



# Avoyelles Parish Hazard Mitigation Plan Update Public Meeting



July 15, 2025

Marksville, LA

**LSU** | Stephenson Disaster  
Management Institute

# Agenda



**Introductions**



**Hazard Identification &  
Risk Assessment Review**



**Public Outreach  
Activities**



# Introductions

- **Avoyelles Parish OHSEP Director and Staff**
  - Joey Frank – Avoyelles Parish OHSEP Director
- **Stephenson Disaster Management Institute (SDMI) at LSU**
  - Chris Rippetoe – Hazard Mitigation Program Manager
  - Jason Martin – Emergency Management Analyst
- **Governor's Office of Homeland Security and Emergency Preparedness**
  - Marion Pearson – Hazard Mitigation Planner
  - Lennie LaFleur – Preparedness Program Specialist



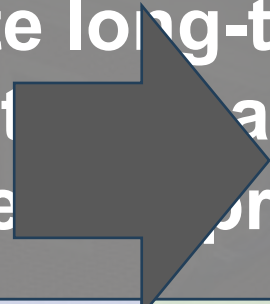
# Who is SDMI?

- 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



# What Is Hazard Mitigation?

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



## Common Mitigation Activities

Ongoing process that occurs before, during and after events

Enhances community resilience and guides future development

Infrastructure Improvements

Regulatory & Policy Implementation

Education & Outreach Programs



# Benefits of Hazard Mitigation



## Saves Lives

Protects  
residents and  
first  
responders



## Reduces Property Damage

Increases  
building,  
infrastructure  
and  
community  
resiliency



## Minimizes Economic Disruptions

Reduces  
disaster  
recovery costs

# 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 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

- Previously Profiled Hazards
- Newly Identified Hazards
- Previous Occurrences
- Probability of Future Events
- Potential Losses due to an Event
- Zoning and Land Use
- Impacts on Critical Facilities
- Impacts from Future Development
- Future Impacts due to Climate Change



# Hazard Identification And Risk Assessment



**Drought**  
**Flooding**



**Tornadoes**  
**Tropical Cyclones**



**Thunderstorms:**  
(Lightning, High Wind, Hail)



**Wildfires**  
**Winter Weather**

# Risk Matrix for Avoyelles Parish

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	Overall Risk
Drought	2	2	4	2	3	2.55
Flooding	3	4	3	4	3	3.4
Thunderstorm Hail	4	2	3	3	1	2.7
Thunderstorm Lightning	2	2	2	3	1	2
Thunderstorm Wind	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	1	3	4	1	2	2.25
Winter Weather	2	4	4	1	2	2.75

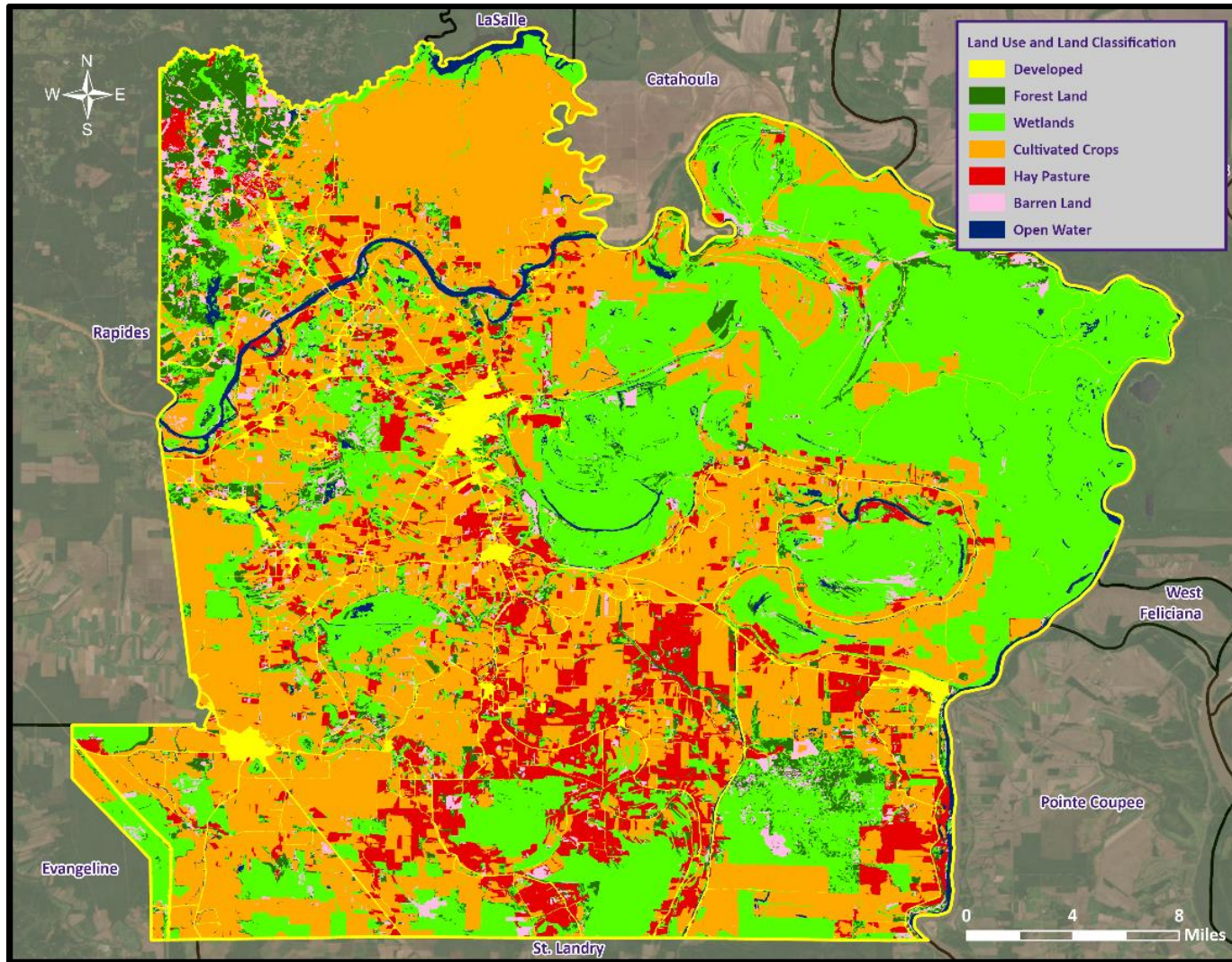
Risk Factor	PRI Range
High Risk	2.5 to 4.0
Moderate Risk	2.0 to 2.4
Low Risk	0 to 1.9





# Risk Assessment Maps

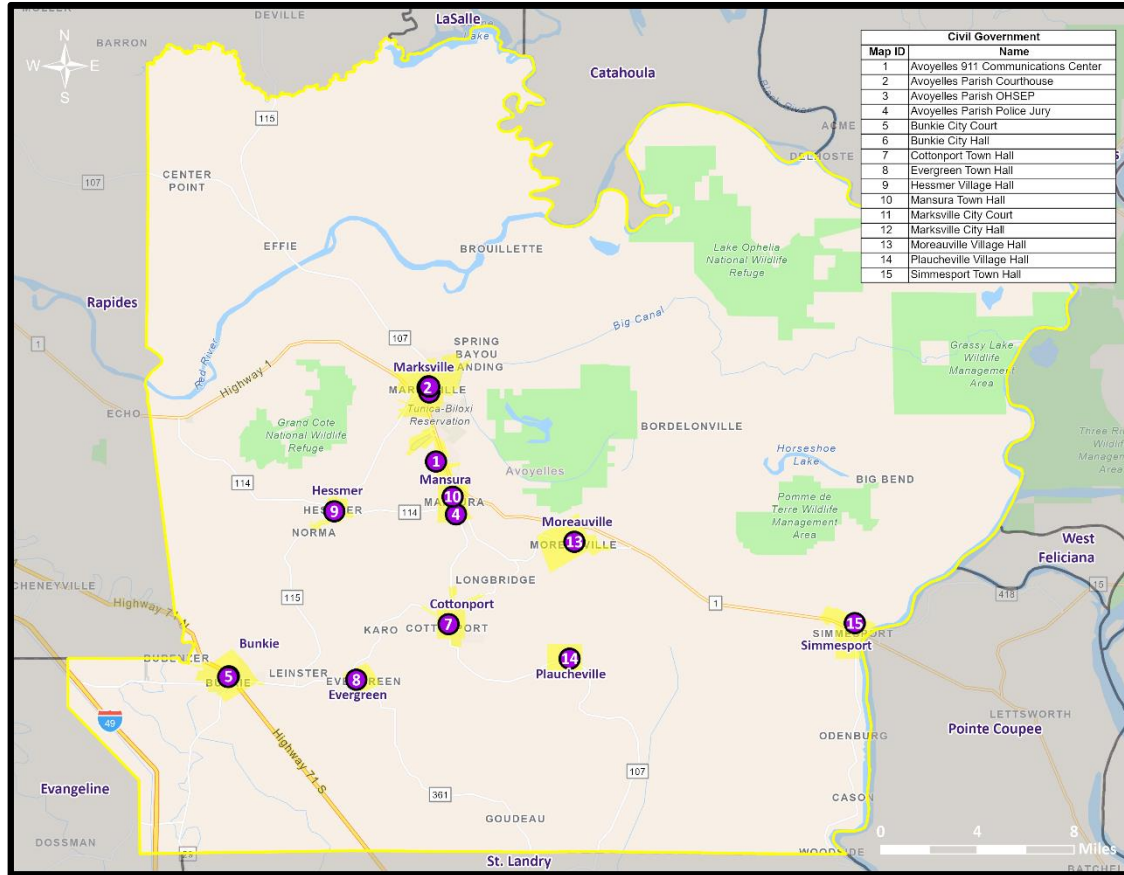
# Avoyelles Parish Land Use



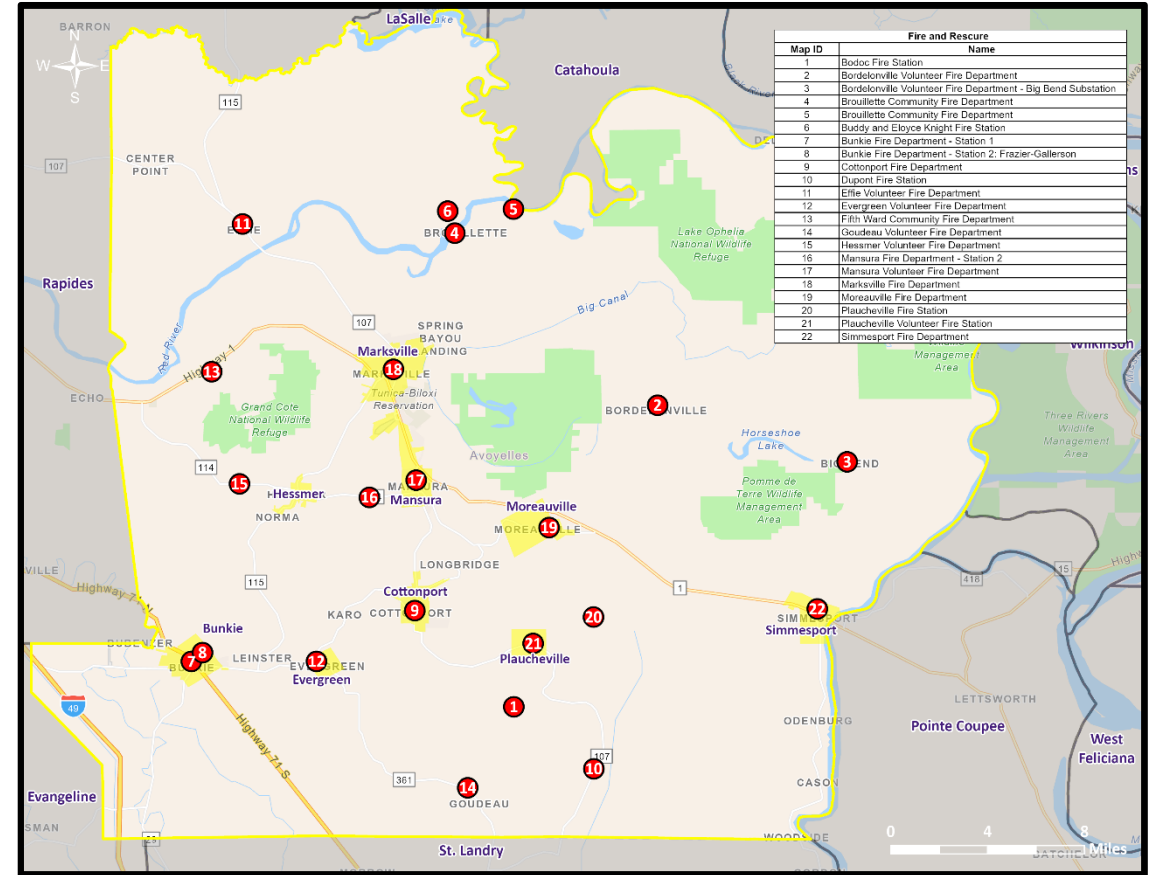
Land Use	Acres	Percentage
Agricultural Land, Cropland, and Pasture	283,265	51%
Wetlands	198,495	36%
Forest Land (Not including forested wetlands)	34,879	6%
Urban/Development	23,292	4%
Water	14,102	3%

Source: USGS Land Use Map

# Avoyelles Parish Critical Facilities

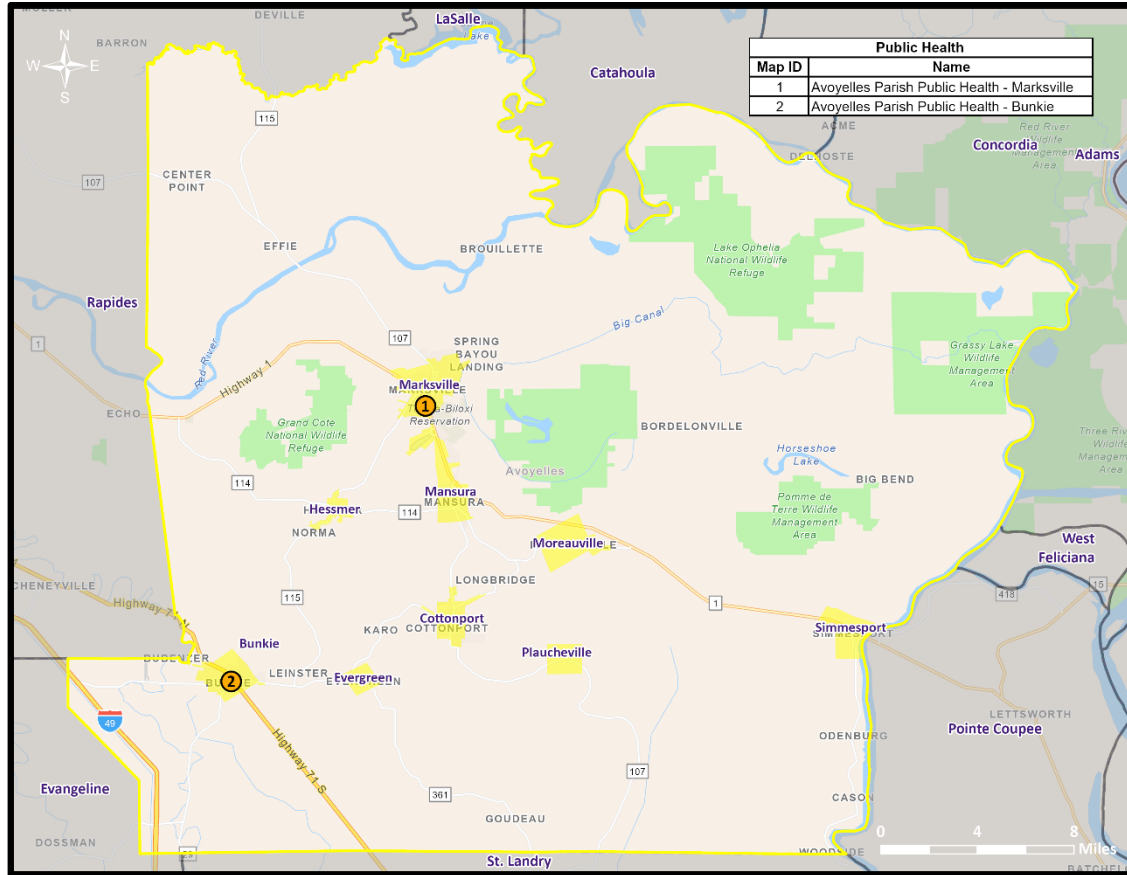


**Civil Government**

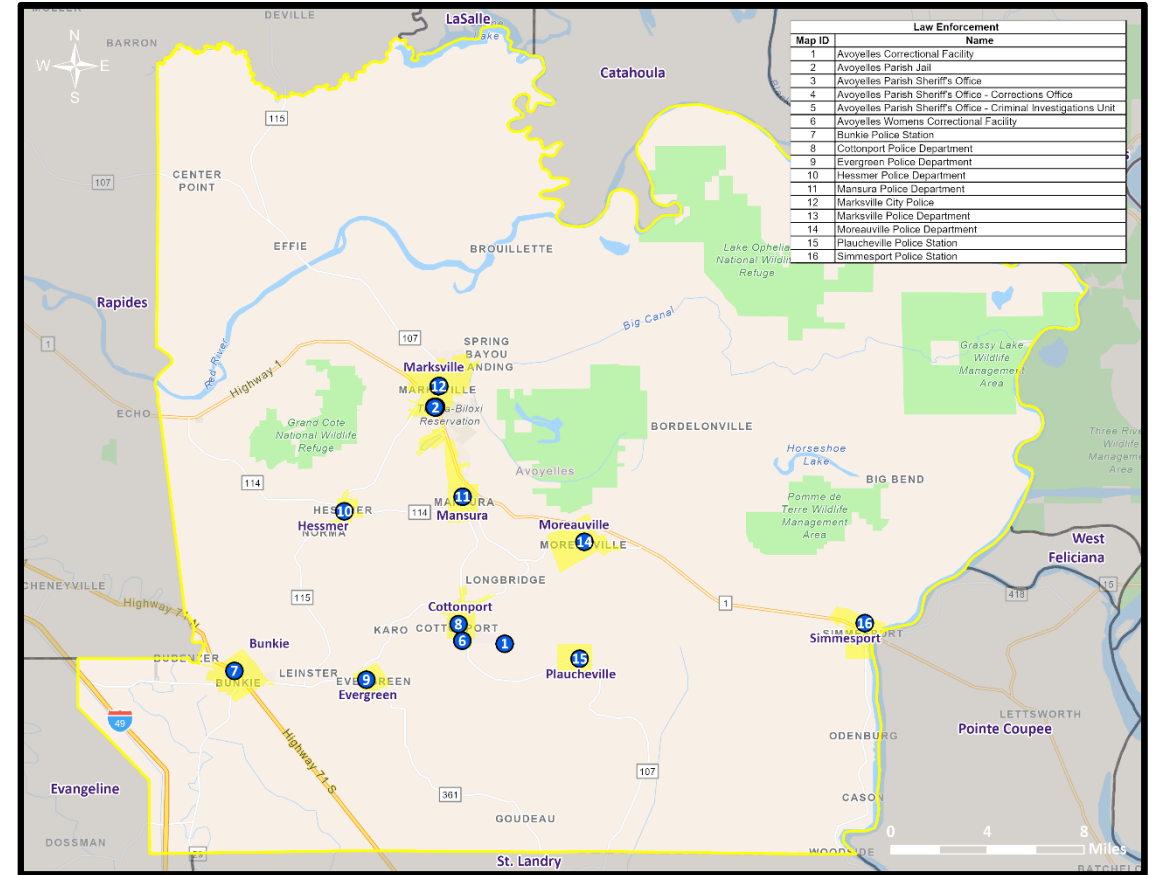


**Fire & SAR**

# Avoyelles Parish Critical Facilities

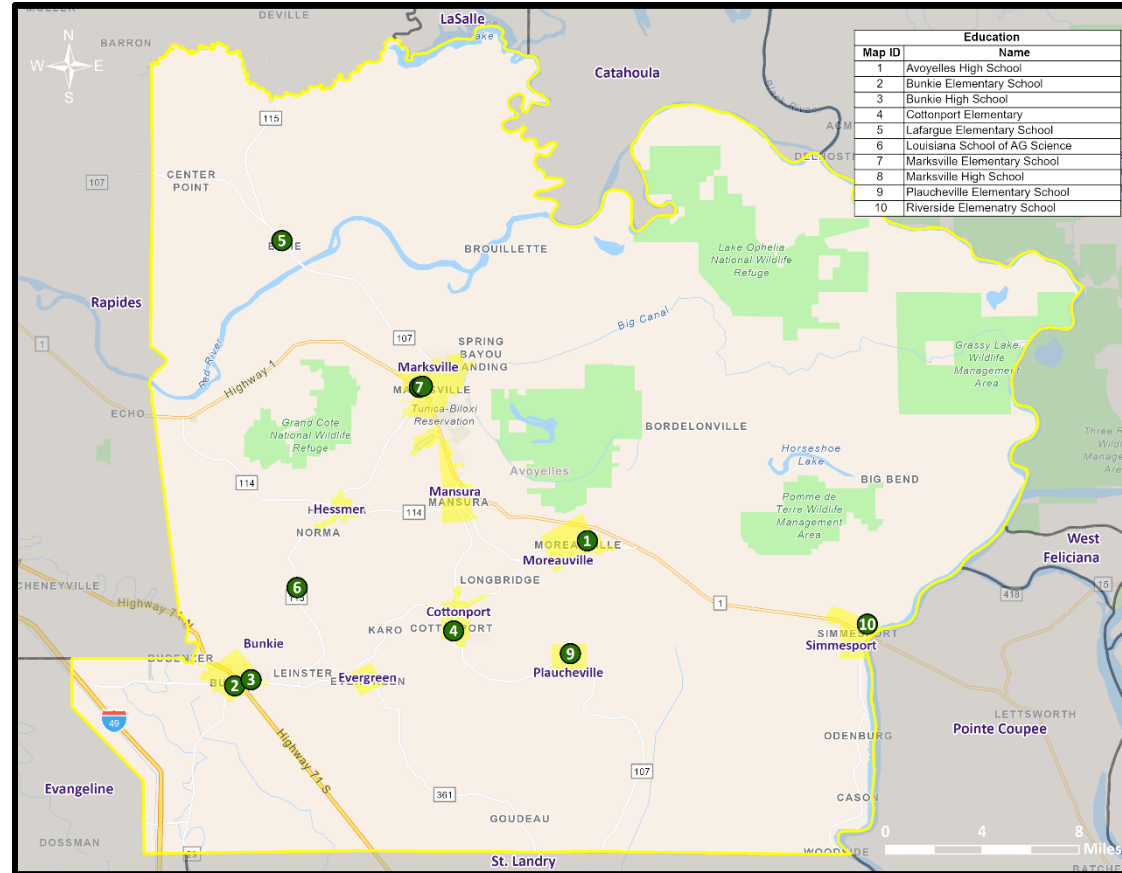


**Public Health**



**Law Enforcement**

# Avoyelles Parish Critical Facilities



## Public Education



# Drought

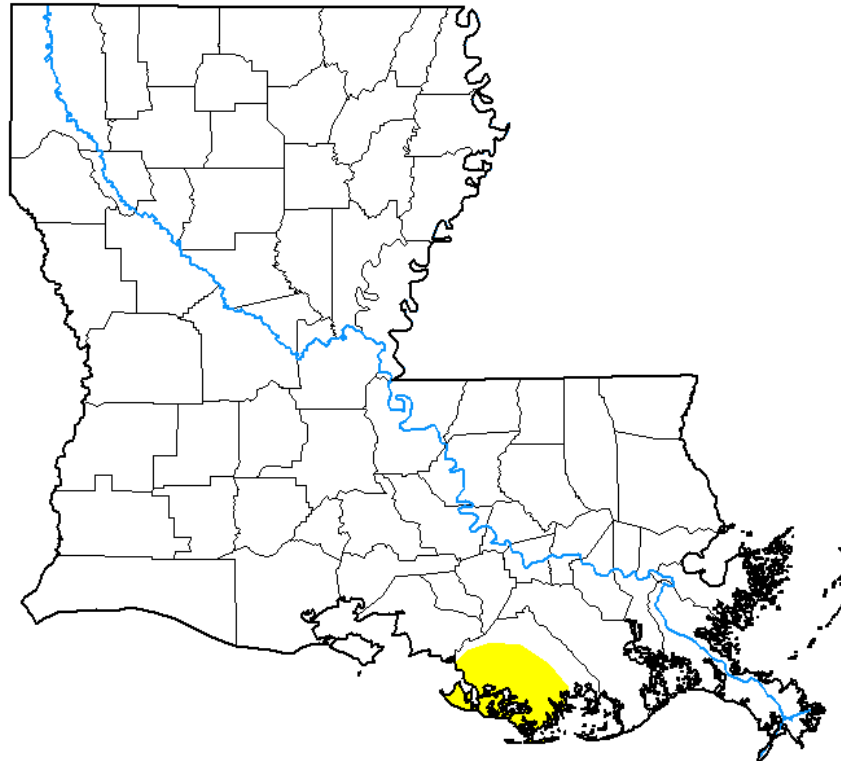


- A drought is a deficiency in water availability over an extended period of time, caused by precipitation totals and soil water storages that do not satisfy the environmental demand for water either by evaporation or transpiration through plant leaves.
- There are four classes of drought:
  - ✓ Meteorological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

## U.S. Drought Monitor Louisiana

July 8, 2025  
(Released Thursday, Jul. 10, 2025)  
Valid 8 a.m. EDT



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <http://droughtmonitor.unl.edu/About.aspx>

**Author:**

Brad Pugh  
CPC/NOAA



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)



**Source:** U.S. Drought Monitor –  
University of Nebraska-Lincoln

# 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.”





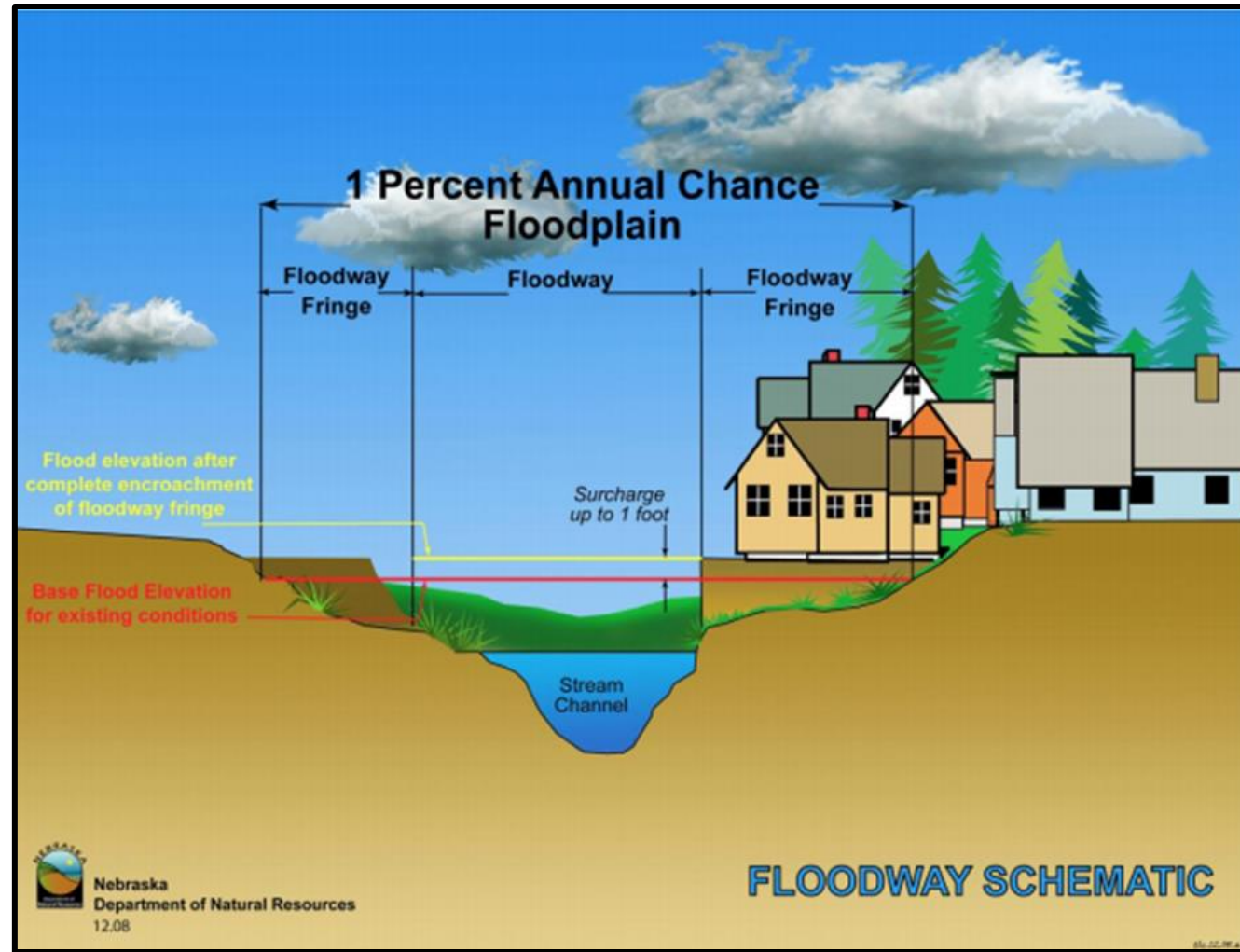
# Flooding

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- In Louisiana, six specific types of flooding are of main concern:
  - Riverine
  - Flash
  - Ponding
  - Backwater
  - Urban
  - Coastal



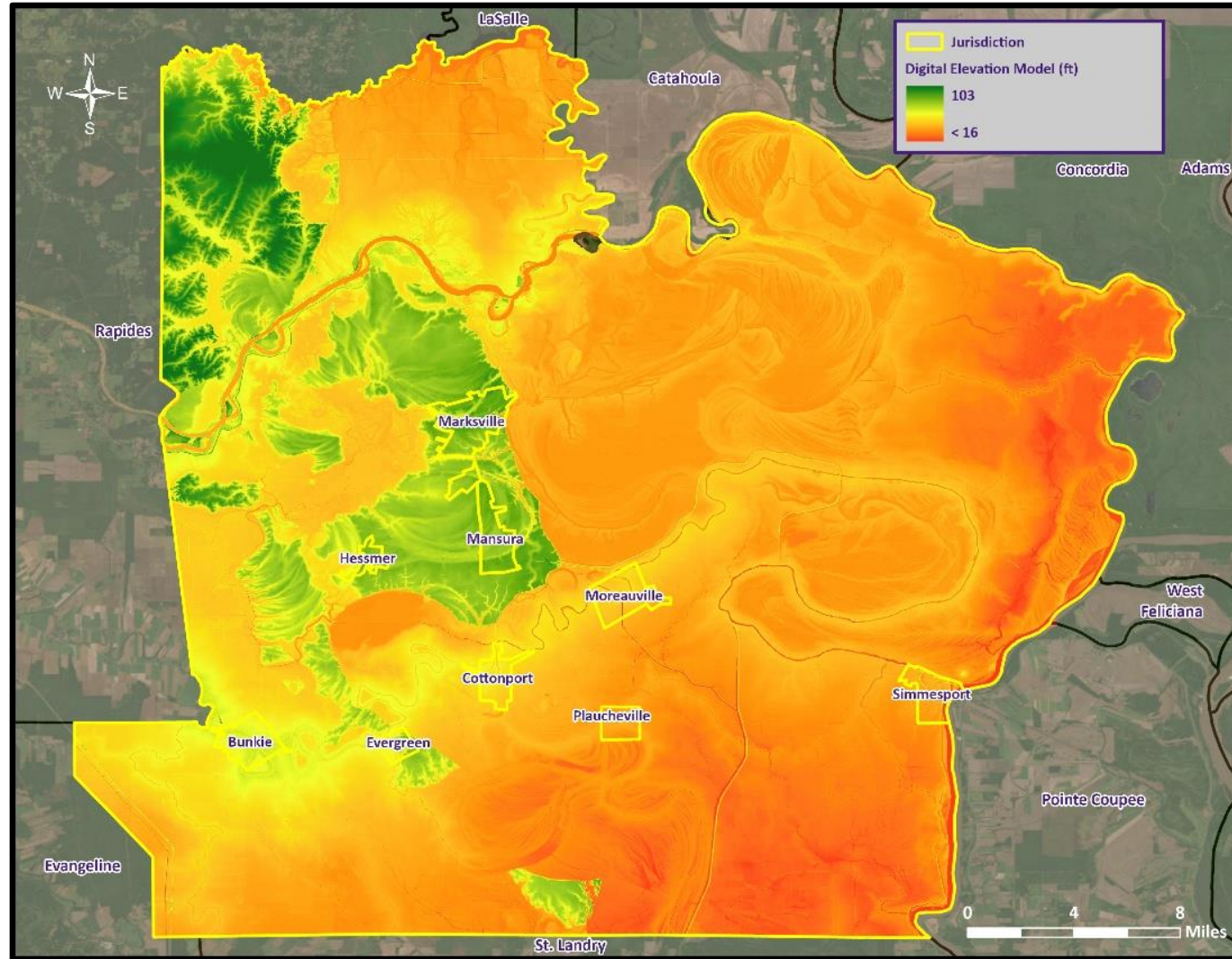
# Floodway Diagram



Source: Nebraska Department of Natural Resources



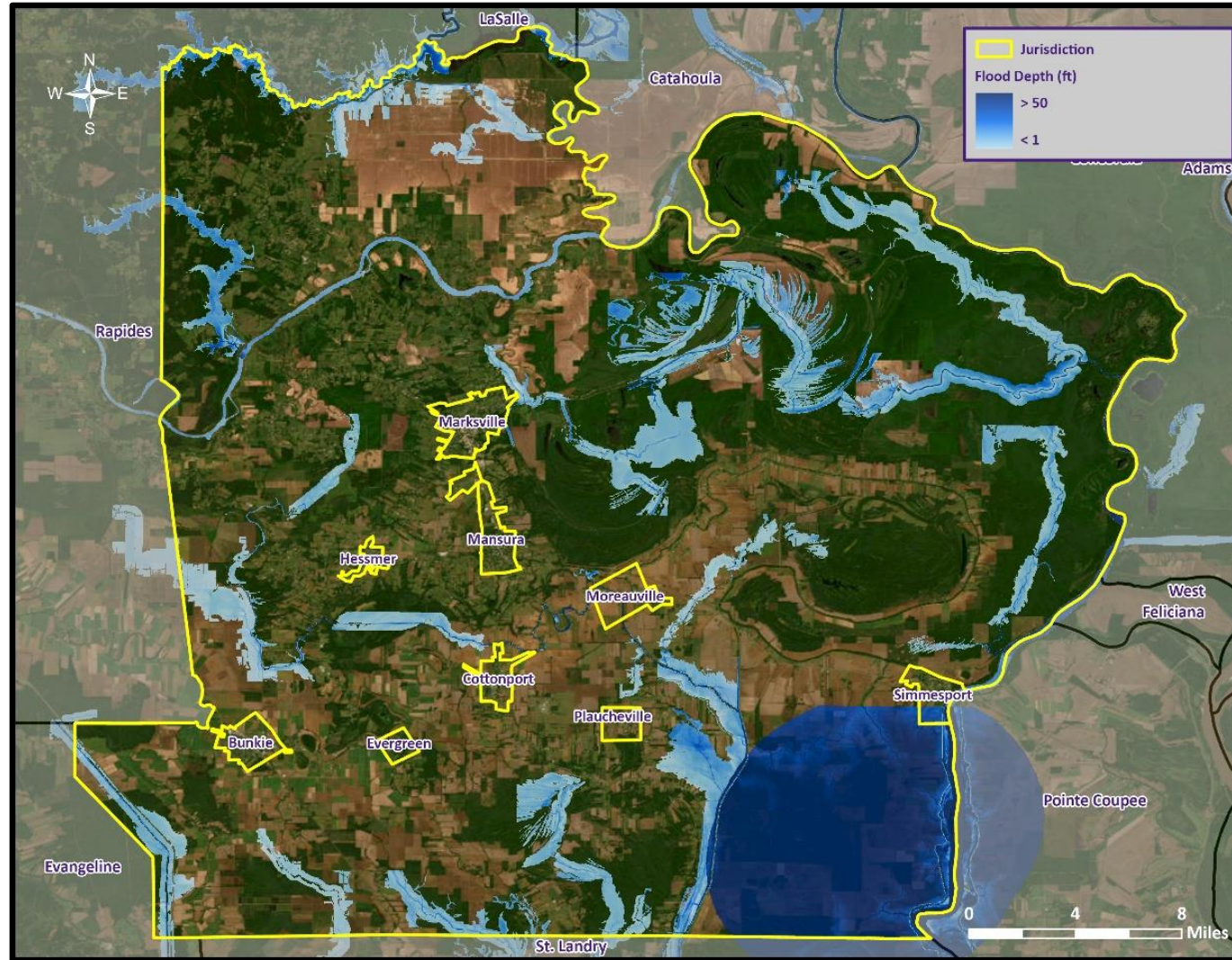
# Digital Elevation Model



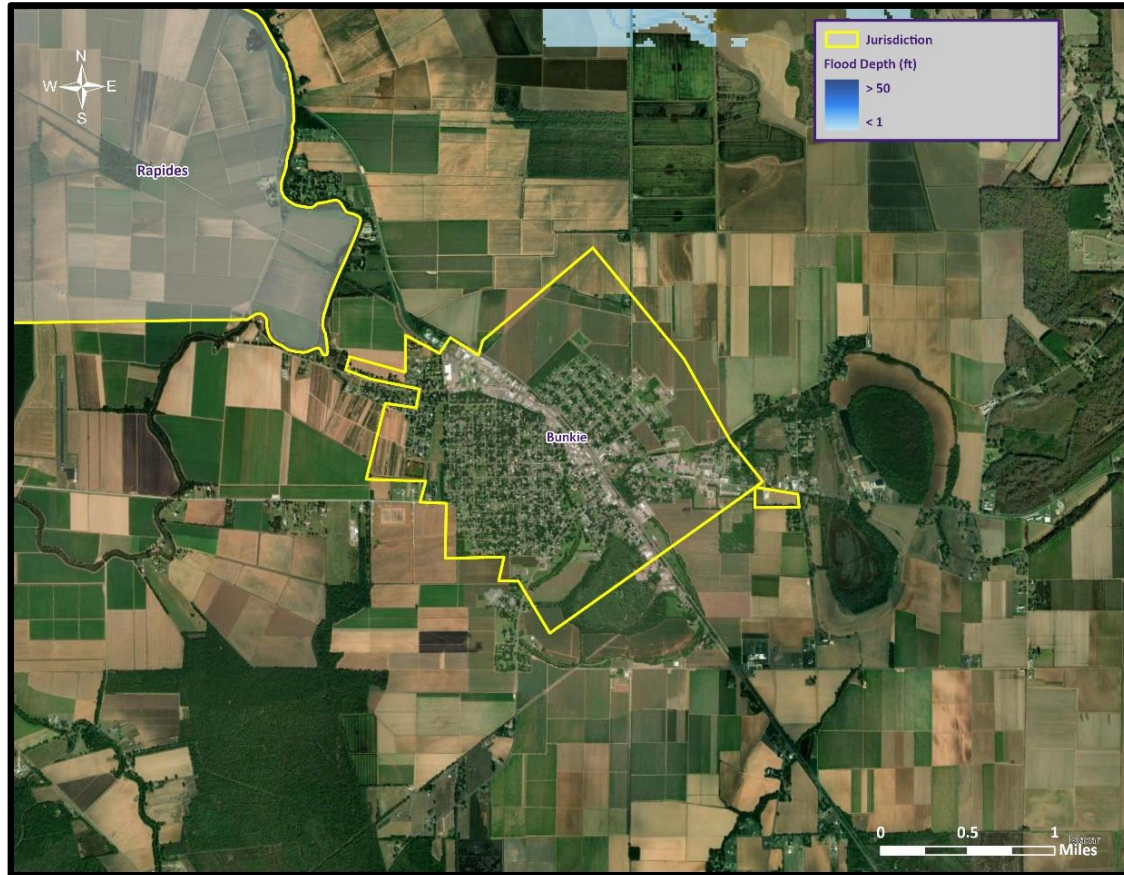
Source: USGS



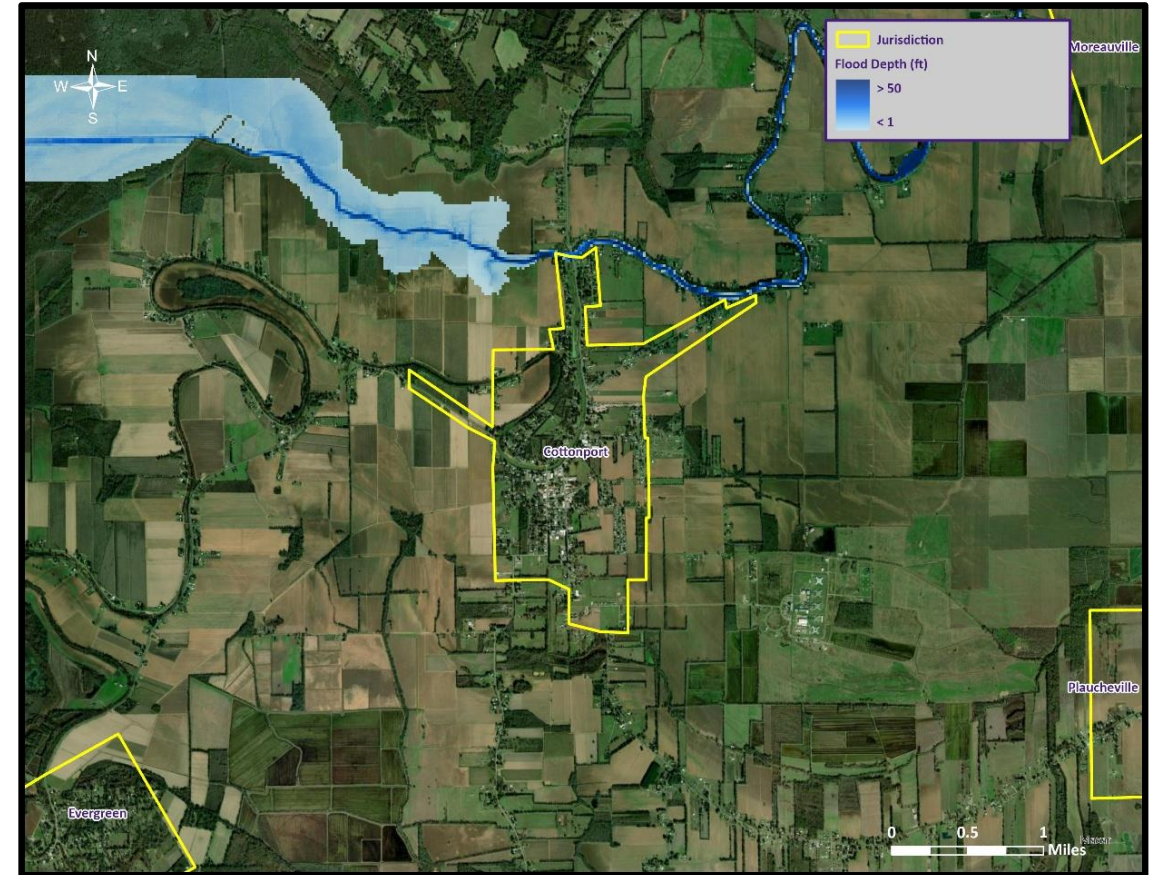
# Avoyelles Parish Flood Map



# Community Flood Maps

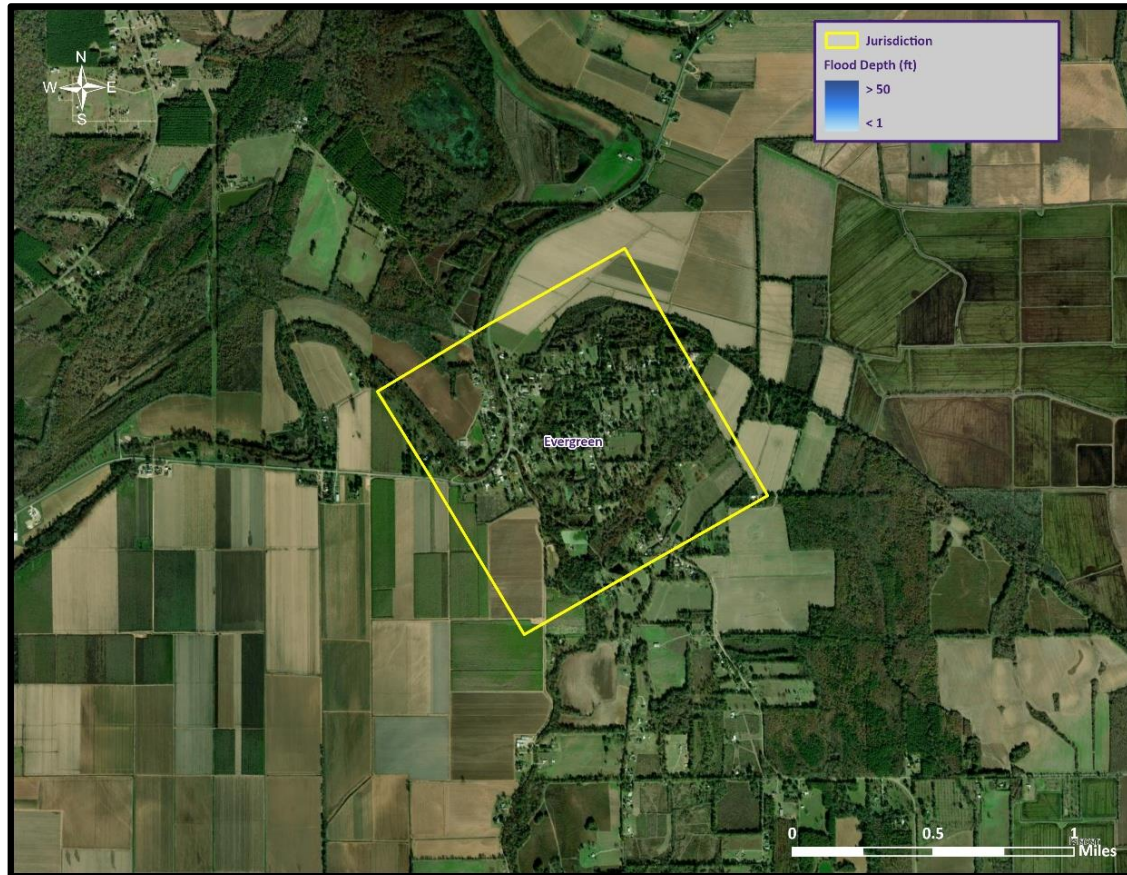


**Bunkie**

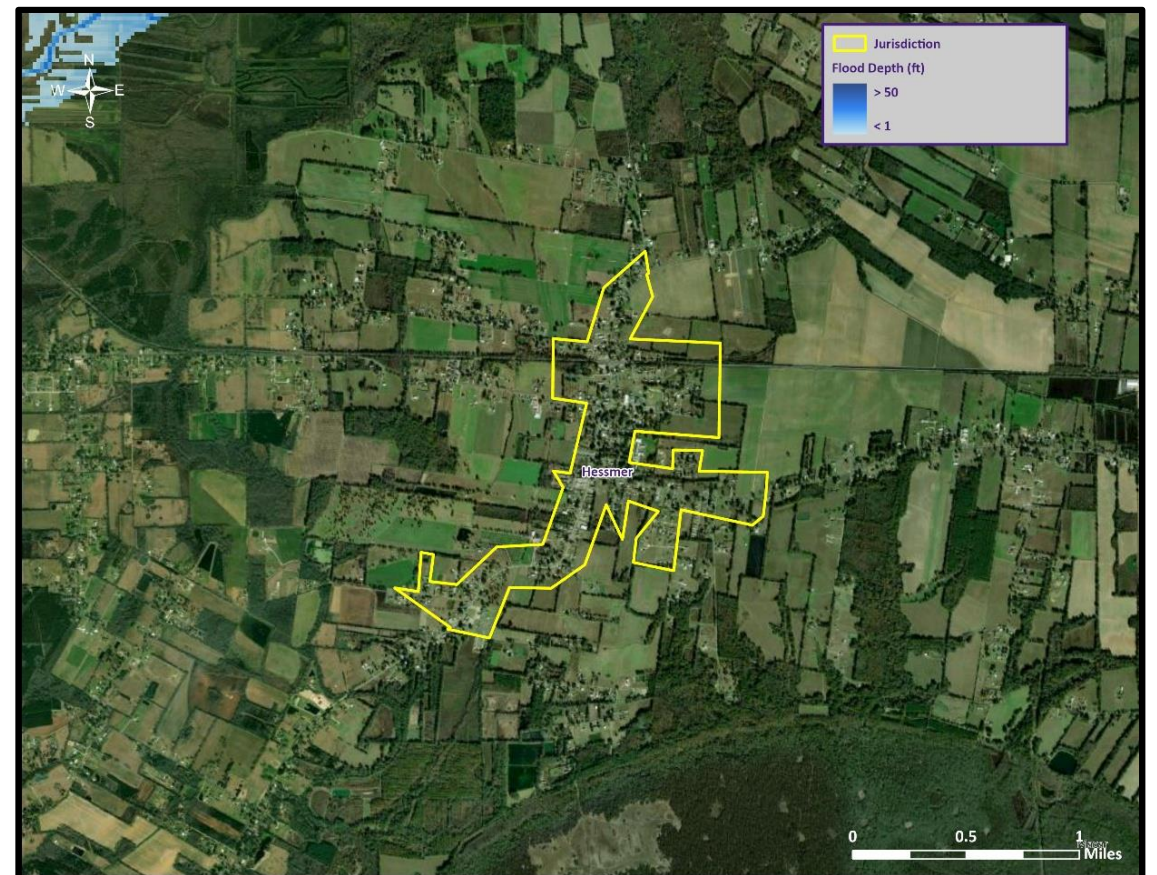


**Cottonport**

# Community Flood Maps

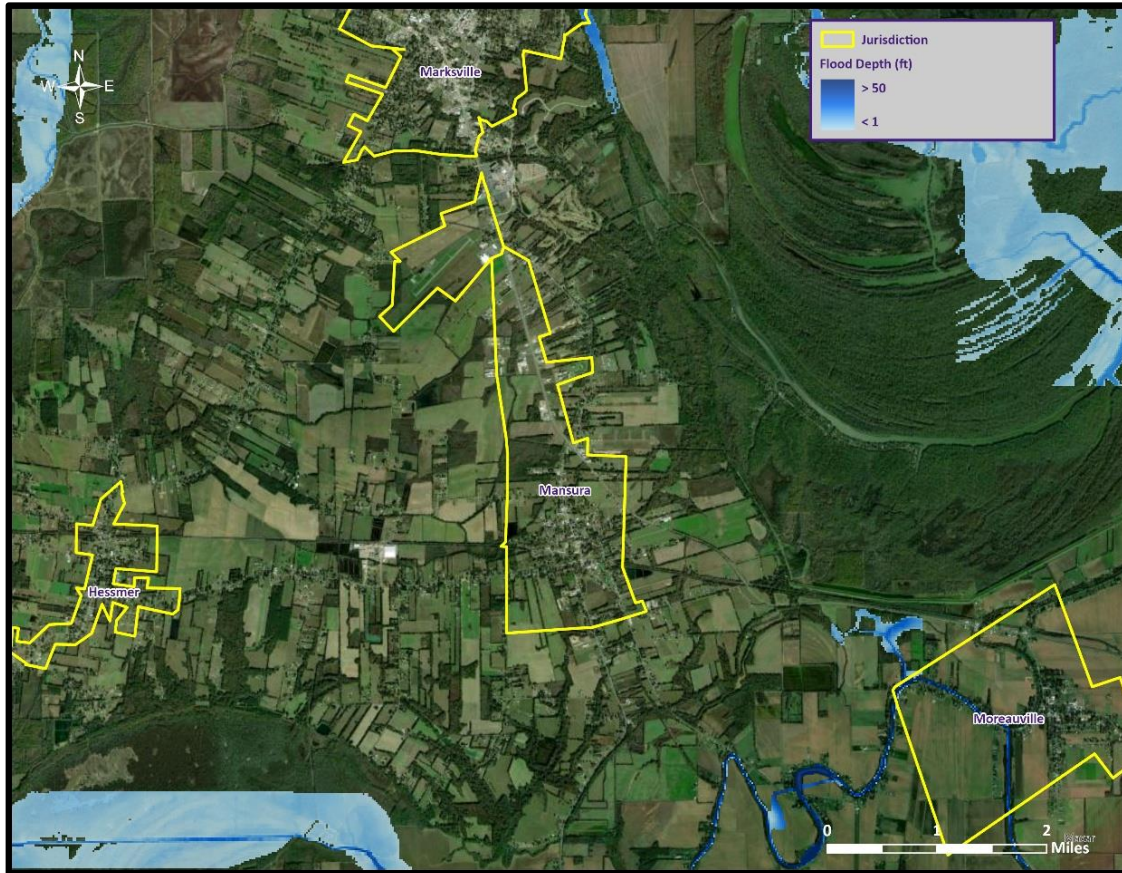


**Evergreen**

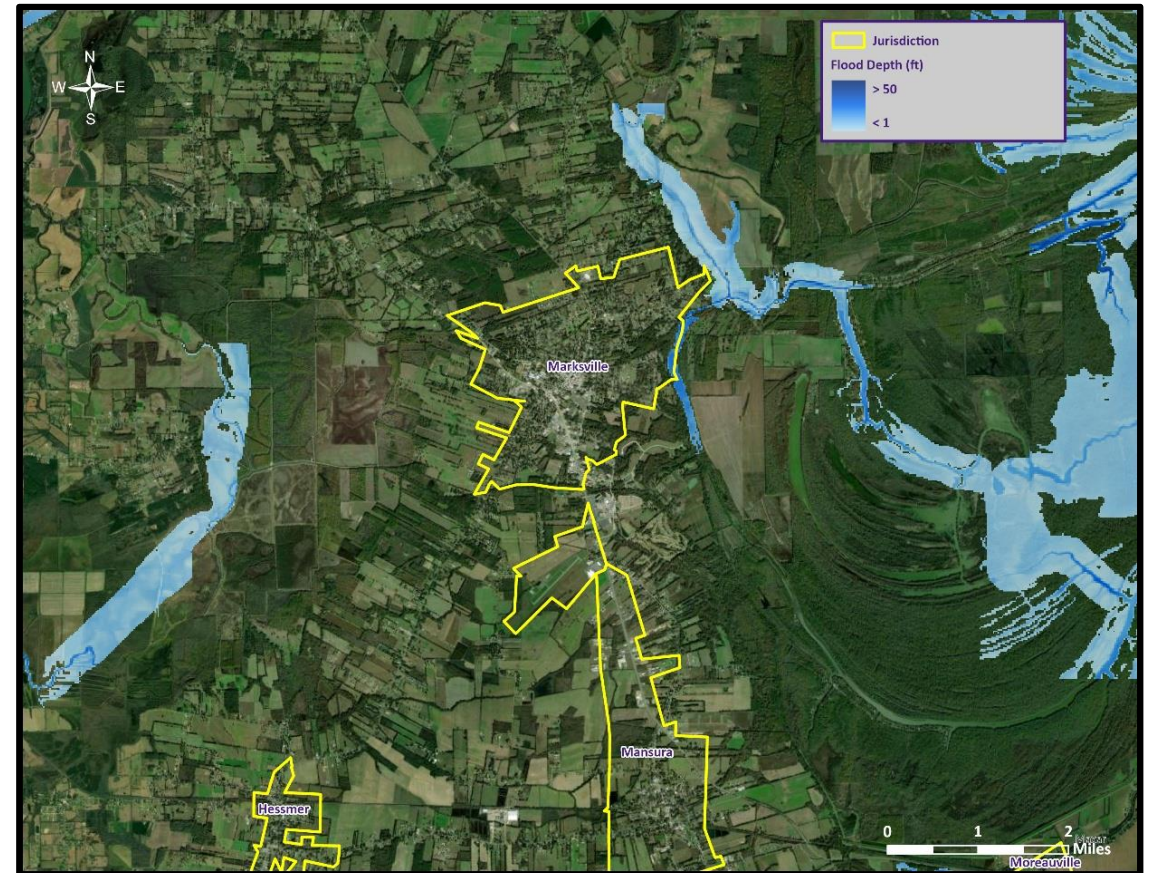


**Hessmer**

# Community Flood Maps

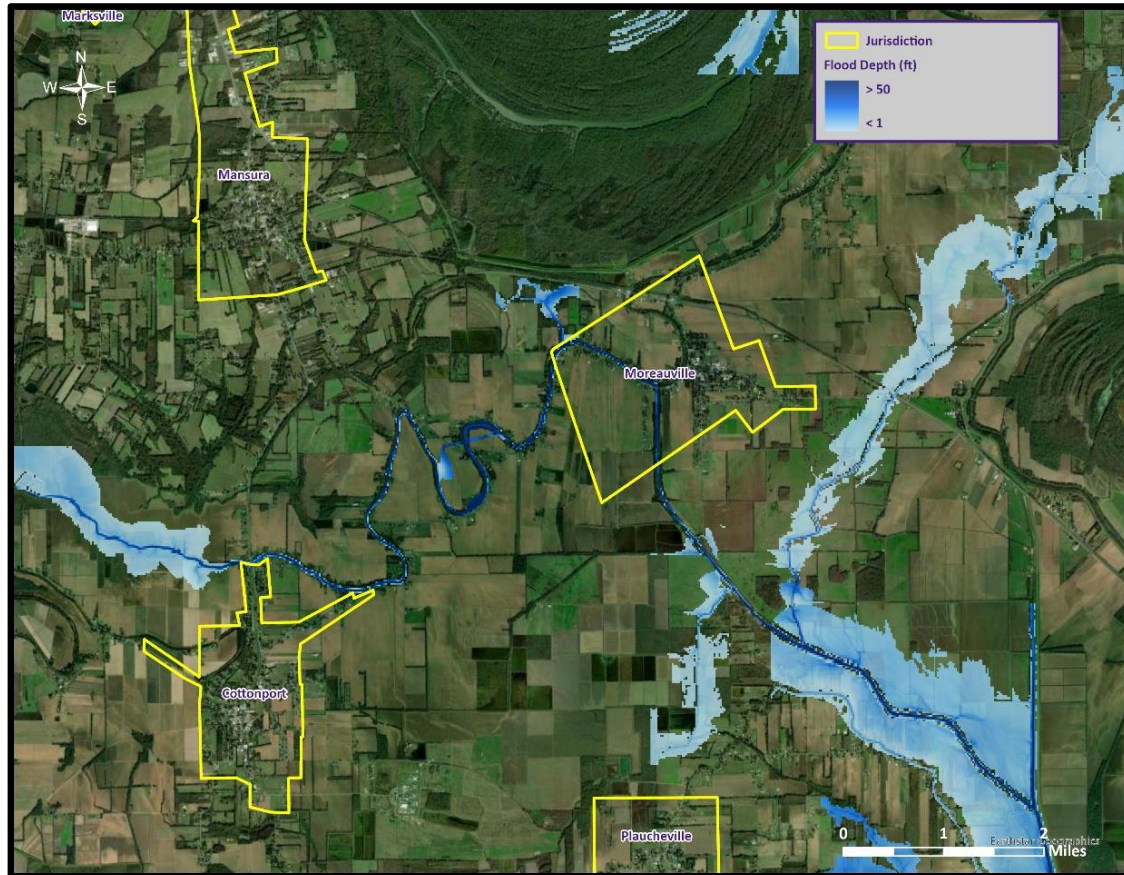


**Mansura**



**Marksville**

# Community Flood Maps

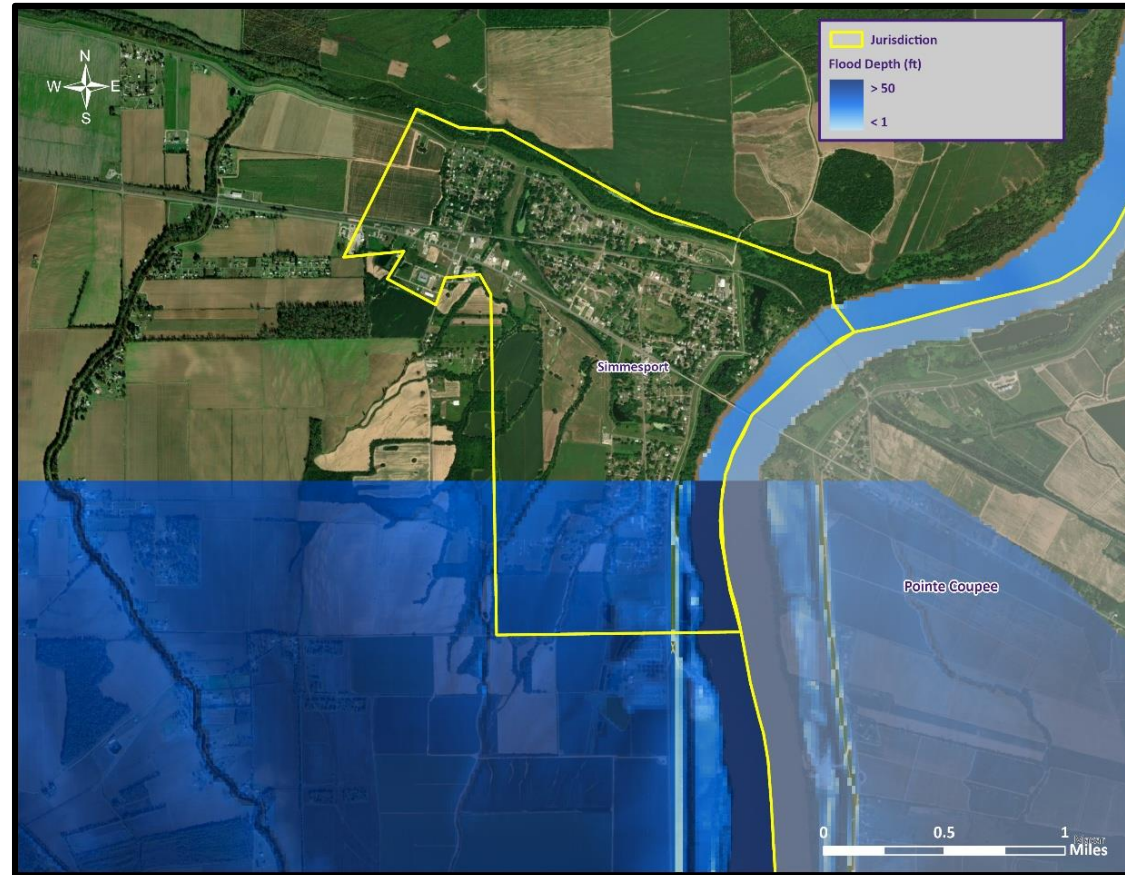


**Moreauville**



**Placheville**

# Community Flood Maps



## Simmesport

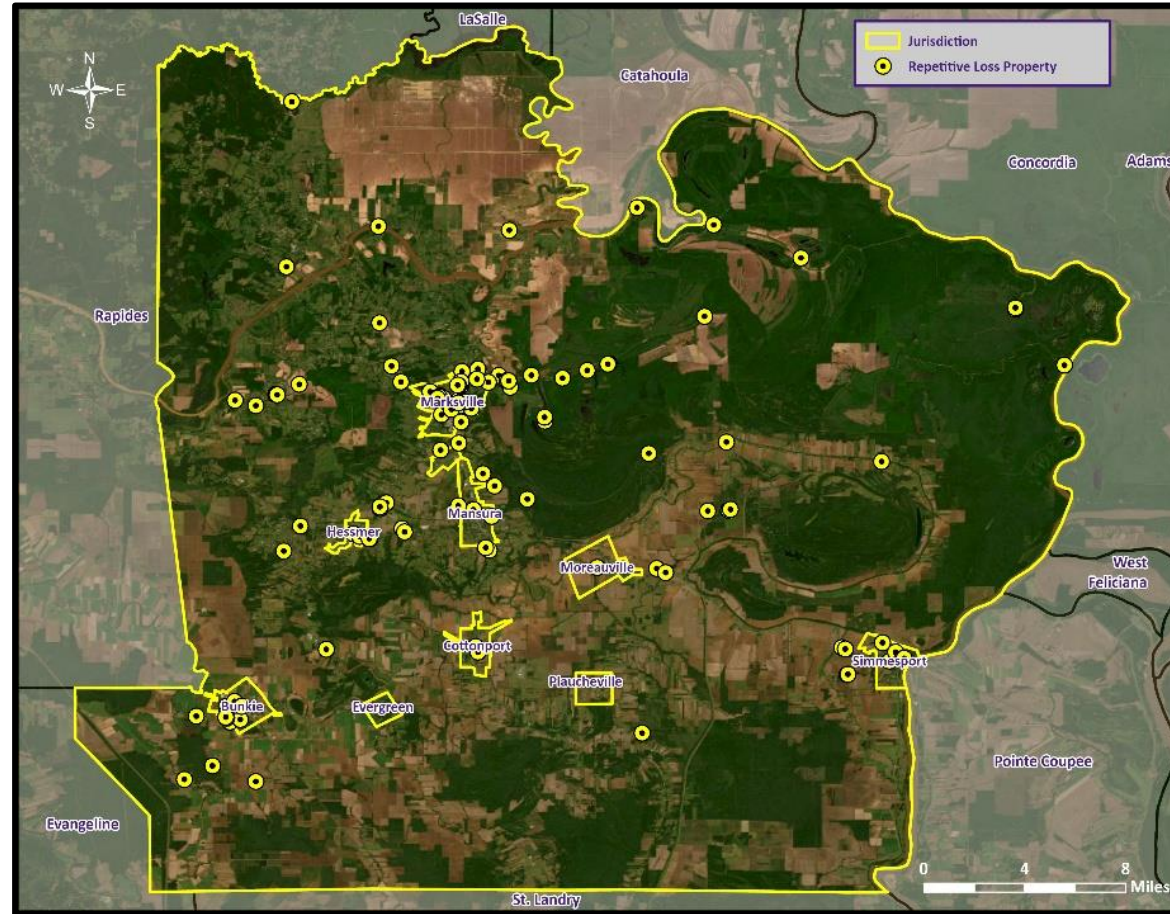




# Flooding

- 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



Number of Structures	Residential	Commercial	Government	Total Claims	Total Claims Paid
179	172	7	0	565	\$6,522,826



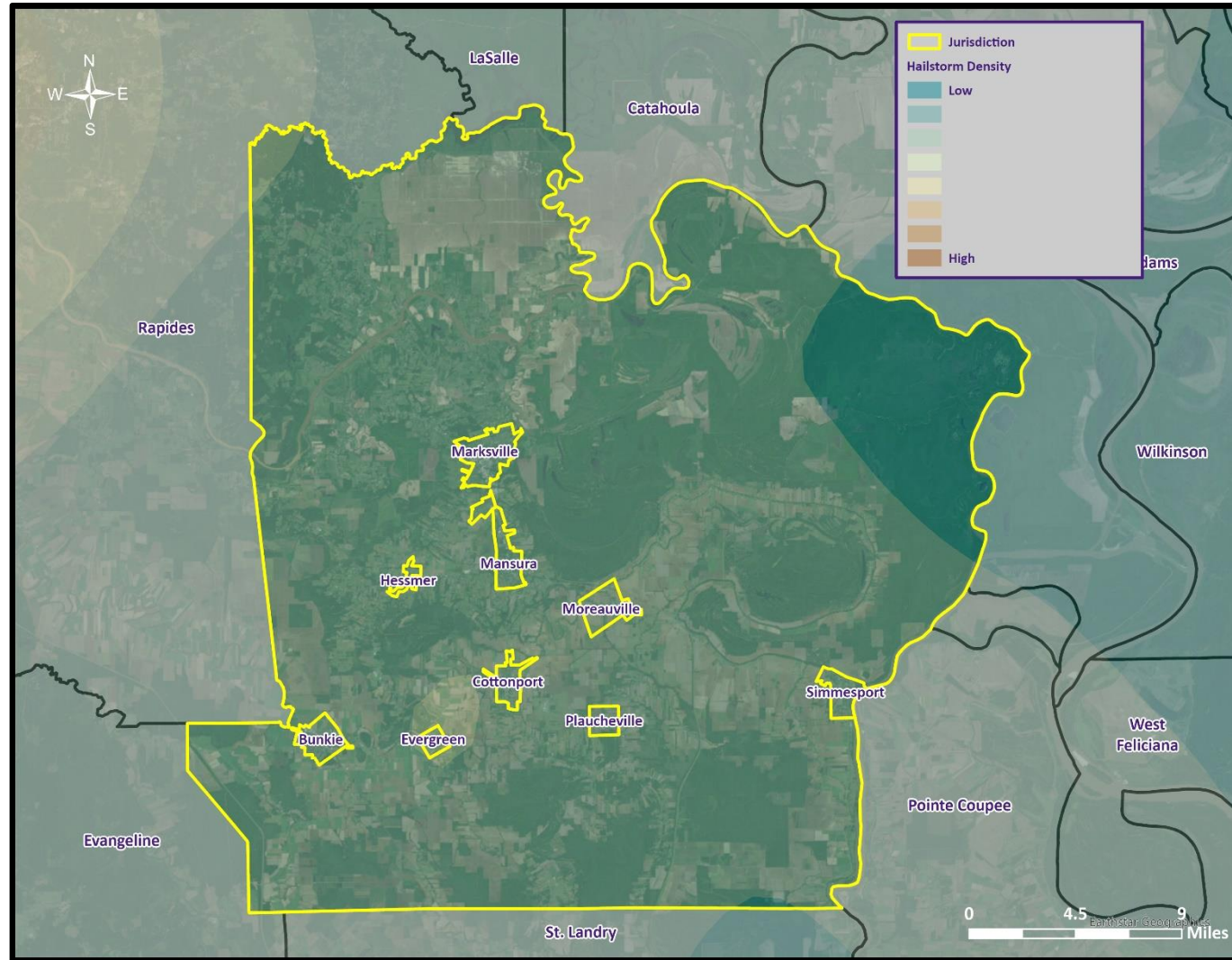
# Thunderstorms



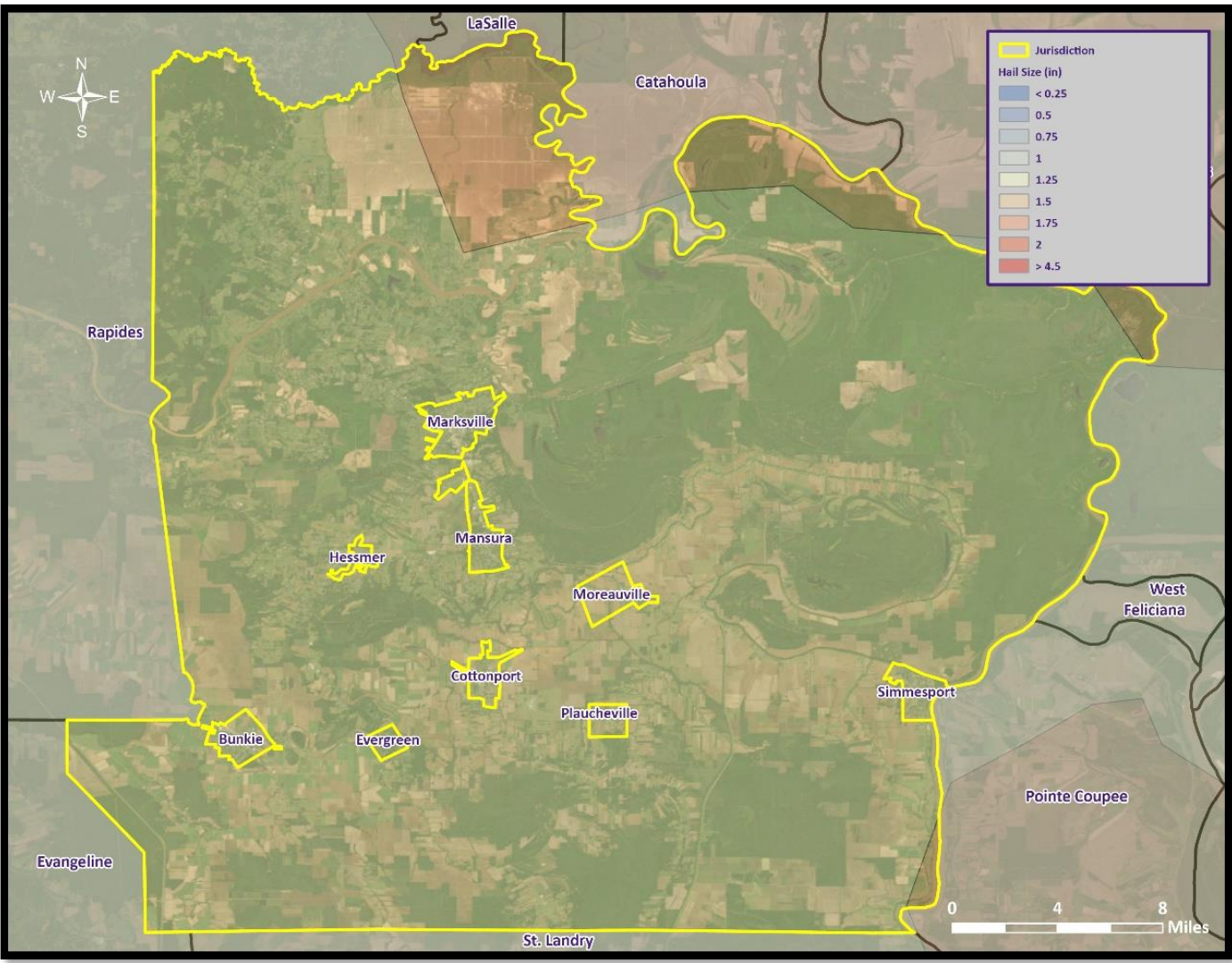
- A **thunderstorm**, also known as an **electrical storm**, a **lightning storm**, or a **thundershower**, is a type of storm characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder.
- They are usually accompanied by strong winds, heavy rain, and 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 shear causes a deviation in their course at a right angle to the wind shear direction.



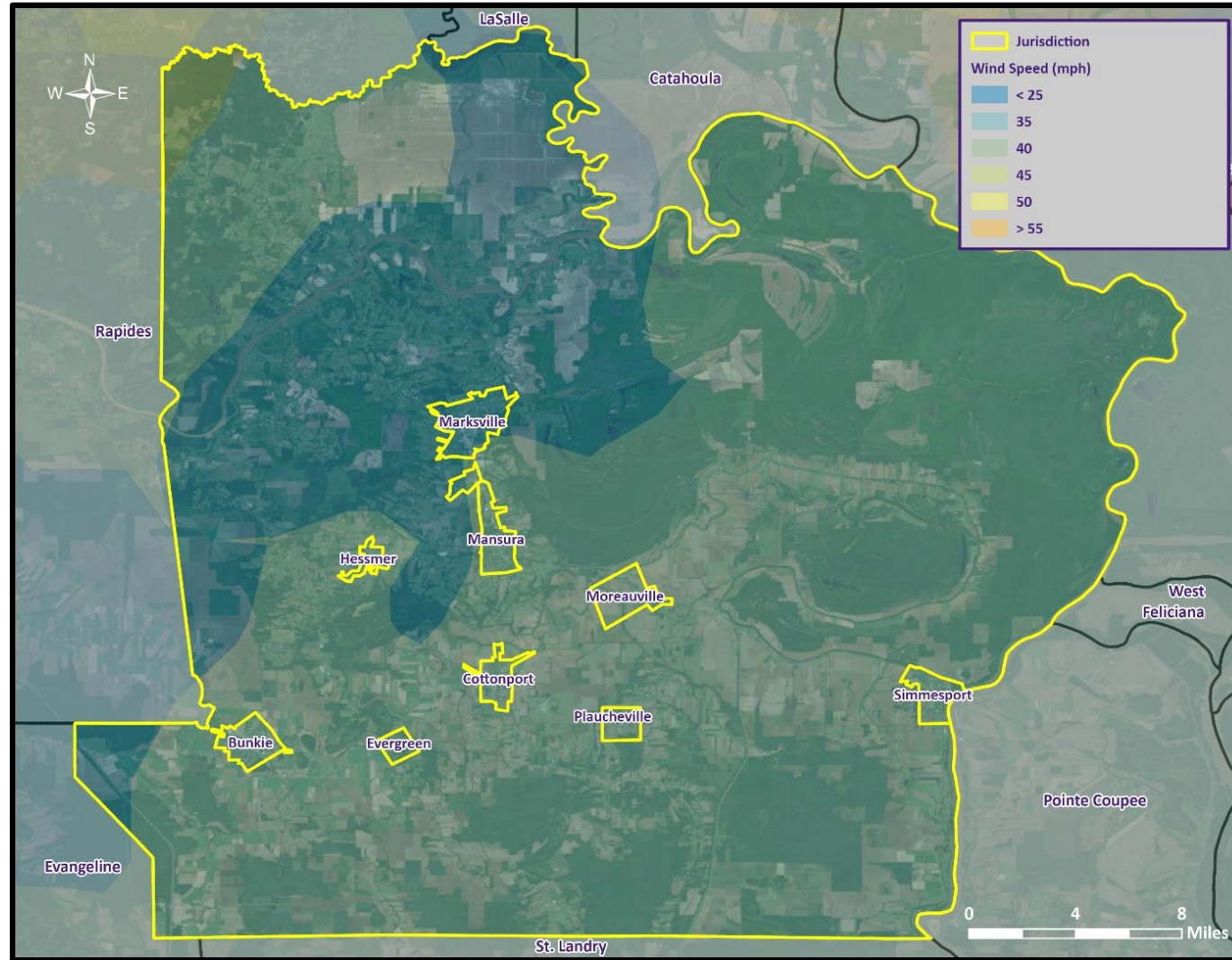
# Hailstorm Density in Avoyelles Parish



# Maximum Hail Size Probability



# Maximum Wind Speed Probability



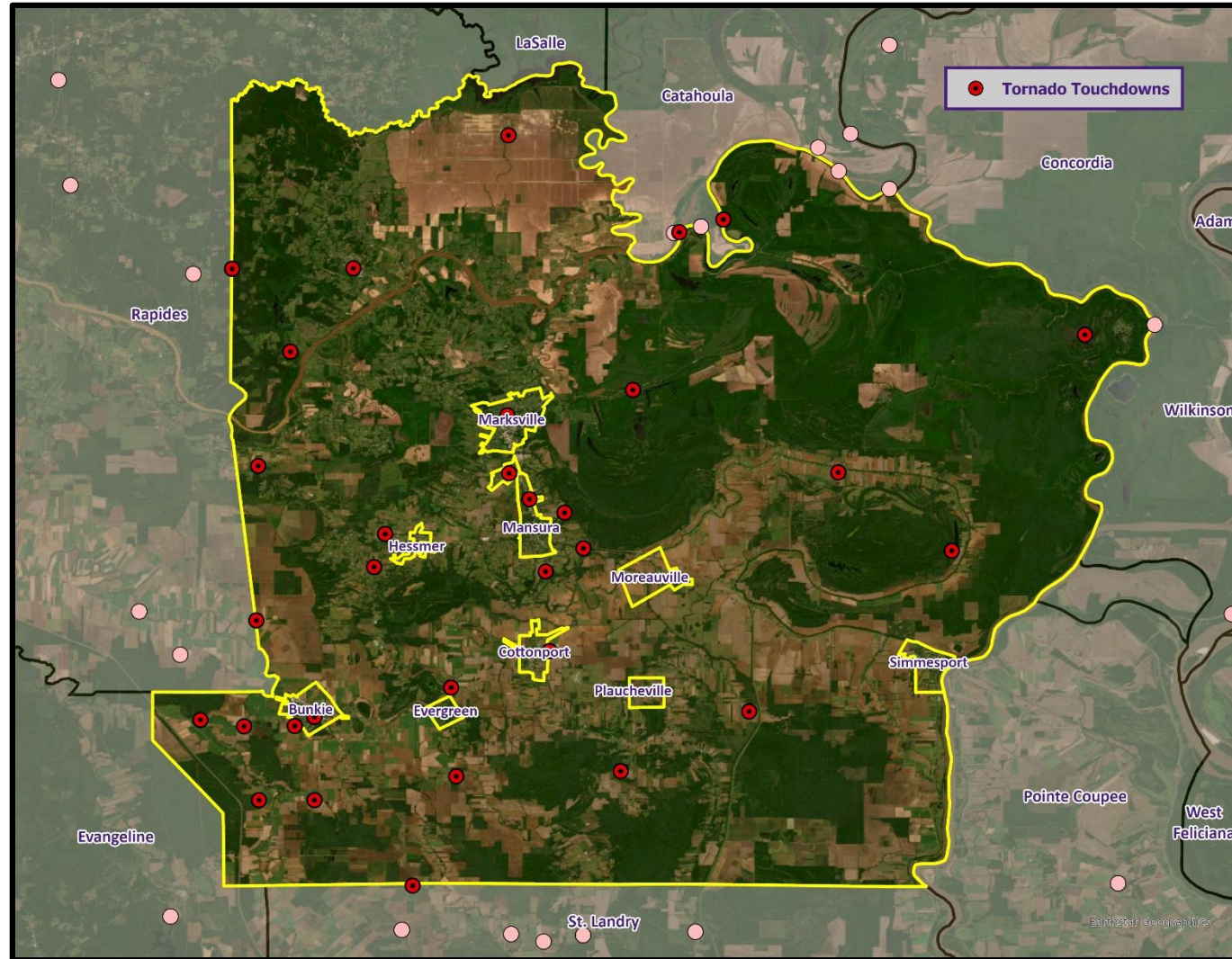
# Tornadoes

- 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



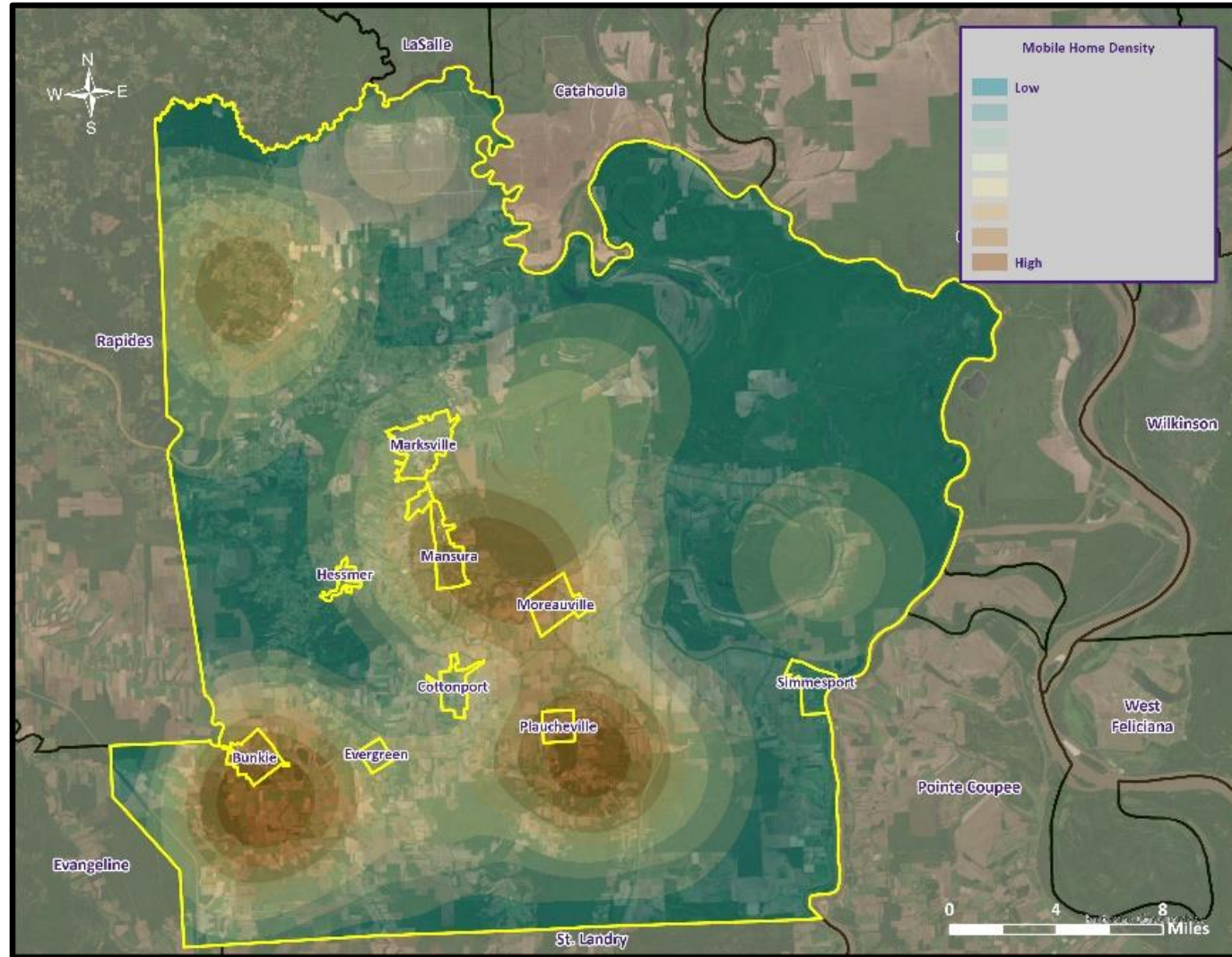
# Tornadoes in Avoyelles Parish



Source: NCEI Storm Events Database



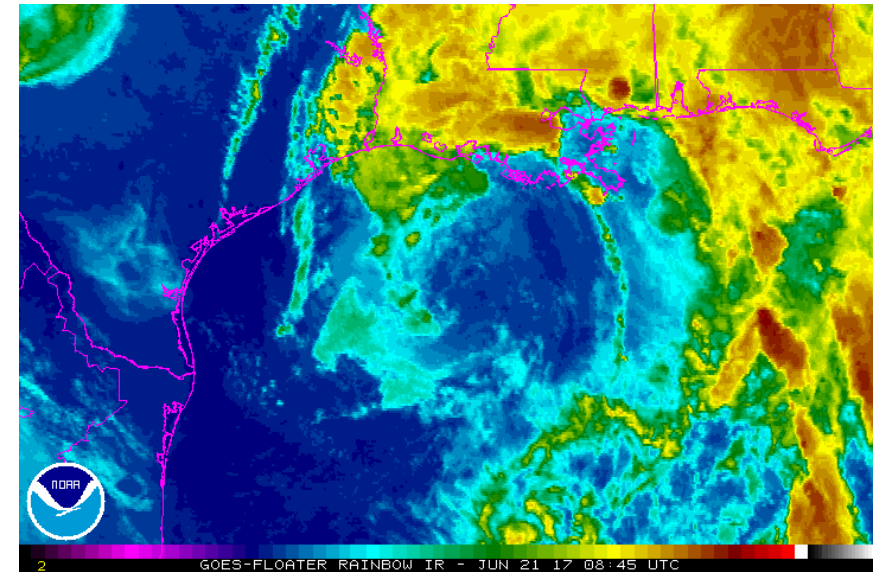
# Manufactured Home Density



# Tropical Cyclones

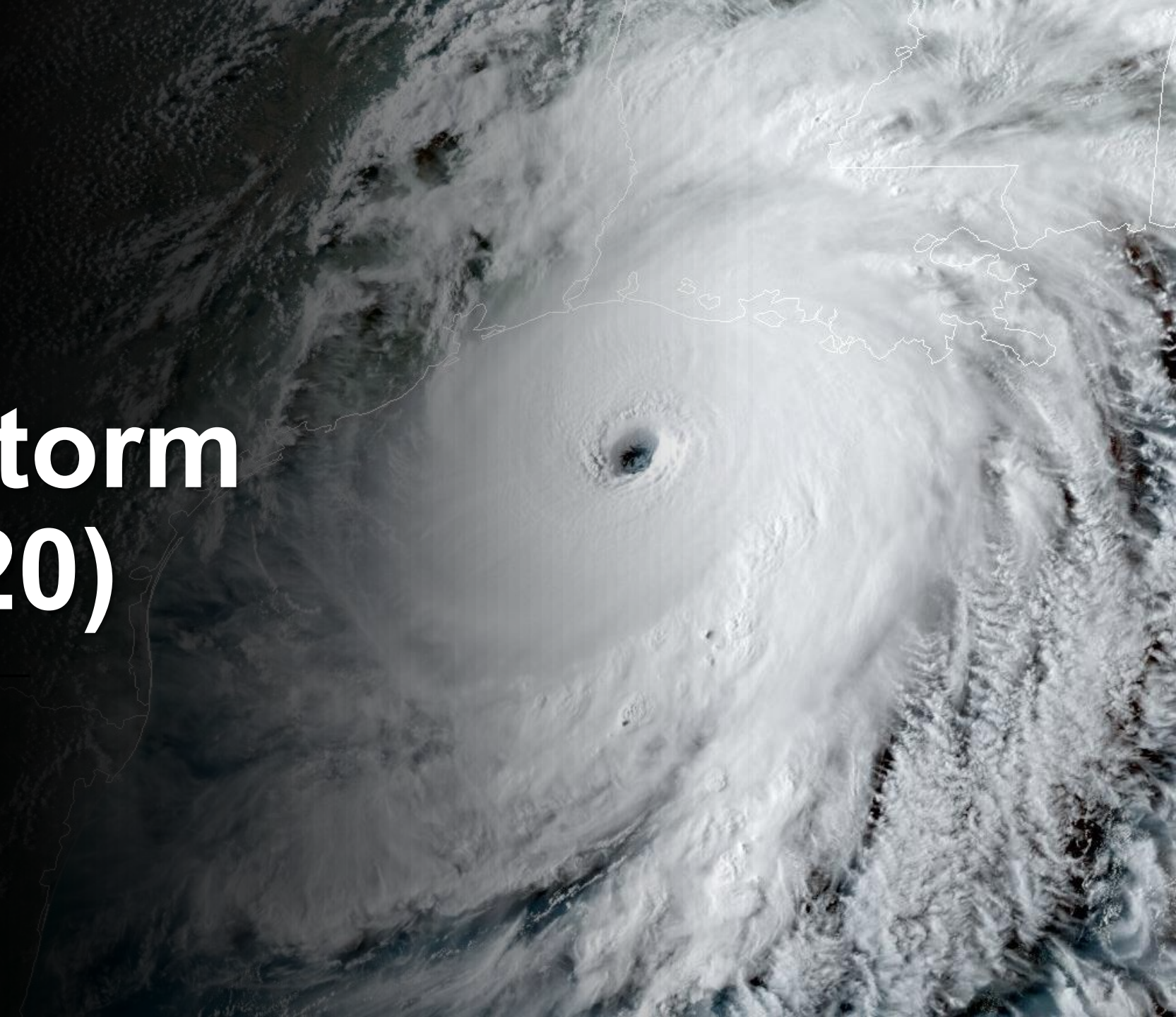
- Tropical cyclones are defined spinning, low-pressure air masses that draw surface air into their centers and attain strength ranging from weak tropical waves to the most intense hurricanes

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.





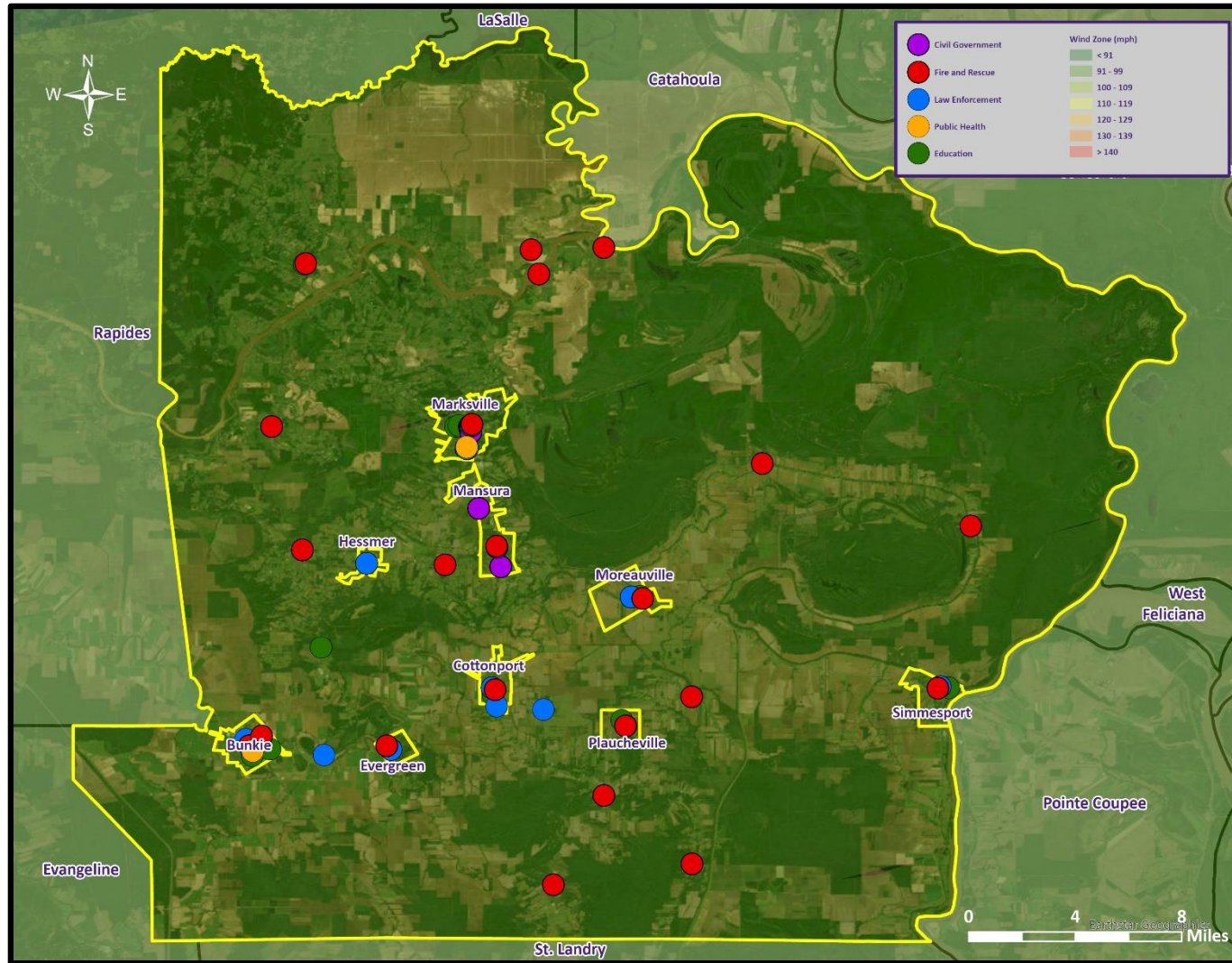
# Tropical Storm Laura (2020)



A satellite image of Tropical Storm Delta (2020) over the ocean. The storm is a large, circular system with a distinct eye and a well-defined eye wall. The surrounding clouds are dense and spiral inward. The ocean surface is visible in the lower right, showing some wave activity. In the top left corner, there is a small orange horizontal bar.

# Tropical Storm Delta (2020)

# Tropical Cyclone CI Map

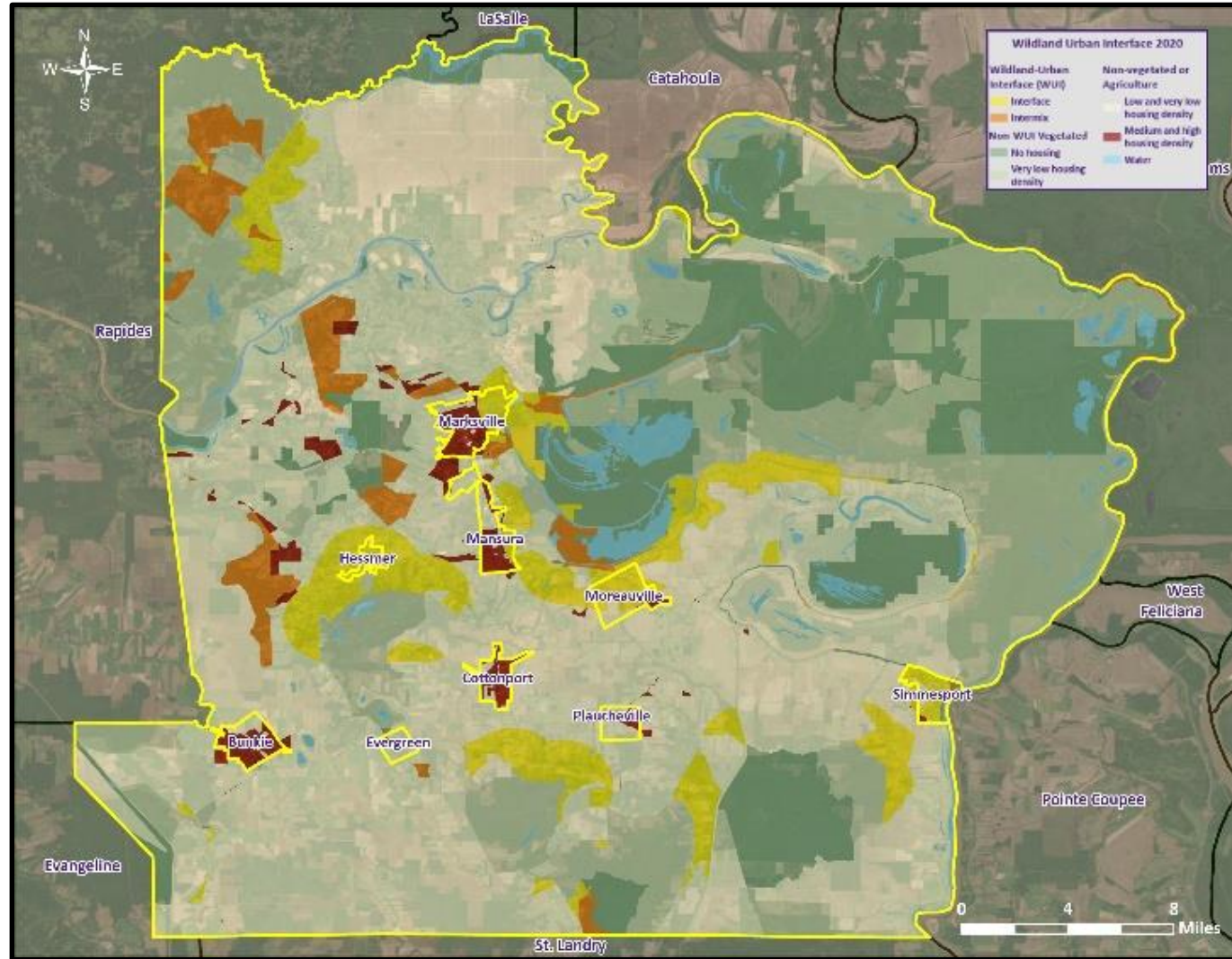


# Wildfires



- 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.

# Avoyelles Wildland-Urban Interaction

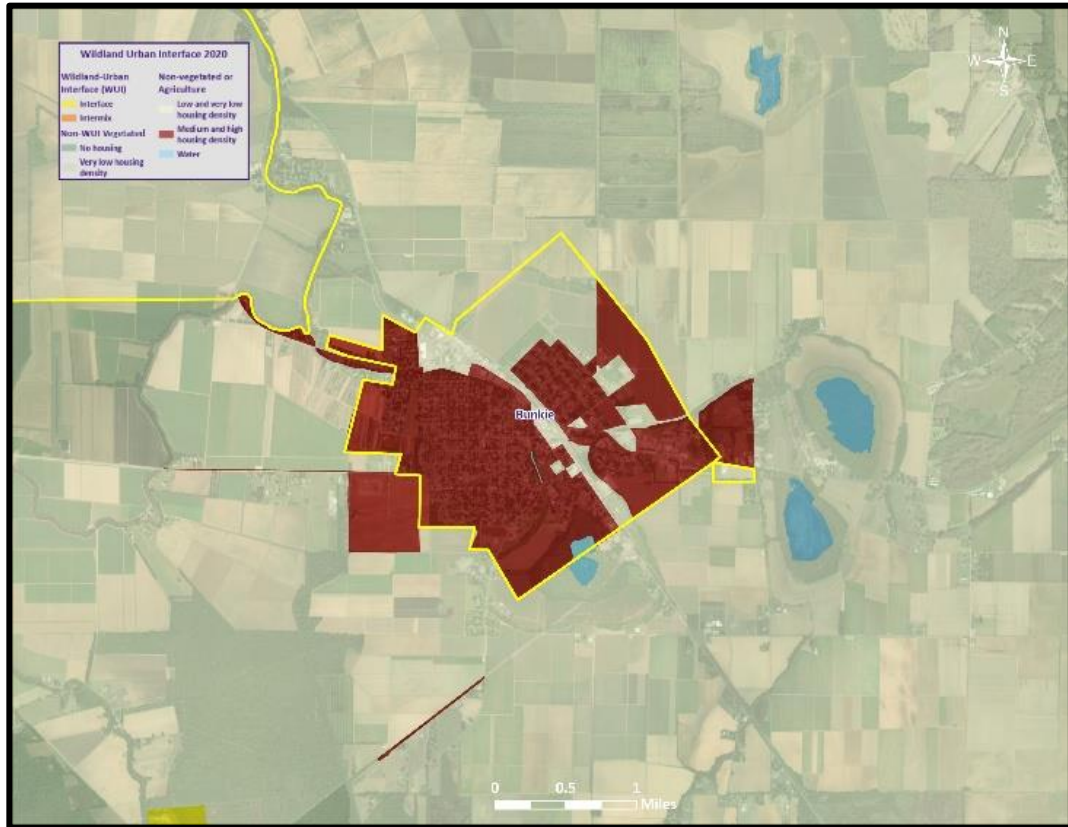


**Source:** U.S. Forest Service – Geospatial Data Discovery

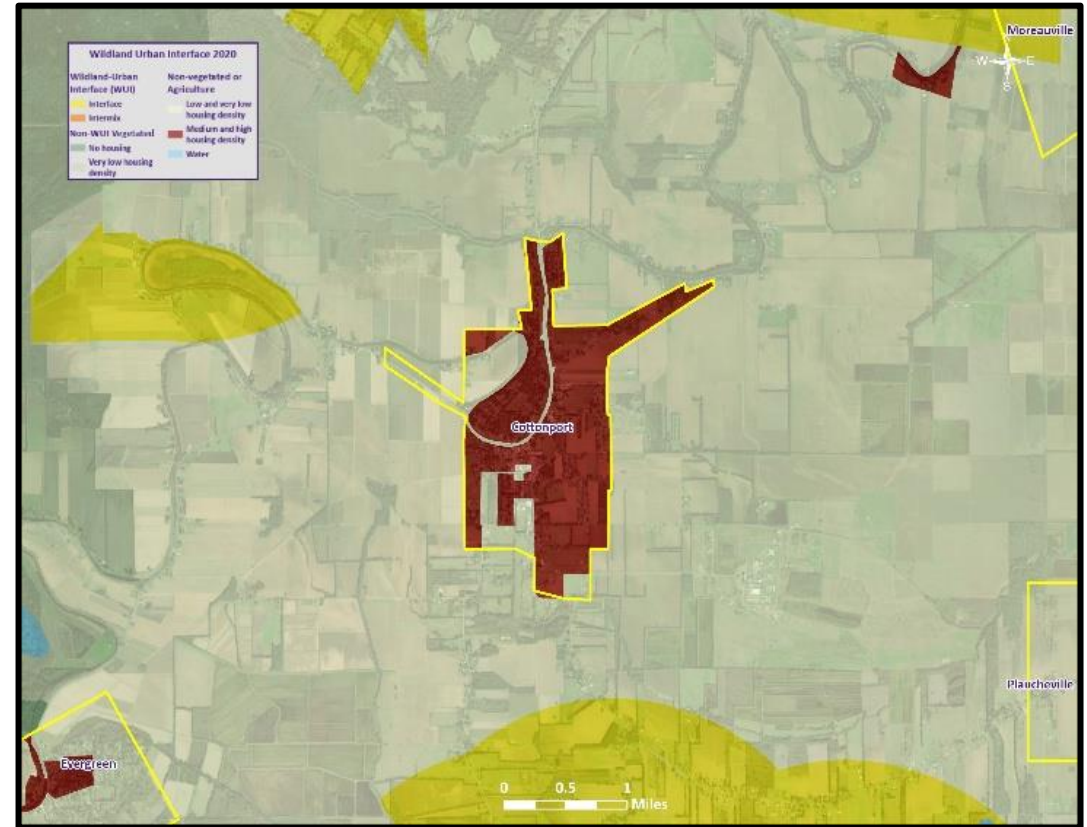


# Wildland Urban Interaction Maps

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



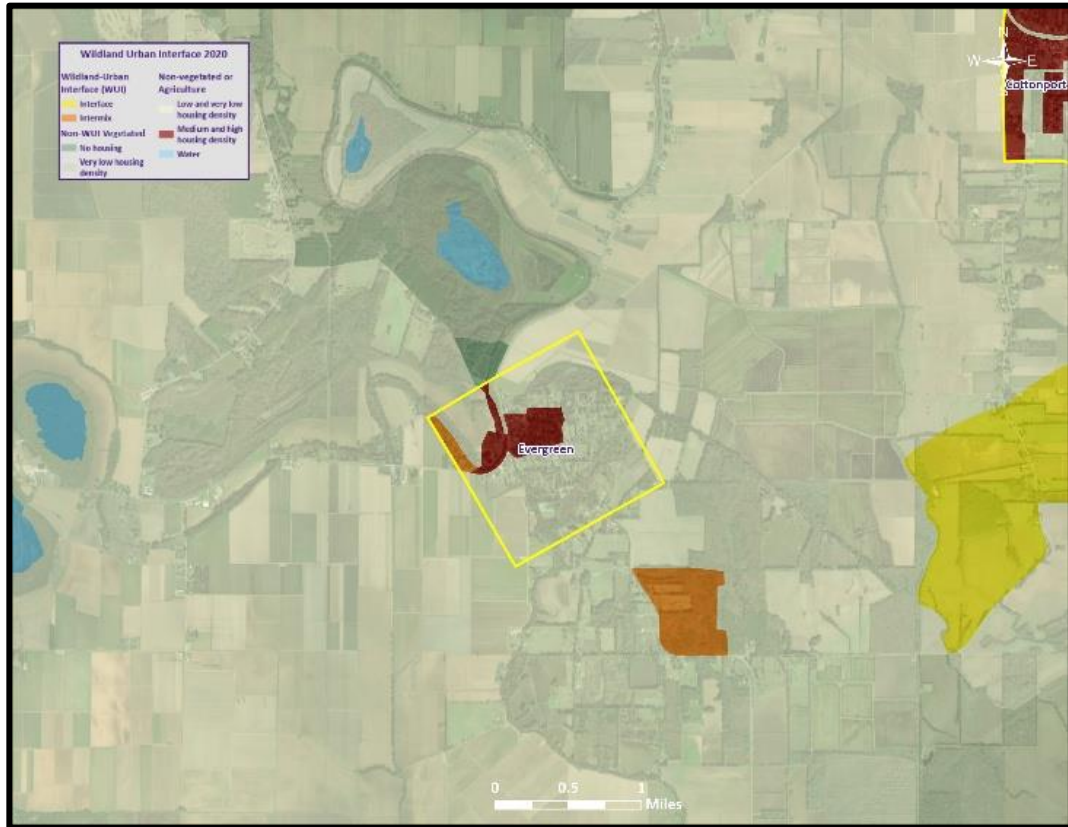
**Bunkie**



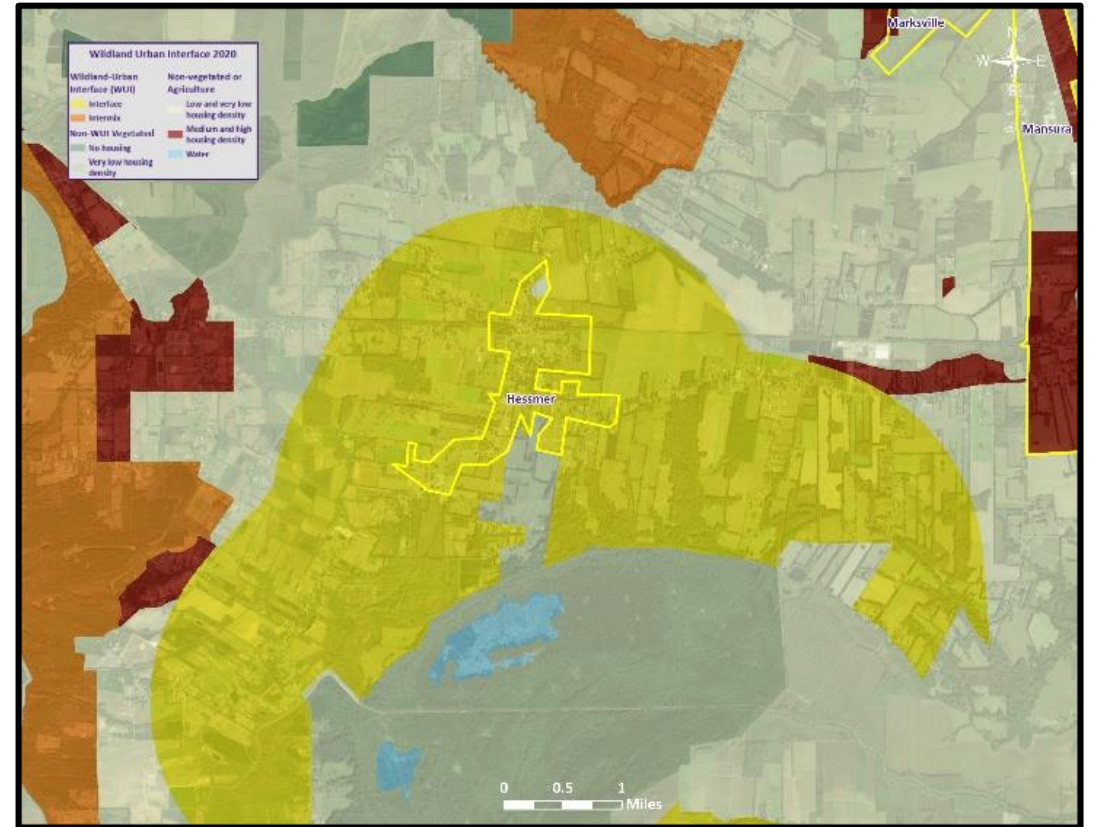
**Cottonport**

# Wildland Urban Interaction Maps

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



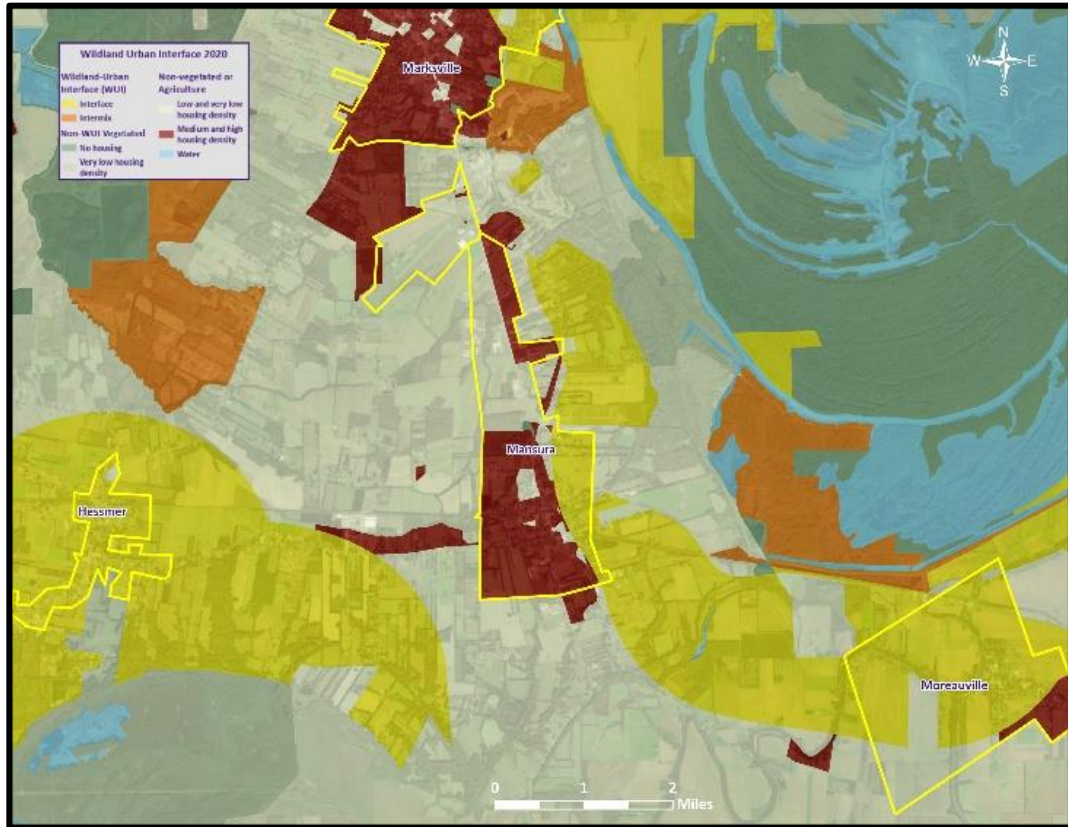
**Evergreen**



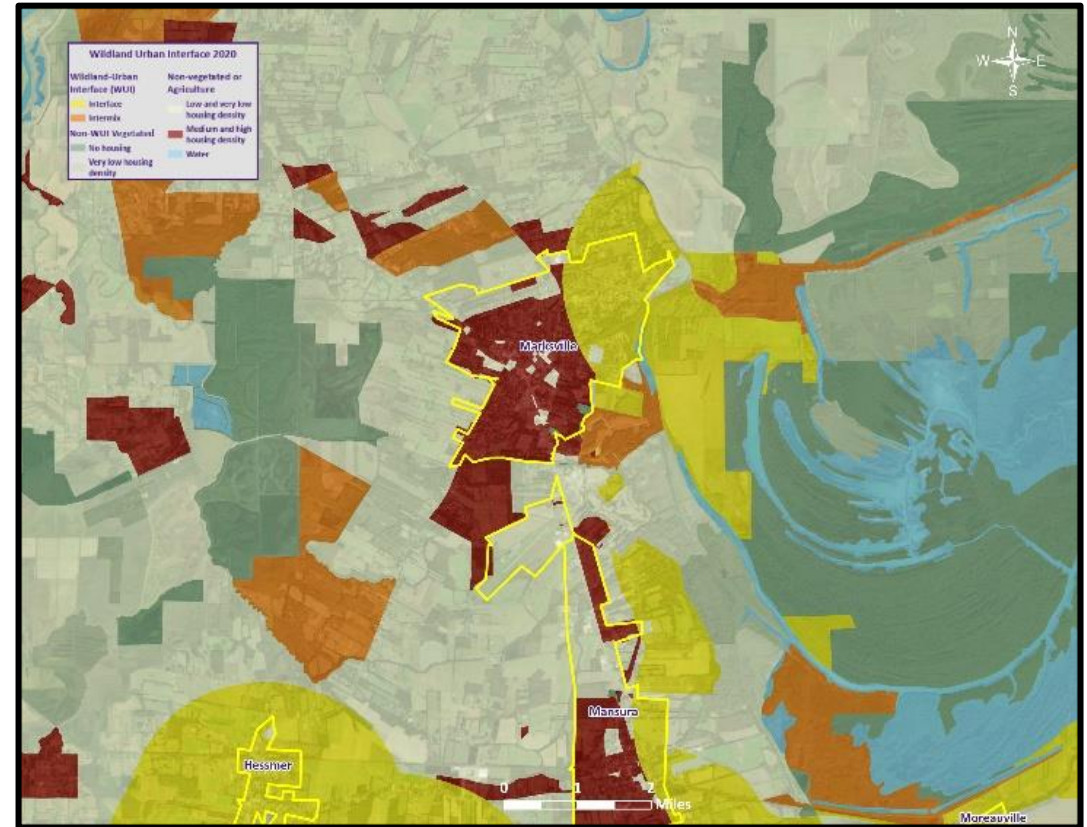
**Hessmer**

# Wildland Urban Interaction Maps

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



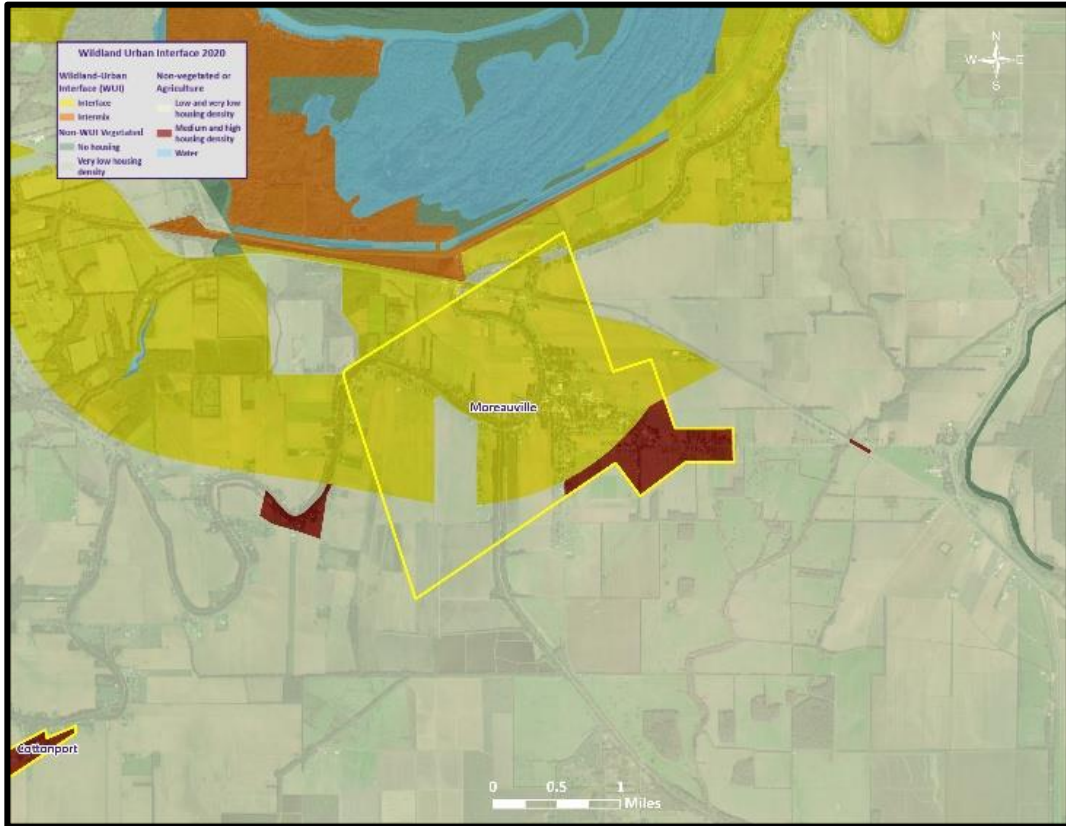
**Mansura**



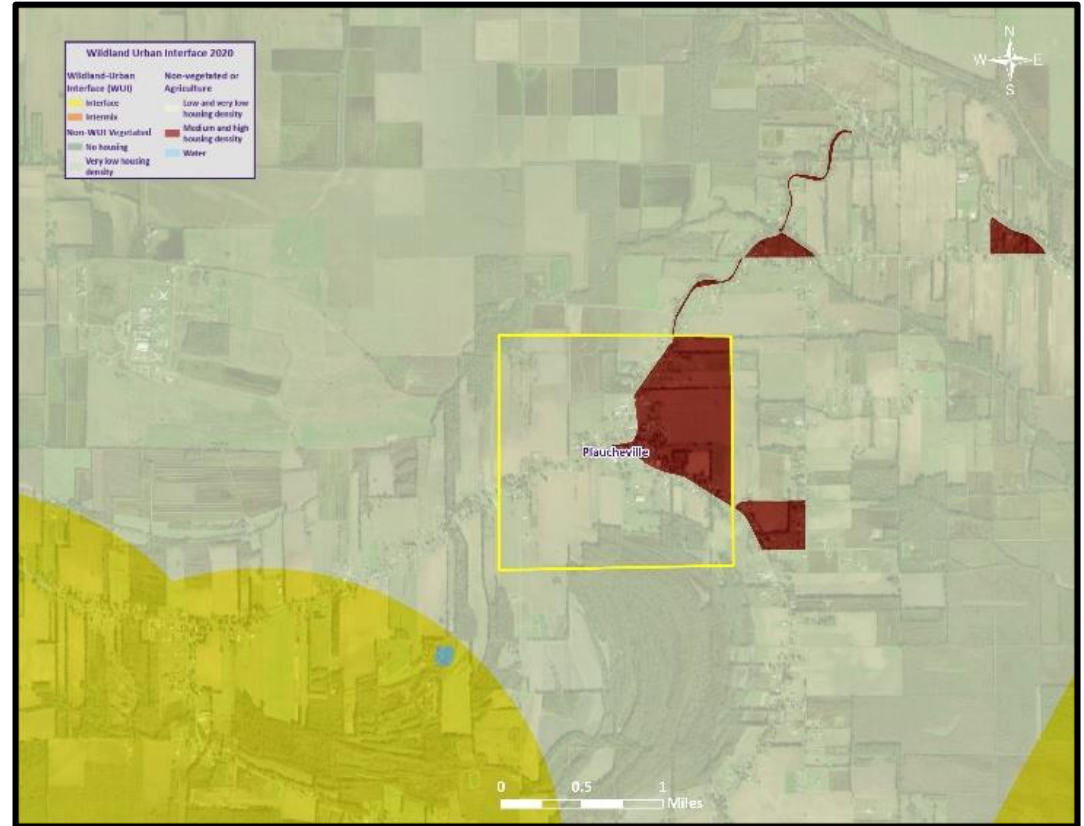
**Marksville**

# Wildland Urban Interaction Maps

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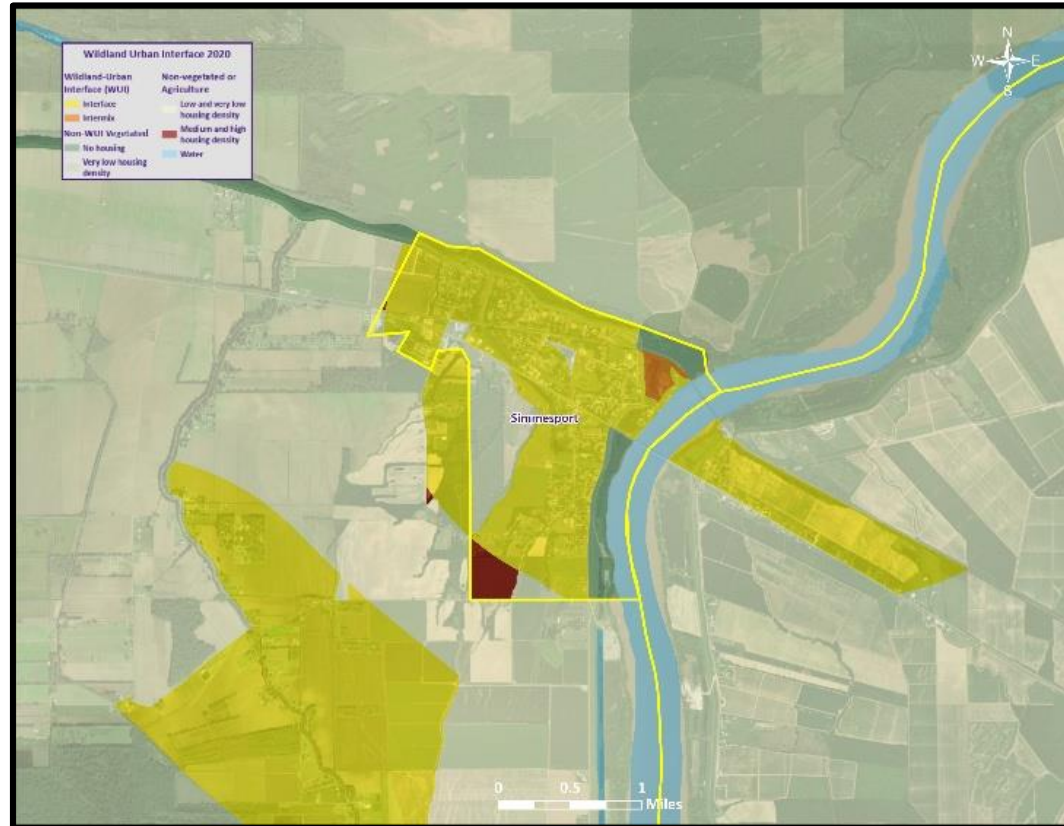
**Moreauville**



**Plaucheville**

# Wildland Urban Interaction Maps

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



## Simmesport



# Winter Weather

- Occurs when humid air from the Gulf of America meets a cold air mass from the north.
- As the temperature falls, precipitation may fall in the form of snow or sleet.
- If the ground temperature is cold enough but air temperature is above freezing, rain can freeze instantly on contact with the surface, causing massive ice storms.



# Avoyelles Hazard Mitigation Goals

1. Maintain public services and critical facilities at the time of an impending hazard or during and immediately after a hazard event in order to protect people's lives and quality of life
2. Create general awareness of location of mitigation information
3. Improve effectiveness of communication with the public
4. Preserve the parish's natural geography, reclaim and restore natural areas, and prevent damage to higher elevations
5. Maintain public services and safety by training personnel to be effective in addressing hazardous and industrial events
6. Create safe environments in which to assist evacuees
7. Establish ability for public facilities for water and wastewater throughout the parish to have access to emergency power to serve the populous
8. Maintain steady water supply to entire parish
9. Maintain and improve system of shelters by equipping and adequately staffing with trained volunteers



# Public Outreach Activity #1

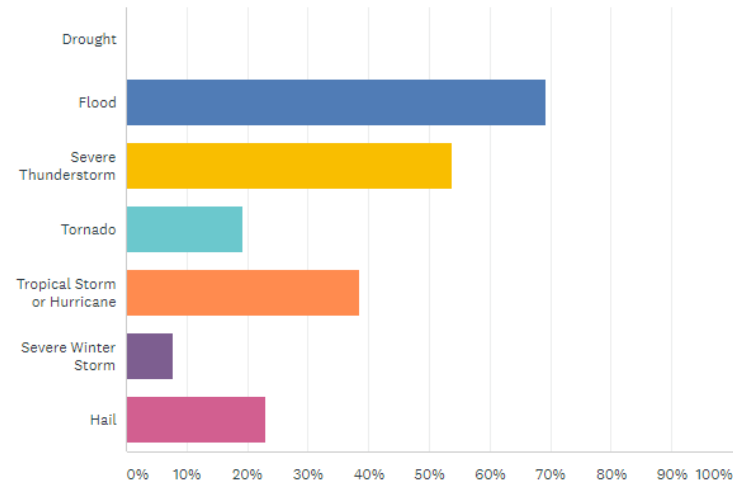
## Hazard Mitigation Public Opinion Survey

[https://lsu.qualtrics.com/jfe/form/SV\\_dcbGE6yTlzOx63I](https://lsu.qualtrics.com/jfe/form/SV_dcbGE6yTlzOx63I)



Which of these natural disasters have you or someone in your household experienced in the past five years? (Check all that apply)

Answered: 26 Skipped: 1



# Public Outreach Activity #2

Please fill out an incident questionnaire!



AVOUELLES PARISH PUBLIC MEETING	
<b>PUBLIC ACTIVITY: INCIDENT/ ISSUE QUESTIONNAIRE</b>	
<b>1. HAZARD TYPE(S):</b>	<b>4. INTENSITY:</b>
A. DROUGHT B. FLOODING C. THUNDERSTORMS D. TORNADOES E. TROPICAL CYCLONES F. WILDFIRES G. WINTER WEATHER	A. DEPTH (FLOODING) OR SIZE (HAILE ETC.): B. WIND STRENGTH
<b>2. DESCRIBE INCIDENT OR ISSUE:</b>	<b>5. RECURRING OR ONE TIME:</b>
	A. IF RECURRING, HOW OFTEN:
	<b>6. WHAT TYPE OF INTERRUPTIONS DOES/DIDTHE INCIDENT OR ISSUE CAUSE? (BUSINESS CLOSURE,DAMAGE, EVACUATION, ETC.)</b>
	<b>7.HOW LONG WAS THE INTERRUPTION (HOURS, DAYS, WEEKS ETC.)</b>
<b>3. LOCATION:</b>	<b>8. HOW COULD THIS HAZARD OR IMPACT BE PREVENTED, FIXED OR ALLEVIATED?</b>
A. CITY:	
B. ADDRESS OR AREA:	



# SDMI Hazard Mitigation Website

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



The screenshot displays the website interface for Avoyelles Parish. At the top, the LSU Stephenson Disaster Management Institute logo is visible, along with a navigation bar containing 'SDMI HOME', 'f', and 't' icons. Below this is a yellow header for 'HAZARD MITIGATION' and a sub-navigation bar with 'Intro', 'Events', 'FEMA Resources', and 'Parish Plans'. The main content area is titled 'Avoyelles Parish' and includes a 'PLAN DUE DATE: AUGUST 24 2025' badge. A 'DEVELOPMENT STATUS' section shows a progress bar with four stages: 'PLAN DEVELOPMENT' (yellow), 'PLAN REVIEW' (purple), 'PLAN ADOPTION' (purple), and 'COMPLETED' (purple). Below the progress bar, the stages are labeled with 'INITIAL PLANNING COMMITTEE', 'TBD', 'TBD', and 'TBD'. A 'PARTICIPATING JURISDICTIONS' section lists various entities with radio button indicators: Avoyelles Parish, Unincorporated areas, Village of Moreauville, City of Bunkie, Village of Hessmer, Village of Plaquemine, Town of Cottonport, Town of Mansura, Town of Simmesport, Town of Evergreen, and City of Marksville. A calendar view shows two upcoming meetings: '2025 AVOYELLES PARISH EXECUTIVE OVERVIEW' on June 17, 2024, and '2025 AVOYELLES PARISH INITIAL PLANNING COMMITTEE MEETING' on January 15, 2025. A 'PREVIOUS PLANS' section for the year 2017 features three download buttons for 'AVOYELLES PARISH KICK OFF MEETING', 'AVOYELLES PARISH PUBLIC MEETING', and 'AVOYELLES PARISH HAZARD MITIGATION PLAN'. At the bottom, there is a 'Survey' section with an 'Access Survey' button and the LSU logo.

# Contact Us

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**Emergency Management Analyst**

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