



GOVERNOR'S  
HURRICANE CONFERENCE®

# Hurricane Probability Information within GIS Platforms

*Visualizing uncertainty*

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Workshop Session 146

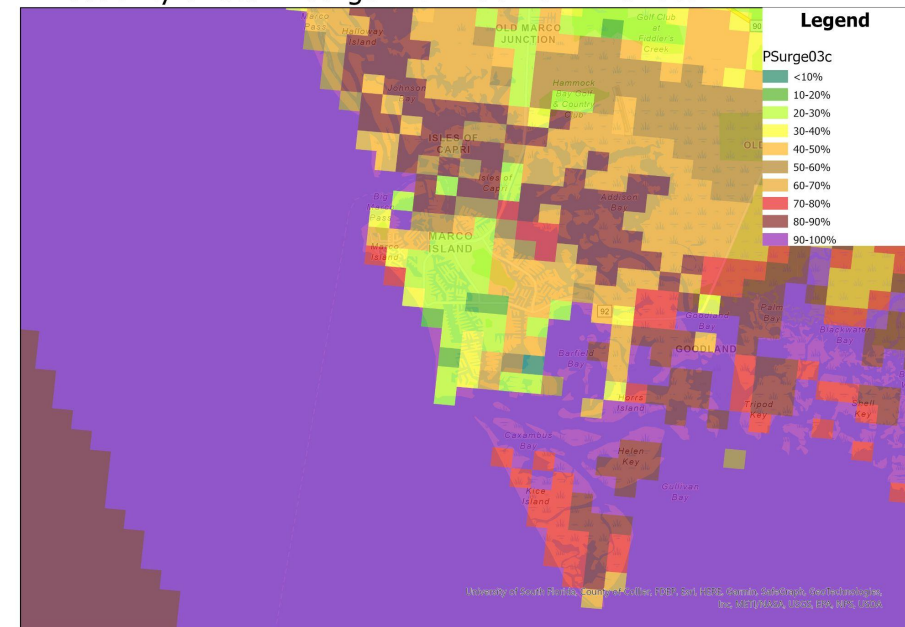




# GIS & Hurricanes

- **GIS = Geographic Information Systems**
- **GIS is commonly used in many industries to combine maps with other datasets for situational analysis**
- **Combining the power of GIS with available probabilistic data from the National Weather Service can create a potent tool for decision-making**

Hurricane Ian - Advisory 18  
Probability of Storm Surge with Tide AGL  $\geq$  3 feet





# Poll Question 1

What GIS data are you interested in?



# Poll Question 2

**What tools or software are you using to help you?**



# NWS GIS Goodies

Where are they?

- NWS forecasts, warnings, basemaps, & web services: [weather.gov/gis](https://www.weather.gov/gis)
- NHC data in KMZ and Shapefile formats: [hurricanes.gov/gis](https://www.hurricanes.gov/gis)
- Hurricane Threat & Impact graphics in KMZ format: local NWS webpages (e.g. [weather.gov/miami](https://www.weather.gov/miami))
- Water Resources: [water.noaa.gov](https://www.water.noaa.gov)
- Point Forecasts: [weather.gov/forecastpoints/](https://www.weather.gov/forecastpoints/)



# weather.gov/gis

- The NWS GIS Portal offers a variety of radar, forecast, warning, and other data in GIS format
- Click Layers to open the menu with different options
  - All GIS datasets can be found by clicking on the paperclip next to their title
  - Many are also searchable within ESRI platforms

## NWS GIS Portal

[Weather.gov](#) > GIS

[CloudGIS Web Services](#) [NWS National GIS Viewer](#) [AWIPS Basemaps](#) [Metadata Page](#)

NWS Viewer's General Page Link: <https://viewer.weather.noaa.gov/general>

For more information and help for NWS Viewer: <https://viewer.weather.noaa.gov/viewerHelp>

Many of the National Weather Service data sets are available in formats that are able to be imported directly into Geographic Information Systems (GIS) or your own custom map viewers or web pages. Data formats include downloadable [shapefiles and KML formats](#), [web services](#), and our [basemaps](#) in shapefile format.

Individual Radar WMS links can be found here: <https://opengeo.ncep.noaa.gov/geoserver/www/index.html>

Tropical Cyclone Milton [GIS Resources](#)

As more data is made available in these formats, links to the data will be added to these pages. Click one of the GIS format links above to start exploring the NWS GIS data currently available!

The screenshot displays the NWS GIS Viewer interface. On the left is a map of Florida and the Gulf of America, with major cities like New Orleans, Jacksonville, Orlando, Miami, and Havana labeled. The map includes a search bar and various navigation icons. On the right is a sidebar menu titled 'NWS GIS Viewer | General'. The 'LAYERS' section is expanded, showing a search bar and buttons for 'Clear Layers', 'Expand All', 'Collapse Folders', and 'Show Active Layers'. Below this, several layer categories are listed with expandable arrows: Background Layers, Reference Layers, Watches, Warnings, Hazards, and Advisories, Quantitative Precipitation Estimates, Radar Products (with a 'Quick Radar' checkbox), Radar Products - All NWS Areas of Responsibility, Radar Products by Geographic Area, Flood Inundation Maps (FIM) (EXPERIMENTAL), Flood Products, Marine / Coastal, River Observations and Forecasts, Surface Observations and Analysis, Surface Forecasts and Outlooks, and Weather Event Related Data. Other sidebar options include LEGEND, ADD DATA, QUERY TOOLS, FILTER, DASHBOARD, OTHER, CHANGE SITE, HELP, and LOGIN.



# weather.gov/gis

- NWS cloud GIS services are also available at <https://www.weather.gov/gis/cloudgiswebservice>

## National Weather Service Data as OGC Web Services on the Public Cloud

This page is for data that is available as Geospatial Information System (GIS) Web Services running on the public cloud. This page contains web services that follow the Open Geospatial Consortium (OGC) standards for web services. Three standards are supported - Web Mapping Services (WMS), Web Feature Services (WFS) and Web Coverage Services (WCS).

If these services are not functioning (operational issue), contact: [sdm@noaa.gov](mailto:sdm@noaa.gov).

For questions or concerns about these services, please contact the [DISS GIS Team](#).

To receive notifications on changes to our web services, please subscribe to our [Listserv](#).

Link to Radar application: <https://radar.weather.gov>

Link to Radar WMS/WFS: <https://opengeo.ncep.noaa.gov/geoserver/www/index.html>

Link to [Service Change Notice](#)

Expand All Collapse All Select a Menu Search for data..

**Watches, Warnings and Advisories (WWA), and Radar Services**

**Tropical Weather Products and Services (Hurricanes)**

**Air Quality Products**

**Climate Outlooks**

**Current Weather and Forecast Products and Services**

**Fire Weather Products and Services**

**National Digital Forecast Database (NDFD)**

**NWS Reference Maps**

**Water Products and Services**

**Winter Weather Products and Services**

**Experimental Products**

# hurricanes.gov/gis



- A variety of NHC products are available in GIS-friendly formats with each advisory cycle
- Some of these are also searchable within ESRI platforms thanks to NOAA's enterprise agreement
- Samples of the products are linked on the page
- Archives from previous years also available for education or outreach



ANALYSIS & FORECASTS ▾ DATA & TOOLS ▾ EDUCATIONAL RESOURCES ▾ ARCHIVES ▾ ABOUT ▾ SEARCH ▾

## NHC Data in GIS Formats

[Satellite](#) | [Radar](#) | [Aircraft Recon](#) | [GIS Data](#) | [Analysis Tools](#)

### Data & Products

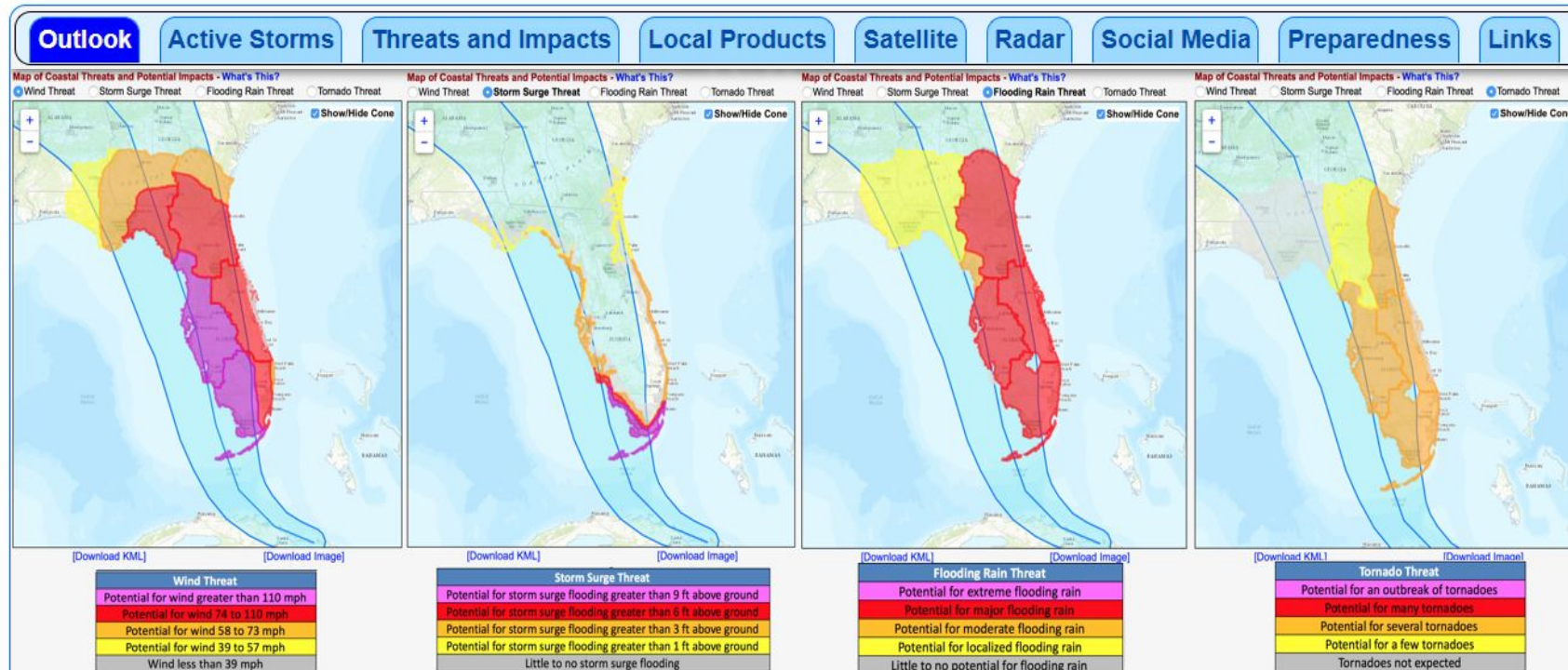
Please note these GIS datasets are provided as a convenience to users. Support for these data may not always be available or timely in nature. For issues directly related to the datasets below, please [contact us](#).

	As of Wed, 29 Apr 2026 18:06:27 UTC			Archive
	Atlantic	Eastern Pacific	Central Pacific	
<b>Advisory Forecast Track, Cone of Uncertainty, and Watches/Warnings<sup>†</sup></b> <i>Sample Shapefiles: Irma Example</i> <i>Sample KMZ: Cone   Track   Warnings</i>	No current data	No current data	No current data	Year ▾
<b>Advisory Wind Field and Forecast Wind Radii<sup>†</sup></b> <i>Sample Shapefiles: Irma Example</i> <i>Sample KMZ: Initial Radii   Forecast Radii</i>	No current data	No current data	No current data	Year ▾
<b>Preliminary Best Track<sup>†</sup></b> <i>Note: Final Best Tracks available here</i> <i>Sample Shapefiles: Irma Example</i> <i>Sample KMZ: Past Track</i>	No current data	No current data	No current data	Year ▾
<b>Arrival Time of Tropical Storm Force Winds</b> <i>Sample KMZ: Earliest Reasonable   Most Likely</i>	No current data GRIB2 data: <a href="#">via HTTPS</a>			Year ▾
<b>Graphical Tropical Weather Outlook<sup>†</sup></b> <i>Sample Shapefile</i>	Outlook areas (if any): [shp] KMZ: [Atlantic] [East Pacific] [Central Pacific]		Atlantic, E Pacific, C Pacific	
<b>Wind Speed Probabilities<sup>†*</sup></b> <i>Sample Shapefiles: Polygons   Points</i> <i>Sample KMZ: 34 kt   50 kt   64 kt</i>	No current data GRIB1 and GRIB2 data: <a href="#">via HTTPS</a> <a href="#">via FTP</a>			Year ▾
<b>Probabilistic Storm Surge<sup>†*</sup></b> <i>metadata sample</i>	No current data GDPR: <a href="#">via FTP</a>	N/A	N/A	Year ▾



# Hurricane Threat & Impact Graphics

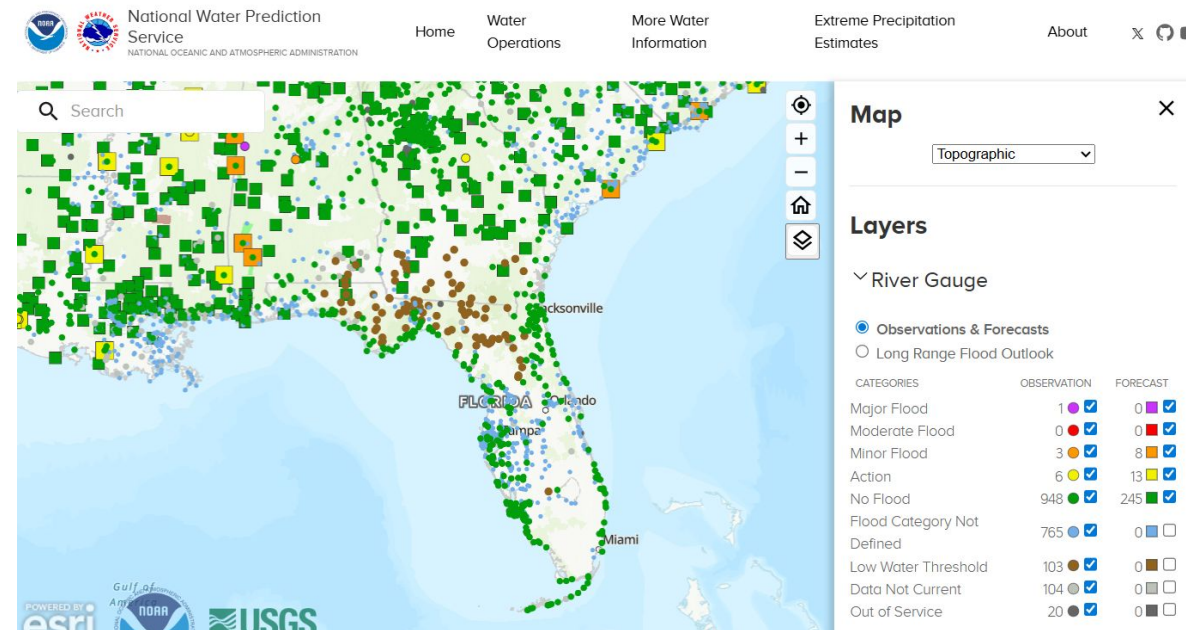
- Available in KMZ from your local [weather.gov](https://www.weather.gov) site
- [Hurricanes.gov](https://www.hurricanes.gov) will also link to them
- Great tool for public preparation messaging





# water.noaa.gov

- New and growing tool that houses NOAA's water resources
- API available
- GIS native from the start
- Catalog of Services Available at <https://water.noaa.gov/about/data-and-web-services-catalog>
- More to come with Flood Inundation Mapping and the National Water Model

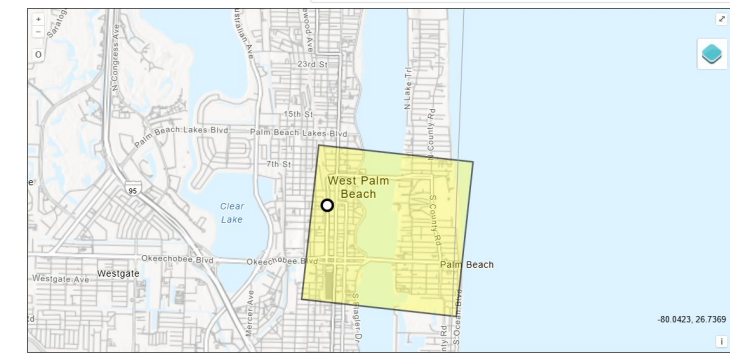




# IDSS Forecast Points

- Available at [weather.gov/forecastpoints](https://weather.gov/forecastpoints)
- Provides NWS point forecast for area of interest
- You can create bookmarks that take the lat/lon into account

Prototype  
 IDSS Forecast Points



Background Map: Terrain

**Rip Current Statement in effect until 800 pm EDT Fri. 5/1/2026**

Table updated: 231 pm EDT Wed. 4/29/2026 (Last Update: 27 minutes ago)  
 Click for Text Forecast

MFL Forecast Discussion  
 2 miles NNW of Palm Beach, FL

**Weekly Summary**

	Wed Apr 29	Thu Apr 30	Fri May 1	Sat May 2	Sun May 3	Mon May 4	Tue May 5
Max Temp, °F	81	85	84	87	81	78	79
Min Temp, °F	79	74	74	77	75	74	75
Max Wind, mph	15	18	18	20	15	15	13
Min Wind, mph	10	8	6	10	9	10	8
Max Wind Gust, mph	17	20	21	24	20	20	16
Max Prob. of Precip., %	2	2	0	6	80	63	14
Max Heat Index, °F	85	91	90	95	86	77	79
Max Wet Bulb Globe T, °F	80	81	81	84	78	76	79
Min Wet Bulb Globe T, °F	75	72	71	74	73	72	72

**Outlooks**

	Day 1	Day 2	Day 3
Severe Thunderstorm	Not Expected	Not Expected	Not Expected
Excessive Rainfall	Not Expected	Not Expected	Not Expected

**Hourly Table**

Day of week:	Wednesday 4/29	Thursday 4/30
Time:	2PM 3PM 4PM 5PM 6PM 7PM 8PM 9PM 10PM 11PM 12AM 1AM 2AM 3AM 4AM 5AM 6AM	

# Thank You!

Questions?

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NWS Miami

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