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Louisiana Board of Regents
Gulf Oil Spill Conference

Seafood Safety and Human Health

Scientific Response Disaster Management
and
Public Perception Disaster Management

November 1, 2010

Marilyn B. Kilgen, Ph.D.,
Project Director of the ISS
Alcee Fortier Distinguished Professor of Biological Sciences

Louisiana is the number one seafood producer in the continental United States -

- **provides about 1/3 of the nation's most valuable commercial shellfish and finfish species.**
- **renewable natural commercial seafood resources worth about $2.4 billion per year to the state**
- **employs more than 27,000 people in Louisiana**
- **provides 20 percent of domestic U.S. seafood, and**
- **70 percent of the Gulf of Mexico seafood production.**

Pictures from LA Seafood Promotion and Marketing Board

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LA Seafood Safety - Trial by Fire

April 20, 2010

Deepwater Horizon Oil Spill MC 252

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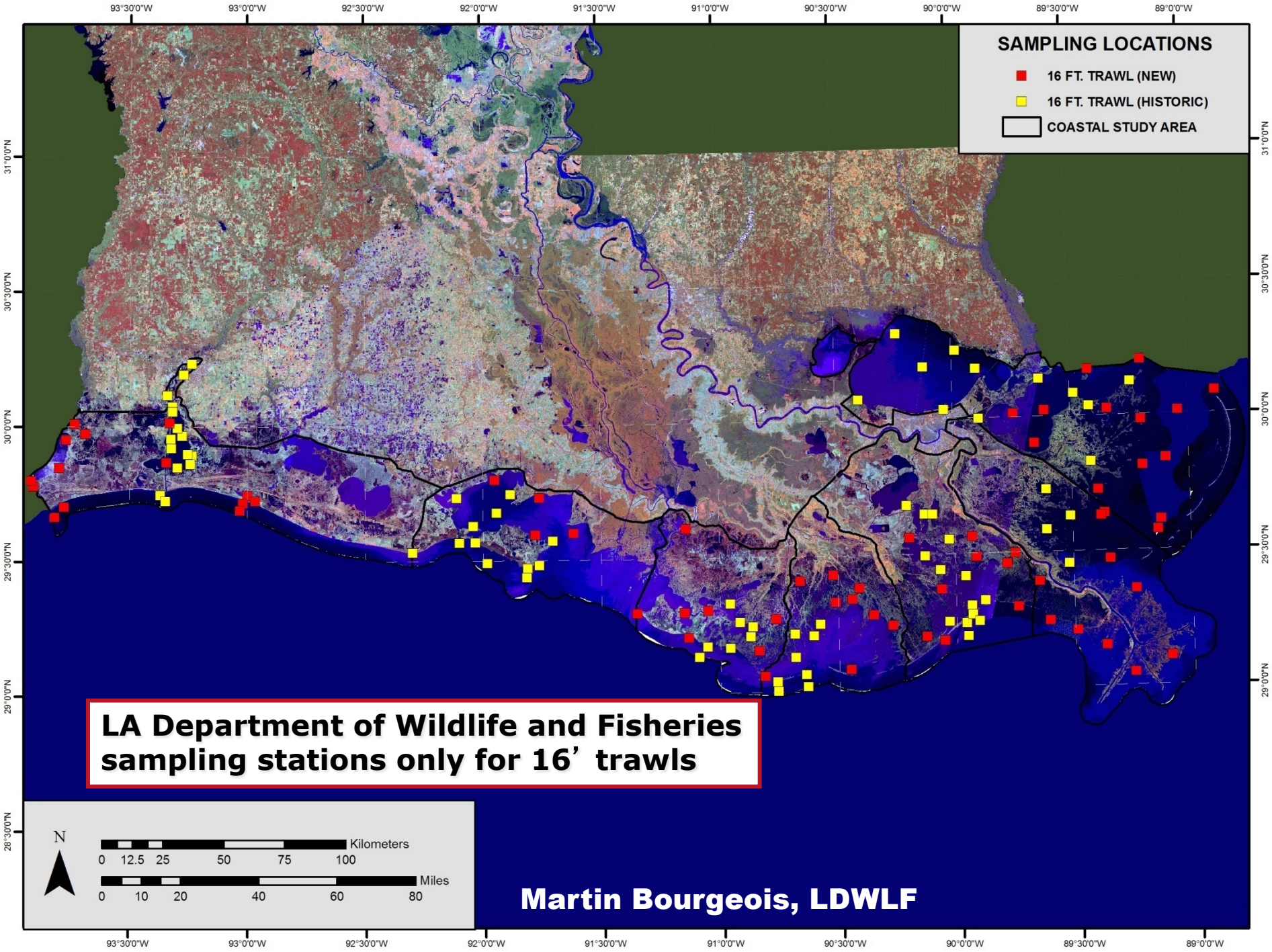
http://www.time.com/time/nation/article/0,8599,1986836,00.html

Seafood Safety and Human Health:
Scientific Response to Disaster Management

Thousands of samples of tissues from every seafood organism, their growing waters and sediments have been analyzed for potential oil related chemicals by every federal and state agency involved in seafood safety:

Federal: FDA, NOAA, EPA, USFWLS
State: LDHH, LDWLF, LDEQ
Academic Institutions:

Many universities across the State of Louisiana (including Nicholls State), the Gulf Coast and across the entire nation are involved in monitoring and analyzing seafood organisms, and their habitat and condition.


SAMPLING LOCATIONS
16 FT. TRAWL (NEW)
16 FT. TRAWL (HISTORIC)
COASTAL STUDY AREA
93°30'0"W
93°0'0"W
92°30'0"W
92°0'0"W
91°30'0"W
91°0'0"W
90°30'0"W
90°0'0"W
89°30'0"W
89°0'0"W
31°0'0"N
30°30'0"N
30°0'0"N
29°30'0"N
29°0'0"N
28°30'0"N
LA Department of Wildlife and Fisheries sampling stations only for 16' trawls
N
Kilometers
0 12.5 25 50 75 100
Miles
0 10 20 40 60 80
Martin Bourgeois, LDWLF

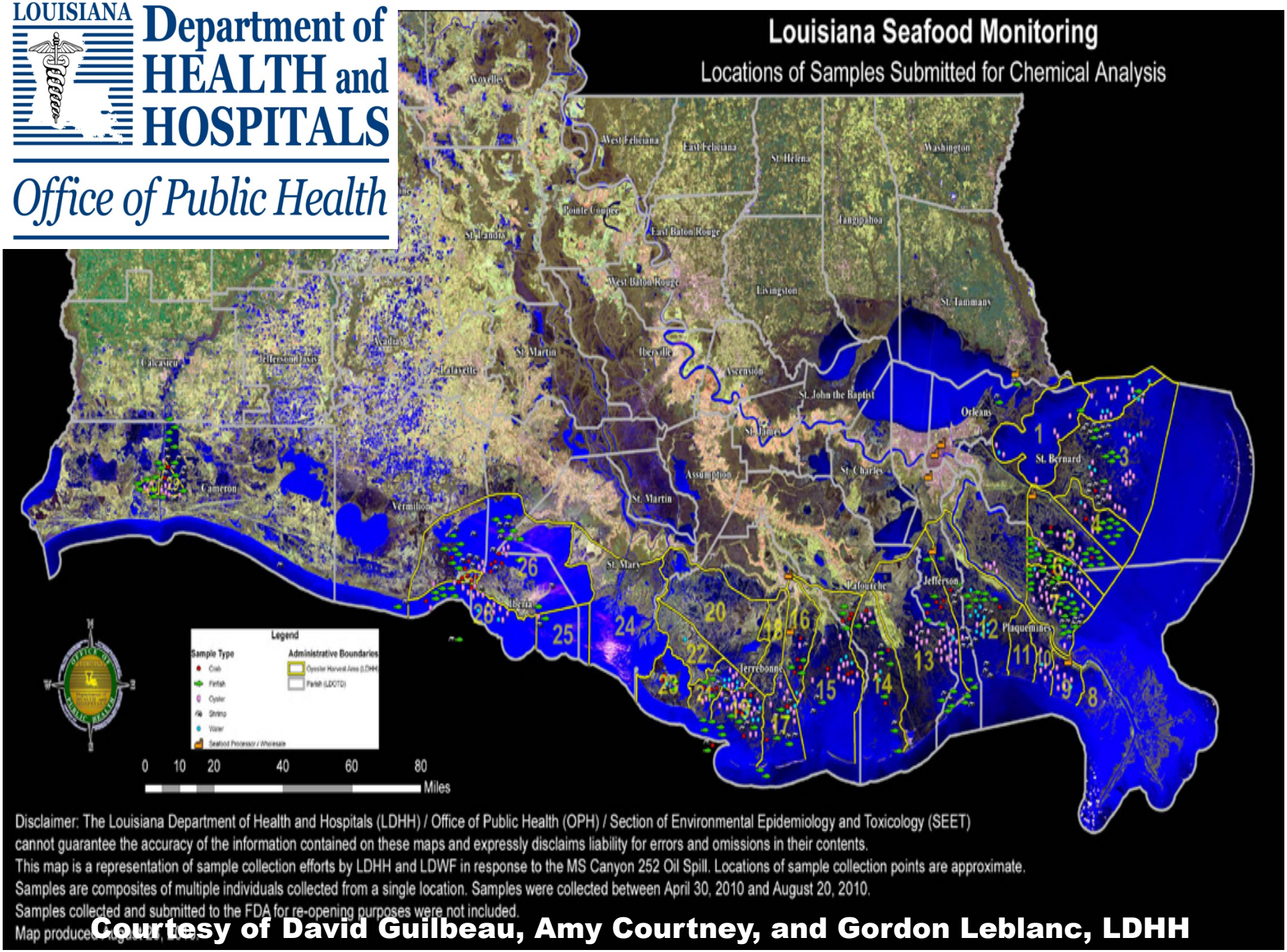
	Jan				Feb				Mar				Apr				May				Jun			
6’ trawl													X	X	X	X	X					X	X	
16’ Inshore	X		X		X		X		X		X		X	X	X	X	X	X	X	X	X	X	X	X
16’ Offsh.	X				X				X				X		X		X		X		X		X	
Gill net	X				X				X				X		X		X		X		X		X	
Trammel	X				X				X															
Seine	X												X											
Dredge	X				X				X				X				X		X		X		X	

	Jul				Aug				Sep				Oct				Nov				Dec			
6’ trawl																								
16’ Inshore	X	X	X	X	X		X		X		X		X		X		X		X		X		X	
16’ Offsh.	X		X		X		X		X				X						X	X	X	X	X	X
Gill net	X		X		X		X		X		X		X				X				X			
Trammel													X				X				X			
Seine	X												X											

LDWLF sampling timelines for all gear **(Martin Bourgeois, LDWLF)**

LOUISIANA Department of HEALTH and HOSPITALS

Office of Public Health



Courtesy of David Guilbeau, Amy Courtney, and Gordon Leblanc, LDHH

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ISS Board Research Priorities

ISS PRIORITY AREA: SEAFOOD PRODUCT DEVELOPMENT

P.I. Chef Monica Larousse, Instructor, Chef John Folse Culinary Institute
TITLE: Louisiana Seafood Product Development by the Nicholls State University John Folse Culinary Institute

ISS PRIORITY AREA: HABITAT

P.I. Gary LaFleur, Ph.D., Associate Professor of Biological Sciences
TITLE: Reproductive Biomarkers of Aquatic Organisms as Indicators of Habitat Health

P.I.'s: John Doucet, Ph.D., Distinguished Service Professor and Head, Biological Sciences
Enmin Zou, Ph.D., Associate Professor of Biological Sciences
TITLE: Development of molecular biomarkers for assessment of larval populations and viability of commercially important seafood species—blue crab, penaeid shrimps, and oysters

P.I. Enmin Zou, Associate Professor of Biological Sciences
TITLE: Interactive effects of the Deepwater Horizon crude oil and the dispersant Corexit 9500 in penaeid shrimps and the gulf killifish

Funding for the ISS by BP following spill

Project Director: Dr. Marilyn Kilgen

Environmental Assessment of Oyster Populations and Habitat in the Barataria-Terrebone National Estuary

Dr. Raj Boopathy, Distinguished Service Professor of Biological Sciences
Microbial Enhanced Bioremediation of Deepwater Horizon Oil Spill Under Aerobic and Anaerobic Conditions in Water Column and Sediments; Also monitoring oysters, sediment, and growing water for PAH and TPH.

Dr. Earl Melancon, Distinguished Service Professor of Biological Sciences
Assessment of Oyster Metrics on Intertidal and Shallow Water Populations Potentially Impacted by the Deepwater Horizon Oil Spill

Angela Corbin, Instructor of Biological Sciences
Analysis of nitrogen species and phosphates in intertidal waters to detect nutrient depletion during naturally occurring bioremediation of petroleum hydrocarbons

Dr. Balaji Ram, Associate Professor of Applied Sciences, Geomatics Program
Geodatabase Data Model Development

Dr. Quenton Fontenot, Associate Professor of Biological Sciences
Project Design and Statistical Analysis

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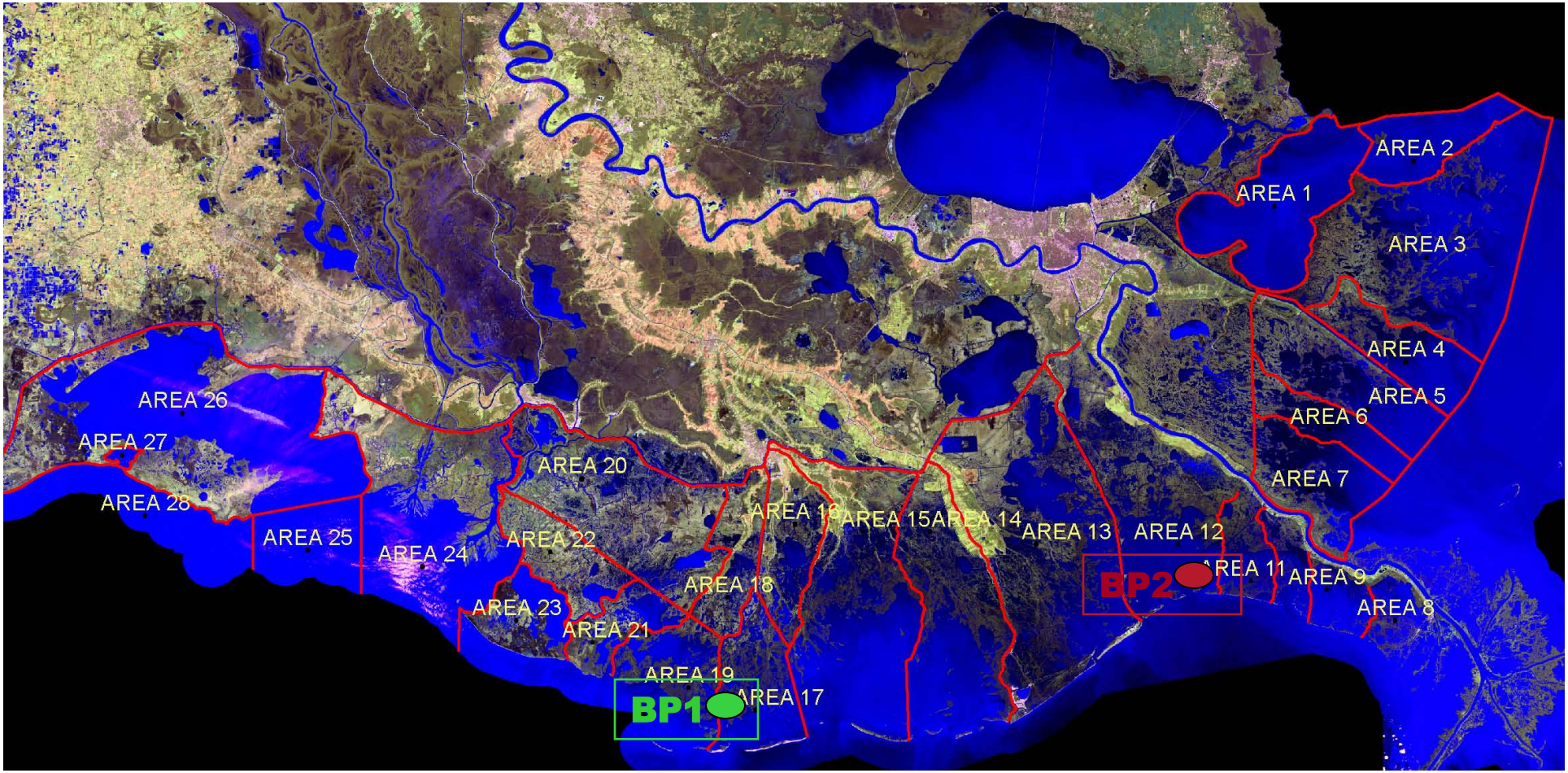
NSU BP Oyster Assessment Sites in BTE

BP-1 (2 sites) Terrebonne – Below Sister Lake - control sites with no oil

BP-2 (2 sites) Barataria – behind Grand Terre – sites with oil



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Is Gulf Seafood Safe for Consumption?

Thousands of samples of tissues from every seafood organism, their growing waters and sediments have been analyzed for potential oil related chemicals by every federal and state agency involved in seafood safety:

The results of these intensive unprecedented investigations have consistently shown that *seafood harvested from state and federally designated open areas present no public health risk from the gulf oil spill.*

Seafood Safety and Human Health:

Public and Seafood Industry Perception to the Oil Spill Disaster Management

http://www.boston.com/bigpicture/2010/06/caught_in_the_oil.html

http://www.boston.com/bigpicture/2010/04/oil_spill_approaches_louisiana.html

Photograph by C.C. Lockwood

http://ngm.nationalgeographic.com/2010/10/gulf-oil-spill/gulf-spill-photography

http://www.boston.com/bigpicture/2010/06/caught_in_the_oil.html

http://news.nationalgeographic.com/news/2010/06/photogalleries/100608-gulf-oil-spill

Seafood Safety and Human Health:

Public and Seafood Industry Perception to the Oil Spill Disaster Management

Office of Social Innovation and Civic Pa

The Policy Assistant to the White House Domestic Policy Council's Office of Social Innovation and Civic Participation was in close contact with the seafood industry members in impacted areas.

They specifically were trying to "improve confidence in the testing being done for safety," and were seeking suggestions from industry and scientists involved in seafood safety work.

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RECOMMENDATIONS

Need collaborative research and programs to manage the socioeconomic disaster of public perception to disaster management by the government and by science – government and academic.

Must include the seafood industry and NGO's in the planning and implementation of programs.

St Bernard Fishermen Photograph by Tyrone Turner

1. **Many fishermen will not go back to fishing because they are afraid they will not be able to sell their catch to markets throughout the country and even internationally due to public fear of the safety of the products.**

Photo courtesy of Wayne Keller, GIPC

1. Immediate Research Need:

Must establish collaborative work between science and the Seafood Promotion and Marketing Boards

http://louisianaseafood.com/nfeed/305

http://ngm.nationalgeographic.com/2010/10/gulf-oil-spill/gulf-spill-photography

Photograph by David Liittschwager

2. Immediate and Future Research Needs:

Need studies on effects of oil and dispersant on survival and viability of eggs, embryos and larval seafood species.

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It is vital to the survival of our Gulf Seafood Industries that National and international consumers regain confidence in our seafood products.

This will require not only science, but also the expertise of marketing and promotion that is backed by sound independent academic discoveries.

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Courtesy of Dr. John Doucet

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ACKNOWLEDGEMENTS

Institute for Seafood Studies Advisory Board

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ISS Research Faculty at Nicholls State University

Dr. Marilyn Kilgen, Project Director, Alcee Fortier Distinguished Service Professor, Biological Sciences

Dr. John Doucet, Distinguished Service Professor/Head, Biological Sciences

Dr. Raj Boopathy, Distinguished Service Professor, Biological Sciences

Dr. Earl Melancon, Distinguished Service Professor, Biological Sciences

Dr. Gary LaFleur, Associate Professor of Biological Sciences

Dr. Allyse Fererra, Associate Professor of Biological Sciences

Dr. Quenton Fontenot, Associate Professor of Biological Sciences

Dr. Enmin Zou, Associate Professor of Biological Sciences

Dr. Raj Nathaniel, Associate Professor of Biological Sciences

Dr. Aaron Pierce, Assistant Professor of Biological Sciences

Ms. Angela Corbin, Instructor of Biological Sciences

Dr. Balaji Ram, Associate Professor of Geomatics, Applied Sciences

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Photo by Marilyn Kilgen – LUMCON at sunset