

USGS Tools and Products

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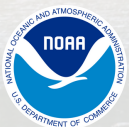
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WaterWatch

Description

WaterWatch (<http://waterwatch.usgs.gov>) is a U.S. Geological Survey (USGS) World Wide Web site that displays maps, graphs, and tables describing real-time, recent, and past streamflow conditions for the United States. The real-time information generally is updated on an hourly basis. WaterWatch provides streamgage-based maps that show the location of more than 3,000 long-term (30 years or more) USGS streamgages; use colors to represent streamflow conditions compared to historical streamflow; feature a point-and-click interface allowing users to retrieve graphs of stream stage (water elevation) and flow; and highlight locations where extreme hydrologic events, such as floods and droughts, are occurring.

More Information

<https://waterwatch.usgs.gov/>

Graphic or Visualization

The screenshot displays the USGS WaterWatch website. At the top left is the USGS logo with the tagline "science for a changing world". At the top right are links for "USGS Home", "Contact USGS", and "Search USGS". A notice in the center states: "NOTICE: In January 2020, USGS WaterWatch began operating in maintenance-only mode. Existing tools, features, and web data services are being fully maintained as before, but new tools and enhancements will no longer be developed. Please click [here](#) for more information or contact [USGS WaterWatch](#) if you have any questions." Below the notice is the "WaterWatch" title and a search bar labeled "Search WaterWatch ...". On the left is a navigation menu with links: Home, Special Features, Current Streamflow, Flood, Drought, Past Flow/Runoff, Animation, Toolkit, Annual Summaries, Data Services, Additional Information, and About WaterWatch. The main content area features four maps of the United States: "Current Streamflow" (Thursday, April 15, 2021 03:00:00), "Drought" (Wednesday, April 14, 2021), "Flood" (Thursday, April 15, 2021 03:00:00), and "Past Flow/Runoff" (Wednesday, April 14, 2021). Each map includes a USGS logo and a search bar labeled "Search USGS streamgage".

National Water Dashboard

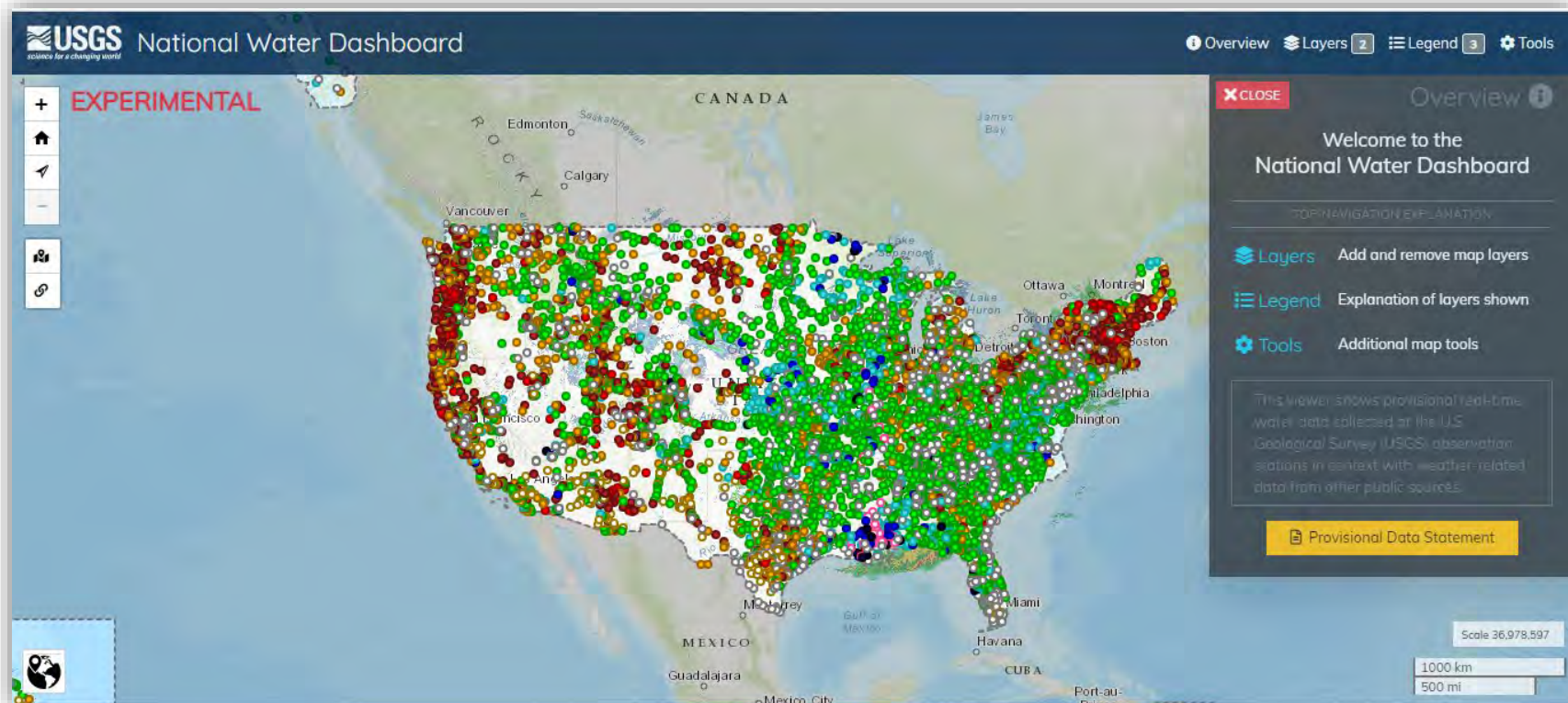
Description

This viewer shows provisional real-time water data collected at the USGS observation stations in context with weather-related data from other public sources.

More Information

<https://dashboard.waterdata.usgs.gov>

Graphic or Visualization



WaterAlert

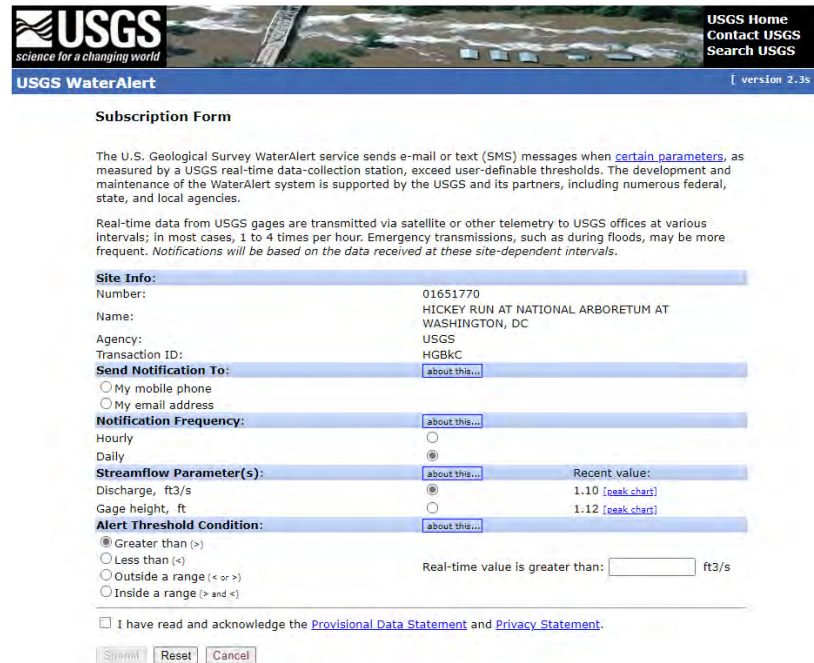
Description

WaterAlert is a popular subscription service that allows users to subscribe to email or text messages when certain parameters, as measured by a USGS monitoring location, exceed user-definable thresholds.

More Information

[USGS WaterAlert](#)

Graphic or Visualization



The screenshot shows the USGS WaterAlert subscription form for site 01651770. The form includes a header with the USGS logo and navigation links. The main content area is titled "Subscription Form" and contains an introductory paragraph, a "Site Info" section, a "Send Notification To" section, a "Notification Frequency" section, a "Streamflow Parameter(s)" section, and an "Alert Threshold Condition" section. The form is currently set to send notifications to a mobile phone at a daily frequency for a discharge parameter greater than 1.10 ft³/s.

Site Info:	
Number:	01651770
Name:	HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC
Agency:	USGS
Transaction ID:	HGBkC

Send Notification To: [about this...](#)

My mobile phone
 My email address

Notification Frequency: [about this...](#)

Hourly
Daily

Streamflow Parameter(s): [about this...](#) Recent value:

Discharge, ft³/s 1.10 [\[peak chart\]](#)
Gage height, ft 1.12 [\[peak chart\]](#)

Alert Threshold Condition: [about this...](#)

Greater than (>)
 Less than (<)
 Outside a range (< or >)
 Inside a range (> and <)

Real-time value is greater than: ft³/s

I have read and acknowledge the [Provisional Data Statement](#) and [Privacy Statement](#).

Shown: WaterAlert Subscription Form

Flood Inundation Mapping (FIM)

Description

The **USGS Flood Inundation Mapping (FIM) Program** helps communities protect lives and property by providing tools and information to help them understand their local flood risks and make cost-effective mitigation decisions.

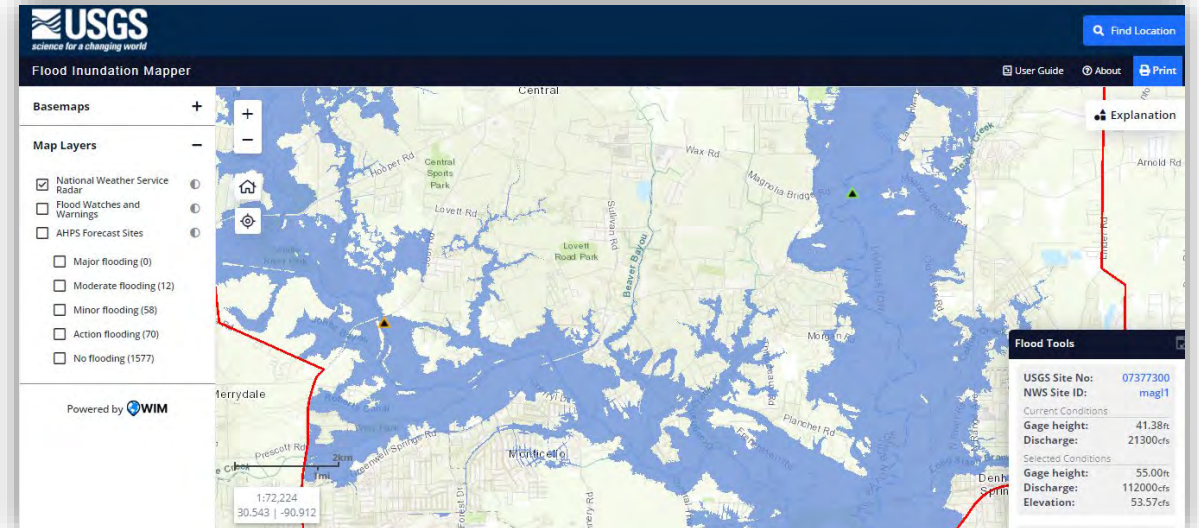
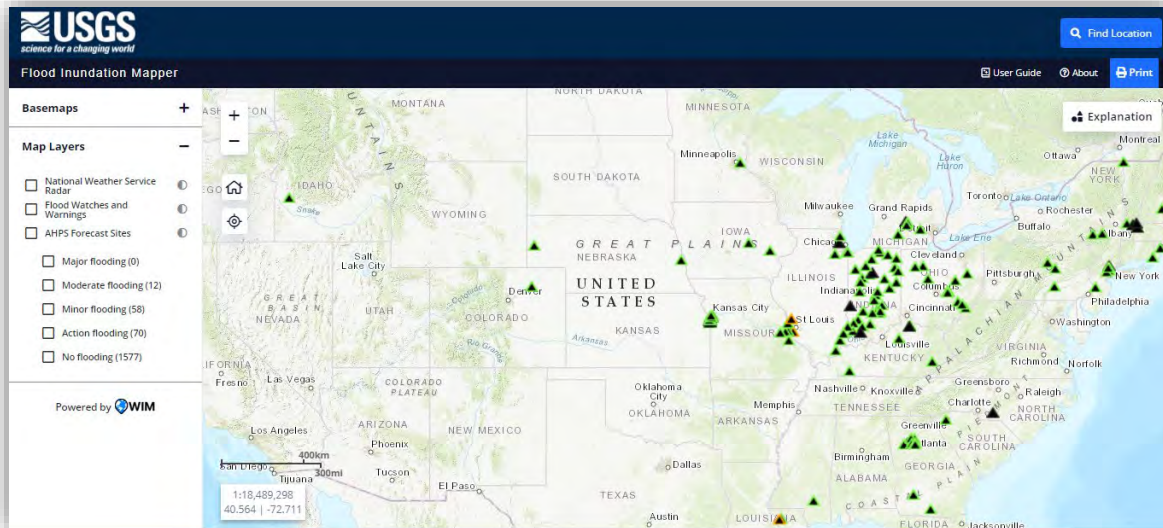
The USGS Flood Inundation Mapping Program has two main functions:

- 1) Partner with local communities to assist with the development and validation of flood inundation map libraries.
- 2) Provide online access to flood inundation maps along with real-time streamflow data, flood forecasts, and potential loss estimates.

More Information

<https://fim.wim.usgs.gov/fim/>

Graphic or Visualization



Flood Event Viewer

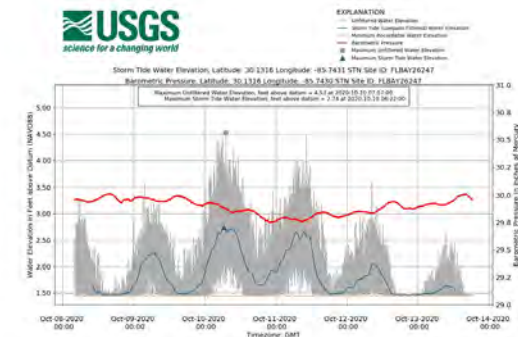
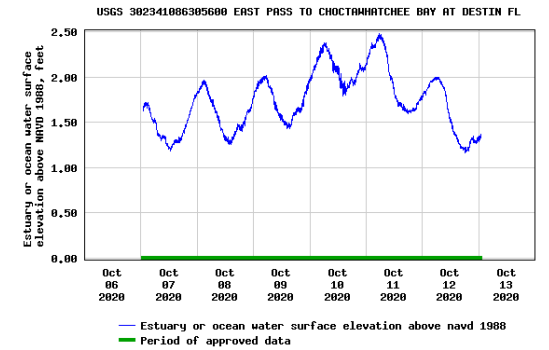
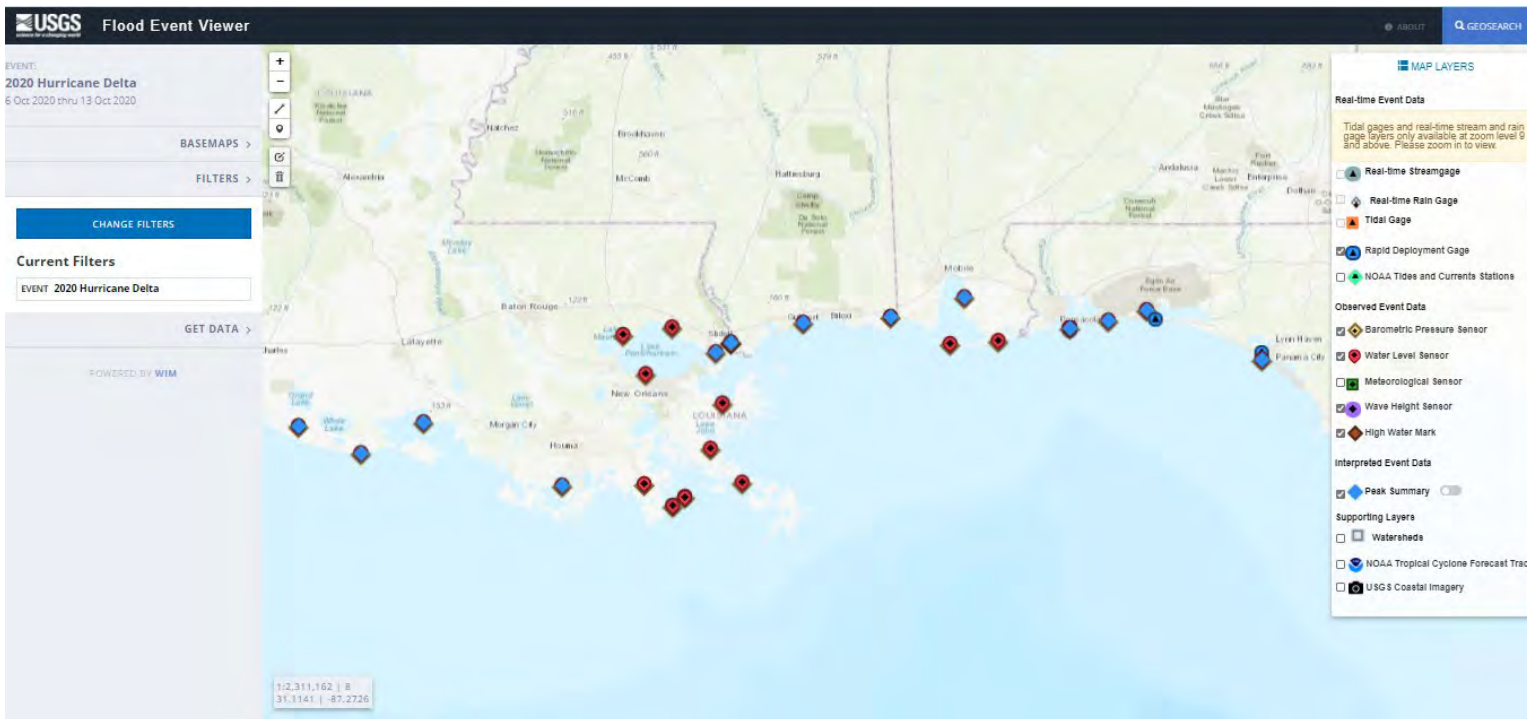
Description

The USGS Flood Event Viewer or FEV was created by the USGS to provide public access to coordinated, snippets (lengths) of coastal and riverine water-level and highwater marks recorded corresponding to major storms or other short-term events.

More Information

<https://stn.wim.usgs.gov/FEV>

Graphic or Visualization



NOAA/NWS and USGS Total Water Level and Coastal Change Forecasts

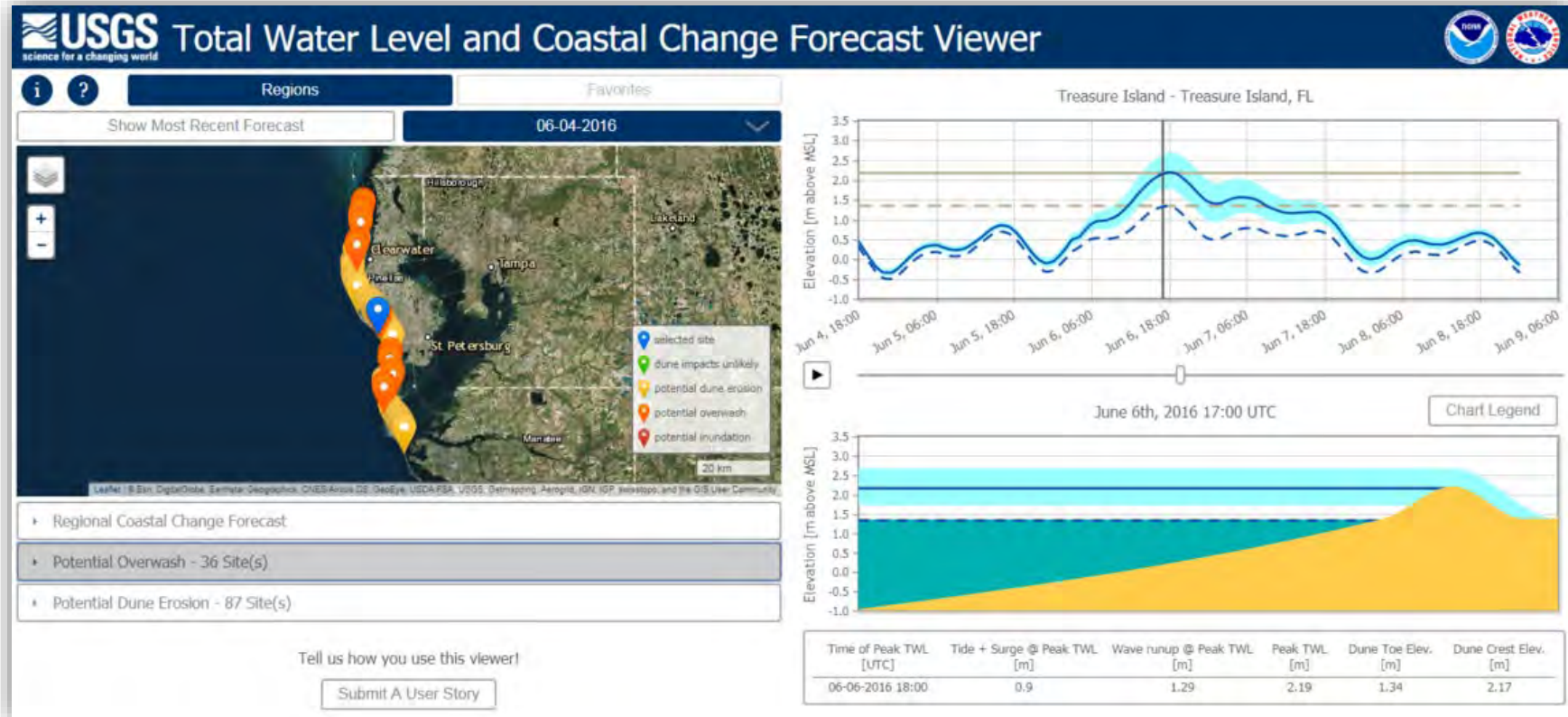
Description

The **Total Water Level and Coastal Change (TWL-CC) Forecast Viewer** is a tool that estimates **water levels** and the potential for **coastal change** along sandy shorelines based on local tides, storm surge, waves, and beach characteristics.

More Information

<https://coastal.er.usgs.gov/hurricanes/research/twlvviewer/>

Graphic or Visualization



Coastal Change Hazards Portal

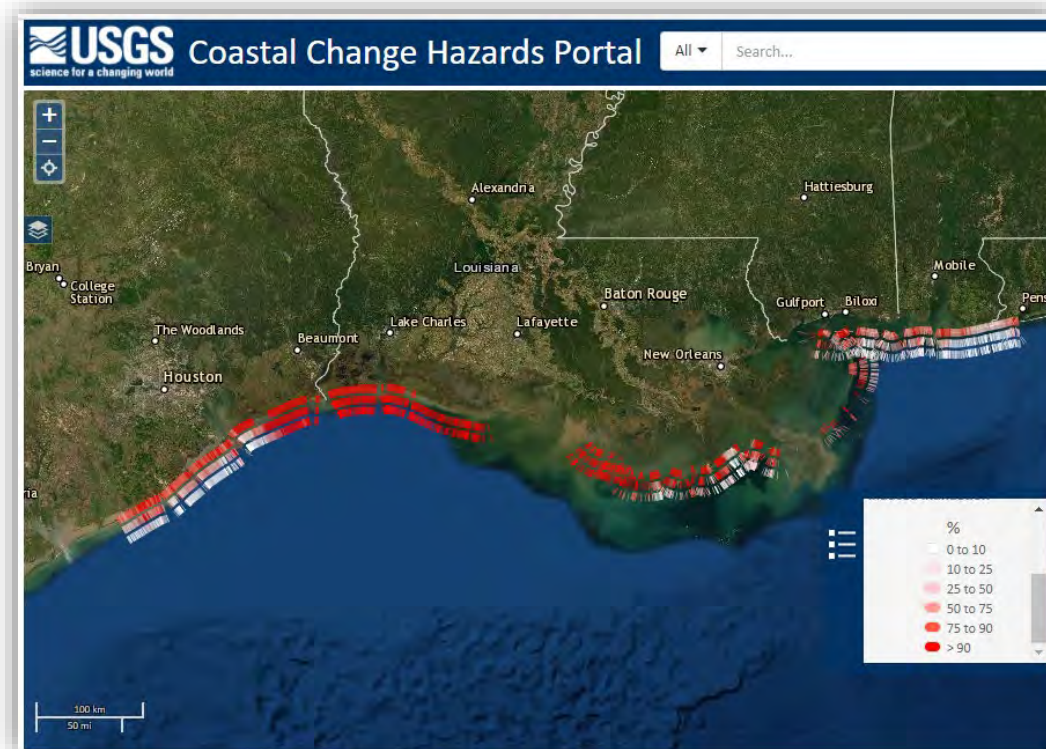
Description

This portal provides scientifically credible data suitable for use in land use planning projects, storm response and recovery protocols, and infrastructure, ecosystem, and cultural resource management decision-making. Resources are organized under three coastal hazard themes: extreme storms, shoreline change, and sea level rise.

More Information

<https://marine.usgs.gov/coastalchangehazardsportal/>

Graphic or Visualization



Shown: Forecast of likely coastal change during Hurricane Laura. The forecast was made prior to hurricane landfall, using inputs from NOAA. Colors indicate probability of dune erosion (inner band), over wash (middle), and inundation (outer).

Real-time Flood Impact Map (Experimental)

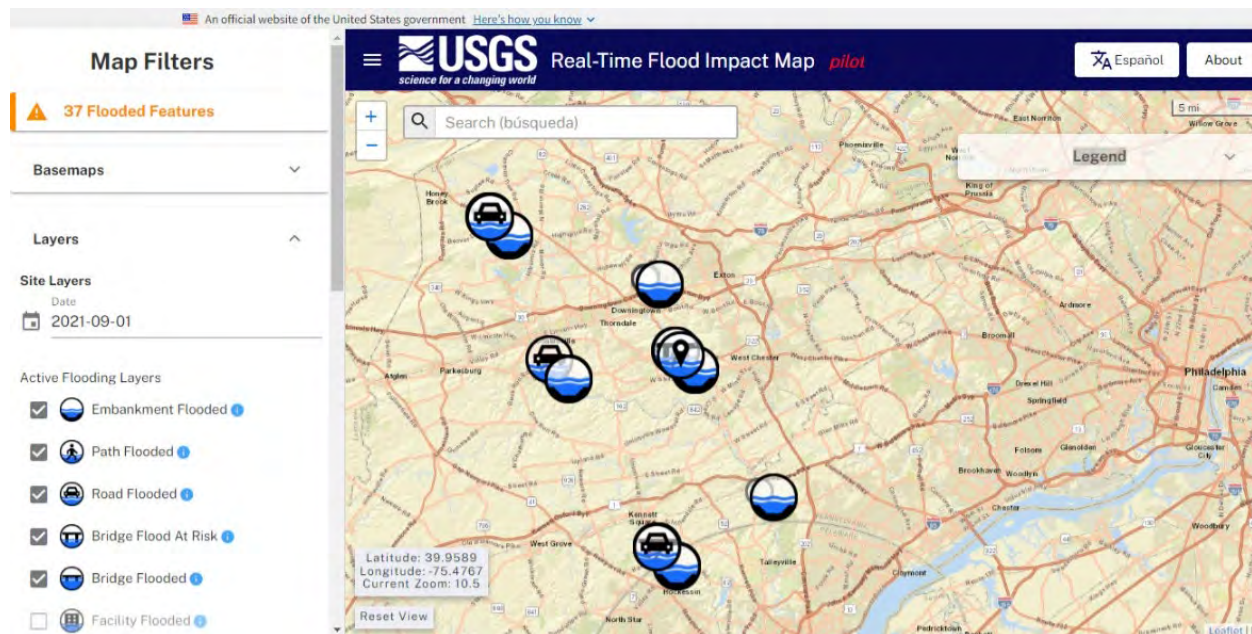
Description

This product shows flood impacts of critical or safety infrastructure features (stream or river embankment, roads, bridges, pedestrian paths, and more) near participating USGS streamgages.

More Information

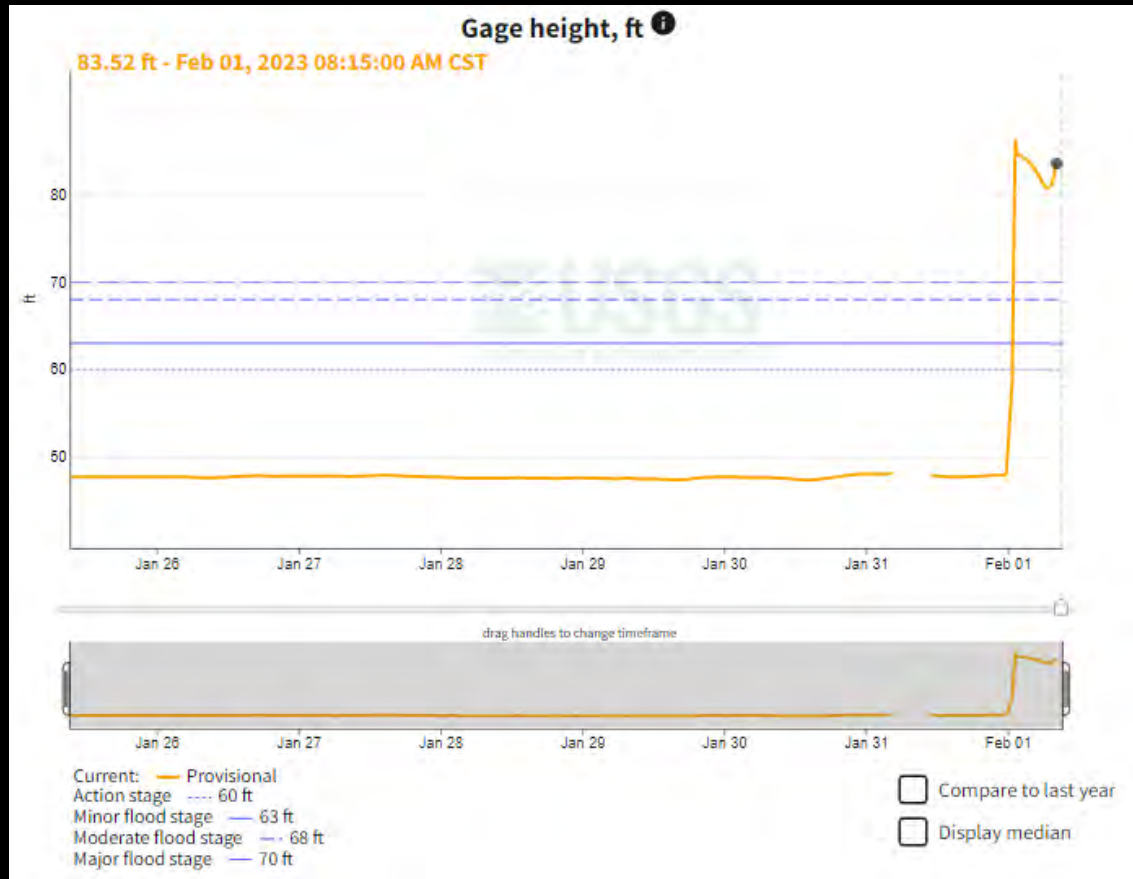
[thresholds \(usgs.gov\)](https://www.usgs.gov/thresholds)

Graphic or Visualization

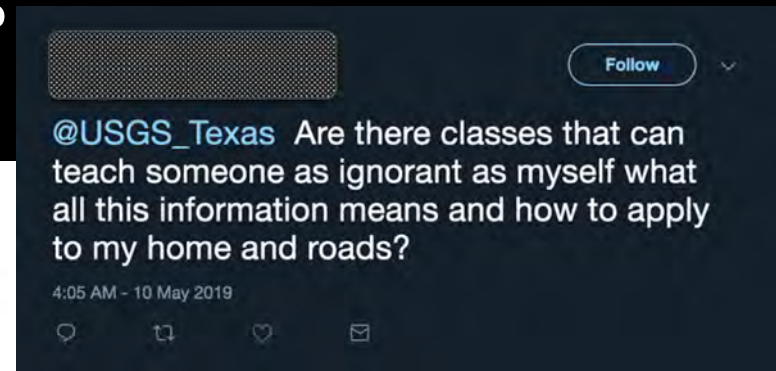


Shown: Flood impacts near USGS streamgages in Pennsylvania during 2021 Hurricane Ida.

USGS Real-time Flood Impact Map



- I used to be a USGS Cooperator and user of USGS data.
- Gage height, ft –
 - So what? What does this mean to me?
 - How can I apply this to my roads and home?



Resent-From: <gs-w-txpublic.info@usgs.gov>
From: <kevinzn53@gmail.com>
Date: June 7, 2019 at 7:26:14 AM CDT
To: <gs-w-tx_NWISWeb_Data_Inquiries@usgs.gov>
Cc: <archive_ask@usgs.gov>
Subject: Site Number: 08044500,Road flooding at gage site

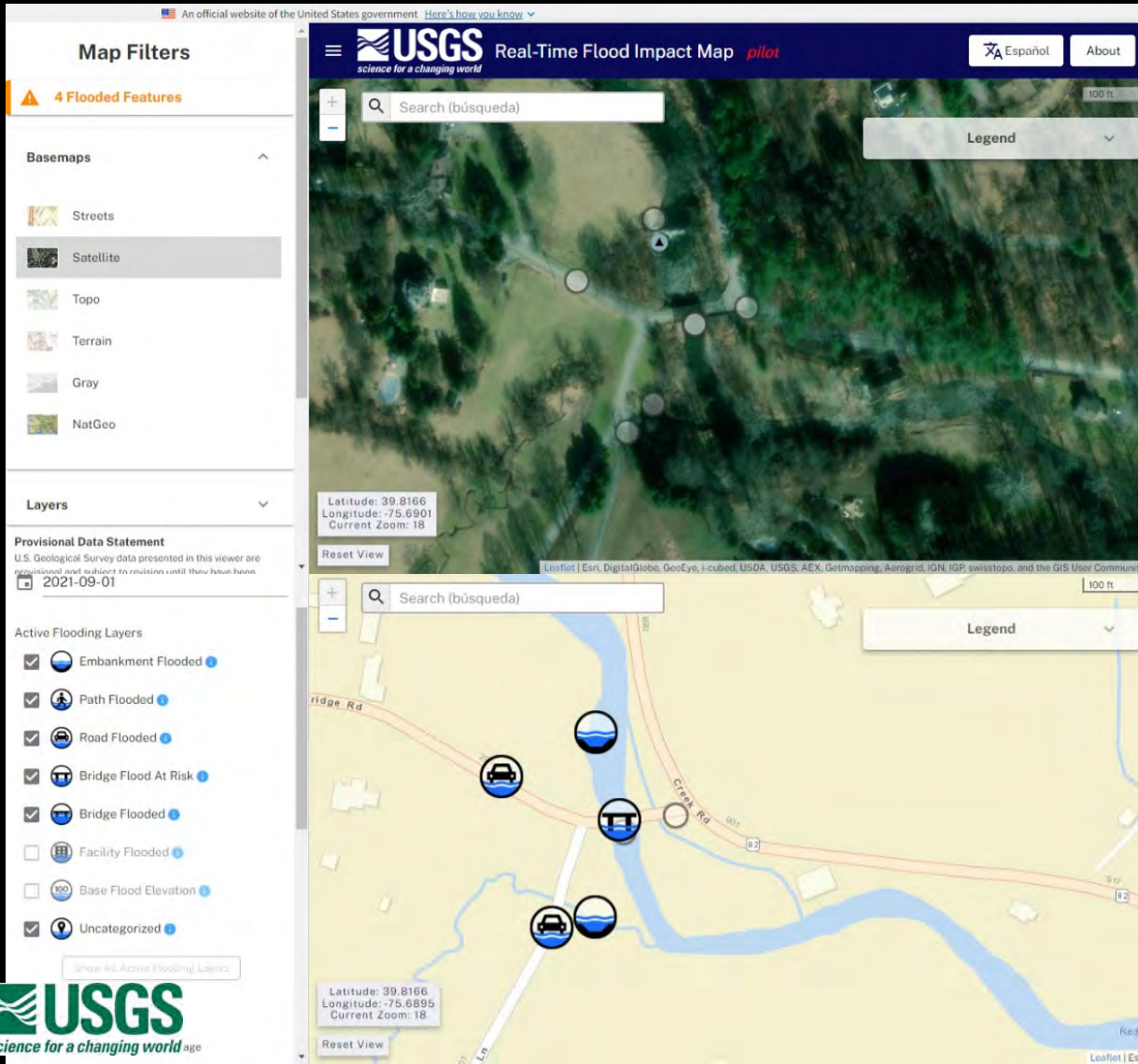
Transaction=GSFTWZ4G [07.JUN2019 12:26:13UTC]
Customer email: kevinzn53@gmail.com
Customer: Kevin Enzian
Customer phone: 2144939225
Subject: Site Number: 08044500,Road flooding at gage site
Originating page: <https://waterdata.usgs.gov/monitoring-location/08044500/>
Primary response: gs-w-tx_NWISWeb_Data_Inquiries@usgs.gov
Tracking info: t=1|webchat=no|time=UTC12:22|time=UTC12:26|recipient=gs-w-tx_NWISWeb_Data_Inquiries@usgs.gov|sender=kevinzn53@gmail.com

If you are experiencing problems with this email application, please send your feedback to h2oleam@usgs.gov

Perhaps too local, but would you be able to tell me at what Gage height at 08044500 (W FK Trinity Rv nr Boyd, TX) does Hwy 730 flood?

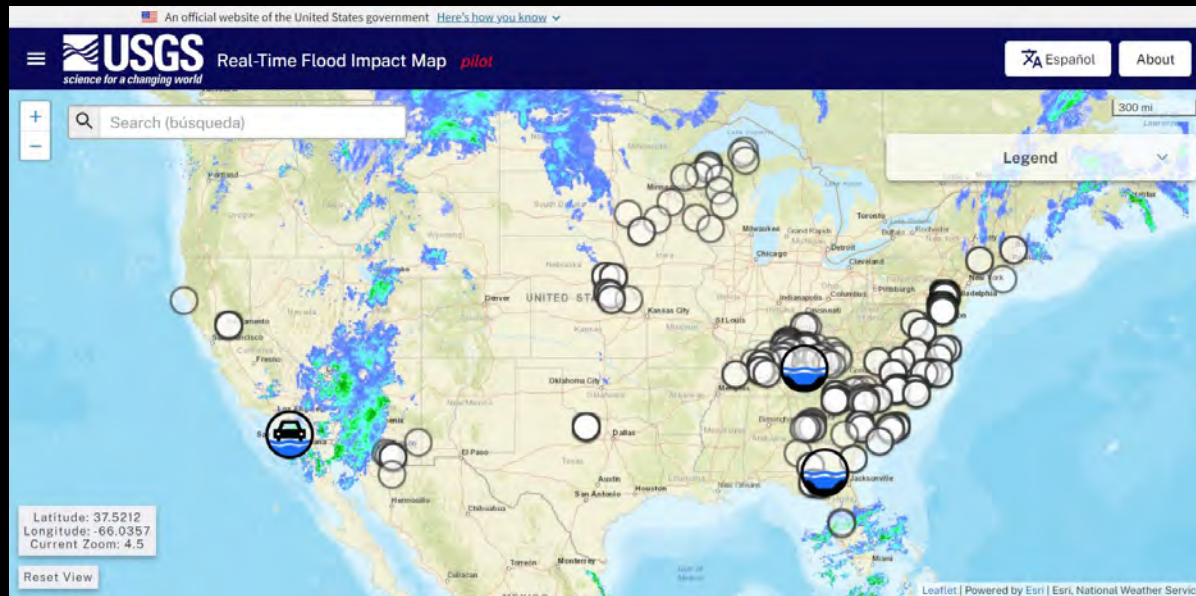
NGWOS FY21 R&D

USGS Real-time Flood Impact Map



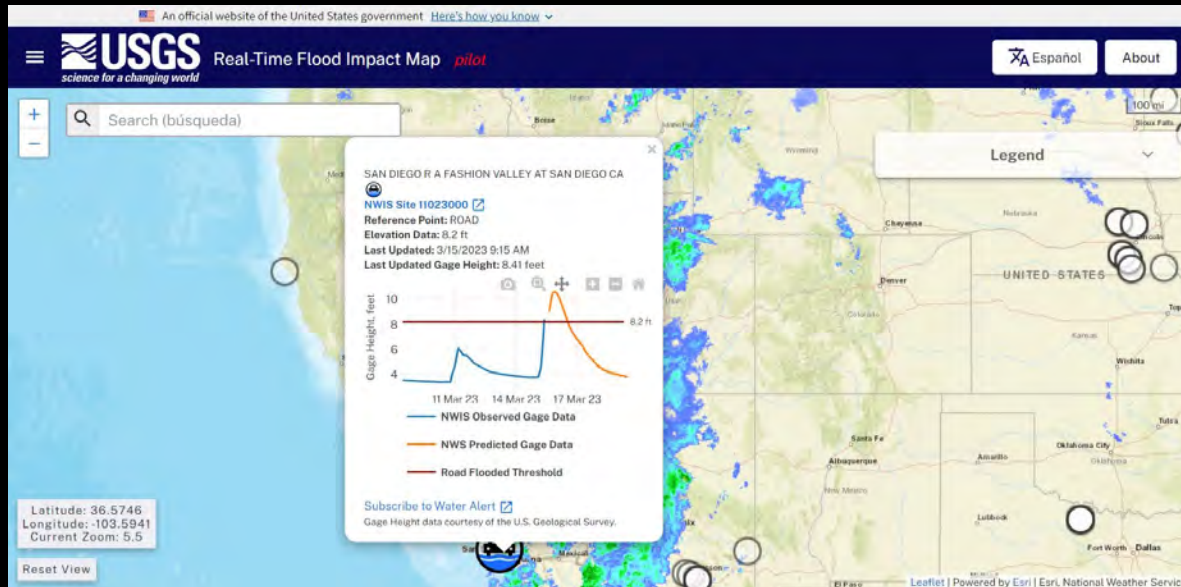
- Overcomes “So What?”
- Let the gage tell the story of flooding conditions
- USGS measures the height of critical safety or infrastructure features that may be vulnerable to flood impacts (roads, bridges, etc.)
- Flood impacts are georeferenced (x, y, z)
- The flood impacts are associated with a nearby USGS real-time streamgage.
- When the gage height exceeds the flood impact surveyed height, its icon will display on the map, showing this location may be currently flooded.

USGS Real-time Flood Impact Map



- White circles represent flood impact locations that have been measured but not currently flooding
- Date picker – retroactively view the impacts
- This product is not a flood warning system ... but it can be used to convey immediate flood risk by showing the locations where flooding may be currently or soon occurring.
- Additional flood information layers
 - All USGS real-time streamgages
 - FEMA Flood Hazard
 - NOAA National Weather Service Radar
 - NOAA National Weather Service Watches & Warnings
 - NOAA Tide and Water Level Stations
- Spanish version
- Currently scheduled for USGS EAB review
- WSCs are getting creative!
 - Washington and Idaho are working with Silver Jackets
 - USACE survey the Flood Impacts
 - USGS enter the Flood Impacts into AQ-TS as Reference Points

USGS Real-time Flood Impact Map



The screenshot shows the USGS WaterAlert setup page for the location 'SAN DIEGO R A FASHION VALLEY AT SAN DIEGO CA - 11023000'. The page includes the following sections:

- My Alerts:** This Location | All My Alerts
- Sign in to see your alert notifications:** A button labeled 'Show me how to start using WaterAlert'.
- Create Alerts for This Location:** A section for configuring alerts.

The 'Create Alerts for This Location' section includes:

- Gage height, feet:** Latest Value: 8.43 ft on Wed, 15-Mar-2023 14:13:00 GMT UTC.
- What values have been seen in the past?:** A button with a plus sign.
- Your alert's trigger range -- units: ft:** A range selector showing 0.99 and 20.
- Reminder:** you're not signed in.
- Send alert when current condition value is:** greater than / less than. A dropdown menu for 'sign in to enter values' is set to 'ft'. An option 'I'd like to use a value range' is unchecked.
- While the alert conditions are true notify me:** Radio buttons for 'Once per day' (selected) and 'Once per hour'.
- Summary:** Sign in to create your alert.
- Messages will be sent to:** Sign in to see your information.
- IMPORTANT:** By clicking **Create alert**, you accept the terms and conditions of our [Service Statement](#) and [Privacy Act Statement](#).
- Discharge, cubic feet per second:** A dropdown menu.
- DCP battery voltage, volts:** A dropdown menu.
- Questions or Comments:** A button at the bottom right.

- Click on the icon and the pop-up will display current gage height and flood impact height.
- If the gage is a NWS River Forecast Site ... the forecast will also appear on the hydrograph ... so you will have an idea about how long the flood impact will occur.
- Subscription to Water Alert – the user has a real-world gage height ... to subscribe too!