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Bad News for Gulf Oysters

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Seafood lovers should not expect to see Gulf Coast oysters on the menus of their favorite restaurants for a long time, says Doug Hansen, a marine biochemist and senior research scientist at the University of Dayton Research Institute.

Although there is no way to pinpoint how long Gulf oysters will be unavailable, Hansen said, he did say there is little chance they will be marketable yet this year, or in the relatively near future.

Hansen, who performs biomimetics research (looking at ways technology can imitate some of the superior biological properties and systems found in nature) on shell fish at the Research Institute, said the long-term future for Gulf oysters is grim.

"Oysters are filter feeders, which means they take in water from their environment, filter the nutrients and pump out the excess water. They do this on a continual basis," Hansen said. "When the water is contaminated with oil or chemicals and an oyster detects something nasty in the water, it will close its shell and rely on glycogen stores in its tissue to survive for energy, respiring at a very low rate. This is how it handles a low-tide phase when the oyster reef is above the water and it is exposed to air. In the presence of a toxin, however, the oyster will stay shut and, because it is not filtering water or getting any oxygen or food, it is only a matter of time — days or even weeks — before the oyster expires."

Sadly, Hansen said, that is the good scenario.

"A long-term bad scenario happens when the level of oil contaminants is low enough so that the oyster keeps on filtering the water and, as a consequence, starts to accumulate oil in its tissue," Hansen said. "In this case it dies much more slowly, taking several weeks and even months. If the oyster gets harvested during this phase, it could possibly be shipped to market and consumed. Anyone who eats such an oyster will get sick."

An oyster fishery that closes now because of contamination from the oil spill in the Gulf could possibly be shut down for years, according to Hansen.

"There are a number of determining factors — how much oil is in the water, where the oysters are, and what steps are being taken to mitigate damage to the ecosystem," Hansen said.

The situation is the same for all organisms that filter feed, adding that the picture is no brighter for other Gulf denizens, according to Hansen. Fish and other creatures that feed in a traditional manner will ingest oil, which becomes soluble in fatty tissue, he said, which sickens the fish and those who consume them.

"The problem is that oil has such a long residence time in water," Hansen added. "We all know the threat it poses to wildlife at the surface, but even when it coagulates and sinks to the bottom, it can get into the sediment and slowly leach out."

To put the Gulf spill in perspective, Hansen recalled a much smaller spill of light-grade heating oil into a sound off Rhode Island.

"As oils go, heating oil is far less harmful than crude — it is light, it spreads out quickly into a monolayer that sits on top of the water and essentially evaporates," Hansen said. "But that small spill is still posing issues for a local fishery, and that event took place 15 years ago."

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