Maximum Rainfall and Timing Product

HMT staff

How to draw
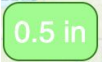
1: Draw all areas counter clockwise.

2. Click model/ensemble button, enter cycle. (this is a forecast we ask you to at least look at. It doesnt need to be your first guess)

3. Choose day to reveal the domain we have selected.

4: Draw smallest qpf first.

Example: click 0.5 in to activate drawing for the 0.5" polygon. Then click on the map where you want the forecast area to start at (a crosshair shows on the map). Click to add more points, **counter clockwise**, then click very first point (crosshair will become a hand prior to click) to close the polygon.

This polygon can be edited with the edit layer. It can be deleted with the trashcan. After edit/delete click save to stop the action.

5. Once you have finished drawing, answer the remaining questions.

How to draw

6: Username: use the same username everyday.

7. 6hr precip: your max value that will be associated with your point.

8. 6hr ARI in years: consult ARI images on hmt_website

9. 1hr precip - max hourly accum

10. Flood prob - how likely it is to flood, and as denoted by your flood area

11. Damage prob - how likely for damage to be caused by flooding

12. Rain prob - how likely to exceed our chosen rain threshold, listed on the domain area

13. Time confidence: 10 bins from 03 - 12z, using 100 points. Entry will look like this: 0,0,0,0,10,80,10,0,0,0 with more confidence for 8z time period

*** MUST CLICK THE BUTTON AFTER EACH INPUT TO SAVE TEXT ENTERED INTO THE INPUT BOX.

How to Submit

If you have answered all the questions the last 2 steps are the most critical.

1. <mark>Drop your point on the map</mark> 📍 The answers to your questions will attach to the point and allow us to capture your data.
2. Click Export Features.
    a. File downloads: Success!
    b. An alert pops up. Oh No! The information on that alert will tell you what's missing. There are ten questions. A 1 means its been answered. A zero should indicate you need to click the corresponding button.
        i.   <mark>Delete your point once the questions have answered, and add your point again to the map.</mark>
        ii. Try export features again.
        iii. Repeat.

How to Submit

Once you have successfully downloaded your forecast:

3. Check to make sure the file name is correct:

    a.   MRTP_username_model_today'sDate_day#.geojson

        i.   ex: MRTP_MIrocks_CAPSRRFSe_20230526_day1.geojson

4. If the name looks correct then send an email to Jimmy and Sarah with your MRTP attached.

    a.   Email title - MRTP Day #

    b.   Emails - james.correia@noaa.gov and sarah.trojniak@noaa.gov

Goals

Group:

- Select a 6 hour window where the maximum 6 hour rainfall and/or the maximum risk of flooding (i.e. areal coverage of > 1") will occur.

- Select a regional domain to capture the primary/secondary hazard area

Forecast Questions:

Enter Max Rainfall	Enter Max ARI	Enter Flood Prob	Enter Damage Prob	Enter Hourly Max Rain	RainMax Prob	Time Confidence

Max 6hr and hourly Max rainfall
Max 6hr ARI
Probabilities of Flooding, Damage
Probability a threshold will be exceeded[1]
Time Confidence[1]

Maximum Threats

Chance of Impacts
Confidence in your high end Rainfall
The confidence in the 6hr time window selected as well as the other possible windows

1: Lawson,J et al , 2023: A probabilistic Wx Challenge Proposal. AMS Annual Meeting

Drawing Elements

- QPF areas (0.5", 1,2,3,4,5")
    - You do not have to draw for every threshold but you must draw for every threshold lower than the maximum threshold you draw for.
- Flooding area (flooding could occur in a variety of ways)
- Your Point Maximum location - all question data will get attached via this Point on the map
    - This point corresponds to the maximum 6hr rainfall you input in your forecast.

Time controls

When the page loads - it loads the current time. To activate archive data for verification, enter date-hour and lookback time by clicking respective buttons.

The model date-cycle is controlled similar but also requires forecast hour. Click click.

CHANGES TO TIME/FHR FOR OBSERVATIONS AND MODEL DATA ONLY ACTIVATE WHEN THEIR RESPEICTIVE BUTTONS ARE CLICKED

Start Date for Models (YYYY-MM-dd-HH)   Model FHR

| 2023-05-30-00 | Set Date | | 19 | Set fhr |

Visualization Elements

Model 6 hour precip contours and object Maxima (hourly)

MRMS 6 hour precip contours and Object Maxima (hourly)

Mesoscale Precip Discussions (current time or obs time sync)

Situational Awareness:

- Prob severe (latest updates every 15 minutes),
- Warnings (user selected),
- LSRs (user selected),
- ASOS prates last 6hrs
- Social Vulnerability Index (SVI; static)
- Burn scars/Urban Areas

Verification Elements

- We will verify as a group for the time confidence
- Objective scores provided for each QPF threshold
- Each model/ens will be verified for each threshold
- LSRs will be used to assess flash flooding areas

Each participant can load their own MRTP forecast back into the browser for assessment as well as the HMT imagery

only works for counterclockwise drawn polygons

Other

- To find the valid date/time for the MRTP click on the grey border that outlines the MRTP domain

This is the Day1 MRTP domain for 20230530___
Valid day: 20230531 **Start Time:** 06 UTC
Valid day: 20230531 **End Time:** 12 UTC
Rain Prob Threshold:3.0 in