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Changes in Human Health and Well-being Resulting From the Deepwater Horizon Oil Disaster

Lowell Atkinson [1, 2] and Lauren Brown [1, 2]
College of Charleston, Master of Environmental Studies Program [1]
National Center for Coastal Ocean Science (NCCOS), Hollings Marine Laboratory [2]

Introduction:

Most of the research on the Deepwater Horizon and other oil disasters has focused on the environmental damage and physical impacts of the disaster. In addition to these impacts, oil disasters also affect the surrounding communities in ways that have yet to be comprehensively evaluated. Because the oil has a significant impact on important ecosystem services that people from the Gulf regularly enjoy, we want to understand how a change in these ecosystem services can affect the well-being of entire communities.

Significance:

This project will improve our understanding of the impacts of such hazards on the basic needs, health, economies and social structure of coastal communities. Our findings will help support community planning before disasters and assist in recovery efforts afterwards. Resource managers and government officials will be able to use our results to create more comprehensive emergency plans. Our results will help officials take a critical look at governance, housing, jobs, public health, preparedness, social conflict and other factors to determine how to decrease the impacts of future disasters on human well-being.

Study Objective:

To document changes of well-being in counties affected by the Deepwater Horizon oil disaster.

Study Area:

This study is focused on twenty counties and parishes along Gulf of Mexico in Alabama, Florida, Louisiana and Mississippi that were directly affected by the oil. The study also includes twenty-one unaffected counties located along the Gulf of Mexico and the Southeast Coast for comparison.

Methods:

We are identifying, collecting, and consolidating the existing data for indicators of well-being into one dataset for modeling and analysis. Using statistical techniques including regression analysis and structural modeling, we will examine changes in well-being over time, focusing on changes associated with the Deepwater Horizon disaster and other large scale environmental events during the study period (2000-2010).

Indicators:

Through a review of the current literature, availability of relevant data, and recommendations from an expert workshop, we selected 13 specific indicators and over 120 measures for human well-being from which to characterize impacts of the Deepwater Horizon disaster on Gulf Coast communities. We are collecting county level data for the period, 2000-2010.

Well-Being

- Health
- Safety
- Economic Security
- County Governance
- Food & Water
- Education
- Housing
- Access to Critical Social Services
- Social Conflict
- Environmental Use
- Civil Society
- Occupation Structure

Environmental Conditions

- Contaminants
- Land
- Water
- Air
- Resources

Population Demographics

- Size
- Diversity
- Distribution
- Population Change

Snapshot of Gulf Coast Ocean Jobs* 2001-2008

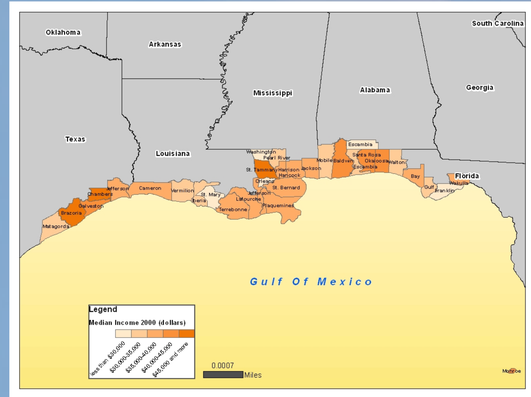
County/Parish, State	% Change	Ocean Jobs as a % of Total Jobs
Baldwin, AL	2%	12.4%
Mobile, AL	-4%	8.3%
Bay, FL	23%	15.5%
Escambia, FL	-7%	8.6%
Franklin, FL	-1%	17.8%
Gulf, FL	-1%	3.6%
Okaloosa, FL	24%	12.9%
Santa Rosa, FL	69%	10.8%
Wakulla, FL	-34%	5.3%
Walton, FL	87%	12.1%
Cameron, LA	46%	4.3%
Iberia, LA	-46%	6.6%
Jefferson, LA	13%	13.2%
Lafourche, LA	50%	16.7%

County/Parish, State	% Change	Ocean Jobs as a % of Total Jobs
Orleans, LA	-32%	15.6%
Plaquemines, LA	-5%	9.7%
St. Bernard, LA	-51%	6.9%
St. Mary, LA	-13%	10.9%
St. Tammany, LA	53%	12.4%
Terrebonne, LA	94%	19.3%
Vermilion, LA	-9.1%	10.3%
Hancock, MS	44%	6.7%
Harrison, MS	-27%	7.7%
Jackson, MS	-75%	7.4%
Brazoria, TX	21%	10.7%
Chambers, TX	16%**	5.7%
Galveston, TX	11%	13.1%
Jefferson, TX	46%	12.8%
Matagorda, TX	-5%	10.1%

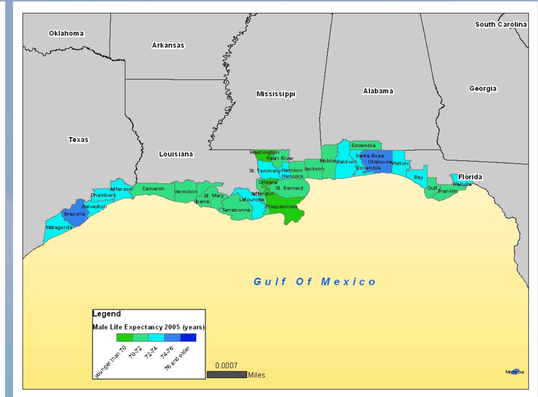
*Ocean Jobs derived from Economics: National Ocean Watch (ENOW) datasets, which are based on Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) and GDP statistics from the Bureau of Economic Analysis.
* *2002 datasets were used as those for 2001 were unavailable.

Sample Measures for Economic Security, Health, and Governance Indicators

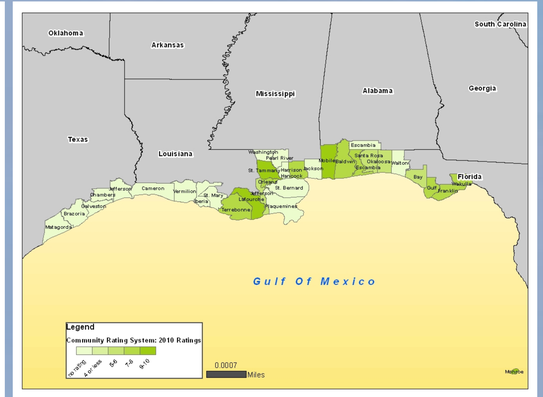
Median Income 2000



Male Life Expectancy 2005



Community Rating System: 2010 Ratings



Gulf of Mexico Timeline

2000

- 819 new oil and gas platforms activated in the Gulf of Mexico from 2000 through 2010 (BOEM: Gulf of Mexico OCS Data Center)

2001

- September 11 Attacks- (09/11/01)

2002

- Dead Zone- 8,494 square miles
- Tropical Storm Isidore- (09/26/02)

2003

- Hurricane Ivan- (09/16/04) $6.6b in property damages (AL, FL, LA, MS) (source: NCDC Storm Event Database)

2004

- Hurricane Dennis- (07/10/05) $3.4b in property damages (AL, FL) (source: NCDC Storm Event Database)

2005

- Hurricane Rita- (09/24/05) $108,755 decrease in Revenue at Sea Rim State Park (Jefferson, TX) from FY2005-FY2006 (source: Texas Parks & Wildlife Dept.)
- Hurricane Katrina- (08/29/05) Total Resident Population declined from 455,188 on July 1, 2005 to 208,548 on July 1, 2006 in Orleans, LA (source: US Census Bureau)

2006

- Plaquemines, LA- 4.35% net increase in developed area from 2001-2006 (source: NOAA C-CAP)
- Escambia, FL- 3.49% net decrease in wetlands from 2001-2006 (source: NOAA C-CAP)

2007

- Hancock, MS- 2.75% net decrease in wetlands from 2001-2006 (source: NOAA C-CAP)
- Wakulla, FL- 4.27% net increase in developed area from 2001-2006 (source: NOAA C-CAP)

2008

- Hurricane Gustav- (09/01/08)
- 2008 New Orleans Oil Spill- (07/23/08) approx. 380,000 gallons (source: NOAA's NOS Incident News)

2009

- Hurricane Ike- (09/13/08) $1.1b in property damages (AL, FL, TX) (source: NCDC Storm Event Database)
- $700 billion Bailout of the U.S. Financial System/Emergency Economic Stabilization Act of 2008- (10/03/08)

2010

- Port Arthur Oil Spill- (01/23/10) approx. 450,000 gallons (source: NOAA's NOAAWatch Oil Spill Headlines)
- Deepwater Horizon Oil Spill- (04/20/10) approx. 205.8 million gallons (source: Corn and Copeland, 2010)

2011

- 36.6% of Gulf of Mexico Federal waters closed to fishing- (06/02/10) (source: NOAA Fisheries Service Southeast Regional Office)

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