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CITY AWASH IN TOXIC WATERS, BUT LONG-TERM IMPACT IS MURKY

- [Glen Martin, Chronicle Environment Writer](#)

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The dark waters now covering New Orleans constitute a nasty brew of toxic chemicals and harmful bacteria, but the long-term environmental effects of the city's inundation by Hurricane Katrina remain unclear, scientists say.

Certainly, the Mississippi Delta and its environs hardly made up a pristine Eden before the hurricane. The region supported one of the great oil and gas extraction and petrochemical refining complexes on the planet, and pollution has long been a hot-button issue there.

"This is an area known as Cancer Alley, and there's a good reason for that," said David Lewis, the executive director of Save the Bay, an Oakland environmental group that maintains a liaison with a Louisiana wetlands preservation organization. "Contaminants were already a problem (in local waters)."

Still, said Tina Swanson, the senior scientist with the Bay Institute in Novato, the delta of the Mississippi and the surrounding waters of the gulf are biologically rich, supporting robust fisheries for shrimp, oysters, crabs and a wide array of fish.

"True, there were problems, but you had thriving operations producing fish and shellfish that were presumably safe to eat, given government regulations," Swanson said.

Now, Katrina has vastly increased the amount of potentially dangerous substances in the local aquatic environment.

Some figures are already coming in. The results of the first government pathogen tests on water obtained from New Orleans were made available Wednesday, and they showed coliform bacteria counts 10 times higher than safe levels. Elevated coliform bacteria levels correspond with increased risks of contracting gastrointestinal disease.

In effect, much of the coastal gulf has been turned into an open sewer. According to the U.S. Environmental Protection Agency, 212 wastewater treatment plants have been disabled or impaired -- 114 in Louisiana, 85 in Mississippi and 13 in Alabama.

The hazards to human health from the effluent are real and immediate, said Bob Perciasepe, the

chief operating officer for the National Audubon Society, and the same can be said for the gasoline that casts a rainbow sheen off the surface of the lake that is now the Crescent City.

But those dangers most likely will prove temporary, Perciasepe said: Gasoline is a light, highly unstable compound and will volatilize quickly. The pathogens in the sewage will disperse with dilution and die from exposure to sunlight. Nutrients in the effluent may contribute to oxygen depletion and subsequent fish kills, but they, too, will be a passing phenomenon.

More troublesome are the quantities of unknown compounds seeping into the water from petrochemical refineries and chemical warehouses, from dry-cleaning shops and home garages.

"These great industrial areas are normally isolated from the hydrologic process, and now they're very much a part of it," said Lester McKee, an environmental scientist with the San Francisco Estuary Institute, an organization that monitors toxic compounds in San Francisco Bay.

"Now you have tanks leaking directly into the water," McKee said. "Or, say there is an area of ground that has been saturated with chemicals leaching from a tank for many years -- now it's (flooded), and the chemicals are released into the water." Additionally, McKee said, many thousands of home garages and toolsheds must be considered de facto toxic dumps.

"Old packages of now-outlawed pesticides like chlordane, solvents, even old computers," he said. "The human environment has an incredible number of chemicals laced through it. It's a chemical cocktail."

Swanson of the Bay Institute said such heavily contaminated water presents a threefold problem to fisheries and wildlife. First, she said, some susceptible species may be killed outright. Included in this category, she said, are creatures destroyed by the physical force of the hurricane.

"I hear many of the oyster beds have been buried with silt, and that will wipe them out," she said. "They're filter feeders, and they can't survive being covered with mud."

Second, she said, are sublethal impacts: reproductive and developmental problems caused by chemicals that can affect certain species of fish, shellfish or birds over time, significantly reducing their populations.

"And finally, we have bio-accumulation," she said. "Certain toxic substances concentrate in the fatty tissue, accumulating in greater quantities the higher you go on the food chain. So a big, predatory fish has much more of the chemical than a little fish. And the bird, animal or person that eats that big fish can get the biggest dose of all."

Right now, however, such concerns must remain secondary as New Orleans attempts to drain the water from its streets. This is largely being accomplished by pumping the water back into Lake Pontchartrain, the huge saltwater lake that flooded the city when its levees were breached.

The project is basically refilling the lake's basin with toxic effluent, reversing years of effort to clean up the water. But there are few, if any, dissenting voices -- even from the environmental community. There simply seems to be no other alternative.

"It's an acute emergency, so I'd be surprised if anyone was against it," said Lewis of Save the Bay.

Mike McDaniel, secretary of the Louisiana Department of Environmental Quality, expressed optimism that an ecological catastrophe can be avoided.

"The wonderful thing about nature is its resilience," McDaniel told reporters.

Thomas Miller, a water quality specialist at the University of Maryland who specializes in contamination problems after natural disasters, agreed with McDaniel that "nature is pretty good about self-recovery," but added much depends on whether humans assist or stymie the process.

"The nice thing about wetlands is that they can cleanse and filter water as it moves through," Miller said. "But too much contamination can overwhelm this natural filtering system and destroy it."

Chronicle news services contributed to this report. E-mail Glen Martin at glmartin@sfchronicle.com.

Page A - 17

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