

# IF GEORGES HADN'T TURNED

New Orleans most recently dodged catastrophic flooding in 1998, when Hurricane Georges cut across the Gulf of Mexico on a beeline to the mouth of the Mississippi River. As half the population fled, the storm veered to the east and made landfall in Mississippi. The hurricane caused flooding in St. Bernard Parish and also pushed waves from Lake Pontchartrain up against its south shore levees, leaving many to ponder: What if?

**KEY:**  
 Surge water flow  
 Wind direction  
 Model hurricane track

**5 ST. CHARLES SUBMERGED**  
 Here, water in the lake would reach heights of 3-8 feet above normal, spilling into wetlands and towns in St. Charles and St. John parishes. The water would be deepest near the river levees.

**4 LAKE LEVES HOLD**  
 Winds on the west side would push water against the hurricane-protection levees.

**3 SIDELL SOAKED**  
 Large parts of Slidell would be inundated, but the waters would recede rapidly with no levees to contain them.

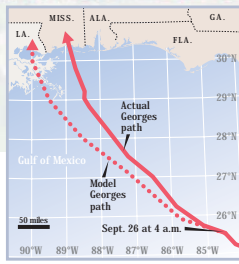
**6 GRAVITY'S GATEWAY**  
 Relentless winds from the stalled hurricane push a dome of water 14 feet above sea level at the levee. The model says that water would top low levees and floodwalls and move east into Jefferson and Orleans parishes. Jefferson Parish officials say some areas would be sandbagged to 10 feet but protection would be lower near the river.

**7 FILLING THE BOWL**  
 With the storm stalled, water continues to pour into Jefferson and Orleans, filling the bowl with as much as 8 feet of water until it reaches natural ridges or the Mississippi River levees.

**2 PUMPED UP LAKE**  
 Easterly winds in advance of the storm would pump water from Lake Borgne and from Breton and Chandeleur sounds into Lake Pontchartrain, raising the lake's surface by 5 feet.

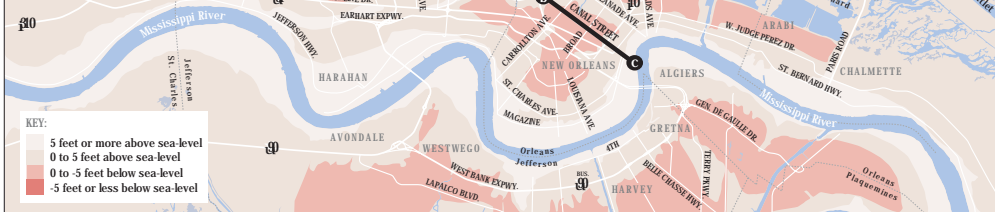
## 1 THE MODEL

A computer model designed by LSU scientists Joseph Suhayda and Vibhas Aravamudan and used by government agencies to prepare evacuation plans shows what would have happened if Georges had not turned. This scenario assumes that the storm continued on the track and intensity forecast by the National Hurricane Center on Saturday, Sept. 26, 1998, at 4 a.m. In the model, Georges intensifies to a Category 3 with 115-mph winds when it makes landfall just west of the mouth of the Mississippi. During the next two days, it moves slowly northwest, weakening to a Category 1 and stalling over eastern New Orleans.



## EXPLAINING THE BOWL

Much of the area is below sea-level, creating a natural "bowl." Storm surge simply follows the law of gravity and meanders to the lowest points.



## CITY BELOW THE SEA

When a hurricane even stronger than Georges hits New Orleans, Lake Pontchartrain — a foot higher than sea level — will be the city's biggest threat. Surge water from the Gulf of Mexico, topped by towering waves, will swell the lake above levees and cause widespread flooding. A look at average surge levels by category, compared to a cross-section of the city known as "the bowl":

Hurricane Category	Surge and waves at low tide*	Effect on New Orleans
1	7 feet	Lake Pontchartrain's levees stop the low-level surge
2	9 feet	Levees stop the surge, but some waves could find their way over
3	14 feet	Levees stop bulk of surge, but waves could cause considerable flooding
4	19 feet	Levees topped, causing catastrophic flooding
5	24 feet	Entire city submerged including Mississippi River levees

