

NOAA'S NATIONAL WEATHER SERVICE

Guide to Hydrologic Information on the Web



Colorado River at Lees Ferry

Photo: courtesy Tim Helble

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

<http://water.weather.gov>

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service
July 2008

NOAA/PA 200850



National Map

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

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

River Observations | **River Forecasts** | **Precipitation** | **River Download** | **Other Information**

All Locations [Go] Click The Map To Zoom In.

American Samoa · Guam · Puerto Rico/Virgin Islands

3814 Total Gauges
225 Locations in Flood

- 360 Gauges: Observations older than 24 hours
- 15 Gauges: Out of Service
- 13 Gauges: Major Flooding
- 46 Gauges: Moderate Flooding
- 166 Gauges: Minor Flooding
- 182 Gauges: Near Flood Stage
- 3032 Gauges: No Flooding

Last map update: Thu, Mar, 20, 2008 at 11:41:42 am EDT.

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

Clicking on this tab shows locations where **forecasts** are available, color coded according to highest forecast for the next two days.

Allows user to display all locations, hydrograph only locations, hydrograph/probability forecast locations, and inundation map locations.

Click here to only display **locations currently in flood**.

First row shows options available on the NWS home page.

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

Clicking on any location brings up a regional map containing that location.

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

Color coding scheme used on map locations to indicate flood status. Click on colored box and only points in that 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.

River Observations | **River Forecasts Within 48 Hours** | **Precipitation** | **Download**

03/20/2008 11:48 AM EDT

South Boston, Lawrenceville, Danville, John H. Kerr Dam, Emporia, Paces, Lake Gaston, Roanoke Rapids, Dalton, Wentworth, Bethel Hill, Halifax, Enfield, Enon, N. Buffalo Crk, Haw River, Durham, Louisburg, Scotland Neck, Yadkin College, S. Buffalo Crk, Falls Lake, Rocky Mount, Oak City, Lexington, Ramseur, Bynum, Crabtree Crk, Tarboro, High Rock Lake, Jordan Lake, Swift Crk, Clayton, Lucama, Shine, Hockerton, Simpson, Griffon, Iversness, Manchester, Goldsboro, Mays Store, Fort, Lillington, Smithfield, Trenton, Pollocksville, Lake Tillery, Hoffman, Fayetteville, W.O. Huske Lock, Tomahawk, Rockingham, Maxton, Big Swamp, Garland, Chingquapin, Gum Branch, Cheraw, Pembroke, Lumberton, Elizabethtown, Burgaw, Bennettville, West 5th Street

Map Legend

- Hydrograph Available
- Probability and Hydrograph Available
- Major Flooding
- Moderate Flooding
- Minor Flooding
- Near Flood Stage
- No Flooding
- Observation More Than 24 Hours Old
- Out of Service

79 Total Gauges | 0 Zero Locations In Flood | RSS

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

Clicking on this tab shows locations where **forecasts** are available, color coded according to highest forecast for the next two days.

Navigation arrows allow user to move to neighboring regions.

Squares indicate locations with observed hydrograph plots, some which include near-term forecasts. Circles are used for locations that also have forecast uncertainty information out to several months.

User selectable overlays.

Color of icon indicates category of flooding.

Area of interest in relation to state boundaries.

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.

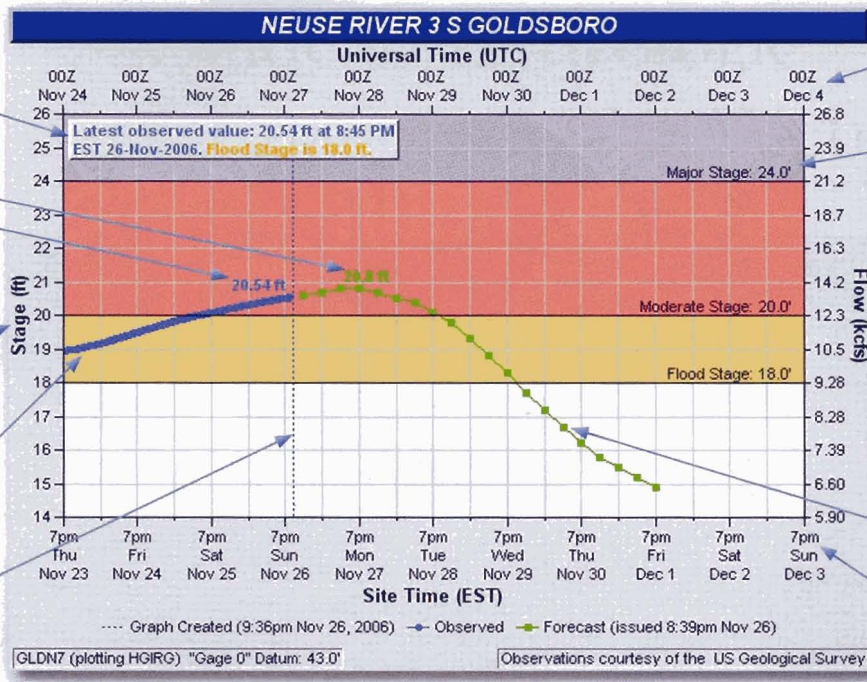
No data received from this site in at least 24 hrs.

River or stream gauge is not operating.

Hydrograph

The hydrograph is the first graphic displayed after clicking on a specific river/stream location on the regional map. It 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.

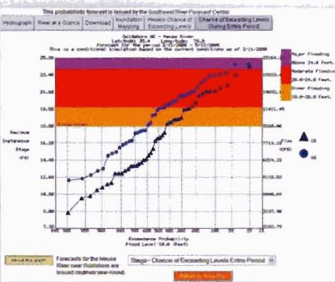
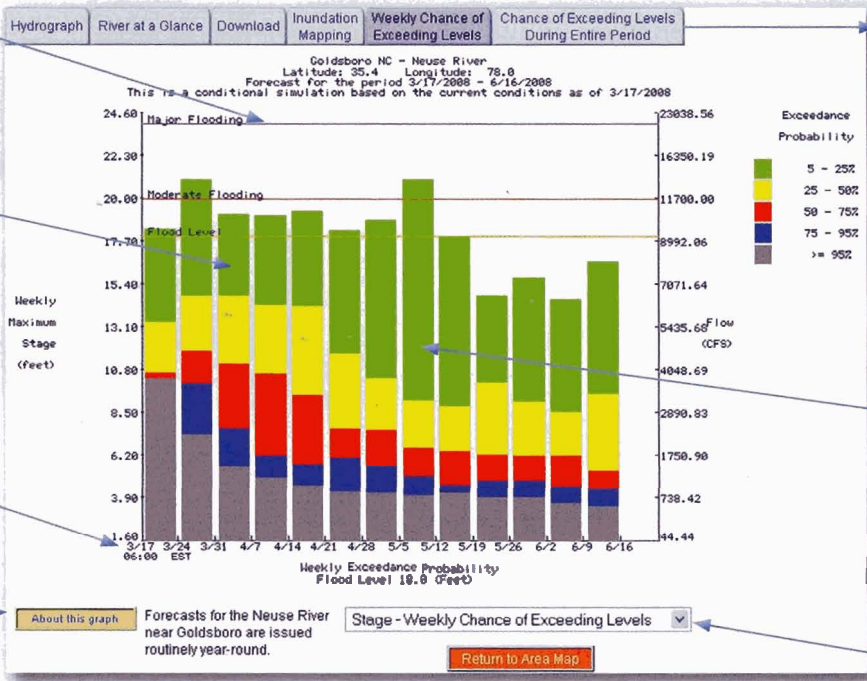


- Coordinated Universal Time (UTC) scale.
- Color coded flood categories for location being viewed, with stage where each category starts. Flood severity color scheme is consistent throughout these web pages.
- Scale for indicating water level in terms of flow in thousands of cubic feet per second (kcfs).
- 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., 5% to 25% for the green 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.



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

Example: For week of 5/5 to 5/12, the bottom of the green bar shows there is a 25% chance the stage will exceed about 9.1 feet and the top shows there is a 5% chance the stage will exceed about 21 feet.

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

Flood Inundation Map

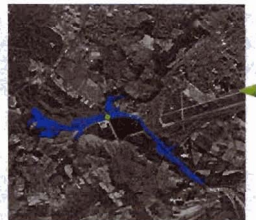
This interactive **web page** shows the spatial extent of possible or expected flooding in a given area. It can be used to show if roadways and structures will be impacted by floodwaters. At the limited number of forecast locations where inundation maps are currently available, this web page is accessed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

Activate feature to show water depth at cursor (detailed mode only).

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



Flood category display



Current forecast display

Menu for inundation levels shown on map: stage = 21 feet is highlighted in yellow.

Slider for adjusting transparency of overlay.

Stage at inundation level currently shown on map.

Print/save image, download data, and links to supporting documents.

Mouse cursor location information, including water depth when the feature is activated.

National Weather Service Advanced Hydrologic Prediction Service

Home News Organization Search for

NWS All NOAA Go

Weather Office Raleigh, NC Source: River Forecast Center

400 800 16000 Feet

To see all current watches and warnings, click here.

Hydrograph
River at a Glance
Download
Inundation Mapping
Weekly Chance of Exceeding Levels
Chance of Exceeding Levels During Entire Period

Image Type: Standard (Faster Download) Detailed (Slower Download)

Mouse Location Water Depth: Off Water Depth Function Off **Current Stage: 2.98 ft at 14:15 UTC 07/02**

Data Type

- Inundation Levels
- Flood Categories
- Current Forecast

Inundation Levels

NAVD88	Stage
71.0	28.0
70.0	27.0
69.0	26.0
68.0	25.0
67.0	24.0

Major Flooding Begins

66.0	23.0
65.0	22.0
64.0	21.0
63.0	20.0

Minor Flooding Begins

62.0	19.0
61.0	18.0

Flooding Begins

60.0	17.0
59.0	16.0
58.0	15.0
57.0	14.0
56.0	13.0

Data Type

- Inundation Levels
- Flood Categories
- Current Forecast

Currently: 7.32 ft @ 17:15 03/20

Forecast: Not within inundation limits

Inundation Feedback

Inundation in partnership with

Selected Inundation
NAVD88: 64.0 ft
Stage: 21.0 ft

Mouse Location'
Water Depth: Off
Latitude: 35.3688 N
Longitude: -77.9606 W
* All mouse location values are estimator only.

Click on the image to zoom in

Graphical representation of flood inundation for NWS flood categories is based on steady state hydraulic modeling of water surface elevations for incremented discharges. Map shows approximate inundation areas for given water surface elevations and should not be used for navigation or permitting or other legal purposes, but strictly as a planning reference tool.

Flood Categories (in feet)

Major Flood Stage	24
Moderate Flood Stage	20
Flood Stage	18
Action Stage	18
Below Flood Stage	

USGS Gauge Location

Extent of Inundation Study Boundaries

Historical Crests

- (1) 28.85 ft on 09/20/1999
- (2) 27.30 ft on 10/05/1929
- (3) 26.70 ft on 09/23/1945
- (4) 26.21 ft on 09/12/1996
- (5) 26.10 ft on 10/09/1964

Show More Historical Crests

Transparency Level

100 Year Flood 500 Year Flood Floodway Data

Select background: standard map or detailed photo.

Latest stage observation.

Clicking anywhere on map allows user to zoom in on area of interest.

Flood inundation at stage = 21 ft is shown on map.

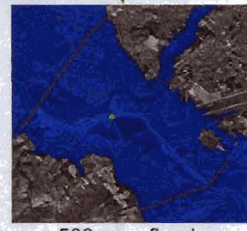
Provides overlays for FEMA 100-year flood, 500-year flood, and floodway maps.

Describes stage where each flood category begins.

List of historical flood crests.

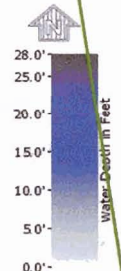


100-year flood



500-year flood

Color scale for depth of inundation.



Precipitation

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

The screenshot shows the National Weather Service Precipitation web interface. At the top, there are navigation tabs for Warnings & Forecasts, Graphical Forecasts, National Maps, Radar, Water, Air Quality, Satellite, and Climate. Below these are sub-tabs for River Observations, River Forecasts, Precipitation, River Download, and Other Information. The main content area displays a map of the United States with a color-coded precipitation depth overlay. A legend on the right indicates precipitation depth in inches, ranging from 0.01 to 10.0. Below the map, there are four main sections: 1. Timeframe (Current Data, Archive: Month/Year, Archive: Daily), 2. Product (Observed), 3. Location (States, NWS RFC/Regions, NWS WFOs), and 4. Units (English, Metric). A 'Missing Data' box is also present. Callout boxes provide detailed descriptions of these features.

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: current, 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: state, major hydrologic region, or weather forecast office area (defaults to CONUS + Puerto Rico).

Interactive Snow Information

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

The screenshot shows the National Operational Hydrologic Remote Sensing Center Interactive Snow Information web interface. The main content area displays a map of the United States with a color-coded snow water equivalent overlay. A legend on the right indicates snow water equivalent in inches of water, ranging from < 1 to > 30. Below the map, there are several sections: Navigation Tools, Query, and a list of directions for use. Callout boxes provide detailed descriptions of these features.

Control map zoom down to portions of counties.

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 (English, metric).

Miscellaneous display control features.

Latitude and longitude of cursor location. User can enter coordinates to re-center 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.



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:

<http://water.weather.gov>

Feedback on these web pages is welcome at:

www.weather.gov/feedback.php

