

The Gulf of Mexico Oil Disaster

The Gulf of Mexico oil disaster: how it affects aquarists and how they can help.

By Joshua Wiegert

The topic of conservation should be important to every individual alive today, but it is of particular importance to aquarists. This is because we not only depend upon wild populations for many of the beautiful fishes, plants, and invertebrates we keep, but also because, as aquarists, we share a deeper love of natural systems – particularly aquatic – than most. After all, it is this love of nature that drives us to attempt to recreate something resembling our vision of nature in the aquarium, or at the very least (for the Burping Clam crowd), to keep living things.

Unfortunately, for my first online column, I'm going to pick a topic that is not particularly aquarium related, but should be of interest to everyone – aquarist or not.

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This is a satellite view of the British Petroleum oil disaster (inside of the white box) as it appeared on April 29. This MODIS image is provided by NASA's Terra satellite, downlinked and processed at the University of Miami's CSTARS ground station. The most striking environmental disaster of all time has recently occurred, directly affecting a vital marine area. The Gulf of Mexico has suffered from a vast oil rupture, when a pipeline transferring oil from an underwater well exploded. Estimates of the amount of oil being dumped by the broken pipe vary, but the simple fact is an unimaginable amount of oil is flooding into the gulf. The gulf ecosystem is not likely to ever "recover," but will be forever changed by this event, environmentally as well as culturally.

The effect on the gulf will be felt by all of us. As anyone who has turned on the news knows, two branches of the gulf economy have essentially been destroyed: tourism and fishing. Many people outside the gulf region have this vague, naïve or optimistic hope that the gulf economy will simply be "down" for a year or two. Unfortunately, this is simply not true. The fishing industry in that area may never recover, and tourism will likely continue to suffer under the stigma for some time. As such, many of the workers who have been employed in these industries will become displaced, either migrating to other industries in the region, or attempting to relocate.

Many species of fish and sea life have been devastated by the gulf oil disaster. Very little attention has been focused on fishes, beyond how they might taste. The oil rupture will have a huge effect on sea life in the gulf and beyond at all levels, and utterly destroy the food chain.

Since much of the oil is floating, it will have one very obvious effect – it'll shade the water beneath. While a layer of oil is fairly transparent, it does have a significant effect on light transmission through water. We can expect photosynthetic production to be depressed in areas with floating oil sheen, which is a rather large portion of the gulf. Further, oil will simply kill many of these plankton. It is these organisms that zooplankton feed upon, and these zooplankton that become the food for fry and small fishes, and so on. As a result, just this simple disruption will have a huge trickle-down effect.

Oil is also toxic to anything that ingests it, and this includes anything that ingests anything that has ingested oil. Imagine a small fish getting coated in oil. A medium sized fish eats the small fish, and its oil coat. A larger fish eats this medium fish. The medium sized fish has probably eaten quite a few small, oil coated fishes. The oil, in small doses, is not toxic. The oil is simply stored in fat, until such time as the medium-sized fish actually becomes sick, facilitating it being eaten by the large fish. The concentration of oil in the medium fish is now quite high, and since the large fish must eat many medium fish to survive, the concentration of oil within its body increases. This is a process called bioamplification, which essentially means that poisons in the environment will increase as you move from prey to predator. This is the same process through which DDT, sprayed on bugs, causes infertility in eagles.

Several of our familiar aquarium residents are also collected – or at least hail from – the Gulf of Mexico. These include the beautiful queen trigger and several species of pufferfish, most notably the porcupine puffer. Countless invertebrates are grown here, including hermit crabs and turbo snails. Aquarists may see shortages of some of these organisms, although many are also collected from the Atlantic Coast and Caribbean.

As the water works its way into estuaries and wetlands, we'll see disruptions in the ecosystem here, as well. Wetland plants will perish. These vital areas are the primary breeding, spawning and rearing grounds for countless varieties of

freshwater and marine fishes, amphibians, birds, and invertebrates. Without them, these organisms will simply fail to breed. Until they are restored, the populations will simply decline. Next Page>>