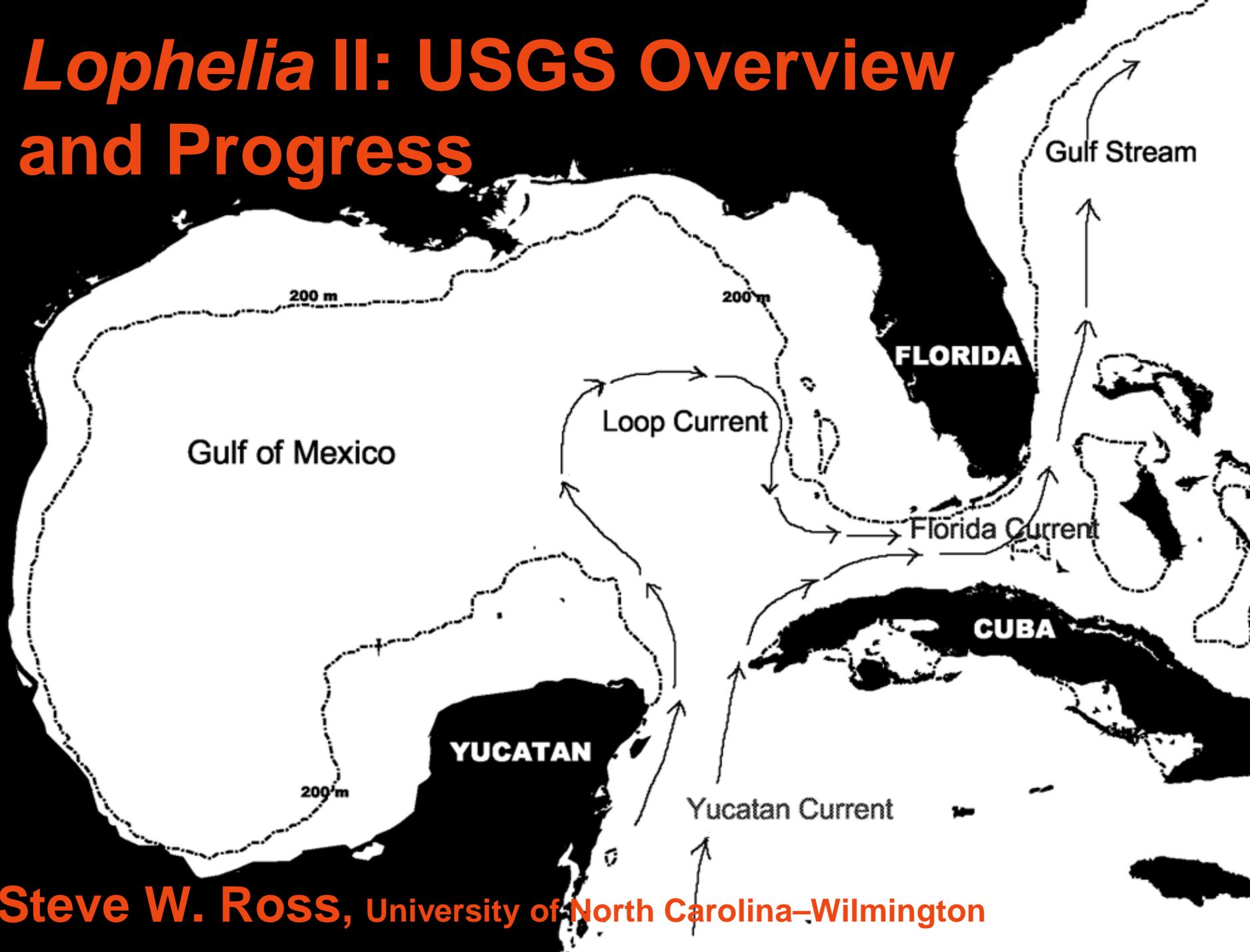


Lophelia II: USGS Overview and Progress



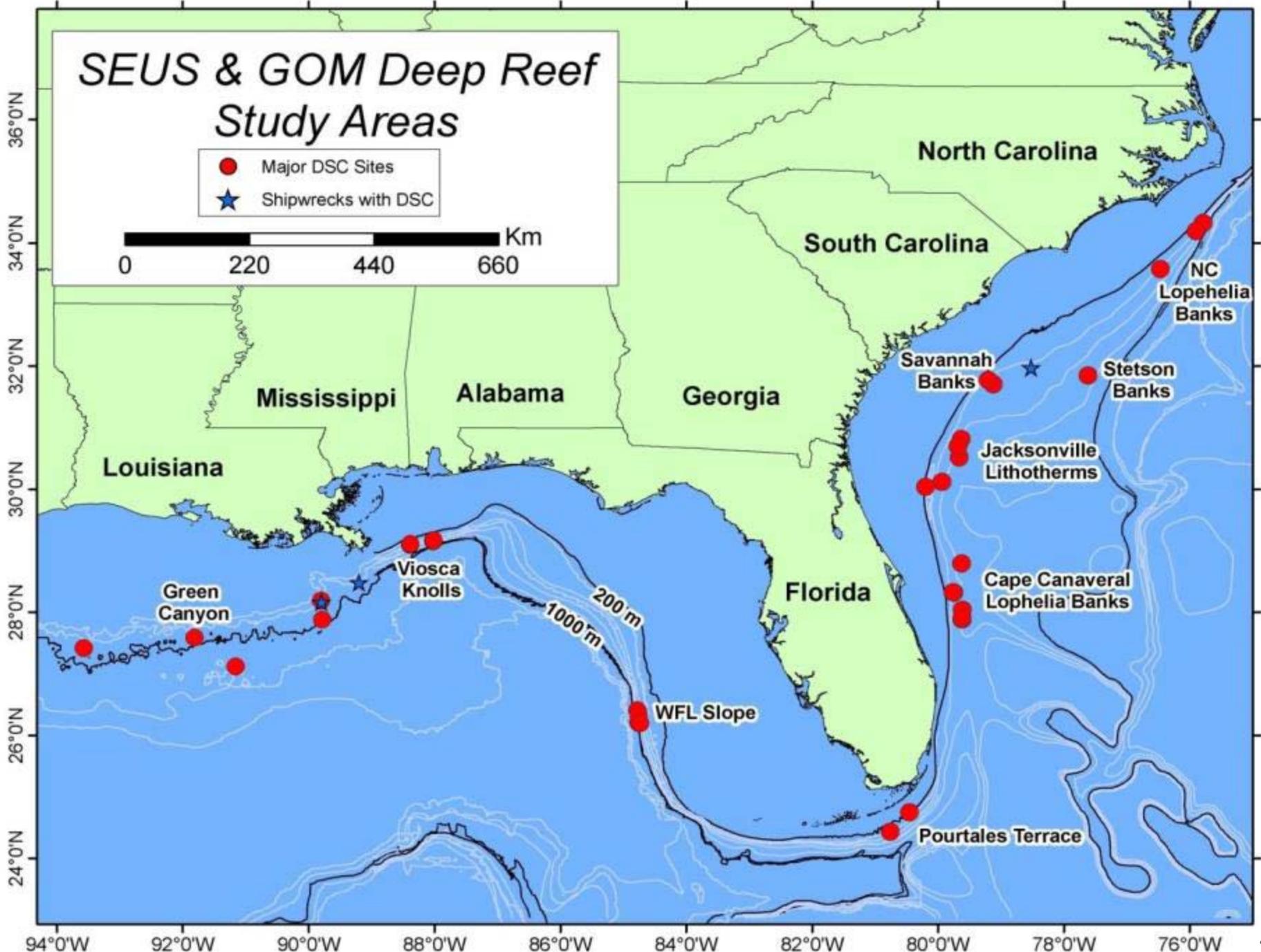
Steve W. ROSS, University of North Carolina–Wilmington

Lophelia II (DISCOVRE)

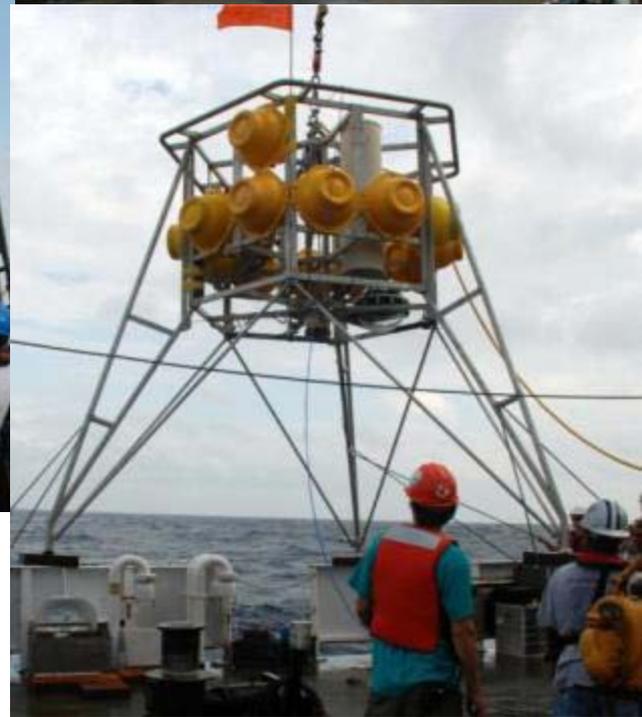
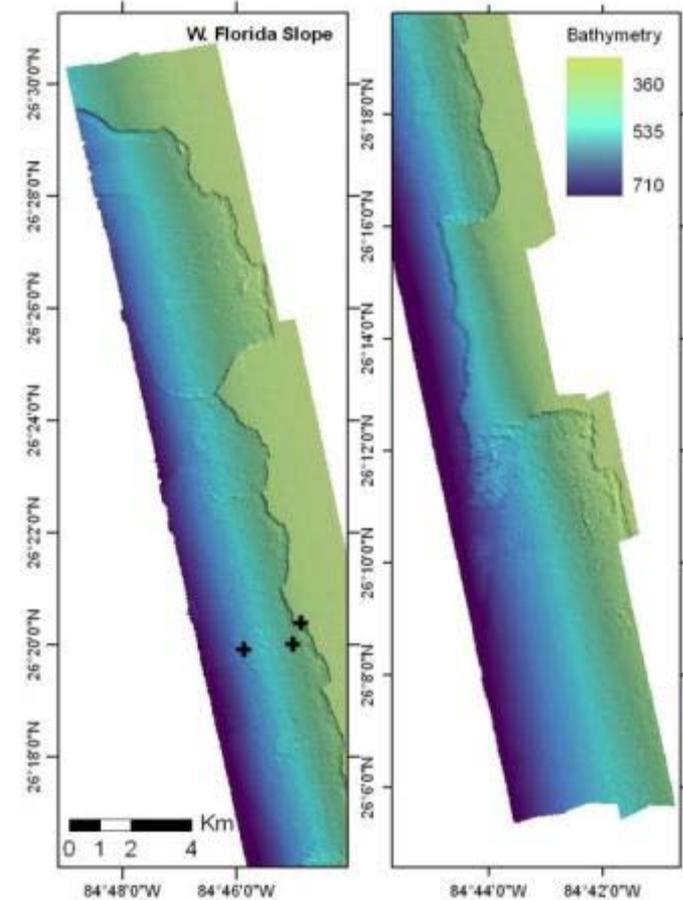
- Partnership with USGS, BOEMRE, NOAA, several universities and agencies, & BOEMRE contractor (TDI Brooks + additional universities)
- Plus international contributions (NIOZ, SAMS, etc.)
- 2008–2011 (3 field years + 1 analysis year)
- Follow-up & expansion of *Lophelia* I studies

USGS Study Topics

- Habitat Mapping and Site Discovery
- Physical Oceanography
- Trophodynamics
- Fish Communities
- Benthic & Invertebrate Community Ecology
- Coral Biology
- Genetics – Population Structure
- Microbiology
- Geochemistry (paleoecology)



October 5 – 19, 2008
(two legs)

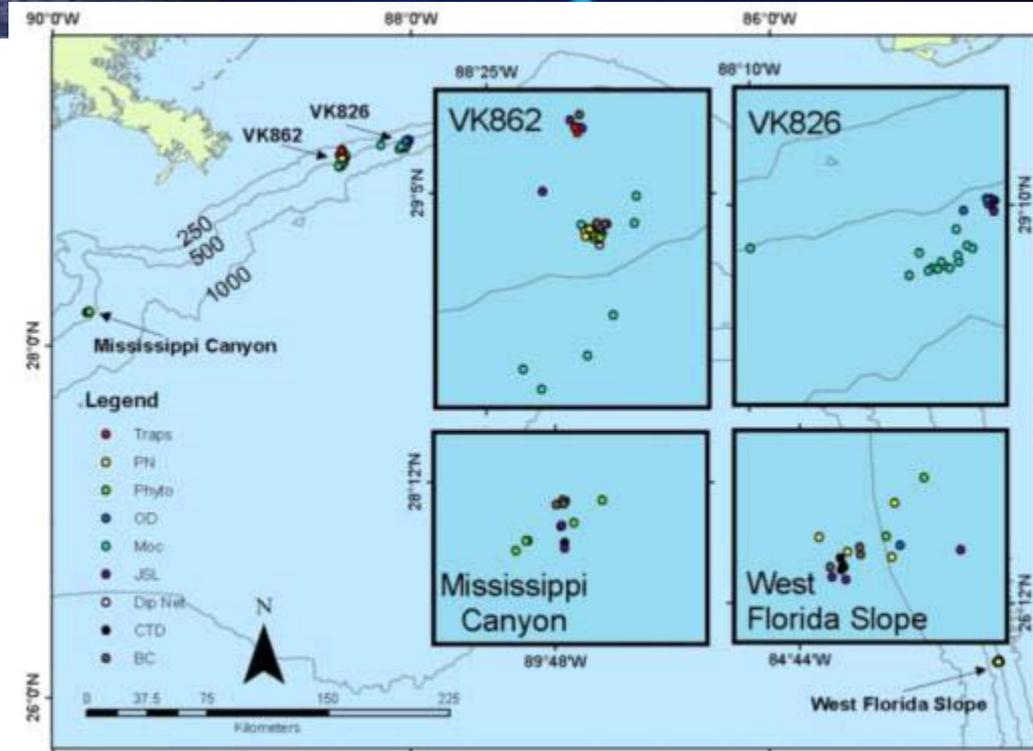


6 ROV dives
4 lander deployments
222 km² mapped
79 other stations
International involvement (NIOZ, SAMS)

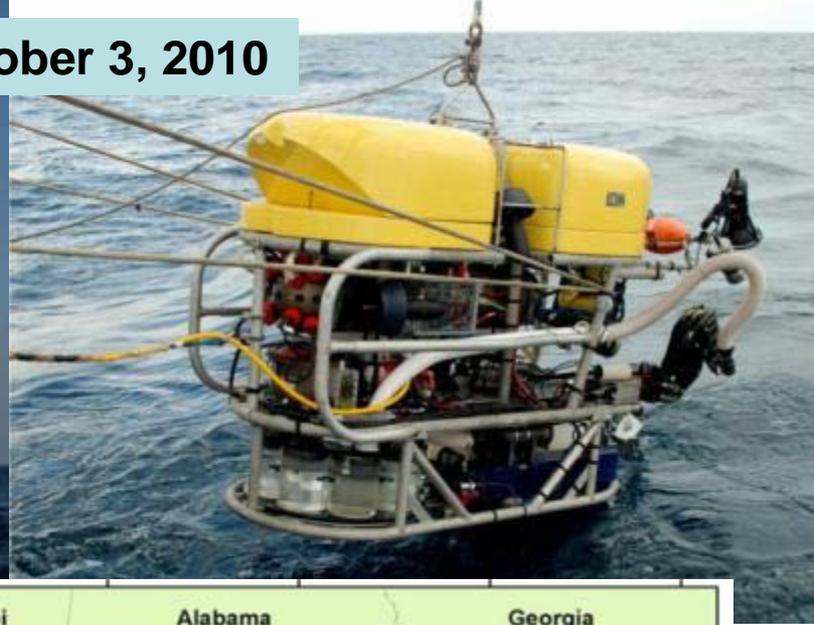
September 14 – 25, 2009



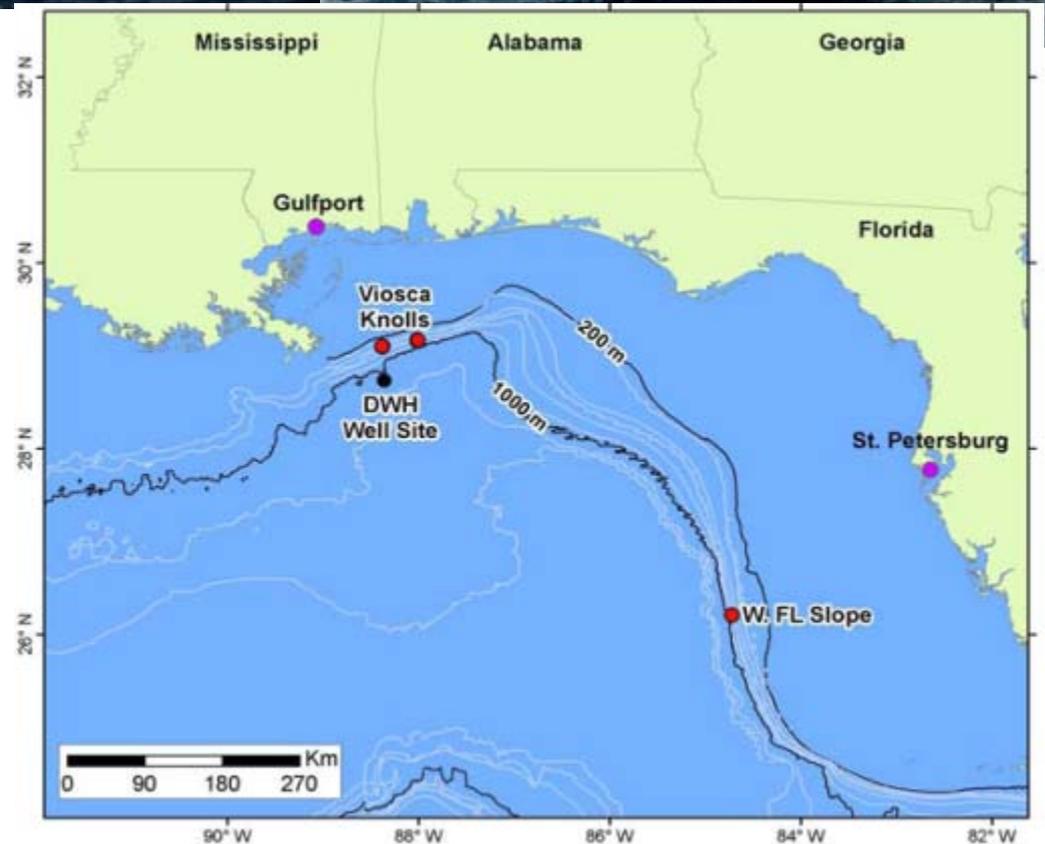
Landers recovered
15 JSL dives
83 additional stations
International involvement (NIOZ)



September 20 – October 3, 2010

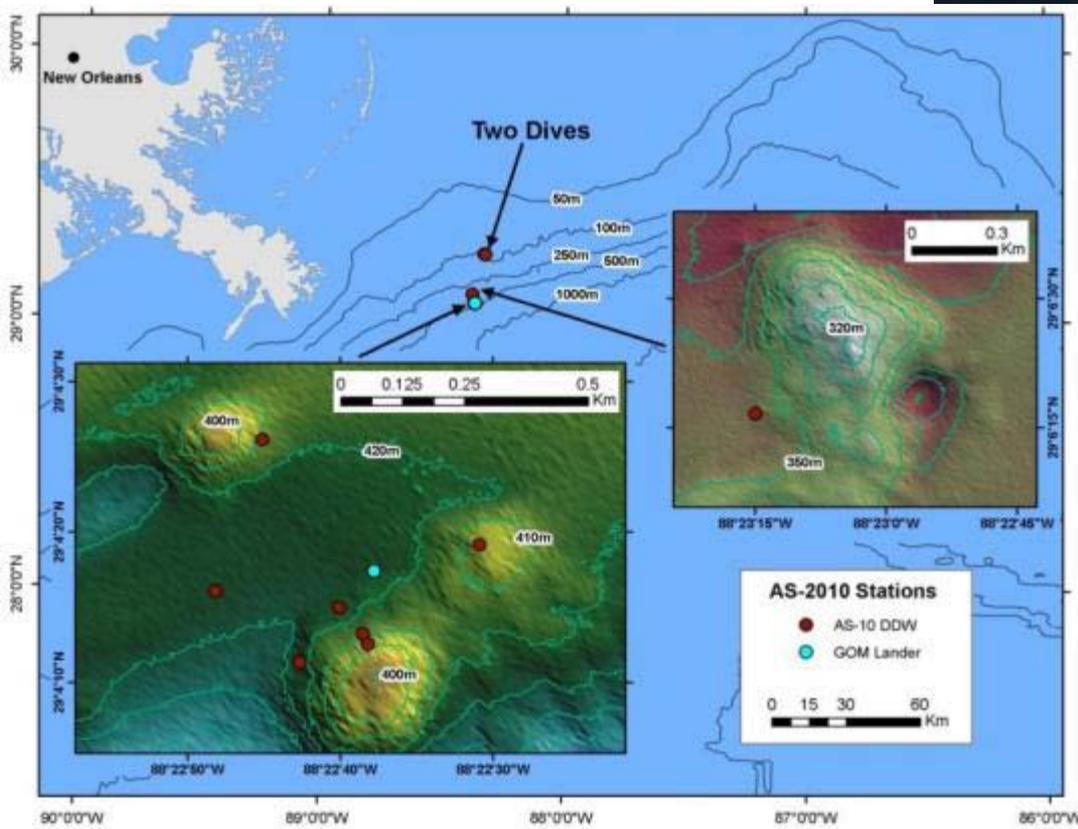


11 ROV (*Kraken II*) dives
110 additional stations
Post-DWH oil spill



Dual DeepWorker cruise
October 15 – 20, 2010
Work concentrated at VK906/862

7 dives at these sites
Video data, water & coral samples
Lander deployed for 1 year





Total numbers of stations occupied during 3 GOM cruises, 2008 – 2010

	ROV/HOV	Lander	MB	CTD	OT	TT	PN	Trap	Cores	Other
TOTALS	32	4	222	84	21	70	34	10	25	34

USGS team efforts largely focused on the 2 Viosca Knoll sites and the West Florida slope

Project Outreach

Project web site maintained at
USGS Southeast Ecological
Science Center, Gainesville, FL

<http://fl.biology.usgs.gov/DISCOVERE/index.html>



Search This Site:

WELCOME



- Cruise 2010
- Cruise 2009
- Cruise 2008

[Meet the Scientists](#)
[Study Sites](#)
[Relevant Publications](#)
[Checklist of Species](#)
[Upcoming Events](#)
[Resources](#)

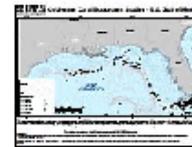
USGS DISCOVERE EXPEDITION

Diversity, Systematics, and Connectivity of Vulnerable Reef Ecosystems

The 4-year multidisciplinary research program will focus on understanding the physical oceanography, biology, ecology, genetic connectivity, and trophodynamics of deep coral environments in the Gulf of Mexico (300-1000 m depths), both within natural and artificial (shipwreck) sites. The program has integrated a diverse group of collaborators, including scientists from the U.S. Geological Survey (USGS), University of North Carolina Wilmington (UNC-W), UNC Chapel Hill, National Oceanic and Atmospheric Administration (NOAA), the Royal Netherlands Institute for Sea Research (NIOZ), and the Scottish Association for Marine Science (SAMS). It is part of a larger effort involving the Minerals Management Service (MMS), NOAA Ocean Explorer, and TDI Brooks. We will use a combination of traditional techniques (for example, photography, quantitative sample collections) and several advanced tools (including remotely operated vehicles, multibeam sonar, benthic landers, and genetic analysis) in order to better understand these critical, poorly studied deep-sea habitats.



- ↩ [Dive and Discover - Expedition 13: Gulf of Mexico \(You are leaving this site\)](#)
- ↩ [DISCOVERE Involvement in Deep Gulf of Mexico Research since the Deepwater Horizon Event](#)
- ↩ [Deep-sea Cruises 2010 - Cruise 2 \(You are leaving this site\)](#)
- ↩ [Deep-sea Cruises 2010 - Cruise 1](#)



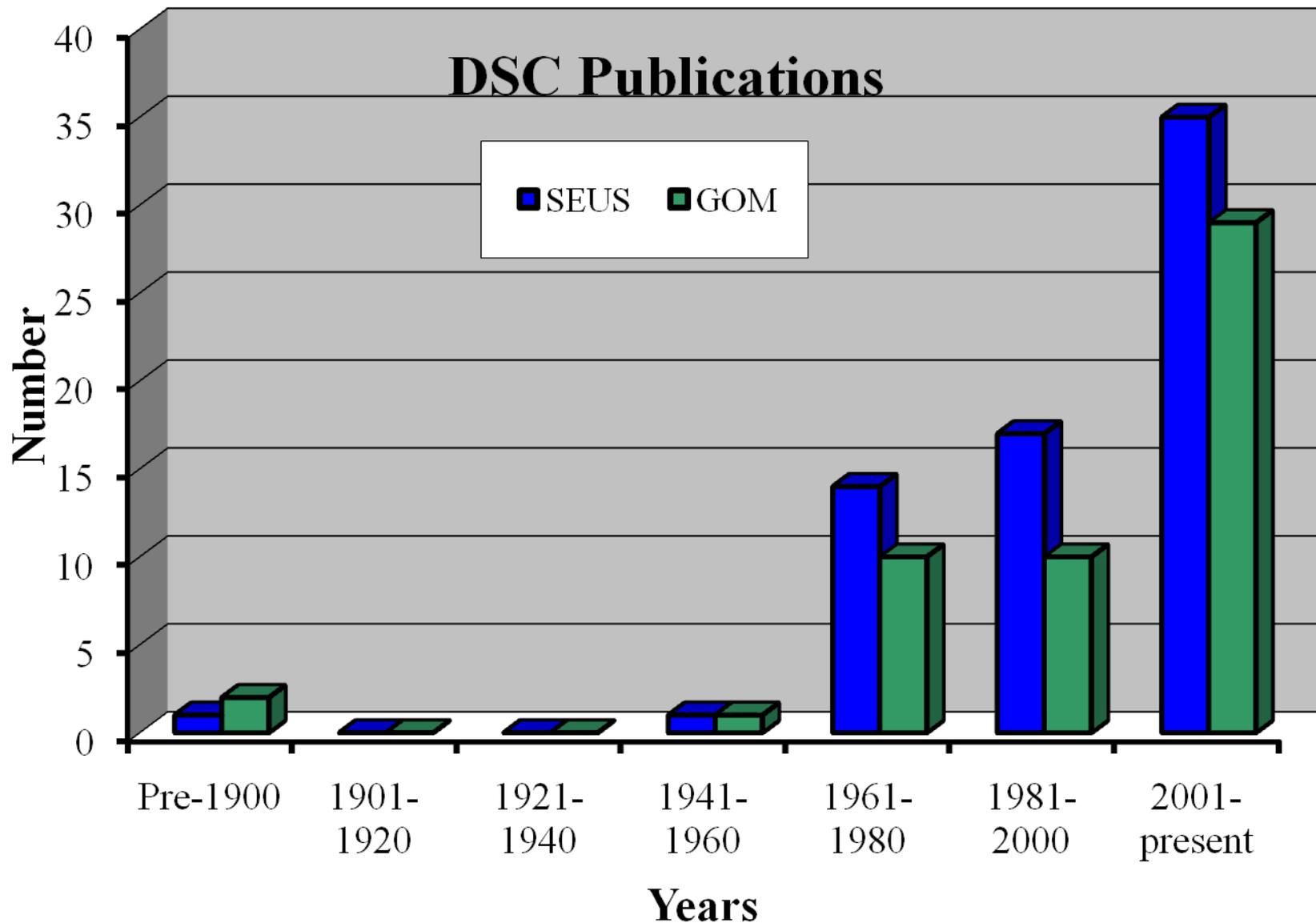
Cold-water Coral Ecosystem Studies - U.S. Gulf of Mexico

- Download:
- [Large Image Format](#)
 - [Adobe PDF Print Version](#)

Media Inquiries: [Amanda Demopoulos](#), (352) 264-3490, amandad@usgs.gov

Preliminary Observations

- West Florida slope DSCs may exceed those of anywhere else in the GOM
- Many fishes & invertebrates seem dependent on deep-reef habitat
- New faunal records & new species associated with deep reef habitats
- Black & bamboo corals: 100s – 1,000s of years of environmental history
- Ocean physics is dynamic & variable around deep reefs; probably influences coral ecosystem productivity & recruitment
- GOM *L. pertusa* population genetically isolated from those in Atlantic Ocean
- Diverse DSC microbial communities may be important in the ecology of these ecosystems
- Commercially & recreationally important species use the deep-reef habitats
- Deep-reef habitats are fragile & threatened by variety of activities



Tremendous progress in understanding DSC ecosystems over the last decade fueled by funding from the Bureau of Ocean Energy Management, Regulation and Enforcement (formerly Minerals Management Service), U.S. Geological Survey, and National Oceanic and Atmospheric Administration.