2026 Cameron Parish Hazard Mitigation Plan Update

Public Meeting

October 7, 2025

Parish of Cameron 18 70 Louisiana

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Agenda

Introductions

Hazard Mitigation & Planning Process

Hazard Identification & Risk Assessment Review

Public Outreach Activities

Introductions

- **Stephenson Disaster Management Institute (SDMI)**
  - Chris Rippetoe – Hazard Mitigation Program Manager
  - Jason Martin – Emergency Management Analyst
- **Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)**
  - Marion Pearson – Program Coordinator
  - Lennie LaFleur – Preparedness Program Specialist
- **Cameron Parish**
  - Danny Lavergne – Cameron Parish OHSEP Director

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Who is SDMI?

- Stephenson Disaster Management Institute (SDMI) at Louisiana State University
- Non-Academic, Applied Research Unit on campus
- Specialize in providing programmatic support and decision making tools for state and local emergency managers
  - Hazard Mitigation Plans
  - Emergency Operations Plans
  - Geographic Information Systems
  - Application Development
  - Data Visualization
  - Aerial Imagery Collection/Processing

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What Is Hazard Mitigation?

Actions taken to reduce or eliminate long-term risk from natural hazards to people and property

Ongoing process that occurs before, during and after events

Common Mitigation Activities

- Infrastructure Improvements
- Regulatory & Policy Implementation
- Education & Outreach Programs

Why Have A Hazard Mitigation Plan

Planning efforts help communities become more resilient and sustainable

- Provides platform for input from diverse group of stakeholders
- Identifies most prevalent hazards in the community
- Outlines a strategy to protect community from hazards

Maintains community eligibility for federal post-disaster mitigation funding

- Disaster Mitigation Act (DMA) of 2000 Section 322
- Title 44 Code of Federal Regulations (CFR) §201.6
- **No Plan = No Mitigation Money = No Project Funding!**

Hazard Mitigation Planning is a process that identifies natural hazard risks and develops strategies to reduce these risks

Plan Update Process

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Hazard Mitigation Plan Requirements

Must include a robust planning committee/ stakeholder group

- Local/parish agencies
- Local business/ industry
- Underserved populations

Must identify and evaluate the risk from natural hazards

- Types/sources of hazards
- Location/extent
- Impacts on community
- Previous occurrences
- Potential for future events

Must outline strategy for reducing impacts for identified risks

- Set clear goals/ objectives
- Identify actions or projects
- Establish timelines, responsible parties & funding sources

Must be formally adopted by Cameron Parish

- All HM plans in LA are multi-jurisdictional
- Administered at parish level
- Incorporated communities within parish must also adopt

Must be updated and receive FEMA approval every five years

- Reassess risks, vulnerabilities & mitigation strategy
- Must reflect changes in conditions & development

Hazard Identification and Risk Assessment

- The plan includes descriptions of the natural hazards that affect the parish planning area.

- The hazards identification includes the following:
  - *locations affected*
  - *extent or strength*
  - *previous occurrences*
  - *probability of future events*

Hazard Identification And Risk Assessment

- Based on Currently Profiled Prevalent Natural Hazards
- Identify Any New Hazards
- Previous Occurrences
- Impact from Events
- Probability of Future Events
- Critical Facilities
- Future Development Trends
- Future Hazard Impacts
- Zoning and Land Use

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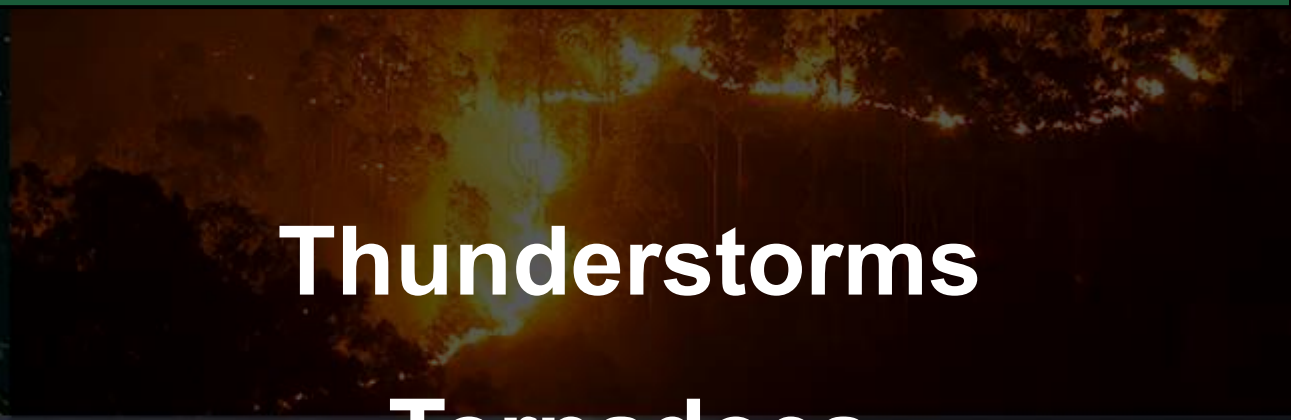
Hazard Identification And Risk Assessment

Coastal Hazards

Drought



Thunderstorms

Tornadoes

Excessive Heat

Flooding

Sinkholes

Tropical Cyclones

Wildfires

Risk Matrix for Cameron Parish

Hazards	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Coastal Hazards	4	2	2	1	2	**2.35**
Drought	2	2	4	2	3	**2.55**
Excessive Heat	1	2	4	1	2	**2**
Flooding	3	4	3	4	3	**3.4**
Sinkholes	1	2	2	1	4	**1.9**
Thunderstorms – Hail	4	2	3	3	1	**2.7**
Thunderstorms – Lightning	3	2	2	3	1	**2.25**
Thunderstorms – Winds	4	2	3	3	1	**2.7**
Tornadoes	4	3	2	4	3	**3.2**
Tropical Cyclones	3	4	4	1	4	**3.3**
Wildfires	2	3	4	1	2	**2.5**

Risk Factor	PRI Range
High Risk	2.5 to 4.0
Moderate Risk	2.0 to 2.4
Low Risk	0 to 1.9

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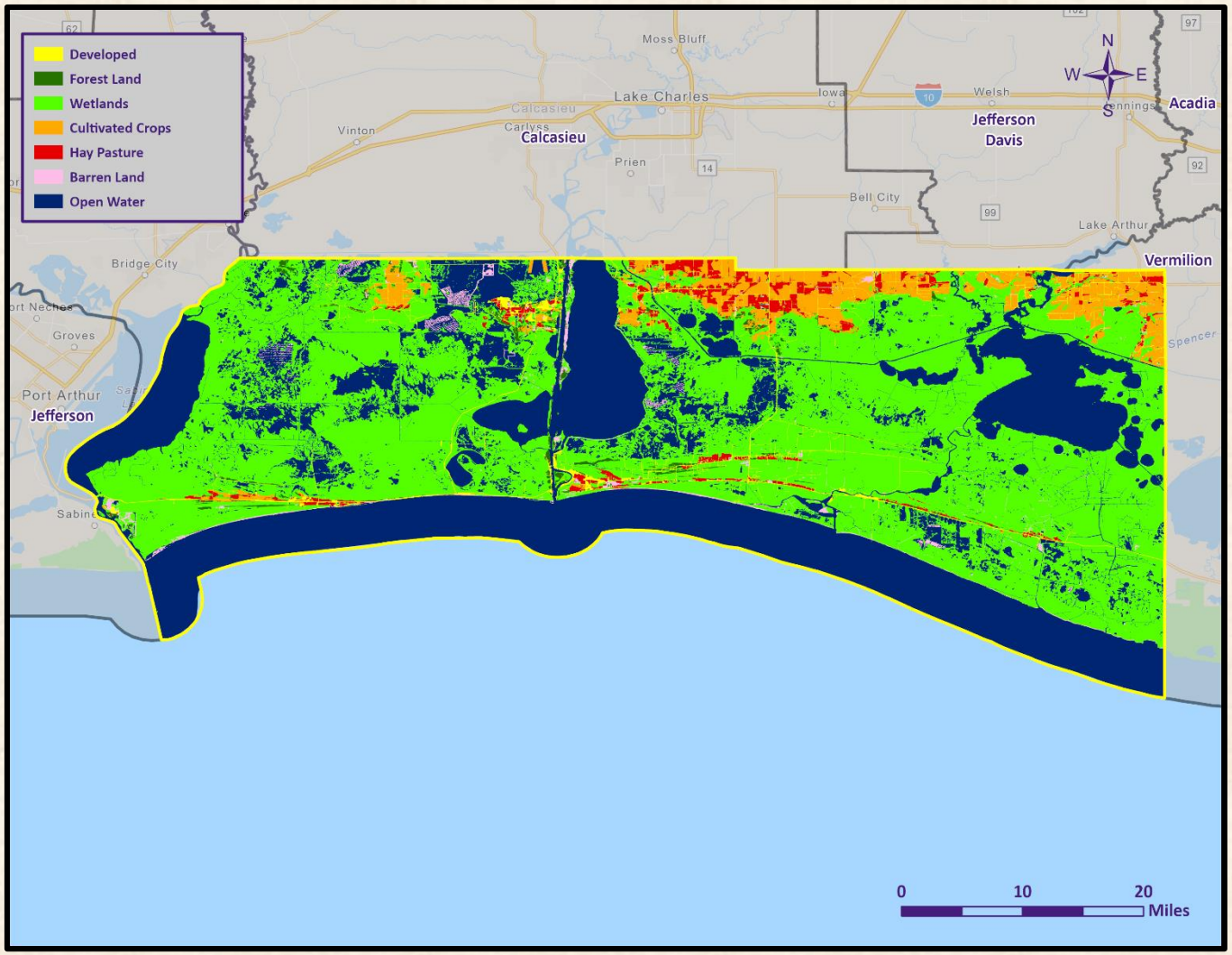
Risk Assessment Maps

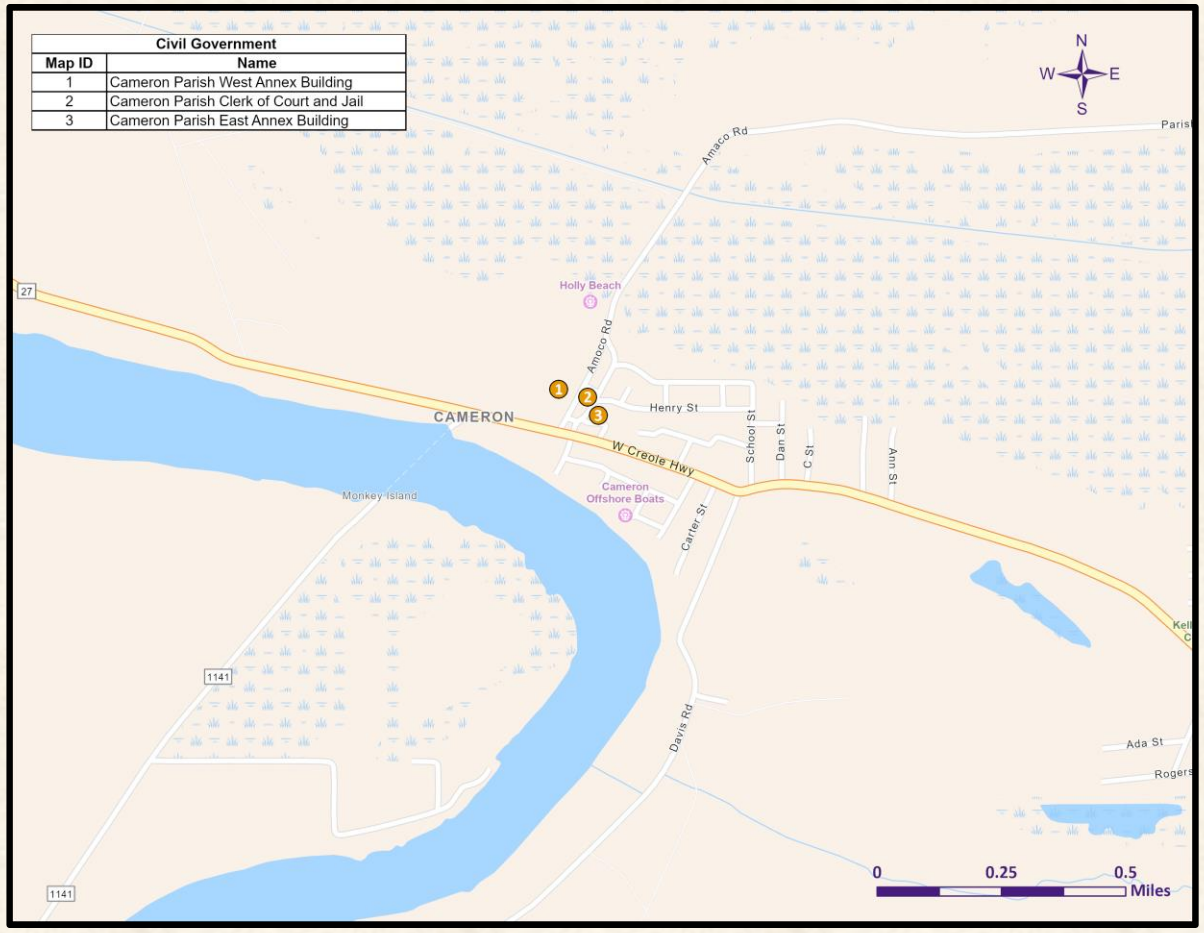
Cameron Parish Land Use

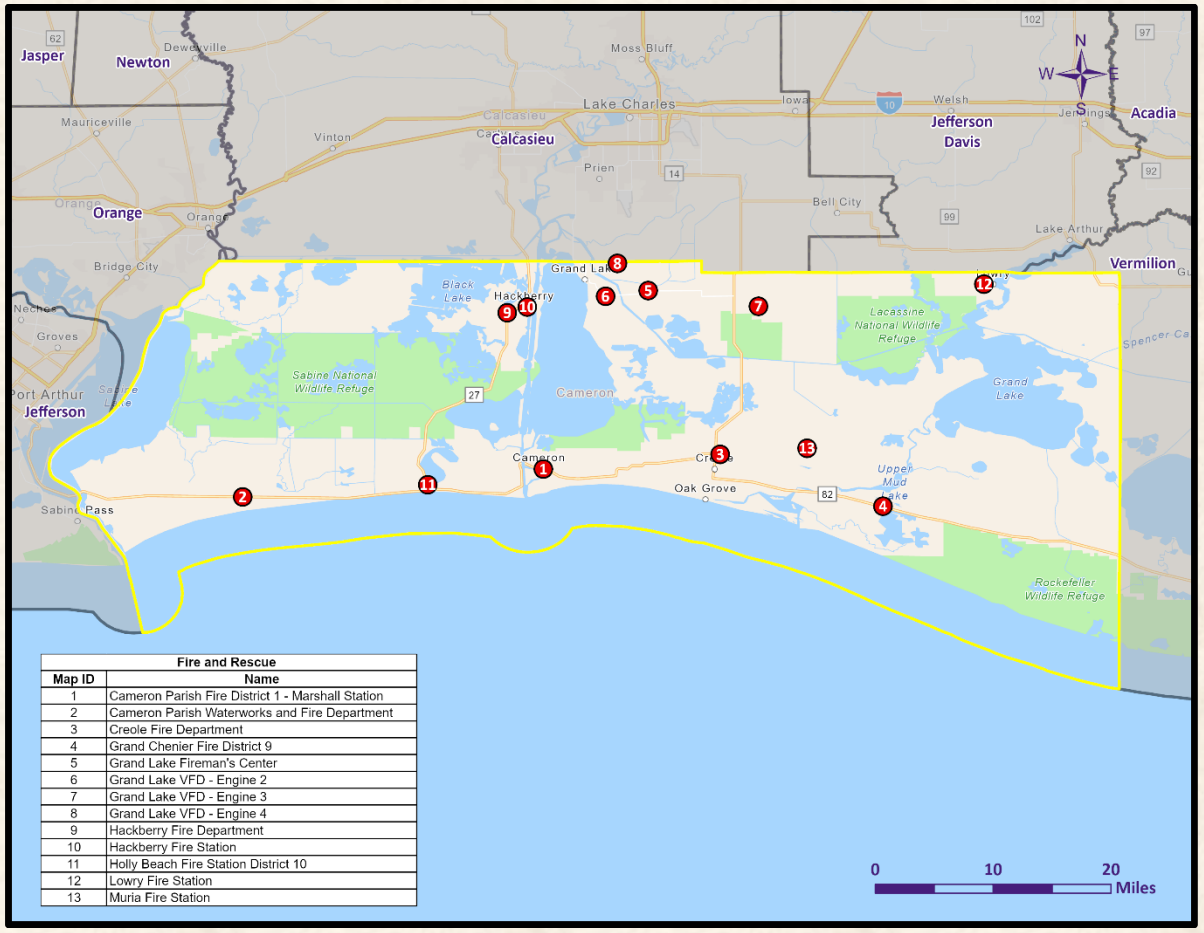


Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	82,329	7%
Wetlands	656,089	53%
Forest Land (Not including forested wetlands)	4,472	< 1%
Urban/Development	16,723	1%
Water	464,107	39%

Source: USGS Land Use Map

Cameron Parish Critical Facilities

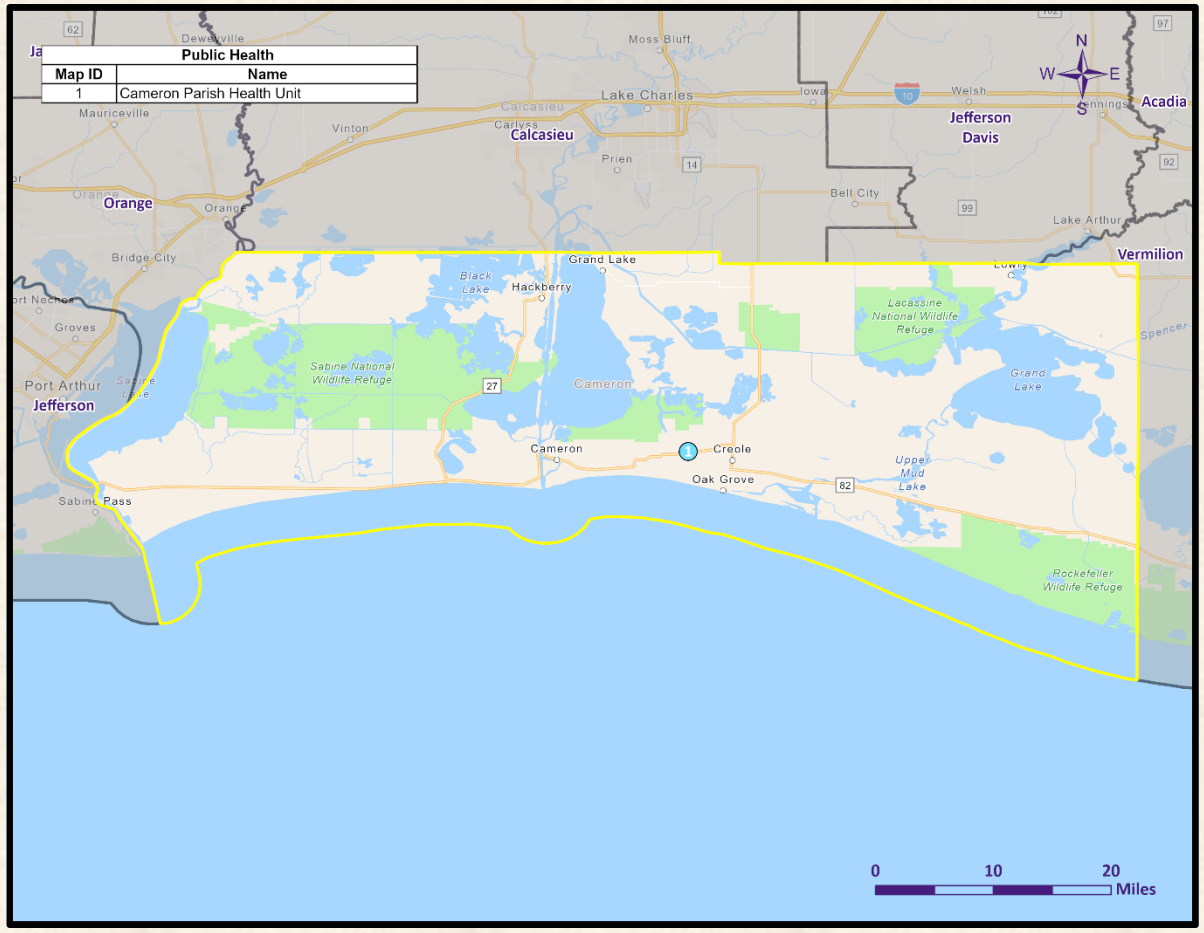




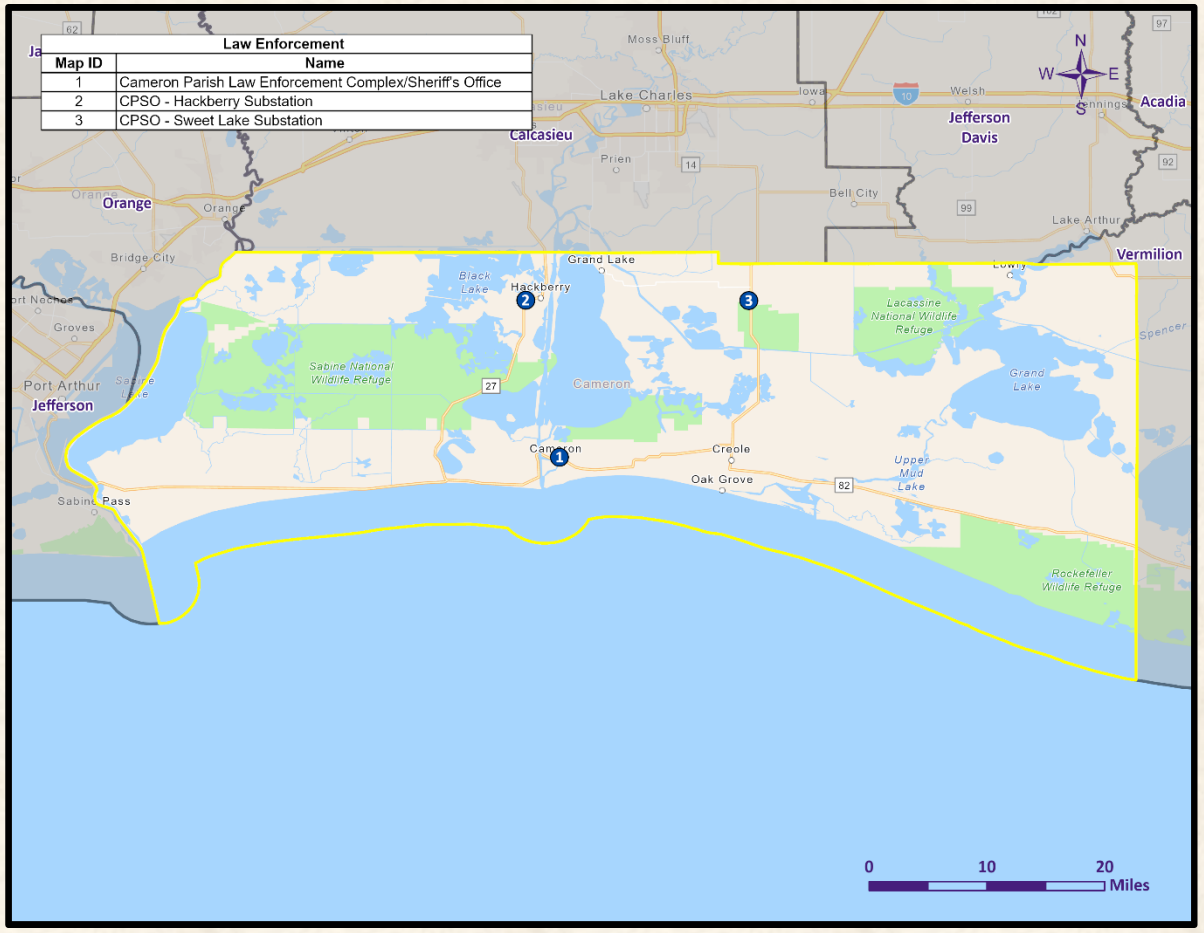
Civil Government

Fire & SAR

Cameron Parish Critical Facilities

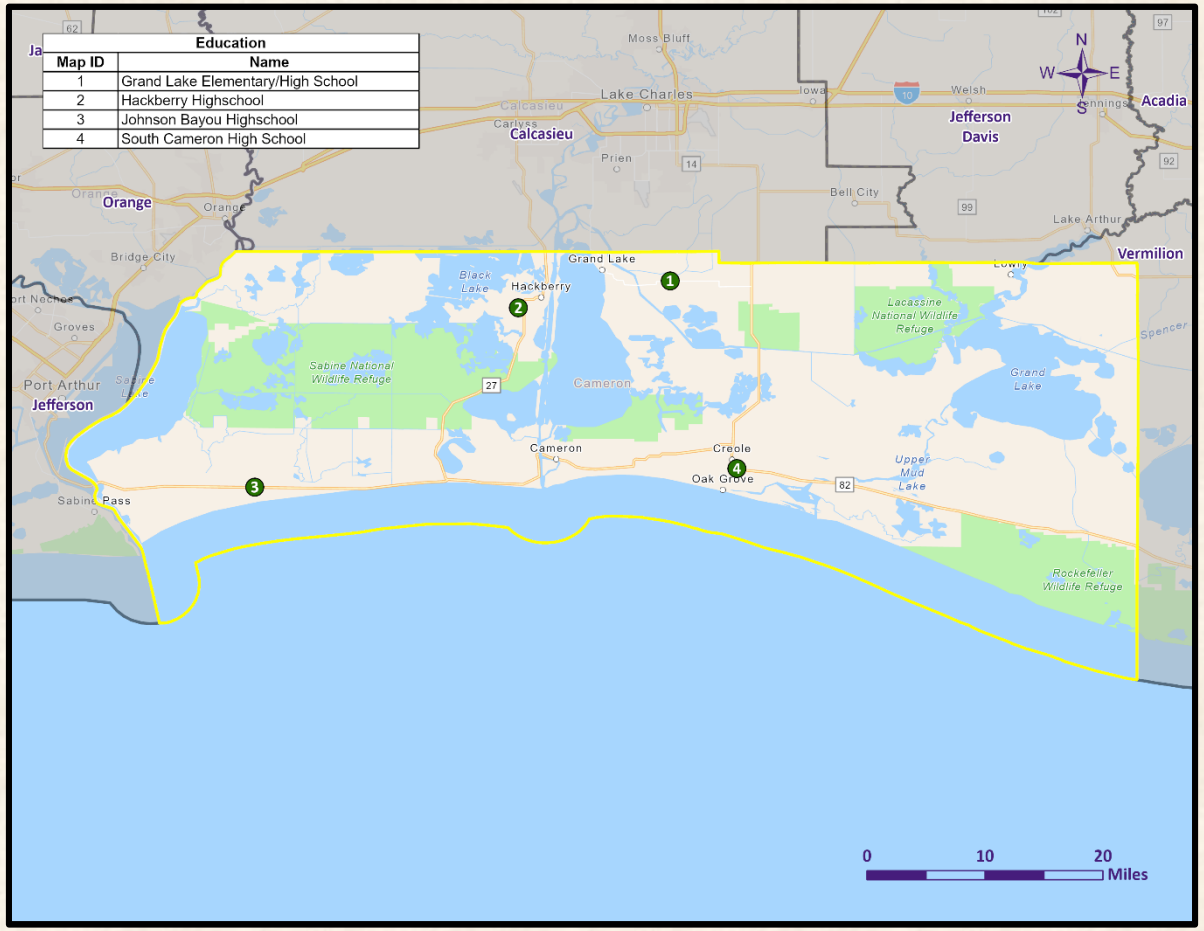


Public Health



Law Enforcement

Cameron Parish Critical Facilities



Public Education

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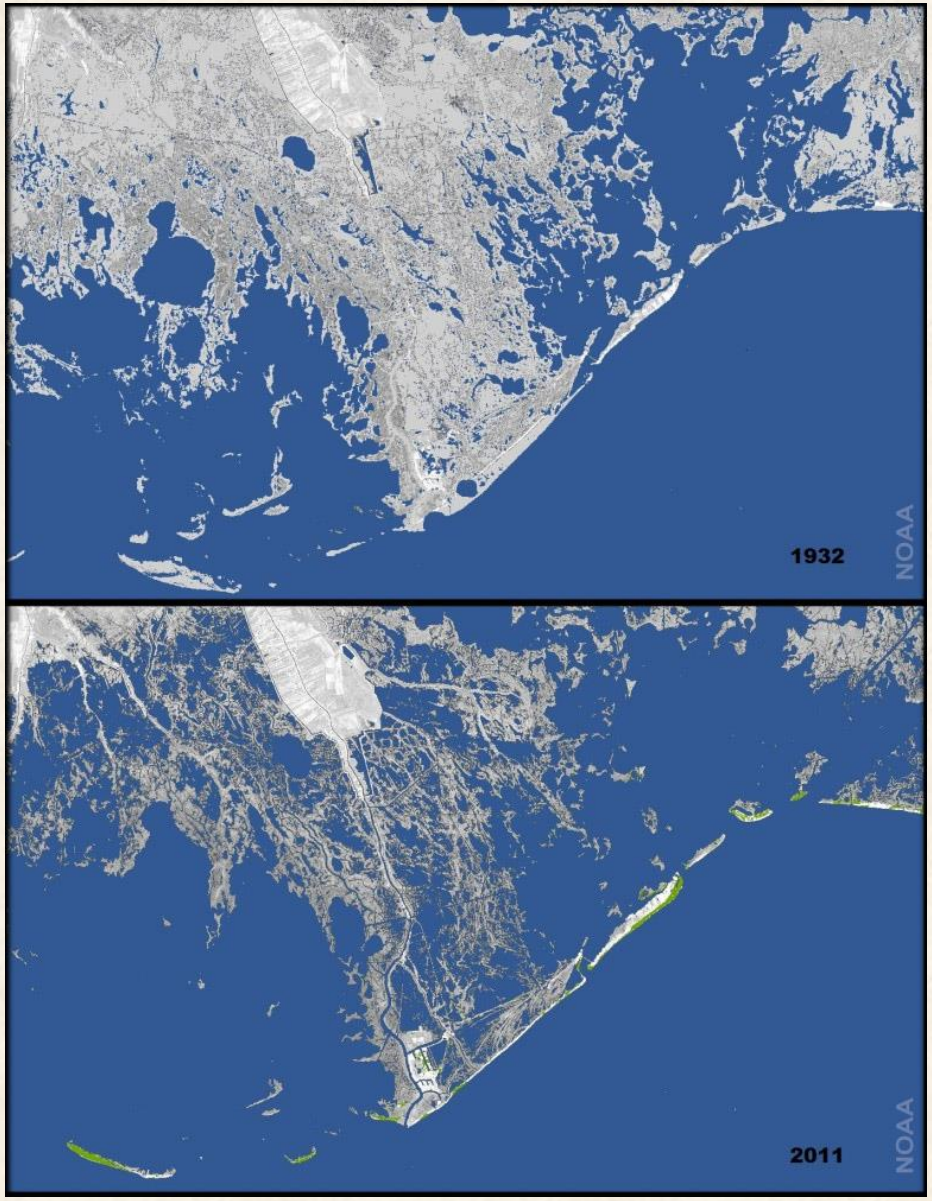
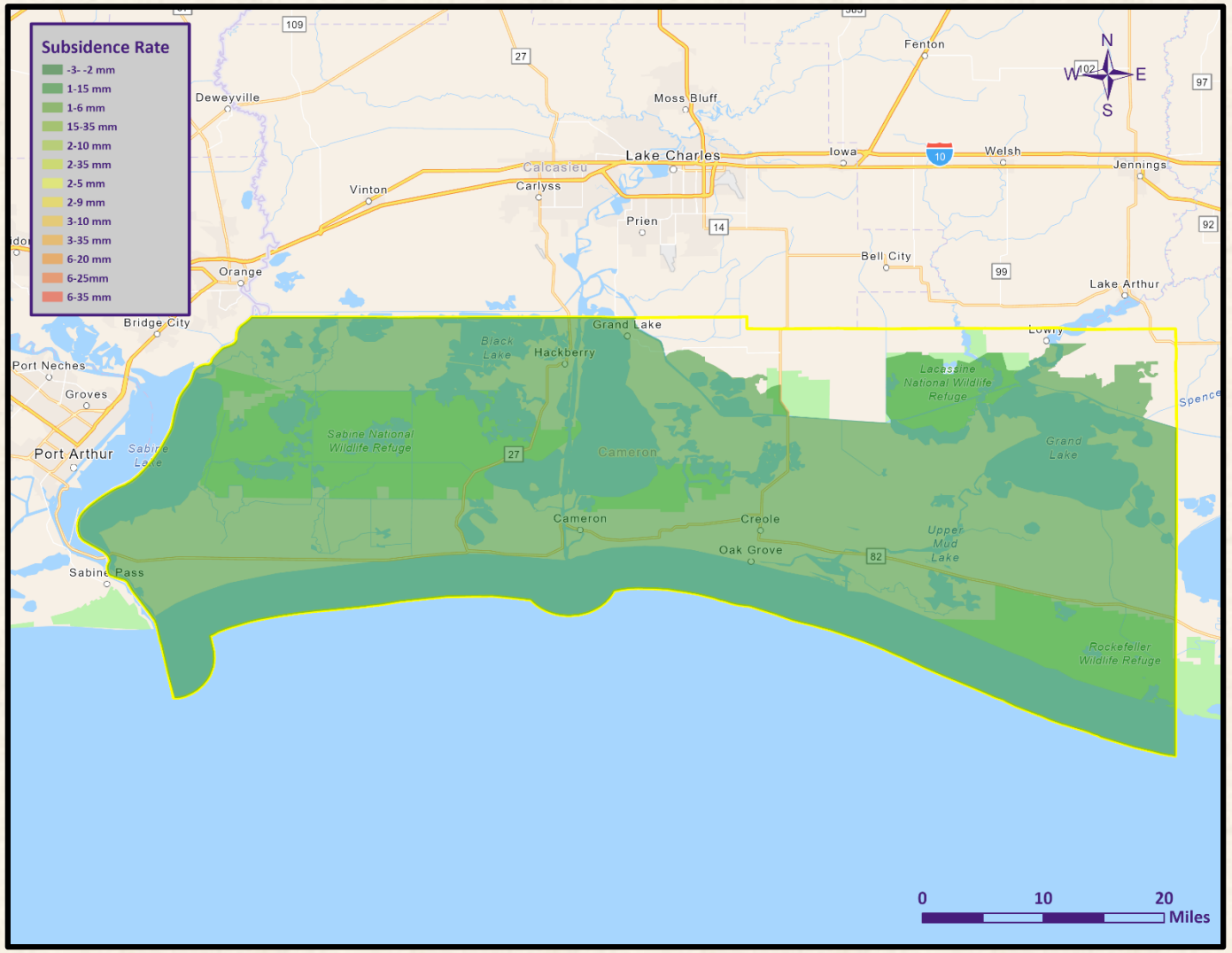
Coastal Hazards

- Since 1932, the average annual land loss in Louisiana is 35 square miles, while the average annual land gained is 3 square miles.
- Subsidence and sea level rise are the main culprits for land loss but other “discrete hazards” i.e. hurricanes, also contribute.
- Subsidence rates are moderately high in Cameron Parish with the potential to lose up to 15mm or more of land annually throughout the parish.



Subsidence Rates



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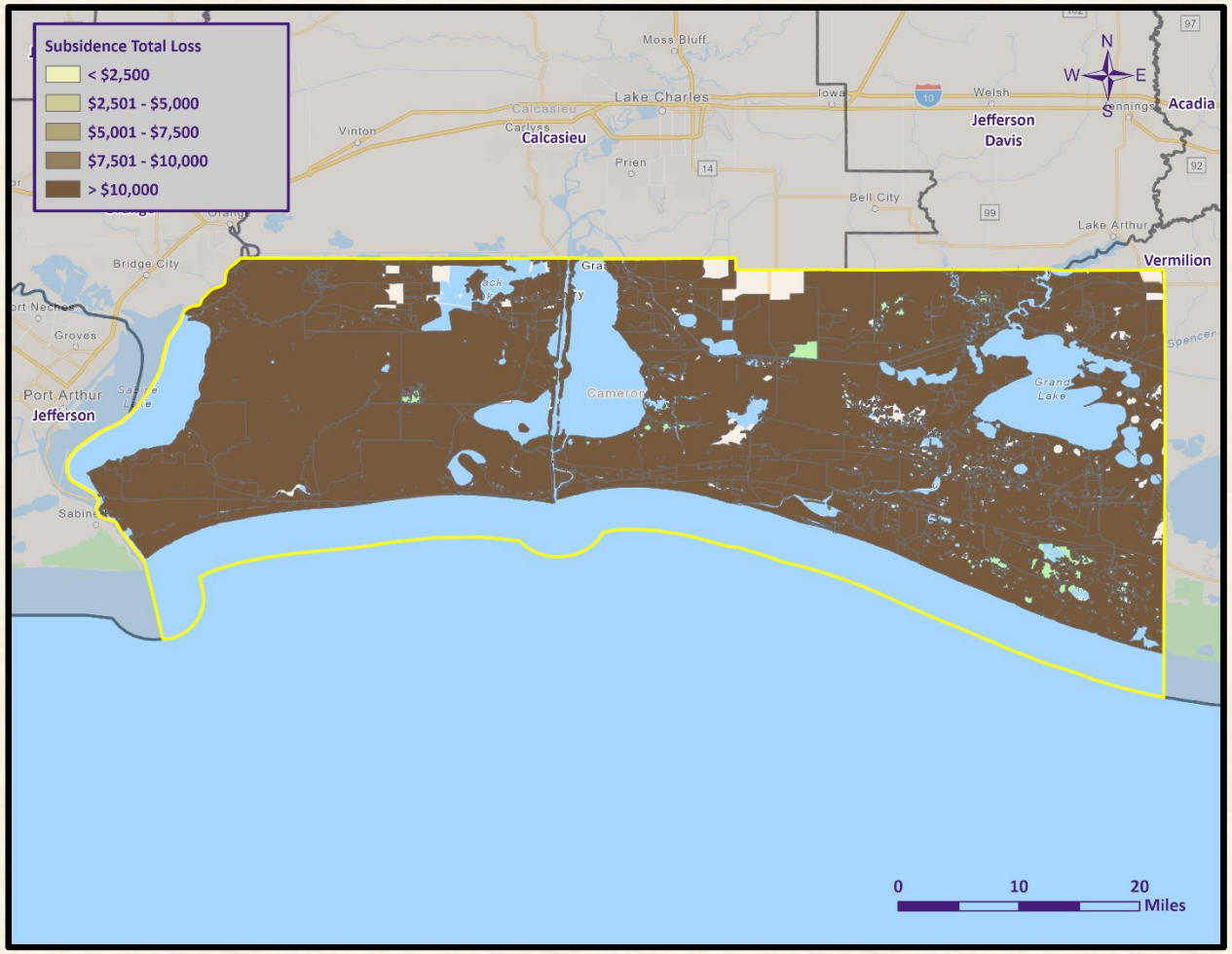
Subsidence Loss



Estimated Annual Potential Losses
Cameron Parish
$1,379,000

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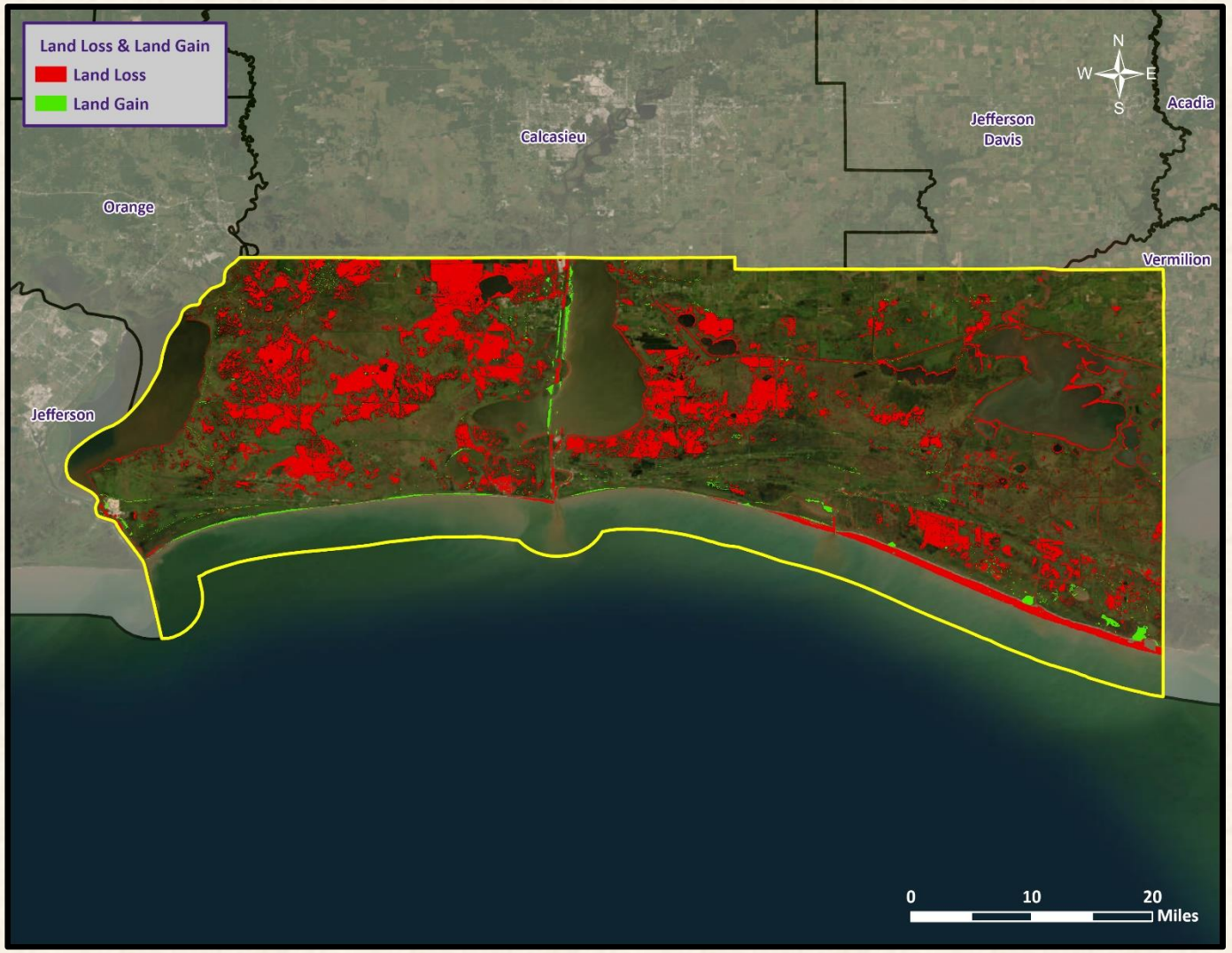
Land Gain and Land Loss



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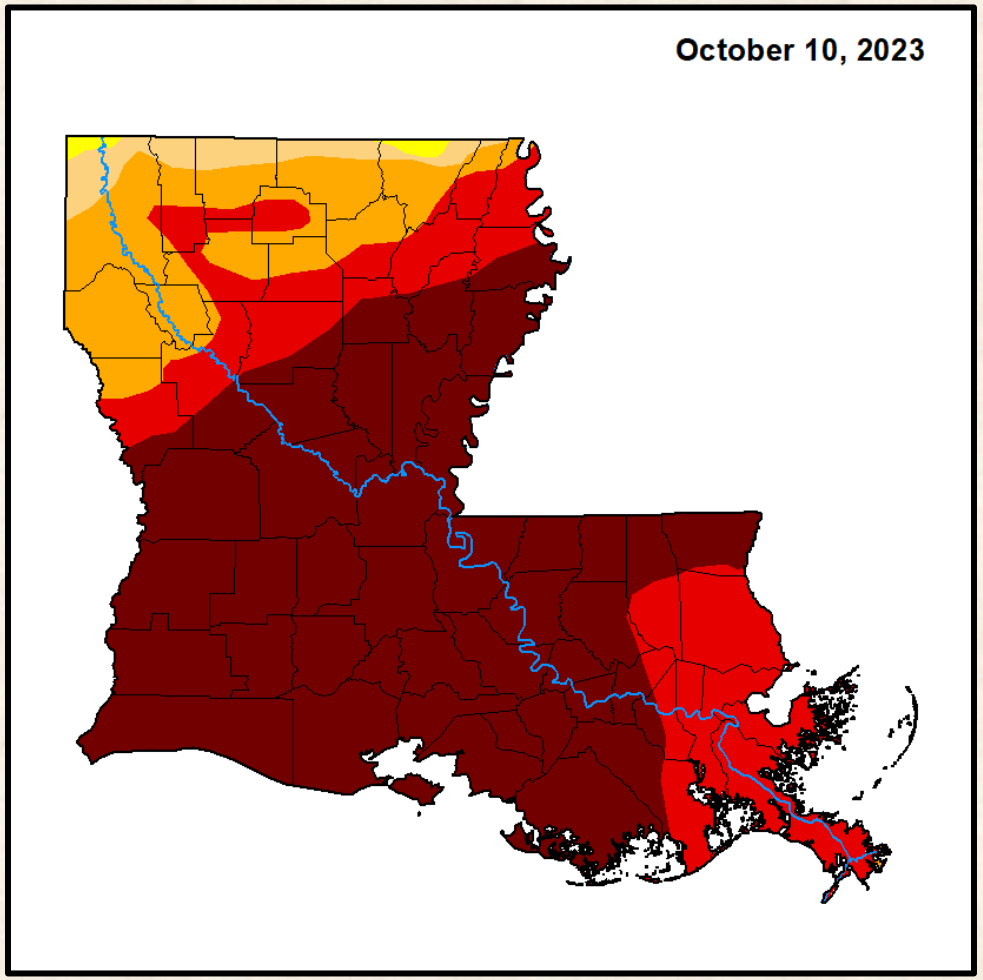
Drought

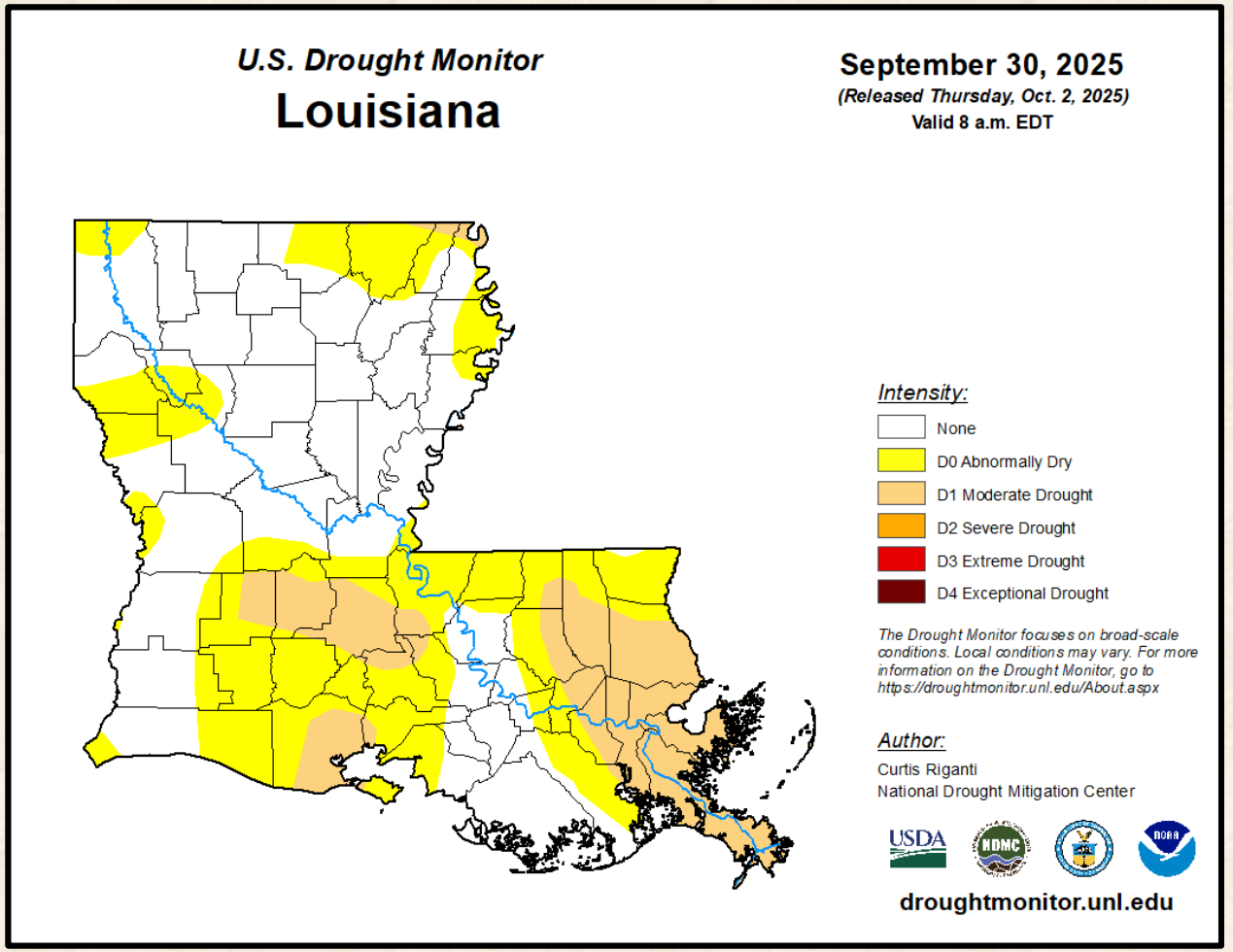
- A drought is a deficiency in water availability over an extended period of time, caused by precipitation totals and soil water storages that do not satisfy the environmental demand for water either by evaporation or transpiration through plant leaves.

- There are four classes of drought:
  - ✓Meteorological Drought
  - ✓Hydrologic Drought
  - ✓Agricultural Drought
  - ✓Socioeconomic Drought

- Generally, the entire parish will be affected by drought
  - Not limited to one particular location within the parish

State-wide Drought Monitor





Excessive Heat

- No universal definition for Excessive Heat
- Often seen in conjunction with regional drought
- Heat waves are easier to define
  - At least 5 consecutive days where the daily max temperature exceeds the average max temperature by 9 degrees

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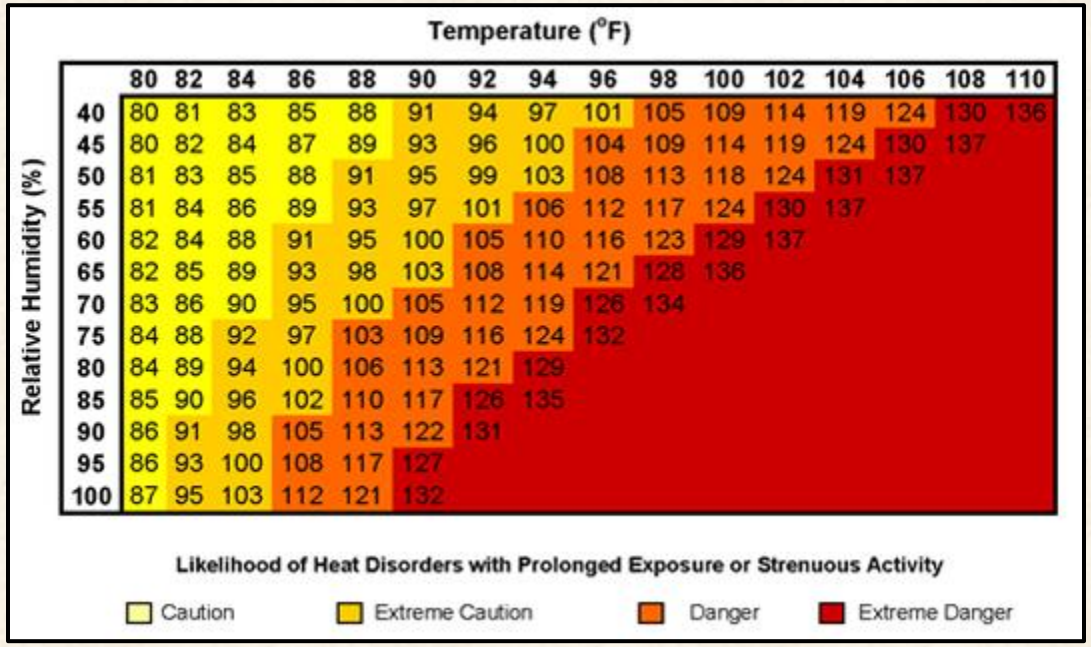
Excessive Heat



Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning.
91°F to 103°F	Moderate	Implement precautions and heighten awareness.
103°F to 115°F	High	Additional precautions to protect workers.
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures.

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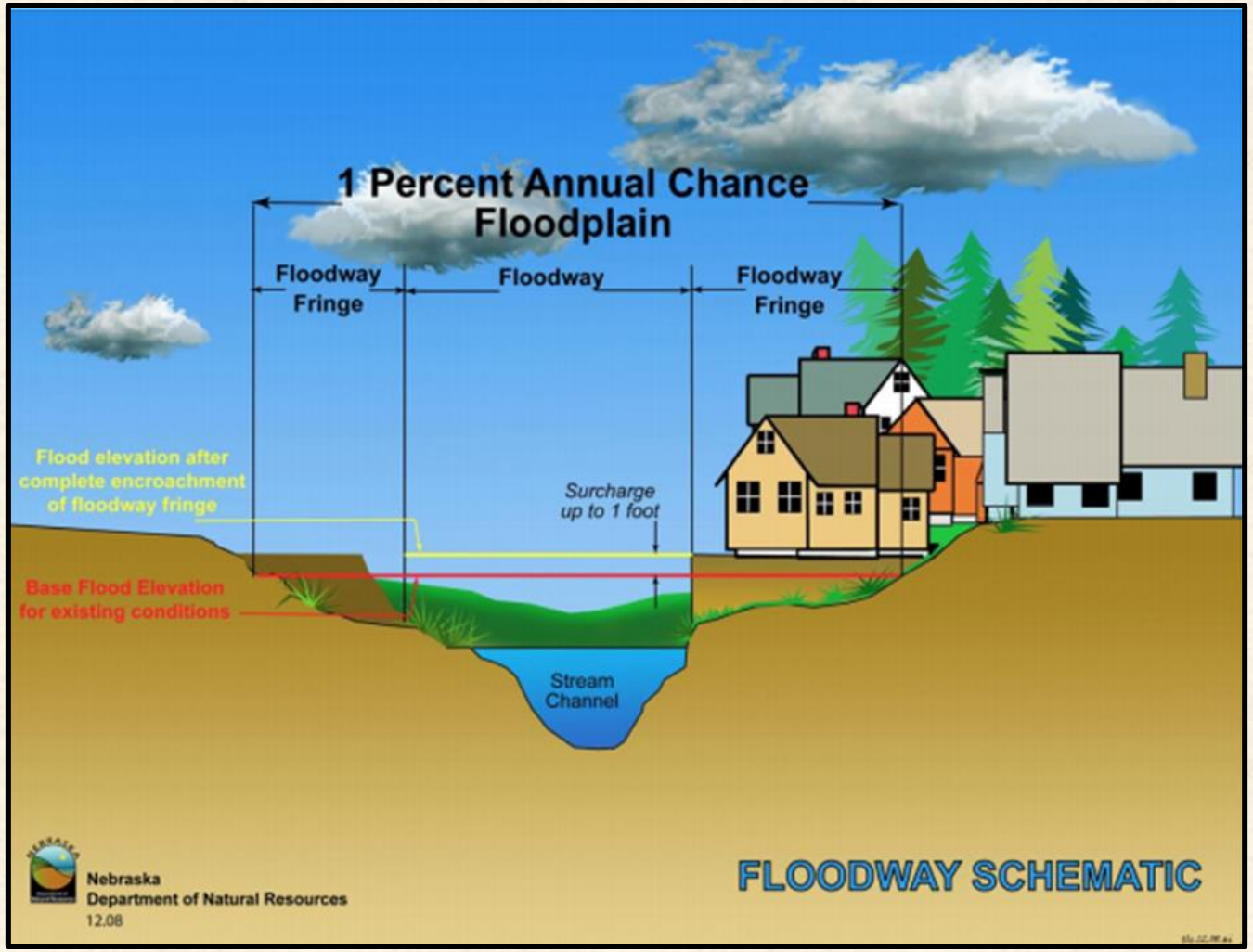
Flooding

- A flood is the overflow of water onto land that is usually not inundated.

- The National Flood Insurance Program defines a flood as “a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waves, unusual and rapid accumulation or runoff of surface waters from any source, mudflow, or collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.”

Floodway Diagram



Source: Nebraska Department of Natural Resources

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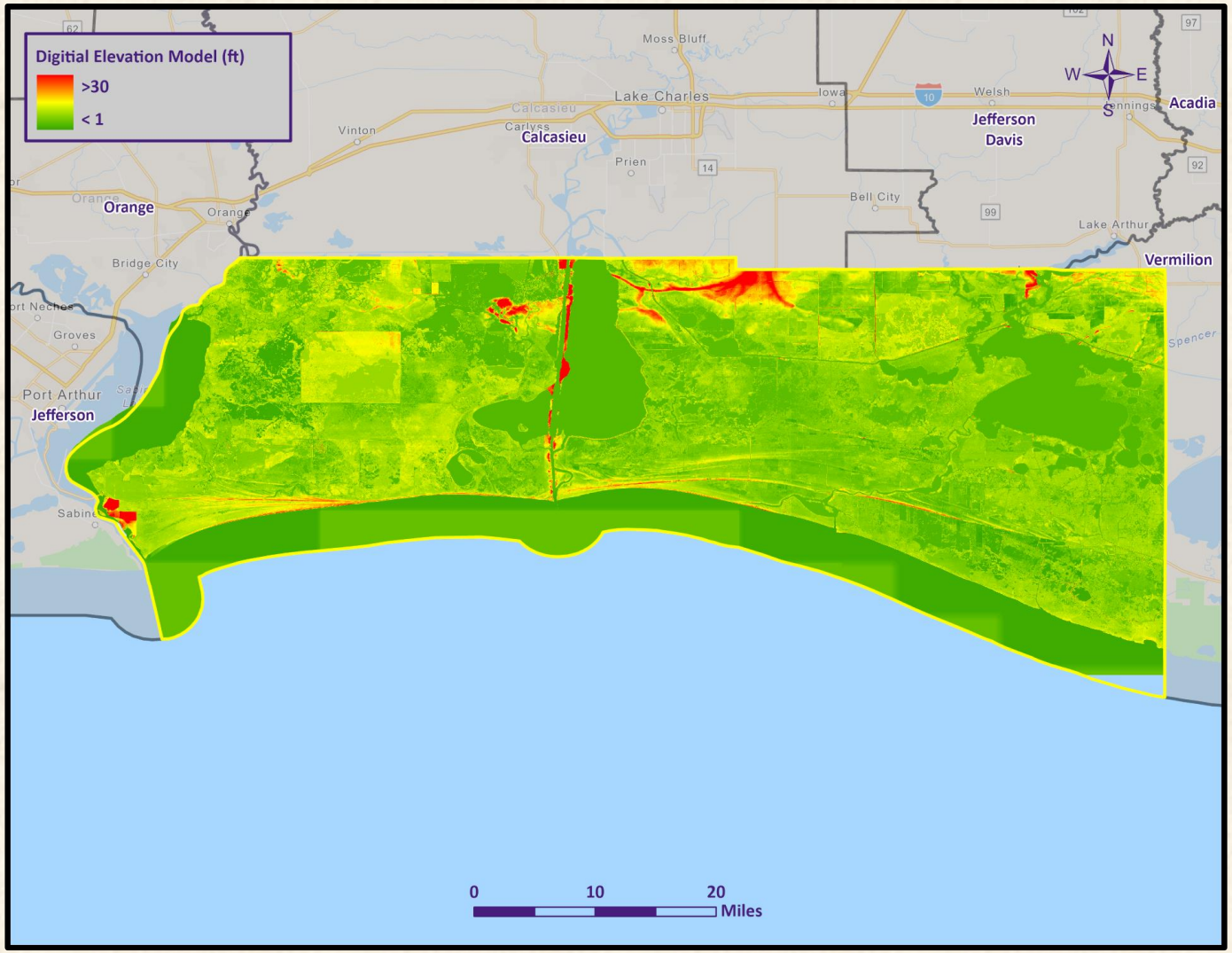
Digital Elevation Model



Source: USGS

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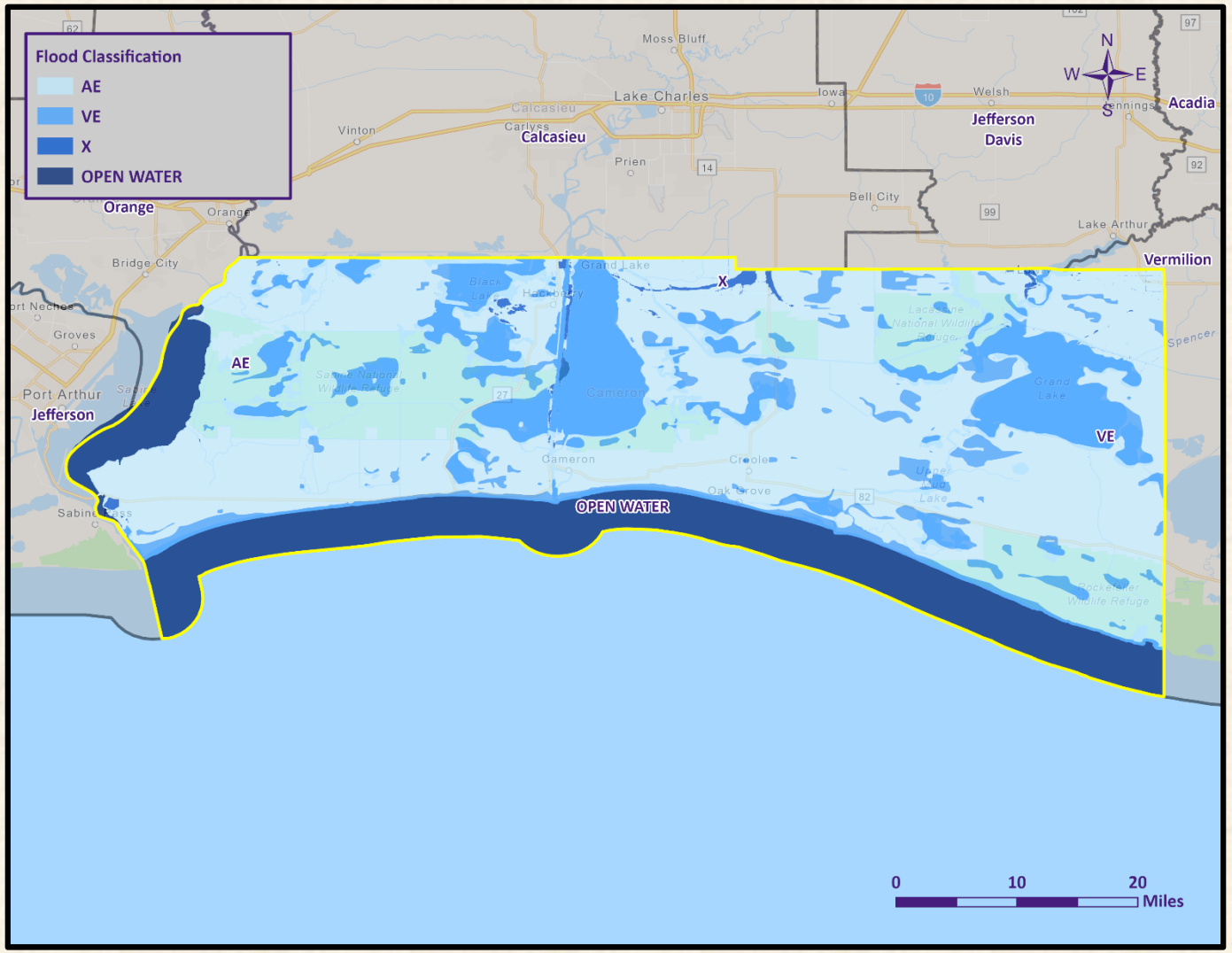
Cameron Parish Flood Map



Source: FEMA Maps Service Center

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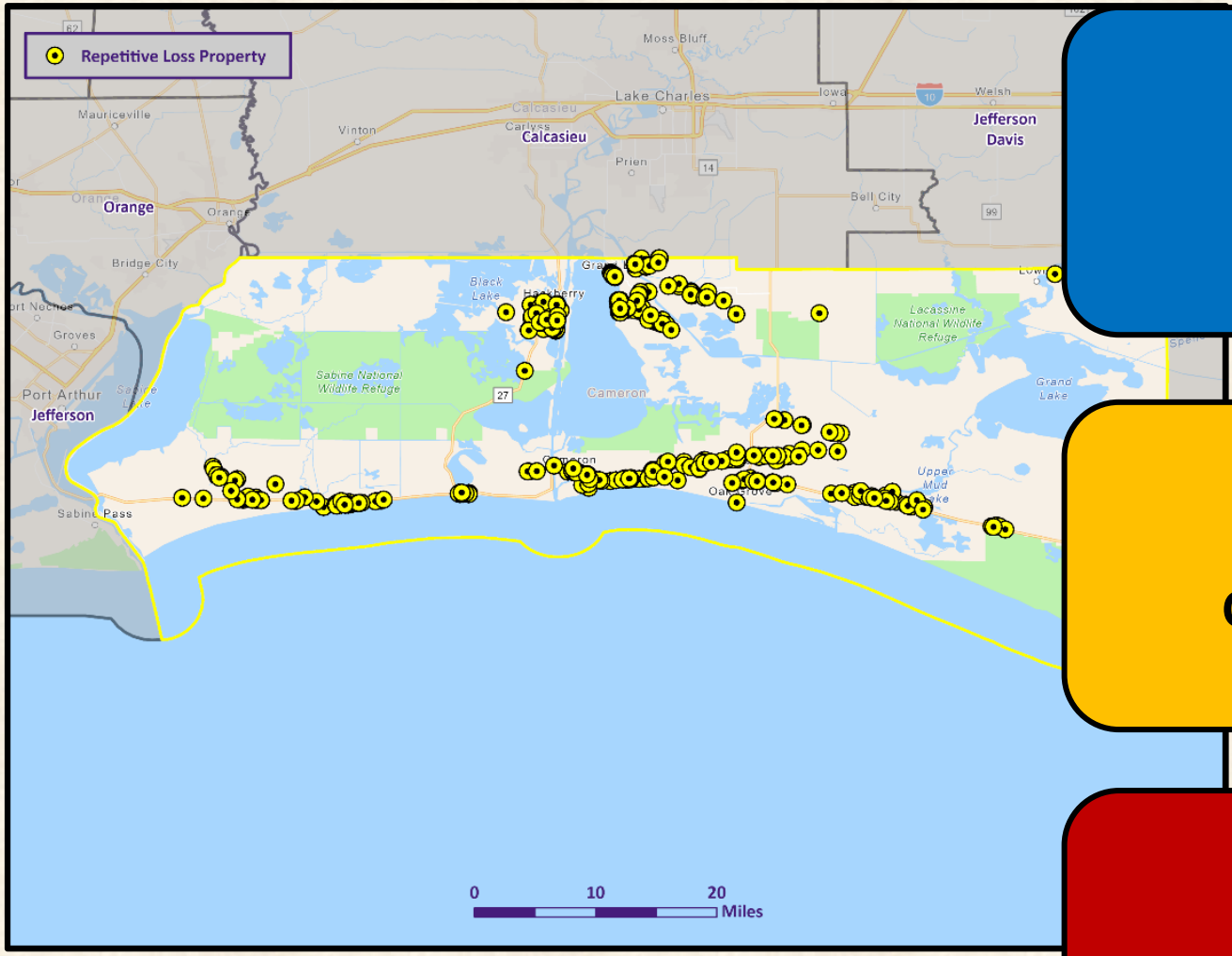
Flooding

- Some areas flood more often than other properties, even more than those in the mapped 100-year floodplain.
- FEMA defines a “repetitive loss” property as one which has received two flood insurance claim payments for at least $1,000 over any 10-year period since 1978.
- There are currently over 250,000 repetitive loss properties in the U.S.
  - ~43,000 in Louisiana alone
- These properties comprise 1.3% of the NFIP policy base, but they account for approximately 25-30% of the country’s flood insurance claim payments.

Repetitive Loss Properties



Residential
448

Commercial
47

Government
0

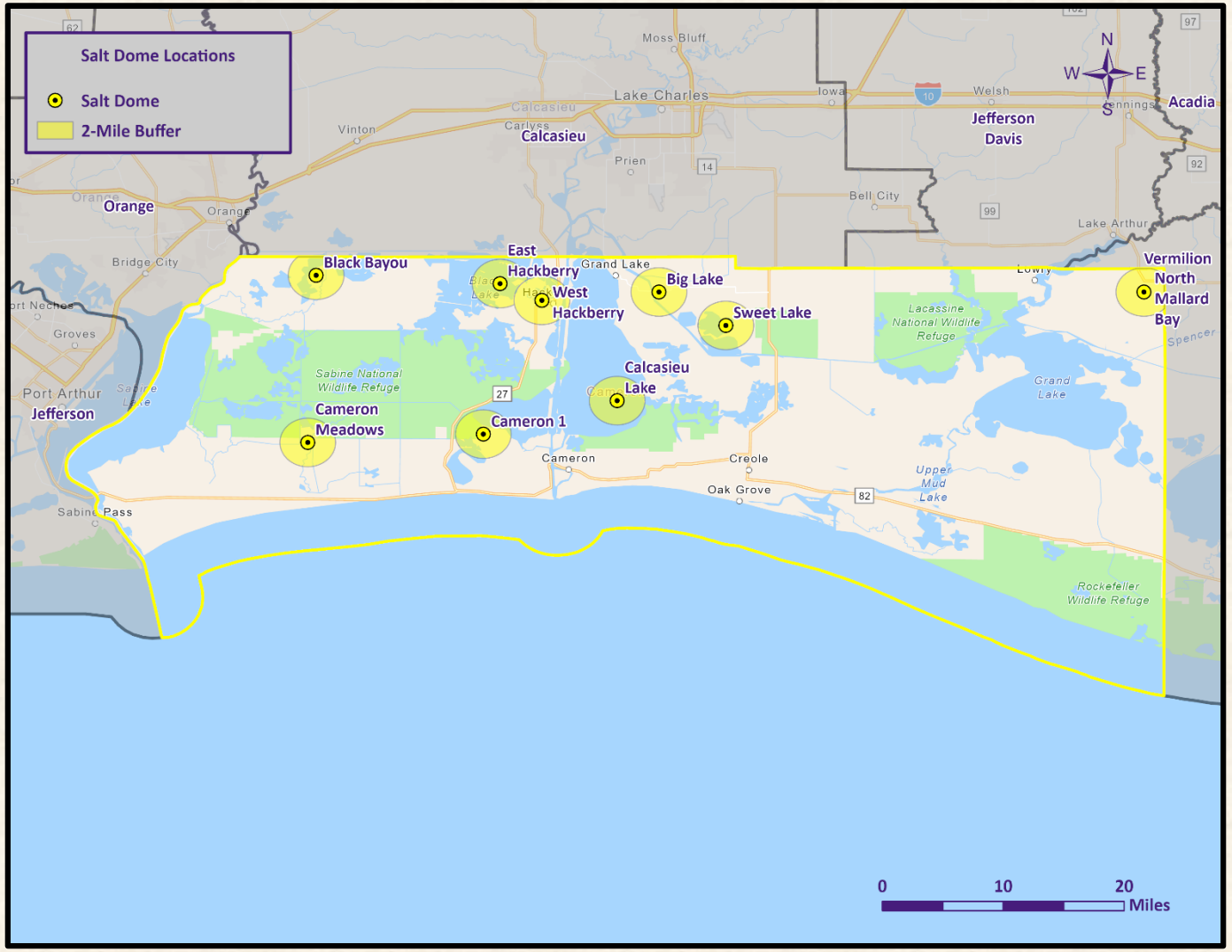
Total Structures: 495

Claims Paid: $90,645,408

Sinkholes

- A sinkhole is an area of ground that has no natural external surface drainage – when it rains, all of the water stays inside the sinkhole and typically drains into the subsurface.
- Sinkholes form in areas where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by groundwater circulating through them.
- As the rock dissolves, spaces and caverns develop underground. Once the spaces underground become too large, there is not enough support for the land above the spaces which causes a sudden collapse on the land surface.

Salt Dome Locations



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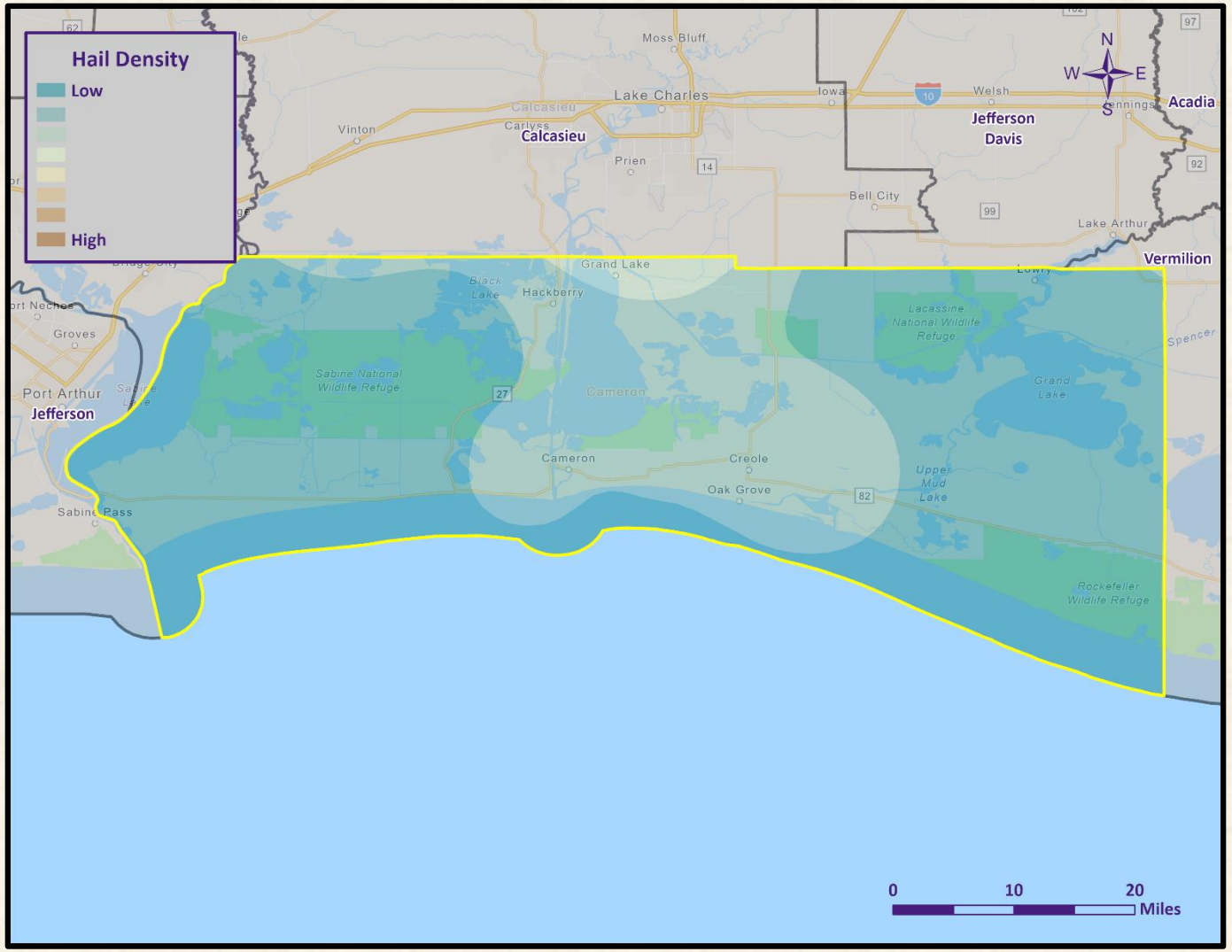
Thunderstorms

- A **thunderstorm**, also known as an **electrical storm**, a **lightning storm**, or a **thundershower**, is a type of storm characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder.

- They are usually accompanied by strong winds, heavy rain, and sometimes snow, sleet, or hail.

- Thunderstorms may line up in a series or rainband, known as a squall line. Strong or severe thunderstorms may rotate, known as supercells. While most thunderstorms move with the mean wind flow through the layer of the troposphere that they occupy, vertical wind sheer causes a deviation in their course at a right angle to the wind shear direction.

Hailstorm Density in Cameron Parish



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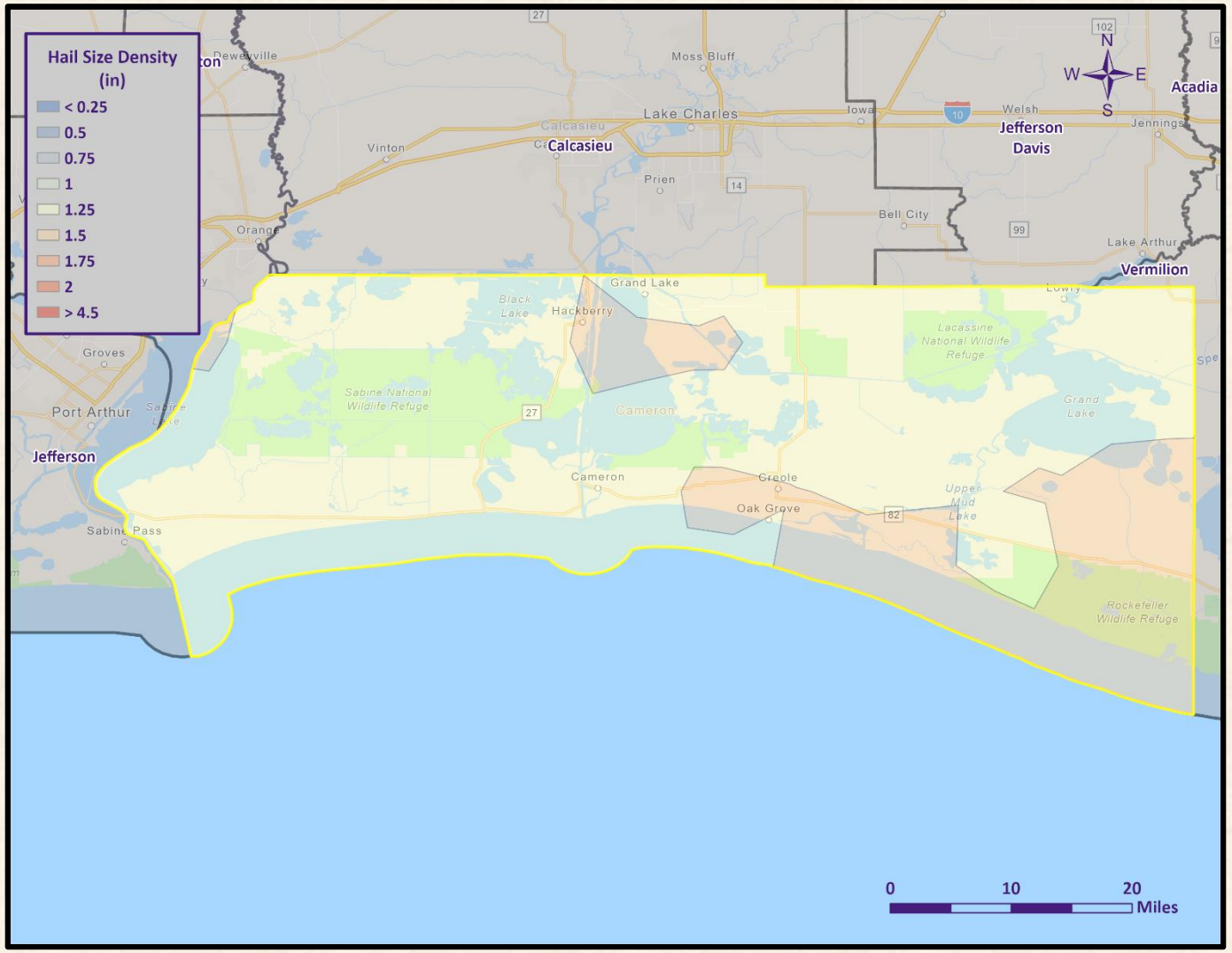
Maximum Hail Size Probability



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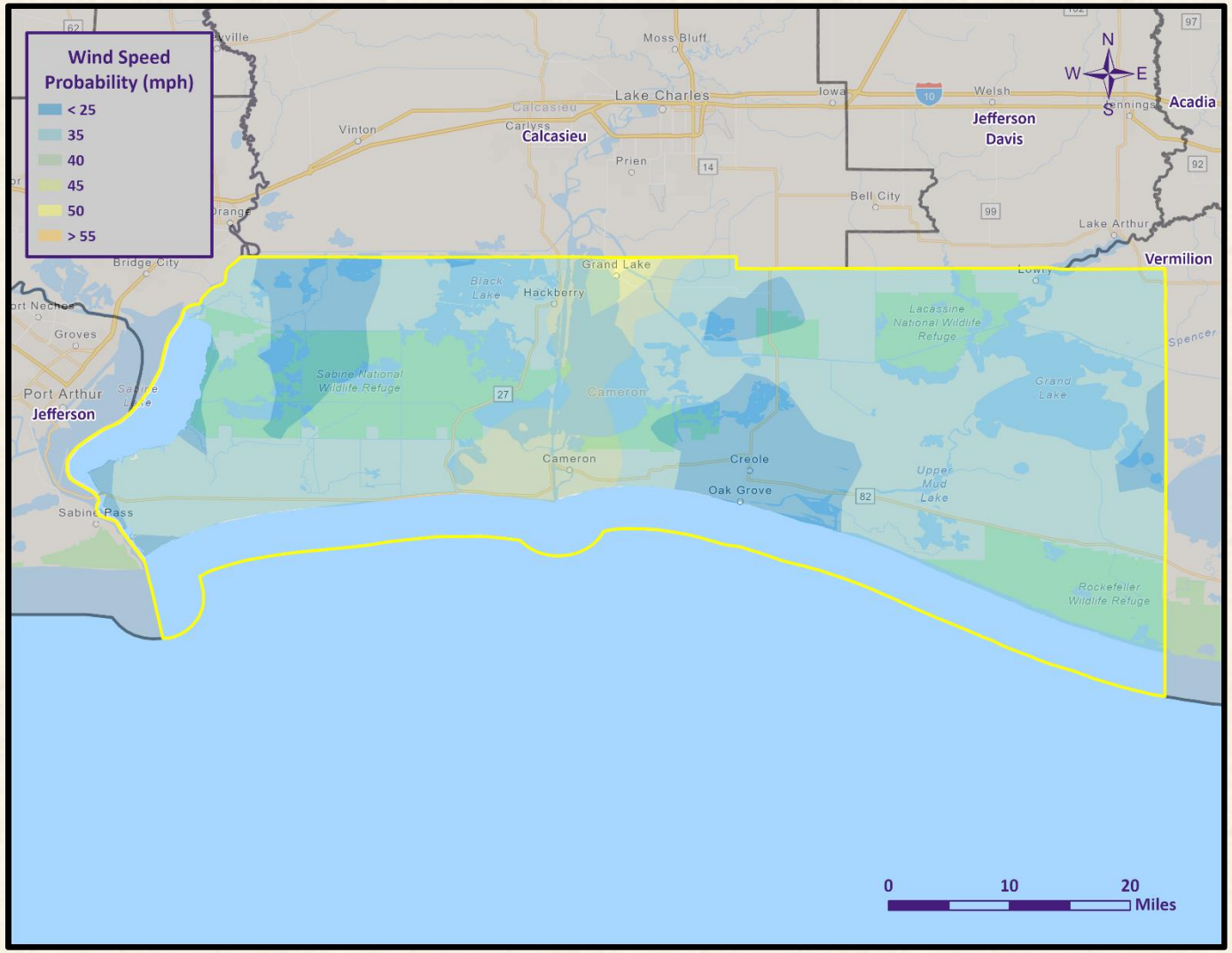
Maximum Wind Speed Probability



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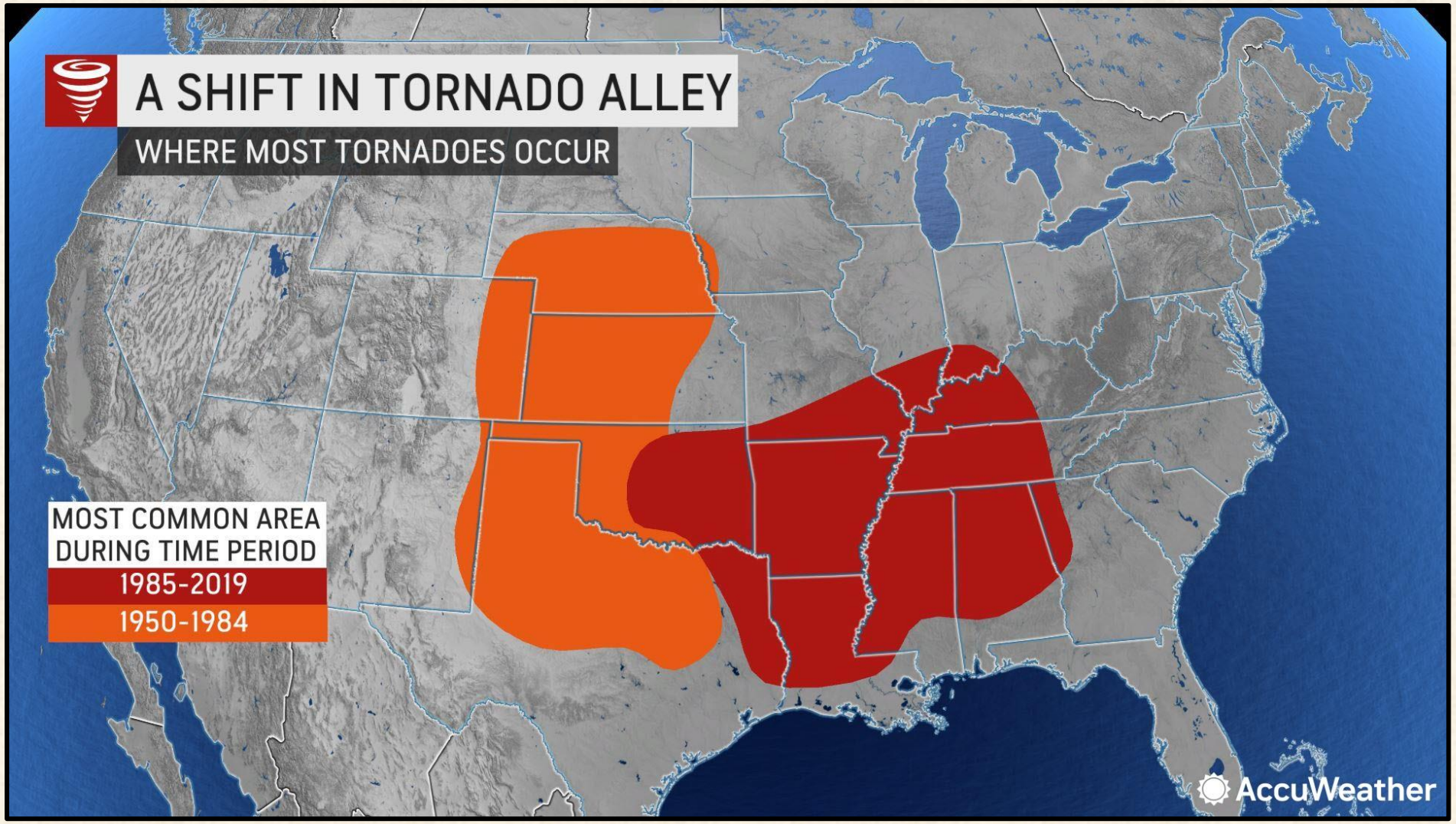
Tornadoes

- Tornadoes are rapidly rotating funnels of wind extending between storm clouds and the ground.
- Tornadoes are the most severe storms for their size, and 70% of the world's reported tornadoes occur within the continental United States.

ORIGINAL FUJITA SCALE		ENHANCED FUJITA SCALE	
F5	261-318 mph	EF5	+200 mph
F4	207-260 mph	EF4	166-200 mph
F3	158-206 mph	EF3	136-165 mph
F2	113-157 mph	EF2	111-135 mph
F1	73-112 mph	EF1	86-110 mph
F0	<73 mph	EF0	65-85 mph

“Tornado Alley” Shift



Source: AccuWeather

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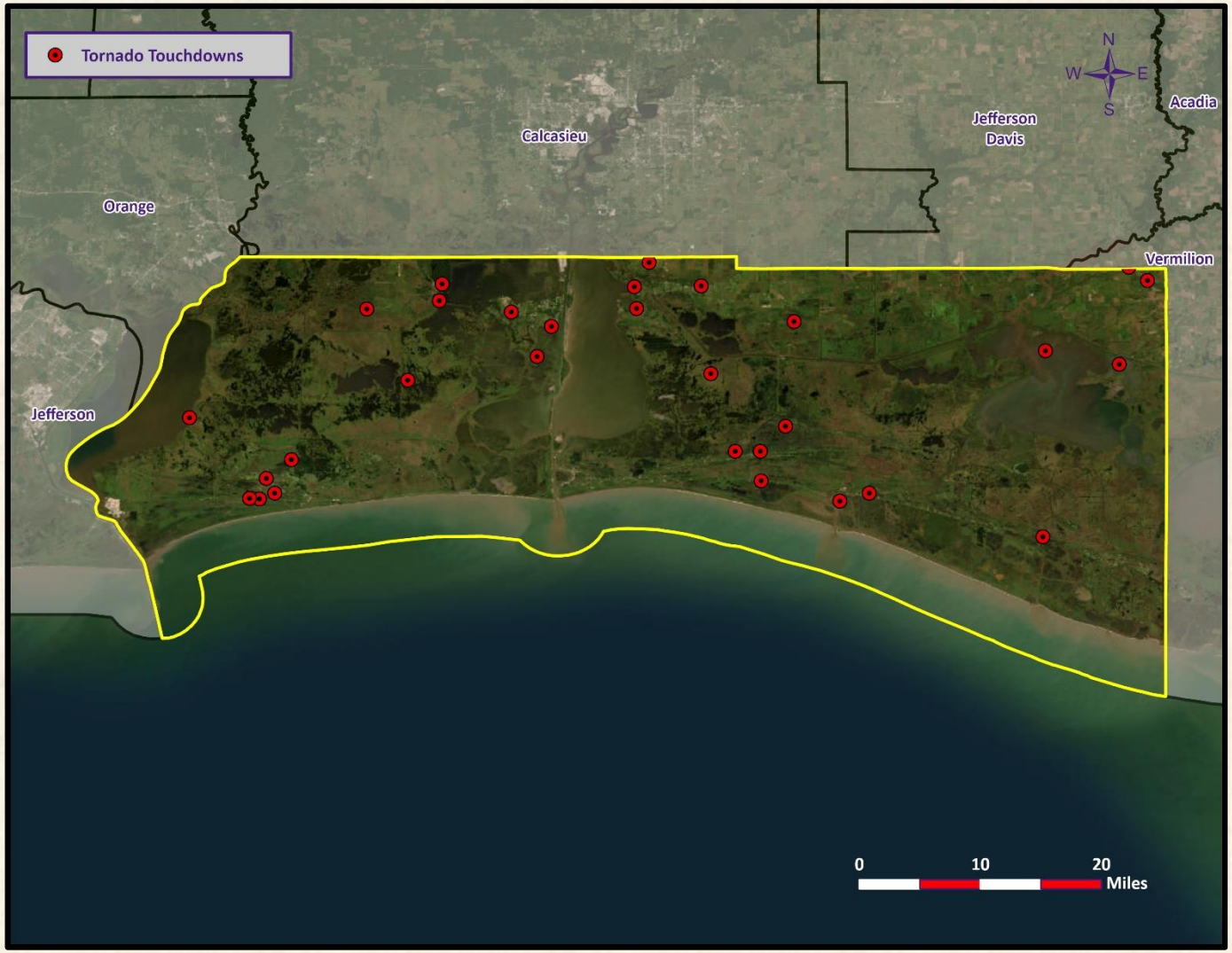
Tornadoes in Cameron Parish



Source: NCEI Storm Events Database

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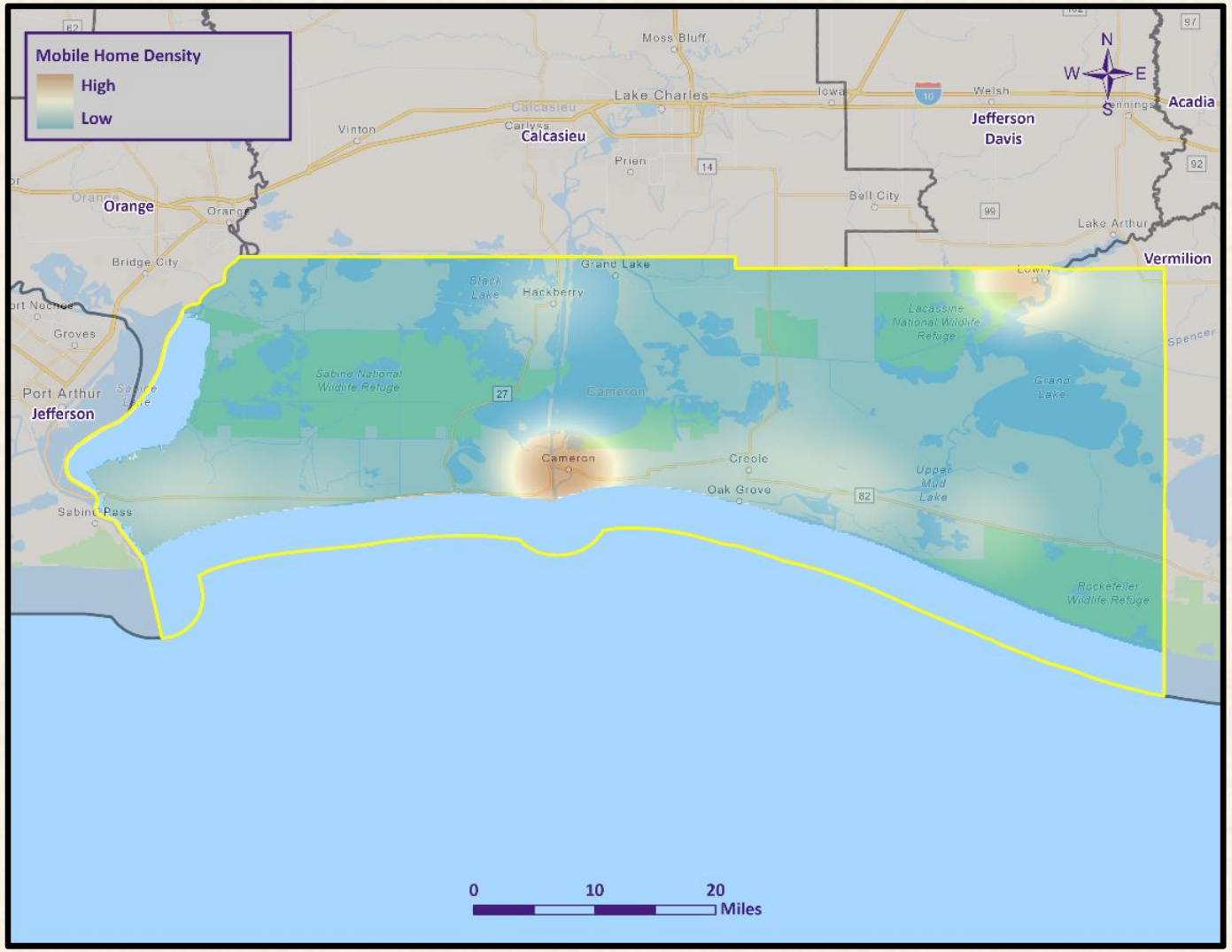
Manufactured Home Density



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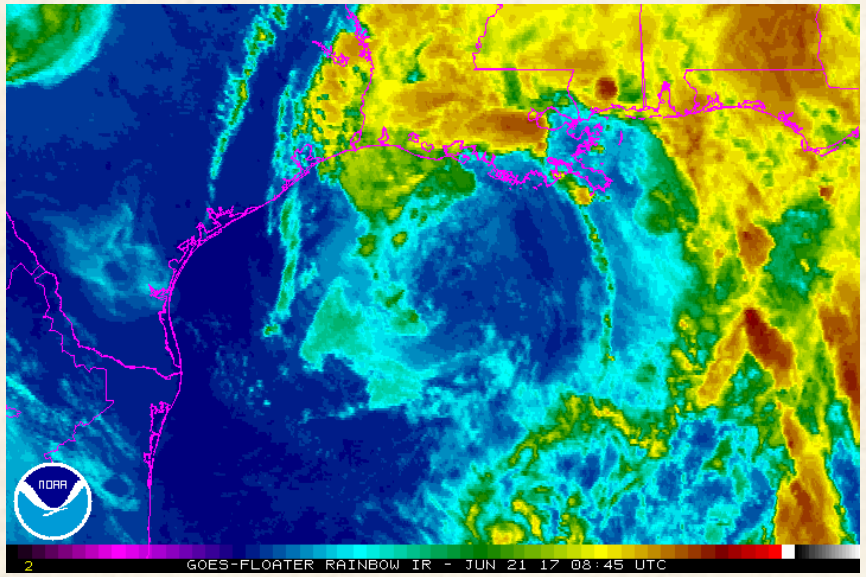
Tropical Cyclones

- Tropical cyclones are defined spinning, low-pressure air masses that draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes

Saffir-Simpson Hurricane Wind Scale		
	Sustained Wind Speed	**Effects**
Category 1	74-95 mph (119-153 km/hr)	Very dangerous winds will produce some damage. Low-lying coastal roads flooded, minor pier damage
Category 2	96-110 mph (154-177 km/hr)	Extremely dangerous winds will cause extensive damage. Major damage to exposed mobile homes, evacuation of some shoreline residents
Category 3	111-130 mph (178-209 km/hr)	Devastating damage will occur. Some structural damage to small buildings; serious flooding at coast and many smaller structures near coast destroyed
Category 4	131-155 mph (210-249 km/hr)	Catastrophic damage will occur. High risk of injury or death to people, livestock, and pets due to flying and falling debris. Long-term water shortages will increase human suffering. Most of the area will be uninhabitable for weeks or months.
Category 5	> 155 mph (249 km/hr)	Catastrophic damage will occur. People, livestock, and pets are at very high risk of injury or death from flying or falling debris. A high percentage of frame homes will be destroyed. Long-term power outages and water shortages will render area uninhabitable for weeks or months.



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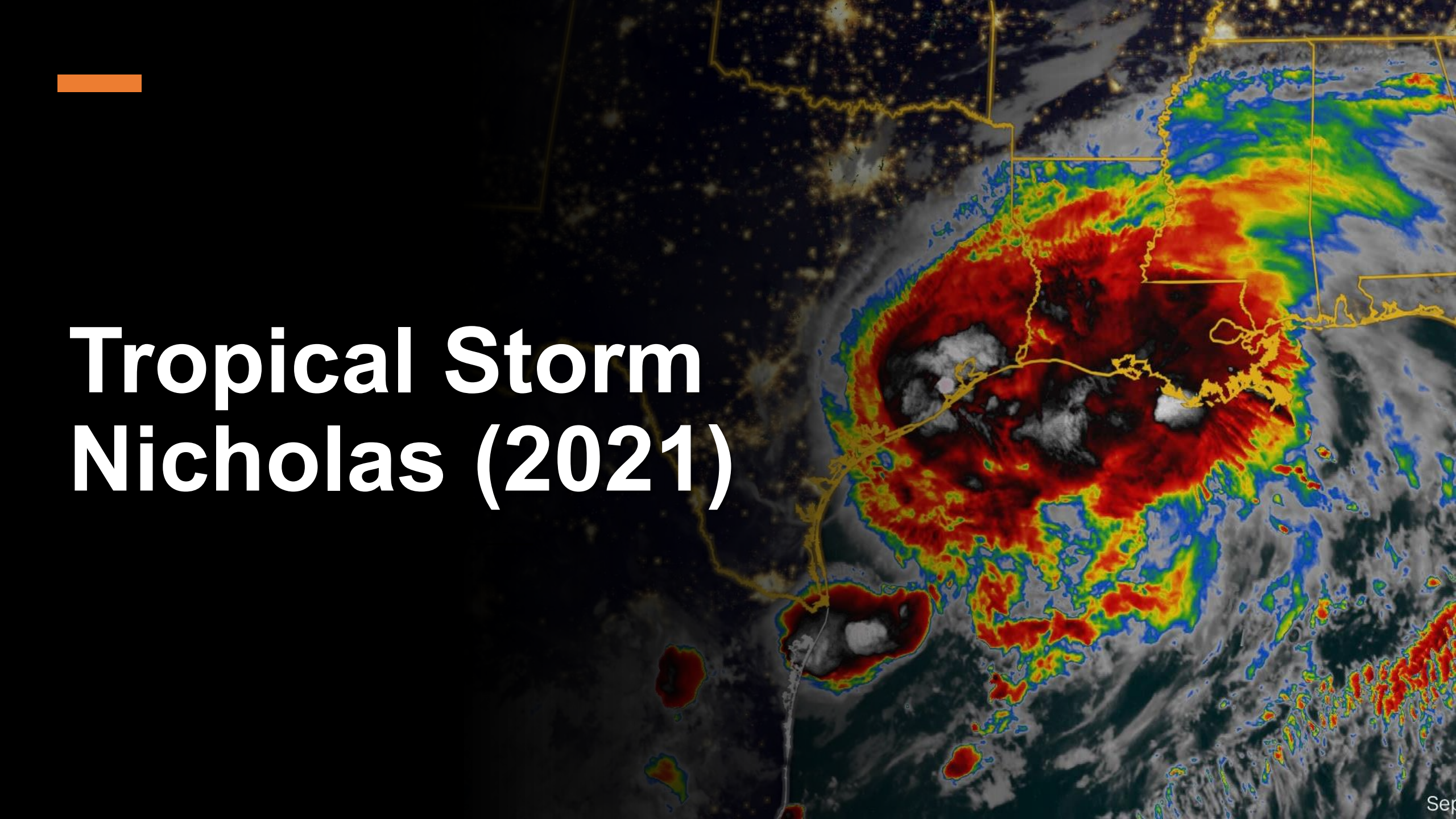
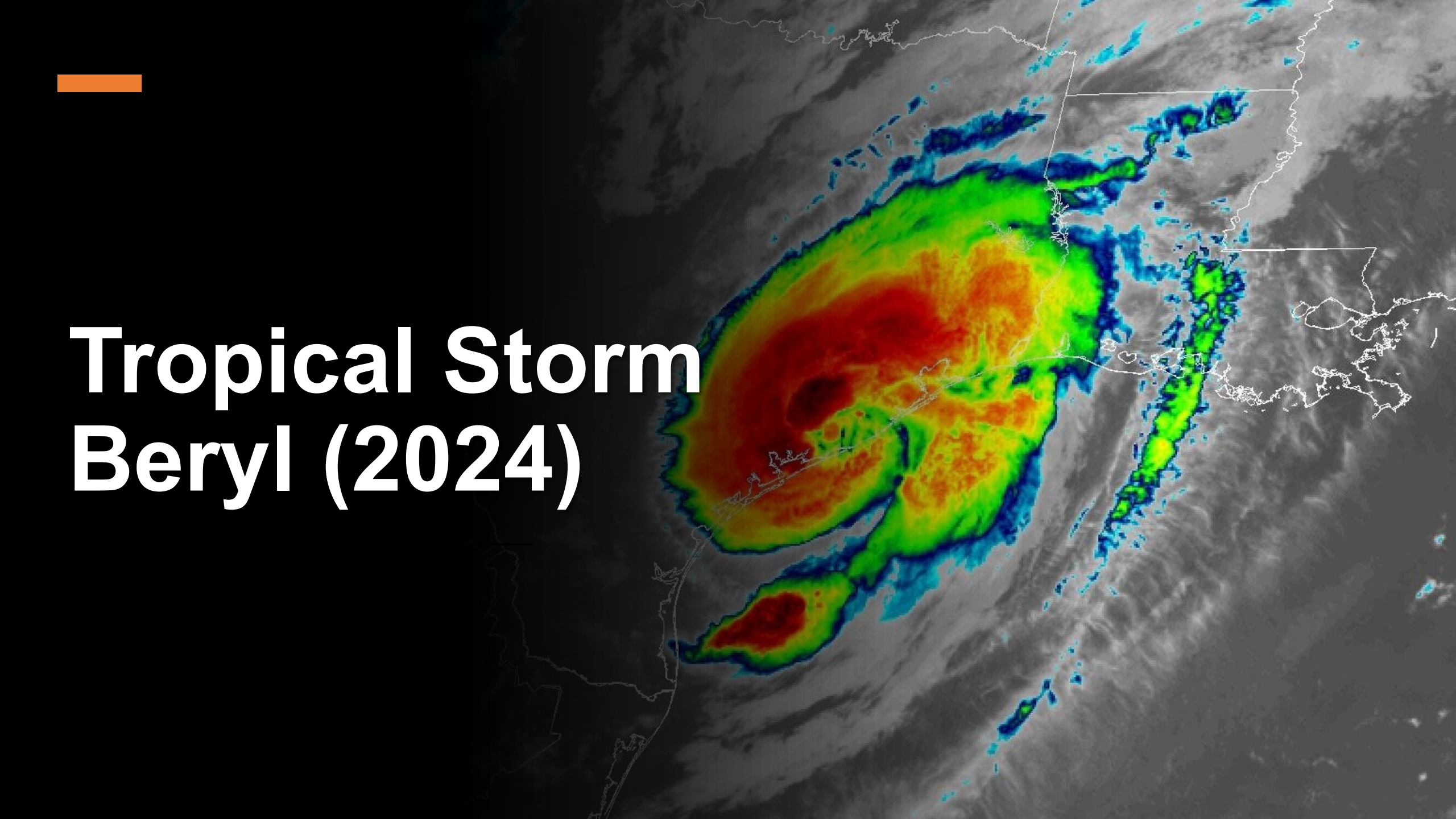
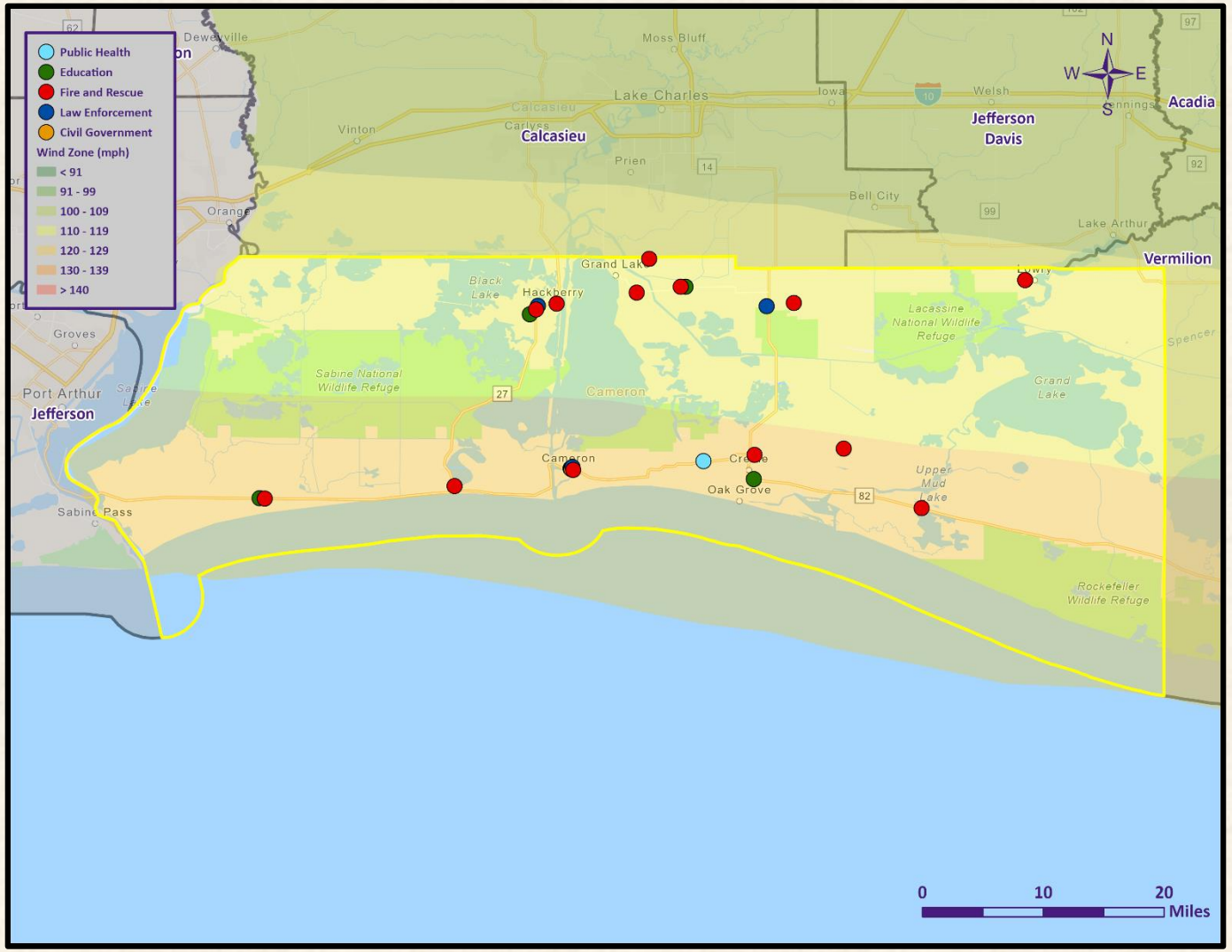
Tropical Storm Nicholas (2021)



Tropical Storm Beryl (2024)



Wind Speed Impacts on C.I.



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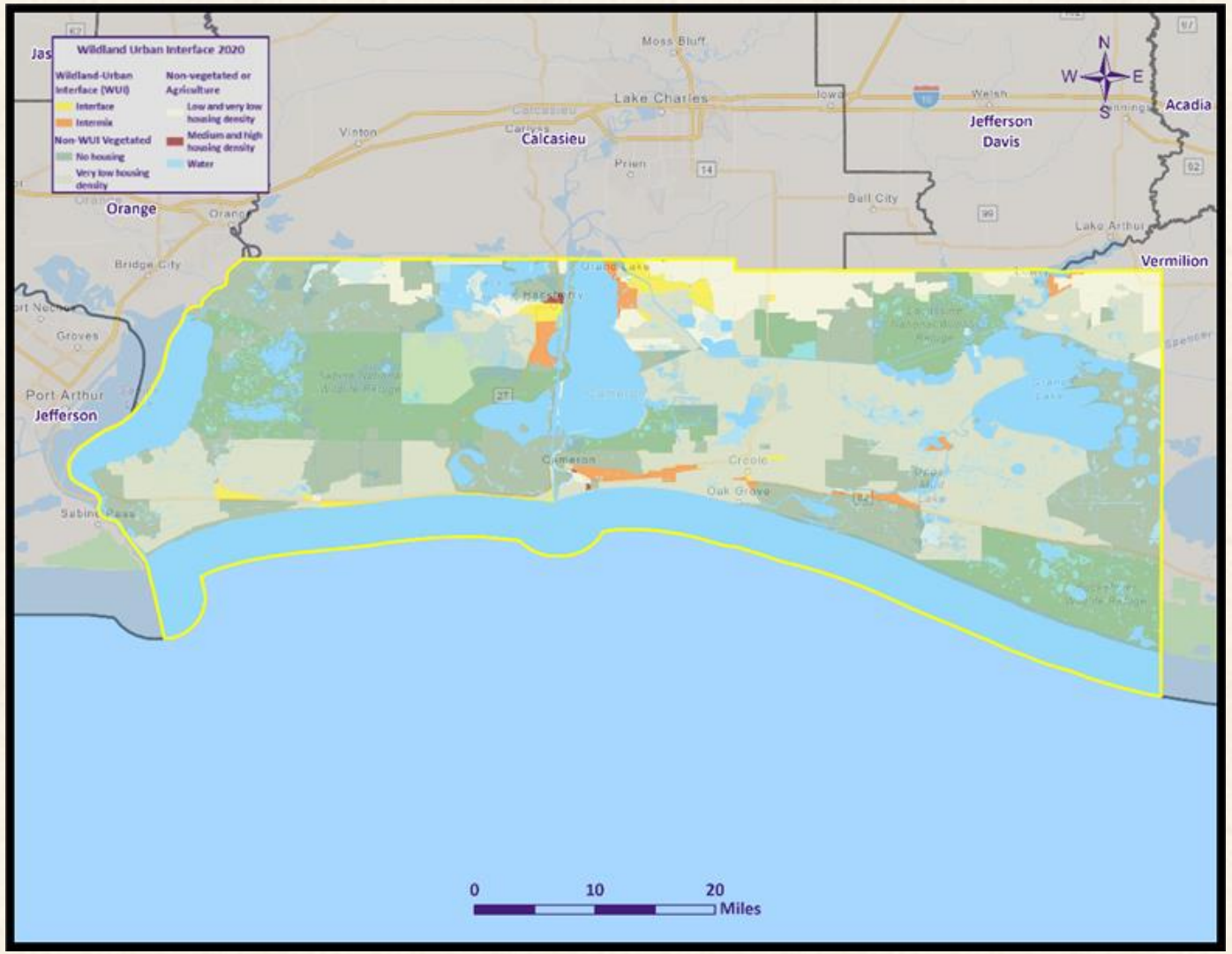
Wildfires

- A wildfire is combustion in a natural setting, marked by flames or intense heat.
- Most frequently, wildfires are ignited by lightning or unintentionally by humans. Fires set purposefully (but lawfully) are referred to as controlled fires or burns
- While loss of timber is a problem, the real hazard is when wildfires threaten developed areas. As more development moves into and next to forested areas, the hazards to people and property increases.

Cameron Wildland-Urban Interaction Map



Source: U.S. Forest Service – Geospatial Data Discovery

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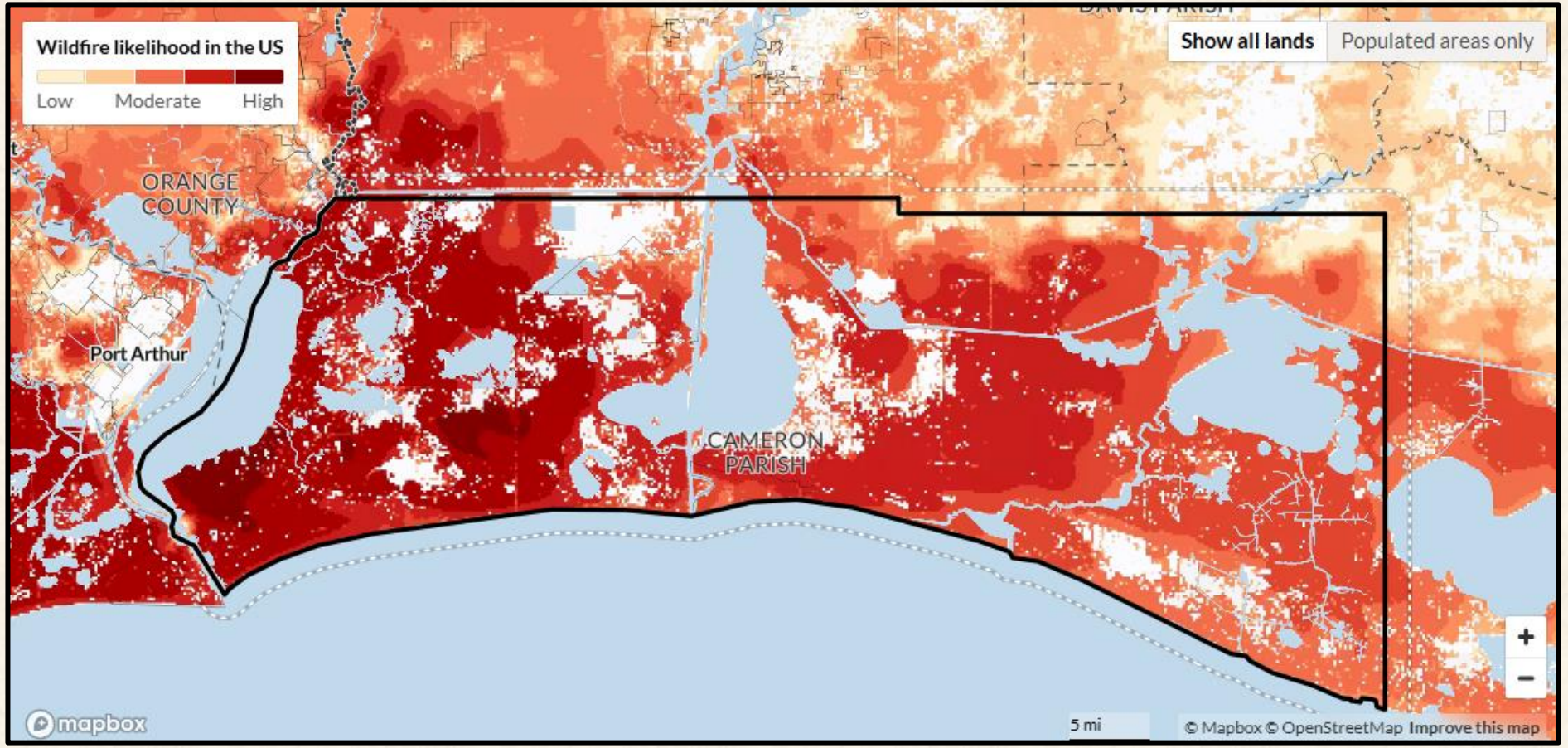
Cameron Wildfire Likelihood Map



Source: U.S. Forest Service – Wildfire Risk to Communities

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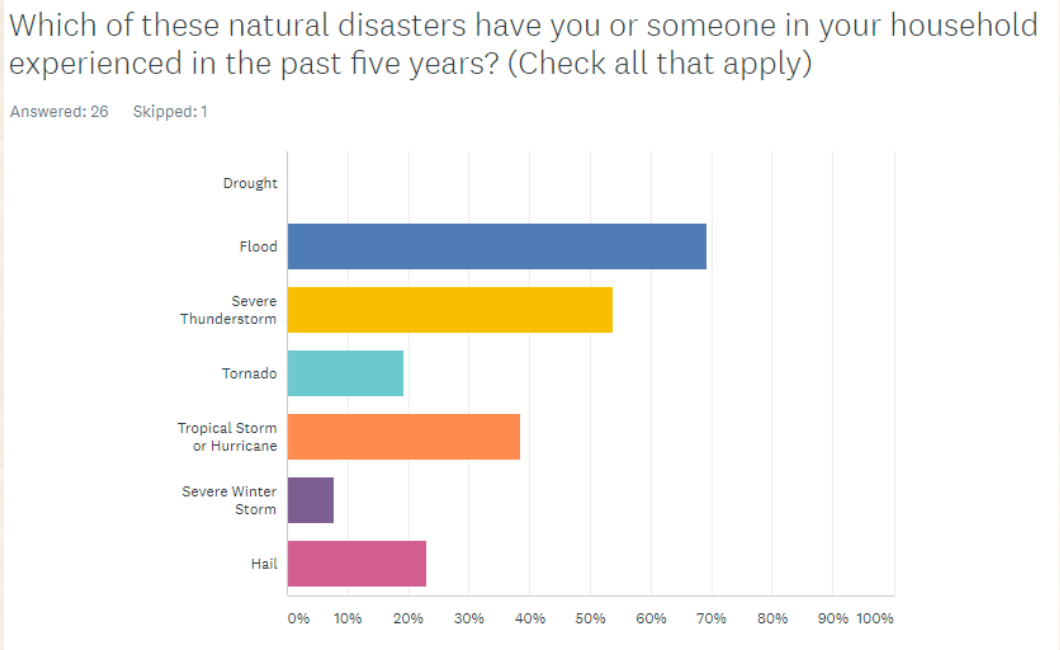
Cameron Parish Hazard Mitigation Goals

1. Reduce the loss of life or property
2. Protect critical public facilities and thoroughfares
3. Ensure post-disaster operability of strategic facilities and thoroughfares
4. Develop incentive and community outreach/education programs that assist homeowners in protecting residential properties
5. Provide a long-term mitigation solution in locations which experience repetitive hazard damage
6. Provide a cooperative, inter-jurisdictional / inter-agency solution to a problem
7. Show development and implementation of comprehensive programs, standards, and regulations that reduce future hazard damage
8. Avoid inappropriate future development in areas that are vulnerable to hazard damage
9. Reduce the level of hazard vulnerability in existing structures and developed property
10. Restore or protect natural resources, recreational areas, open space, or other environmental values

Public Outreach Activity #1

Hazard Mitigation Public Opinion Survey

https://lsu.qualtrics.com/jfe/form/SV_88EBWgRGEG5umkC



Public Outreach Activity #2

Please fill out an incident questionnaire!

CAMERON PARISH PUBLIC OUTREACH

PUBLIC ACTIVITY: INCIDENT/ ISSUE QUESTIONNAIRE

1. HAZARD TYPE(S):

A. COASTAL HAZARDS
B. DROUGHT
C. EXCESSIVE HEAT
D. FLOODING
E. SINKHOLES
F. THUNDERSTORMS
G. TORNADOES
H. TROPICAL CYCLONES
I. WILDFIRES

2. DESCRIBE INCIDENT OR ISSUE:

3. LOCATION:

A. CITY:

B. ADDRESS OR AREA:

4. INTENSITY:

A. DEPTH (FLOODING) OR SIZE (HAIL ETC.):

B. WIND STRENGTH

5. RECURRING OR ONE TIME:

A. IF RECURRING, HOW OFTEN:

6. WHAT TYPE OF INTERRUPTIONS DOES/DIDTHE INCIDENT OR ISSUE CAUSE? (BUSINESS CLOSURE,DAMAGE, EVACUATION, ETC.)

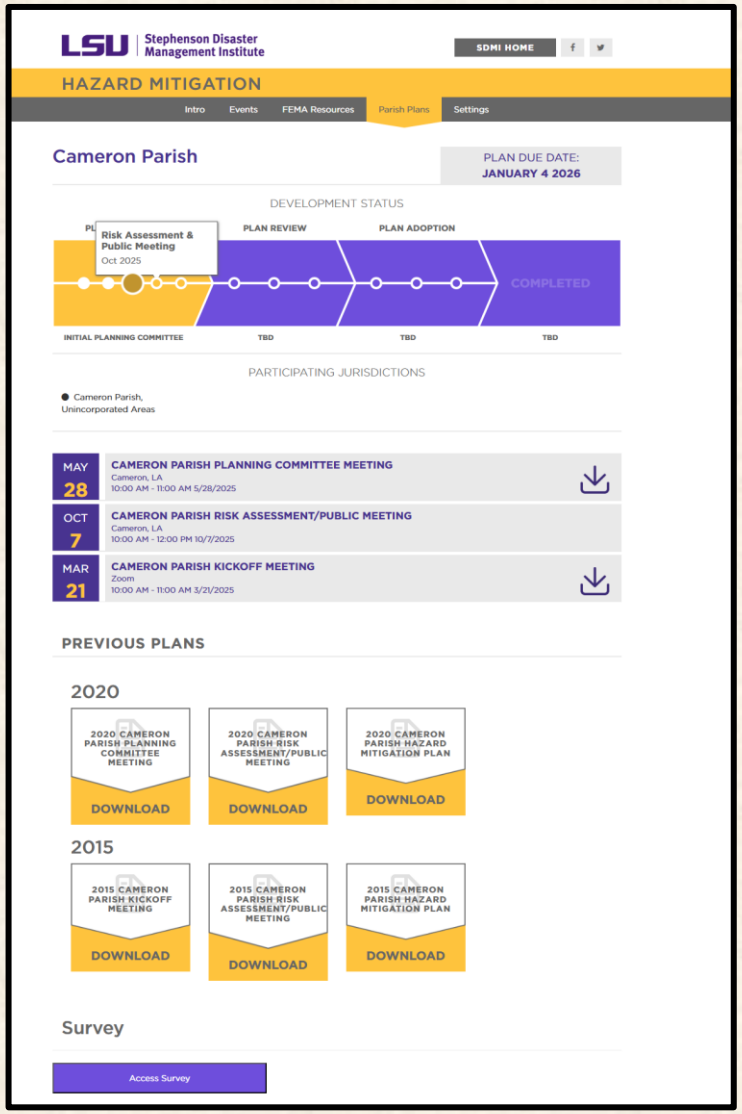
7.HOW LONG WAS THE INTERRUPTION (HOURS, DAYS, WEEKS ETC.)

8. HOW COULD THIS HAZARD OR IMPACT BE PREVENTED, FIXED OR ALLEVIATED?

Parish of Cameron
18 70
Louisiana

SDMI Hazard Mitigation Website

- Repository for materials used during update process
- https://hmplans.sdmi.lsu.edu/Home/Parish/cameron



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