

NOAA's National Weather Service

Guide to Hydrologic Information on the Web



Your gateway to web resources provided through NOAA's
Advanced Hydrologic Prediction Service begins here:
water.weather.gov

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service
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National Map

This web page shows the flood status at all National Weather Service river forecast locations.

Clicking on this tab shows locations where observations are color-coded according to their current flood status.

Click this button to have the map automatically update every 5 minutes.

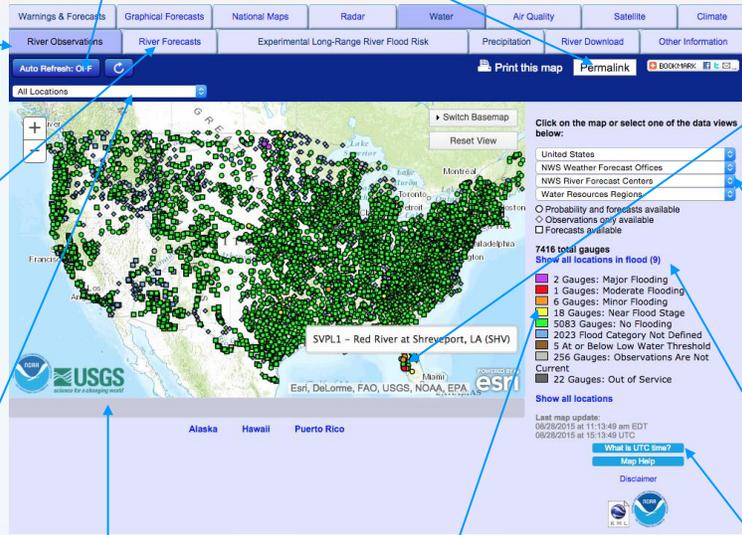
Click this button to bookmark or share your current view.

Top row shows options available on the NWS home page.

Bottom row shows options available under the "Water" category.

Clicking on this tab shows locations that are color-coded according to the maximum forecast flood category through the entire period. Because the period for which a forecast is prepared varies from RFC to RFC, the entire period generally varies from 2 to 10 days.

Drop-down menu allows users to display all locations, hydrograph only locations, hydrograph/probability forecast locations, inundation mapping locations, near or above flood stage locations, and at or below low water threshold locations.



Clicking on any location brings up a regional map showing a NWS Weather Forecast Office (WFO) Hydrologic Service Area (HSA) containing that location.

Use drop-down menus to show locations across different regions, including states, NWS WFO HSAs, NWS River Forecast Center (RFC) areas of responsibility, and USGS water resource regions.

Click here to only display locations currently in flood.

Hover over this box to learn more about UTC time.

NWS river forecasts and flood products are critically dependent on the USGS stream gaging network.

Color-coding is used on map locations to indicate flood status. Click on a colored box and only points in that flood category are displayed.

Regional Map

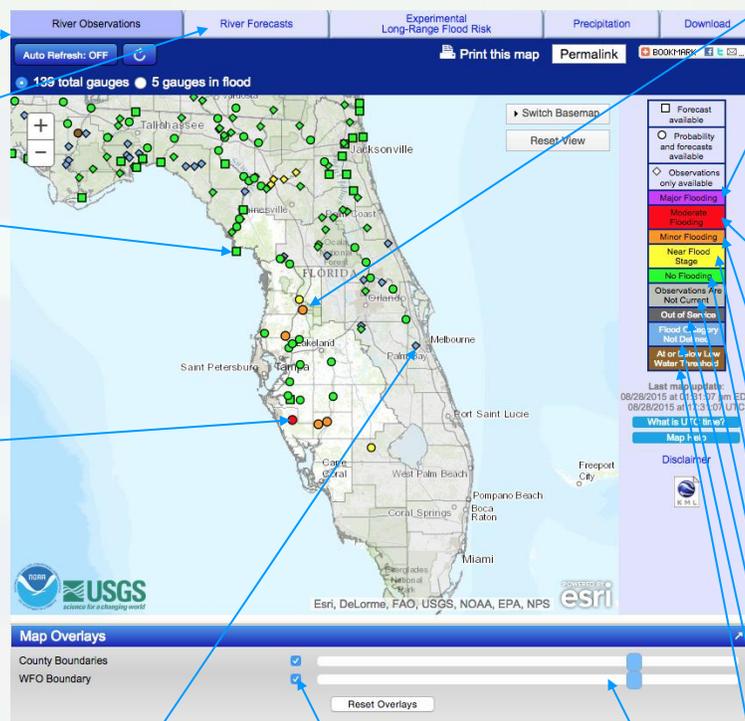
This web page shows the flood status of river forecast locations in the selected region. Selecting a specific river/stream location provides access to localized information.

Clicking on this tab shows locations where observations are color-coded according to their current flood status.

Clicking on this tab shows locations that are color-coded according to the highest forecast flood category through the entire period. Use the forecast timeline slider at the top of the map to adjust the forecast period. For example, clicking on the Day 1 tick mark shows locations that are color-coded according to the highest forecast flood category through Day 1.

Squares indicate locations where short-term forecasts are available.

Circles indicate locations where short-term and probabilistic forecasts are available.



Color of icon indicates category of flooding.

Extensive inundation of structures and roads. Significant evacuations of people and property.

Some inundation of structures and roads near stream – some evacuations of people and property.

Minimal or no property damage, but possibly some public threat.

River or stream level approaching flood stage.

River or stream level below flood stage.

Observations are not current.

River or stream gauge is not operating.

Flood category has not been defined.

River or stream level at or below low water threshold.

Navigation arrows allow users to move to neighboring WFO HSAs.

Diamonds indicate locations where only observations are available.

Use checkboxes to turn overlays off and on and slider bars to adjust the transparency of the overlays.



Hydrograph

Mouse over a specific river/stream location on a regional map to display the location's five-character identifier, name, and hydrograph. Click on the river/stream location to go to the main hydrograph page. The hydrograph provides recent observations and for many points a forecast for the next few days. Tabs at the top of the hydrograph allow a user to display other graphical information for the river/stream location.

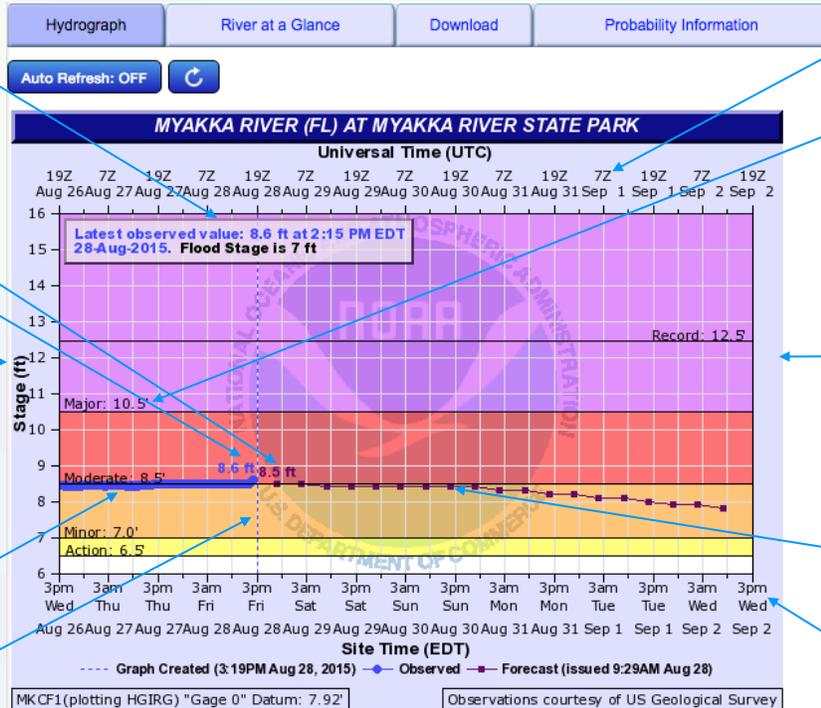
Latest observed stage with time and date. Flood stage is included if available.

Peak observed and forecast stages during time period covered by graph.

Scale for indicating water level in terms of stage in feet (ft).

Observed trace – indicates water level trends over past several days.

Vertical line marks the current viewing time.



Coordinated Universal Time (UTC) scale.

Color-coded flood categories for location being viewed, with stage where each category starts. Flood severity color scheme is consistent throughout these web pages.

Scale for indicating water level in terms of flow in thousands of cubic feet per second (kcfs) or cubic feet per second (cfs) if available.

Forecast trace – shows expected water level trend over next few days.

Local time scale.

Weekly Chance of Exceeding Levels

This graphic provides the probability of exceeding various river/stream levels during the next three months given the weather patterns in past years and the best available long-term forecasts.

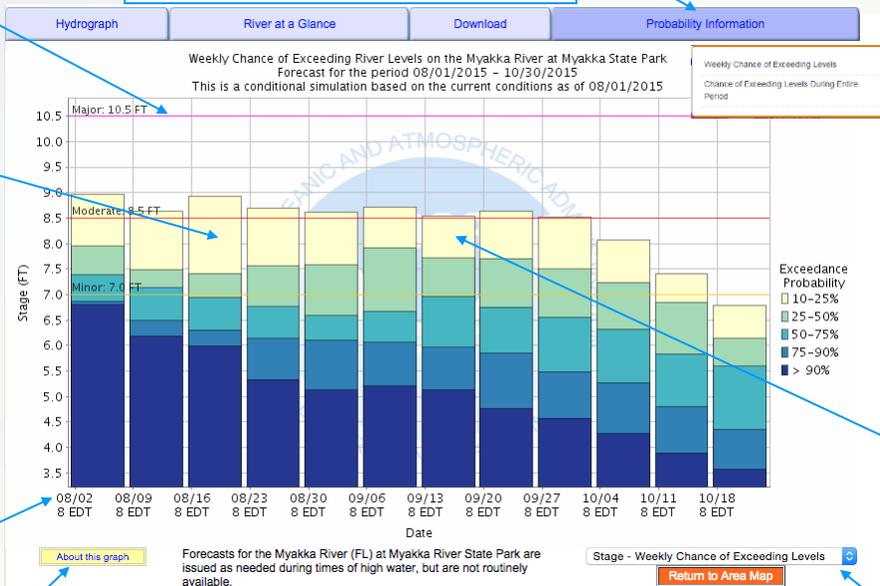
Lines for flood category levels use the same color scheme shown on the flood hydrograph and other web pages.

Each colored section of vertical bar represents a range of probabilities (e.g., 10% to 25% for the yellow bars). Range of stages corresponding to those probabilities can be found on the left scale of the graph (see example).

Bars are shown in weekly increments.

Provides explanation of the graph.

Hover over this tab to select the type of probability information you wish to view.



On the web, click on "About this graph" for description of this plot.

Example: For week of 9/13 to 9/20, the bottom of the yellow bar shows there is a 25% chance the stage will exceed about 7.7 feet and the top shows there is a 10% chance the stage will exceed about 8.5 feet.

Allows user to display probabilities in terms of stage, discharge, or weekly flow volume.

Precipitation

This web page shows the digital precipitation estimates used in National Weather Service river forecast models.

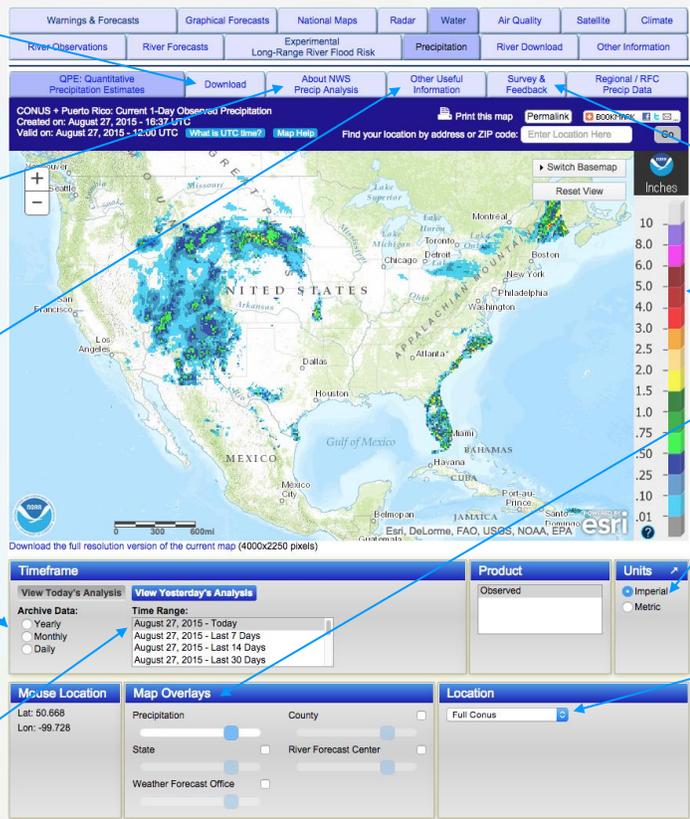
Allows download of digital data in shapefile or netCDF format.

Description of precipitation display and its features.

Provides list of links to other precipitation-related web pages.

Selectable timeframe: archived yearly, archived monthly, or archived daily data.

User can select year and month or year, month, and day depending on archive timeframe chosen.



Third row shows options available under "Precipitation" category.

Feedback from users is highly valued.

Precipitation depth in selected units.

User-selectable overlays.

Select units for display.

Area covered: River Forecast Center (RFC) area of responsibility, state, full CONUS + Puerto Rico, Weather Forecast Office (WFO), or USGS water resource region (defaults to full CONUS + Puerto Rico).

Interactive Snow Information

This web page (www.nohrsc.nws.gov/interactive/) provides an interface to remotely sensed snow information.

Control map by zooming in or out.

When box is red, clicking and dragging while holding down mouse button and then releasing zooms in on created rectangle area.

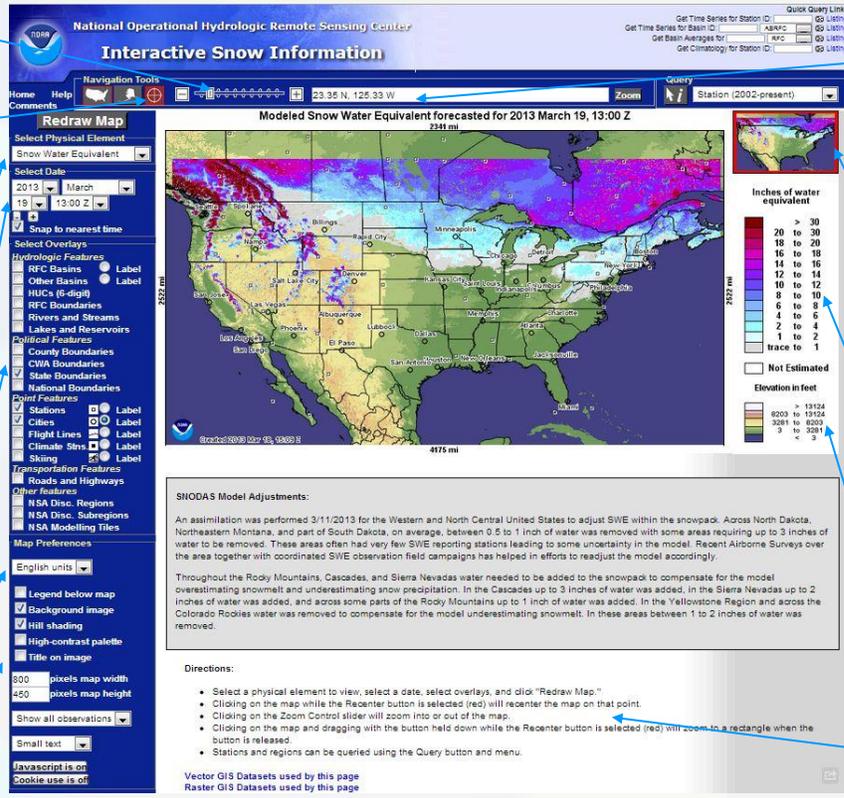
Select type of data to display – e.g., snow water equivalent, snow depth, or snow water equivalent change.

Select date and time to display.

Select geographic features to display.

Select display units (U.S., metric).

Miscellaneous display control features.



Latitude and longitude of cursor location. User can enter coordinates to recenter map.

Map shows portion of U.S. currently being displayed.

Key to information being displayed.

Elevation key for base map.

Directions for use of interactive features.

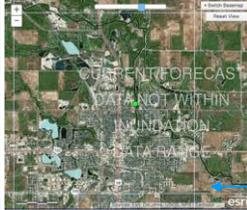
Flood Inundation Map

This interactive web page shows the spatial extent of possible or expected flooding in a given area. It can be used to show if roadways and structures will be impacted by floodwaters. At the limited number of forecast locations where inundation maps are currently available, this web page is accessed by clicking on the inundation mapping tab on the hydrograph web page. In collaboration with partners, this product will be expanded to new locations.

Set display: inundation levels, flood categories, or current forecast.



Flood category display



Current forecast display

Menu for inundation levels shown on map: stage = 18.5 feet is highlighted in yellow.

Clicking anywhere on map displays a red marker. Water depth, latitude, longitude, and nearest geo-located address is provided for that location.

Slider for adjusting transparency of overlay.

Latest stage observation.

Stage at inundation level currently shown on map.

Describes stage where each flood category begins.

List of historical flood crests.

Winnebago River (Northern IA) at Mason City, IA (MCRW)

Data Type

- Inundation Levels
- Flood Categories
- Current/Forecast

Flood Stage Categories

- Major Flood
- Moderate Flood
- Minor Flood
- Near Flood
- Below Flood

Data Type

- Inundation Levels
- Flood Categories
- Current/Forecast

Currently: 3.4 ft at 08/27/2015 18:30:00 UTC

Highest Forecast: Not Available

Inundation Levels NAVD88	Stage
1,091.5"	22.0"
1,091.0"	21.5"
1,090.5"	21.0"
1,090.0"	20.5"
1,089.5"	20.0"
1,089.0"	19.5"
1,088.5"	19.0"
Record Crest: 18.74	
1,088.0"	18.5"
1,087.5	18.0
1,087.0	17.5
1,086.5	17.0
1,086.0	16.5
1,085.5	16.0
1,085.0	15.5
Major Flooding Begins	
1,084.5	15.0
1,084.0	14.5
Moderate Flooding Begins	
1,083.5	14.0
1,083.0	13.5
1,082.5	13.0
1,081.5	12.0
1,081.0	11.5
1,080.5	11.0
1,080.0	10.5
1,079.5	10.0
Minor Flooding Begins	
1,079.0	9.5
1,078.5	9.0
1,078.0	8.5
1,077.5	8.0
1,077.0	7.5
1,076.5	7.0
1,076.0	6.5
= Extended rating	

Inundation Feedback

Provided in Partnership with

Iowa Flood Center

WHEN FLOODED TURN AROUND DON'T DROWN

FLOODSMART.GOV USA.gov

FEMA's National Flood Hazard Layers not showing?

Note: Your zoom level may have changed. ESRI's zoom levels must be between 14 and 16 to show National Flood Hazard layers.

Flood Categories (in feet)

- Major Flood Stage: 15.5
- Moderate Flood Stage: 14.5
- Flood Stage: 10
- Action Stage: 6

Historic Crests

- 18.74 ft on 08/05/2008
- 14.80 ft on 03/27/1981
- 14.67 ft on 05/22/2004
- 14.27 ft on 04/11/1965
- 13.70 ft on 04/06/1965
- 13.06 ft on 03/31/1962
- 12.59 ft on 04/01/1993
- 12.44 ft on 04/07/1951
- 12.30 ft on 05/23/2004
- 12.25 ft on 07/08/1969

Show More Historic Crests

Marker Info

Depth: 7 - 8 ft
 Lat: 43.16445267884096
 Lon: -93.1927006988813

Nearest geolocated address:
 1337 Elm Dr 50401
 Mason City
 Iowa
 Remove this marker.

Gauge Information

Map Overlays

- Inundation Extent Boundary
- Documented Flood Control Structures
- 1088.0 Water Level
- FEMA National Flood Hazard Layers
- Medium Willow Creek Flows (13.0 ft)
- Medium Willow Creek Flows (15.0 ft)
- Medium Willow Creek Flows (17.0 ft)
- High Willow Creek Flows (13.5 ft)
- High Willow Creek Flows (14.0 ft)
- High Willow Creek Flows (16.0 ft)
- High Willow Creek Flows (17.5 ft)
- High Willow Creek Flows (20.0 ft)
- Documented Levee Risk Area

Legend

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

Note: Your zoom level may have changed. ESRI's zoom levels must be between 14 and 16 to show National Flood Hazard layers.

Site-specific information:

Willow Creek flow contributions have a significant influence on the magnitude and location of flooding in Mason City. The Winnebago River flood depth maps at this location are representative of a typical flooding scenario, which incorporates the most likely flow contributions from Willow Creek. Additional medium and high Willow Creek flow contribution scenarios have been provided below the main map window to supplement the typical scenario maps.

The Water Treatment Plant on 13th Street NE is protected by a floodwall, which was constructed after the flood inundation map was completed. The protection provided by the floodwall is not depicted on the flood inundation map; however, the Water Treatment Plant will remain protected by the floodwall, until the floodwall is overtopped at a stage of 21.5 ft.

Select background: imagery, street, topographic, USGS topographic, and light grey canvas maps.

Color scale for depth of inundation.

Flood inundation at stage = 18.5 ft is shown on map.

Download data and links to supporting documents.

Link to user guide video on YouTube.

Levee risk area and flood control structures overlays are displayed when flood inundation map is viewed for the first time.

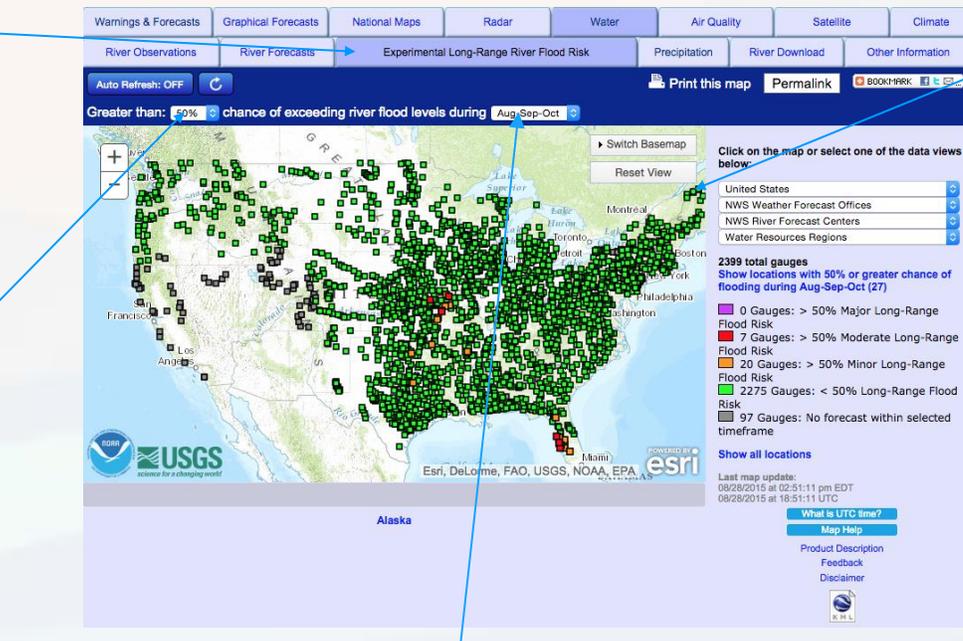
Use tear-away to move map overlay controls.

Experimental Long-Range River Flood Risk Map

This interactive web page shows the long-range (3-month) risk of minor, moderate and major river flooding at locations where probabilistic forecasts are produced. The risk information is based on NWS Ensemble Streamflow (ESP) forecasts which are generated for thousands of river and stream forecast locations across the nation.

Clicking on this tab shows locations where there is a greater than 50% chance of exceeding minor, moderate, and major flooding.

Allows user to choose values of greater than 5, 10, 25, 50, 75, 90, or 95% chance of exceeding river flood levels during a 3-month period.



Click on the map to display a regional map of the WFO HSA containing that location.

Use the dropdown menus to view four types of regional maps, including state, WFO HSA, NWS RFC area of responsibility, or USGS water resource region.

Allows user to select the 3-month period of interest. Through the 28th day of the current month, the 3-month period defaults to the current month, current month + 1 month, current month + 2 months. After the 28th day of the current month, the 3-month period defaults to the current month + 1 month, current month + 2 months, current month + 3 months.

On a regional map, click on a point to view the Chance of Exceeding Levels During Entire Period graphic for that location.

The Advanced Hydrologic Prediction Service, or AHPS, is a program in NOAA's National Weather Service designed to provide improved river and flood forecasting and water information. AHPS provides a suite of graphical and numeric products over the Internet to assist community leaders and emergency managers in making better life- and cost-saving decisions about evacuations and movement of property before flooding occurs.

To access the water information in this brochure, see:
water.weather.gov

Feedback on these web pages is welcome at:
weather.gov/contact

