



What's Next: Implications of the Oil Spill for Florida

For the
Leadership Florida
2010
Annual Meeting
June 17-20

Julie Harrington, Ph.D, Director,
jharrington@cefa.fsu.edu

Center for Economic
Forecasting and Analysis (FSU CEFA)
Florida State University
(850) 644-7357
<http://www.cefa.fsu.edu>

June, 2010

Oil Spill Economics: Basic Framework

- **Brief Description of FSU CEFA**
- **Oil Spill Economics – Background**
- **Future Directions – What's Next?**



Florida State University Center for Economic Forecasting and Analysis (FSU CEFA)

The FSU Center for Economic Forecasting and Analysis (CEFA) specializes in applying advanced, computer-based economic models and techniques to perform economic analyses and to examine public policy issues across a spectrum of research areas. FSU CEFA also serves as a foundation for training students on the uses and applications of advanced economics and statistical tools.

Key Areas of Expertise:

- Economics
- Econometrics
- Sustainable Energy
- High Tech Economic Research
- Environmental/Natural Resources
- Economic Development
- Economic Impact Analysis





FSU Institute for Energy Systems, Economics and Sustainability (IESES)

- Performs scholarly basic research and analysis in engineering, science, infrastructure and the social dimensions of the sustainable energy economy. The unique approach of IESES is to focus not only on new and more efficient sustainable technologies for generating electric power, but on the new efficiencies in energy systems and consumption that will also be necessary to a sustainable energy economy.
- In addition to primary research, IESES trains a new generation of engineers, scientists, policymakers and planners – professionals who possess a comprehensive understanding of complex sustainable energy systems and stand ready to tackle the challenges and opportunities related to our energy-based future.

**2000 Levy Avenue, Suite 340
Tallahassee, FL 32310
dave@ieses.fsu.edu
www.ieses.fsu.edu
850-645-1184**



Florida Center for Advanced Aero-Propulsion (FCAAP)



FCAAP – Areas of Expertise

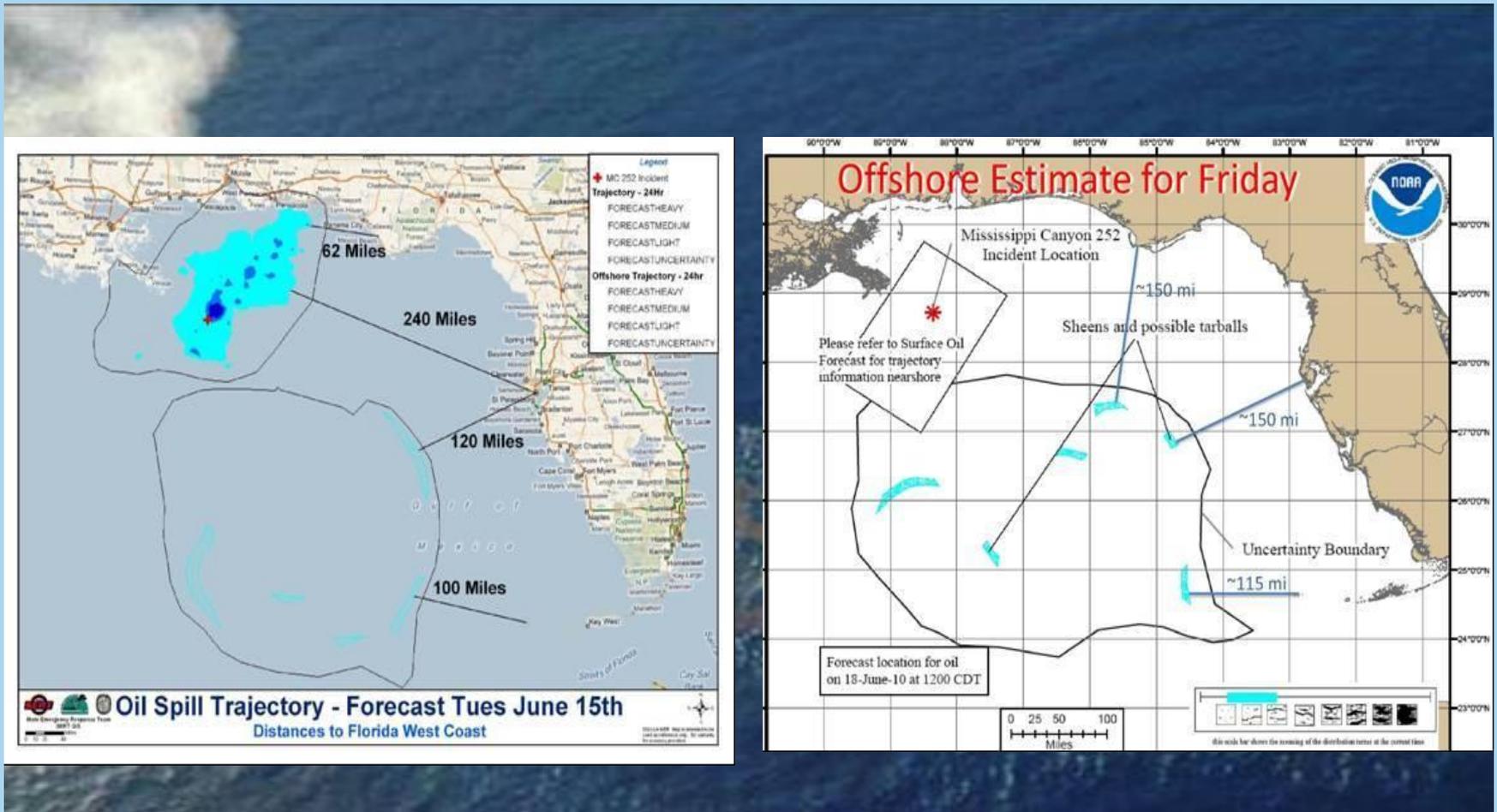
- *Active Flow Control*
- *Jet & Rocket Noise Control*
- *Advanced Gas Turbine Technology*
- *Efficient Engine Inlet Design*
- *Air & Space Vehicle System Design*



- *Design of Hypersonic Systems*
- *Alternative Power Systems*
- *Air Traffic Management*



Forecast for Gulf Coast of Florida (June 15 and 19, 2010)



Deepwater Horizon daily updates provided by Scott Nelson, Wakulla County Emergency Management Director, June 16, 2010

Projected Economic Impacts of Gulf (Inshore and OCS) in 2030

Private Sector Economic Impacts – 2030

Eastern Gulf

	Direct	Indirect	Induced	Total
Output (Million 2006\$)	831	510	632	1,972
Employment (Number of Jobs)	2,454	2,464	4,620	9,539
Total Value Added (Million 2006\$)	478	258	345	1,081
Labor Income (Million 2006\$)	217	155	195	568
Employee Compensation (Million 2006\$)	152	126	169	448
Proprietors Income (Million 2006\$)	65	28	25	118
Other Property Type Income (Million 2006\$)	230	85	118	433
Indirect Business Taxes (Million 2006\$)	32	19	32	82

OCS

	Direct	Indirect	Induced	Total
Output (Million 2006\$)	3,348	2,088	2,570	8,006
Employment (Number of Jobs)	10,090	10,184	18,906	39,079
Total Value Added (Million 2006\$)	1,912	1,059	1,403	4,374

Private sector economic impact results derived using IMPLAN for 2030 from ICF International. These are economy-wide and not specific to Florida. Florida will capture a portion of the employment and value added, maybe 10 to 25 percent.

Kaiser, Mark. FSU IESES Oil Symposium 2009. Gulf Oil is a \$37 billion market, whereas the world market is a \$260 billion (2009). OCS = Outer Continental Shelf Royalties and Bonus are 2nd largest revenue stream to US Government after income taxes. Gulf States receive 50% of onshore royalties, but currently none from OCS.

Previous Economic Impact Studies of Oil Spill (Exxon Valdez)

- Exxon paid ~\$4.3B, or \$17,230/barrel (42 gallons); \$3.8 B paid to clean up the site, and \$507.5M more in court.
- Exxon Valdez – 4 short term studies in 1992 found:
 - Tourism: Lost \$2.4 B in sales and 26,000 jobs lost
 - Sport Fishing: 124,185 lost fishing days at \$250 day, or \$31 M loss
 - Replacement Cost of Wildlife: wildlife value based on cost to obtain and rehabilitate them = \$218 M
 - Passive use cost: CV Evaluation - \$2.8 B
- Since the Pollution Act of 1990, cost of oil spills has risen by about 700%. British Petroleum (BP, in 2002) estimated the total cost of an oil spill to be \$10,000 per barrel spilled.

Previous Economic Impact Studies of Oil Spill (Ixtoc)

- **The Ixtoc Oil Spill – Bay of Campeche (Gulf of Mexico)**
 - 6/3/79 to 3/23/80. Similar to Deepwater Horizon. The Blow Out Preventer (BOP) was supposed to engage, but drill collars were in the way. There were 3M barrels of oil, 162 miles of impacted coastline, and a 1,100 square mile impact.
 - Limited to direct economic impacts of tourism (\$3.8 M loss), recreation(\$3 M loss), and commercial fishing industries (negligible) and indirect effects on related industries in the region (Texas coastal counties).

Recent Economic Impact Studies of Oil Spill (Florida)

- **University of Central Florida**
 - If 10% loss in tourism and leisure industry: 39,000 jobs and \$2.2 B
 - If 50% loss in tourism and leisure industry: 195,000 jobs and \$10.9 B
- **Important to Establish a Baseline of Economic Activity Before the Oil Spill.**



Types of Oil Spill Costs

Direct Expenses

- cost of personnel and their expenses during cleanup
- cost of contractors and other direct cleanup
- reimbursed cost for USCG and USCG fines
- fees and fines from state agencies
- cost of litigation and litigation defense
- costs associated with residual damages
- economic losses
- environmental damage
- mitigation expense
- loss of sale of products

Indirect Expenses

- increased attention by regulators
- permits for new activities cost more and take longer
- more drills and exercises
- increased cost of new equipment and other preparation costs
- new local, state, and federal taxes and fees
- business cost from diverting key personnel to spill control
- stock price and stockholder pressure
- higher insurance costs

*Source of Table: Gandhi and Chennoju. The cost of oil spills has risen dramatically. Strict liability standards in the Oil Pollution Act of 1990; increased requirements for training, preparedness, and mitigation; and provisions for recovery of damages to natural resources from oil spills have pushed the cost of oil spills up by over 700% according to one industry estimate.

Economic Impact Estimates for Coastal Economies (Including Private, Non-Market and Public Sectors)

- 
- **Construction**
 - **Recreation and Recreation-Related Business**
 - **Crop Agriculture**
 - **Military (Navy) Operations**
 - **Oil and Gas Distribution**
 - **Pollution Management and Prevention**
 - **Maritime Transportation**
 - **Storm Damage Mitigation and Repair**
 - **Commercial Shipping**
 - **Offshore Energy Production**
 - **Fisheries: Commercial, Fisheries: Recreational**
 - **Marine Search and Rescue (SAR)**
 - **Marine Water Quality Management**
 - **Freshwater Supply Management**

Economic Impact Estimates for Coastal Economies (an Example Framework)

Economic Activity or Sector	Economic Scale of Oil Spill Damage	Output or Revenues/Sales	Jobs or Employment	Income
Construction	\$	\$	#	\$
Recreation				
Fisheries				
Military Etc...				

Economic Impact Analysis of the COOS in the Gulf Coast Region, Report to the NOAA National Oceanographic Partnership Program (NOPP), 2005

New Zealand and Prince William Sound Approach to Oil Spills

- **New Zealand: Uses a Three Tier Approach:**
 - Tier 1 – Industry (ships and inshore/offshore oil transfer sites), Tier 2 – Regional Councils, Tier 3 – Maritime New Zealand – maintains a response capability to handle an oil spill of 3,500 tonnes, which is deemed to be a 'one in a hundred year' event. In the case of anything larger, there is a neighborly reciprocal agreement.
 - Paid for by an Oil Pollution Levy. Funds come from sectors whose activities raise the risk of a marine oil spill.
- **Prince William Sound Regional Citizen's Advisory Council; was created as a result of Oil Pollution Act of 1990.**

What's Next, What's Needed

- **Research into Oil Spill Economic and Environmental Valuation. Continue to Examine Other Countries and States for Working or Proven Oil Spill Models**
- **Investment in recent datasets of current business related information that can be tied to point data (zip code, etc) to facilitate mapping coastal economic impacts.**
- **Begin to Quantify Economic Impacts and Value of Private, Non-Market, and Public Sectors in Florida's Coastal Counties.**
- **Aim to Integrate Economic Impact Estimates in Centralized Oil Spill Command Structure or Incident/Unified Command Planning and Analysis Process**
- **Warren Buffet: "I don't look to jump over 7-foot bars: I look around for 1-foot bars that I can step over."**