

1. Geological and Seismic Risks

- **Fault Activation and Induced Seismicity:**
Lake Maurepas sits above the Baton Rouge–Denham Springs Fault Zone and other subsurface growth faults. Injecting CO₂ under high pressure increases the risk of reactivating these faults, potentially triggering small earthquakes or land subsidence.
- **Pressure Build-Up and Structural Integrity:**
Increased subsurface pressure can fracture rock layers, allowing CO₂ or brine to migrate upward into freshwater aquifers.
- **Caprock and Wellbore Failure:**
If containment seals fail, injected CO₂ could escape through existing geological fractures or legacy wells.

2. Water and Wetland Impacts

- **Hydrologic and Sediment Disruption:**
Pipeline installation and well pad construction can disrupt natural water flow, increasing erosion and flood risks.
- **Pollution from Industrial Activity:**
Spills of drilling muds, diesel fuel, or hydraulic fluids can degrade water quality and threaten aquatic life.
- **CO₂ Leakage and Acidification:**
Escaped CO₂ dissolves in water, forming carbonic acid that can lower pH levels and damage shellfish, fish eggs, and vegetation.
- **Navigational and Visibility Hazards:**
Industrial platforms and barges create dangerous obstructions on the lake, particularly at night or in fog, increasing the risk of collisions for local fishers and recreational boaters.

3. Wildlife and Habitat Loss

- **Habitat Fragmentation:**
Construction corridors and platforms disturb bird rookeries, nesting areas, and fish nurseries.
- **Noise and Light Pollution:**
Continuous industrial lighting and vessel traffic alter natural behaviors of migratory birds and aquatic species.
- **Contamination and Bioaccumulation:**
Pollutants from heavy machinery or drilling can enter sediments, affecting the entire food chain.

4. Human Health, Safety, and Property Impacts

- **CO₂ Leak or Rupture Risk:**
A CO₂ pipeline rupture can release massive amounts of odorless, colorless gas that displaces oxygen, causing asphyxiation.
 - In the 2020 Satartia, Mississippi pipeline rupture, over 45 people were hospitalized, vehicles stalled, and emergency crews struggled to respond due to low oxygen levels.
 - Similar risks exist near Lake Maurepas communities if containment or valves fail.
- **Death and Serious Injury Potential:**
In confined or low-lying areas, escaping CO₂ can cause rapid unconsciousness or death within minutes. Unlike natural gas, CO₂ is not flammable, but it is heavier than air and can pool near the ground, silently replacing breathable air.
- **Emergency Response (EMS) Concerns:**
Most local fire and EMS agencies are not yet trained or equipped for CO₂ incidents.
 - Specialized training, gas detection monitors, and self-contained breathing apparatus (SCBA) are needed to safely operate in a CO₂ leak zone.

- Delayed or unsafe response could lead to greater casualties and ineffective evacuations.
- Lack of Community Safety Measures:
There is limited public information about evacuation routes, leak detection systems, or community warning protocols for the Lake Maurepas project area.
- Property Devaluation:
Homes located near CO₂ infrastructure often face declining property values due to perceived risk, reduced insurability, and industrial nuisance factors (noise, traffic, and visual pollution).
- Quality of Life Decline:
Increased industrial noise, light pollution, and heavy equipment traffic can contribute to chronic stress and anxiety among residents.

5. Ecological and Climate Consequences

- False Climate Benefit:
Carbon capture projects often extend fossil fuel operations rather than displace them, offsetting little real emission reduction.
- Wetland Carbon Loss:
Damaged wetlands release stored carbon, worsening greenhouse gas emissions.
- Ecosystem Imbalance:
Sediment disruption and chemical contamination can trigger fish kills, algae blooms, and habitat collapse.

6. Regulatory and Accountability Gaps

- Weak Federal Oversight:
CCS wells fall under EPA Class VI regulations, but enforcement and long-term monitoring are limited.

- **No Long-Term Liability Plan:**
After project completion, taxpayers may bear cleanup costs if leaks or contamination occur.
- **Limited Transparency:**
Residents have expressed concern over insufficient notice and public hearings, limiting community input and consent.

7. Cultural, Recreational, and Economic Impacts

- **Loss of Public Use:**
Industrialization of the lake threatens long-standing traditions of fishing, boating, and family recreation.
- **Navigational Hazards:**
Platforms, barges, and equipment increase risk of nighttime and fog-related accidents, particularly for small boats without radar systems.
- **Tourism and Local Economy:**
Degraded water and wildlife reduce eco-tourism and fishing-based income, harming small businesses.
- **Cultural Heritage:**
The lake is part of Louisiana's natural and cultural identity; its degradation affects community pride and intergenerational connection to the land and water.