
The Official U.S. Version Of the Environmental Damage

Zirahuén Villamar*

Almost a year has passed since the explosion on the British Petroleum (BP) Deepwater Horizon oil platform, in the Mississippi Canyon Block 252 well. Between the April 20 explosion in U.S. territorial waters 75 kilometers from the Louisiana shore, and August 5, when the well was finally sealed and the spill halted, 4.4 million barrels of crude were spewed into the waters of the gulf,¹ at a rate of 56 000 a day.² This article will examine U.S. government perceptions of the damage caused by the leak.

ELEMENTS FOR AN ANALYSIS OF ENVIRONMENTAL DAMAGE

The importance of the Gulf of Mexico lies in the amount and diversity of its natural resources, both because of their intrinsic maritime and coastal value (islands, wetlands, beaches, and coral reefs) and because they are areas that are the habitat and spawning grounds for many species; in its historic value; and in the productive activities it sustains and the economic, commercial, recreational, and other kinds of benefits it provides. To a great extent, this natural wealth is due to the action of three ocean currents: the Yucatán current, which enters the gulf from the Caribbean, flowing between the Yucatán Peninsula and Cuba; the Loop Current, fed by the first and turning clockwise to become the third, the Florida Current, which pushes out of the gulf into the Atlantic through the Florida Straits. To a lesser extent, the current that comes from the Caribbean moves north-northwest toward the coasts of Louisiana, Mississippi, and Alabama; then, when it nears the coast, the weakened current splits toward the west and Texas, and toward the east-northeast and Florida.³

* Economist, specialist in global governance and European studies; professor at the UNAM School of Economics, zirahuenvn@gmail.com.

On the other hand, as far as experience with oil spills indicates, the general impacts depend on four variables: the spill's volume and rate or rhythm, the location of its source, and the type of crude involved. The way in which these variables articulate with each other makes the difference between a minor incident and a catastrophe. Regardless of the size, it is generally accepted that the effects on the environment can be classified into two categories: severe or short-term, and chronic or long-term. Severe spills can be lethal or not, but in any case they debilitate the environment because they reduce the reproduction of animal and plant species, change their daily development, decrease their feeding mechanisms, and hamper their ability to fight off disease. The chronic effects are much more polemical, since the evidence is often not conclusive and the results not straightforward. This controversy tends to be resolved, without much effort and simply using common sense, by assuming that exposure to low levels of crude significantly affects the survival and reproduction of the species.

The U.S. Department of Commerce Oceanic and Atmospheric Administration explains that maritime oil spills cause differentiated impacts depending on the place the oil is located: crude oil offshore, crude oil in coastal habitats, and crude oil and human activities.⁴ Based on this classification, evaluations of the effects of an oil spill vary in their methods depending on what they propose to analyze and the purpose of the exercise.

MACONDO'S DAMAGE

According to Fish and Wildlife Service (FWS) officials, five states suffered the greatest environmental damage: Alabama, Florida, Louisiana, Mississippi, and Texas, all of which have threatened and endangered mammals, birds, reptiles, and fish.



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In the first category, threatened animals are those that run the risk of becoming endangered, that is, that could become extinct, the second category.⁵ Alabama has 21 threatened animals, four of which may have suffered damage to their habitats from crude oil pollution. Of 58 endangered species, 10 or 11 may have been affected by oil pollution.

In Florida, 9 or 10 of the 19 threatened species and 23 or 24 of the 35 endangered species may be affected by the contamination, while in Louisiana, four or five of the eight threatened species, and eight of the ten endangered species are in the same situation. In Mississippi, the same is happening to 4 out of 11 of the threatened and 10 out of 20 of the endangered species. In Texas, 9 animal species are considered threatened, 3 of which may have their habitats affected by crude oil contamination; and 49 species are endangered, of

which 8 may have had their habitats contaminated with oil.⁶ Obviously the damage varies according to the kind of species, and U.S. officials emphasized these differences, an analysis of which follows.

ESTIMATES OF THE DAMAGE TO DIFFERENT SPECIES

For official agencies, quantifying the damage and trying to mitigate it were the priorities from the moment the news of the incident on the platform and its resulting oil spill came out. Regarding the diagnostic analysis of the damage to animal and plant species, the NOAA and the FWS explained that the figures they provided referred to the total of the reports of the ongoing procedures: once finished, after a first look, they qualified the specimens in three categories: “visibly oiled,” “no visible oil,” and “pending.” In the next stage, they would be subjected to long-term assessments to determine the causes of the injuries or death of the specimens collected, verifying if they had broken bones, oil on their skin, or other injuries. If necessary, another examination would be made to look for less obvious injuries, studying the mouth, throat, and eyes to see if they showed signs of crude oil. An additional step could include a partial or full necropsy to help determine

the exact cause of death and see whether it was related to the damage caused by the oil spill or not.⁷

BIRDS

If oil contamination in the birds' feathers is severe, they can lose their insulation properties and they die of hypothermia even if the temperature of the water seems mild or lukewarm. If their plumage is covered with oil, ocean birds can no longer float, so they sink and drown. This makes it very difficult to estimate the number of bird deaths since there are no bodies to count. A third case of contamination of birds with oil is when they ingest it as they try to clean their contaminated feathers or they eat prey that has also been contaminated.⁸ According to one FWS report published in November, 7 835 birds have been affected; 2 888 were found visibly covered with oil, 66 percent of which were dead. Another 4 014 were not covered with oil, but were internally contaminated; of these, 77 percent had died. Lastly, 933 birds, in whose cases contamination had not been confirmed, were found, but 931 of them had died.⁹

MAMMALS

Rodents, felines, bears, deer, manatees, dolphins, and sperm whales are some of the mammals whose habitats—and therefore their lives—may be directly or indirectly affected by the spill. While land animals are usually less affected than marine animals—and this was, indeed, the case—there was still clear concern about protecting their surroundings. For the mammals inhabiting Gulf of Mexico waters, the situation was worse: despite the fact that they do not have much fur to be covered with crude, they require the layer of fat under their skin to maintain their body temperature, and when their skin comes into contact with the oil, it becomes irritated and can become infected.

Even more dangerous is their inhaling oil fumes when they come to the surface to breathe, and their eating contaminated prey, poisoning them. According to the FWS, by November 2, nine live mammals had been found, two visibly covered in oil and seven without any visible outward signs; 100 specimens were found dead, four of which were covered in oil and another 92 not; conclusions about the other four were pending. In total, 109 mammals were collected, of which only three could be returned to the wild.¹⁰

The controversy about the chronic effects of spills tends to be resolved simply using common sense, by assuming that exposure to even low levels of crude significantly affects species' survival and reproduction.

REPTILES

Six species of tortoises and the American crocodile are the reptiles most affected. Five hundred thirty-five tortoises were collected alive both from the sea and on land; 85 percent were visibly affected by the oil, and the remaining 15 percent had no clear marks of oil on them. Another 609 carcasses were collected, 3 percent dead from the oil, 52 percent with visible signs of oil contamination, and 45 percent still pending conclusions. This makes a total of 1 144 samples collected, of which 397 were treated and released; 278 nests were relocated, and 14 676 tortoise young were freed.¹¹

CORALS

It is common knowledge that exposure to large amounts of oil kills corals; the same is true of prolonged exposure to small amounts of oil. In the first case, it weakens them; in the second case, it exterminates them. Additionally, there is evidence that in the medium and long term, the use of chemical dispersants to reduce the amount of oil after a spill is harmful. On an optimistic note, previous experience teaches us that corals recover more rapidly from the damage from oil contamination than from injuries caused by mechanical disasters like hurricanes or ships running aground on them.¹²

FISH AND FISHING ACTIVITIES

Two species of sturgeon were the most threatened by the Macondo spill.¹³ However, researchers consider that the greatest damage was done to commercial fishing activities. In U.S. waters in the gulf, fishing directly and indirectly generates 200 000 jobs with a value of US\$5.5 billion at 2008 prices. In 2010, the value of the catches in the area came to US\$659 million. By last July, the Oceanic and Atmospheric National Administration had closed about 217 000 square kilometers

For sea mammals,
the main dangers are inhaling oil fumes
when they come to the surface
to breathe, and being poisoned
by eating contaminated prey.



of ocean to fishing, something like 35 percent of the U.S. territorial economic waters in the gulf. The most important species and the ones most damaged by this ban are shrimp, menhaden, oysters, and blue crab.¹⁴

(UN)OFFICIAL CONCLUSION

By November 2010, 25 803 samples had been collected from water (10 236), sediment (3 060), tissue (3 286), and residue washed up on beaches (1 894). The Natural Resource Damage Assessment (NRDA) joint operation did 35 487 tests on them; 3 200 kilometers of coastline had been explored, and oil residue was found at 1 500 points, dispersed in marshes, salt-water marshes, beaches, and mangroves. Also, 1 507 tons of oil residue was removed from the coasts most susceptible to damage.¹⁵

By the end of 2010, the environmental damage from the Macondo oil spill, quantified as costs of cleanup and rehabilitation, were calculated at US\$40 billion, according to BP sources.¹⁶ To this must be added the US\$20 billion fund to pay claims by individuals and companies who can prove their economic activities have been affected.¹⁷ It should be expected that in the long term, the cost of the damage due to the spill will rise up to as much as US\$200 billion, as more negative effects begin to show up.¹⁸ This is not just possible, but very probable. ■■■

NOTES

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- ² Timothy J. Crone and Maya Tolstoy, "Magnitude of the 2010 Gulf of Mexico Oil Leak," *Science*, October 27, 2010, <http://www.sciencemag.org/content/330/6004/634.abstract?sid=844e388d-946d-4fbc-a29e-6b407ddc3cd9>.
- ³ Joanna Gyory, Arthur J. Mariano, and Edward H. Ryan, "The Loop Current," *Ocean Surface Currents*, The Cooperative Institute for Marine and Atmospheric Studies, <http://oceancurrents.rsmas.miami.edu/atlantic/loop-current.html>, accessed November 28, 2010.
- ⁴ This NOAA map can be consulted: "Deepwater BP Oil Spill. Natural Resource Damage Assessment (NRDA)" (November 2010), http://www.gulfspillrestoration.noaa.gov/wp-content/uploads/2010/11/PreassessmentMap_11-29-10_low-res_horizontal.pdf.
- ⁵ FSW, "Wildlife Threatened on the Gulf Coast," June 2010, <http://www.fws.gov/home/dhoilspill/pdfs/NewWildlifeOfGulf.pdf>.
- ⁶ M. Lynne Corn and Claudia Copeland, *The Deepwater Horizon Oil Spill: Coastal Wetland and Wildlife Impacts and Response*, Congressional Research Service, no. R41311, August 5, 2010, p. 20, <http://www.fas.org/sgp/crs/misc/R41311.pdf>.
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- ⁸ M. Lynne Corn and Claudia Copeland, op. cit., pp. 11-12.
- ⁹ FSW, "Bird Impact Data from DOI-ERDC Database Download 16 Nov. 2010," November 16, 2010, p. 1, <http://www.fws.gov/home/dhoilspill/pdfs/Bird%20Data%20Species%20Spreadsheet%2011162010.pdf>.
- ¹⁰ FSW, "Deepwater Horizon Response...", op. cit.
- ¹¹ Ibid., p. 1.
- ¹² NOAA, "How Does an Oil Spill Affect Coral Reefs?", http://coralreef.noaa.gov/aboutcorals/facts/coral_oilspill.html, accessed December 1, 2010.
- ¹³ FSW, "Wildlife Threatened...", op. cit.
- ¹⁴ Curry L. Hagerty and Jonathan L. Ramseur, "Deepwater Horizon Oil Spill: Selected Issues for Congress," Congressional Research Service no. R41262, July 30, 2010, pp. 30-31, <http://www.fas.org/sgp/crs/misc/R41262.pdf>.
- ¹⁵ NOAA, op. cit.
- ¹⁶ Paula Dittrick, "BP Oil Spill Costs Reach nearly \$40 Billion," November 2, 2010, http://www.pennenergy.com/index/petroleum/display/2212977131/articles/pennenergy/petroleum/finance/2010/11/bp-oil_spill_costs.html.
- ¹⁷ BP, "BP Establishes \$20 Billion Claims Fund for Deepwater Horizon Spill and Outlines Dividend Decisions," June 16, 2010, <http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7062966>.
- ¹⁸ Chris Kahn, "BP's Spill Costs Look Manageable 8 Months Later," Associated Press, November 29, 2010, http://hosted.ap.org/dynamic/stories/U/US_GULF_OIL_SPILL_BPS_COSTS?SITE=FLPET&SECTION=HOME&TEMPLATE=DEFAULT.