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## ESSAY

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### THE HURRICANE KATRINA LEVEE BREACH LITIGATION: GETTING THE FIRST GEOENGINEERING LIABILITY CASE RIGHT

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#### INTRODUCTION

In August 2005, Hurricane Katrina flattened the Gulf Coast from the Alabama border to 100 miles west of New Orleans. The New Orleans levees failed, and much of the city was flooded. More than 1800 people died,<sup>1</sup> and property damage is estimated at \$108 billion.<sup>2</sup> While Katrina was not the most deadly or expensive hurricane in U.S. history, it was the worst storm in more than eighty years and destroyed public complacency about the government's ability to respond to disasters.

The conventional story of the destruction of New Orleans is that the levees broke because the Army Corps of Engineers (Corps) did not design and build them correctly. The district court's holding in *In re Katrina Canal Breaches Consolidated Litigation (Robinson)*,<sup>3</sup> dis-

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<sup>1</sup> RICHARD D. KNABB ET AL., NAT'L HURRICANE CTR., TROPICAL CYCLONE REPORT: HURRICANE KATRINA 11 (2005), available at [http://biotech.law.lsu.edu/katrina/govdocs/TCR-AL122005\\_Katrina.pdf](http://biotech.law.lsu.edu/katrina/govdocs/TCR-AL122005_Katrina.pdf).

<sup>2</sup> *Id.* at 13.

<sup>3</sup> 647 F. Supp. 2d 644 (E.D. La. 2009). Norman Robinson was one of the plaintiffs in the exemplar case for this thread of the Katrina litigation, and the court refers to these cases as the *Robinson* cases. The litigation has generated more than 200 orders and judicial documents. See generally *Katrina Canal Breaches Consolidated Litigation: Cur-*

cussed below, asserts that the Corps was negligent—and implies that it was even malicious<sup>4</sup>—in putting New Orleans at risk and that it is liable for the damages.<sup>5</sup> But it is also true that New Orleans, like many coastal cities, is the victim of ocean rise and geology.<sup>6</sup> Levees create false security and prevent rational adaptations, worsening catastrophes when they fail. Exclusively relying on levees in the future will cause untold fiscal and environmental damage, while providing little long-term safety.

This Essay argues that conceptualizing the destruction of New Orleans as a negligent or intentional failure of the Corps is mistaken and will continue the cycle of catastrophic flooding in New Orleans. The implications of this mistake, however, reach far beyond New Orleans. Levees are the original geoengineering projects—large-scale manipulations of Earth’s environment intended to mitigate the consequences of climate. Thus, the Katrina levee breach litigation is the first in an upcoming wave of climate geoengineering litigation.<sup>7</sup> The stakes are high—if the Katrina plaintiffs prevail, then the litigation will drive geoengineering solutions for all coastal cities.

This Essay examines these issues by looking at the courts’ response to the levee breach caused by Hurricane Katrina, focusing on *Robinson*—a case in which the court ignored statutory immunity and blamed the Corps for the damage. This and other courts’ misdirection of blame—from the climate to the Corps—creates precedent for liability that will lead to unhelpful and even dangerous geoengineering projects as more and more of the United States faces rising ocean water.

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*rent Developments*, U.S. DISTRICT COURT, E. DISTRICT OF LA., <http://www.laed.uscourts.gov/CanalCases/CanalCases.htm> (last visited Jan. 15, 2012).

<sup>4</sup> 647 F. Supp. 2d at 707 (“Furthermore, the Corps not only knew, but admitted by 1988, that the [Mississippi River Gulf Outlet] threatened human life . . . and yet it did not act in time to prevent the catastrophic disaster that ensued with the onslaught of Hurricane Katrina.” (internal citations omitted)).

<sup>5</sup> *Id.* at 733.

<sup>6</sup> See Roy K. Dokka, *The Role of Deep Processes in Late 20th Century Subsidence of New Orleans and Coastal Areas of Southern Louisiana and Mississippi*, 116 J. GEOPHYSICAL RES. B06403, at 1 (2011).

<sup>7</sup> A levee is a gently sloping hill of clay built by piling clay, compacting it, and then piling more clay. See Yingzi Xu, Jaideep Chatterjee & Farshad Amini, *A Comparative Slope Stability Analysis of New Orleans Levee Subjected to Hurricane Loading*, 16 ELECTRONIC J. GEOTECHNICAL ENGINEERING 325, 330-31 (2011), available at <http://www.ejge.com/2011/Ppr11.022/Ppr11.022ar.pdf> (showing a typical cross-section of a levee). The levee must be impervious to water to function. *Cf. id.*

## I. THE FLOOD

New Orleans is one of the oldest cities in the United States. The original city was built on the Mississippi River's natural levees and ridges. The surrounding land was low, swampy land and marshes. New Orleans is bordered on the east and southeast by low land and marshes running to the Gulf of Mexico. Hurricane surge can inundate these areas, flooding the eastern side of the city into downtown. The north side is a large bay, Lake Pontchartrain, which funnels hurricane surge to the northern border of the city.<sup>8</sup>

Like Holland, New Orleans expanded through geoengineering. As pump and levee technology evolved, the city enclosed and pumped out swampy, low-lying land.<sup>9</sup> There are now more than 350 miles of levees in the greater New Orleans area. When a levee is built, the rain and ground water that accumulate behind it must be pumped out. Pumping de-waters organic material such as peat, which oxidizes when it is exposed to the air. The effect is to shrink the land as if it were a drying sponge, causing the surface to subside.<sup>10</sup> This has left more than half of New Orleans below sea level, by as much as fifteen feet in some places. Without levees and pumping, New Orleans would be only a narrow city on the winding natural levees of the Mississippi. While the levees make the city possible, they also make it unstable because of the subsidence below sea level. If a levee breaks, the city floods, and the flood water stays in place until it is pumped out, greatly increasing long-term damage and loss of life.<sup>11</sup>

Hurricane Katrina came ashore at the Louisiana/Mississippi border as a Category 3 storm. It had been a Category 5 storm before coming ashore and still had the huge surge field of one. The strongest winds and highest surge are in the northeast quadrant of a hurricane, which in Katrina's case meant everything on the Mississippi coast was leveled.

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<sup>8</sup> For a concise source of information about the topography of and hydrologic risks to New Orleans, including a very accurate prediction of what happened when Katrina hit, see *Washing Away* (pts. 1-5), TIMES-PICAYUNE (New Orleans), June 23-27, 2002, available at <http://www.nola.com/hurricane/content.ssf?washingaway/index.html>.

<sup>9</sup> CRAIG E. COLTEN, AN UNNATURAL METROPOLIS: WRESTING NEW ORLEANS FROM NATURE 77-107 (2004).

<sup>10</sup> See Dokka, *supra* note 6, at 23.

<sup>11</sup> During Katrina, many people died of heat and dehydration while trapped in attics by the flood waters. See Jennifer Pangvanszki, *3 Days of Death, Despair and Survival*, CNN (Sept. 9, 2005), [http://articles.cnn.com/2005-09-09/us/katrina.survivors\\_1\\_attic-dirty-water-tiffany?\\_s=PM:US](http://articles.cnn.com/2005-09-09/us/katrina.survivors_1_attic-dirty-water-tiffany?_s=PM:US). In the other coastal cities hit by Katrina that were above sea level, gravity drained out the surge as the storm passed.

New Orleans missed the brunt of the storm and breathed a sigh of relief for part of a day before water started pouring into the city.<sup>12</sup>

Three problem areas have gained attention in the Katrina litigation. First, a flood wall on the Seventeenth Street Canal failed, allowing surge from Lake Pontchartrain to flood the city from the north. Second, flood walls were overtopped or failed on the Inner Harbor Navigational Canal (IHNC). Finally, the Industrial Canal<sup>13</sup>—which is on the west side of the Ninth Ward and to the east of the French Quarter—failed, allowing flood waters into the Ninth Ward.<sup>14</sup> The Industrial Canal leads to the Mississippi River Gulf Outlet (MRGO), which runs southeast of New Orleans into the Gulf of Mexico.<sup>15</sup> The plaintiffs in *Robinson* claimed that the MRGO hastened the failure of levees on the east side of New Orleans during Hurricane Katrina, and that it has had the long-term effect of destabilizing the land on the east side of New Orleans and in St. Bernard Parish through the promotion of salt water intrusion into the marshland.<sup>16</sup>

## II. THE FEDERAL TORT CLAIMS

The bulk of the Katrina litigation consists of claims against the Corps for tort damages from levee and flood wall failures, claims which face a variety of statutory challenges.<sup>17</sup> To begin, the claims depend on the

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<sup>12</sup> See Sheri Fink, *The Deadly Choices at Memorial*, N.Y. TIMES, Aug. 30, 2009 (Magazine), at MM28 (describing the receding flood waters on the night of Aug. 29, 2005—the day Katrina made landfall—and explaining that a local hospital had “seemed to have weathered one more storm”); see also Bob Marshall, *City’s Fate Sealed in Hours*, TIMES-PICAYUNE (New Orleans), May 14, 2006, at A1 (“With Katrina already north of the city . . . the surge has begun to drop. For levees and floodwalls still standing, the overtopping is over. But the large sections of levees and floodwalls that have collapsed will keep bleeding water into the city for more than four days.”).

<sup>13</sup> The IHNC is the southern reach and the Industrial Canal is the northern reach of a canal cutting between the Mississippi River and Lake Pontchartrain. The canal’s two reaches are divided by the intersection with the Intercoastal Waterway.

<sup>14</sup> The iconic picture of a barge washed into the Ninth Ward was taken at the location of the break on the IHNC. See *In re Katrina Canal Breaches Consol. Litig. (Barge)*, No. 05-4182, 2011 WL 1792542, app. 14 fig.116 (E.D. La. Jan. 20, 2011). In litigation involving the barge, the district court determined that the barge washed ashore after the break and that the barge company was not liable for causing the break. *Id.* at \*13-14.

<sup>15</sup> The MRGO was built at the insistence of Louisiana politicians to provide a shorter and easier-to-traverse path to the Gulf of Mexico for Mississippi River traffic. *History of MRGO*, U.S. ARMY CORPS OF ENGINEERS, [http://www.mrgo.gov/MRGO\\_History.aspx](http://www.mrgo.gov/MRGO_History.aspx) (last visited Jan. 15, 2012).

<sup>16</sup> *In re Katrina Canal Breaches Consol. Litig. (Robinson)*, 647 F. Supp. 2d. 644, 671 (E.D. La. 2009).

<sup>17</sup> One claim, however, was based on the Takings Clause, arguing that the Corps’ failure to build better levees was governmental taking of property. See *Tommaseo v.*

statutory waiver of sovereign immunity in the Federal Tort Claims Act (FTCA).<sup>18</sup> The FTCA requires that the plaintiffs first exhaust their remedies in an administrative compensation system. Once in court, they also must prove their case under the restrictions of the FTCA.

The Katrina flooding cases face an additional hurdle because the Flood Control Act of 1928 (FCA) provides the United States statutory immunity for any claims based on flooding.<sup>19</sup> Thus, before going to trial on the merits, any plaintiffs in a case against the government based on flood damage must survive summary judgment for FCA immunity, exhaust their remedies with the Corps, and then prove their case under the stricture of the FTCA at trial. This sequence will be followed in analyzing these cases.

### A. *The Flood Control Act of 1928*

The Mississippi River flood of 1927 was the most disastrous on record and prompted Congress to pass the FCA.<sup>20</sup> The objective of this Act, and its subsequent renewals, was to finish the job of leveeing and damming the Mississippi and to create alternative paths for flood waters to minimize future flooding disasters.<sup>21</sup> The key provision of the FCA for the Katrina cases is the immunity provision, § 702c, which states, “No liability of any kind shall attach to or rest upon the United States for any damage from or by floods or flood waters at any place . . . .”<sup>22</sup>

Congress included this immunity provision because of its experience with Mississippi River flood control,<sup>23</sup> recognizing that while levees prevent yearly flooding, they also can cause greater disasters when they fail.<sup>24</sup> This immunity provision should have ended all the Katrina tort litigation against the Corps.

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United States, 75 Fed. Cl. 700, 802-03 (Fed. Cl. 2007). The case was initially stayed, awaiting the outcome of *Robinson*. But although *Robinson* was decided more than two years ago, the case did not go to trial until December 2011, and the court has not yet released its opinion. See *St. Bernard Parish v. United States*, 99 Fed. Cl. 765, 771 (Fed. Cl. 2011) (denying the government’s motion to stay proceedings indefinitely).

<sup>18</sup> 28 U.S.C. § 1346(b) (2006); see also *id.* § 2680(h).

<sup>19</sup> See 33 U.S.C. § 702c.

<sup>20</sup> For a general history, see JOHN M. BARRY, *RISE AND FALL: THE GREAT MISSISSIPPI FLOOD OF 1927 AND HOW IT CHANGED AMERICA* (1997).

<sup>21</sup> *National Mfg. Co. v. United States*, 210 F.2d 263, 270 (8th Cir. 1954) (describing the FCA and its renewal in 1936).

<sup>22</sup> 33 U.S.C. § 702c.

<sup>23</sup> For a history of Mississippi flood control efforts before the passage of the FCA, see *Jackson v. United States*, 230 U.S. 1, 3-8 (1913).

<sup>24</sup> *Cf. Stover v. United States*, 332 F.2d 204, 207 (9th Cir. 1964) (“It may be that morally and financially the plaintiffs have been grievously wronged by their govern-

The passage of the FTCA created a vehicle for bringing claims that implicated § 702c. The Eighth Circuit in *National Manufacturing Co. v. United States* held that the FTCA did not abrogate § 702c, finding that it preempted only the specific list of laws that were part of its text.<sup>25</sup> The early cases focus on the nature of the water and ask whether it was part of a natural flood.<sup>26</sup> Not until Hurricane Betsy in 1965 did a court face the first large-scale flooding case, *Graci v. United States*.<sup>27</sup>

### B. *Graci v. United States*

The Fifth Circuit in *Graci* found that the then–newly complete MRGO—originally constructed as a shipping canal—was a conduit that allowed storm surge from Hurricane Betsy to flood eastern New Orleans and St. Bernard Parish.<sup>28</sup> The *Graci* court broke with the previous focus on the nature of the water, and focused instead on the flood control structure, finding that

the purpose of § 3 was to place a limit on the amount of money that Congress would spend in connection with flood control programs. Congress undoubtedly realized that the cost of extensive flood control projects would be great and determined that those costs should not have added to them the floodwater damages that might occur in spite of federal flood control efforts. . . .

The question then becomes whether it is reasonable to suppose that in exchange for its entry into flood control projects the United States demanded complete immunity from liability for the negligent and wrongful acts of its employees *unconnected with flood control projects*.<sup>29</sup>

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ment; that in protecting others it injured them. It is not committed to us to remake the statute. That the limitation should happen to be in the statute is understandable. Appropriations for flood control do not come automatically. Dozens of congressmen have no flood control problems. Perhaps, as a condition to their consent to flood control appropriations, they impose such limitations as § 702c.”).

<sup>25</sup> 210 F.2d at 274 (“The Act contains a list of the statutes which it declares ‘are hereby repealed’ . . . and the list so expressly repealed does not include Section 3 of the 1928 Act.” (internal citations omitted)).

<sup>26</sup> See *Stover v. United States*, 204 F. Supp. 477, 483 (N.D. Cal. 1962) (“[I]t is of no consequence how negligent the Government may (or may not) have been, if it be shown that the inundations, even in part, resulted from, and were *actually* caused by, such natural forces.”); *Guy F. Atkinson Co. v. Merritt, Chapman & Scott Corp.*, 126 F. Supp. 406, 408 (N.D. Cal. 1954) (“[T]his Court is of the opinion that [§ 702c’s] purpose was to prevent the Government from being held liable for the staggering amount of damage caused by natural floods, merely because the Government had embarked upon a vast program of flood control . . .”).

<sup>27</sup> 456 F.2d 20 (5th Cir. 1971).

<sup>28</sup> *Id.* at 22.

<sup>29</sup> *Id.* at 25-26.

The court then concluded that it would be unreasonable to assume that Congress intended for FCA immunity to reach projects that were not designed for flood control.<sup>30</sup> Since the MRGO was strictly a navigation canal, the court ruled that § 702c did not apply and remanded so that the FTCA case could go forward.<sup>31</sup> While the government objected to this reading of the FCA, it did not appeal because it prevailed at summary judgment on remand.<sup>32</sup>

This ruling ignored the symmetry of flood control decisions: flood control plans are as much about which levees and structures are not built as those that are built. By abrogating immunity for flooding related to navigation systems, *Graci* opens the Corps to liability for flood damage associated with any Corps project not defined as a flood control project. This forces the Corps to build flood control systems on all Corps-constructed navigation systems that could be subject to flooding—and thus flood land that would not otherwise have flooded.<sup>33</sup> The district court in *Graci* found that the MRGO was properly constructed and dismissed the claims. But that left open the attack on the Corps' decisionmaking that we see in *Robinson*, and gave the court the freedom to transform a legal issue into a factual determination that is difficult to overturn on appeal. To protect against future flooding, the Corps immediately built the flood control levees between the MRGO and all the populated areas of New Orleans and St. Bernard Parish that are at issue in *Robinson*.

### C. Central Green v. United States

While a number of cases cite *Graci*, none actually follows its holding and abrogates § 702c immunity for damages caused by flood waters in the absence of a flood control structure.<sup>34</sup> The United States

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<sup>30</sup> *Id.* at 26.

<sup>31</sup> *Id.* at 27-28.

<sup>32</sup> On remand, the district court held that the plaintiffs had not shown that the Corps had been negligent or that the MRGO caused the damage to their property. *Graci v. United States*, 435 F. Supp. 189, 196 (E.D. La. 1977).

<sup>33</sup> For example, by leveeing the Mississippi, the level of the river is raised higher during floods than it would otherwise be. This causes water to back up into tributary streams during a flood because the Mississippi becomes higher than the tributaries. This was a major source of flooding during the Mississippi River flood of 2011.

<sup>34</sup> See, e.g., *United States v. James*, 478 U.S. 597, 612 (1986) (following a “plain language” approach to interpreting § 702c); *Lunsford v. United States*, 570 F.2d 221, 229 (8th Cir. 1977) (discussing differences between *National Manufacturing* and *Graci*, but ultimately remanding because of ripeness considerations); *Fla. E. Coast Ry. Co. v. United States*, 519 F.2d 1184, 1191 (5th Cir. 1975) (applying § 702c to “floods or flood waters’ in connection with flood control projects” (quoting *Graci*, 456 F.2d at 25-27));

Supreme Court first looked at § 702c in *United States v. James*.<sup>35</sup> This Louisiana case arose from recreational water users who were injured or killed when the Corps negligently operated floodgates.<sup>36</sup> *James* upheld a broad reading of § 702c, finding ample support in the legislative history for extending its reach beyond property claims and applying it to recreational users of a flood control lake who were injured by flood waters.<sup>37</sup> Since *James* had both flood waters and a flood control structure, it did not need to clarify *Graci*.

The second, and most recent, United States Supreme Court case to look at § 702c is *Central Green Co. v. United States*.<sup>38</sup> *Central Green* deals with a regional irrigation system in California.<sup>39</sup> This was a combined flood control and irrigation system fed by natural streams.<sup>40</sup> When these streams were flooded, the system would function as a flood control system.<sup>41</sup> Thus, parts of the system might channel both flood and normal (irrigation) flow.<sup>42</sup> The plaintiff was a pistachio grower who argued that seepage through the walls of the canal near his orchards led to subsurface flooding.<sup>43</sup> This damaged his orchard and increased his operating costs.<sup>44</sup> He argued negligence in the design, construction, and maintenance of the canal, but made no claims that dams or flood control structures were at fault.<sup>45</sup>

The government argued that it should be immune from damages if any part of the system was related to flood control.<sup>46</sup> The lower courts

*Britt v. United States*, 515 F. Supp. 1159, 1161 (M.D. Ala. 1981) (“The United States’ flood immunity is not limited to that resulting from its actions taken in connection with such physical flood control structures as dams, dikes and levees.”); *see also* *Mocklin v. Orleans Levee Dist.*, 877 F.2d 427, 430 (5th Cir. 1989) (distinguishing *Graci*); *Callaway v. United States*, 568 F.2d 684, 686-87 (10th Cir. 1978) (same); *Morici Corp. v. United States*, 491 F. Supp. 466, 473 (E.D. Cal. 1980) (same); *Ledford v. United States*, 429 F. Supp. 204, 205 (W.D. Okla. 1977) (same).

<sup>35</sup> *James*, 478 U.S. at 597.

<sup>36</sup> *Id.* at 599.

<sup>37</sup> *Id.* at 612 (“It is true that during the debates on the Act, several Congressmen used the terms ‘liability’ and ‘damage’ to refer only to property damage caused by the construction of the flood control projects. But . . . there are numerous passages in the legislative history that emphasize the intention of Congress to protect the Federal Government from *any* damages liability that might arise out of flood control.”).

<sup>38</sup> 531 U.S. 425 (2001).

<sup>39</sup> *Id.* at 427.

<sup>40</sup> *Id.* at 427; *see also id.* at 434.

<sup>41</sup> *Id.* at 427-28, 436.

<sup>42</sup> *Id.* at 434-36.

<sup>43</sup> *Id.* at 427.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 436.



agreed, dismissing the claim.<sup>47</sup> The Supreme Court shared the discomfort of the lower courts in the breadth of the immunity claimed by the defendant, quoting the Ninth Circuit's opinion that, under such a test, there would seem to be no "set of facts where the government is not immune from damage arising from water that at one time passed through part of the Central Valley or other flood control project."<sup>48</sup>

While ignoring *Graci*, the Court looked at how previous cases had used the nexus with a flood control structure to narrow the exceptions, noting that "some courts have focused on whether the damage relates in some, often tenuous, way to a flood control project, rather than whether it relates to 'floods or flood waters.'"<sup>49</sup> The Court noted that while this distinction was used in *James*, it was dictum since the damages were caused by flood waters.<sup>50</sup> The Court then looked to the vast size of the Central Valley irrigation system and found that characterizing every drop of water that flowed through the system as flood water "unnecessarily dilutes the language of the statute."<sup>51</sup> To narrow the scope of § 702c, the Court held:

Accordingly, the text of the statute directs us to determine the scope of the immunity conferred, not by the character of the federal project or the purposes it serves, but by the character of the waters that cause the relevant damage and the purposes behind their release.

....

... [I]n determining whether § 702c immunity attaches, courts should consider the character of the waters that cause the relevant damage rather than the relation between that damage and a flood control project.<sup>52</sup>

The Court recognized that its analysis repudiated the broad dicta in *James*.<sup>53</sup> The Court also recognized that while it is usually simple to tell if a single release of water is flood water, the damage in this case stretched over years.<sup>54</sup> During some of that time there might have been flood water in the canal, but most of the time the water would be irrigation water not subject to § 702c immunity.<sup>55</sup> The lower court's

<sup>47</sup> *Id.* at 427-28.

<sup>48</sup> *Id.* at 428 (quoting *Central Green Co. v. United States*, 177 F.3d 834, 839 (9th Cir. 1999)).

<sup>49</sup> *Id.* at 430 (quoting *Washington v. E. Columbia Basin Irrigation Dist.*, 105 F.3d 517, 519 (9th Cir. 1997)).

<sup>50</sup> *Id.* at 431.

<sup>51</sup> *Id.* at 434.

<sup>52</sup> *Id.* at 434, 437.

<sup>53</sup> *Id.* at 436.

<sup>54</sup> *Id.*

<sup>55</sup> *Id.*

dismissal was reversed, and the case was remanded to determine the character of the water that caused the damage.<sup>56</sup>

When *Central Green* came down, it appeared that *Graci* had been overruled. *Graci* was a pure case of damage caused by flood waters, yet the Fifth Circuit did not apply § 702c because there was no flood control structure. *Central Green's* test of considering the “character of the waters that cause the relevant damage rather than the relation between that damage and a flood control project” seems to mandate the application of § 702c to cases involving a hurricane that floods an area with its massive storm surge.<sup>57</sup> Yet, as we will see, the court in *Robinson* managed to find that § 702c did not apply.

#### D. *The Robinson Pre-Trial Motions*

*Robinson* deals with the Katrina flooding adjacent to the MRGO.<sup>58</sup> The *Robinson* facts are almost identical to those in *Graci*. The plaintiffs in both cases argued that the MRGO funneled storm surge into the city, exacerbating flooding of the same areas, occupied in some cases by the same people. The difference is that the Corps built flood control levees between the city and the MRGO after the flooding in 1965.<sup>59</sup> Thus, any flooding that damaged the city’s most populated areas would all but certainly have passed through or over a flood control structure.

#### 1. FCA Immunity

The *Robinson* plaintiffs built their case on *Graci*. They argued that the Corps was negligent in the construction and post-construction maintenance of the MRGO, and that since *Graci*—decided by the same court decades earlier—found that the MRGO had nothing to do with flood control, § 702c did not apply.<sup>60</sup> The court accepted this theory but was left with the problem of how to classify the water spilling over and through those flood control levees without triggering § 702c.

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<sup>56</sup> *Id.* at 437.

<sup>57</sup> *Id.*

<sup>58</sup> *In re Katrina Canal Breaches Consol. Litig. (Robinson)*, 471 F. Supp. 2d 684, 686 (E.D. La. 2007). I will first discuss the opinion rejecting the government’s motion to dismiss based on § 702c, and then I will return to the opinion from the trial.

<sup>59</sup> By 1962, these levees had been planned, but construction was not completed until after Hurricane Betsy flooded New Orleans in 1965. *In re Katrina Canal Breaches Consol. Litig. (Robinson)*, 647 F. Supp. 2d 644, 651-52 (E.D. La. 2009).

<sup>60</sup> *Robinson*, 471 F. Supp. 2d at 690.

Even reading *Central Green* to preserve *Graci*, it seemed that the confluence of flood waters from Hurricane Katrina that breached flood control structures would trigger § 702c immunity. But if the court recognized this, then it would not be able to make the Corps pay for failing to protect New Orleans.<sup>61</sup> The judge, therefore, set about redefining the problem as one that had nothing to do with flood control projects:

For example, would the United States be immune for all damages if a Navy vessel lost control and broke through [a] levee where the sole cause of the failure of that levee was the Navy vessel's negligence? Thus, contrary to the Government's contention that *Central Green* broadens the immunity provided by [§] 702c, in reality *Central Green* requires the Court to identify *the cause of the damage* rather than base a decision on the mere fact that a flood control project was involved. *Central Green* does not directly answer the question of what nexus to a flood control project is required for floodwaters to trigger immunity.<sup>62</sup>

The court goes on to say that the instant case is “very much like” *Central Green*—“while arguably the immediate cause of the damage was indeed ‘floodwaters,’ the caus[e] for such floodwaters['] force and breadth [is] alleged to have been the defalcations of the Government with respect to the MRGO.”<sup>63</sup>

By ignoring *Central Green*'s clear statement that the courts should look to the “character of the waters”<sup>64</sup> and looking instead at the nature of the damage, the court read the importance of the flood waters out of its § 702c analysis and denied summary judgment on the § 702c motion to allow further discovery by the plaintiffs. By denying immunity, the court shifted the focus from the law to the Corps—a move that will allow emotion to dictate that the Corps will lose.

## 2. The FTCA Claims

The tort law of the state where the incident occurs supplies the substantive law for making out a prima facie case under the FTCA.<sup>65</sup>

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<sup>61</sup> Reading the series of opinions and orders in this case makes it clear that the judge, a life-long coastal Louisiana resident, was furious about what, in his view, the Corps allowed to happen. This view is shared by many in Louisiana, Republicans and Democrats alike. It reflects the deep-seated view that the federal government has a duty to protect coastal communities against flooding, without regard to cost or the fecklessness of local land use decisions.

<sup>62</sup> *Robinson*, 471 F. Supp. 2d at 695.

<sup>63</sup> *Id.*

<sup>64</sup> 531 U.S. 425, 437 (2001).

<sup>65</sup> *Molzof v. United States*, 502 U.S. 301, 305 (1992).

The FTCA itself provides a substantive defense, discretionary authority immunity: if the agency is making a discretionary choice of action, then even if it makes a bad choice, it is immune from suit.<sup>66</sup>

Since the plaintiffs and the judge in *Robinson* felt bound by *Graci*, it is instructive to look at what the trial judge in *Graci* decided about the plaintiffs' FTCA claims when he reviewed the case on remand.<sup>67</sup> He found that under Louisiana law, the United States would be liable for its acts and negligence, if any, in the construction of the MRGO to the extent that they caused damages.<sup>68</sup> He also found that Congress authorized the MRGO, that plaintiffs had not shown that the Corps deviated from the project Congress envisioned, and that the plaintiffs did not show any negligence in the "design, construction or functioning of said project."<sup>69</sup>

These findings are relevant because the plaintiffs in *Robinson* allege that design decisions made in the 1950s showed that the Corps knew that the banks of the MRGO should have been armored.<sup>70</sup> This argument is then bolstered by references to a 1963 report from the Board of Engineers for Rivers and Harbors that also called for riprap (i.e., rock used to armor the shoreline) along the MRGO.<sup>71</sup> The court concludes that this is evidence that the negligent failure to use riprap was associated with the MRGO, and not with the flood control plan.<sup>72</sup> The plaintiffs and the court seem determined to refight *Graci*, but to reach a different outcome.

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<sup>66</sup> 28 U.S.C. § 2680(a) (2006). For example, in *Allen v. United States*, the plaintiffs proved at trial that the government knowingly chose to do above-ground nuclear weapons testing, aware that it would expose communities downwind to dangerous nuclear fallout, which did in fact cause injuries. 588 F. Supp. 247, 404 (D. Utah 1984). The appeals court was clear that this showing did not trigger liability:

It is irrelevant to the discretion issue whether the [Atomic Energy Commission] or its employees were negligent in failing to adequately protect the public. When the conduct at issue involves the exercise of discretion by a government agency or employee, § 2680(a) preserves governmental immunity "whether or not the discretion involved be abused." For better or worse, plaintiffs here "obtain their 'right to sue from Congress [and] necessarily must take it subject to such restrictions as have been imposed."

*Allen v. United States*, 816 F.2d 1417, 1421-22 (10th Cir. 1987) (quoting *Dalehite v. United States*, 366 U.S. 15, 31 (1953)).

<sup>67</sup> *Graci v. United States*, 435 F. Supp. 189 (E.D. La. 1977).

<sup>68</sup> *Id.* at 195-96. But he also found that the MRGO had no effect on the flooding. *Id.*

<sup>69</sup> *Id.* at 196.

<sup>70</sup> *In re Katrina Canal Breaches Consol. Litig. (Robinson)*, 647 F. Supp. 2d 644, 654 (E.D. La. 2009).

<sup>71</sup> *Id.* at 656.

<sup>72</sup> See *infra* text accompanying note 87.

There are additional allegations about how the widening of the MRGO through wave action threatened the flood control levees outside the MRGO.<sup>73</sup> In sum, the plaintiffs' case is that the Corps ignored the threat that the MRGO posed to the flood control levees, and that it was the MRGO that caused the levee failure. Absent § 702c immunity, such claims state a prima facie under the FTCA, prompting the judge to deny summary judgment.

#### E. Seventeenth Street Canal

After rejecting the government's motion for summary judgment on FCA immunity in *Robinson*, the district court turned to *Seventeenth Street Canal*, a case dealing with damage claims from the failure of the flood wall on the Seventeenth Street Canal.<sup>74</sup> Since New Orleans is ringed with levees and flood walls, and more than fifty percent of it is below sea level, every drop of rain and ground water must be pumped out of the city through the levees. While canals are usually thought of as below ground level, the top of the Seventeenth Street Canal is high above the surrounding neighborhoods. The water level in the canal is always several feet higher than the land beside the canal. It must be high enough so that water pumped up to it from the lowest areas of the city can flow by gravity to Lake Pontchartrain. The canal did not have flood gates. When Hurricane Katrina's surge raised the level of Lake Pontchartrain several feet, the water backed up into the canal, and the pressure caused the concrete-and-sheetpile flood wall forming the New Orleans side of the canal to fail, flooding a large area of the northern part of the city.<sup>75</sup>

Much of the *Seventeenth Street Canal* opinion recited the plaintiffs' detailed history of the New Orleans hurricane protection plan, which began after Hurricane Betsy in 1965.<sup>76</sup> The plaintiffs presented various theories of negligence in the design and construction of the levees and flood walls, including decisions by the Corps to allow dredging near the canal, which might have weakened it.<sup>77</sup> The gov-

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<sup>73</sup> *Robinson*, 647 F. Supp. 2d at 697-98.

<sup>74</sup> *In re Katrina Canal Breaches Consol. Litig. (Seventeenth Street Canal)*, 533 F. Supp. 2d 615, 618 (E.D. La. 2008).

<sup>75</sup> See generally M. Rajabalinejad et al., *Probabilistic Assessment of the Flood Wall at 17th Street Canal, New Orleans* (advocating a probabilistic method for estimating the failure of flood defenses), in *RISK, RELIABILITY AND SOCIETAL SAFETY* (Terje Aven & Jan Erik Vinnem eds., 2007).

<sup>76</sup> 533 F. Supp. 2d at 619-21.

<sup>77</sup> *Id.* at 628.

ernment moved to dismiss, arguing that § 702c grants immunity for any damage caused by flood waters.<sup>78</sup>

The court returned to its position in *Robinson* that *Graci* is still controlling law.<sup>79</sup> The court made clear that it thought the Corps was negligent in the design of the hurricane protection system, noting that “the facts surrounding the [Hurricane Protection Plan] in relation to the outfall canals is checkered and replete with what appears to be errors in judgment . . . .”<sup>80</sup> It then went on to find that Congress authorized and funded the Corps’ plan, and that this made it clear that the Seventeenth Street Canal was solely a flood control structure.<sup>81</sup> With both conditions of *Graci* met, the court had no choice but to grant the motion to dismiss based on § 702c immunity. Nonetheless, the judge expressed disapproval of the law:

When Congress grants immunity to the “sovereign” and that immunity is interpreted as it has been by the Supreme Court in *James* and *Central Green*, in essence, the King can do no wrong if the facts of the case compel the Court to apply that immunity. Here, the Court must apply this broad immunity based upon the facts of this case. Often, when the King can do no wrong, his subjects suffer the consequences. Such is the case here.<sup>82</sup>

#### F. *The Robinson Trial*

We now return to *Robinson*, which went to trial following the court’s decision in *Seventeenth Street Canal*.<sup>83</sup> Recall that the *Robinson* court rejected the government’s motion to dismiss, comparing the hurricane to a Navy vessel as the phantom levee breaker—an analogy that persists throughout the judge’s arguments.<sup>84</sup> The district judge began by noting that nothing he had seen in all the motions and evidence before the court in the two years since the hearing for the motion to dismiss changed his reading of *Graci* and *Central Green*.<sup>85</sup>

<sup>78</sup> *Id.* at 633.

<sup>79</sup> *Id.* at 634 (“This Court has previously rejected the United States’ contention that it is immune from damages for any floodwater regardless of its source in its ruling on a motion to dismiss before as seen in *Robinson* and will continue to do so until otherwise guided by a higher court.”).

<sup>80</sup> *Id.* at 637.

<sup>81</sup> *Id.* at 638. The judge apparently does not believe in discretionary authority, otherwise the approval of Congress would not be relevant to assessing the Corps’ decision.

<sup>82</sup> *Id.*

<sup>83</sup> *In re Katrina Canal Breaches Consol. Litig. (Robinson)*, 647 F. Supp. 2d 644 (E.D. La. 2009).

<sup>84</sup> *See, e.g., id.* at 692; *see also supra* text accompanying note 62.

<sup>85</sup> *See Robinson*, 647 F. Supp. 2d at 648 (introducing the earlier reading of the two cases and beginning the analysis where the earlier opinion left off).

The court then provided a history of the MRGO and the Lake Pontchartrain and Vicinity Hurricane Protection Plan (LVP), the plan set in motion by Congress in 1955 after a series of hurricanes flooded New Orleans.<sup>86</sup> The presentation of this history reads like a traditional tort case against a private party:

Buried in various Corps' reports some of which are discussed, *infra*, are unequivocal, positive statements that underscore the Corps' knowledge that the MRGO would not be a static, unchanging waterway. It was clear from its inception that because of its location, degradation of the area would result unless proper, prophylactic measures were taken. In fact, some measures were included in the Corps' plans; they simply were not implemented in time to prevent immense environmental destruction.<sup>87</sup>

In other words, the Corps had notice and knowledge, and made a decision not to act on the knowledge. In a private tort action, this would prove intentional wrongdoing and might support punitive damages. But in a FTCA case, it proves that the agency acted intentionally, knowing the consequences of its action—the clearest proof of a discretionary choice.<sup>88</sup>

The judge then proceeds to transform Hurricane Katrina's flood waters into his Navy vessel. He sees a major problem with the Corps' failure to armor the sides of the MRGO with rock to prevent erosion and widening.<sup>89</sup> While the decision whether to armor a channel to protect a flood levee would seem to fall directly under § 702c, in this court's view that decision was part of the (nonimmune) decisionmaking about the MRGO. In response to the government's evidence that the levee failed and was overtopped because it was not constructed at the design height, a pure § 702c decision, the court responded that if "the Navy vessel ran into a papier mâché levee, the vessel would still be a substantial factor in the damage."<sup>90</sup>

The court concluded that the failure to prevent the natural widening of the MRGO hastened the destruction of the flood control levee

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<sup>86</sup> *Id.* at 649-53. For much of the history, the court relies on a Corps report, DOUGLAS WOOLLEY AND LEONARD SHABMAN, DECISION-MAKING CHRONOLOGY FOR THE LAKE PONTCHARTRAIN & VICINITY HURRICANE PROTECTION PROJECT (2008).

<sup>87</sup> *Robinson*, 647 F. Supp. 2d at 653.

<sup>88</sup> *See id.* at 666 ("As to the north shore, the callous and/or myopic approach of the Corps to the obvious deleterious nature of the MRGO is beyond understanding.")

<sup>89</sup> *See id.* at 697 ("This Court is utterly convinced that the Corps' failure to provide timely foreshore protection doomed the channel to grow to two to three times its design width and destroyed the banks which would have helped to protect the Reach 2 Levee from front-side wave attack as well as loss of height.")

<sup>90</sup> *Id.* at 692.

during the hurricane.<sup>91</sup> Thus, the MRGO becomes the Navy vessel.<sup>92</sup> We are left with flood water breaching a flood control levee—due to known risks that were assessed by the Corps as part of a flood control plan—being excluded from § 702c immunity.

The FTCA discretionary authority defense was disposed of by finding that the Corps violated various questionable duties. These include a duty to ask Congress for money<sup>93</sup> and a failure properly to assess the MRGO's risks to wetlands in a 1976 environmental impact statement under the National Environmental Policy Act.<sup>94</sup> None of these alleged breaches of duty is relevant to the Corps' authority. The court ignores the pages of evidence that the Corps knowingly and intentionally weighed the facts and chose its course of action.

*Robinson* was a test case. Evaluating the strength of legal arguments with a few typical plaintiffs, and following the plaintiffs' success, their advocates moved to certify a class and start the process of allocating damages.<sup>95</sup> Class certification requires a level of commonality between plaintiffs.<sup>96</sup> The FTCA requires exhaustion of administrative remedies by each plaintiff, which requires the plaintiff to give the agency notice of the claim and the requested compensation.<sup>97</sup> The plaintiff cannot go to court until the agency either denies the claim or does not act on the claim notice for six months. The plaintiff must bring the action within six months of the agency's final denial of the claim.<sup>98</sup> This notice must be provided within two years of the injury.<sup>99</sup> Because the district court reviews the exhaustion requirement de novo, it is generally assumed that there can be no FTCA class actions—as the government argued to the court in objecting to class certification.<sup>100</sup> The court, however, found that the notice and exhaustion requirements posed no bar to class certification,<sup>101</sup> thus creating what may be the

<sup>91</sup> *Id.* at 697-98.

<sup>92</sup> *Id.* at 698 (“The Corps’ ‘Navy vessel’ devastated this levee.”).

<sup>93</sup> *Id.* at 663 (“Never was any direct funding approach taken even when the Corps knew it had triggered catastrophic erosion caused by the very channel it had created.”).

<sup>94</sup> *Id.* at 725.

<sup>95</sup> *In re Katrina Canal Breaches Consol. Litig.*, No. 05-4182, 2010 WL 487431, at \*13 (E.D. La. Feb. 2, 2010).

<sup>96</sup> FED. R. CIV. P. 23(a)(2).

<sup>97</sup> 28 U.S.C. § 2675 (2006).

<sup>98</sup> 28 U.S.C. § 2401(b). If the agency does not act on the claim, § 2401(a) would likely control, giving the plaintiff up to six years from the injury to file.

<sup>99</sup> *Id.*

<sup>100</sup> *In re Katrina Canal Breaches Consol. Litig.*, No. 05-4181, 2009 WL 1649501, at \*2-4 (E.D. La. June 9, 2009).

<sup>101</sup> *Id.* at \*2-\*5.



first FTCA class action.<sup>102</sup> The court then concluded that the original *Robinson* petition provided constructive notice to the Corps that additional plaintiffs would be filing cases.<sup>103</sup> Under this reasoning, once a plaintiff has met the exhaustion requirements and filed an FTCA action, the action itself would become a shortcut for adding new claims against the agency, opening the door to greater liability and more strongly incentivizing ineffective governmental responses to climate change.

### III. COASTAL SCIENCE

The irony of *Robinson* is that the plaintiffs and the government are not really adverse parties. The plaintiffs, the judge, and the Corps share a belief that the answer to coastal flooding is bigger and better levees. The scientific defense to the claims in *Robinson* is simple and well documented: coastal Louisiana in general, and New Orleans in particular, are being inundated by the combination of subsidence and ocean rise.<sup>104</sup> The Corps cannot admit this because it would undermine its levee and flood wall-based solutions. If the problem is inundation, then there is no denying that building flood control structures will lead to the eventual drowning of the wetlands between the levee and the sea. Since the Corps is also charged with protecting these wetlands, it would be put in an impossible political and legal position. More fundamentally, a Congress that cannot come to a consensus about climate change is unlikely to stop funding politically popular levees.

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<sup>102</sup> The court in *Kantor v. Kahn* found that there had not been an FTCA class action as of 1979. 463 F. Supp. 1160, 1162 (S.D.N.Y. 1979). Though an FTCA class action is perhaps not impossible, a search of the legal databases and the major treatise on FTCA litigation has not identified a reported FTCA class action. See 3 LESTER S. JAYSON & ROBERT C. LONGSTRETH, *HANDLING FEDERAL TORT CLAIMS* § 17.05 (2011). The more restrictive commonality requirements in *Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2154 (2011), cast further doubt on the viability of an FTCA class action. Similar mass claims actions have been tried as consolidated actions with named plaintiffs, not class actions. See, e.g., *Allen v. United States*, 588 F. Supp. 247, 258 (D. Utah 1984).

<sup>103</sup> *In re Katrina Canal Breaches Consol. Litig.*, No. 05-4182, 2010 WL 487431, at \*12 (E.D. La. Feb. 2, 2010) (“Thus, any argument that once these plaintiffs filed their Master Complaint, they were precluded from enlarging their claims within the two year period is without merit. Indeed, given the facts as presented herein, plaintiffs’ claims can be deemed exhausted because more than six months [have] passed since the 2007 complaint was filed placing the Corps on notice that the [East Bank Industrial Area] claim was being made by these three plaintiffs . . .”).

<sup>104</sup> See generally Arthur E. Berman, *The Anatomy of a Silent Disaster: Ongoing Subsidence and Inundation of the Northern Margin of the Gulf of Mexico Basin: An Interview with Dr. Roy Dokka*, HOUS. GEOLOGICAL SOC’Y BULL., Feb. 2005, at 31.

The effects of climate change, however, must force us to reevaluate the Corps' mission—and reevaluate the future of New Orleans.<sup>105</sup>

### A. *Understanding the Mississippi Delta*

Most of coastal and southeastern Louisiana lies in the Mississippi Delta. This delta is formed by sediment the river deposits. Under normal flow, the sediment is deposited at the mouth of the river, where it can only form land that is at or below sea level. The delta is built above sea level only when the river floods over its banks upstream of the mouth and deposits sediment on dry land. This sediment also forms natural levees on the riverbank, impeding the river's flow during floods and encouraging the river to cut new channels. The abandoned banks then become ridges.<sup>106</sup> As the process repeats through time, the river meanders across its delta and builds up the land.<sup>107</sup> This leaves a flat delta crisscrossed with ridges and oxbow lakes.<sup>108</sup>

There are two key geographic features of the Mississippi Delta. One is the flatness—the rise may only be a foot in ten to twenty miles.<sup>109</sup> The second is its instability. After the sediments are laid down, they compact so the surface layers subside.<sup>110</sup> Through geologic time, the load of sediment deforms the earth's crust and causes long-term, deep-level subsidence.<sup>111</sup> Even with a constant sea level, the rela-

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<sup>105</sup> Even the Dutch, masters of levees, are rethinking their system in the face of climate change. See M. Vankoningsveld et al., *Living with Sea-Level Rise and Climate Change: A Case Study of the Netherlands*, 24 J. OF COASTAL RES. 367, 378 (2008) (“Working with nature, with a reappraisal of an accommodation strategy in combination with a hard protection strategy, is being gradually considered to be a sustainable alternative . . .”).

<sup>106</sup> These ridges provide the high ground in New Orleans and St. Bernard Parish. Paul V. Heinrich, *Review of the Engineering Geology of St. Bernard Parish, Louisiana*, LA. GEOLOGICAL SURV., Dec. 2005, at 6, 7.

<sup>107</sup> HAROLD N. FISK, MISS. RIVER COMM'N, GEOLOGICAL INVESTIGATION OF THE ALLUVIAL VALLEY OF THE LOWER MISSISSIPPI RIVER fig.78 (1944), available at [http://biotech.law.lsu.edu/climate/mississippi/fisk/Fisk\\_44\\_report2.pdf](http://biotech.law.lsu.edu/climate/mississippi/fisk/Fisk_44_report2.pdf).

<sup>108</sup> ROGER T. SAUCIER, U.S. ARMY CORPS OF ENG'RS, GEOMORPHOLOGY AND QUATERNARY GEOLOGIC HISTORY OF THE LOWER MISSISSIPPI VALLEY 105-07 (1994), available at [http://biotech.law.lsu.edu/climate/mississippi/sausier/Sausier\\_Vol\\_I\\_text.pdf](http://biotech.law.lsu.edu/climate/mississippi/sausier/Sausier_Vol_I_text.pdf).

<sup>109</sup> SCOTT A. ANGELLE ET AL., LA. DEP'T OF NATURAL RES., DEFINING LOUISIANA'S COASTAL ZONE: A SCIENCE BASED EVALUATION OF THE LOUISIANA COASTAL ZONE INLAND BOUNDARY 32 fig.7 (2010), available at [http://biotech.law.lsu.edu/climate/docs/CZB\\_Report\\_20August2010.pdf](http://biotech.law.lsu.edu/climate/docs/CZB_Report_20August2010.pdf).

<sup>110</sup> T.A. Meckel, *An Attempt to Reconcile Subsidence Rates Determined from Various Techniques in Southern Louisiana*, 27 QUATERNARY SCIENCE REV. 1517, 1518 (2008).

<sup>111</sup> Roy K. Dokka et al., *Tectonic Control of Subsidence and Southward Displacement of Southeast Louisiana with Respect to Stable North America*, 33 GEOPHYSICAL RES. LETTERS L23308, at 3 (2006).

tive sea level begins to rise as soon as the river's course changes, and it no longer replenishes an area of delta, which then subsides. Any reductions in the sediment load in the river, or in its periodic flooding, will reduce the replenishment of the delta.

This makes the lower Mississippi Delta a very sensitive indicator of changes in sea level. If the rise in the land is one foot in ten miles, then even an inch of sea level rise will move the coastline nearly a mile on average. Over geologic time, ocean level has varied as much as 125 meters.<sup>112</sup> The current delta developed over the past 5000 to 7000 years, beginning when the rate of ocean rise slowed to a very low level. Without sediment, the delta cannot build,<sup>113</sup> and even with large amounts of sediment, it will not be able to build fast enough to keep ahead of significant ocean rise.<sup>114</sup> Unless the river is allowed to flood over the delta—wiping out New Orleans and other cities—the sediment can only build sea level mud flats and fill in bays. The river can only raise the elevation of the land—thus replenishing it—by depositing sediment on the delta.

### B. *Hurricanes*

Hurricanes bring this slow and difficult-to-see process to our attention. The impact of hurricanes on the Mississippi Delta region is driven by simple geometry. The land stays flat as it goes underwater, creating a broad and shallow coastal shelf that allows maximum hurricane surge development. The Gulf Coast sees some of the highest hurricane surges in the world. Since the major determinate of how far inland surge goes is elevation, a twenty-five-foot storm surge can go a long way inland when the elevation thirty miles from the coast is only three feet. While this is not the product of recent changes in the coast,<sup>115</sup> the risk has increased because geoengineering has left much of greater New Orleans below sea level. New Orleans is at constant risk of flooding from rain falling faster than it can be pumped out or

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<sup>112</sup> Bilal U. Haq & Stephen R. Schutter, *A Chronology of Paleozoic Sea-Level Changes*, 322 SCIENCE 64, 64 (2008).

<sup>113</sup> Even with no sediment, the delta would appear to grow if sea level falls faster than the land subsides.

<sup>114</sup> Periods of glacial melting generated very high river and sediment flows, yet the delta receded during these periods because the sea level was rising relatively quickly. Erik R. Ivins et al., *Post-Glacial Sediment Load and Subsidence in Coastal Louisiana*, 34 GEOPHYSICAL RES. LETTERS L16303, at 1-2 (2007).

<sup>115</sup> See Knabb, *supra* note 1, at 11 (describing a 1893 storm that hit the southeastern Louisiana barrier island of Cheniere Caminanda and killed about 2000 people).

from levee failure. While levees are seen as protection against hurricanes,<sup>116</sup> the experiences with Katrina and Betsy indicates otherwise.

#### IV. *ROBINSON* AND THE GEOENGINEERING SOLUTION

The Louisiana Coastal Restoration Plan—centered around a plan to build levees—will not solve the problems of relative ocean rise and the increased risk that hurricanes pose to the more vulnerable land. It is politically attractive because it sounds environmentally friendly<sup>117</sup> and can attract federal dollars into the local economy. Unfortunately, the focus is always on levees. A good example of the levee strategy is the Morganza, Louisiana, to the Gulf of Mexico Risk Reduction Project.<sup>118</sup> These projects start small, with low, “relatively” cheap levees, which are then seen as inadequate in the face of the storm threat. Pressure then mounts to raise and strengthen the levees, and the cost and damage to the environment explodes.

The *Robinson* ruling exacerbates the existing over-reliance on levees. Returning to the *Graci* requirement of a flood control structure for § 702c, rather than the *Central Green* flood waters test, gives the Corps no § 702c immunity unless it builds a levee. It cannot choose to forego a levee in favor of adaptation and mitigation and be protected by § 702c. The *Robinson* court transformed the Corps’ knowledge of risks about flooding from a discretionary authority defense into an unprotected liability. This makes a mockery of both § 702c and the discretionary authority defense. The Corps and other government agencies are observing and documenting the increasing risk of flooding due to the destruction of coastal topography on every coast. Since almost all coastal areas have Corps-permitted and Corps-maintained canals and harbors, will all of these become Navy vessels with the next hurricane?

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<sup>116</sup> See *infra* Part IV.

<sup>117</sup> In fact, these levees will destroy all the wetlands between themselves and the Gulf: as the ocean rises, the levees stop the upslope retreat of the wetlands from the coast side, causing the wetlands to slowly disappear. For a graphic illustrating the process, see generally COMM. ON ENG’G IMPLICATIONS OF CHANGES IN RELATIVE MEAN SEA LEVEL, NAT’L RESEARCH COUNCIL, RESPONDING TO CHANGES IN SEA LEVEL: ENGINEERING IMPLICATIONS 70 (1987), available at [http://www.nap.edu/openbook.php?record\\_id=1006&page=70](http://www.nap.edu/openbook.php?record_id=1006&page=70). Every national and local environmental group should be fighting levee projects, but they have been seduced by the myth of coastal restoration.

<sup>118</sup> See *Morganza to the Gulf of Mexico Risk Reduction Project: Fact Sheet*, U.S. ARMY CORPS OF ENGINEERS, [http://www.mvn.usace.army.mil/prj/mtog/project\\_fact\\_sheet\\_\\_\\_morganza.asp](http://www.mvn.usace.army.mil/prj/mtog/project_fact_sheet___morganza.asp) (last visited Jan. 15, 2012) (describing the project).

## CONCLUSION

The *Robinson* case is bad law promoting bad science. By failing to dismiss the case at the first instance under § 702c, the court gave the plaintiffs a forum for bad science and generated endless media coverage on this science. By ruling for the plaintiffs, and fully endorsing their arguments in its opinion, the court has put its imprimatur on that science.<sup>119</sup> It has fueled the national myth that New Orleans would have been fine but for the failures of the Corps. That myth has already driven billions of dollars in new levee construction and helped prevent meaningful mitigation of future risks to man and the environment on the Louisiana coast. It should be reversed, and *Graci* should be clearly overruled.

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<sup>119</sup> Sophisticated litigators and scholars know that even in the best of cases, courtroom science is questionable because of the expert witness system. This is not the best of cases, and the public and politicians should not believe that once something is in the legal reports, it is true.