

The Future Rests on a Foundation of Integrated Fundamental Data

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- Forum for dialogue.
- Raising awareness.
- Supporting decision making
- High-level coordination on geospatial integration.
- Representatives from **National Statistical and Geospatial Information Agencies.**



10th anniversary

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ON THE INTEGRATION OF STATISTICAL
AND GEOSPATIAL INFORMATION



The Data We Need: The Global Fundamental Geospatial Data Themes



Global Geodetic Reference Frame



Addresses



Buildings and Settlements



Elevation and Depth



Functional Areas



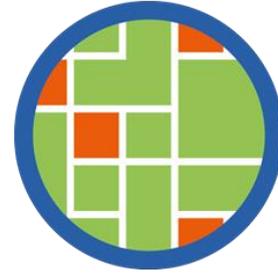
Geographical Names



Geology and Soils



Land Cover and Use



Land Parcels



Orthoimagery



Physical Infrastructure



Population Distribution



Transport Networks



Water



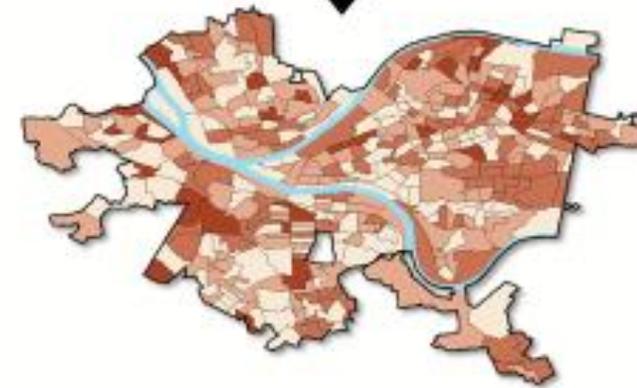
Addressing Recognized Needs

- Integration of information from statistical and geospatial domains.
- Establishes “where?”
- Creation of globally comparable datasets.

Statistical Data

01	01	0010	100	2.000	1.000
02	02	0020	100	3.000	1.000
03	03	0030	100	1.000	1.000
04	04	0040	100	1.000	1.000
05	05	0050	100	3.000	1.000
06	06	0060	100	3.000	1.000
07	07	0070	100	3.000	1.000
08	08	0080	100	3.000	1.000
09	09	0090	100	3.000	1.000
10	10	0100	100	3.000	1.000
11	11	0110	100	3.000	1.000
12	12	0120	100	3.000	1.000
13	13	0130	100	3.000	1.000
14	14	0140	100	3.000	1.000
15	15	0150	100	3.000	1.000
16	16	0160	100	3.000	1.000
17	17	0170	100	3.000	1.000
18	18	0180	100	3.000	1.000
19	19	0190	100	3.000	1.000
20	20	0200	100	3.000	1.000

Geospatial Data



“There is an urgent need for a mechanism, such as a global statistical-spatial framework, to facilitate consistent production and integration approaches for geo-statistical information.”

The Global Forum on the Integration of Statistical and Geospatial Information, New York 2014

Global Statistical Geospatial Framework (GSGF)

Five High Level Principles

Principle 1: Use of fundamental geospatial infrastructure and geocoding.

Principle 2: Geocoded unit record data in a data management environment.

Principle 3: Common geographies for collection and dissemination of statistics.

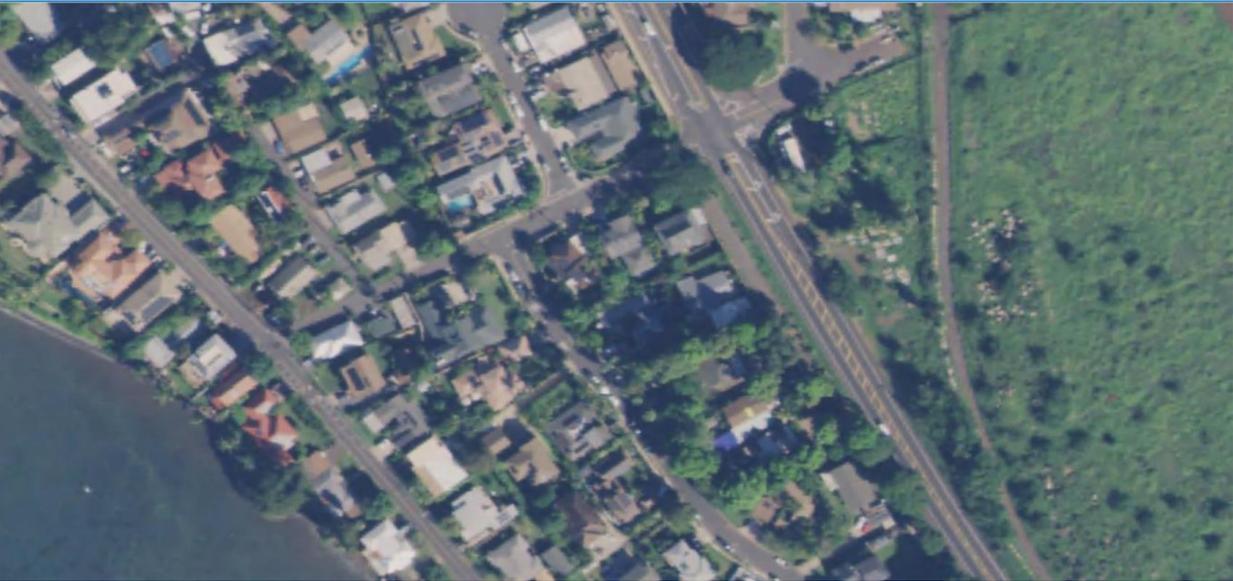
Principle 4: Statistical and geospatial interoperability data, standards and processes.

Principle 5: Accessible and usable geospatially enabled statistics.



Disaster Impact Assessment

2022 pre-disaster Maui, HI



Imagery: © USDA NAIP 2022

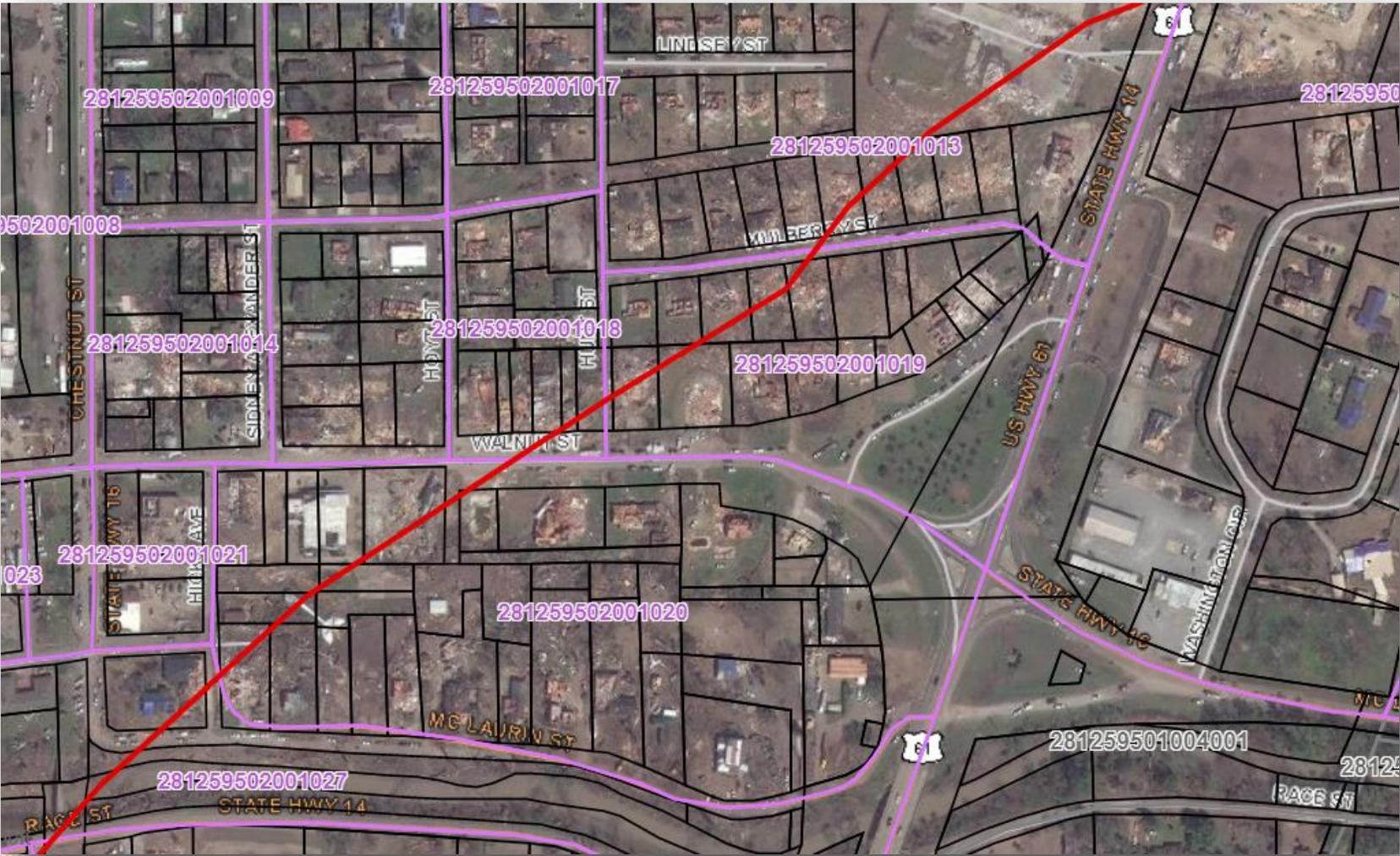
2023 post-disaster Maui, HI



Imagery: © 2023, Maxar, USG Plus, Image Date 08/09/2023

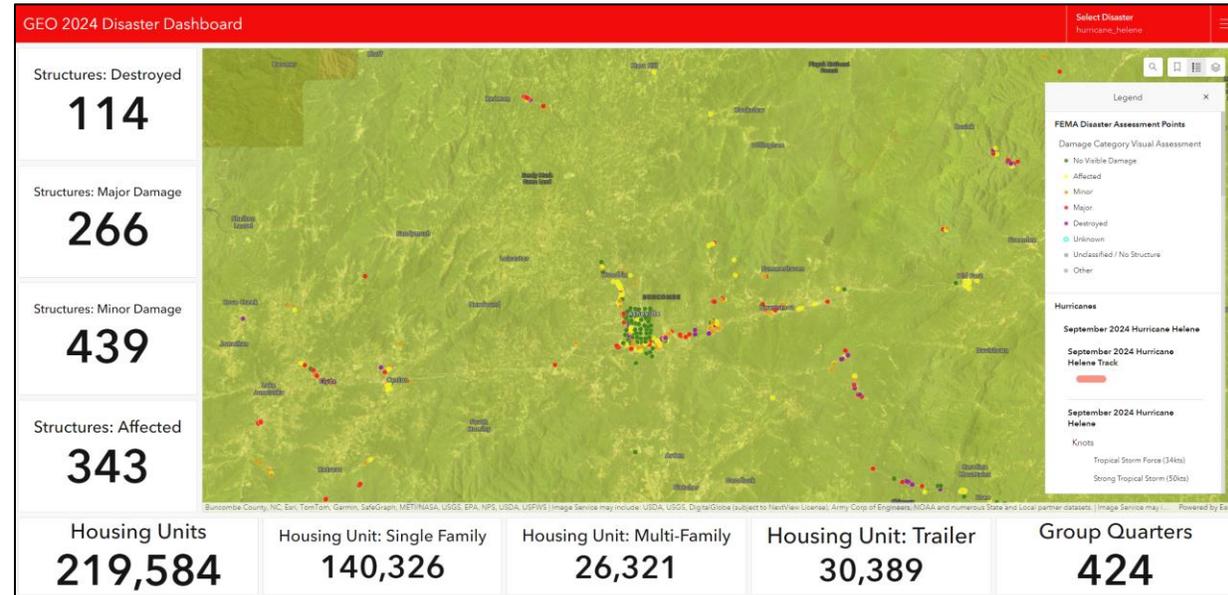
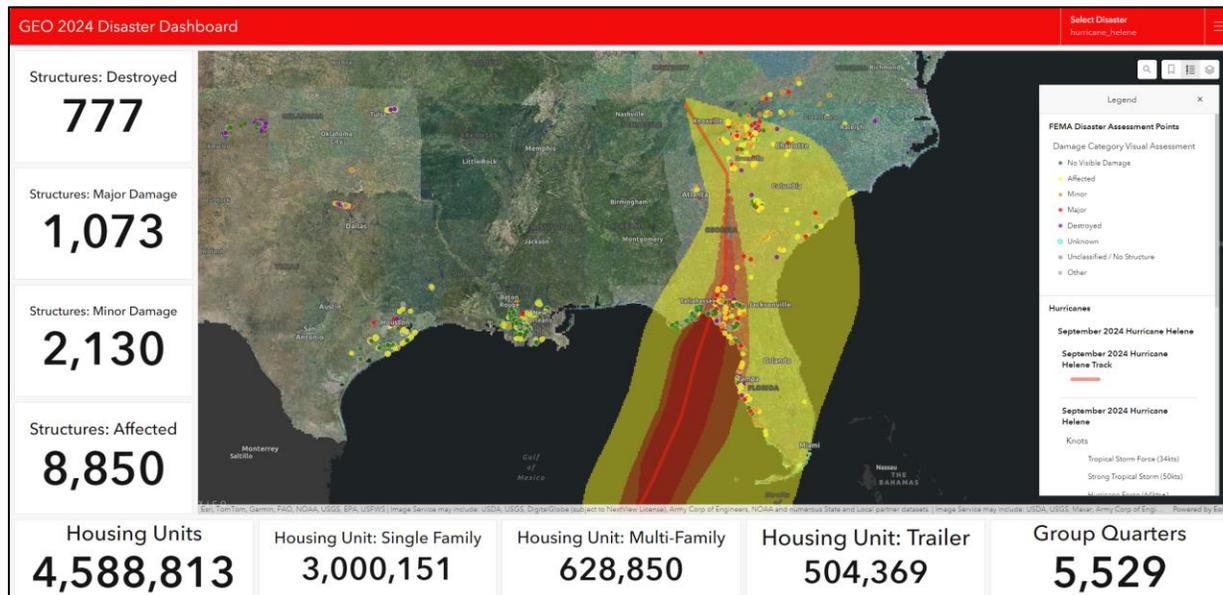
Real-time Analysis of Fundamental Geospatial Data for Disaster Response

Tornado data provided by NOAA through the [Damage Assessment Toolkit](#)



Integrated Geospatial and Statistical Data for Disaster Response

Hurricane Helene, September 2024



- Damage assessment points (FEMA)
- Hurricane and Tornado tracts/points (NOAA/NWS)
- Wildfire data (USFS)
- Seismic data (USGS)

- Housing Address Points (Census)
- Census Block Data (Census)
- Building Footprints (Census)
- Parcels (State, local, private industry partners)

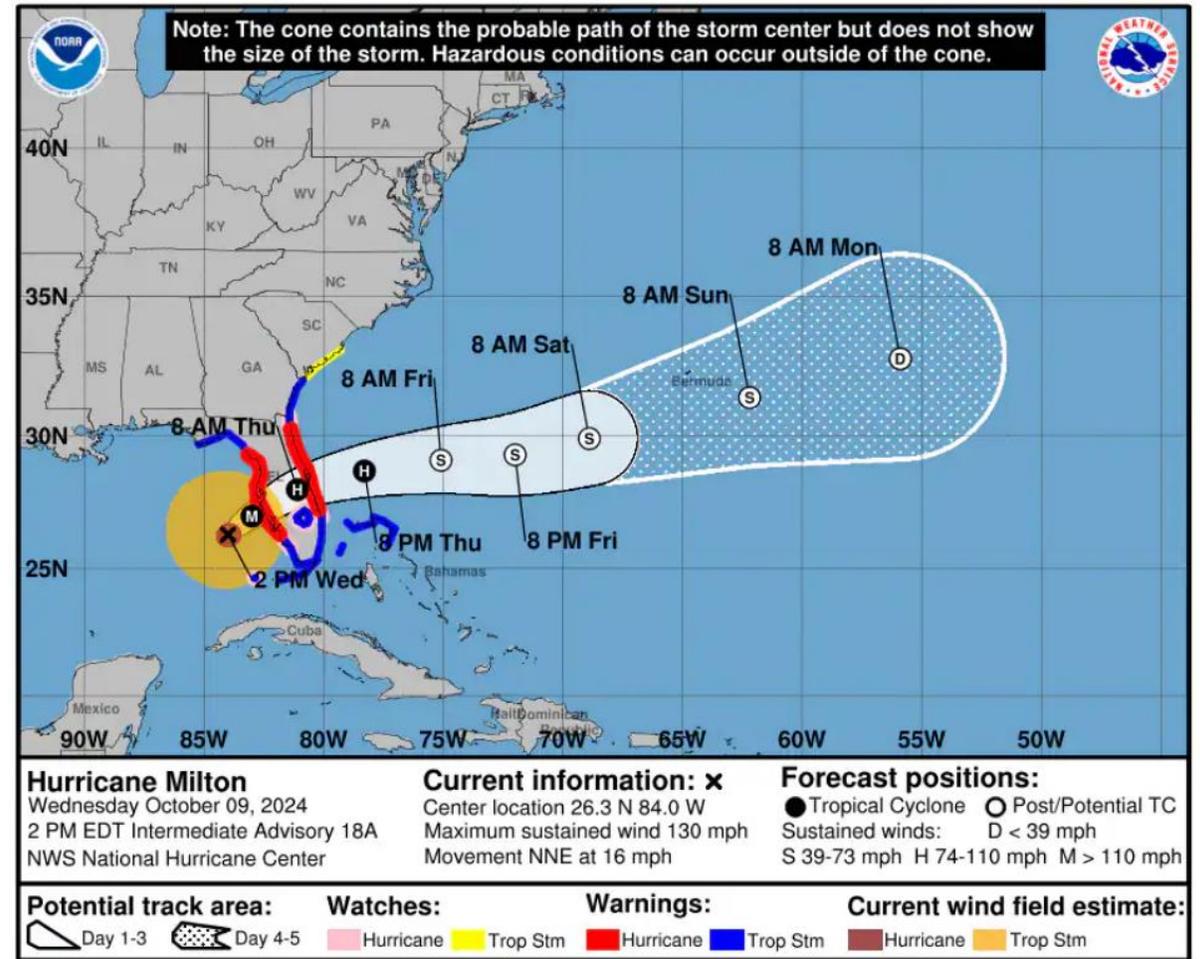


Real-time Analysis of Integrated Data for Disaster Preparedness



GOES-16 GeoColor satellite image, National Oceanic and Atmospheric Administration.

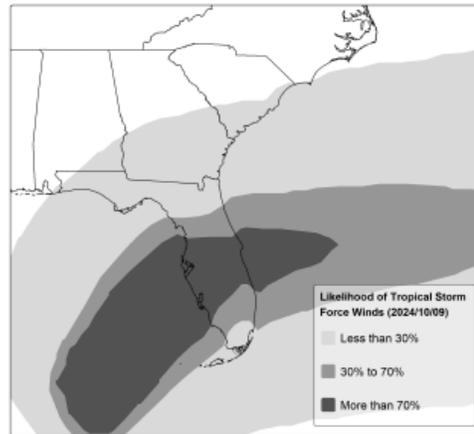
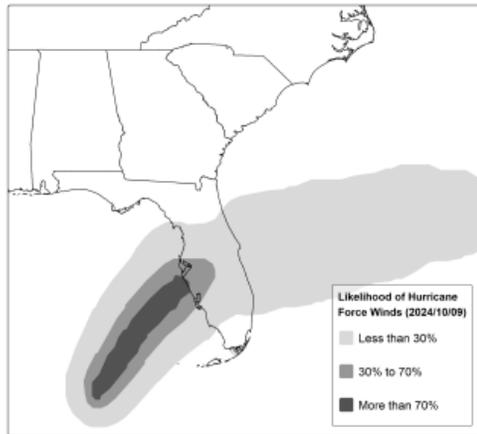
<https://www2.census.gov/topics/preparedness/events/hurricanes/milton/real-time-analysis-hurricane-milton.pdf>



National Hurricane Center Map, National Oceanic and Atmospheric Administration.

Real-time Analysis for Disaster Readiness and Response

Figure 1: The spatial distribution of tropical force wind speed and hurricane force wind speed probabilities.



(a) Hurricane Force Wind Probabilities

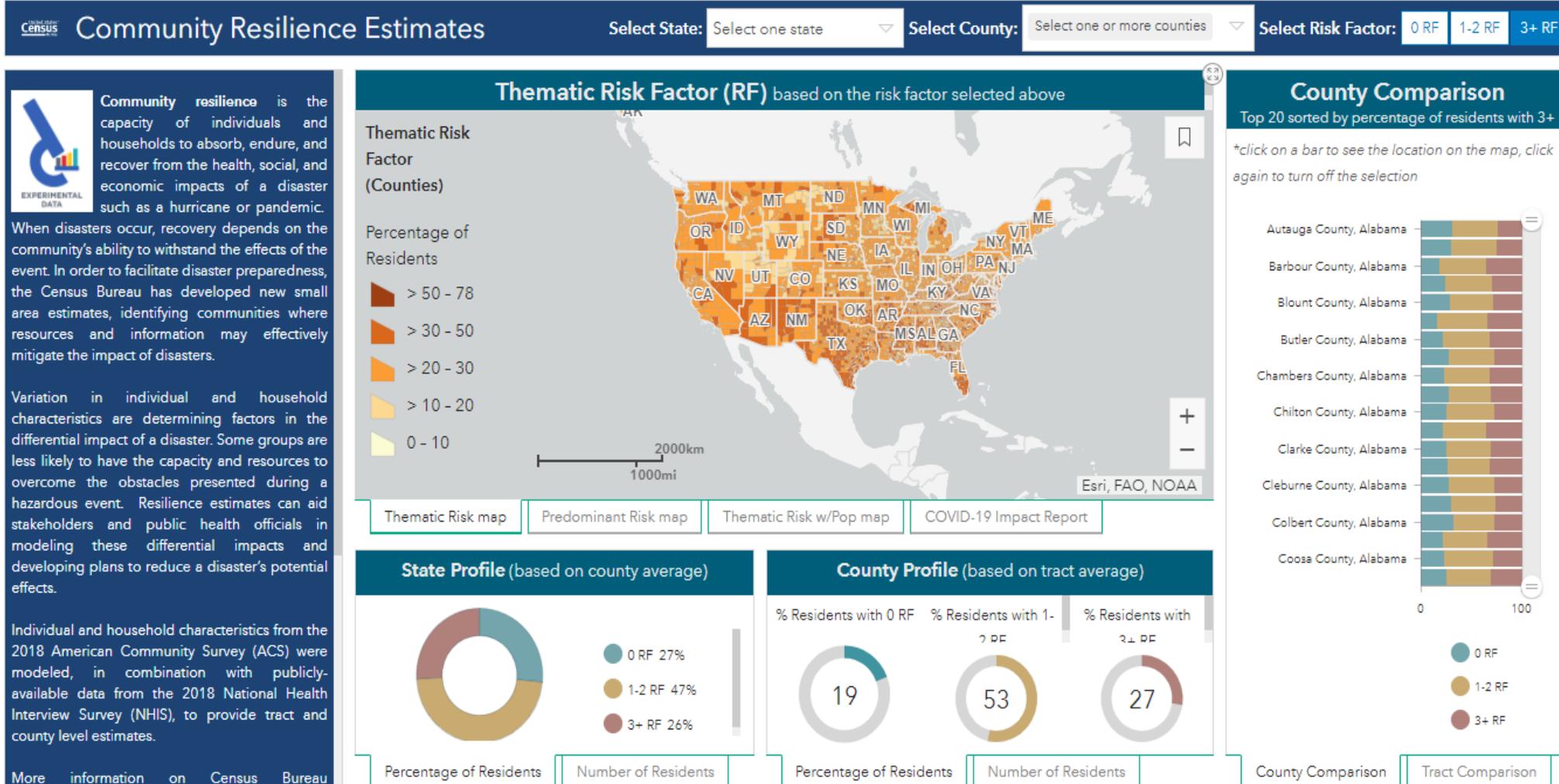
(b) Tropical Storm-Force Wind Probabilities

Notes: This Figure presents hurricane and tropical storm-force wind probabilities as provided by the NHC on October 9, 2024, at 11:00AM.

<https://www2.census.gov/topics/preparedness/events/hurricanes/milton/real-time-analysis-hurricane-milton.pdf>

	Population	Percent
Panel A: hurricane-force winds		
Non-Hispanic White	4,961,974	53.14
Non-Hispanic Black	986,486	10.57
Hispanic	1,877,376	20.11
Non-Hispanic Asian	216,781	2.32
Non-Hispanic AIAN	25,379	0.27
Other	1,269,266	13.59
Over the Age of 65	2,016,941	21.60
Under the Age of 18	1,643,602	17.60
Lower Income	2,014,871	21.58
Total Population Exposed	9,337,262	

Data Integration for Community Resilience



<https://www2.census.gov/programs-surveys/demo/technical-documentation/community-resilience/>



Why Integrate Statistical and Geospatial Information?



The UN Expert Group on the Integration of Statistical and Geospatial Information

Thank you!



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