

Scientists: Gulf health nearly at pre-spill level

18 April 2011, By CAIN BURDEAU and SETH BORENSTEIN , Associated Press



In this April 1, 2011 photo, Tulane University population ecologist Jessica Henkel sets up a net to catch migrating birds for blood, fecal and feather samples on Fourchon Beach in Port Fourchon, La., as part of a research project that is looking for long-term, not immediately lethal effects from the BP PLC oil spill on birds that stop along the Gulf Coast during their migration. "It's much easier to see a dead pelican on the beach" than it is to see more chronic population-wide effects, Henkel said. (AP Photo/Patrick Semansky)

(AP) -- Scientists judge the overall health of the Gulf of Mexico as nearly back to normal one year after the BP oil spill, but with glaring blemishes that restrain their optimism about nature's resiliency, an Associated Press survey of researchers shows.

More than three dozen scientists grade the Gulf's big picture health a 68 on average, using a 1-to-100 scale. What's remarkable is that that's just a few points below the 71 the same researchers gave last summer when asked what grade they would give the ecosystem before the spill. And it's an improvement from the 65 given back in October.

At the same time, scientists are worried. They cite significant declines in key health indicators such as the sea floor, dolphins and [oysters](#). In interviews, dozens of Gulf experts emphasized their concerns,

pointing to the mysterious deaths of hundreds of young dolphins and turtles, strangely stained crabs and dead patches on the sea floor.

The survey results mirror impressions Jane Lubchenco, the head of the National Oceanic and Atmospheric Administration, gave on the health of the Gulf in an interview with the AP Thursday.

The Gulf is "much better than people feared, but the jury is out about what the end result will be," she said. "It's premature to conclude that things are good ... There are surprises coming up - we're finding dead baby dolphins."

Just as it was before the April 20 accident when the Deepwater Horizon [oil](#) rig exploded, ultimately spewing 172 million gallons of oil, the Gulf continues to be a place of contradictions: The surface looks as if nothing ever happened while potentially big problems are hidden deep below the surface, in hard-to-get-to marshes and in the slow-moving [food web](#). Some may not even be known for years.

"When considering the entire [Gulf of Mexico](#), I think the natural restoration of the Gulf is back to close to where it was before the spill," said Wes Tunnell at Texas A&M University, who wrote a scientific advisory report for the federal arbitrator who is awarding money to residents and businesses because of the oil spill. Tunnell's grades are typical. He says the Gulf's overall health before the spill was a 70; he gives it a 69 now.

If that pre-spill grade isn't impressive, it's because the Gulf has long been an environmental victim- oil from drilling and natural seepage, overfishing, hurricanes and a huge oxygen-depleted dead zone caused by absorbing 40 percent of America's farm and urban runoff from the Mississippi River.

Today, a dozen scientists give the Gulf as good a grade as they did before the spill. One of those is

Louisiana State University professor Ed Overton, a veteran of [oil spills](#). He described a recent trip to Gulf Shores, Ala.: "I walked a half-mile down the beach and there wasn't a tar ball in sight. It was as pretty as I've ever seen it."

In the survey, some categories, such as red snapper and king mackerel, even average out to higher grades than before the spill, mostly because months of partial fishing bans have helped populations thrive.

While that sounds good, the average grades for the sea floor plunged from 68 pre-spill to a failing grade of 57 now. Dolphins initially seemed to be OK, but as more carcasses than usual kept washing up - almost 300 since the spill - the grade fell to 66, compared to a pre-spill 75. Oysters, always under siege, dropped 10 points, crabs dropped 6 points. And the overall food web slid from 70 before the spill to 64 now.

"Everything may be fine in some places, but definitely not fine everywhere," said University of Georgia researcher Samantha Joye who found dead patches of oiled sea bottom in expeditions near the busted well where 11 men lost their lives. "The oil isn't gone; it's just not where we can see it."

Joye said before the oil spill she would have given the sea floor an "A" grade of 90. Now she gives it a 30. Overall, Joye, who has been one of the more hands-on researchers exploring Gulf damage, said its health has plunged from an 80 before the spill to a 50 now, but she was the most pessimistic of the researchers.

In five different expeditions, the last one in December, she and her colleagues took 250 cores of the [sea floor](#) and travelled 2,600 square miles. She says much of the invisible oil in the water and on the sea bottom has been chemically fingerprinted and traced to the BP spill. She also has pictures of oil-choked bottom-dwelling creatures like crabs and brittle stars - starfish-like critters that are normally bright orange but now are pale and dead.

This is hidden from view. Eugene Turner, an LSU wetlands scientist, has looked at marshes in

Louisiana's Barataria basin, and found oil buried in the mud and sand.

"You can't smell it. You can't see it. It's not this big black scum out there, but it's there," Turner said.

At this point, the oil is only obvious in a couple of places - with Bay Jimmy the worst-hit. Today, a crust of oil still lines miles of the outer fringe of marsh in the bay, a remote spot deep visited by the occasional fisherman and oil worker.

Still, it's nothing compared to the black gunk stuck on beaches and marshes last summer or the multi-colored slicks so massive they could be tracked by satellite. Those images, along with the pictures of pelicans and seagulls with gobs of oil oozing down their beaks, are now history.

"Even though some coastal areas were hit hard," says NOAA's Lubchenco, "the oil did not penetrate as far into the marshes as people feared."

Despite the picture on the surface, Dana Wetzel at the Mote Marine Laboratory in Florida, adds: "Anyone who says the Gulf is fine is being precipitous.... It's out-of-sight, out-of-mind, but in my humble opinion this is not over."

While BP money has flowed for immediate cleanup and compensation, the bigger bill for environmental damage and federal penalties is still being calculated. The federal government is collecting data on that, but much is kept from outside scientists. So some of the most important details are being held closely like cards in a high-stakes poker game, outside researchers say.

Trying to quantify the scale of the injury to the Gulf ecosystem "is absolutely the right question," said Robert Haddad, who heads the scientific process for the National Oceanic and Atmospheric Administration. "One of the outcomes from the Exxon Valdez was that they tried to estimate the damage too quickly."

The spill itself lasted nearly three months. Then there was the clean-up. Then federal officials pronounced the oil mostly - but not completely - gone, eaten by microbes, dispersed by chemicals

or diluted. Lubchenco told reporters in February that "it's not a contradiction to say that although most of the oil is gone, there still remains oil out there."

Now, only a year later scientists are starting to see signs - and they are far from conclusive - of possible long-term problems.

Florida State University oceanographer Ian MacDonald warned his fellow scientists to be on the watch for deaths of big marine mammals. That was in October. Since January, 155 young or fetal dolphins and small whales have washed up on Gulf beaches - more than four times the typical number - according to NOAA.

A new study estimates that for every dead dolphin that washes ashore there are 50 dolphins that are never found. That suggests more than 7,500 dolphin deaths the first three months of this year alone.

Blair Mase, NOAA's marine mammal stranding coordinator, says dolphin deaths began to rise in February 2010 - before the BP spill. That slowed in November, but in January dolphins began dying at a much faster rate, higher than before the spill.

Lubchenco said oil contamination could be the culprit: "It is logical that maybe their moms were affected by the spill." Other culprits could be algae blooms, temperature changes or other environmental toxins.

Fifteen of this year's dead dolphins had oil on them, and NOAA chemically linked six of those to the BP well.

It's not just dolphins that are dying. NOAA reports in the first few months of this year, 141 endangered sea turtles were stranded - a higher than normal number. On top of that, Monty Graham, a researcher at the Dauphin Island Sea Lab in Alabama, noticed fewer jellyfish last year.

"We are looking at how the food web could have shifted in general," Graham said. "We think we have growing evidence that the system shifted and became starved for food" for larger sea animals.

At Tulane University, scientist Caroline Taylor is investigating strange orange droplets inside crab larvae. Her team has taken samples from thousands of crabs, but they have not begun to analyze the abnormalities.

Jessica Henkel, a Tulane population ecologist, is spending long days rigging up nets to catch birds for fecal, blood and feather samples, looking for effects that aren't immediately lethal.

"It's much easier to see a dead pelican on the beach" than it is to see more chronic population-wide effects, she said.

This sounds all too familiar to Craig Matkin, a marine mammals biologist at the North Gulf Oceanic Society in Alaska. He studied what happened to whales in Prince William Sound after the 1989 Exxon Valdez spill. Some whales died immediately after being coated with oil, but then a year later scientists noticed lots of whale deaths - 13 out of 35 of the main whale pod. Matkin said it was likely the whales died from oil ingested over months.

Similarly, the herring fishery in the region crashed, not immediately, but over time.

"There's a real tendency to do this out-of-sight, out-of-mind thing until someone shows you that it's not the truth," Matkin said. "It doesn't go away. There are going to be effects down the line."

But John Harding, chief scientist at the Northern Gulf Institute in Mississippi, said, "We're way better off than the Exxon Valdez. We had the oil-eating microbes."

Larry McKinney, who heads a Gulf research center at Texas A&M University in Corpus Christi, has days when he's confident in the Gulf's resilience and days when he's pessimistic. Somehow he can agree with both Overton and Joye, saying the trouble is that there's not enough information to get a complete picture. He compares it to people in a dark room trying to describe an elephant that they can feel but not see.

More information:

NOAA's dolphin death database:

<http://1.usa.gov/fVC4Ua>

NOAA's sea turtle stranding site:

<http://1.usa.gov/f8uLlb>

U.S. government's oil spill page:

<http://www.restorethegulf.gov>

BP's Gulf of Mexico response page:

<http://bit.ly/hJhaFP>

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APA citation: Scientists: Gulf health nearly at pre-spill level (2011, April 18) retrieved 22 September 2020
from <https://phys.org/news/2011-04-scientists-gulf-health-pre-spill.html>

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