 12 April 2021 but was experiencing some recharge due recent runoff from precipitation.

Louisville and Brasher Falls in the Saint Lawrence Valley region were reporting between 10th and 25th percentile groundwater levels as of 12 April 2021.

...Southern New England...

Groundwater levels were running near normal to below normal across most of the region. Pockets of above normal groundwater levels were reported mainly in Rhode Island.

In Connecticut...groundwater levels are averaging between 25th to 50th percentiles for this time of year.

In Rhode Island...groundwater levels are averaging between 25th to 50th percentiles for this time of year. The exception is that Exeter and Richmond are reporting 75th to 90th percentile levels as of 12 April 2021.

In Massachusetts...groundwater levels are averaging between 25th to 50th percentiles for this time of year in western and central portions of the state. Pittsfield in the Berkshires was reporting 10th to 25th percentile levels as of 12 April 2021. Groundwater levels in east portions of the state are a bit closer to normal.

...Northern New England...

Groundwater levels vary from near normal to below normal in Vermont and New Hampshire...near to above normal across most of Maine except below normal in southern Maine.

In Vermont...Groundwater levels were near normal at Pittsford in the southwestern part of the state. Glover and Hartland were reporting below normal groundwater levels in the eastern and northern parts of the state.

In New Hampshire...Groundwater levels are currently below normal and generally close to the 25th percentile range for the time of year at a few of the available reporting locations.

In Maine...Groundwater levels vary and are currently below normal in the 25th percentile range from the time of year across the south and near to slightly above normal in the 50th to near 75th percentile range across portions of the foothills and western parts of the state. Groundwater levels are above normal in the 75th to 90th percentile range for the time of year in the north from Calais to Fort Kent...thanks to recharge from snowmelt and closer to normal precipitation totals.

...RESERVOIR LEVELS AND WATER SUPPLY...

In general...reservoir levels have benefited due to runoff from snowmelt across the northern basins...otherwise elsewhere from some recent precipitation.

In northern New York state...Indian Lake is running a foot below normal. Great Sacandaga Lake is about 1 foot higher than normal. Hinckley Reservoir is now running about 3.5 feet above normal mostly due to runoff from snowmelt. Stillwater reservoir currently running close to normal for mid-April. Lake Champlain is close to 2 feet below normal for mid-April. In central New York state...Owasco Lake is currently 0.6 foot below its normal pool level for this time of year.

In southeastern New York State...the New York City Water Supply system...comprised of 7 large reservoirs...was at 98.5 percent of capacity as of 14 April 2021 which was 1.0 percent below normal. One of the seven large reservoirs...Schoharie was above capacity and releasing water uncontrolled over the spillway.

In Northern New England...reservoir systems in the Kennebec river basin in Maine were 71.3 percent full as of 12 April 2021 which was 52.8 percent above normal. The nearby Androscoggin river storage was 62.9 percent full or 54.9 percent above normal. New Hampshire's largest lake...lake Winnepesaukee was running almost precisely at its normal level for mid-April. In northern Vermont... Lake Memphremagog in Newport Vermont was running about 0.4 foot below normal as of 13 April 2021.

In Southern New England...Quabbin reservoir...the main water supply reservoir for the Boston Metropolitan area...was at 93.4 percent capacity on 1 April 2021...and the smaller Wachusett reservoir was at 89.1 percent of capacity. Both of these reservoirs are in the normal operating range for early Spring. Scituate Reservoir...the main water supply reservoir for northern Rhode Island including the city of Providence...was at 285.21 feet as of 14 April 2021...which was 104.8 percent of capacity. Water was flowing uncontrolled over the spillway into the mainstem Pawtuxet river basin.

We do not currently anticipate large scale water supply issues this spring as snowmelt runoff has generally been enough to recharge lake and reservoir systems. We are somewhat concerned across portions of western New York state and the Saint Lawrence valley region of New York where groundwater levels are still low and the near term forecast indicates no significant precipitation.

If precipitation doesn't increase more across portions of western and far northern New York state...we may begin to notice smaller scale water supply issues develop later this spring.

...RIVER AND ICE CONDITIONS...

Below normal 7 day average streamflows are observed across most of the northeast. Current streamflows are also below normal in many areas...but have increased due to recent rainfall across the Buffalo creeks of western NY...the Finger Lakes region of western and central NY...the southern and eastern Catskills and the New York city metropolitan area and Long Island.

Near to above normal 7 day average river flows are observed across the Adirondacks of northern New York state...also northern New Hampshire and northern and western Maine due to recent snowmelt and past precipitation.

Flows are highest across northern Maine where the Allagash River at Allagash and the Fish River at Fort Kent were within the top 10 percent for mid-April.

Flows were lowest across interior southern New England...southern New Hampshire and southeastern Vermont...including the lower Merrimack basin...and mid to lower Connecticut river basin...the Finger Lakes of central and western New York and across portions of the Saint Lawrence valley region of New York. Many of these locations were within the lowest 10 percent of historical values for mid-April.

River ice is mostly gone and has either rotted or been flushed out of northern Maine rivers in late March and early April. Webcam images...photos and information from WFO Caribou Maine generally confirm this. Some leftover but insignificant shore ice remains along portions of river banks...primarily the Saint John River and western Maine lakes.

...IN CONCLUSION...

The Winter Spring flood potential is below normal across most of the Northeast except somewhat near normal across local portions of the Catskills...southern Adirondacks...Berkshires...Litchfield Hills...southern Green Mountains and White Mountains.

Most of any snow cover of hydrologic significance was located across some of the northern high terrain peaks and summits...encompassing a very small portion of the Northeast at the time of this report.

Antecedent conditions are drier than normal in many areas...particularly across portions of far western and northern basins. Streamflows are mostly below normal except near to above normal in northern New Hampshire and northern Maine...western New York and southern New York. Greenup is gradually getting underway adding to absorption and evapotranspiration of moisture. In most areas...even if significant precipitation occurs most rivers should be able to accommodate the runoff. At this time there is no strong signal for significant precipitation mostly longer term. A below normal outlook is forecast across most of the region.

In the near term...one to two plus inches of QPF is expected across portions of the central and southern basins with some significant high elevation snow possible. The snow although high in water content should melt fairly quickly due to the high April sun angle. The multi-model ensemble forecasts indicate within bankfull action river rises possible due to the runoff from melt and lower elevation rain and snow. An increase in streamflow levels is anticipated in these areas and some above normal precipitation is possible in the longer term but will depend on timing and phasing of systems. If that occurs we could see the possibility of some elevated streamflow levels in this region. A near normal outlook is forecast locally across portions of the Catskills...southern Adirondacks...Berkshires...Litchfield Hills...southern Green Mountains and White Mountains.

In far northern Maine...most of the snow cover has melted except across the high peaks and summits. As mentioned...some elevated streamflows remain due to runoff from snowmelt. Chances for some above normal precipitation exist but no strong signals for significant precipitation longer term at this time. Some of the precipitation will fall as snow across high terrain areas and most rivers should be able to handle the additional runoff. Thus a below normal outlook is forecast.

River ice has been flushed or rotted out and the ice jam threat is over for the 2020-2021 season.

It is important to remember that very heavy rainfall can result in flooding at any time of year...even in areas that have little or no snow on the ground.

A graphic depicting the flood potential across the NERFC service area is available on the NERFC web site at

*** www.weather.gov/nerfc/springfloodpotential ***

all in lower case.

Unless hydrometeorological conditions warrant...this is expected to be the last winter/spring flood potential outlook issuance for the season.

End/Strauss
\$\$

4.2 Example #2 - Long-Range Probabilistic Outlook

FGUS63 KMSR 211529
ESGDEV

DEVILS LAKE BASIN
LONG-RANGE PROBABILISTIC OUTLOOK
NATIONAL WEATHER SERVICE

NORTH CENTRAL RIVER FORECAST CENTER TWIN CITIES/CHANHASSEN MN
 929 AM CST TUE DEC 21 2021

IN TABLE 2 BELOW...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...

```
.B MSR 1220 Z DH12 /DC2112211529/DVD97/HGVFZXT/HGVFZX9/HGVFZXH
.B1 /HGVFZX5/HGVFZXG/HGVFZX1/HGVFZXF
:
:      Chance of Exceeding Stages (ft) at Specific Locations
:      Valid Period: 12/20/2021 - 03/27/2022
:
:      95%      90%      75%      50%      25%      10%      5%
:      ---      ---      ---      ---      ---      ---      ---
:Devils Lake
DCBN8      1447.2/ 1447.3/ 1447.3/ 1447.4/ 1447.7/ 1448.1/ 1448.3
:Eastern Stump Lake
ESLN8      1447.2/ 1447.3/ 1447.3/ 1447.4/ 1447.7/ 1448.1/ 1448.3
.END
```

IN TABLE 3 BELOW...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...

```
.B MSR 1220 Z DH12 /DC2112211529/DVD97/HGVFZNT/HGVFZN9/HGVFZNH
.B1 /HGVFZN5/HGVFZNG/HGVFZN1/HGVFZNF
:
:      Chance of Falling Below Stages (ft) at Specific Locations
:      Valid Period: 12/20/2021 - 03/27/2022
:
:      95%      90%      75%      50%      25%      10%      5%
:      ---      ---      ---      ---      ---      ---      ---
:Devils Lake
DCBN8      1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1
:Eastern Stump Lake
ESLN8      1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1/ 1447.1
.END
```

:Long-range probabilistic outlooks are issued near the end of the month
 :throughout the year.

\$\$

5. Extended-Range Streamflow Prediction (ESP)

5.1 Example #1 - Water Supply Forecast

FGUS63 KKRF 021323
 ESPKRF
 WATER SUPPLY FORECAST
 NWS MISSOURI BASIN RIVER FORECAST CENTER
 PLEASANT HILL MISSOURI

0216 PM CST MONDAY MARCH 01, 2021

DATA CURRENT AS OF: MARCH 01, 2021

MISSOURI/YELLOWSTONE/PLATTE RIVER BASIN FORECASTS

| FORECAST POINT | PERIOD | 50% (KAF) | % AVG | 10% (KAF) | 90% (KAF) | AVG (KAF) |
|---------------------------------------|---------|--------------|----------|--------------|--------------|--------------|
| Boysen Resvr Inflow SBDW4N | Apr-Sep | 676 | 59 | 1177 | 416 | 1140 |
| Bighorn R at Kane LVEW4N | Apr-Sep | 1051 | 62 | 1768 | 660 | 1690 |
| Greybull R at Meeteetse MEEW4N | Apr-Sep | 116 | 65 | 211 | 58 | 177 |
| Buffalo Bill Resvr Inflow CDYW4N | Apr-Sep | 533 | 70 | 733 | 408 | 765 |
| St. Mary R nr Babb SMYM8N | Apr-Sep | 420 | 79 | 482 | 357 | 535 |
| St. Mary R at Intl Boundary SMBM8N | Apr-Sep | 492 | 75 | 578 | 413 | 660 |
| Milk R nr Western Crossing PDBM8N | Apr-Sep | 27 | 67 | 58 | 14 | 41 |
| Milk R nr Eastern Crossing ERNM8N | Apr-Sep | 44 | 55 | 109 | 22 | 81 |
| Lima Resvr Inflow LRRM8N | Apr-Sep | 45 | 58 | 72 | 27 | 78 |
| Clark Canyon Resvr Inflow CLKM8N | Apr-Sep | 91 | 58 | 141 | 58 | 159 |
| Beaverhead R at Barretts BARM8N | Apr-Sep | 121 | 62 | 177 | 85 | 194 |
| Ruby R Resvr Inflow ALRM8N | Apr-Sep | 82 | 84 | 100 | 61 | 97 |
| Big Hole R nr Melrose MLRM8 | Apr-Sep | 517 | 92 | 787 | 390 | 560 |
| Big Hole R nr Melrose MLRM8N | Apr-Sep | 576 | 101 | 844 | 448 | 570 |
| Hebgen Resvr Inflow HBDM8N | Apr-Sep | 426 | 99 | 499 | 364 | 430 |
| Ennis Resvr Inflow ELMM8N | Apr-Sep | 778 | 104 | 890 | 635 | 745 |
| Gallatin R nr Gateway | Apr-Sep | 260 | 57 | 347 | 206 | 455 |

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GLGM8

| | | | | | | |
|---|---------|------|-----|------|------|------|
| Gallatin R nr Gateway GLGM8N | Apr-Sep | 260 | 57 | 347 | 206 | 455 |
| Gallatin R at Logan LOGM8 | Apr-Sep | 276 | 55 | 420 | 190 | 505 |
| Gallatin R at Logan LOGM8N | Apr-Sep | 408 | 69 | 540 | 316 | 595 |
| Missouri R at Toston TOSM8N | Apr-Sep | 2206 | 88 | 2969 | 1842 | 2510 |
| Missouri R at Fort Benton FBNM8N | Apr-Sep | 3466 | 94 | 4637 | 2790 | 3690 |
| Missouri R nr Virgelle VRGM8N | Apr-Sep | 3975 | 93 | 5354 | 3188 | 4280 |
| Missouri R nr Landusky LDKM8N | Apr-Sep | 4240 | 94 | 5686 | 3384 | 4490 |
| Missouri R below Fort Peck Dam FPKM8N | Apr-Sep | 4391 | 93 | 5891 | 3479 | 4730 |
| Gibson Resvr Inflow AGSM8N | Apr-Sep | 468 | 117 | 640 | 387 | 400 |
| Marias R nr Shelby SHLM8N | Apr-Sep | 415 | 92 | 611 | 325 | 450 |
| Musselshell R at Harlowton HLWM8N | Apr-Sep | 64 | 61 | 112 | 37 | 104 |
| Yellowstone R at Yellowstone Lk YLOW4 | Apr-Sep | 592 | 74 | 747 | 476 | 795 |
| Yellowstone R at Yellowstone Lk YLOW4N | Apr-Sep | 781 | 93 | 961 | 650 | 840 |
| Yellowstone R at Corwin Sprgs CORM8 | Apr-Sep | 1478 | 79 | 1823 | 1239 | 1880 |
| Yellowstone R at Corwin Sprgs CORM8N | Apr-Sep | 1784 | 90 | 2135 | 1487 | 1980 |
| Yellowstone R at Livingston LIVM8 | Apr-Sep | 1809 | 85 | 2210 | 1523 | 2130 |
| Yellowstone R at Livingston LIVM8N | Apr-Sep | 2176 | 94 | 2582 | 1805 | 2310 |
| Yellowstone R at Billings BILM8 | Apr-Sep | 2766 | 74 | 3463 | 2162 | 3730 |
| Yellowstone R at Billings BILM8N | Apr-Sep | 3784 | 89 | 4446 | 3097 | 4260 |

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| | | | | | | |
|---|---------|------|----|------|------|------|
| Yellowstone R at Miles City MIILM8N | Apr-Sep | 5643 | 78 | 7303 | 4462 | 7250 |
| Yellowstone R at Sidney SIDM8N | Apr-Sep | 5799 | 77 | 7562 | 4585 | 7540 |
| Boulder R at Big Timber BTMM8 | Apr-Sep | 211 | 70 | 256 | 155 | 300 |
| Boulder R at Big Timber BTMM8N | Apr-Sep | 252 | 78 | 297 | 195 | 325 |
| Stillwater R nr Absarokee SRAM8 | Apr-Sep | 334 | 66 | 420 | 267 | 505 |
| Stillwater R nr Absarokee SRAM8N | Apr-Sep | 392 | 71 | 477 | 325 | 550 |
| Clks Fk Yellowstone R nr Belfry BFYM8 | Apr-Sep | 415 | 75 | 533 | 324 | 550 |
| Clks Fk Yellowstone R nr Belfry BFYM8N | Apr-Sep | 486 | 81 | 602 | 398 | 600 |
| Bighorn R nr St. Xavier STXM8N | Apr-Sep | 1660 | 65 | 2512 | 1160 | 2550 |
| Little Bighorn R nr Hardin HRDM8N | Apr-Sep | 68 | 66 | 100 | 42 | 103 |
| Tongue R nr Dayton DAYW4N | Apr-Sep | 65 | 78 | 83 | 47 | 83 |
| Tongue R nr Decker DSL8N | Apr-Sep | 146 | 68 | 216 | 98 | 215 |
| Tongue R Resvr Inflow DKRM8N | Apr-Sep | 148 | 69 | 223 | 99 | 215 |
| Powder R at Moorhead MHDM8N | Apr-Sep | 130 | 59 | 257 | 72 | 220 |
| Powder R nr Locate LOCM8N | Apr-Sep | 139 | 57 | 318 | 77 | 245 |

Locations with an 'N' suffix indicate natural flows excluding stream augmentations.

KAF: Thousands of Acre-feet

%AVG: Current 50%/AVG

AVG: Average (50%) seasonal runoff volume as simulated by the river forecast model considering a continuous simulation of the basin response to historic climate data (observed precipitation and temperatures) over the period of 1981-2010.

The 50%, 10% and 90% columns indicate the probability that the actual volume will exceed the forecast for the valid time period.

For more information, please visit: www.weather.gov/mbrfc/water

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5.2 Example #2 - Probabilistic Forecast Information

FGUS65 KSTR 162016
 ESPCO
 National Weather Service
 Colorado Basin River Forecast Center
 Salt Lake City, Utah
 March 16, 2021

San Juan Basin Special Forecast Group

March mid-month Forecasts

Seasonal and Monthly forecasts
 Forecast volumes in thousands of acre-feet (KAF)

| | | | | |
|------------|----------|------|------|------|
| Rio Blanco | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 30.0 | 41.0 | 55.0 |

| | | | | |
|---------------|----------|------|------|------|
| Navajo-Chromo | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 33.0 | 47.0 | 62.0 |

| | | | | |
|----------------------|----------|-----|------|-----|
| Little Navajo-Chromo | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 2.4 | 4.3 | 6.3 |
| Mar | | 0.2 | 0.25 | 0.3 |
| Apr | | 0.5 | 0.8 | 1.0 |
| May | | 1.5 | 2.5 | 3.2 |

| | | | | |
|---------------------|----------|------|-------|-------|
| Vallecito Reservoir | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 60.0 | 105.0 | 160.0 |
| Mar | | 3.2 | 3.7 | 4.5 |
| Apr | | 6.0 | 10.0 | 14.0 |
| May | | 21.0 | 35.0 | 50.0 |

| | | | | |
|------------------|----------|-------|-------|-------|
| Navajo Reservoir | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 245.0 | 395.0 | 605.0 |
| Mar | | 23.0 | 27.0 | 35.0 |
| Apr | | 52.0 | 70.0 | 100.0 |
| May | | 101.0 | 150.0 | 205.0 |

| | | | | |
|----------------|----------|-------|-------|-------|
| Animas-Durango | FORECAST | | | |
| | | 90% | 50% | 10% |
| Apr-Jul | | 125.0 | 220.0 | 315.0 |
| Mar | | 7.5 | 8.0 | 11.0 |
| Apr | | 17.0 | 23.0 | 27.0 |
| May | | 43.0 | 75.0 | 85.0 |

| | | | | |
|-----------------|----------|-----|-----|-----|
| Lemon Reservoir | FORECAST | | | |
| | | 90% | 50% | 10% |

| | | | |
|---------|------|------|------|
| Apr-Jul | 13.0 | 27.0 | 42.0 |
| Mar | 0.5 | 0.6 | 0.9 |
| Apr | 1.3 | 2.0 | 3.5 |
| May | 5.7 | 10.0 | 13.0 |

6. Flash Flood Guidance (FFG)

6.1 Example #1 - Zone Name

FOUS62 KALR 011938
 FFGSJU
 ZONE FLASH FLOOD GUIDANCE...PUERTO RICO
 NATIONAL WEATHER SERVICE
 SOUTHEAST RIVER FORECAST CENTER...ATLANTA GA
 337 PM EDT MON NOV 1 2021

INCHES OF RAINFALL FOR SPECIFIED DURATIONS REQUIRED TO PRODUCE FLASH FLOODING IN FORECAST ZONES. LOWER AMOUNTS MAY CAUSE FLASH FLOODING IN URBAN OR MOUNTAINOUS AREAS.

.B ALR 20211101 Z DH18/DC202111011937 /DUE/PPHCF/PPTCF/PPQCF
 :IDENTIFIERS ARE 2-LETTER STATE, Z FOR ZONE, 3-DIGIT ZONE NUMBER

```

:
:IDENT      1HR      3HR      6HR      ZONE NAME
:=====  =====  =====  =====  =====
PRZ001     0.9/     1.5/     2.1
PRZ002     0.9/     1.5/     2.1
PRZ003     0.9/     1.5/     2.1
PRZ004     0.9/     1.5/     2.1
PRZ005     1.7/     2.2/     2.7
PRZ006     1.6/     2.2/     2.6
PRZ007     1.5/     2.2/     2.6
PRZ008     1.7/     2.2/     2.7
PRZ009     1.6/     2.2/     2.6
PRZ010     1.7/     2.2/     2.7
PRZ011     1.7/     2.2/     2.7
PRZ012     1.6/     2.5/     3.5
PRZ013     1.6/     2.5/     3.5
VIZ001     1.6/     2.6/     3.6
VIZ002     1.7/     2.6/     3.7
  
```

.END
 \$\$
 S.E.R.F.C. 770-486-0028 or 770-282-2112
 Regular Hours 6am-10pm Eastern Time
 After Hours Please Follow Callback Instructions

7. Headwater Flash Flood Guidance (FFH)

7.1 Example #1 - With 1, 3, and 6 Hourly Values

FOUS73 KKRF 090146
 FFHMO

M I S S O U R I H Y D R O L O G I C S E R V I C E A R E A S

HEADWATER FLASH FLOOD GUIDANCE
 NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO

745 PM CST MON NOV 8 2021

.B KRF 211109 Z DH00/DC2111090145 /DUE/PPHCF/PPTCF/PPQCF

```

:IDENT      1HR      3HR      6HR  HEADWATER NAME          STREAM
:=====  =====  =====  =====  =====
:
: ***** PLEASANT HILL HSA
:
AGYM7       2.1/    2.4/    2.8 :AGENCY MO 4NE          PLATTE R
BLRM7       1.0/    1.2/    1.4 :BLAIRSTOWN MO         BIG CR
BLVM7       1.6/    1.9/    2.2 :BLUE LICK MO          BLACKWATER R
BONM7       1.3/    1.5/    1.8 :BOONVILLE MO         PETITE SALINE CR
BRLM7       2.4/    2.8/    3.2 :BURLINGTON JCT MO     NODAWAY R
CAXM7       1.3/    1.5/    1.8 :CARROLLTON MO         WAKENDA CR
CHZM7       2.8/    3.2/    3.7 :CHILLICTHE MO 2S      GRAND R
FFXM7       1.5/    1.7/    2.1 :FAIRFAX MO            TARKIO R
FYTM7       1.4/    1.6/    1.9 :FAYETTE MO            MONITEAU CR
KBNM7       2.2/    2.8/    3.5 :KNOBTOWN MO           LITTLE BLUE R
KBRM7       2.2/    2.5/    2.9 :KC MO - BLUERIDGE     BLUE R
KCCM7       3.2/    3.6/    4.2 :KC MO BANNISTER RD    BLUE R
KWPM7       4.2/    4.7/    5.3 :WARD PARKWAY          BRUSH CREEK
LKCM7       1.7/    2.0/    2.3 :LAKE CITY MO          LITTLE BLUE R
LRLM7       1.6/    1.9/    2.2 :LEES SUMMIT RD        LITTLE BLUE R
MBYM7       1.3/    1.5/    1.8 :MOSBY MO              FISHING R
MYVM7       1.9/    2.2/    2.6 :MARYVILLE MO         102 R
NVZM7       2.0/    2.3/    2.7 :NOVINGER MO           CHARITON R
OTTM7       1.3/    1.5/    1.8 :OTTERVILLE MO        LAMINE R
RICM7       1.4/    1.6/    1.9 :RICHMOND MO           CROOKED R
SMHM7       2.1/    2.4/    2.8 :SMITHVILLE MO       LITTLE PLATTE R
TTZM7       2.1/    2.4/    2.8 :TRENTON MO            THOMPSON R
URHM7       1.5/    1.7/    2.1 :URICH MO 3NW          SOUTH GRAND R
VLYM7       1.2/    1.4/    1.7 :VALLEY CITY MO        BLACKWATER R
:
: ***** ST LOUIS HSA *****
:
JCMM7       1.4/    1.6/    1.9 :JEFFERSON CITY MO     MOREAU R
TGRM7       1.7/    2.0/    2.3 :COLUMBIA MO           HINKSON CR
WPHM7       1.7/    2.0/    2.3 :WESTPHALIA MO         MARIES R
:
: ***** SPRINGFIELD HSA *****
:
CMZM7       1.6/    1.9/    2.2 :CAPLINGER MILLS MO    SAC R
BIGM7       1.5/    1.7/    2.1 :BELOW FT WOOD MO      BIG PINEY R
.END

```

\$\$

7.2 Example #2 - With 1, 3, 6, 12, and 24 Hourly Values

```

FOUS72 KALR 090106
FFHAKQ
HEADWATER FLASH FLOOD GUIDANCE...WAKEFIELD CWA
NATIONAL WEATHER SERVICE
SOUTHEAST RIVER FORECAST CENTER...ATLANTA GA
804 PM EST MON NOV 8 2021

```

INCHES OF RAINFALL FOR SPECIFIED DURATIONS REQUIRED TO PRODUCE FLASH FLOODING IN

HEADWATERS. LOWER AMOUNTS MAY CAUSE FLASH FLOODING IN URBAN OR MOUNTAINOUS AREAS.

```
.B ALR 20211109 Z DH00/DC202111090104 /DUE/PPHCF/PPTCF/PPQCF/PPKCF/PPDCF
:
:IDENT      1HR      3HR      6HR      12HR     24HR
:=====  =====  =====  =====  =====  =====
LAWV2      2.9/    3.5/    4.0/    4.6/    5.8
:
: TO USE HEADWATER ADVISORY TABLES TAKE THE THREE HOUR VALUE ABOVE FOR
: THAT LOCATION AND USE THE FOLLOWING RELATIONS...
:      TABLE 1 /    0 TO 2.4 IN          TABLE 4 / 4.1 TO 4.5 IN
:              2 / 2.5 TO 3.3 IN          5 / 4.6 TO 4.9 IN
:              3 / 3.4 TO 4.0 IN          6 / 5.0 IN
:
.END
$$
S.E.R.F.C. 770-486-0028 or 770-282-2112
Regular Hours 6am-10pm Eastern Time
After Hours Please Follow Callback Instructions
```

8. Hydrometeorological Discussion (HMD)

8.1 Example #1 - North Central RFC

AGUS73 KMSR 091655
HMDMSR

Hydrometeorological Forecast Discussion
NWS North Central River Forecast Center Twin Cities/Chanhassen MN
1055 AM CST Tue Nov 9 2021

Rivers around the region are in recession with only the slow-responding Illinois and Elkhart rivers remaining above flood stage after recent rises.

The next weather system will arrive tomorrow afternoon into Thursday with a focus for the rain band from Iowa to Minnesota and Wisconsin, particularly in the border region of those two states. Models have backed off on the wintry mix, and also backed off on the expected moisture with this system, so at this time flooding is not likely.

River forecasts routinely incorporate 24 hours of QPF from April 1 to September 30 and 48 hours from October 1 to March 31. See http://www.weather.gov/ncrfc/LMI_QPF_NcrfcCurrentQpf

...Forecast Activity...
RVF forecasts issued today. Issue times are in UTC.
Subtract 6 hrs for CST, 5 hrs for CDT/EST, 4 hrs for EDT.

| RVF Forecast Group description | Issue Time |
|--------------------------------------|----------------------|
| GND Grand, Muskegon/White Basins, MI | 2021-11-09 14:20 UTC |
| ILO Mainstem Illinois R | 2021-11-09 14:37 UTC |
| KSJ Kalamazoo/St Joseph Bsns-MI & IN | 2021-11-09 14:25 UTC |
| M10 Miss. R - Lake City, MN-L&D 10 | 2021-11-09 16:09 UTC |
| M19 Miss. R - L&D 11-Gregory Landing | 2021-11-09 16:27 UTC |
| NLM Northern Lower Michigan rivers | 2021-11-09 14:54 UTC |

RDW Mississippi R abv Red Wing, MN 2021-11-09 15:10 UTC

=====
 Sites with forecasts above flood stage (FS):

| RVF NWSLI | Station name/river | FS | MAX FCST |
|-----------|------------------------------|------|-------------|
| ILO HAVI2 | Havana - Illinois R | 14.0 | 16.3 |
| ILO BEAI2 | Beardstown - Illinois R | 14.0 | 17.0 |
| KSJ CPEI3 | Cosperville - N Br Elkhart R | 6.0 | 6.1 |

Sites with forecasts below flood stage but above a user-defined threshold
 (FS=Flood Stage):

| RVF NWSLI | Station name/river | FS | MAX FCST |
|-----------|------------------------------------|------|-------------|
| ILO NLGI2 | La Grange - L&D 8 - Illinois R | 23.0 | 21.3 |
| ILO MROI2 | Meredosia - Pwr Plant - Illinois R | 17.0 | 15.4 |
| ILO VALI2 | Valley City - Illinois R | 14.0 | 13.5 |
| KSJ NILM4 | Niles - WWTP - St Joseph R | 11.0 | 7.8 |

=====
 ...Past Precipitation...

Observation times are in UTC.

Subtract 6 hrs for CST, 5 hrs for CDT/EST, 4 hrs for EDT.

=====
 No measurable precipitation reported within the NCRFC area of Iowa during the
 last 24 hours.

Top daily precipitation reports greater than zero from Illinois:

| LID | OBTIME/SHEF | VALUE | NAME / DETAIL | STATE |
|---------|--------------|-------|----------------------------------|-------|
| EMQI2 | DH1200/PPDRG | 0.02 | : Elmhurst 1W - Quarry Diversion | IL |
| ILKN104 | DH1200/PPDRZ | 0.01 | : Geneva 4WSW | IL |

No measurable precipitation reported within the NCRFC area of Indiana during the
 last 24 hours.

Top daily precipitation reports greater than zero from Michigan:

| LID | OBTIME/SHEF | VALUE | NAME / DETAIL | STATE |
|-------|--------------|-------|---------------|-------|
| VSSM4 | DH1200/PPDRZ | 0.03 | : Vassar WWTP | MI |

Top daily precipitation reports greater than zero from Minnesota:

| LID | OBTIME/SHEF | VALUE | NAME / DETAIL | STATE |
|---------|--------------|-------|---------------------------------------|-------|
| WLKM5 | DH1300/PPDRZ | 0.01 | : Walker | MN |
| POPM5 | DH1200/PPDRG | 0.01 | : Lutsen 2WSW | MN |
| WHRM5 | DH1400/PPDRZ | 0.01 | : White Rock Dam (Wheaton 5NW)/Mud Lk | MN |
| MNHN148 | DH1140/PPDRZ | 0.001 | : Maple Grove 4SW | MN |
| RST | DH1154/PPDRZ | 0.001 | : Rochester International Airport | MN |

No measurable precipitation reported within the NCRFC area of Missouri during
 the last 24 hours.

No measurable precipitation reported within the NCRFC area of North Dakota
 during the last 24 hours.

No measurable precipitation reported within the NCRFC area of South Dakota
 during the last 24 hours.

Top daily precipitation reports greater than zero from Wisconsin:

| LID | OBTIME/SHEF | VALUE | NAME / DETAIL | STATE |
|-----|--------------|-------|-----------------|-------|
| OVS | DH1153/PPDRZ | 0.001 | : Boscobel Arpt | WI |

=====


See http://www.weather.gov/ncrfc/LMI_QCPCPN for all reports.

For additional and more in-depth information concerning river forecasts, precipitation and all hydrometeorological information in the NCRFC area of responsibility, please refer to the NCRFC web page at:
<http://www.weather.gov/ncrfc>


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8.2 Example #2 – Northeast RFC

NERFC Graphical Hydrometeorological Discussion



NERFC Daily Discussion




Nov 19, 2021 - 11:06 am

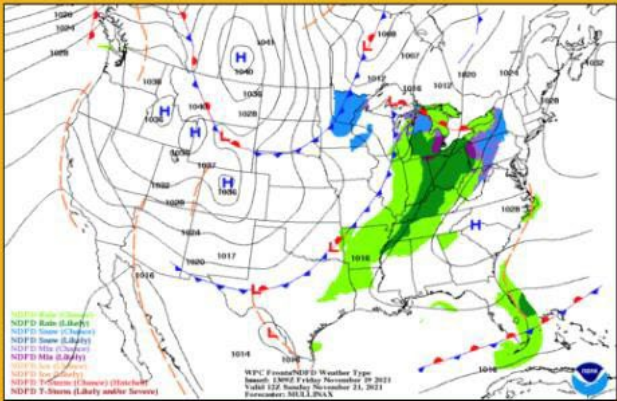
Right --> Lake effect snow showers in progress at Central Square NY state mesonet site with a coating on the ground.

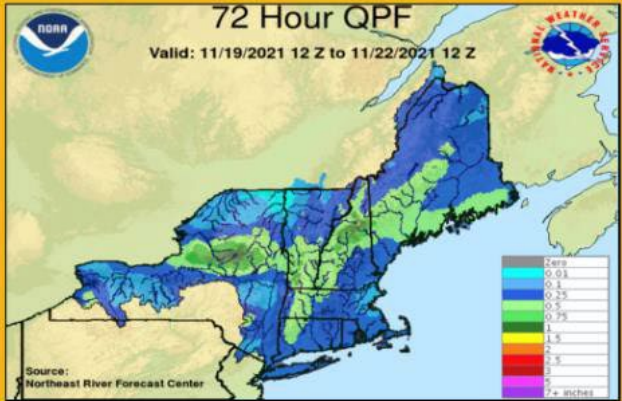
Below --> A short-wave trough and surface low is forecast to produce rain with a chance of snow early, beginning for western NY state on Sunday morning.

Lower right--> Forecast precipitation through Monday morning provides mountainous areas with amounts near or less than 1.25 inches and remaining areas with less than 0.75 inch.

Boehmler







**NOAA/National Weather Service
Northeast River Forecast Center**

<http://weather.gov/ncrfc> Twitter @NWSNERFC
 Facebook: <http://www.facebook.com/NWSNERFC>

9. Hydrometeorological Coordination Message (HCM)

9.1 Example #1 - Coordinating Extension in Hours of Operations

NGUS84 KORN 181653
HCMORN

HYDROMETEOROLOGICAL COORDINATION MESSAGE
NATIONAL WEATHER SERVICE LMRFC...SLIDELL LA
1200 PM CDT FRI JUN 18 2021

...LMRFC STARTING 24HR OPERATIONS...

To all WFOs in the LMRFC area:

LMRFC will begin 24-hour operations tonight due to heavy rainfall
occurring across portions of our forecast area.

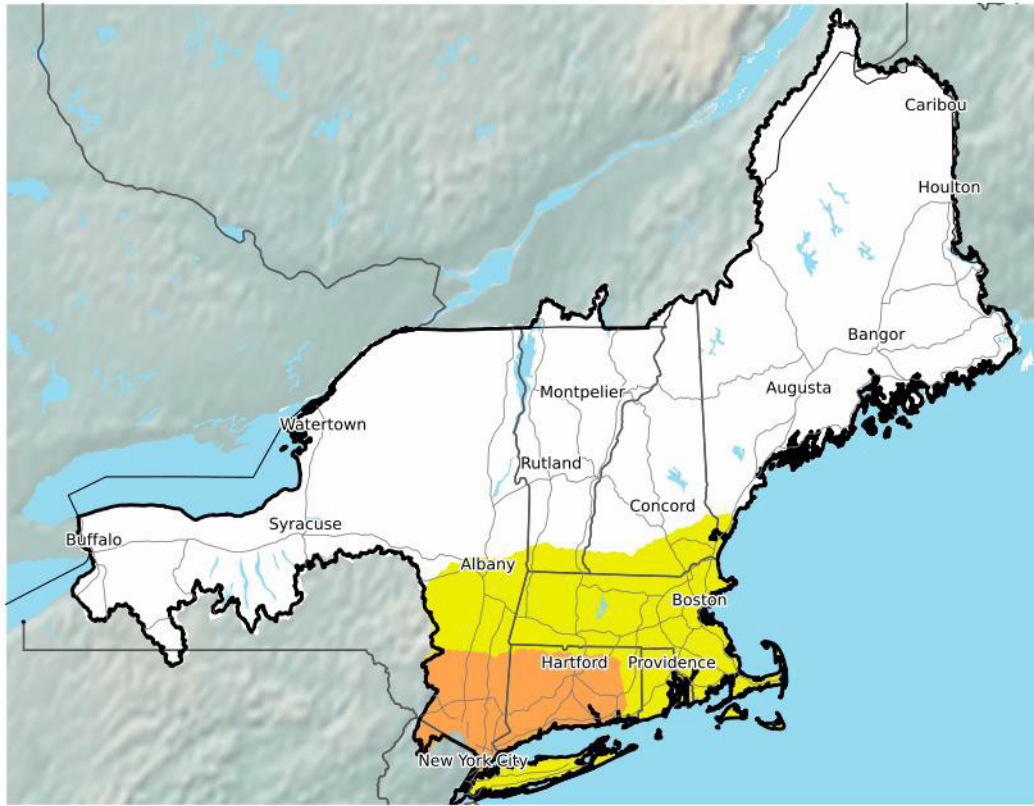
For hydrometeorological assistance and support during the overnight hours, call
the LMRFC operations line at 985-641-4343.

\$\$

10. Significant River Flood Outlook Product

10.1 Example #1 - Northeast RFC

5-Day Significant River Flood Outlook
 Valid: 09/01/2021 08:00 AM - 09/06/2021 08:00 AM EDT







National Weather Service
Northeast RFC
 09/01/2021 11:55 AM EDT

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

Significant River Flooding impacts include road hazards and damage to residential, commercial, and/or agricultural areas. Evacuation may be required. Flash flooding or Minor river flooding are NOT included in this outlook. Check your local weather forecast frequently for the most up-to-date information for your area.

Shaded areas are the forecast region of the Northeast River Forecast Center

- | | |
|---|--|
|  Significant River Flooding Not Expected |  Significant River Flooding Possible Weather conditions indicate, without certainty that significant river flooding could occur |
|  Significant River Flooding Likely Weather conditions indicate that significant river flood conditions can be expected |  Significant River Flooding Occurring Significant river flooding is occurring at this time |

11. Hydrometeorological Data Summary Products (HYx)

11.1 Daily Data Summary Example (HYD)

SXUS52 KALR 101749
 HYDALR
 24 HOUR RAINFALL COLLECTIVE ENDING AT 12Z
 SOUTHEAST RIVER FORECAST CENTER - ATLANTA, GA
 1249 PM EST WED NOV 10 2021

.BR SJU 20211110 DH12/PPDRW
 :

NWSM 10-913 MAY 24, 2022

| :ID | OBTIME | VALUE | LOCATION | LAT | LON |
|-------|---------|-------|-----------------|----------|-------|
| FAEP4 | DH1200/ | 0.34 | : FAJARDO | PR 18.28 | 65.7 |
| REGP4 | DH1200/ | 0.31 | : MORA | PR 18.46 | 67.03 |
| NGIP4 | DH1200/ | 0.23 | : NAGUABO | PR 18.28 | 65.79 |
| SEBP4 | DH1200/ | 0.20 | : SAN SEBASTIAN | PR 18.28 | 67.05 |
| MOCP4 | DH1200/ | 0.16 | : MOCA | PR 18.36 | 67.09 |
| GUPV4 | DH1200/ | 0.15 | : JUNCOS | PR 18.2 | 65.84 |
| ADAP4 | DH1200/ | 0.12 | : AGUADA | PR 18.38 | 67.16 |
| PCXP4 | DH1200/ | 0.11 | : PONCE | PR 18.08 | 66.58 |
| CAIP4 | DH1200/ | 0.10 | : CAGUAS | PR 18.14 | 66.05 |
| VAMP4 | DH1200/ | 0.04 | : JUNCOS | PR 18.16 | 65.91 |
| IANP4 | DH1200/ | 0.04 | : PONCE | PR 18.09 | 66.56 |
| GUSP4 | DH1200/ | 0.04 | : JUNCOS | PR 18.25 | 65.83 |
| UTHP4 | DH1200/ | 0.03 | : UTUADO | PR 18.3 | 66.78 |
| TOAP4 | DH1200/ | 0.03 | : TOA ALTA | PR 18.41 | 66.26 |
| JSJ | DH1200/ | 0.03 | : SAN JUAN | PR 18.44 | 66.0 |
| BAYP4 | DH1200/ | 0.03 | : BAYAMON | PR 18.33 | 66.14 |
| VALP4 | DH1200/ | 0.01 | : JUNCOS | PR 18.22 | 65.93 |
| SLMP4 | DH1200/ | 0.01 | : SAN LORENZO | PR 18.11 | 65.95 |
| SLKP4 | DH1200/ | 0.01 | : SAN LORENZO | PR 18.15 | 65.96 |
| PAXP4 | DH1200/ | 0.01 | : GUAYAMA | PR 17.98 | 66.1 |
| YBUP4 | DH1200/ | 0.00 | : YABUCOA | PR 18.06 | 65.9 |
| VIVP4 | DH1200/ | 0.00 | : UTUADO | PR 18.23 | 66.68 |
| VINP4 | DH1200/ | 0.00 | : VILLALBA | PR 18.16 | 66.46 |
| VILP4 | DH1200/ | 0.00 | : VILLALBA | PR 18.16 | 66.53 |
| VERP4 | DH1200/ | 0.00 | : RIO GRANDE | PR 18.35 | 65.84 |
| VEDP4 | DH1200/ | 0.00 | : RIO GRANDE | PR 18.36 | 65.81 |
| USAP4 | DH1200/ | 0.00 | : BARRAN | PR 18.16 | 66.31 |
| TRUP4 | DH1200/ | 0.00 | : TRUJILLO ALTO | PR 18.34 | 66.01 |
| TOXP4 | DH1200/ | 0.00 | : VILLALBA | PR 18.1 | 66.49 |
| PRTP4 | DH1200/ | 0.00 | : PONCE | PR 18.1 | 66.64 |
| PATP4 | DH1200/ | 0.00 | : PATILLAS | PR 18.03 | 66.03 |
| PASP4 | DH1200/ | 0.00 | : PATILLAS | PR 18.02 | 66.02 |
| OROP4 | DH1200/ | 0.00 | : OROCOVIS | PR 18.21 | 66.48 |
| MELP4 | DH1200/ | 0.00 | : GUAYAMA | PR 17.98 | 66.15 |
| MAYP4 | DH1200/ | 0.00 | : MAYAGUEZ | PR 18.16 | 67.09 |
| LLYP4 | DH1200/ | 0.00 | : YAUCO | PR 18.05 | 66.84 |
| LLUP4 | DH1200/ | 0.00 | : YAUCO | PR 18.09 | 66.86 |
| LARP4 | DH1200/ | 0.00 | : LARES | PR 18.3 | 66.87 |
| JUBP4 | DH1200/ | 0.00 | : JUANA DIAZ | PR 18.09 | 66.5 |
| JUAP4 | DH1200/ | 0.00 | : JUANA DIAZ | PR 18.05 | 66.51 |
| JOXP4 | DH1200/ | 0.00 | : AGUIRRE | PR 17.96 | 66.22 |
| HORP4 | DH1200/ | 0.00 | : HORMIGUEROS | PR 18.14 | 67.15 |
| GYAP4 | DH1200/ | 0.00 | : GUAYANILLA | PR 18.04 | 66.8 |
| GMNP4 | DH1200/ | 0.00 | : GUAYAMA | PR 18.0 | 66.12 |
| GCAP4 | DH1200/ | 0.00 | : GUANICA | PR 17.95 | 66.88 |
| GARP4 | DH1200/ | 0.00 | : GURABO | PR 18.27 | 65.91 |
| CSAP4 | DH1200/ | 0.00 | : SALINAS | PR 18.0 | 66.29 |
| CRRP4 | DH1200/ | 0.00 | : LAS ARENAS | PR 17.97 | 67.16 |
| CORP4 | DH1200/ | 0.00 | : COROZAL | PR 18.35 | 66.34 |
| COMP4 | DH1200/ | 0.00 | : COMERIO | PR 18.22 | 66.22 |
| COAP4 | DH1200/ | 0.00 | : COAMO | PR 18.08 | 66.35 |
| CNAP4 | DH1200/ | 0.00 | : CAMPO RICO | PR 18.32 | 65.89 |
| CMAP4 | DH1200/ | 0.00 | : CAMUY | PR 18.4 | 66.82 |
| CIFP4 | DH1200/ | 0.00 | : CIDRA | PR 18.17 | 66.12 |
| CIAP4 | DH1200/ | 0.00 | : CIALES | PR 18.32 | 66.46 |
| CAMP4 | DH1200/ | 0.00 | : CAGUAS | PR 18.25 | 66.03 |
| CAHP4 | DH1200/ | 0.00 | : CAGUAS | PR 18.21 | 66.11 |

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BZBP4 DH1200/ 0.00 : CAGUAS PR 18.27 66.1
ARHP4 DH1200/ 0.00 : DOS BOCAS PR 18.33 66.62
.END
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12. Hydrometeorological Data Products (RRx)

12.1 RFC Data QC Changes (RR9)

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SRUS84 KTUA 081845
RR9TUA
:
: Values that RFC has changed for QC reasons
:OUN HSA AREA
:AR OKMJ05 20211104 DH130000/PPDRAZ M : Orig 0.62
:PUB HSA AREA
:..AR PTAC2 20211104 DH120000/PPDRGZ 0.00 Orig 0.04
:..AR UQCC2 20211104 DH120000/PPDRGZ 0.00 Orig 0.04
:..AR UWAC2 20211104 DH120000/PPDRGZ 0.00 Orig 0.12
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