

# Restoring Bay County's Recreational Fishing Industry through Artificial Reef Construction and Monitoring

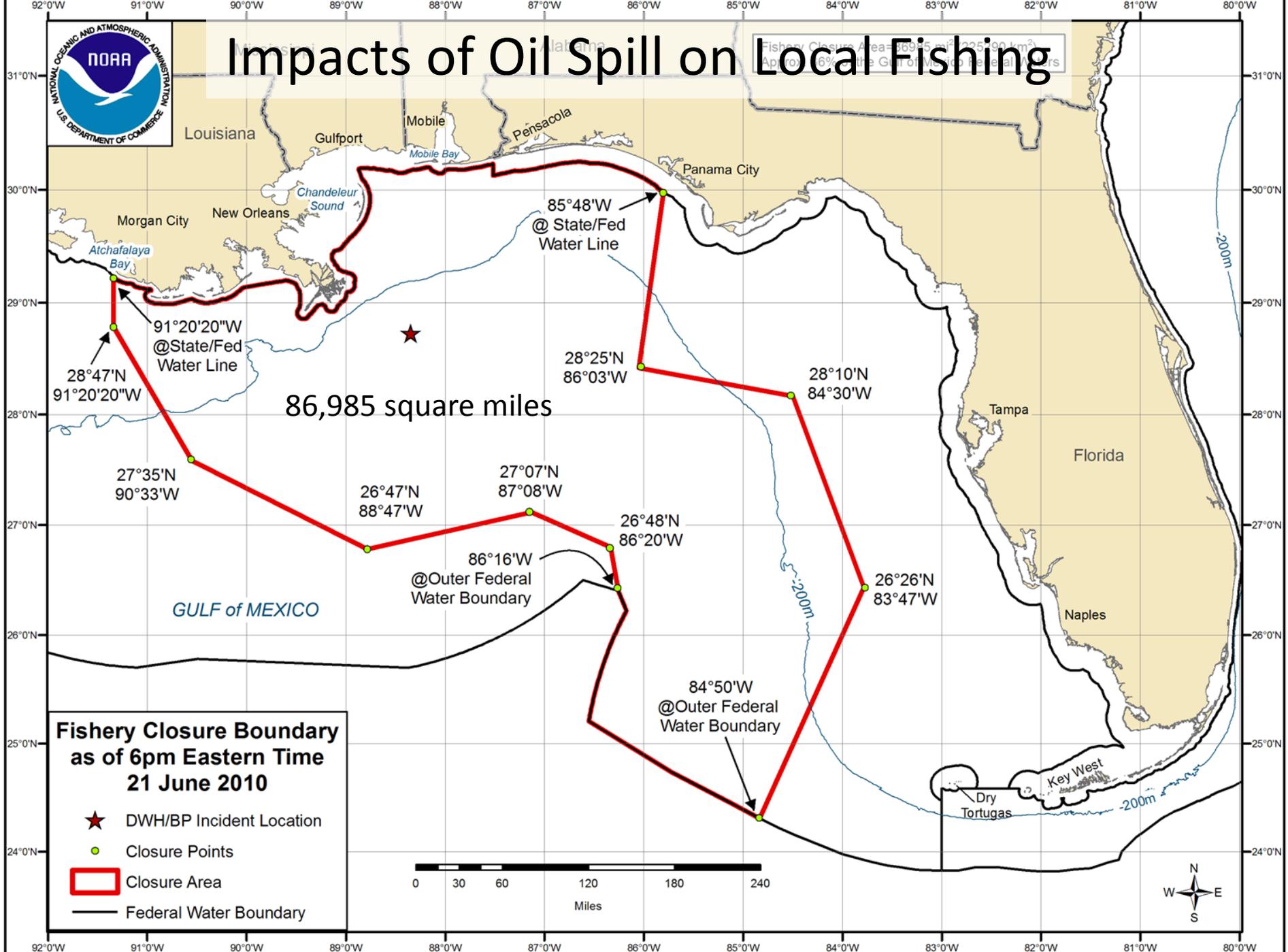


Submitted by  
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# Impacts of Oil Spill on Local Fishing



Fishery Closure Area = 86,985 sq mi (225,000 km<sup>2</sup>)  
Approx. 6% of the Gulf of Mexico's Total Waters



86,985 square miles

**Fishery Closure Boundary as of 6pm Eastern Time 21 June 2010**

- ★ DWH/BP Incident Location
- Closure Points
- Closure Area
- Federal Water Boundary



# Impact of Fishery Closure

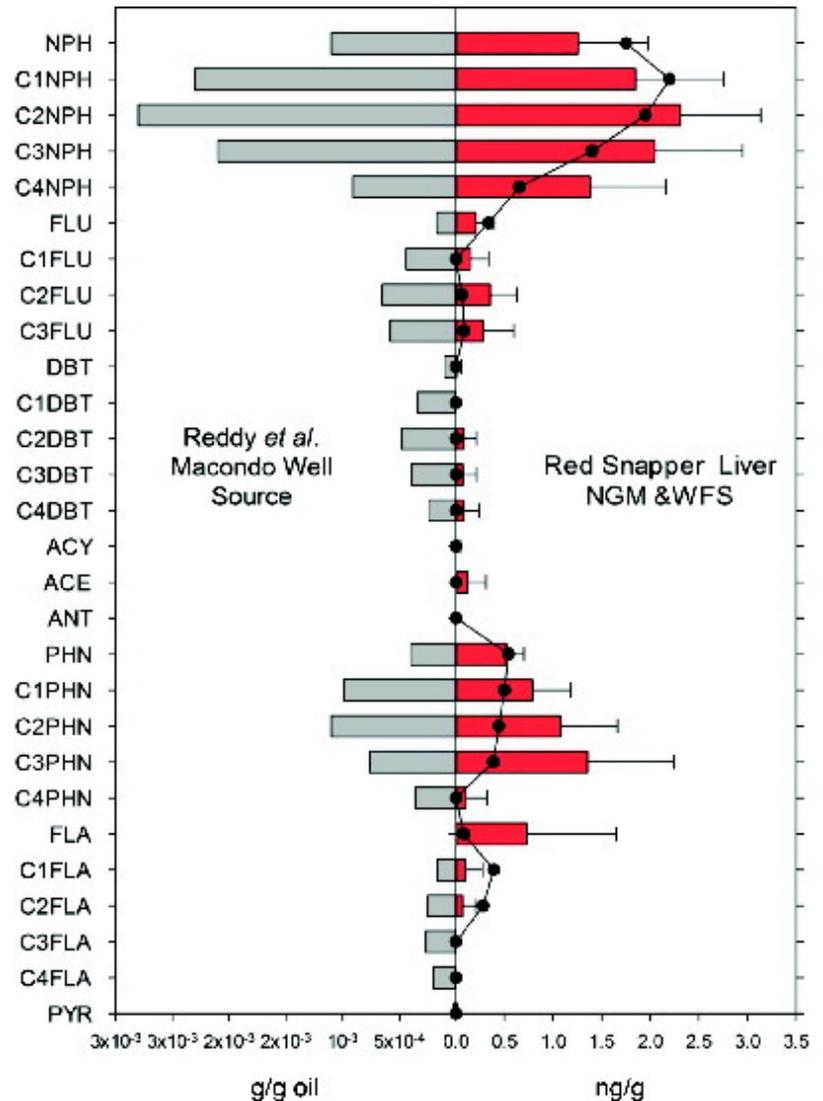
**Journal of Environmental Management – UF/IFAS**

Food Resource Economic Department

Alvarez et al (2014) Estimate Uncompensated  
Recreational Angler losses at \$585 million

# Impact of Oil Spill

**Transactions of  
the American  
Fisheries Society**  
– USF College of  
Marine Science  
Murawski et al  
(2014)  
Documented  
External Skin  
Lesions & PAH



# Economic Benefit of Artificial Reefs

“The benefit-to-cost ratio of the artificial reefs within the northwest Florida region was estimated to be 131 to 1, a value indicating an extremely high, positive return to the cost of developing and implementing the artificial reef programs within the five-county, northwest Florida region.”

- 12 month study (1997 – 1998)  
(Bell, Bonn, Leeworthy)

# Bay County Visitors

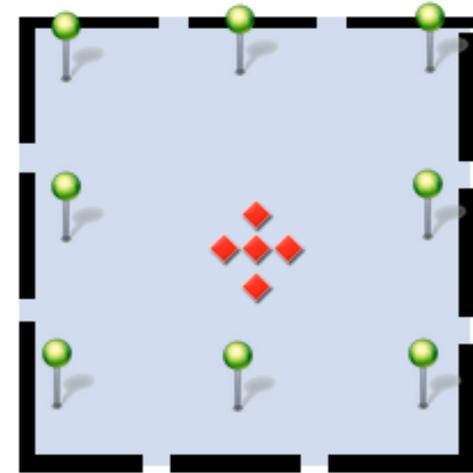
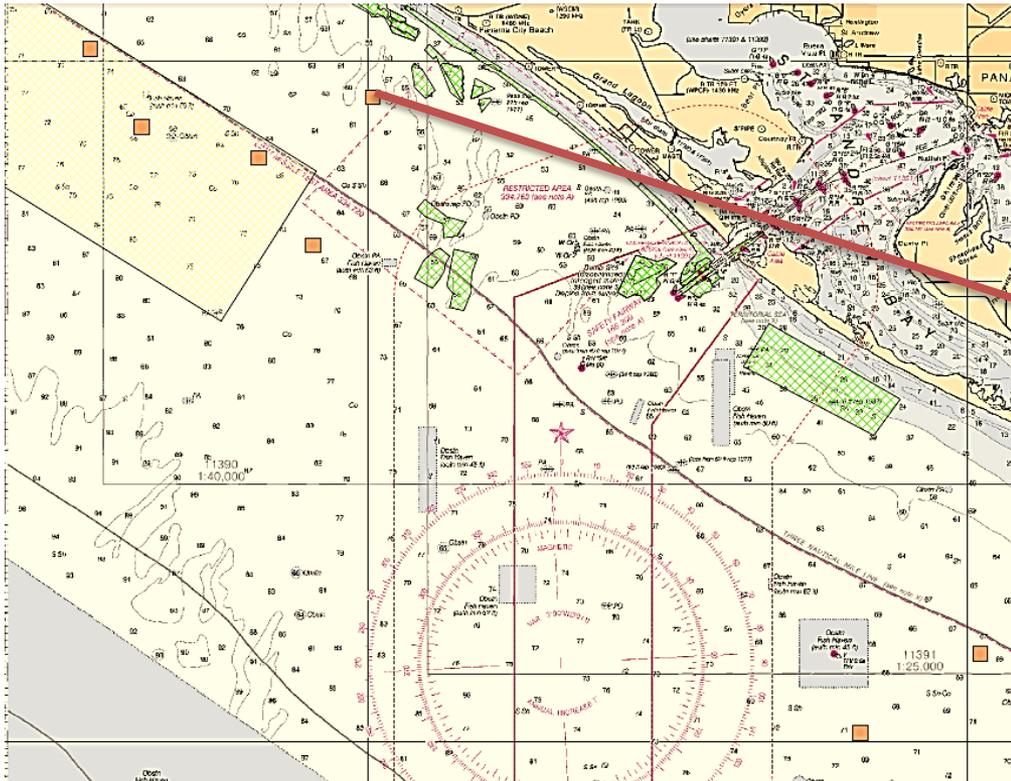
- Fishing and diving visitors spent over \$131 million in Bay County during those days that they engaged in saltwater fishing and diving on or near artificial reefs.
- This supported 2,727 employees who received an estimated \$24.69 million in wages. (\$9,053 per employee)

# Bay County Residents

- Resident divers and anglers spent approximately \$16.74 million directly attributable to the presence of artificial reefs. Generating an additional \$1.6 million in wages and salaries and supporting 147 full and part-time employees. (\$10,884 per employee)
- Bay County has an economic interest in supporting charter fishing and diving through the artificial reef program.



# Optimized Patch Reef Design and Spacing



# Why artificial reefs?

- Provide economic benefit to businesses and resource users directly impacted as a result of oil spill and fishery closure.
- Additional reefs will disperse fishing pressure and benefit fish stocks.
- Provide quality experience for artificial reef users.

(less competition is good for both angler/divers and fish stocks)

# Budget Detail

Description	Unit Cost	Units	Total Cost	Purpose
<b>Pre-Deployment Permit &amp; Siting</b>				
- Permit Cost (per permit)	\$ 250.00	6	\$ 1,500.00	Required Permit
- Bottom Survey (per site)	\$ 500.00	6	\$ 3,000.00	Required for Permit
<b>Cost of Deployment</b>				
- Truck & Driver (per hour)	\$ 175.00	80	\$ 14,000.00	Logistics
- Marine Contractor (per load)	\$ 30,000.00	10	\$ 300,000.00	Logistics
<b>One Year Post Deployment</b>				
- Vessel Charter (per day) (includes Equipment, Divers, Captain)	\$ 500.00	8	\$ 4,000.00	Evaluation
- Website / Social Media Development and Enhancement	\$ 25.00	500	\$ 12,500.00	Publicity / Stewardship
- Reports (3 mo. Status Reports and Final Report)	\$ 1,500.00	1	\$ 1,500.00	Accountability
<b>Total Tangibles Cost</b>			\$ 336,500.00	
<b>Administration of Project</b>		10%	\$ 33,650.00	Realistic Covering of True Costs
<b>Amount being Requested</b>			\$ 370,150.00	
<b>In-Kind (Storage and Staging of Materials)</b>				
- Storage Area (3 acres for 2 years)	\$ 240.00	6	\$ 1,440.00	Owned Assets by County
- Purchase and Procurement of Materials (per Invoice)	\$ 10,355.00	1	\$ 10,355.00	Transportation Costs (30)
- Unloading into Staging Area (per Truckload)	\$ 200.00	50	\$ 10,000.00	Owned Assets by County
<b>In-Kind (Deployment of Materials)</b>				
- Loading Equipment and Operator (per Truckload)	\$ 200.00	50	\$ 10,000.00	Owned Assets by County
<b>Personnel</b>				
Salaries & Benefits Proj Coordinators (per hour)	\$ 143.00	500	\$ 71,500.00	Key Personnel Commitment
<b>Equipment and Services</b>				
<b>In-Kind</b> GPS, Computers, Cameras, Software, Webhosting			\$ 2,300.00	Equipment for Project
<b>Total In-Kind</b>			\$ 105,595.00	
<b>Total Project Cost</b>			\$ 475,745.00	
<b>Amount being Requested</b>			\$ 370,150.00	