

Flood Inundation Mapping

Bob Hainly

Marie C. Pepler

USGS FIM Program

U.S. Department of the Interior
U.S. Geological Survey



USGS and NWS Data Networks

USGS
National Water Information System: Web Interface

USGS updated March, 2012
Mar 22, 2012 11:30 EDT: A satellite that relays current conditions information is presently unavailable. This mainly affects western states and there is no present time estimate on when the issue will be resolved. More information will be posted as it becomes available.

USGS Current Water Data for the Nation

Predefined displays: Group table by: Select sites by number or name:

Daily Streamflow Conditions

Thursday, March 22, 2012 11:30 EDT

Select a state from the map to access real-time data

Current data typically are recorded at 15- to 60-minute intervals, stored onsite, and then transmitted to USGS offices every 1 to 4 hours, depending on the data relay technique used. Recording and transmission times may be more frequent during critical events. Data from current sites are relayed to USGS offices via satellite, telephone, and/or radio telemetry and are available for viewing within minutes of arrival.

All real-time data are **provisional and subject to revision**.

Build Current Conditions Table
Show a custom current conditions summary table for one or more stations.

Build Time Series
Show custom graphs or tables for a series of recent data for one or more stations.

Explanation

- High
- > 90th percentile
- 75th - 90th percentile
- 25th - 75th percentile
- 10th - 24th percentile
- < 10th percentile
- Low
- Not ranked

The colored dots on this map depict streamflow conditions as a percentile, which is computed from the period of record for the current day of the year. Only stations with at least 30 years of record are used. The gray circles indicate other stations that were not ranked in percentiles either because they have fewer than 30 years of record or because they report parameters other than streamflow. Some stations, for example, measure stage only.

National Oceanic and Atmospheric Administration's
National Weather Service

Home > River Observations

NOAA has issued its annual Spring Flood Outlook. Details...

Warnings & Forecasts | Graphical Forecasts | National Maps | Radar | Water | Air Quality | Satellite | Climate

River Observations | River Forecasts | Precipitation | River Downloads | Other Information

4000 Initial gauges

- 4 Gauges: Major Flooding
- 17 Gauges: Moderate Flooding
- 35 Gauges: Minor Flooding
- 41 Gauges: Near Flood Stage
- 4516 Gauges: No Flooding
- 233 Gauges: Observations older than 24 hours
- 23 Gauges: Out of Service

Hydrologic Resources

- ▶ River Forecast Centers
- ▶ About A-IPS
- ▶ Pathways
- ▶ A-IPS Feedback
- ▶ A-IPS RSG
- ▶ Automated Flood Warning Systems
- ▶ Hydro-meteorological Automated Data System
- ▶ Instream Mapping Locations

Additional Resources

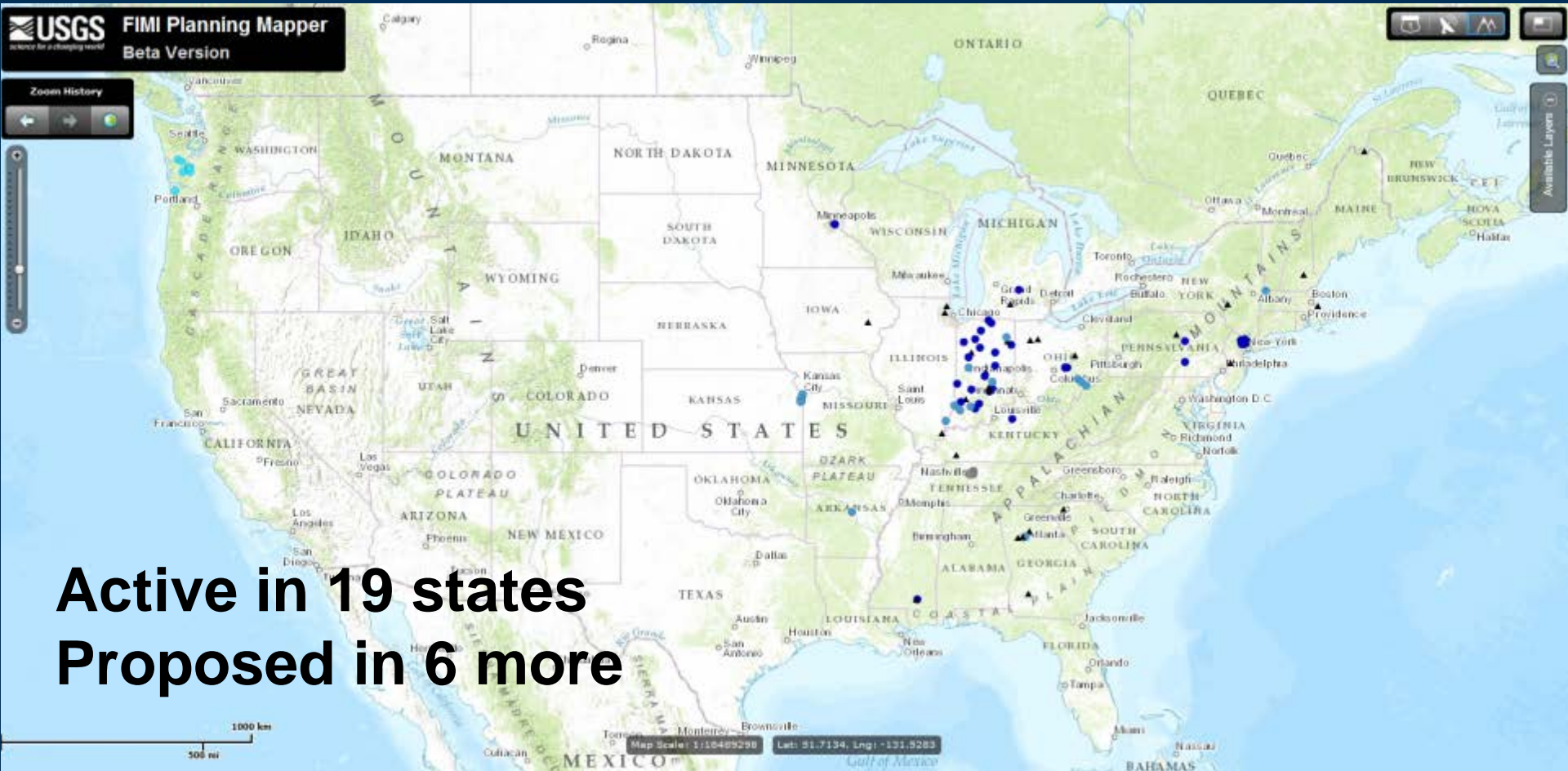
- ▶ National Significant River Flood Outlook
- ▶ U.S. Geological Survey Streamflow Information
- ▶ Snow Information
- ▶ NWS Precipitation and River Forecasting
- ▶ Water Resources Outlook
- ▶ Experimental Floody Precipitation
- ▶ Guide to Hydrologic Information on the Web
- ▶ Precip Frequency/PMP

Over 8,000 USGS Gages reporting current stream conditions in NWIS

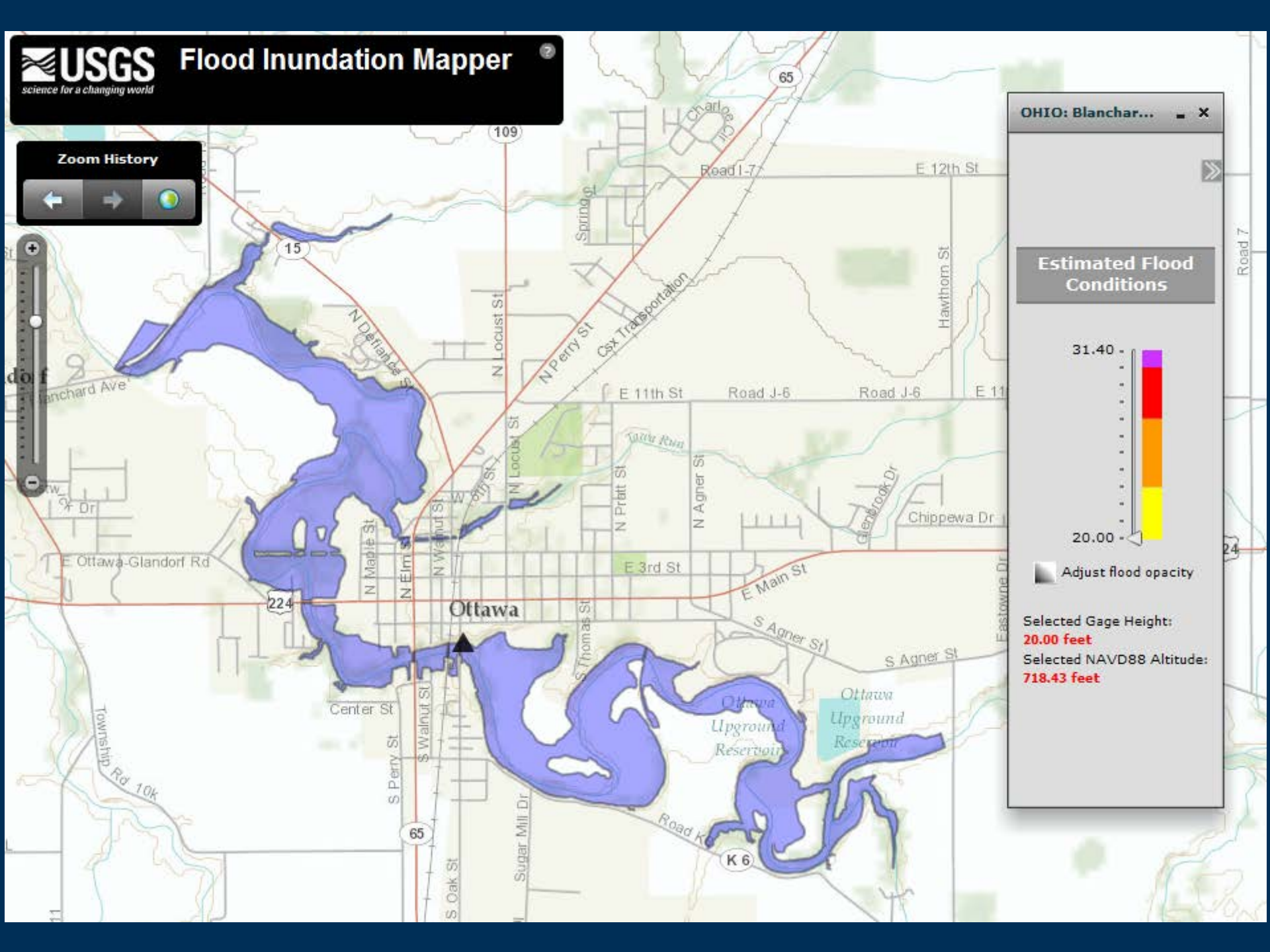
Over 4,000 NWS Flood Forecast/Warning locations in AHPS



Upcoming USGS studies



Zoom History



OHIO: Blanchar... [Close]

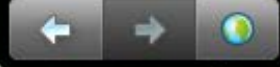
Estimated Flood Conditions



Adjust flood opacity

Selected Gage Height:
20.00 feet
Selected NAVD88 Altitude:
718.43 feet

Zoom History



Site Numbers: 01014000 & 01013500

Flood Tools USGS Hydro... NWS Predic... HAZUS Web Cam Web Cam 2

Opacity Control

Include Leveed Area

Zoom To Flood Study Area



Site No: 01014000

Selected Values

Gage Height: **25.60** feet
NAVD88 Altitude: **510.00** feet

Current Values

Gage Height: 4.93 feet
Discharge: 4530 cfs

[NWIS Site Page](#)

Forecast Values

NWS 24hr Gage Height:



Site No: 01013500

Selected Values

Gage Height: **10.30** feet
NAVD88 Altitude: **521.00** feet

Current Values

Gage Height: 4.04 feet
Discharge: 821 cfs

[NWIS Site Page](#)

Forecast Values

NWS 24hr Gage Height:



USGS Challenges

1. Cooperative Funding

2. Gage locations

3. Available data

4. Reporting and peer review requirements

1. Develop partnerships

2. Focus on existing gages or add new

3. Focus on existing locations of DEMs

4. Develop new report capabilities, including map- and report-on-demand options

USGS Future Directions

- **Develop new report capabilities, including map- and report-on-demand options**
- **Expand the spatial display of Loss Estimation model output (hazus/FIA)**
- **Extend the science of FIM to include new processes and modeling and ensure that the new methods meet the high standards**

Questions



Bob Hainly

USGS Office of Surface Water

rahainly@usgs.gov

Marie C. Peppler

USGS Wisconsin Water Science Center

mpeppler@usgs.gov

http://water.usgs.gov/osw/flood_inundation/



Wisconsin internet Mapping