

Summary

RESEARCH PROPOSAL

**Fish Toxicity Analysis in Response to Oil Spill
in the
Gulf of Mexico**

By

EcoRigs

Steve Kolian

edited by

Jim Flagg

EcoRigs Non-Profit Corporation
6765 Corporate Boulevard Suite 1207
Baton Rouge, Louisiana 70809
225-910-0304
stevekolian@hotmail.com

May 2010

INTRODUCTION

This is a proposal to assess the impact of the oil and dispersants in the Gulf of Mexico on fish and invertebrate communities associated with the coastal zone and the oil and gas platforms. EcoRigs suggests that commercial and charter boat captains should lead a fish toxicity assessment plan to determine when it will be safe to consume fish found at oil and gas platforms and coastal waters. The oil slick has affected a vast area, over 90,000 square miles, and the idea is to utilize the numerous idle commercial and charter boat captains to collect fish samples to analyze their tissue for toxic residue. These waters provide for their livelihood and they need to participate in the research that may determine their fate.

RESEARCH OBJECTIVES

There are two main research objectives:

1. Safe Fish Consumption, determine when the fish at platforms and shrimp, crabs and fish in adjacent coastal waters will be safe to eat after the oil spill.
2. Assess the impacts of the oil and dispersants on the coral reef community at offshore platforms.

Safe Fish Consumption:

There were two main objectives for the analysis of fish tissue:

1. Obtain levels of toxins in fish flesh for use in the human health risk assessment; and
2. Obtain exposure information for the different species at the platforms (i.e., to assess the degree of uptake in herbivores, omnivores, piscivores and detritivores).

The application of a tissue residue approach to exposure characterization is complex. Therefore, the challenge is to be sure that we select the appropriate tissue in order to allow a reasonably confident analysis of relationships between tissue residue levels and health effects.

METHODS

The plan is to recruit Louisiana commercial and charter boat captains to collect fish and invertebrates on platforms and coastal sites to be submitted for fish tissue analysis. These stakeholders can participate in the research. It is simple and cheap and very important data. Commercial and charter boat captains have the know-how and are the most qualified to collect samples for this massive undertaking. EcoRigs can develop a sampling plan to maximize the efficiency of vessel traffic and represent all areas affected by the oil slick. The vessel's crew will simply harvest fish and put them on ice to be transported to shore. They will receive cash for the fish they collect. Fish collection centers will be located at main ports along the Gulf coast. The vessels unload samples at the dock and the samples will be repacked in ice and delivered to a lab. Fish tissue toxicity analysis is a common laboratory service available in several of the Gulf states.

RESEARCH DELIVERABLES

- Advise the public when it is safe to consume the fish and invertebrates.
- Assess the impact of oil and dispersants on the shrimp, crab, oyster and reef fish community
- Involve the commercial and charter boat captains in research that can affect their livelihood
- Demonstrate that oil and gas platforms create prolific coral reef ecosystems

TIMELINE OF DELIVERABLES

Initial results can be delivered almost immediately, data can be published soon after the first batch of fish were analyzed and continue that way for the duration of the study. Fish tissue analysis is a common test in hundreds of laboratories across the nation. Periodically, EcoRigs will submit comprehensive reports on findings and conclusions. Subsequent analyses and evaluations will assess impacts resulting from either natural or anthropogenic (oil) factors. Analyses will include the description of species density and diversity of resident fish and invertebrate communities. A summary report of findings will be produced within 2 months of concluding all field surveys and a comprehensive report after 1 year of concluding all field surveys.

PURPOSE AND NEED

Due to the location of offshore platforms immediately inshore to the source of the oil spill, these coral communities will experience the greatest exposure to various states of the oil coverage. This is a great scientific opportunity because very little is known about the impact of oil and dispersants on coral reef communities. Citizens are concerned that the oil spill will lead to the subsequent destruction of the coral reef communities located elsewhere in the Gulf. The proposed research will provide the necessary information needed to validate anticipated concerns of citizens in other Gulf States. This research will prove beneficial to BP, the scientific community, environmental NGOs and the fishermen who use the platforms to harvest fish.

Louisiana is home to the second most productive fishery areas in North America (NMFS 2010). Fishery landings on the Louisiana coast primarily include shrimp, crab, menhaden and oysters. They produce \$251 million annually in value of landings on the docks of fish packers in Louisiana. The platforms are used extensively by fisherman and divers and they currently generate \$324 million annually in economic impact and create 5,560 full-time jobs in the marine sport fishing and diving industries (Hiett and Milon 2002). Commercial fisheries create 30,000 jobs and \$2.8 billion annually in economic benefits to the Louisiana economy (Southwick 1997). These stakeholders will be anxious to know when the fish they enjoy harvesting will be safe to consume.

Collected data and subsequent analyses are anticipated to disclose volumes of valuable information on the potential impacts of oil spills on coral reef communities and coastal fish. Currently, there is very little supporting research on the effects of oil spills to coral reef communities, let alone sufficient data characterizing the chemical signature of this specific oil spill and associated petroleum dispersant products presently leaking in the Gulf of Mexico. These oil and gas platforms located in the oil slick zone are perfect candidates to study the potential impacts of oil spill contaminants to coral reef communities. Since the platforms and the coral reef organisms each occupy all depths of the water column, an ideal research scenario now exists for studying the impacts of oil contaminants on coral reef fish communities in a single location, thereby enabling a comprehensive evaluation of the coral reef ecosystem.

ECO RIGS NON-PROFIT ORGANIZATION
Fish Toxicity Analysis

QUALIFICATIONS

Commercial and charter boat captains cannot fish until their products are considered safe to eat. They are highly qualified to collect samples from all areas in the Gulf of Mexico. The members of the EcoRigs team have been collecting data on offshore oil and gas platforms for the past 20 years and, most recently (May 7th and 9th 2010), video and water samples were collected at three structures located within the oil slick of the Mississippi Delta. Steve Kolian, the director of EcoRigs, grew up commercial fishing in the Gulf of Mexico. Scott Porter, one of the best marine field biologists in Louisiana, also fished commercially in Louisiana for a living. Mr. Porter currently works for Louisiana Universities Marine Consortium (LUMCON) and Mr. Kolian is director and founder of EcoRigs and currently employed by Gulf South Research Corporation (GSRC).

PARTICIPATING INVESTIGATORS

Upon request for participating interest, EcoRigs will provide a list of academic institutions and research organizations that have expressed a positive interest in supporting this research.

REFERENCES

- Hiatt, R. L. and J. W. Milon. 2002. Economic Impact of Recreational Fishing and Diving Associated with Offshore Oil and Gas Structures in the Gulf of Mexico: Final Report . OCS Study MMS 2002-010 . U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. 98 pp.
- NOAA Fisheries Office of Science and Technology (2010) Website "Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division, Silver Spring, MD"
<http://www.st.nmfs.gov/st1/index.html>
- Stanley, D.R. and C.A. Wilson. 1989. Utilization of offshore platforms by recreational fishermen and scuba divers off the Louisiana coast. Bull. Mar. Sci. 44: 767 -775.
- Southwick, R. 1997. The economic benefits of fisheries, wildlife and boating resources in the State of Louisiana. Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA, (internal report).