

# Senate hearing focuses on repairing levees in New Orleans

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It is clear that there were multiple causes for the levee failures in New Orleans, but researchers need to gather more data to better understand what they were and how to rebuild properly after the devastation caused by Hurricane Katrina, according to testimony today before the U.S. Senate Committee on Environment and Public Works. Tom Zimmie, professor and acting chair of civil and environmental engineering at Rensselaer Polytechnic Institute, offered his perspective on the degree to which the preliminary findings on the failure of the Gulf Coast levees are being incorporated into the restoration of hurricane protection.

"There is not one simple answer as to why the levees failed," Zimmie said in a prepared statement. "Field observations indicated various causes: overtopping of the levees, erosion, failure in foundation soils underlying the levees, seepage through the soils under the levees causing piping failures, and this is not a complete list."

Zimmie spent a week in New Orleans as part of an expert team investigating levee failures in the aftermath of Hurricane Katrina. The team, which was funded by a special exploratory grant from the National Science Foundation, released their preliminary report Nov. 2 in a presentation to the Senate Committee on Homeland Security and Governmental Affairs.

Others at today's Environment and Public Works hearing echoed Zimmie's comments, noting that until all the physical evidence has been collected and analyzed, engineers will not have a complete picture of

what happened.

"Hopefully the results of our study will lead to a clear appreciation of what happened in Katrina, and that the lessons learned from this event will lead to improved protection in the future, not just in the New Orleans area, but throughout the nation and around the world," Zimmie told the committee. "The emphasis today is New Orleans, but we really have thousands of miles of levees in the United States."

Regarding the preliminary report, questions from the committee focused on the peat layer found under some levee sections in New Orleans. It has been suggested that a soft, spongy layer of swamp peat underneath the 17th Street Canal floodwall caused this wall to breach, and that this same peat layer runs under other levee sections. Zimmie noted that it is too soon to draw final conclusions about the nature of the peat layer and its implications for the levee failures.

"How widespread is it? We can't really answer that question at this point," Zimmie responded. "That's a big concern. The other parts of the levee system haven't been tested. It's like a chain; you have one weak link in the chain and the whole chain has failed. So now you have another link further down. You fix one link and then the next link fails."

"Peat is very common in the New Orleans area. I don't think there's any question about that. . . . It's a swampy area, so of course there's peat," Zimmie continued. "So the question is, how much soil sampling do you do? I don't think we know the answer at this point in the game. . . . I think with the investigation -- securing soil samples, getting more information to do a proper design -- then we should be able to answer that."

Zimmie was joined at the hearing by several other panelists: Dan Hitchings, director of Task Force HOPE for the U.S. Army Corps of

Engineers; Sherwood Gagliano, president of Coastal Environments, Inc.; Larry Roth, deputy executive director of the American Society of Civil Engineers; Joseph Suhayda, emeritus professor of engineering at Louisiana State University; and Robert Verchick, a professor at Loyola University Law School in New Orleans.

Sen. James Inhofe (R-Okla.) is chair of the Committee on Environment and Public Works, and Sen. James Jeffords (I-Vt.) is the ranking minority. Other committee members in attendance were Sen. David Vitter (R-La.), Sen. Christopher Bond (R-Mo.), Sen. John Thune (R-S.D.), Sen. Johnny Isakson (R-Ga.), and Sen. Thomas Carper (D-Del.).

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