

NOAA CIOERT Cruise Report

Survey of the Pulley Ridge Mesophotic Reef Ecosystem

**NOAA Ship *Nancy Foster*
Florida Shelf-Edge Exploration II (FLoSEE) Cruise
Leg 1- September 12-19, 2011**

NOAA Project Number: NF-11-09-CIOERT

John Reed, Chief Scientist
Harbor Branch Oceanographic Institute, Florida Atlantic University
5600 U.S. 1, North
Fort Pierce, FL 34946
Phone: 772-242-2205
Email: jreed12@hboi.fau.edu

Stephanie Farrington, Biological Scientist
Harbor Branch Oceanographic Institute, Florida Atlantic University

Dr. Shirley Pomponi, Executive Director
The Cooperative Institute for Ocean Exploration, Research, and Technology
Harbor Branch Oceanographic Institute, Florida Atlantic University

Dr. Dennis Hanisak, Principal Investigator
Harbor Branch Oceanographic Institute, Florida Atlantic University

Dr. Joshua Voss, Principal Investigator
Harbor Branch Oceanographic Institute, Florida Atlantic University



HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY

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EXECUTIVE SUMMARY

In September 2011, a three week research cruise was conducted by the Cooperative Institute for Ocean Exploration, Research, and Technology (CIOERT) at Harbor Branch Oceanographic Institute-Florida Atlantic University (HBOI-FAU) in collaboration with NOAA. This CIOERT Florida Shelf-Edge Exploration II (FLoSEE) Cruise was conducted in two legs using the NOAA Ship *Nancy Foster* and the University of Connecticut's (UCONN) *Kraken 2* ROV. CIOERT is grateful for the funding and resources provided by the NOAA Office of Ocean Exploration and Research (OER), the NOAA Deep Sea Coral Research and Technology Program (DSCRTP), and the NOAA Office of Marine and Aviation Operations (OMAO) in support of the research, ship time, and ROV time. This Preliminary Cruise Report is for Leg 1 of the cruise to characterize and document the habitat, benthic and fish communities, and to assess the coral health on southern Pulley Ridge and within the Pulley Ridge Habitat Area of Particular Concern (HAPC); these sites are in the Gulf of Mexico on the southwest Florida shelf (Fig. 1). Leg 2 was on Pourtales Terrace which is south of the Florida Keys and is reported separately. This Preliminary Cruise Report includes SEADESC Level I data analysis (Appendix 1) which describes in detail each ROV dive including: cruise metadata, figures showing each dive track overlaid on the new multibeam sonar maps, dive track data (start and end latitude, longitude, depth), objectives, general description of the habitat and biota, and images of the biota and habitat that characterize the dive site. The Final Cruise Report will include the SEADESC Level II Report which will provide for each dive site quantitative analyses detailing the densities of the benthic biota and CPCE 4.0[©] Coral Point Count for percent cover of substrate type and sessile biota.

As part of the CIOERT program at HBOI-FAU, the benthic team developed a new and efficient Database Solution for Benthic Surveys that was used for the first time for this cruise and will be used in all future CIOERT mesophotic and deepwater surveys. Over the past two years a Microsoft Access database was developed to compile and manage all data collected during CIOERT cruises, including: ROV navigation data, CTD data, samples data, site data, video and photographic data, ROV dive notes, multibeam sonar data, and metadata. The second phase of the Database Solution for Benthic Surveys, was development of a Graphical User Interface called AnthSOA by CIOERT partner SRI in collaboration with CIOERT researchers at HBOI-FAU. This program which has been developed over the past year will be used for this cruise and future CIOERT cruises for the following:

- Import, filter and standardize raw ROV dive track data and CTD data
- Import digital images characterizing habitat and biota
- Link data sets for import into AnthoSOA, HBOI-FAU at-Sea Database, and ArcGIS.

The goal of the FLoSEE II expedition's education and outreach activities is to promote ocean literacy, knowledge of ocean ecosystems, and challenges of exploring and managing deep ocean frontiers, for public and classroom audiences, with a focus on CIOERT's research themes. Related activities included: 1) expedition Web Site (www.cioert.org/FLoSEE2); 2) extensive news media and press releases; 3) at-sea, live Skype[™] event that linked the cruise participants inside the ROV van during an actual dive with students and teachers of the Marine & Oceanographic Academy (MOA), which is located on the HBOI-FAU campus; and 4) a course

Immersion in Ocean Sciences taught at HBOI-FAU, which involved a total of eight FAU graduate students (four each leg) who participated in the cruise. This expedition was the second of a series of CIOERT “Ocean Discovery” cruises that are increasing “hands-on”, at-sea, multidisciplinary opportunities for university students in the CIOERT region, with each cruise focused on one or more of CIOERT’s themes. The student research posters that resulted from this cruise will be presented in the Final Cruise Report.

Leg 1 (September 12-19) of the FLoSEE II cruise resulted in 12 ROV dives on Pulley Ridge and adjacent sites for a total bottom time of 58.5 hours, covering 16 km and at depths from 59 to 827 (Fig. 2). A total of 60 hours of ROV dive videotapes with audio annotations (Appendix 2) were made which were recorded on hard drives, with copies on DV Cam and DVD. A total of 3,880 *in situ* digital images were taken which included 206 images of collected species, 648 general habitat and species photos, and 2,947 quantitative transect photos which will be used for the SEADESC Level II Report. A total of 160 specimens were collected, including 38 Cnidaria (19 Scleractinia, 12 Octocorallia, 6 Antipatharia), 37 Porifera, 9 Echinodermata, 1 Mollusca, and 14 macroalgae. Six sites were surveyed with multibeam sonar by the survey team of the *Nancy Foster* and covered a total of 106 km² (Fig. 1). Three of the sonar maps were within the Pulley Ridge HAPC and five were in adjacent areas; the surveys within the Pulley Ridge HAPC were 1-m resolution which is much greater than previous surveys. These new *Nancy Foster* sonar maps enabled us to discover and dive on many new features and reefs that had never been documented before and documented extensive essential fish habitat and coral/sponge habitat existing outside the protected HAPC boundaries. In particular, we documented extensive rugged rock habitat along the southern drop-off of Pulley Ridge which provides essential fish habitat for numerous large grouper species but is yet outside the borders of the HAPC. Also an extensive rocky escarpment was discovered and mapped south of the HAPC at depths of 500-800 m.

The new sonar maps and ground truthing by ROV dives, MOCNESS trawls, and CTD casts have provided data characterizing these sites. These areas outside the current HAPC should be of priority for future research cruises. These data will be of use for site selection, habitat characterization, and coral health assessment for the new NOAA grant to University of Miami and CIOERT: “2011 REPP; Understanding Coral Ecosystem Connectivity in the Gulf of Mexico--Pulley Ridge to the Florida Keys”. These data will be important for managers and scientists within NOAA Fisheries, the Gulf of Mexico Fishery Management Council, The Florida Keys National Marine Sanctuary, NOAA Deep Sea Coral Research and Technology Program, and NOAA Mesophotic Reef Ecosystem Program. New data was collected on habitat, benthic species’ distributions, coral health, and commercially and recreationally important fish populations.

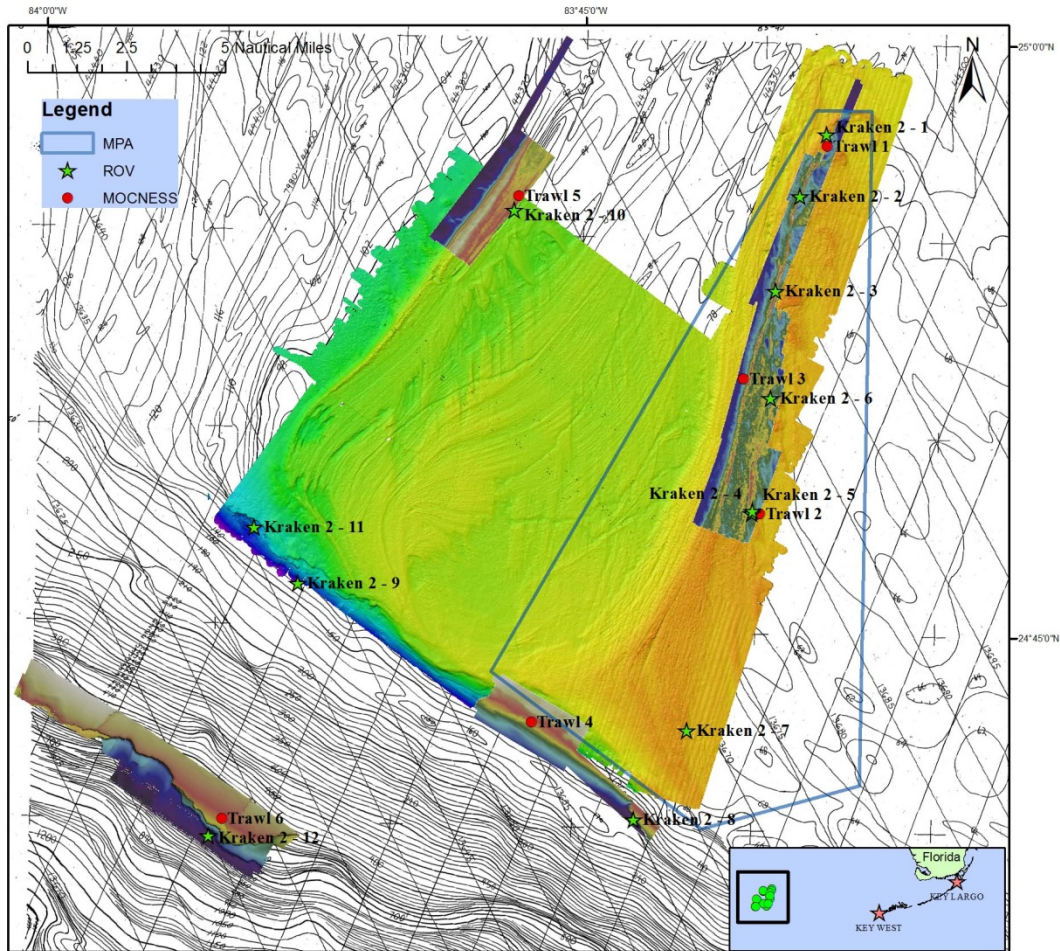


Figure 1. Region of the CIOERT Florida Shelf-Edge Exploration II (FLoSEE) Cruise on southern Pulley Ridge, September 12-19, 2011. Green stars- *Kraken 2* ROV dive sites, red dots- MOCNESS trawl sites, blue polygon- Pulley Ridge Habitat Area of Particular Concern (HAPC); background multibeam sonar map- D. Naar, USF; five individual multibeam maps- 2011 *Nancy Foster* sonar surveys.

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DELIVERABLES AND DATA MANAGEMENT

This Preliminary Cruise Report includes the SEADESC Level I Report (Appendix 1) which details each ROV dive site including: cruise metadata, figures of dive tracks overlaid on multibeam sonar maps, dive track data (start and end latitude, longitude, depth), objectives, general description of habitat and biota, and images of biota and habitat characteristic of each dive site. Appendix 2 is the detailed log of each ROV dive. The Final Cruise Report will have the SEADESC Level II Report which includes quantitative analyses of each dive site showing percent cover of substrate type, biota and density of biota.

The Chief Scientist is responsible for the disposition of data. Under NAO 216-101, managers of programs are responsible for ensuring that data and related information are available in a timely manner (within 1 year) at the NOAA national processing centers and national data centers. To date, all data have been archived as required; these data include shipboard data, raw and processed multibeam sonar data, CTD, ROV navigation data, ROV videotapes and digital images, samples, and ROV dive annotations (Table 1). The ship survey department, under the direction of the Operations Officer, has archived all multibeam data at the National Geophysical Data Center. This archival will be conducted in consultation with the Principal Investigator to ensure there is no unintentional release of sensitive data.

The Chief Scientist retains responsibility for management of all other data collected, including habitat and biologic assessments, fish movement, marine debris, and data downloaded from the acoustic receivers and water quality sensors (Table 2). The Benthic Science Team (J. Reed, S. Farrington) will maintain data logs and archives using MS Access and Excel logs to record site, sample, and ROV dive annotations. A complete set of original data (including shipboard data, ROV tracking, ROV video, ROV digital images, CTD, raw and processed multibeam sonar) are archived by the Chief Scientist on hard drives and servers at HBOI-FAU. A second complete set of data are archived with NOAA Fisheries (Andrew David) who will ensure these data are submitted to NOAA Deep Sea Coral Research and Technology Program (DSCRTP) and in accordance with Procedure 1102.25 Section 3.2.3, to the National Geophysical Data Center (NGDC) within 1 year of the end of the project.

Table 1. FLoSEE II Expedition archived data; NOAA Ship *Nancy Foster*, Leg 1, September 12-19, 2011. Archives and archivists: HBOI-FAU (John Reed, Chief Scientist), NOAA NMFS (Andrew David, Panama Lab), NOAA DSCRTP (Dan Dorfman, Data Manager), NOAA NGDC (Dave Fischman, Data Manager, NOAA National Geophysical Data Center, NCL= NOAA Central Library, MOC = NOAA Marine Operations Center-Atlantic, CS = Chief Scientist.

Type	Product Description	Format	MD rec.	Archive	Date Submitted
Data	ROV video- digital copies of all ROV dives	DVD, hard drive	Y	NCL	9/30/12
Data	ROV still images	DVD	Y	NCL	9/30/12
Data	Multibeam (MB) sonar- raw	PDS	Y	NGDC	9/30/12
Data	MB- processed files (corrected for tides and sound velocity)	CARIS, HDCS, XYZ, ASCII	Y	NGDC	9/30/12

Data	MB- GeoTIFF	TIFF	Y	NGDC	9/30/12
Data	CTD	CSV	Y	NGDC	9/30/12
Log	ROV dive logs	MDB	Y	NCL	9/30/12
Log	Sample logs	MDB	Y	NCL	9/30/12
Data	ROV DAT file (dive tracks and sensor data)	CSV	Y	NCL	9/30/12
Report	Web site	HTML	N	Cioert.org/ FLoSEE2	9/30/12
Report	Foster Cruise Plan	PDF	Y	NOAA/MOC	8/11/11
Report	Foster Evaluation Report	PDF	N	NOAA/MOC	10/7/11
Report	CIOERT Cruise Report	PDF	Y	NCL	1/30/12
Report	SEADESC I report- dive logs, site characterizations, and video logs	PDF	Y	NCL	2/15/12
Report	SEADESC II report- Final CIOERT Cruise Report	PDF	Y	NCL	9/30/12
Report	Publications	PDF	N	NCL	As available

In addition to the data products to be archived at NOAA in Table 1, other data sets will be generated and retained by the expedition Chief Scientist at HBOI-FAU (Table 2).

Table 2. Data sets produced by ROV, ship and science team that will be archived with the Chief Scientist at HBOI-FAU.

Source	Description	Format
Ship	Multibeam (MB) sonar- raw	PDS
Ship	MB- processed files (corrected for tides and sound velocity)	CARIS, HDCS,XYZ (ASCII)
Ship	MB- GeoTIFF	TIFF
Ship	CTD	CSV
ROV	ROV video- digital copies of all ROV dives	DVD, hard drive
ROV	ROV still images	DVD
ROV	Waypoint file	CSV
ROV	Event log	CSV
Science	Dive track polygons	ArcGIS shapefile
Science	Cruise database, sample and site logs	Access MDB

BACKGROUND

In September 2011, a three week research cruise was conducted by the Cooperative Institute for Ocean Exploration, Research, and Technology (CIOERT) at Harbor Branch Oceanographic Institute-Florida Atlantic University (HBOI-FAU) in collaboration with NOAA. This CIOERT Florida Shelf-Edge Exploration II (FLoSEE) Cruise was conducted over two legs using the NOAA Ship *Nancy Foster* in conjunction with University of Connecticut's (UCONN) *Kraken 2* ROV. Funding and resources were provided by the NOAA Office of Ocean Exploration and

Research (OER), the NOAA Deep Sea Coral Research and Technology Program (DSCRTP), and the NOAA Office of Marine and Aviation Operations (OMAO) in support of the research, ship time, and ROV time. This Preliminary Cruise Report is for Leg 1 of the cruise to characterize and document the habitat, benthic and fish communities, and to assess the coral health on southern Pulley Ridge and within the Pulley Ridge Habitat Area of Particular Concern (HAPC); these sites are in the Gulf of Mexico on the southwest Florida shelf (Fig. 1). Leg 2 was on Pourtales Terrace which is south of the Florida Keys and is reported separately.

The overall scope of work envisioned for the mesophotic reef projects reflects the need to conduct broad surveys to understand the large scale dimensions of mesophotic coral reefs (e.g., geomorphological structure and forcing, biodiversity and biogeography, geographic connectivity) coupled with detailed work at selected sites to understand the functioning of mesophotic reefs (e.g., connectivity to shallow reefs, dynamics and life histories, effects of anthropogenic stress and climate change, historical development and their support of fisheries resources and endangered species).

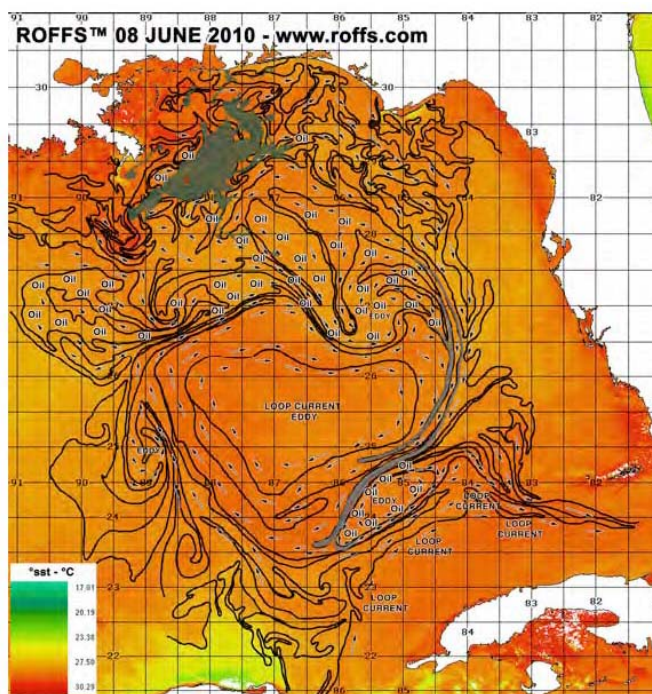


Figure 2. Surface currents and oil distribution in eastern Gulf of Mexico following the British Petroleum's Deepwater Horizon oil spill (from Roffer's Ocean Fishing Forecasting Service, Inc., June 8, 2010).

In addition, the Pulley Ridge mesophotic reef system was downstream of the 2010 British Petroleum's Deepwater Horizon oil spill (Fig. 2). In response to the spill, CIOERT at HBOI-FAU conducted the first Florida Shelf-Edge Expedition (FLoSEE) cruise, July 9-August 9, 2010. This CIOERT cruise enabled CIOERT scientists and collaborators to assess the impact of the oil spill if any on the mesophotic, shelf-edge reefs all along the west Florida shelf, and including Pulley Ridge, and to provide data to assist NOAA in background ecosystem assessment, damage assessment, and restoration. These data collected by CIOERT in 2010 and 2011 in addition to

data collected by USGS and USF in 2004 (Hine et al., 2008) will be good sources of background data for pre- and post-spill conditions and potential effects on Pulley Ridge coral/sponge/algal habitat and fish communities.

CIOERT/NOAA COLLABORATION

The primary focus of the CIOERT FLoSEE II Cruise is to advance NOAA Ocean Exploration and Research (OER) goals while complementing the management objectives of NOAA DSCRTP, NOAA Mesophotic Reef Ecosystem Program, Florida Keys National Marine Sanctuary (FKNMS), and regional fishery management councils. The cruise integrated the research objectives of five CIOERT projects including: Mesophotic Reef Project (Project #5.3.1), Deep-Sea Coral Project (#5.3.2), Benthic-Pelagic Project (Project # 4.2.1), New Biomedical Resources Project (Project # 4.3.1), and Education/Outreach Project (Project #6.3.1).

For this cruise we collaborated with NOAA NMFS (Andrew David, Stacey Harter, Panama City) in order to assess habitat and fish communities, targeting grouper, snapper and tilefish. These data will be of value to the South Atlantic and Gulf of Mexico Fishery Management Councils for management decisions on these key species and habitat. Pulley Ridge region is also of priority to the NOAA Mesophotic Ecosystem Program (pers. comm., K. Puglise, NOAA) and is funded for additional research through NOAA CRCP for testing the hypothesis of connectivity of mesophotic reefs and adjacent shallow water reefs in this region. Ultimately the primary benefits are critical data that characterize mesophotic and deep water reef resources, habitat and ecosystem functions, ecosystem services, and, when applicable, the impact of management actions on these resources.

GOALS AND OBJECTIVES

Goal 1-- Explore and research DSCEs and shelf-edge mesophotic reefs off Florida:

The goal of this cruise is to map, explore, document, and characterize the deepwater and mesophotic coral habitats off the coast of Florida including: Pulley Ridge and Pourtales Terrace. This cruise provides critical data by mapping and characterizing essential fish habitat for NOAA and the regional Fishery Management Councils. The CIOERT PI's in collaboration with NOAA NMFS scientists will provide analyses of fish and benthic habitats. We will evaluate the coral samples for the coral health assessment component of this project, and samples will also be targeted for molecular and genetic research with the goal of assessing the connectivity and relative health of both deep and shallow coral populations.

Goal 2-- Generate SEADESC Level I and II Reports for ROV Dive Sites:

A major objective in the DSCRTP plan is to generate synthesized products from DSCRTP sponsored expeditions that convey the location and condition of DSCEs. An approach being used is generation of Southeast Atlantic Deep-Sea Coral (SEADESC) dive logs and site characterizations (NOAA/OER, 2008). There are two levels of these reports:

- Level I—rapid turn-around log similar to logs generated for the OER 2008 report;

intention is to provide general metadata on dive locations and areas, with description of DSCE.

- Level II—inclusion of more detailed metadata describing dives and site characterization that includes quantified measures of coral, sponge, and fish abundance and diversity.

The Level II effort requires analysis of ROV videotapes and quantitative photographic transects from ROV dives. NOAA NMFS scientists (A. David, S. Harter) will analyze the video and still images for fish populations. CIOERT scientists, Chief Scientist John Reed and technicians will analyze imagery of benthic communities, and synthesize all data sets to create Level II dive logs for the dives supported by the DSCRTP-sponsored ROV dives during the expedition.

Specific objectives included:

1. Characterize and map benthic hard bottom habitats at select sites with emphasis on macro-benthic, sessile species including: scleractinian corals, gorgonians, black corals, sponges, and algae.
2. Characterize fish populations at each dive site with emphasis on commercially and recreationally important species including grouper, snapper, and tilefish.
3. Conduct shipboard multibeam sonar surveys at each dive site, prior to ROV dives, for ROV dive planning, ROV dive tracking, and for habitat classification.
4. Conduct quantitative and qualitative ROV video and photographic transects at each site.
5. Document percent hard coral cover and hard bottom at each site.
6. Conduct coral health assessment.
7. Collect corals for health assessment and genetic studies.
8. Collect benthic invertebrates (scleractinians, gorgonians, black corals, sponges, and algae for biodiversity, habitat characterization, and biomedical research).
9. Collect any apparent oil impacted fauna or sediment.
10. Collect and document physical water column data (CTD).
11. Collect and document mid-water plankton over reef sites with MOCNESS trawls.
12. Conduct education/outreach activities (students- at-sea, CIOERT web site, daily blogs).

METHODS

Quantitative and qualitative ROV video and photographic surveys were made at each site to quantify and characterize the benthic habitats, fish populations and coral cover. Coral samples were collected for coral health surveys; sponges, gorgonians, black corals, and algae were targeted for species documentation. Plankton samples were collected during nightly MOCNESS trawls to document plankton over the mesophotic and deepwater reef habitats. Shipboard CTD casts were conducted at each MOCNESS site. Shipboard multibeam sonar surveys were conducted to assist with dive planning, ROV dive tracking and habitat characterization.

STUDY AREAS

During Leg 1 of the expedition, the focus was on southern Pulley Ridge a mesophotic reef system off southwest Florida shelf and west of Tortugas at depths of 60-100 m (Fig. 1). It is noted as the deepest, hermatypic reef system in the continental U.S. USGS, USF and others have

documented in the 1980s to 2004 extensive areas of scleractinian coral including large plates of *Agaricia* spp. and fairly dense populations of gorgonians, sponges and algae. Southern Pulley Ridge also includes the Pulley Ridge Habitat Area of Particular Concern (HAPC) under the jurisdiction of the Gulf of Mexico Fishery Management Council.

PERMITS

All dives and collections were conducted outside Florida state waters but within Federal waters. Sampling was conducted under the Southeast NMFS Regional Permit (Letter of Authorization F/SER25:KM, received August 3, 2011).

PARTICIPATING INSTITUTIONS

- CIOERT/Academic Partners: HBOI-FAU-FAU, University of North Carolina Wilmington, University of Miami, SRI International, and Florida State University, University of Connecticut
- NOAA Partners: NOAA Fisheries, NCDDC, DSCRTP, NOAA Mesophotic Ecosystem Program, OER, NCOS, AOML, NOAA Sanctuaries, CSCOR

COLLABORATORS

- Andrew David, NOAA National Marine Fisheries Service (NMFS)
- Scott Donahue, NOAA Florida Keys National Marine Sanctuary (FKNMS)
- Dan Dorfman, NOS/NCCOS Biogeography Branch
- Kimberly Puglise, NOAA/CSCOR Coral Reef Ecosystem Studies Program
- Greg Piniak, NOAA Center for Coastal Fisheries and Habitat Research
- Roger Pugliese, South Atlantic Fishery Management Council

SCIENCE AND ROV PERSONNEL (Leg 1)

Name	Affiliation	Role
John Reed	HBOI-FAU	Chief Scientist, Principal Investigator
Josh Voss	HBOI-FAU	Co-PI, coral health assessment
Dennis Hanisak	HBOI-FAU	Co-PI, marine botany, education/outreach
Shirley Pomponi	HBOI-FAU	Co-PI, sponge taxonomy
Stephanie Farrington	HBOI-FAU	Data manager, benthic team
Chris Gardner	NMFS-Panama City	Fish ecologist
Jim Lovin	Univ. of Miami	MOCNESS technician
Noelle Notarnicola	FAU	Student
Jennifer Grima	FAU	Student
Bethany Lieuwen	FAU	Student
Andrew Krupski	FAU	Student
Kevin Joy	Univ. of Conn.	ROV team

John Hamilton	Univ. of Conn.	ROV team
Don Liberatore	Univ. of Conn.	ROV team
Rudy Schlepp	DOER	ROV team

ADMINISTRATIVE

Name	Affiliation	Role
John Reed	HBOI-FAU	Chief Scientist
Captain David Score	NOAA Commanding Officer, Marine Operations Center – Atlantic	CO, MOC
LT Joshua Slater	NOAA Ship <i>Nancy Foster</i>	Ship Ops Officer
Kevin Joy	Univ. Connecticut	ROV Ops
Shirley Pomponi	HBOI-FAU	CIOERT, Director
Ivar Babb	Univ. Connecticut	ROV Ops

ITINERARY

- Sept. 9-11: Staging at USCG pier, Key West, FL; ROV, MOCNESS, and Science mobilization
- Sept. 12: Depart for Leg 1 operations
- Sept. 12-19: Conduct operations on Pulley Ridge
- Sept 20-22: Staging at USCG pier; crew rest days; switch out science and ROV crews for Leg 2
- Sept. 23: Depart for Leg 2 operations
- Sept. 23-30: Conduct operations on deepwater reefs sites on Pourtalès Terrace
- Sept. 30: Staging at USCG pier
- Sept. 31: Demobilization of ROV, MOCNESS, and science gear

SHIP AND ROV OPERATIONS

Vessel operations are on a 24 hour workday. Routine daily operations included ROV dives during the day (0700-1900); at night (2000-0600) were MOCNESS plankton tows, shipboard multibeam acoustic surveys, and CTD-rosette operations.

Prior to each dive, the ship crew provided live ADCP data from the surface to the bottom of the water column to the ROV team. Also the ship crew provided set and drift data for current and wind effects approximately one hour prior to ROV launch. The ROV team and ship crew then determined the necessary launch site in order for the ROV to land near the on-bottom target site. In some situations, depending on depth, current and wind, the launch site was ½-1 nmi from the target site. It is critical that the ROV crew and the personnel on the ship's bridge have verbal contact throughout the dive and especially during launch and recovery. It was very helpful for tracking the ROV and concurrent ship positioning that the bridge was provided with a video feed showing the multibeam sonar map with the ROV position. This allowed the ROV team to show the bridge where they intend to move throughout the dive.

KRAKEN 2 ROV

University of Connecticut's *Kraken 2* ROV, a 1000-meter light-work class ROV, was used for benthic surveys and sampling (Figure 2). This system operates with an electro-optic tether and can support two simultaneous high definition camera and up to four standard definition cameras. The K2 also has a 6-function robotic arm, an extensible, insulated biobox and suction sample system with eight buckets for sample collection. The ROV was deployed from the aft deck with the main deck crane, and the ROV depressor was deployed with the aft deck A-frame. Major items that support ROV operations include:

- ROV Control Van: 8'W x 20'L x 8-1/2'H ~ 12,000 lbs max
- Isolation Transformer (460Vac to 208Vac): approximately 36"W x 24"D x 36"H ~ 550 lbs in weight
- Oceanographic Winch: 8'W x 6-1/2'D x 6-1/2'H ~ 5,500 lbs
- Hydraulic Pressure Unit (HPU): 56-1/2"W x 41"D x 75"H ~ 1,750 lbs
- Sheave for Umbilical: 36" diameter x 15"W
- ROV Depressor Frame: 22"W x 45"L x 50-1/2"H ~ 1,050 lbs
- Kraken2 (K2) ROV w/tool skid: 48"W x 96"L x 72"H ~ 2,300 lbs
- K2 Tether Box (optional backup to 1000'): 54"W x 43"L x 33"H ~ approximately 500 lbs
- Storage Totes (quantity 4): 43"L x 28"W x 20"H ~ stackable on deck



Figure 3. *Kraken 2* ROV, 1000-m working depth, equipped with HD camera, still camera, manipulator arm. Sampling array is mounted on sled beneath vehicle.

ROV Research Tasks

1. Conduct video and photo transects over selected areas of different habitat types.
2. Make collections of benthic invertebrates (primarily scleractinian coral, black coral, gorgonians, sponges, and algae) from various habitats including high relief rock ledges and walls using various sampling gear.
3. Collect live corals from selected sites and maintain in cold-water biobox on ROV.
4. Collect invertebrates (sponges, gorgonians, algae) for biomedical research and maintain in cold water biobox on ROV.
5. Collect various invertebrates for general taxonomy and analyses and place in quivers, suction buckets, or external boxes (*in situ* temp not required).

6. Collect sediment core samples for oil analyses (if observed).
7. Document habitat and samples with video and digital still images.
8. Collect near-bottom water samples using a Niskin bottle mounted on the ROV.

ROV Dive Schedule

The following was the tentative daily schedule:

- 0700: Prep ROV
- 0800: Launch ROV. Each dive typically lasted 4-5 hours, with 1-2 hour surface interval between dive sites. Digital still images will be downloaded following each dive if required or at the end of the day.
- 1800-1900: ROV on deck after final dive of day.
- 1900- 2000: Complete download of ROV video and data, and maintenance.

ROV Navigation and Event Data

Following each dive day the ROV team provided the Chief Scientist with ROV tracking data from the WinFrog Integrated Navigation System for subsequent import into ArcGIS 10.0 for plotting dives on bathymetric maps. The science team used a programmable X-Key[®] keyboard tied into WinFrog system to log dive annotations throughout each dive. This was used to log events, habitat and species documentation along with real-time depth, coordinates and CTD data.

ROV Video/Photo Transects

During each dive the primary objectives of the ROV dive were to document benthic habitat and fauna (fish, corals, sponges, algae), collect samples, and conduct photo transects which will be used for quantitative point counts of percent cover of coral and habitat type. During the dive and especially during photo transects, the ROV was <1 m off bottom, and a speed over ground of ~1/4-1/2 knot.

The high-definition (HD) video was the main camera for documenting the general benthic habitat. The Kongsberg Maritime HD camera (Kongsberg OE14-502A, 800 TY lines resolution, 50.5 dg wide field of view) was mounted on the K2 ROV's pan/tilt unit with parallel lasers spaced at 20 cm. The video footage was recorded continuously throughout the dive from surface to surface. The camera was typically angled down ~30° and to view both near and far to the horizon for fish aggregations. A headset microphone was used for continuous audio annotations by the lead scientist describing events, habitat, and fauna which were recorded onto the video recordings. A standard definition camera (Insite Pacific, Aurora; 570 horizontal TV lines, 73 dg angle width view) was mounted to the underside of the Kongsberg HD camera providing a wide angle, fixed focal length field of view overlapping that of the HD video camera with 20 cm parallel lasers in full view. Along with being used for quantitative video data collection, this camera was used as the primary "pilot" view and also for recording fish observations.

Digital still images were used primarily for the quantitative timed transects, providing images that will be used with CPCE[®] (Kohler and Gill, 2006) to document percent cover of hard bottom, coral, and other benthic species. The camera (Scorpio Plus from Insite Pacific with Nikon CoolPix 995 camera, 3.2 MP) was angled down close to 90° and had parallel lasers (10 cm). The camera settings were set at: shutter speed priority- $1/125$ second; aperture variable; focal length (manual or automatic- as needed); each image was ~1-2 MB. During quantitative transects,

images were taken as quickly as possible to provide non-overlapping images (3-4/minute depending on strobe recycling rate). Non-transect images taken of specific animals or habitat were noted in the database log. Several hundred images were taken per dive. Each photo filename was coded with corresponding UTC time code (using Stamp 2.8) of the image collection which was imported into Access and linked to the ROV navigation data for site specific data of coordinates and depth and then imported into ArcGIS 10.0.

ROV Video and Photo Media

The high-definition video was recorded directly to a 3 terabyte (TB) hard disk array utilized as part of the UCONN ROV group's HD video recording system. The video recorded to this array was compressed and stored at 220 Mbps using the Apple ProRes 422 QuickTime™ video compression codec. Approximately 30 hr of video can be accommodated for temporary storage by this hard disk array. These recordings will have no burned in data overlay (time, date, depth, coordinates), but have the corresponding UTC time code recorded to the time code track of the QuickTime™ file. These video files can be played back and viewed on a Mac or PC with a standard QuickTime™ Player. QuickTime Players of version 7.1.6 or greater are also capable of displaying the UTC time code associated with the video. It should be noted that all drives connected to this video recording system will need to be formatted with the Mac OS Extended Volume Hard Drive Format (HFS+) to ensure proper storage of video files to hard disk. At the conclusion of each dive day, the corresponding HD video files were copied to secondary 2 TB hard drives provided by the science party for science use and archival. At 220 Mbps, ten hours of video will require approximately 1 TB of drive space.

The video from the standard definition camera was routed in series to a pair of Sony DSR-20 DVCAM decks and then onto a Pioneer DVD recorder. Additionally, a Horita GPT RM-50 II video titler will be placed just prior to the recording decks and configured to provide a data overlay of UTC data/time, ROV latitude, longitude & depth burned into the video to be recorded. The Science Team provided two Sony DSR 11 DVCam recorders (HBOI-FAU) as spares and two Voyager Q docking stations to copy the HD video to 2 TB hard drives.

ROV Collections and Samples

Periodically during the dive and as directed by the lead scientist, sessile invertebrates (coral, gorgonians, sponges, algae, and other invertebrates) were collected using the ROV manipulator arm (6 function with fingers). A coral cutting blade was attached to the manipulator claw for sampling soft corals. The ROV team provided the following collection gear with the *Kraken 2* ROV: 6-function HYDRO-LEK hydraulic manipulator; 8-bucket rotary carousel with 7- liter suction buckets and suction hose; and a hydraulically extensible sample tray containing either 1) one 1" thick-walled polypropylene Biobox having external dimension of 36"L x 12"W x 10"H; or 2) 18 4"-diameter sampling quivers (PVC tubes) on a rotating tray. Additional T-handle punch cores may be mounted in place of one of the quivers. Because of the limitation of keeping specimens separated in the Biobox (especially important for coral genetic samples), the quivers and suction samples were used exclusively.

General collections of marine invertebrates, algae, and microorganisms will be used for baseline assessment of taxonomy and biodiversity. When available hard corals were collected for molecular coral health assessment and to determine genetic connectivity between regions (Drs.

Joshua Voss, Sara Edge; with funding from NOAA CIOERT and FIO). Shallow and mesophotic species were targeted on Pulley Ridge, including: *Agaricia*, *Leptoseris*, *Scolymia*, *Montastraea*, and *Madracis*. On Pourtalès Terrace deepwater species were targeted: *Sylaster*, *Lophelia*, and *Enallopsammia*. Up to 3-5 scleractinian specimens (5 cm² each) were collected at each site when possible.

Some samples were subdivided onboard for microbial community profiling (flash frozen), gene expression profiling (TRIzol[®] preservative and frozen), population genetics (95-100% ethanol and frozen). Voucher specimens were made of each sample for museum archives (Harbor Branch Oceanographic Museum and/or USNM). The subsamples for gene expression, microbial profiling, and population genetics will be exhausted following the experiments. If corals with visually apparent oil deposits (or oil observed in adjacent sediments) are encountered, a subsample will also be preserved (frozen) for HPLC analysis.

Some non-scleractinian samples were frozen and preserved for chemical fractionation, microbial isolations, genetic analysis of microbial communities and biosynthetic gene clusters. After the expedition, some materials will be evaluated in a broad range of biological assays related to human disease both in the PIs' laboratories and through collaborative agreements with researchers having complementary assays. The active components will be purified and the structures defined through spectroscopic methods.

MULTIBEAM SONAR SURVEYS AND MAPS

Acoustic mapping with the *Nancy Foster's* multibeam echosounders used the Simrad EM1002 System (95 kHz, 20m-1000m; 0.5 Gb/hr for survey and processing) and Reson 7125 System (400 kHz and 200 kHz, 500 m max; 4 Gb/hr). Target sites were selected by the Chief Scientist on Pulley Ridge (50-150 m) and Pourtalès Terrace (200-800 m). At shallow depths of Pulley Ridge the Reson provided 1 m resolution, but deeper depths required the EM1002 at 5-10 m resolution. Sonar water column data was not collected. Approximately 6 hours of sonar survey (24:00-06:00) was conducted each night when not in transit.

Targets included areas for which the science team does not have existing maps, and were used to guide subsequent ROV dive operations. Whenever possible, shipboard sonar surveys were made the night prior to the ROV dive and the NOAA sonar team provided the Chief Scientist and ROV team GeoTIFF maps for each dive site as soon as possible after each sonar survey. Each survey was on the order of 3x 5 nmi depending on depth and time constraints. These maps were loaded into the ROV team's WinFrog integrated navigation system to be used during the dive to track the ROV's position relative to bottom features. Prior to each dive the Chief Scientist met with the ROV team to review the GeoTIFF map and to overlay waypoints for the ROV to navigate to during the dive.

In addition the Chief Scientist has the following GeoTIFF maps which were used for some of the dive sites and will be made available to the ROV team prior to the cruise:

- 1) Pulley Ridge HAPC multibeam sonar map- Conducted and provided by D. Naar, USF.
- 2) Pourtalès Terrace multibeam maps- Shipboard sonar during NOAA Ron Brown cruise, November 2010 (map source- T. Baptista, NOAA). Currently only two small areas (~2

nmi²) have been surveyed and are available. These are of very low resolution and poor quality.

- 3) Regional NOAA bathymetric charts- Several NOAA charts for the region along the Florida coastline are available through NOAA as TIFF and/or SID images. These have bathymetric contour lines but are not digitized; that is, the contour lines are not digitized. These have been georeferenced by the Chief Scientist and imported into ArcGIS 9.3 as GeoTIFF files. Where multibeam data are not available (i.e., most of the Pourtalès Terrace), these maps were used for the ROV dive navigation and dive site planning.

MOCNESS PLANKTON TRAWLS

The Multiple Opening and Closing Net Sampling System (MOCNESS) was equipped with conductivity, temperature, fluorometer, transmissometer, dissolved oxygen and depth sensors, and EM conducting cable. The ship provided the winch and EM conducting cable, and the University of Miami provided the MOCNESS gear. Eight nets can be triggered from surface to open/close and sample at discrete depths to maximum depth of 500 m. The MOCNESS plankton tows were conducted nightly for ~4 hours (~20:00- 24:00) whenever practical and when not transiting. Two science team members assisted the UM technician and the ship's deck crew for deployment and recovery.

CTD

The ship provided a SBE 911 CTD-rosette system which collected conductivity, temperature, depth, and fluorometry, and turbidity. These data were used both to support sonar surveys (sound velocity) and to characterize hydrographic conditions at the dive sites. CTD casts with the ship's CTD-rosette were deployed nightly at each MOCNESS and multibeam site.

BLUEFIN GLIDER OPERATIONS

One Bluefin Robotics Spray Glider was deployed during Leg 1 on Pulley Ridge to collect oceanographic mid-water data and was recovered after the cruise near Pulley Ridge after 56 days and 3,211 dives. It was programmed to conduct transects in the Pulley Ridge vicinity for nearly two months and then to surface for recovery at a specific time. The glider is 2 m long, 0.2 m diameter with two 0.5 m wings, weighs 120 lbs, and has sensor configuration of: CTD, DO, Chl-a, and Scattering. A second glider (with sensor configuration: CTD, Refined Oil, Crude Oil) was to be deployed at Pulley Ridge and then to follow the Florida Current, across Pourtalès Terrace, and up the east coast of Florida for recovery. Unfortunately the second glider had electronic problems and was not deployed. A FAU student deployed the glider and received position updates and sensor datasets from the glider by email throughout the cruise; position updates were also via satellite phone from HBOI-FAU to prepare for recovery. Once launched, the glider was piloted remotely (i.e., from the operation's center at HBOI-FAU in consultation with CIOERT scientists).

CRUISE RESULTS

HBOI-FAU AT-SEA DATABASE

As part of our CIOERT Mesophotic Program, the HBOI-FAU deepwater benthic team developed a new and efficient Database Solution for Benthic Surveys that was used for the first time for this cruise and will be used in all future CIOERT mesophotic and deepwater surveys. First, all time-stamped ROV equipment (ROV video and still cameras, WinFrog, CTD, etc.) were synchronized before departure. Over the past two years a Microsoft Access 2007 database was developed to compile and manage all data collected during CIOERT cruises, including: ROV navigation data, CTD data, samples data, site data, video and photograph data, ROV dive notes, multibeam sonar data, and metadata. Any data collected that contains continuous real time date and time information was linked to ROV tracking data based on this information. The Access database is then linked to ArcGIS 10 to visualize all the georeferenced spatial data. This system will then later be used to aid in the characterization of the habitats.

- In this database, all data sets are linked to the ROV track data every 1-2 seconds
- These data are archived at HBOI-FAU's DBMR Museum (Hard Drives and DVDs) and backed up on HBOI-FAU's computer server
- These data are then compiled in ArcGIS (version 10.0) which shows details maps of all the collection sites, and hot links to each sample, photograph, and other data

A second part of this Solution for Benthic Surveys, was development of a Graphical User Interface called AnthSOA by SRI in collaboration with HBOI-FAU CIOERT. This program which has been developed over the past year will be used for this cruise and future CIOERT cruises for the following:

- Import and filter raw dive track data
- Import and standardize CTD data
- Import dive images
- Links data sets for import into AnthoSOA, HBOI-FAU at-Sea Database, and ArcGIS

Many ROVs used for science rely on Ultrashort Baseline Navigation (USBL) for tracking the ROV's position throughout the dive every 1-2 seconds. Depending on the equipment (transponders, software), depth, and other factors such as rugged topography, these data are inherently 'noisy' and often produce false echoes that may be 10s of meters from the actual ROV position. Typical error is 10-20 m but may exceed 50-100 m. The AnthoSOA software allows the user to add various layers of filter to the dive track data; altering several parameters including ROV speed, nearest neighboring points and other factors. This then allows all the other data that will be linked to the ROV navigation data to have the most accurate location possible. In combination with the HBOI-FAU at-Sea Database, these will provide CIOERT cruises the best Database Solution for Benthic Surveys, including:

- Increase data entry:
 - Speed
 - Accuracy
 - Consistency

- User Friendly
- Increase data reporting speed
 - With standardized automated reports
- ArcGIS Mapping
 - Quick and easy shape files
 - Automatically updated into ArcGIS

EDUCATION AND OUTREACH

Education and outreach activities associated with the FLoSEE II expedition included:

- Web site to include daily logs from sea, press kit, and links to educational resources related to DSCE
- University student participation during the expedition, sponsored by CIOERT project 6.3.1, “*Ocean Discovery*”: *At-Sea Research Opportunities for the Next Generation of Ocean Scientists*.

The goal of the expedition education and outreach activities is to promote ocean literacy, knowledge of ocean ecosystems, and challenges of exploring and managing deep ocean frontiers, for public and classroom audiences, with a focus on CIOERT’s research themes. Related activities included:

Expedition Web Site- Dennis Hanisak, HBOI-FAU (at-sea lead); Andrew Shepard, UNCW (Webmaster):

The FLoSEE II expedition web site (www.cioert.org/FLoSEE2) resembled the FLoSEE 2010 expedition web site (www.cioert.org/FLoSEE) and includes information on the expedition (including the expedition plan, track, and overall schedule, and daily blogs), science resources (on CIOERT themes: mesophotic and deep water coral reefs, water column, and biomedical resources), and technology resources (e.g., undersea vehicles, featuring the *Kraken* ROV, seafloor mapping, and plankton sampling).

News Media- Linda Joy, NOAA/OAR; Kim Amendola, NOAA SEFSC; Jan Petri, HBOI-FAU; Keeley Belva, NOAA/OER; David Hall, OMAO Public Affairs Officer:

A press release on post-cruise discoveries was drafted by the Chief Scientist, reviewed by key participants, and distributed by the CIOERT partners and NOAA’s OER Communication network.

Skype™ to High School Students – With NOAA’s approval to permit Skype™ on the ship, a 30-minute Skype™ session was held during the cruise that linked the cruise participants inside the ROV van during an actual dive with students and teachers of the Marine & Oceanographic Academy (MOA), which is located on the HBOI-FAU campus.

At-Sea Opportunity for University Students - This expedition includes the second of a series of CIOERT “Ocean Discovery” cruises that will increase “hands-on”, at-sea, multi-disciplinary opportunities for university students in the CIOERT region, with each cruise focused on one or

more of CIOERT's themes. The goal of this program is to facilitate students to become successful scientists through active participation and immersion in a multi-disciplinary ocean sciences research and monitoring cruise, followed by a rigorous, laboratory-based oceanographic research course. A total of eight FAU graduate students (four each leg) participated in this cruise and participated in a course *Immersion in Ocean Sciences* taught this fall at HBOI-FAU/FAU (Lead Instructor: Dennis Hanisak).

Student Reports

The student reports that resulted from this cruise are the following which will be presented in the Final Cruise Report:

- Morphological Characterization and Identification of Sponges Collected During FLoSEE II, J. Grima
- Zooplankton Diversity and Abundance Within and Outside the Pourtalès Gyre, C. Kehler
- Vertical Distribution and Development of Flatfish Larvae, B. Lieuwen
- Characterization of the Water Column During FLoSEE II, R. Mulroy
- Biodiversity and Abundance of Zooplankton in Two Regions of the Gulf of Mexico, N. Notarnicola
- Bluefin Spray Glider, Survey of Pulley Ridge, D. Krupski

CRUISE SUMMARY

Table 3 summarizes the results of Leg 1, September 12-19, 2011, including ROV dives, MOCNESS trawls, ROV samples collected, ROV photographs and videotapes, and multibeam sonar surveys.

Table 3. Summary of 2011 CIOERT FLoSEE II cruise, Leg 1, on the NOAA Ship *Nancy Foster*.

Leg:	1		
Number of sites:	30		
ROV Sites:	12	Bottom Time:	58.5
# of MOCNESS Sites:	6		
Sonar Type:	Multibeam	Number of Sonar:	6
		Total km2 covered:	106.05
Number of Specimens:	160	# of Total Images:	4219
		Total Subsamples:	134
Annelida:	1	# of InSitu Sample Images:	206
Arthropoda:	3		MIC ISO: 0
Bryozoa:	1	# of Deck Images:	339
Chlorophyta:	7	# of All In Situ:	3880
Chordata:	4	# of General:	648
Cnidaria:	38	# of Transect Images:	2947
Scleractinia:	19	DVD:	30
Octocorallia:	12	MiniDV:	0
Antipatharia:	6	Other Media:	0
Echinodermata:	9	HDCam:	30
		Hard Drive #'s:	1 - 3
Mollusca:	1	Hours of Video:	60
Phaeophyta:	1		
Porifera:	37		
Rhodophyta:	6		
Sediment:	3		
Water/Plankton:	50		
			CELL CULT: 0
			DNA: 54
			Portol: 0
			RNA Later: 0
			Other: 45

ROV DIVE SITES

Leg 1 (September 12-19) of the FLoSEE II cruise resulted in 12 ROV dives on Pulley Ridge and adjacent sites for a total bottom time of 58.5 hours, covering 16.08 km and at depths from 59 to 827 m (Fig. 1, Table 4).

Table 4. List of collection sites for Leg 1 of the CIOERT FLoSEE II Cruise on Pulley Ridge, September 12-19, 2011, including ROV dives, CTD casts, and MOCNESS trawls.

SITE #	Method	Bottom Time (min)	Total Distance (km)	Latitude (On Bottom)	Longitude (On Bottom)	Latitude (Off Bottom)	Longitude (Off Bottom)	Depth Range (m)
13-IX-11-1	Kraken 2 - 1	423	1.44	24°57.6766'N	83°38.2409'W	24°58.2004'N	83°37.7321'W	59-68
13-IX-11-2	Trawl 1	97		24°57.4010'N	83°38.2180'W	24°59.7980'N	83°36.7640'W	19-52
13-IX-11-3	CTD_DN256_1			24°57.0000'N	83°38.0000'W			65
14-IX-11-2	Kraken 2 - 2	206	1.39	24°56.0890'N	83°38.9735'W	24°56.6273'N	83°38.7573'W	60-65
14-IX-11-3	Kraken 2 - 3	221	1.15	24°53.6955'N	83°39.5803'W	24°54.2374'N	83°39.4272'W	58-62
14-IX-11-4	Trawl 2	60		24°48.0375'N	83°39.8984'W			18-50
14-IX-11-5	CTD-DN257_1			24°57.4900'N	83°38.4900'W			63
14-IX-11-6	CTD-DN257_2			24°56.1200'N	83°38.9500'W			59
15-IX-11-1	Kraken 2 - 4	237	2.11	24°48.0480'N	83°40.1457'W	24°47.9789'N	83°41.3660'W	62-68
15-IX-11-2	Kraken 2 - 5	222	1.7	24°48.0964'N	83°40.1521'W	24°48.0341'N	83°34.1356'W	62-68
15-IX-11-3	Trawl 3	67		24°51.5480'N	83°40.4220'W			20-50
15-IX-11-4	CTD DN258_1			24°50.3900'N	83°40.8300'W			69
15-IX-11-5	CTD DN258_2			24°48.0200'N	83°40.4600'W			61
16-IX-11-1	Kraken 2 - 6	246	1.79	24°50.9803'N	83°39.6496'W	24°50.6934'N	83°40.6570'W	54-71
16-IX-11-2	Kraken 2 - 7	212	0.91	24°42.5010'N	83°41.7933'W	24°42.5593'N	83°42.3163'W	64-67
16-IX-11-3	Trawl 4			24°42.6470'N	83°46.1430'W	24°44.5390'N	83°44.4530'W	23-61
16-IX-11-4	CTD DN259_1			24°53.4600'N	83°38.8800'W			58
16-IX-11-5	CTD DN259_2			24°50.9500'N	83°39.7200'W			61
17-IX-11-1	Kraken 2 - 8	236	0.48	24°40.2112'N	83°43.2540'W	24°40.3123'N	83°43.2483'W	84-172
17-IX-11-2	Kraken 2 - 9	222	1.39	24°46.0331'N	83°52.7326'W	24°46.6640'N	83°52.7759'W	97-167
17-IX-11-3	Trawl 5	72		24°55.9880'N	83°46.7820'W	24°57.6280'N	83°45.4380'W	21-64
17-IX-11-4	CTD DN260_1			24°41.7600'N	83°44.8400'W			106
17-IX-11-5	CTD DN260_2			24°40.2500'N	83°43.2200'W			161
18-IX-11-1	Kraken 2 - 10	276	1.2	24°55.4622'N	83°46.9065'W	24°56.0014'N	83°47.3606'W	80-87
18-IX-11-2	Kraken 2 - 11	213	1.37	24°47.4692'N	83°53.9775'W	24°47.7943'N	83°54.4847'W	100-144
18-IX-11-3	Trawl 6	62		24°40.0290'N	83°54.6860'W	24°41.5670'N	83°52.6100'W	67-331
18-IX-11-4	CTD DN261_1			24°57.1400'N	83°45.6900'W			78
18-IX-11-5	CTD DN261_2			24°55.4800'N	83°46.9900'W			82
19-IX-11-1	Kraken 2 - 12	438	1.15	24°39.6902'N	83°55.0128'W	24°40.2444'N	83°55.3118'W	512-827
19-IX-11-4	CTD DN262_1			24°39.7000'N	83°54.1300'W			580
19-IX-11-5	CTD DN262_2			24°39.4000'N	83°54.9100'W			815

SEADESC Report- Habitat and Biota Characterizations

The SEADESC Level I Report (Southeastern United States Deep-Sea Corals) for each ROV dive is presented in Appendix 1. This provides for each ROV dive the following data: cruise metadata, dive track overlaid on multibeam map, dive track data (start and end latitude/longitude, depth, distance traveled), objectives, general description of habitat and biota, and images of biota and habitat characteristic of the dive site.

ROV Dive Annotations

Throughout each dive the PIs continuously annotated the video logging events every 1-5 minutes. Each event was coded with a date/time stamp which allowed it to be linked to the exact coordinates and depth of the ROV navigation log. Commentary was provided describing geology, habitat, and biota. These entire logs for all dives are presented in Appendix 2. The full data set along with the ROV Navigation logs have been submitted to NOAA on CDs.

Seven ROV dives were conducted within the Pulley Ridge HAPC, one ROV dive was conducted on another ridge west of the main ridge; three dives were made on the southern dropoff of Pulley Ridge, and one dive was made on a deepwater escarpment ~5 nmi south of Pulley Ridge. These sites are summarized below.

Sites within the Pulley Ridge HAPC

Kraken 2-1 (main ridge, northern end of HAPC)- Conducted N-S transect parallel along top of main ridge. Ridge crest relatively flat, 64-66 m depth, with series of low relief hummocks; nearly 100% hard bottom; 80-100% cover of 5-10 cm diameter rock rubble and cobble, patches of exposed sediment. No hard coral was observed except *Scolymia* solitary coral. Rhodophyta, multiple species of 30 - 100+ cm flat blades (*Halymenia*, *Kallymenia*) were abundant.

Kraken 2-2 (main ridge, northern end of HAPC)- Conducted N-S transect parallel along main ridge. 100% hard bottom, covered with rock rubble, cobble, and small boulders (5-50 cm diameter), and patches of sand and shell hash. Series of low relief hummocks (2 m relief) on main ridge. Numerous lionfish (>15 observed), red grouper and black grouper, and dense reef fish. Hard coral included *Leptoseris* (1 observed). Large bladed Rhodophyta and green alga *Anadyomene* were abundant.



Figure 4. *Anadyomene* green algae and coralline algal habitat; *Kraken* dive 2-4.

Kraken 2-3 (main ridge, central area of HAPC)- Conducted N-S transect parallel along main ridge. 100% hard bottom, covered with rock rubble, cobble, sand and shell hash. Series of low relief hummocks (2 m relief) on main ridge. Only one hard coral observed (*Agaricia* sp.). *Anadyomene* dominated the benthos along with the large bladed *Rhodophyta*.

Kraken 2-4 (main ridge, central area of HAPC)- Survey E-W transect perpendicular to main ridge in the middle region of Pulley Ridge following track line of USGS SeaBoss Site 13 dive in 2004 (Hine et al., 2008). 100% hard bottom predominantly low relief; <10-20 cm rock rubble cobble, dead coral plates and very little exposed sediment. The high points on top of the ridges are 64-65 m depth. The valleys in between are ~66 m. One small region on the east ridge and slightly west of the ridge had a population of live *Agaricia lamarcki*, ~20 colonies counted. The rest of the transect had only a few *Agaricia* and a few *Montastraea cavernosa*. Several red grouper burrows were observed: 8-10 m diameter, 1-1.5 m deep. *Anadyomene* dominated with 75-90% cover.



Figure 5. *Agaricia* coral plates; *Kraken* dive 2-6 (parallel lasers 10 cm).

Kraken 2-5 (main ridge, central area of HAPC)- Survey parallel to and 100 m north of *Kraken 2-4*. Transect started at east ridge crossing apparent valley and ended on the main west ridge. 100% hard bottom predominantly low relief, <5-20 cm rock rubble and cobble, dead coral plates and very little exposed sediment. Some small ledges with 30 cm relief. The high points on the ridges are 64-65 m and the valleys in between are ~66 m. Hard coral- few small patches of live coral were found along the transect, one within the east ridge region and one in the valley region between the ridges. Each patch was no larger than 5x10 m dominated by 30-60 cm *Agaricia lamarcki* and a few *Montastraea cavernosa*. *Anadyomene* dominated with 75-90% cover.

Kraken 2-6 (main ridge, central area of HAPC)- Survey E-W transect perpendicular to main ridge in the middle region of Pulley Ridge following track line of USGS SeaBoss Site 11 dive in 2004 (Hine et al., 2008). 100% hard bottom predominantly low relief; rock rubble, cobble, dead coral plates 0.5 m diameter, 90% cover; small patches of exposed sand; 10-20 cm ledges relief. Few small patches of live coral were found along the transect; *Agaricia lamarcki* 10-20 cm diameter present but uncommon; some *Montastraea cavernosa*, uncommon. Several 8-10 m diameter red grouper burrows observed, 1-1.5 m deep. *Anadyomene* dominated, varying from 10-50% cover.

Kraken 2-7 (main ridge, southern area of HAPC)- Survey E-W transect perpendicular following track line of USGS SeaBoss Site 10 dive (Hine et al., 2008) at southern end of main ridge of Pulley Ridge. 100% hard bottom, predominantly flat, ~63 m depth; low relief, <10-20 cm, rock rubble, cobble, dead coral plates, and very little exposed sediment. Hard coral consisted of patch about 5x10 m dominated 30 - 60 cm *Agaricia lamarcki* and *Montastraea cavernosa*. Eleven lionfish, rock beauty, purple reef fish, two lobster were observed. *Anadyomene* and *Lobophora* dominated the benthos.



Figure 6. Lionfish line up along small ledge; *Kraken* dive 2-7.

Sites on Pulley Ridge but outside boundaries of Pulley Ridge HAPC

Kraken 2-10 (ridge ~7 nmi west of main Pulley Ridge)- Survey northwest area of Pulley Ridge. Eastern base of east ridge is 86.4 m; 100% hard bottom, all rock rubble, cobble 5-10 cm, no dead plate coral. Top of east ridge is 83.8 m; same habitat, no ledges, 75-90% cover rock rubble and cobble. Dominant species included *Anadyomene*, *Peyssonnelia*, deep purple encrusting corallines; 15-20 spp. of demosponges. Very dense biota, dense sponges; densest observed on all of Pulley Ridge.

Kraken 2-8 (southern drop-off of Pulley Ridge)- New multibeam sonar (*Nancy Foster, 2011*) along the southeast drop-off of the Pulley Ridge terrace shows 50-m relief wall oriented NW to SE from 160 to 118 m; at the base of the wall are several 8 m tall rock piles or mounds. Base of wall is 163 m with 30-45° rock slope; 1-2 m outcrops and boulders. Video of five abandoned fish traps with pile of long line on top. Dominant fish included anthiids, 30-40cm scamp, bank butterfly, and roughtongue bass.

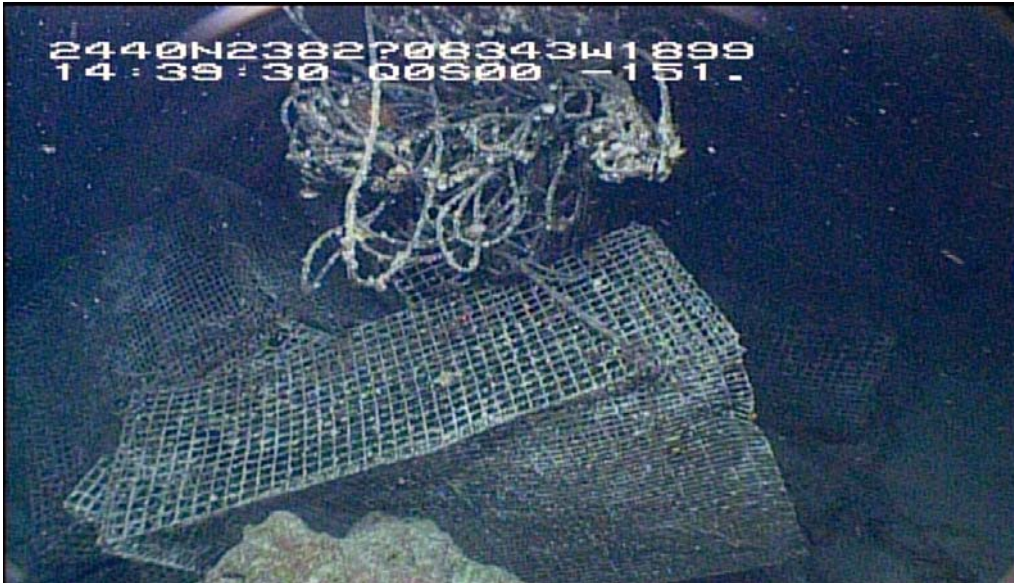


Figure 7. Ghost fish traps along drop-off of Pulley Ridge; *Kraken* dive 2-8.



Figure 8. Roughtongue bass; *Kraken* dive 2-8.

Kraken 2-9 (southern drop-off of Pulley Ridge)- Survey deep drop-off and escarpment at southwest corner of Pulley Ridge region within USF (D. Naar) multibeam sonar map. Conducted 1 nmi transect S-N on deep drop-off, across and along each escarpment from 136 m to 98 m. Sonar map shows a series of three escarpments on the wall. 100% hard bottom, rock

rubble, pavement, and ledges. Lower ledge, 136-130 m depth. Some areas with 1-2 m ledges and rugged rock with dense population of reef fish; video of at least 3 large (60-100 cm) Warsaw grouper, some scamp, dozens of greater amberjack.



Figure 9. Large warsaw grouper on deep rocky wall; *Kraken* dive 2-9.

Kraken 2-11 (southern drop-off of Pulley Ridge)- Survey southwest drop-off and escarpment of Pulley Ridge near *Kraken 2-9*. Base of wall 122 m depth; 80% cover rubble and pavement; 111 m, top edge. Fish observations included two Warsaw grouper 60 cm, numerous scamp, 50 cm speckled hind, 2 snapper (dog snapper?), 60 cm gag (first seen on cruise).

Site outside Pulley Ridge

Kraken 2-12 (800 m Escarpment)- Survey rock escarpment at 800 m depth, ~6 nmi south of the Pulley Ridge. The new *Nancy Foster* multibeam sonar shows 205 m high wall, base 825 m, top 620 m. Depth 802 m- vertical, apparent consolidated white clay, horizontally layered, 2 m vertical escarpments; 1-2 m rock escarpments, 1 m boulders, pocketed consolidated clay; 1-2 m rock slab. Sparse colonies and rubble of *Lophelia pertusa* coral observed. 30 cm *Beryx* (barrelfish) present along with golden crab *Chaceon fenneri*.



Figure 10. Blind lobster *Acanthacaris caeca* by burrow; *Kraken* dive 2-12.

ROV Insitu Photos and Video

A total of 60 hours of ROV dive videotapes with audio annotations (Appendix 2) were made which were recorded on hard drives, with copies on DV Cam and DVD. A total of 3,880 *in situ* digital images were taken which included 206 images of collected species, 648 general habitat and species photos, and 2,947 quantitative transect photos. The transect photos were taken generally straight down, perpendicular to the bottom, with parallel lasers so that the area of each image can be calculated using CPCE[®] to determine species densities and percent cover of substrate and fauna. These data will be analyzed and presented in the Final SEADESC Type II Report. One copy of the video and photos is archived at HBOI-FAU, one set is with NOAA Fisheries (A. David), and one set is archived at NOAA Central Library (Table 1).

The following sets of video are archived:

Leg 1 (CIOERT): HD Videotapes- One set of 2-TB hard drives to HBOI-FAU (CIOERT), and 1 set to NOAA Fisheries (Andrew David, AD). Total = Eight 2-TB hard drives (HBOI-FAU- 4, AD- 4). Standard definition videotapes- 1 set of DV-Cam tapes to HBOI-FAU (CIOERT), 1 set of DV-Cam tapes to Andrew David. Total = 7 dive days, 56 hours of tape; 56 DV-Cam tapes (HBOI-FAU- 28, AD- 28).

Leg 2 (NOAA DSCR): HD Videotapes- One set to HBOI-FAU (CIOERT), 1 set to Andrew David (NOAA Fisheries); AD will copy a third set for NOAA. Total = Nine 2-TB hard drives (HBOI-FAU- 3, AD- 6). Standard definition videotapes- 1 set of DV-Cam tapes to HBOI-FAU (CIOERT), 1 set of DV-Cam tapes to Andrew David; 1 set of DVDs for NOAA. Total = 6 dive days, 48 hours of tape; 48 DV-Cam tapes; 48 DVDs (HBOI-FAU- 24 tapes, AD- 24 tapes)

SAMPLES

During Leg 1 of the FLoSEE II Cruise on Pulley Ridge, currents were much lower than on Leg 2 on Pourtales Terrace where collections were much more challenging. A total of 160 specimens were collected during Leg 1 including 38 Cnidaria (19 Scleractinia, 12 Octocorallia, 6 Antipatharia), 37 Porifera, 9 Echinodermata, 1 Mollusca, and 14 algae (Table 5). Museum specimens are archived at HBOI-FAU; subsamples will go the National Museum of Natural History and specialists. Samples were also collected for CIOERT's coral health and biomedical research programs. A total of 134 subsamples of the specimens were used for microbial analysis, chemical extracts, and DNA extracts.

Table 5. Samples collected by *Kraken 2* ROV and MOCNESS trawls (plankton) during Leg 1 of the CIOERT FLoSEE II Cruise, September 12-19, 2011.

Sample #	Phylum	Taxonomy	Dive #	Depth (m)
13-IX-11-1-000	Cnidaria	Scolymia sp.	Kraken 2 - 1	66
13-IX-11-1-001	Cnidaria	Primnoidae	Kraken 2 - 1	62
13-IX-11-1-002	Chordata	Didemnidae	Kraken 2 - 1	61
13-IX-11-1-003	Chordata	Didemnidae	Kraken 2 - 1	61
13-IX-11-1-004	Cnidaria	Hydroida sp.	Kraken 2 - 1	65
13-IX-11-1-005	Porifera	Cinachyra sp.	Kraken 2 - 1	65

13-IX-11-1-006	Porifera	Halichondrida	Kraken 2 - 1	65
13-IX-11-1-007	Echinodermata	Crinoidea	Kraken 2 - 1	67
13-IX-11-1-008	Porifera	Astrophorida	Kraken 2 - 1	67
13-IX-11-1-009	Porifera	Xestospongia muta	Kraken 2 - 1	68
13-IX-11-1-010	Echinodermata	Narcissia sp.	Kraken 2 - 1	68
13-IX-11-1-011	Porifera	Poecilosclerida	Kraken 2 - 1	68
13-IX-11-1-012	Porifera	Poecilosclerida	Kraken 2 - 1	68
13-IX-11-1-013	Cnidaria	Carijoa sp.	Kraken 2 - 1	67
13-IX-11-1-101	Rhodophyta	Rhodymenia sp.	Kraken 2 - 1	66
13-IX-11-1-102	Rhodophyta	Rhodophyta	Kraken 2 - 1	66
13-IX-11-1-301	Water/Plankton	Water/Plankton	Kraken 2 - 1	68
13-IX-11-2-301	Water/Plankton	Water/Plankton	Trawl 1	51.8
13-IX-11-2-302	Water/Plankton	Water/Plankton	Trawl 1	38.9
13-IX-11-2-303	Water/Plankton	Water/Plankton	Trawl 1	38.2
13-IX-11-2-304	Water/Plankton	Water/Plankton	Trawl 1	31.8
13-IX-11-2-305	Water/Plankton	Water/Plankton	Trawl 1	29.1
13-IX-11-2-306	Water/Plankton	Water/Plankton	Trawl 1	19
13-IX-11-2-307	Water/Plankton	Water/Plankton	Trawl 1	19.2
13-IX-11-2-308	Water/Plankton	Water/Plankton	Trawl 1	19
14-IX-11-2-001	Cnidaria	Stichopathes lutkeni	Kraken 2 - 2	60
14-IX-11-2-002	Echinodermata	Gorgonocephalidae	Kraken 2 - 2	60
14-IX-11-2-003	Cnidaria	Leptoseris cucullata	Kraken 2 - 2	64
14-IX-11-2-101	Rhodophyta	Rhodophyta	Kraken 2 - 2	61
14-IX-11-2-102	Chlorophyta	Anadyomene sp.	Kraken 2 - 2	61
14-IX-11-2-103	Rhodophyta	Botryocladia sp.	Kraken 2 - 2	61
14-IX-11-3-001	Cnidaria	Ellisellidae	Kraken 2 - 3	60
14-IX-11-3-002	Cnidaria	Leiopathes sp.	Kraken 2 - 3	61
14-IX-11-3-003	Cnidaria	Stichopathes sp.	Kraken 2 - 3	61
14-IX-11-3-004	Porifera	Agelas clathrodes	Kraken 2 - 3	58
14-IX-11-3-005	Cnidaria	Agaricia fragilis	Kraken 2 - 3	58
14-IX-11-3-006	Echinodermata	Comatulida	Kraken 2 - 3	unknown
14-IX-11-3-101	Chlorophyta	Chlorophyta	Kraken 2 - 3	61
14-IX-11-3-102	Ochrophyta	Lobophora variegata	Kraken 2 - 3	61
14-IX-11-4-301	Water/Plankton	Water/Plankton	Trawl 2	50.1
14-IX-11-4-302	Water/Plankton	Water/Plankton	Trawl 2	40.4
14-IX-11-4-303	Water/Plankton	Water/Plankton	Trawl 2	37.6
14-IX-11-4-304	Water/Plankton	Water/Plankton	Trawl 2	28.5
14-IX-11-4-305	Water/Plankton	Water/Plankton	Trawl 2	28
14-IX-11-4-306	Water/Plankton	Water/Plankton	Trawl 2	22.3
14-IX-11-4-307	Water/Plankton	Water/Plankton	Trawl 2	18.3
14-IX-11-4-308	Water/Plankton	Water/Plankton	Trawl 2	19.4

15-IX-11-1-001	Cnidaria	Agaricia lamarcki	Kraken 2 - 4	64
15-IX-11-2-001	Cnidaria	Montastraea cavernosa	Kraken 2 - 5	67
15-IX-11-2-002	Cnidaria	Agaricia lamarcki	Kraken 2 - 5	65
15-IX-11-2-003	Cnidaria	Montastraea cavernosa	Kraken 2 - 5	65
15-IX-11-2-004	Cnidaria	Agaricia lamarcki	Kraken 2 - 5	64
15-IX-11-2-101	Chlorophyta	Anadyomene menziesii	Kraken 2 - 5	65
15-IX-11-3-301	Water/Plankton	Water/Plankton	Trawl 3	47.1
15-IX-11-3-302	Water/Plankton	Water/Plankton	Trawl 3	41.1
15-IX-11-3-303	Water/Plankton	Water/Plankton	Trawl 3	40.9
15-IX-11-3-304	Water/Plankton	Water/Plankton	Trawl 3	31.3
15-IX-11-3-305	Water/Plankton	Water/Plankton	Trawl 3	27.3
15-IX-11-3-306	Water/Plankton	Water/Plankton	Trawl 3	18.9
15-IX-11-3-307	Water/Plankton	Water/Plankton	Trawl 3	20.2
15-IX-11-3-308	Water/Plankton	Water/Plankton	Trawl 3	21
16-IX-11-1-001	Cnidaria	Agaricia lamarcki	Kraken 2 - 6	64
16-IX-11-1-002	Cnidaria	Agaricia lamarcki	Kraken 2 - 6	64
16-IX-11-1-003	Cnidaria	Agaricia lamarcki	Kraken 2 - 6	66
16-IX-11-1-004	Cnidaria	Agaricia lamarcki	Kraken 2 - 6	65
16-IX-11-1-005	Cnidaria	Montastraea cavernosa	Kraken 2 - 6	65
16-IX-11-1-006	Echinodermata	Comatulida	Kraken 2 - 6	66
16-IX-11-1-007	Porifera	Geodia gibberosa	Kraken 2 - 6	70
16-IX-11-1-101	Rhodophyta	Corallinaceae	Kraken 2 - 6	64
16-IX-11-1-102	Chlorophyta	Chlorophyta	Kraken 2 - 6	66
16-IX-11-2-001	Cnidaria	Agaricia lamarcki	Kraken 2 - 7	66.2
16-IX-11-2-002	Cnidaria	Montastraea cavernosa	Kraken 2 - 7	66.5
16-IX-11-2-003	Cnidaria	Agaricia lamarcki	Kraken 2 - 7	66.5
16-IX-11-2-004	Cnidaria	Antipathes atlantica	Kraken 2 - 7	65.5
16-IX-11-2-005	Porifera	Demospongiae	Kraken 2 - 7	64.2
16-IX-11-2-006	Porifera	Poecilosclerida	Kraken 2 - 7	65.5
16-IX-11-2-007	Porifera	Niphates erecta	Kraken 2 - 7	66
16-IX-11-2-008	Porifera	Tethya sp.	Kraken 2 - 7	65
16-IX-11-2-009	Porifera	Demospongiae	Kraken 2 - 7	65
16-IX-11-2-010	Chordata	Ascidiacea	Kraken 2 - 7	65
16-IX-11-2-011	Porifera	Verongida	Kraken 2 - 7	64.9
16-IX-11-2-012	Porifera	Demospongiae	Kraken 2 - 7	66.3
16-IX-11-3-301	Water/Plankton	Water/Plankton	Trawl 4	57.1
16-IX-11-3-302	Water/Plankton	Water/Plankton	Trawl 4	50
16-IX-11-3-303	Water/Plankton	Water/Plankton	Trawl 4	48.6
16-IX-11-3-304	Water/Plankton	Water/Plankton	Trawl 4	40
16-IX-11-3-305	Water/Plankton	Water/Plankton	Trawl 4	39.5
16-IX-11-3-306	Water/Plankton	Water/Plankton	Trawl 4	33.1

16-IX-11-3-307	Water/Plankton	Water/Plankton	Trawl 4	25.1
16-IX-11-3-308	Water/Plankton	Water/Plankton	Trawl 4	21.6
17-IX-11-1-001	Porifera	Porifera	Kraken 2 - 8	169.9
17-IX-11-1-002	Porifera	Porifera	Kraken 2 - 8	169.9
17-IX-11-1-003	Porifera	Porifera	Kraken 2 - 8	169.9
17-IX-11-1-004	Porifera	Lithistida	Kraken 2 - 8	169.9
17-IX-11-1-005	Chordata	<i>Anthias nicholsi</i>	Kraken 2 - 8	163.6
17-IX-11-1-006	Arthropoda	Paguroidea	Kraken 2 - 8	162
17-IX-11-1-007	Porifera	Lithistida	Kraken 2 - 8	140
17-IX-11-1-008	Cnidaria	<i>Antipathes hirta</i>	Kraken 2 - 8	120
17-IX-11-1-009	Porifera	Raspailiidae	Kraken 2 - 8	117.5
17-IX-11-1-101	Chlorophyta	Chlorophyta	Kraken 2 - 8	117.5
17-IX-11-1-201	Porifera	Porifera	Kraken 2 - 8	171
17-IX-11-2-001	Cnidaria	<i>Madrepora carolina</i>	Kraken 2 - 9	139
17-IX-11-2-002	Cnidaria	Paramuriceidae	Kraken 2 - 9	107
17-IX-11-2-003	Cnidaria	Paramuriceidae	Kraken 2 - 9	107
17-IX-11-2-004	Porifera	Demospongiae	Kraken 2 - 9	107
17-IX-11-2-005	Echinodermata	<i>Asteroschema</i> sp.	Kraken 2 - 9	107
17-IX-11-2-301	Water/Plankton	Water/Plankton	Kraken 2 - 9	177
17-IX-11-3-301	Water/Plankton	Water/Plankton	Trawl 5	59
17-IX-11-3-302	Water/Plankton	Water/Plankton	Trawl 5	52.9
17-IX-11-3-303	Water/Plankton	Water/Plankton	Trawl 5	48.3
17-IX-11-3-304	Water/Plankton	Water/Plankton	Trawl 5	42.7
17-IX-11-3-305	Water/Plankton	Water/Plankton	Trawl 5	37.9
17-IX-11-3-306	Water/Plankton	Water/Plankton	Trawl 5	32
17-IX-11-3-307	Water/Plankton	Water/Plankton	Trawl 5	21.3
17-IX-11-3-308	Water/Plankton	Water/Plankton	Trawl 5	19.7
18-IX-11-1-001	Porifera	Poecilosclerida	Kraken 2 - 10	83.8
18-IX-11-1-002	Cnidaria	<i>Nicella guadalupensis</i>	Kraken 2 - 10	84
18-IX-11-1-003	Porifera	Axinellidae	Kraken 2 - 10	84.5
18-IX-11-1-004	Porifera	Astrophorida	Kraken 2 - 10	84.5
18-IX-11-1-005	Porifera	Demospongiae	Kraken 2 - 10	84
18-IX-11-1-006	Echinodermata	Comatulida	Kraken 2 - 10	84.5
18-IX-11-1-007	Porifera	Thorectidae	Kraken 2 - 10	84
18-IX-11-1-008	Porifera	<i>Spongosorites</i> sp.	Kraken 2 - 10	83.5
18-IX-11-1-009	Porifera	<i>Agelas</i> sp.	Kraken 2 - 10	83.5
18-IX-11-1-010	Porifera	<i>Discodermia</i> sp.	Kraken 2 - 10	80.5
18-IX-11-1-101	Rhodophyta	Rhodophyta	Kraken 2 - 10	84
18-IX-11-1-201	rock	rock	Kraken 2 - 10	84
18-IX-11-2-001	Porifera	<i>Theonella</i> sp.	Kraken 2 - 11	122
18-IX-11-2-002	Cnidaria	Plexauridae	Kraken 2 - 11	122

18-IX-11-2-003	Cnidaria	Scolymia sp.	Kraken 2 - 11	127.2
18-IX-11-2-004	Porifera	Demospongiae	Kraken 2 - 11	114
18-IX-11-2-101	Chlorophyta	Verdigellas peltata	Kraken 2 - 11	122
18-IX-11-2-102	Chlorophyta	Verdigellas peltata	Kraken 2 - 11	115
18-IX-11-3-301	Water/Plankton	Water/Plankton	Trawl 6	319.1
18-IX-11-3-302	Water/Plankton	Water/Plankton	Trawl 6	299.4
18-IX-11-3-303	Water/Plankton	Water/Plankton	Trawl 6	230.1
18-IX-11-3-304	Water/Plankton	Water/Plankton	Trawl 6	200.9
18-IX-11-3-305	Water/Plankton	Water/Plankton	Trawl 6	154.9
18-IX-11-3-306	Water/Plankton	Water/Plankton	Trawl 6	108.8
18-IX-11-3-307	Water/Plankton	Water/Plankton	Trawl 6	68.9
18-IX-11-3-308	Water/Plankton	Water/Plankton	Trawl 6	64.1
19-IX-11-1-001	Cnidaria	Isididae	Kraken 2 - 12	786
19-IX-11-1-002	Porifera	Hyalonema sp.	Kraken 2 - 12	779
19-IX-11-1-003	Porifera	Chondrocladia sp.	Kraken 2 - 12	779
19-IX-11-1-004	Echinodermata	Comatula sp.	Kraken 2 - 12	767
19-IX-11-1-005	Bryozoa	Bryozoa	Kraken 2 - 12	765
19-IX-11-1-006	Cnidaria	Paramuriceidae	Kraken 2 - 12	755
19-IX-11-1-007	Porifera	Demospongiae	Kraken 2 - 12	707
19-IX-11-1-008	Porifera	Hexactinellida	Kraken 2 - 12	693
19-IX-11-1-009	Cnidaria	Antipathidae	Kraken 2 - 12	694
19-IX-11-1-010	Cnidaria	Chysogorgiidae	Kraken 2 - 12	667
19-IX-11-1-011	Cnidaria	Gorgonacea	Kraken 2 - 12	633
19-IX-11-1-012	Echinodermata	Holothuroidea	Kraken 2 - 12	632.5
19-IX-11-1-013	Cnidaria	Lophelia pertusa	Kraken 2 - 12	630
19-IX-11-1-014	Cnidaria	Primnoidae	Kraken 2 - 12	630
19-IX-11-1-015	Arthropoda	Galatheidae	Kraken 2 - 12	630
19-IX-11-1-016	Annelida	Polychaeta	Kraken 2 - 12	779
19-IX-11-1-017	Arthropoda	Eumunida picta	Kraken 2 - 12	667
19-IX-11-1-201	Sediment	Sediment	Kraken 2 - 12	825.5
19-IX-11-1-202	Sediment	Sediment	Kraken 2 - 12	707

SPECIES DISTRIBUTIONS

Figures 11-17 shows the distribution of species of interest based solely on observations from these dives (Appendix 2). This certainly does not mean to imply the relative abundance or overall distribution of these species over the entire Pulley Ridge region.

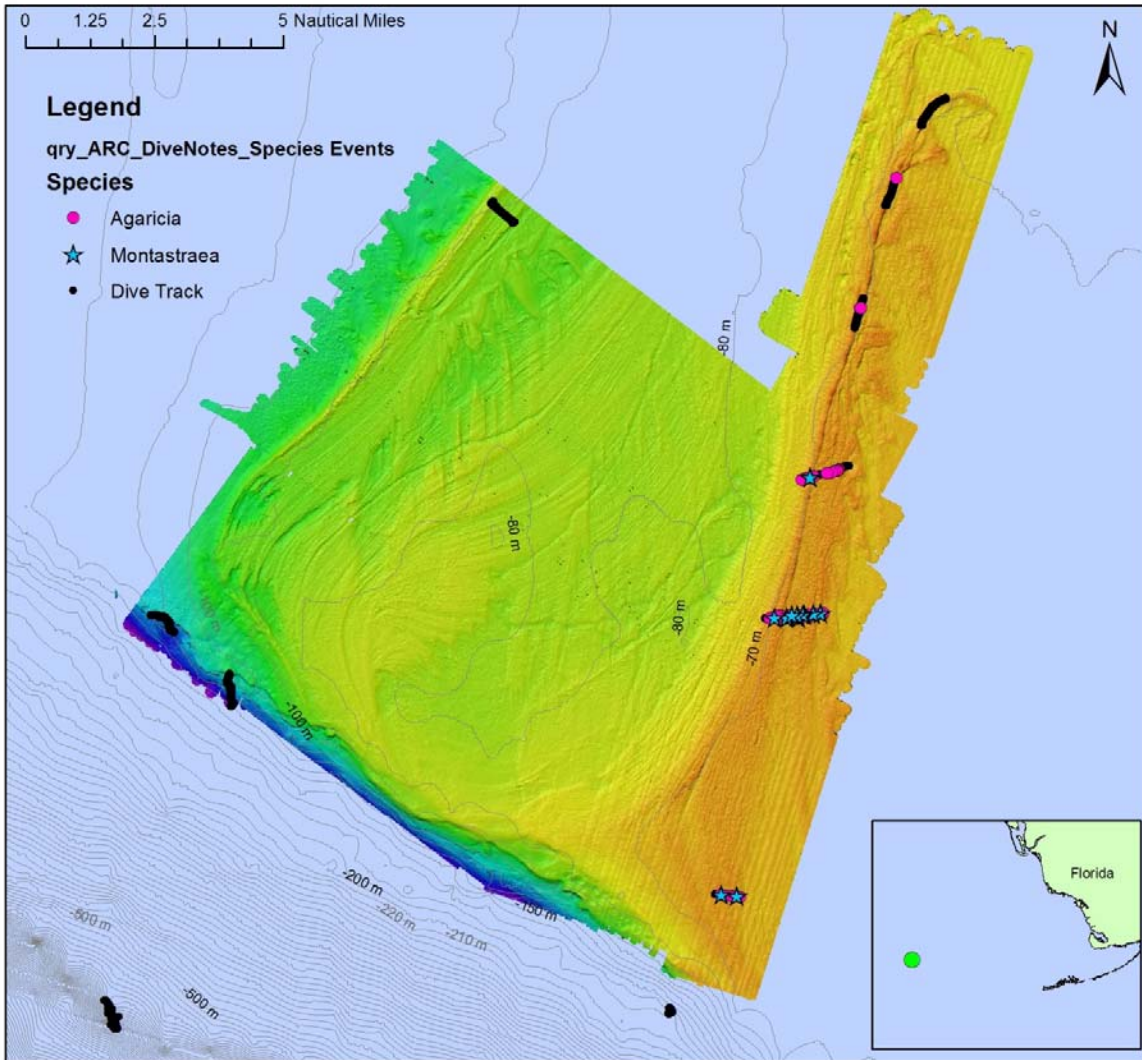


Figure 11. *Montastraea* and *Agaricia* coral observations on Pulley Ridge with *Kraken 2* ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

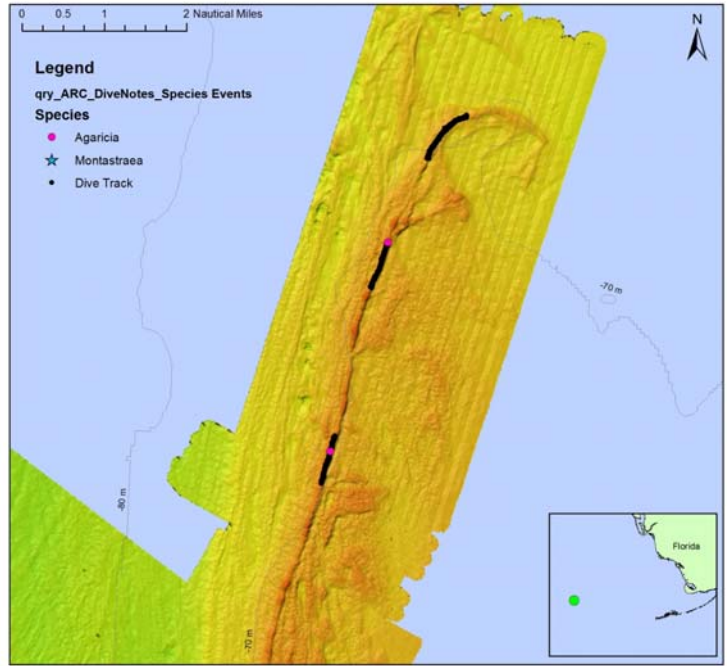


Figure 12. *Montastraea* and *Agaricia* coral observations, close-up of northern Pulley Ridge.

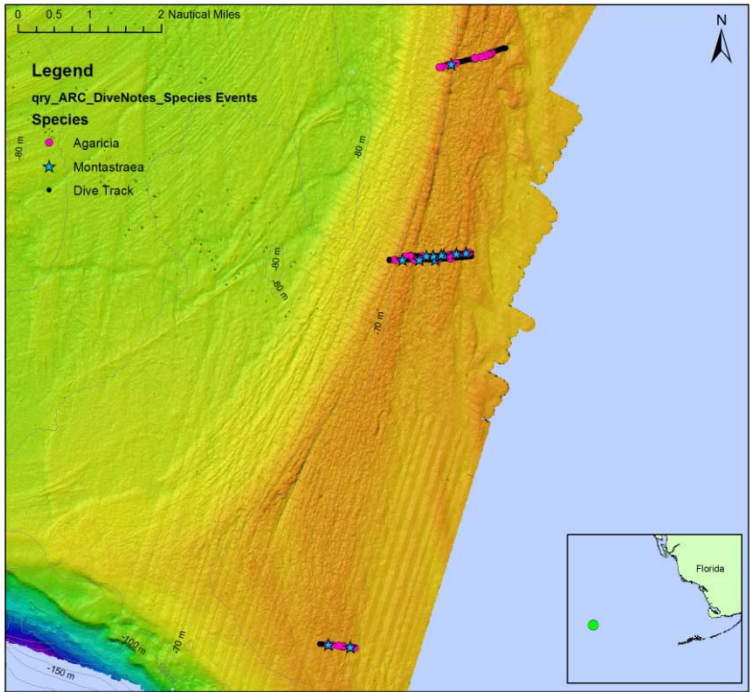


Figure 13. *Montastraea* and *Agaricia* coral observations, close-up of southern Pulley Ridge.

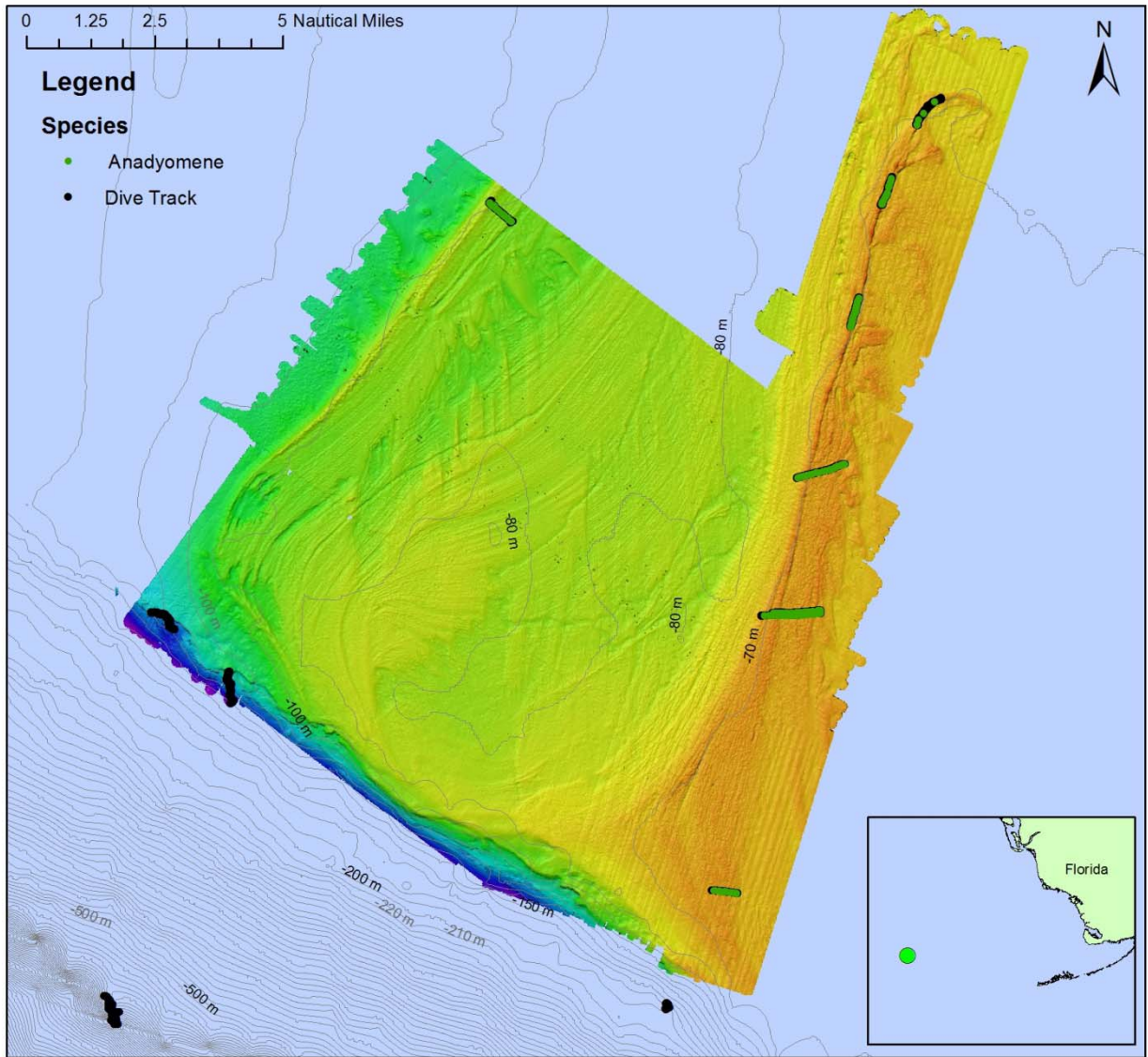


Figure 14. *Anadyomene* green algae observations on Pulley Ridge with *Kraken 2* ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

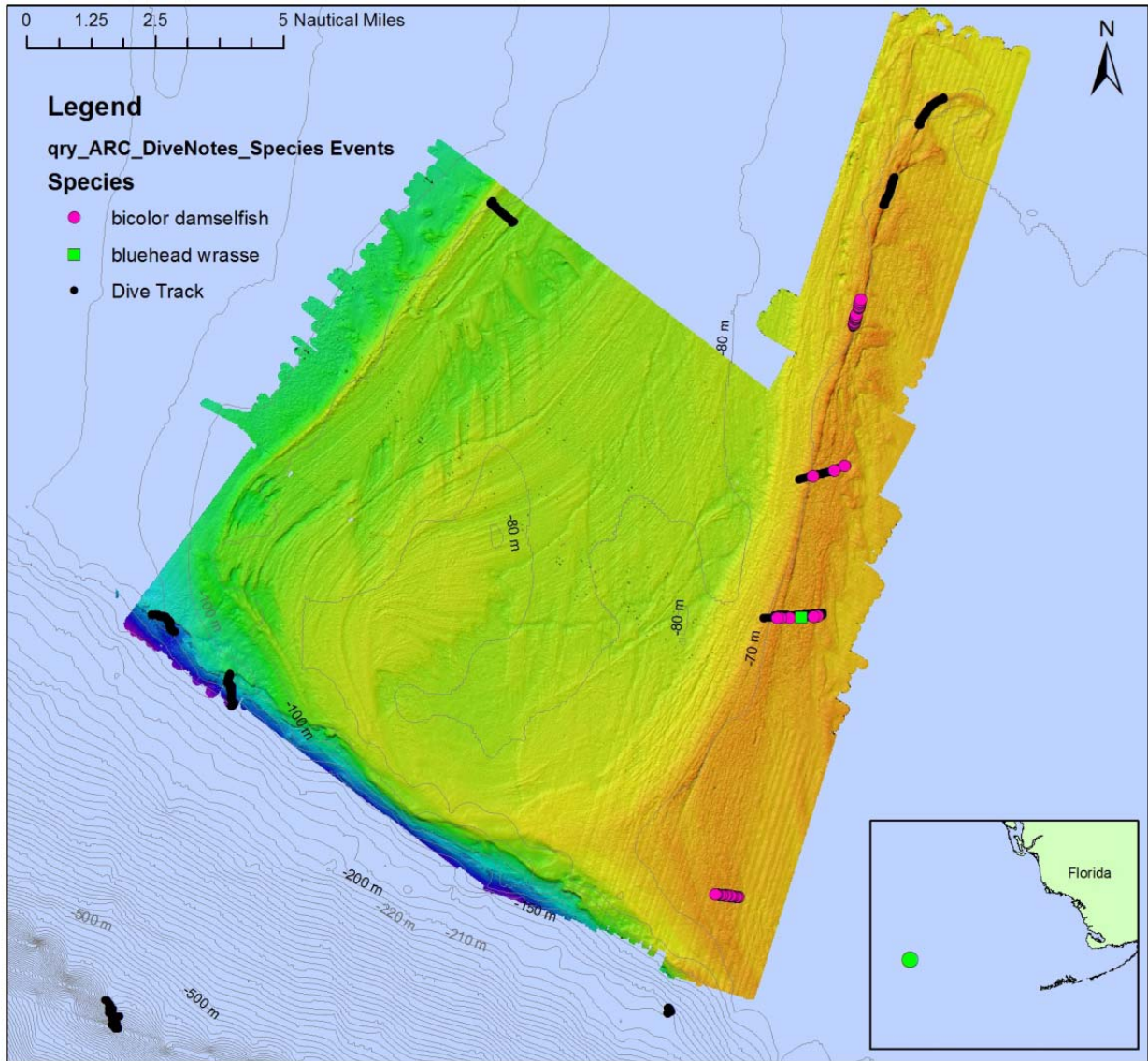


Figure 15. Bicolor damselfish and bluehead wrasse observations on Pulley Ridge with *Kraken 2* ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

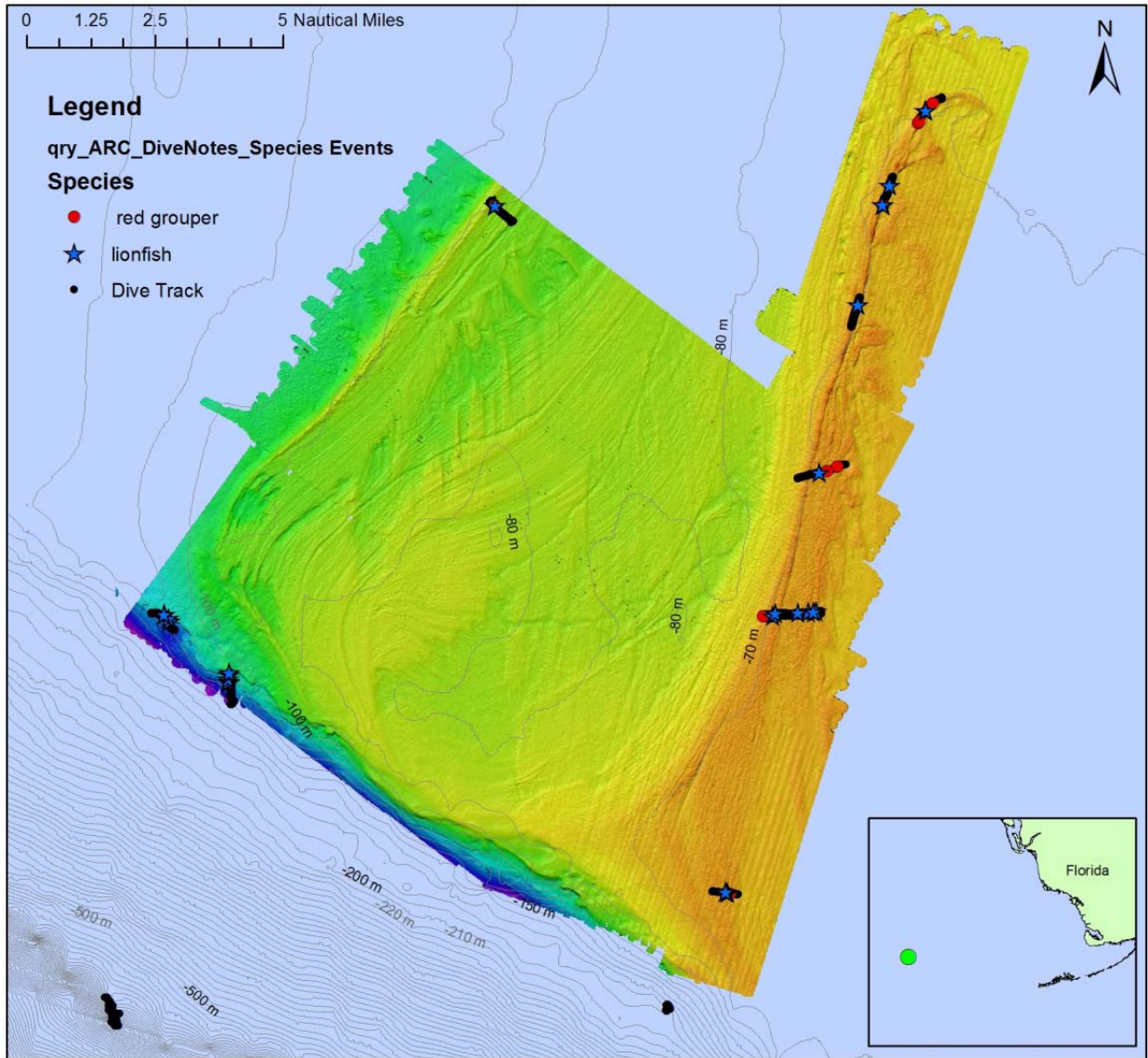


Figure 16. Red grouper and lionfish observations on Pulley Ridge with *Kraken 2* ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

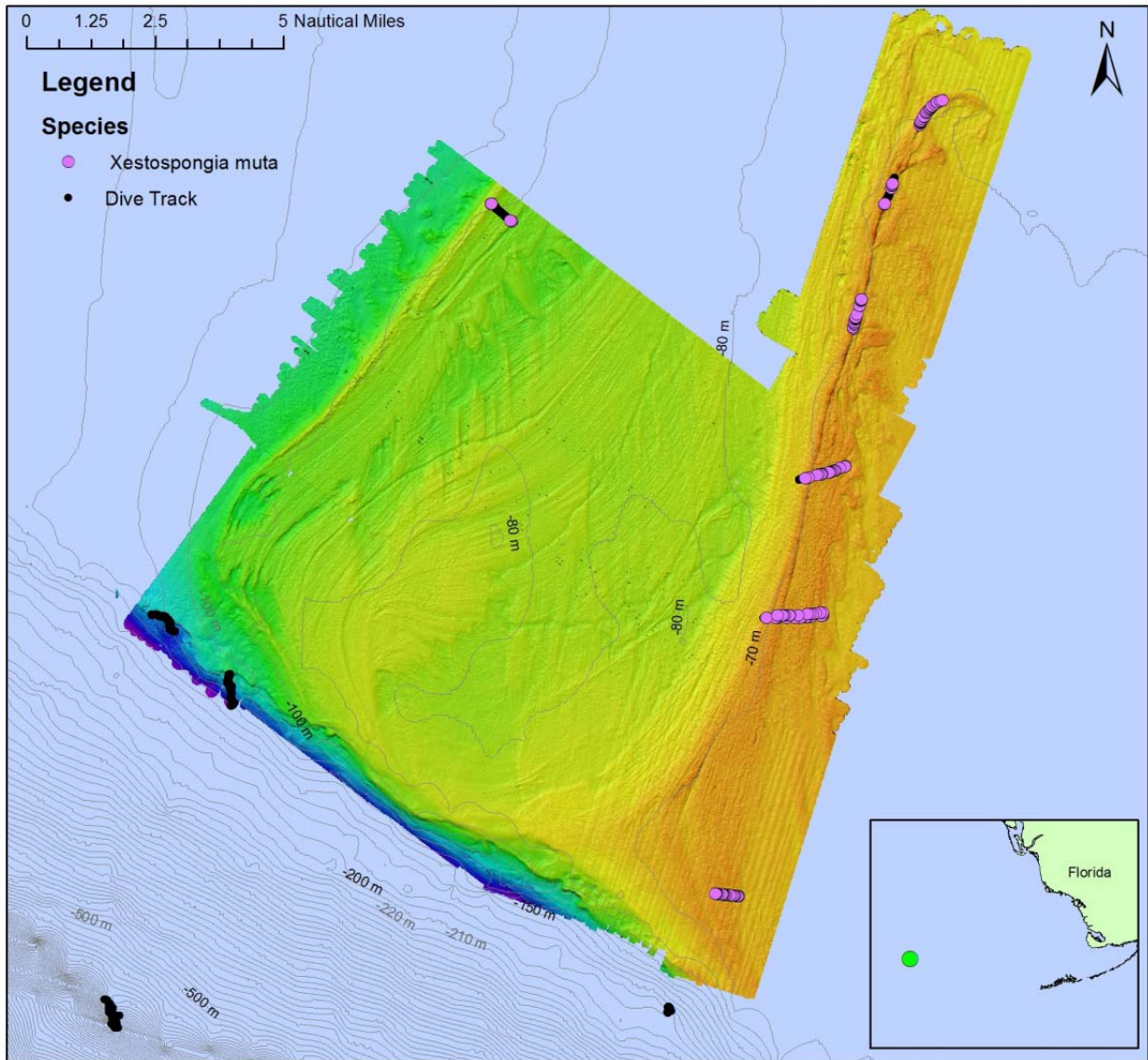


Figure 17. *Xestospongia muta* barrel sponge observations on Pulley Ridge with *Kraken 2* ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

NANCY FOSTER MULTIBEAM SURVEYS

During Leg 1 of the CIOERT FLoSEE II cruise, six sites were surveyed on Pulley Ridge for a total of 1-6 km² with high-resolution (1-3 m) multibeam sonar by the survey team of the *Nancy Foster* (Fig. 1). Previous multibeam sonar by D. Naar (USF) covered all of the southern portion of Pulley Ridge but is of lower resolution. The new multibeam on top of the terrace is 1-m resolution and is able to distinguish red grouper burrows. Three of the new multibeam maps are within the Pulley Ridge HAPC; the rest are outside the HAPC: one was along the western ridge; one was along the southern drop-off of Pulley Ridge; and one was off Pulley Ridge on a 800 m depth escarpment. These maps were ground-truthed with ten ROV dives described above. The raw and processed sonar data are archived at HBOI-FAU, with copies at NOAA Fisheries (A. David), and NOAA National Geophysical Data Center (Table 1).

MOCNESS TRAWLS

A total of six plankton trawls were made with the multiple closing MOCNESS trawl (Fig. 1, Table 4). Three MOCNESS trawls were conducted within the Pulley Ridge HAPC, one trawl was conducted on another ridge west of the main ridge, one trawl was made on the southern drop-off of Pulley Ridge, and one trawl was made on a deepwater escarpment ~5 nmi south of Pulley Ridge.

These provide data on the plankton distribution throughout the water column over these deepwater reefs. An important factor but relatively unknown is the benthic-pelagic coupling of the water column plankton community with the benthic coral and sponge community. These data are being analyzed and will be presented in three student project reports in the Final Cruise Report:

- Zooplankton Diversity and Abundance Within and Outside the Pourtalès Gyre
- Vertical Distribution and Development of Flatfish Larvae
- Biodiversity and Abundance of Zooplankton in Two Regions of the Gulf of Mexico.

CTD

CTD casts were generally conducted at each multibeam sonar site (Table 4). Data included depth, salinity, dissolved oxygen, fluorometry, and turbidity. These data are saved on CD and archived at HBOI-FAU, NOAA Fisheries (A. David), and NOAA Central Library (Table 1). These data are being analyzed and will be presented in a student project report in the Final Cruise Report:

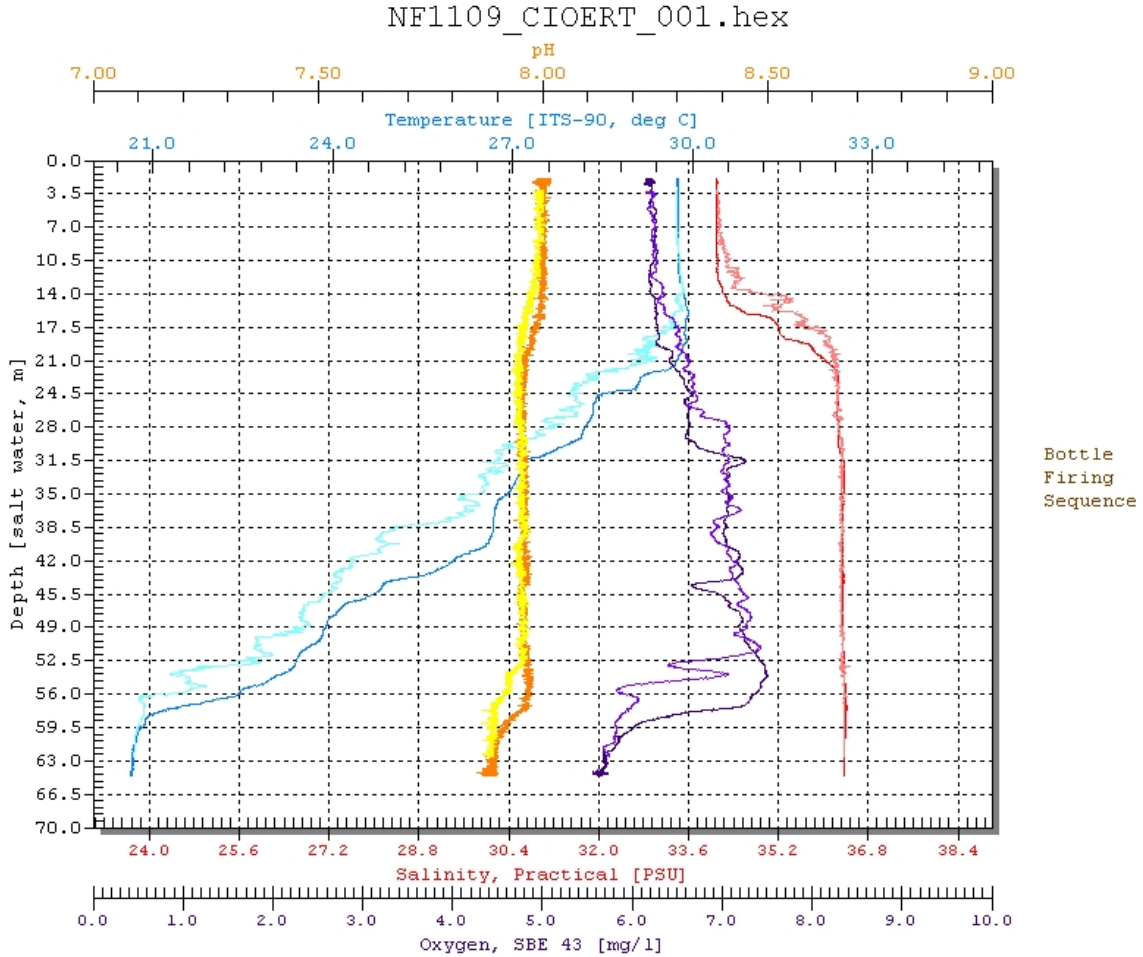


Figure 18. CTD cast on Pulley Ridge HAPC.

CONCLUSIONS AND FUTURE WORK

This cruise, which was conducted by the Cooperative Institute for Ocean Exploration, Research, and Technology (CIOERT) at Harbor Branch Oceanographic Institute-Florida Atlantic University (HBOI-FAU) in collaboration with NOAA, has resulted in a rich set of new data discovering and characterizing mesophotic reef sites on Pulley Ridge and within the Pulley Ridge HAPC. New *Nancy Foster* sonar maps enabled us to discover and map several reef sites that had never been documented before. The new maps and ROV dives documented extensive essential fish habitat (EFH) and coral/sponge habitat existing outside the protected HAPC boundaries. In particular, we documented extensive rugged rock habitat along the southern drop-off of Pulley Ridge which provides EFH for numerous large grouper species but is yet outside the borders of the HAPC. Also an extensive rocky escarpment was discovered and mapped south of the HAPC at depths of 500-800 m.

The new sonar maps and ground truthing by ROV dives, MOCNESS trawls, and CTD casts have provided data characterizing these sites. Those sites outside the current HAPC boundaries that appear to be EFH should be of priority for future research cruises. These data will be of use for site selection, habitat characterization, and coral health assessment for the new NOAA grant to

University of Miami and CIOERT: “2011 REPP; Understanding Coral Ecosystem Connectivity in the Gulf of Mexico--Pulley Ridge to the Florida Keys”. These data will be important for managers and scientists within NOAA Fisheries, the Gulf of Mexico Fishery Management Council, The Florida Keys National Marine Sanctuary, NOAA Deep Sea Coral Research and Technology Program, and NOAA Mesophotic Reef Ecosystem Program.

ACKNOWLEDGMENTS

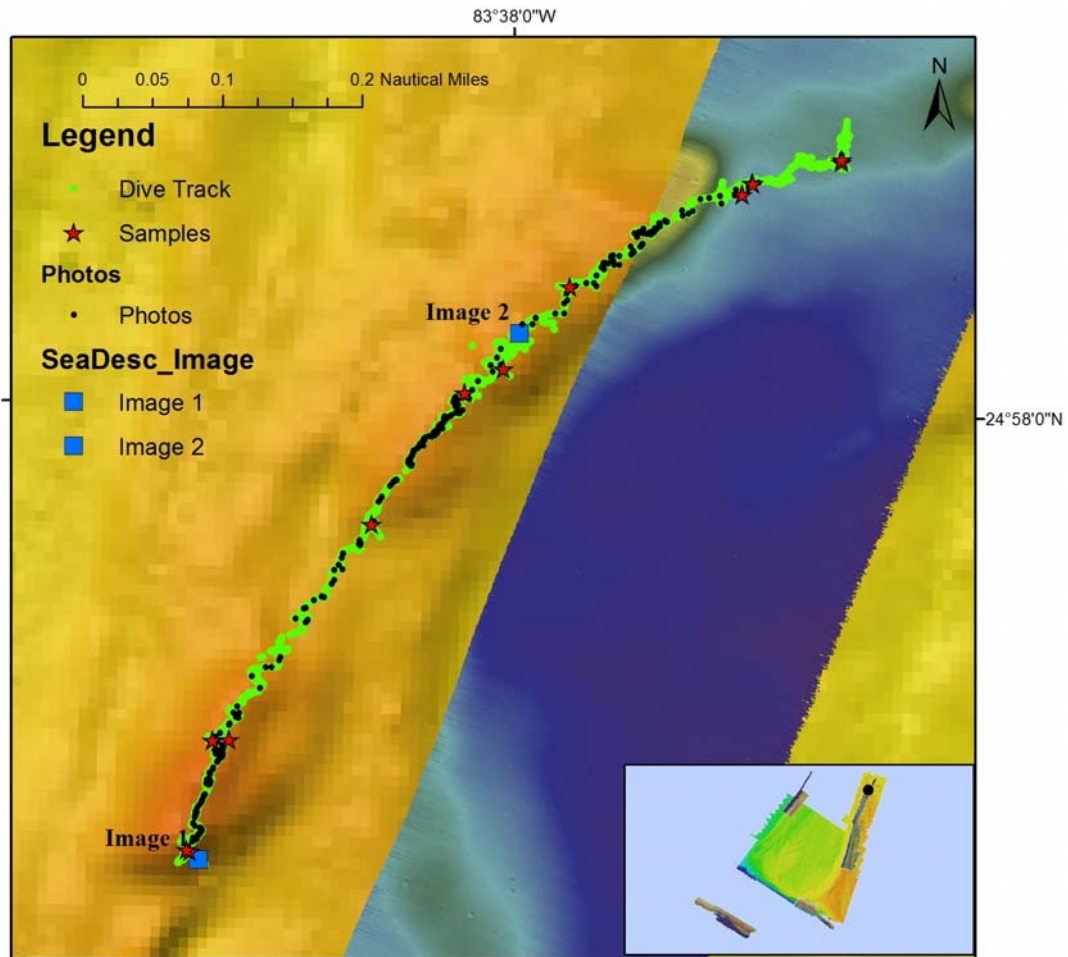
The crews of the NOAA Ship *Nancy Foster* and the University of Connecticut’s *Kraken 2* ROV are thanked for their support and efforts which made this cruise a success. The science team and students are thanked for their tireless efforts, working long days and nights. CIOERT is grateful for the funding and resources provided by the NOAA Office of Ocean Exploration and Research (OER), the NOAA Deep Sea Coral Research and Technology Program (DSCRTP), and the NOAA Office of Marine and Aviation Operations (OMAO) in support of the research, ship time, and ROV time:

- 21 days of NOAA Ship *Nancy Foster* vessel time (OMAO)
- 14 ROV days (OAR/OER)
- Science support costs- fieldwork, data analyses, and reports including SEADESC Level I and II dive logs and site characterizations (OAR/OER).

SEADESC Report - NOAA Ship Nancy Foster Cruise

Dive Number: Kraken 2 - 1

Location: Florida, Pulley Ridge HAPC; main ridge



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	366
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	0
Purpose:	CIOERT Y3 Field Research	HDCam:	4
Expedition	www.cioert.org/flosee2	DVD:	4
Dive #:	Kraken 2 - 1	Specimens:	17
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC; main ridge	Ship Position System:	DGPS
Date of Dive:	9/13/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_Nor th_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	59	Total Transect Length (km):	1.44
Maximum Bottom Depth (m):	68	Surface Current (kn):	1
On Bottom (Time- GMT):	15:43	On Bottom (Lat/Long):	24°57.6766'N 83°38.2409'W
Off Bottom (Time- GMT):	22:46	Off Bottom (Lat/Long):	24°58.2004'N 83°37.7321'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft): 30-50 Current (kn): 0.5



Figure 1: Rhodophyta red algae on rock cobble habitat

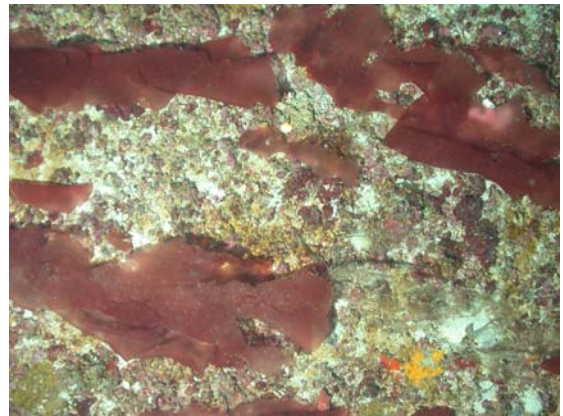


Figure 2: Large Rhodophyta blades on rock rubble habitat

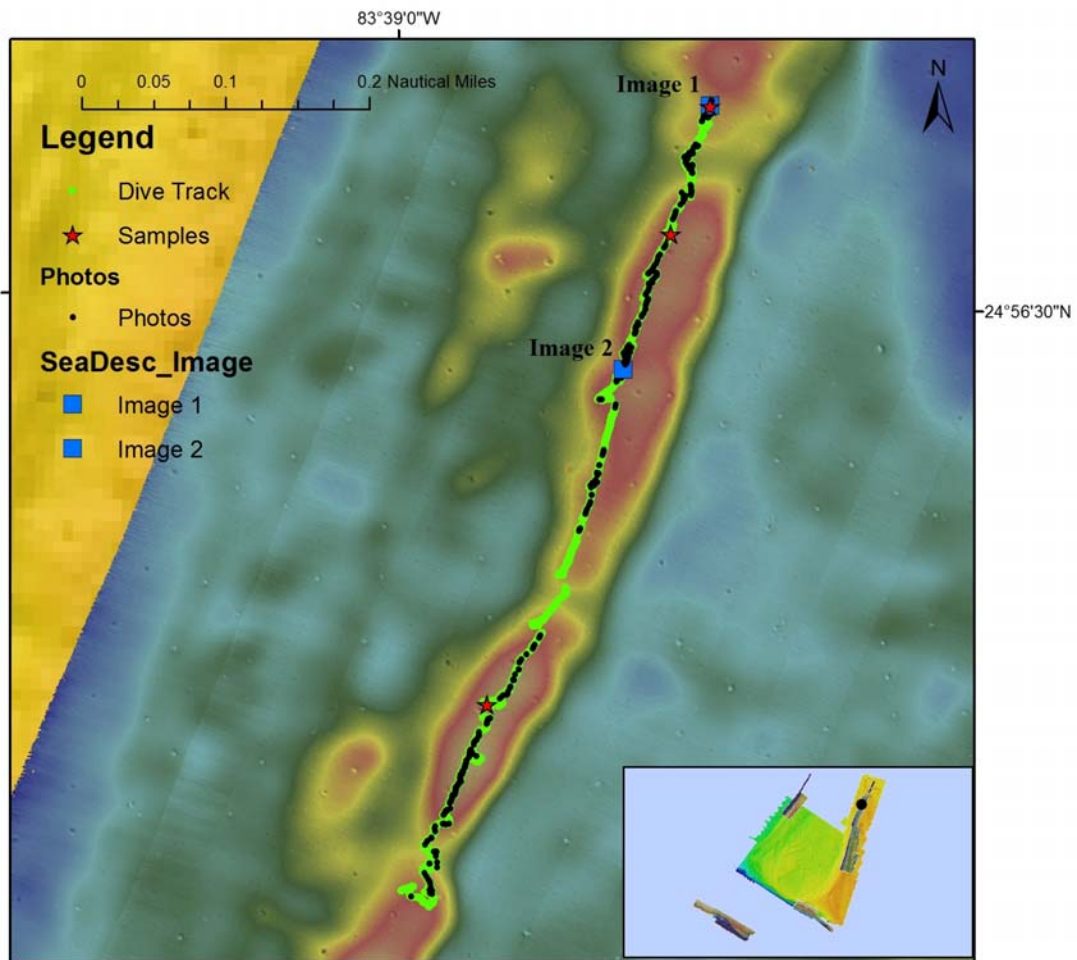
Notes (Objectives, Site Description, Habitat, Fauna):

Objectives: Survey top of main ridge at the northern end of Pulley Ridge (within USF's multibeam region); ground truth previous USF sonar data (D. Naar) and new multibeam data (Nancy Foster, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted N-S transect parallel along top of main ridge and completed three 100-meter quantitative digital still photo transects and collections. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Fiber optic cable broke, preventing use of high-definition camera during Leg 1- Pulley Ridge portion of cruise.

Site Description- Habitat/Dominant Fauna: Ridge crest relatively flat, 64-66 m depth, with series of low relief hummocks. Nearly 100% hard bottom. 80-100% cover of 5-10 cm diameter rock rubble and cobble; patches of exposed sediment. No exposed rock ledges. Hard coral- *Scolymia* sp., uncommon; no other hard coral observed. Fish- greater amberjack, reef butterfly fish, yellowtail reef fish, bicolor damsels, chalk bass, wrasse, mutton snapper; numerous 1-2 meter diameter rubble mounds, probable sand tile burrows; several 1-2 meter sand depressions, possible red grouper burrows but none observed; 2 lion fish. Algae- Rhodophyta, several species; *Kallymenia*(?) 30 - 100+ cm flat blades, abundant; branching stypes, common. Sparse *Peyssonellia* and rubble encrusted with Corallinaceae; no large coralline algal sheets. Chlorophyta- *Halimeda*, common, *Codium* and turf algae. No large Phaeophyta observed. Patches of greenish-brown Cyanophyta on sediment. Gorgonacea- Primnoidae(?) common; plexaurids; sparse. Porifera- *Xestospongia muta* common, encrusting Spirastrellidae, *Cinachyra*, *Ircinia strobilina*, *Placospongia*, Poecilosclerida. Hydroida. Ascidiacea- Didemnidae, white lobate *Aplyidium*(?). Echinodermata- Crinoidea, Asteroidea, no Echinoidea.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	452
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	0
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 2	Specimens:	6
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC; main ridge	Ship Position System:	DGPS
Date of Dive:	9/14/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_Nor th_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	60	Total Transect Length (km):	1.39
Maximum Bottom Depth (m):	65	Surface Current (kn):	0.8
On Bottom (Time- GMT):	13:34	On Bottom (Lat/Long):	24°56.0890'N 83°38.9735'W
Off Bottom (Time- GMT):	17:00	Off Bottom (Lat/Long):	24°56.6273'N 83°38.7573'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft): 60 Current (kn): 0.8



Figure 1: *Leptoseris cucullata* coral, *Xestospongia muta* sponge.

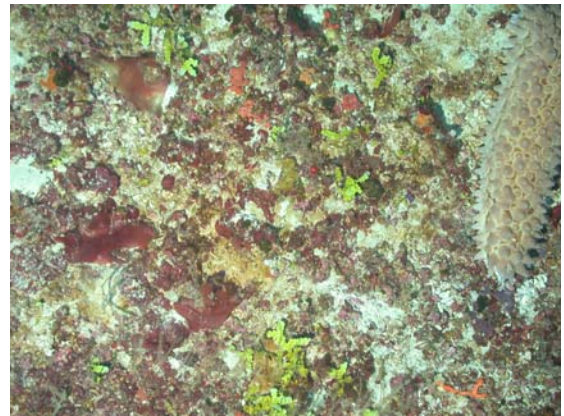


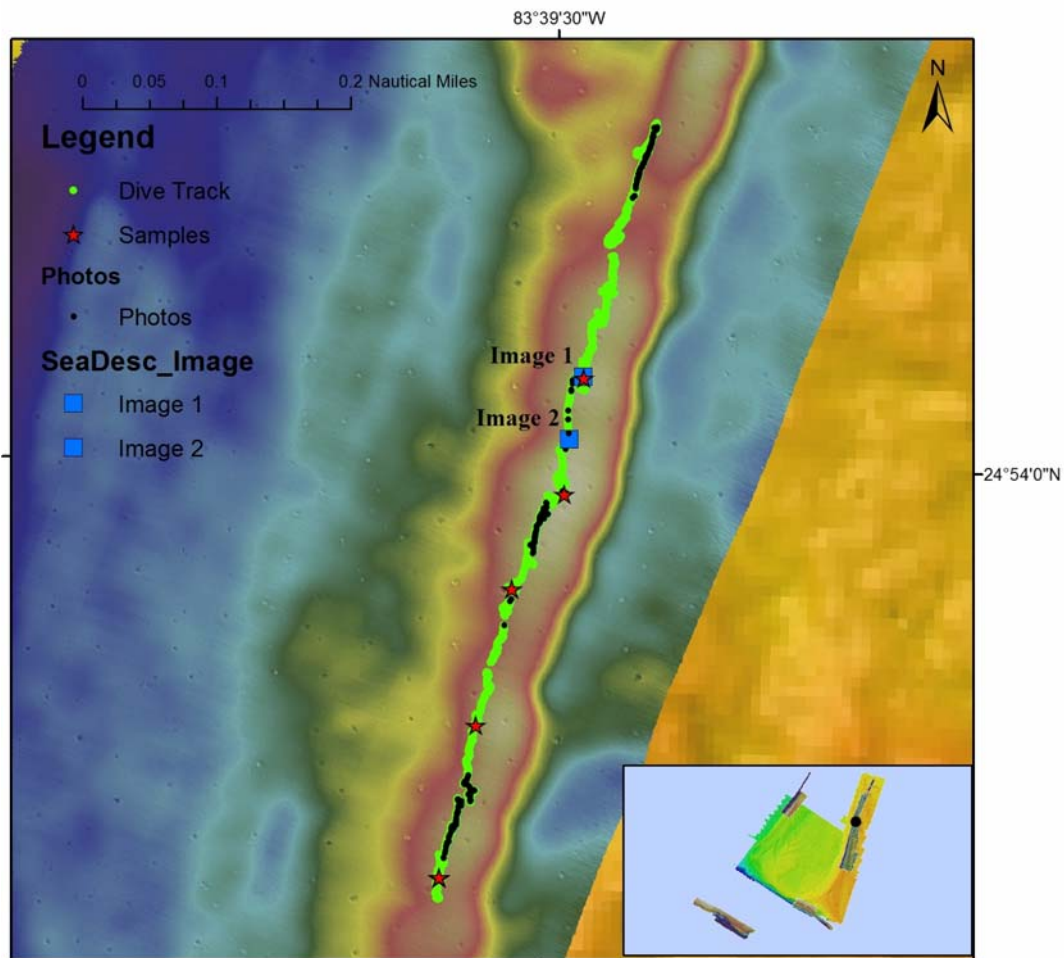
Figure 2: Holothurian on rock rubble habitat

Notes (Objectives, Site Description, Habitat, Fauna):

Objectives: Survey top of main ridge in the northern region of Pulley Ridge and ground truth previous USF sonar data (D. Naar) and new multibeam data (Nancy Foster, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Dive delayed by 1.5 hours so dive was shortened to 3.5 hours. Conducted N-S transect parallel along main ridge and completed two 100 m quantitative digital still photo transects with over 60 photos each. No third transect due to lack of time. Collected *Leptoseris cucullata*; first plate coral seen on cruise. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: 100% hard bottom, covered with rock rubble, cobble, and small boulders (5-50 cm diameter), and patches of sand and shell hash. Series of low relief hummocks (2 m relief) on main ridge. First few 100 m of the transect had some low relief ledges (10-20 cm) with dense fish populations including >15 lionfish, red grouper and black grouper, and dense reef fish; the remaining 3/4 mi transect was flat rock rubble and cobble. Hard coral- *Leptoseris* (1 observed). Fish- red grouper (2), sand tilefish (1), sand tilefish burrows common, reef butterfly fish, squirrelfish, >15 lionfish (clumped near 20 cm relief ledge), yellowtail reef fish, bicolor damsels, chalk bass, wrasse, blue chromis, orange back bass, cherub fish, sharp nose puffer. Several 1-2 meter sand depressions, possible red grouper (1 observed). Algae- Rhodophyta, multiple species, *Kallymenia* 30 - 100+ cm flat blades, abundant; Rhodophyta with branching blade. Some *Peyssonellia* and rubble encrusted with Corallinaceae and very few large coralline algal sheets; *Halimeda*, common; *Anadyomene*, abundant; yellow/brown cyanobacteria in some sediment patches. Gorgonacea- Primnoidae, abundant; plexaurids; sparse. *Stichopathes* with basket star collected. Porifera- *Xestospongia muta*, very common; encrusting Spirastrellidae, *Ircinia strobilina*, rare. Hydroida. Ascidiacea- Didemnidae, *Aplydium*? Echinodermata- Crinoidea, Echinoidea.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	264
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	0
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 3	Specimens:	8
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC; main ridge	Ship Position System:	DGPS
Date of Dive:	9/14/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_Nor th_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

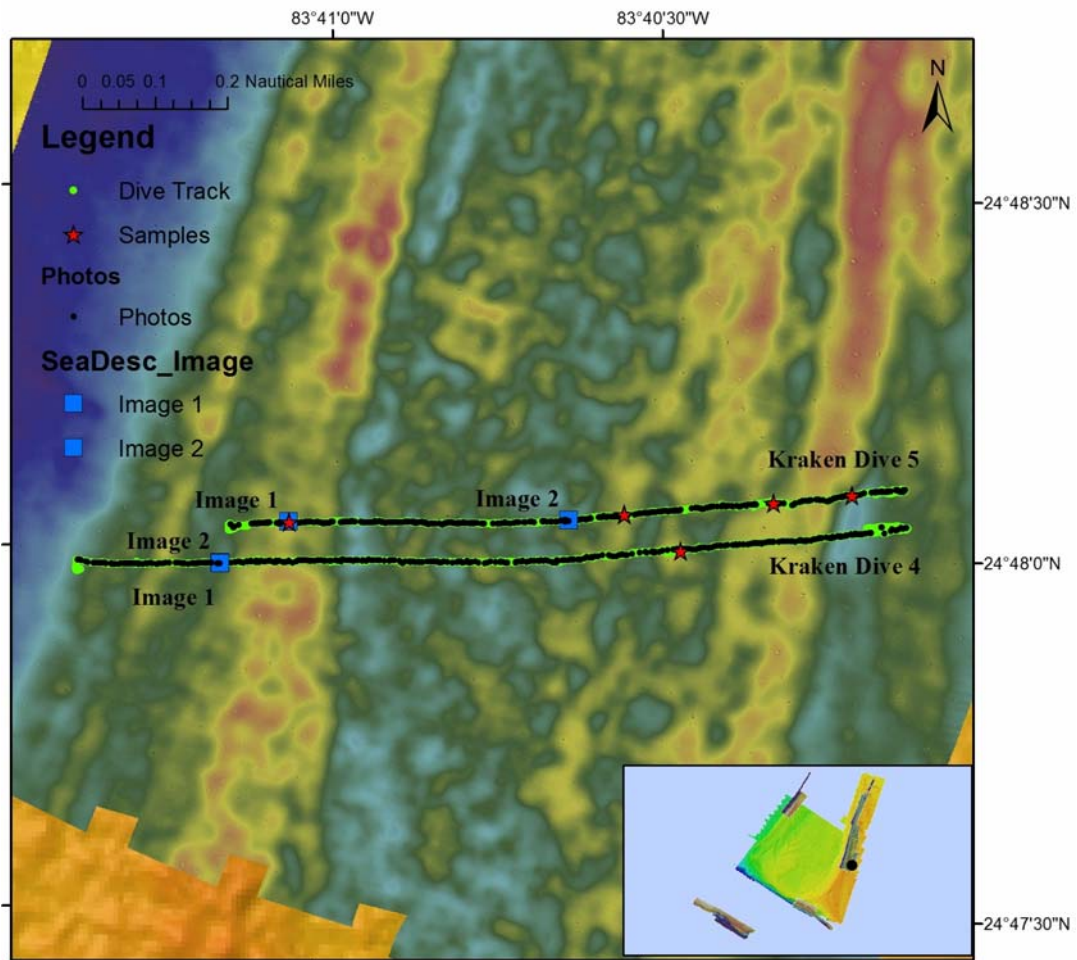
Minimum Bottom Depth (m):	58	Total Transect Length (km):	1.15
Maximum Bottom Depth (m):	62	Surface Current (kn):	
On Bottom (Time- GMT):	19:06	On Bottom (Lat/Long):	24°53.6955'N 83°39.5803'W
Off Bottom (Time- GMT):	22:47	Off Bottom (Lat/Long):	24°54.2374'N 83°39.4272'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft): 30-40 Current (kn): 0.25

Figure 1: Banded *Agradicia* sp.Figure 2: Gorgonian and *Lobophora* algae**Notes (Objectives, Site Description, Habitat, Fauna):**

Objectives: Survey top of main ridge in northern region of Pulley Ridge and ground truth previous USF sonar data (D. Naar) and new multibeam data (*Nancy Foster*, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Morning dive delayed by 1.5 hours so dive was shortened to 3.5 hours. Conducted N-S transect parallel along main ridge and completed three 100-meter quantitative digital still photo transects. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: 100% hard bottom, covered with rock rubble, cobble, sand and shell hash. Series of low relief hummocks (2 m relief) on main ridge. Bottom relatively flat to <35° slope. Hard coral- *Agaricia fragilis* (1 observed and collected). Fish- scamp (~3), sand tilefish burrows common, reef butterfly fish, squirrelfish, yellowtail reef fish, bicolor damsels, chalk bass, wrasse, cherub fish, burr fish. Algae- Rhodophyta, multiple species; *Kallymenia* 30 - 100+ cm flat blades, abundant; Rhodophyta with branching blade; *Peyssonellia* and rubble encrusted with Corallinaceae but very few large coralline algal sheets. Chlorophyta- *Anadyomene*, the dominate species, very abundant; *Codium*, uncommon. Phaeophyta- *Lobophora variegata*, abundant. Gorgonacea- Primnoidae, uncommon; Ellisellidae, uncommon. Porifera- *Xestospongia muta*, common; *Agelas*, uncommon. Hydroida, common. Antipatharia- *Stichopathes*, uncommon; *Antipathes*, rare. Ascidiacea- Didemnidae, *Aplyidium*? Echinodermata- Crinoidea, abundant.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	381
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 4	Specimens:	1
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	Ship Position System:	DGPS
Date of Dive:	9/15/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_South_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	62	Total Transect Length (km):	2.11
Maximum Bottom Depth (m):	68	Surface Current (kn):	.6
On Bottom (Time- GMT):	12:32	On Bottom (Lat/Long):	24°48.0480'N 83°40.1457'W
Off Bottom (Time- GMT):	16:29	Off Bottom (Lat/Long):	24°47.9789'N 83°41.3660'W
Physical (bottom); Temp (°C):		Salinity:	
		Visibility (ft):	Current (kn): 0

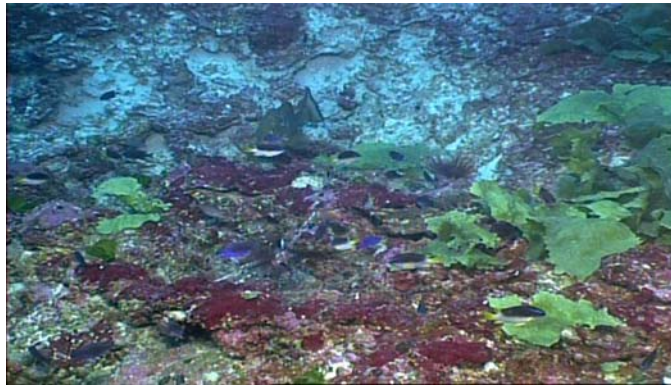


Figure 1: Red grouper burrow with *Anadyomene* algae and lionfish

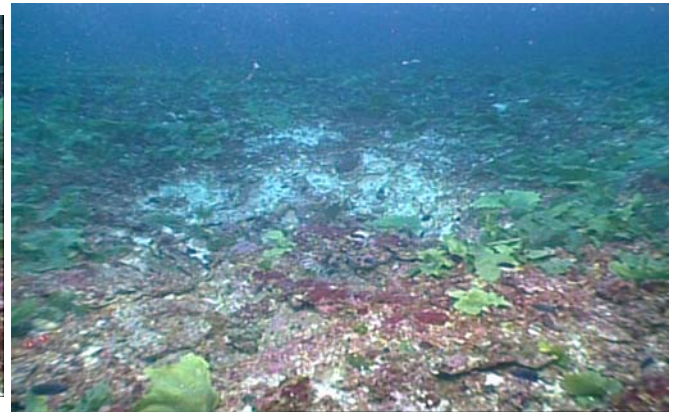


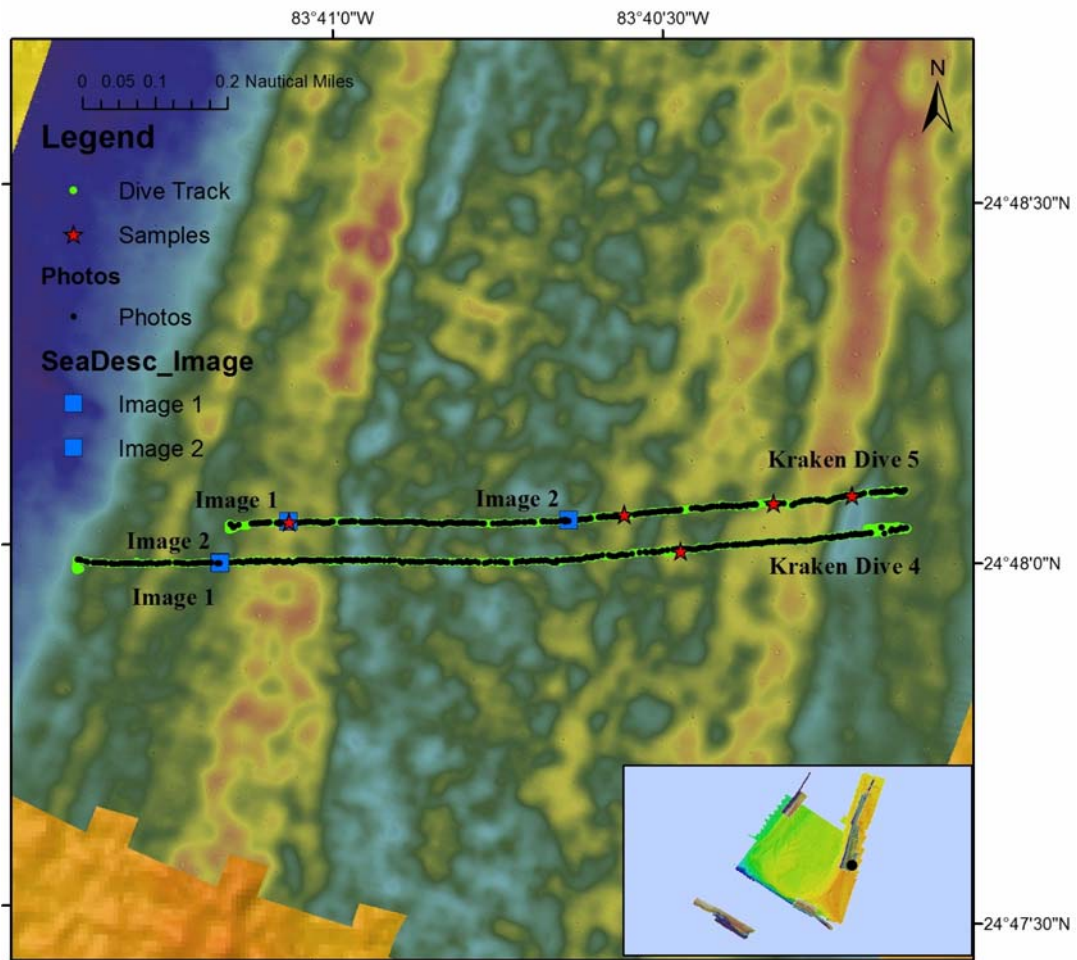
Figure 2: Red grouper burrow and surrounding habitat

Notes (Objectives, Site Description, Habitat, Fauna):

Objectives: Survey E-W transect perpendicular to main ridge in the middle region of Pulley Ridge following track line of USGS SeaBoss Site 13 dive (2004). Ground truth previous USF sonar data (D. Naar) and new multibeam data (*Nancy Foster*, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted 1.3 nmi transect E to W along SeaBoss Site 13 dive track. Transect started at east ridge crossing apparent valley and ended on the main ridge. For quantitative photos, digital still photos were taken every 30 sec traveling at ~0.4 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: Entire transect was 100% hard bottom predominantly low relief; <10-20 cm rock rubble cobble, dead coral plates and very little exposed sediment. The high points on top of the ridges are 64-65 m depth. The valleys in between are ~66 m. Hard coral- one small region on the east ridge and slightly west of the ridge had a population of live *Agaricia lamarki*, ~20 colonies counted. The rest of the transect only a few *Agaricia* and a few *Montastraea cavernosa* were observed and some collected (second plate coral seen on cruise). Fish- several red grouper burrows: 8-10 m diameter, 1-1.5 m deep, sides with rock rubble, cobble, small boulders. Associated with bicolor damselfish, reef butterfly fish, and lionfish. Algae- *Anadyomene* dominate 75-90% cover; *Peyssonellia* and other encrusting corallines dominate on dead coral plates and rubble; sparse Rhodophyta, some *Caulerpa*, *Halimeda*, *Dictyota*. Low density sponges- *Xestospongia muta*, *Agales*, *Niphates*, *Geodia*. Cnidaria- Hydroida, Gorgonacea- rare.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	524
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 5	Specimens:	5
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	Ship Position System:	DGPS
Date of Dive:	9/15/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_South_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

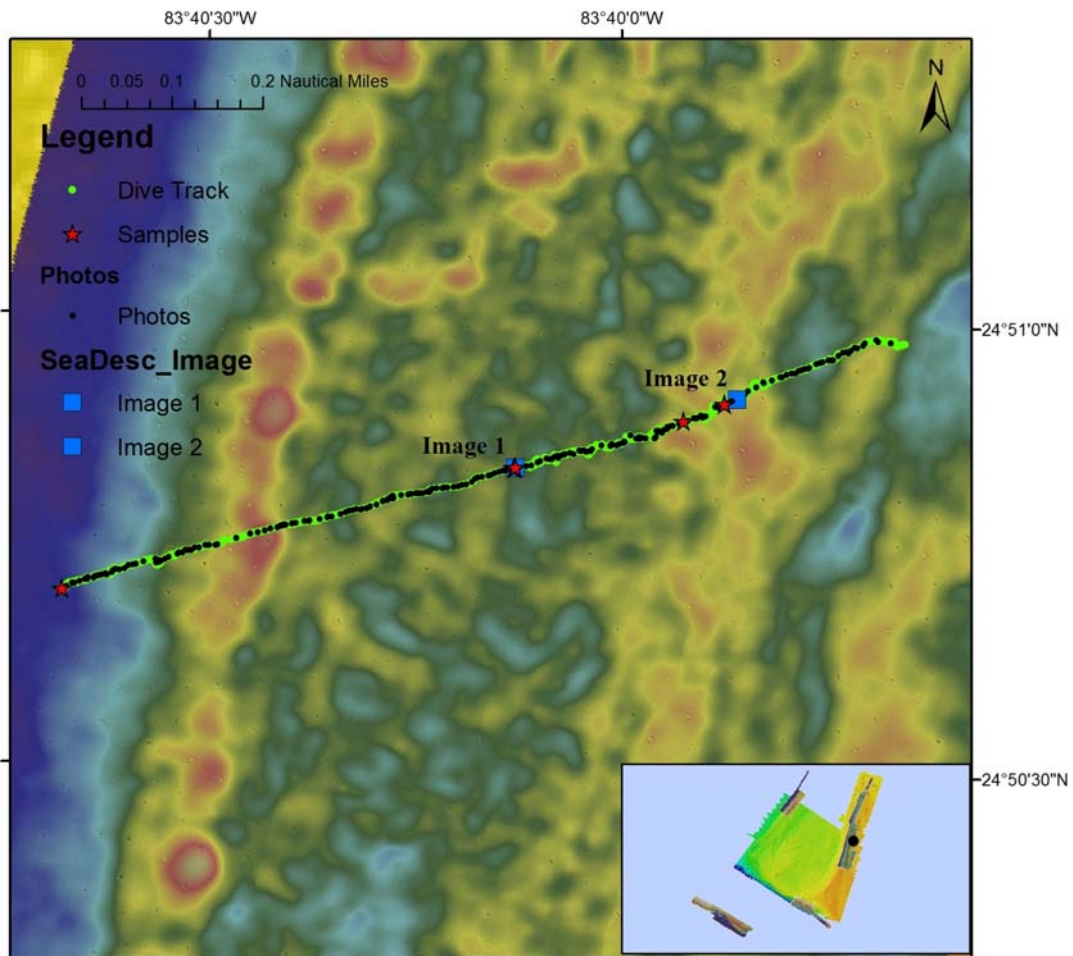
Minimum Bottom Depth (m):	62	Total Transect Length (km):	1.7
Maximum Bottom Depth (m):	68	Surface Current (kn):	
On Bottom (Time- GMT):	18:58	On Bottom (Lat/Long):	24°48.0964'N 83°40.1521'W
Off Bottom (Time- GMT):	22:40	Off Bottom (Lat/Long):	24°48.0341'N 83°34.1356'W
Physical (bottom); Temp (°C):		Salinity:	
		Visibility (ft):	
		Current (kn):	

Figure 1: *Agracia* coral, *Anadyomene* algaeFigure 2: Lionfish on *Anadyomene* dominated habitat**Notes (Objectives, Site Description, Habitat, Fauna):**

Objectives: Survey parallel to and 100 m north of original track line of USGS SeaBoss Site 13 dive (2004). Ground truth previous USF sonar data (D. Naar) and new multibeam data (Nancy Foster, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted 1 nmi transect E to W, parallel and 100 m north of SeaBoss Site 13. Transect started at east ridge crossing apparent valley and ended on the main west ridge. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: Entire transect was 100% hard bottom predominantly low relief, <5-20 cm rock rubble and cobble, dead coral plates and very little exposed sediment. Some small ledges 30 cm relief. The high points on the ridges are 64-65 m and the valleys in between are ~66 m. Hard coral- few small patches of live coral were found along the transect, one within the east ridge region and one in the valley region between the ridges. Each patch was no larger than 5x10 m dominated by 30-60 cm *Agaricia lamarki* and a few *Montastraea cavernosa*. Some *A. lamarki* showed recent bleaching with 30-50% dead areas of exposed coral skeleton. The dead areas ranged from recent dead and pure white, to areas of light green algae, to older encrusted with coralline algae. Some of the brown tissue at the interface of live and dead showed white lines leading to the polyps indicating potential pathogenic disease. All of the *M. cavernosa* appeared healthy with no signs of disease. Fish- several 8-10 m diameter red grouper burrows were ground truthed, being visible on the new 1-m resolution Nancy Foster multibeam maps; associated species included bicolor damselfish, reef butterfly fish, and lionfish. Algae- *Anadyomene* dominate 75-90% cover; *Peyssonellia* and other encrusting corallines dominate on dead coral plates and rubble; sparse Rhodophyta, some *Caulerpa*, *Halimeda*, *Dictyota*. Low density sponges- *Xestospongia muta*, *Agales*, *Niphates*, *Geodia*. Cnidaria- Hydroida, Gorgonacea- rare.

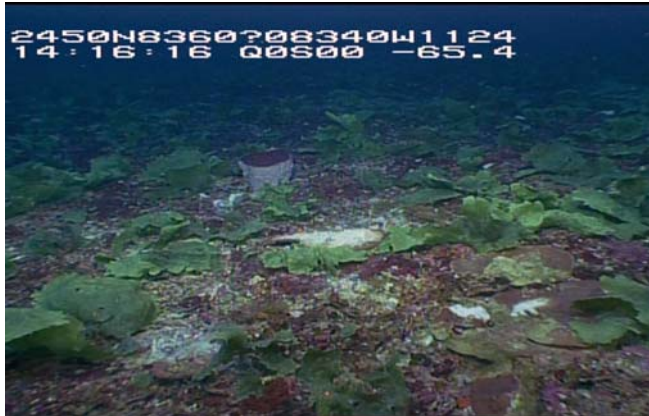


Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	292
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 6	Specimens:	9
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	Ship Position System:	DGPS
Date of Dive:	9/16/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_Mi ddle_1m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

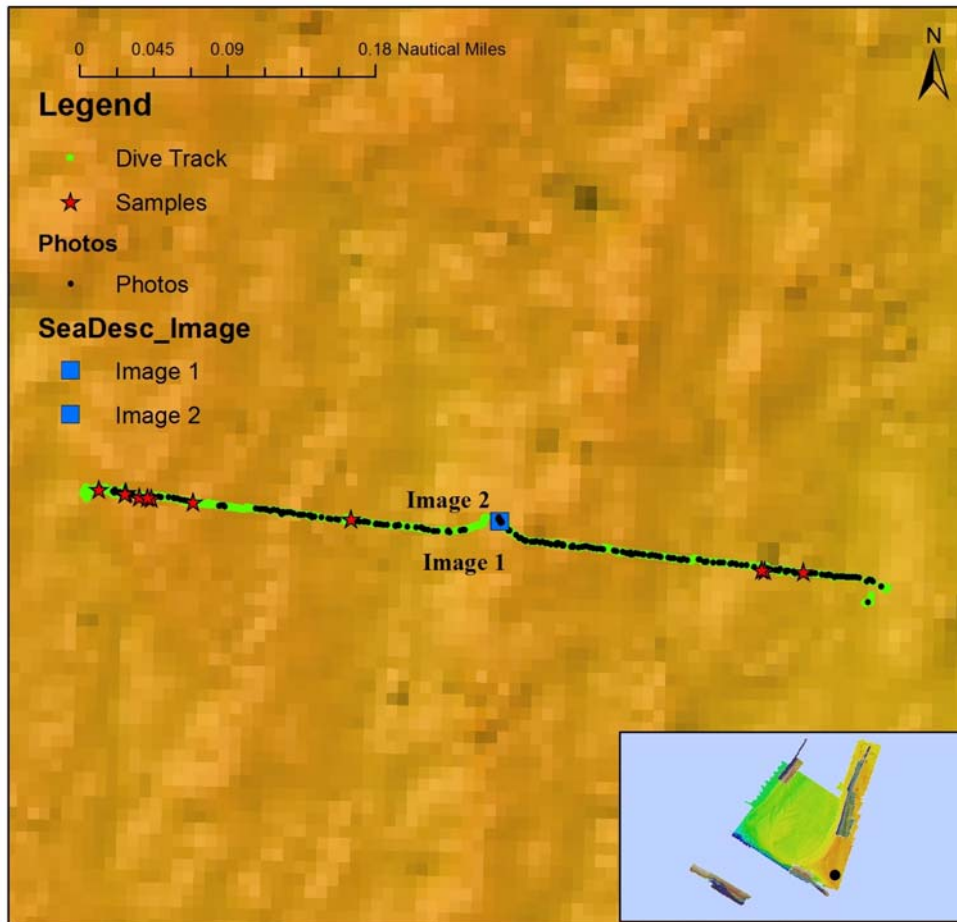
Minimum Bottom Depth (m):	54	Total Transect Length (km):	1.79
Maximum Bottom Depth (m):	71	Surface Current (kn):	1
On Bottom (Time- GMT):	12:18	On Bottom (Lat/Long):	24°50.9803'N 83°39.6496'W
Off Bottom (Time- GMT):	16:24	Off Bottom (Lat/Long):	24°50.6934'N 83°40.6570'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft): 60 Current (kn):

Figure 1: *Anadyomene* dominated habitatFigure 2: Crinoid on *Anadyomene***Notes (Objectives, Site Description, Habitat, Fauna):**

Objectives: Survey E-W transect perpendicular to main ridge in the middle region of Pulley Ridge following track line of USGS SeaBoss Site 11 dive (2004). Ground truth previous USF sonar data (D. Naar) and new multibeam data (Nancy Foster, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted 1 nmi transect E to W along USGS SeaBoss Site 11. Transect started at east ridge crossing apparent valley and ended on the main west ridge. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: 100% hard bottom predominantly low relief; rock rubble, cobble, dead coral plates 0.5 m diameter, 90% cover; small patches of exposed sand; 10-20 cm ledges relief. Hard coral- few small patches of live coral were found along the transect; *Agaricia lamarki* 10-20 cm diameter present but uncommon; some *Montastraea cavernosa*, uncommon; *Scolymia* (1); collected a few 10-20 cm *A. lamarki* and *Montastraea cavernosa*. Some of the *Agaricia* with bleaching and possible disease (white). Fish- several 8-10 m diameter red grouper burrows, 1-1.5 m deep; no red grouper observed; one grouper crater with scamp; bicolor damsel, chalk bass, wrasse bass, longjaw squirrelfish, juvenile graysby?, orange back bass, sand tilefish burrows, yellowtail reeffish, lionfish in grouper burrows, reef butterfly, moray. Algae- *Anadyomene* dominate, varies from 10-50% cover; *Kallymenia*? common, *Peyssonellia* and other encrusting corallines dominate on dead coral plates and rubble; *Codium*, *Lobophora*, *Dictyota*. Sponges- *Xestospongia muta*, halichondrids, various unidentified Demospongiae, *Geodia gibberosa*, *Niphates erecta*, *Cribrorchalina*. Antipathidae coral- *Stichopathes*. Ascidiacea- *Aplidium*.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	296
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 7	Specimens:	12
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	Ship Position System:	DGPS
Date of Dive:	9/16/2011	Sonar Data:	
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	64	Total Transect Length (km):	0.91
Maximum Bottom Depth (m):	67	Surface Current (kn):	1
On Bottom (Time- GMT):	19:04	On Bottom (Lat/Long):	24°42.5010'N 83°41.7933'W
Off Bottom (Time- GMT):	22:36	Off Bottom (Lat/Long):	24°42.5593'N 83°42.3163'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft): 60 Current (kn):



Figure 1: Red grouper on *Anadyomene* dominated habitat



Figure 2: Lionfish on *Anadyomene* dominated habitat

Notes (Objectives, Site Description, Habitat, Fauna):

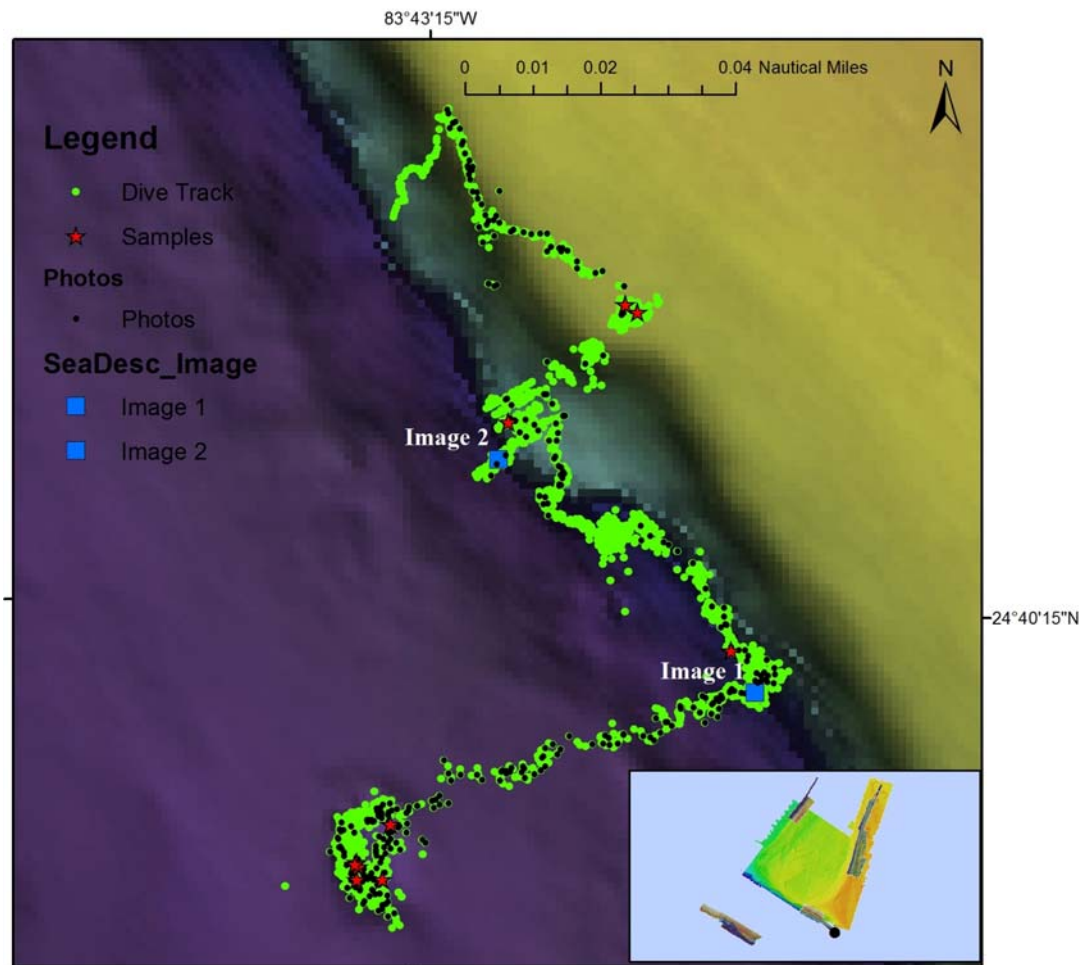
Objectives: Survey E-W transect perpendicular following track line of USGS SeaBoss Site 10 dive (2004) at southern end of main ridge of Pulley Ridge. Ground truth previous USF sonar data (D. Naar); no new multibeam data (*Nancy Foster*, 2011) at this site. Conduct photographic/video benthic survey and collections.

Dive Events: Conducted 0.5 nmi transect E to W, along SeaBoss Site 10 at the southern end of Pulley Ridge. In this region the terrace is somewhat indistinct and broad and of low relief. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: 100% hard bottom predominantly flat, ~63 m depth; low relief, <10-20 cm, rock rubble, cobble, dead coral plates, and very little exposed sediment. Hard coral- patch about 5x10 m dominated 30 - 60 cm *Agaricia lamarki* and *Montastraea cavernosa*. One *Agaricia* ~40% dead, white with lesions and crustose coralline on dead areas; 10 colonies with no signs of disease. Several *Agaricia* with both new and older encrusted dead areas. Some *A. lamarki* showed recent bleaching with ~30-50 % dead areas of exposed coral skeletal. Elsewhere very sparse *Agaricia*; one *Leptoseris*. Fish- chalk bass, reef butterfly, long nose butterfly, yellowtail reef fish, wrasse bass. One 20 cm ledge with 1 lobster, 2 lionfish, bicolor damsel. One 10 m diam red grouper hole with 50 cm red grouper, 11 lionfish, rock beauty, purple reef fish, 2 lobster. Algae- *Anadyomene* and *Lobophora* dominant with coralline algae encrusted rubble and dead coral plates; Dictyota ; very few large Rhodophyta. Porifera- sponges more common and diverse than all previous dives; *Agelas* (several spp.), *Callyspongia vaginalis*, *Aplysina*, *Xestospongia muta*. Cnidaria- very few black coral, hydroid, few coral patches. Fewer crinoids than other sites.

Dive Number: Kraken 2 - 8

Location: Florida, Pulley Ridge, outside HAPC; southern escarpment, east end



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	384
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	3
Expedition	www.cioert.org/flosee2	DVD:	3
Dive #:	Kraken 2 - 8	Specimens:	11
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	Ship Position System:	DGPS
Date of Dive:	9/17/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_Southern_Dropoff_2m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	84	Total Transect Length (km):	0.48
Maximum Bottom Depth (m):	172	Surface Current (kn):	1
On Bottom (Time- GMT):	12:41	On Bottom (Lat/Long):	24°40.2112'N 83°43.2540'W
Off Bottom (Time- GMT):	16:37	Off Bottom (Lat/Long):	24°40.3123'N 83°43.2483'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft):
			Current (kn):



Figure 1: Ghost traps on boulder habitat



Figure 2: Roughtongue bass

Notes (Objectives, Site Description, Habitat, Fauna):

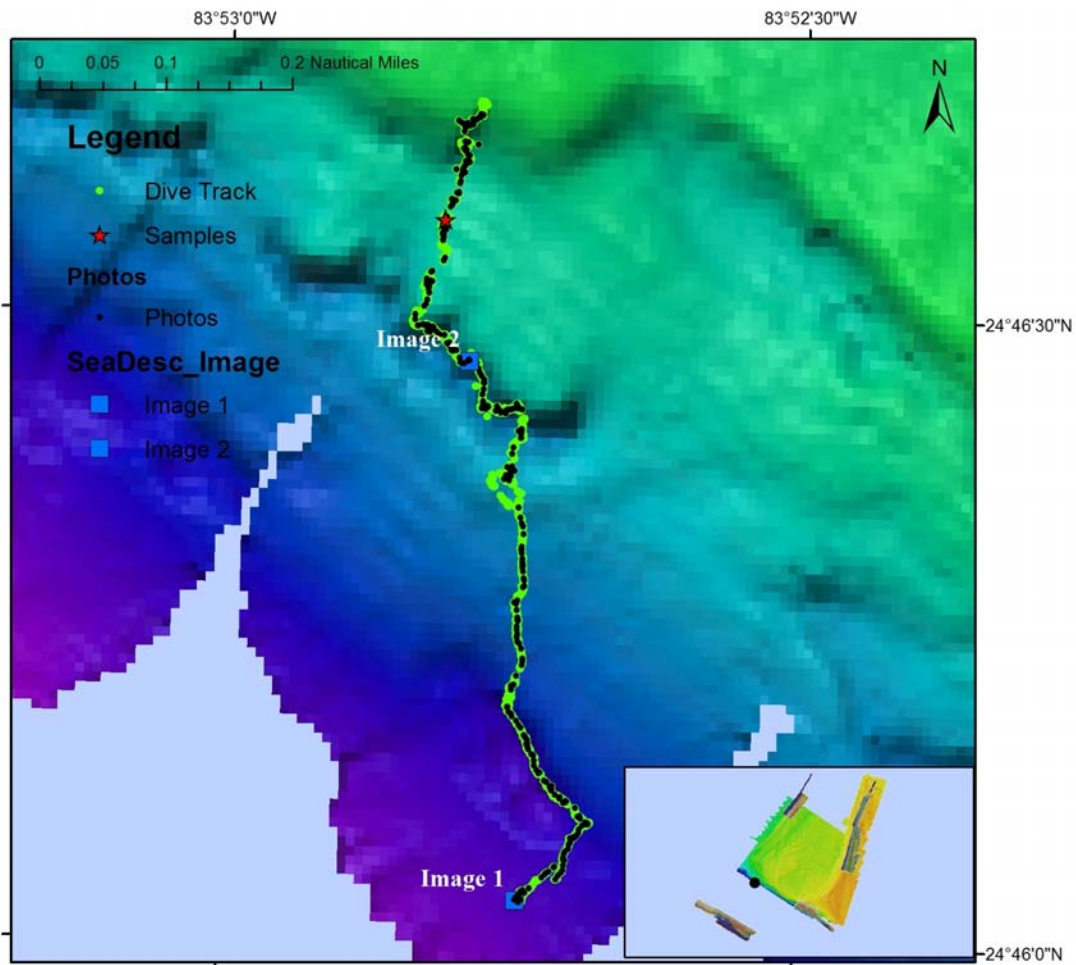
Objectives: New multibeam sonar (*Nancy Foster, 2011*) along the southeast drop-off of the Pulley Ridge terrace shows 50 m relief wall oriented NW to SE from 160 to 118 m; at the base of the wall are several 8 m tall rock piles or mounds. Survey site and ground truth new multibeam data (*Nancy Foster, 2011*); USF (D. Naar) multibeam map does not cover this area. Conduct photographic/video benthic survey and collections.

Dive Events: Conducted survey starting at the rock mounds at the base of the wall and along the face of the wall at various depth zones. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: One rock mound at base of wall was surveyed. It appears to be consolidated carbonate rubble. The top is also smooth rock. It is oval, oriented NW-SE, 20x50 m diameter, 170 m at base and 162 m on top. The west slope is solid rock, relatively smooth, 45-90° slope. Some areas are pocketed with 10-15 cm holes, many of which have anthiids. The north slope is more rugged and eroded. The entire rock mound is very barren. 100 m transect from mound to base of wall is relatively flat, low relief rock pavement and rubble. Crossed 1 m tall exposed clay escarpment; heavy pitted with 2-3 cm holes. Near base of wall is rugged with 1-2 m boulders, encrusting sponges. Base of wall is 163 m depth, 30-45° rock slope and 1-2 m outcrops and boulders; encrusting sponges, possible lavender encrusting coralline algae; cidaroid urchins. Videotape of 5 abandoned fish traps with pile of long line on top. No fish inside. Depth 144 m- steep wall, 70-80°; *Centrostephanus*(?) long spined black urchin; 40-50 cm scamp fish, bank butterfly fish, rough tongue bass; yellow fish, unidentified basslet. Depth 137 m- nearly 100% cover of crustose coralline algae. Depth 142 m- 90° rock wall, with crustose corallines. Depth 143 m- small shelf; dozens anthiids, 30-40cm scamp, bank butterfly, roughtongue bass, unusual 10 cm colorful anthiid; several species of Antipathidae common. Depth 118 m- top of wall, rock pavement; roughtongue bass, tattler; crustose corallines, sponges, comatulid crinoids.

Dive Number: Kraken 2 - 9

Location: Florida, Pulley Ridge, outside HAPC; southern escarpment, west end



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	393
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 9	Specimens:	6
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	Ship Position System:	DGPS
Date of Dive:	9/17/2011	Sonar Data:	
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Number: Kraken 2 - 9

Location: Florida, Pulley Ridge, outside HAPC; southern escarpment, west end

Dive Data:

Minimum Bottom Depth (m): 97	Total Transect Length (km): 1.39
Maximum Bottom Depth (m): 167	Surface Current (kn):
On Bottom (Time- GMT): 18:49	On Bottom (Lat/Long): 24°46.0331'N 83°52.7326'W
Off Bottom (Time- GMT): 22:31	Off Bottom (Lat/Long): 24°46.6640'N 83°52.7759'W
Physical (bottom); Temp (°C):	Salinity: Visibility (ft): 90 Current (kn): 0.25



Figure 1: *Madrepora oculata* coral



Figure 2: Groupers on boulder habitat

Notes (Objectives, Site Description, Habitat, Fauna):

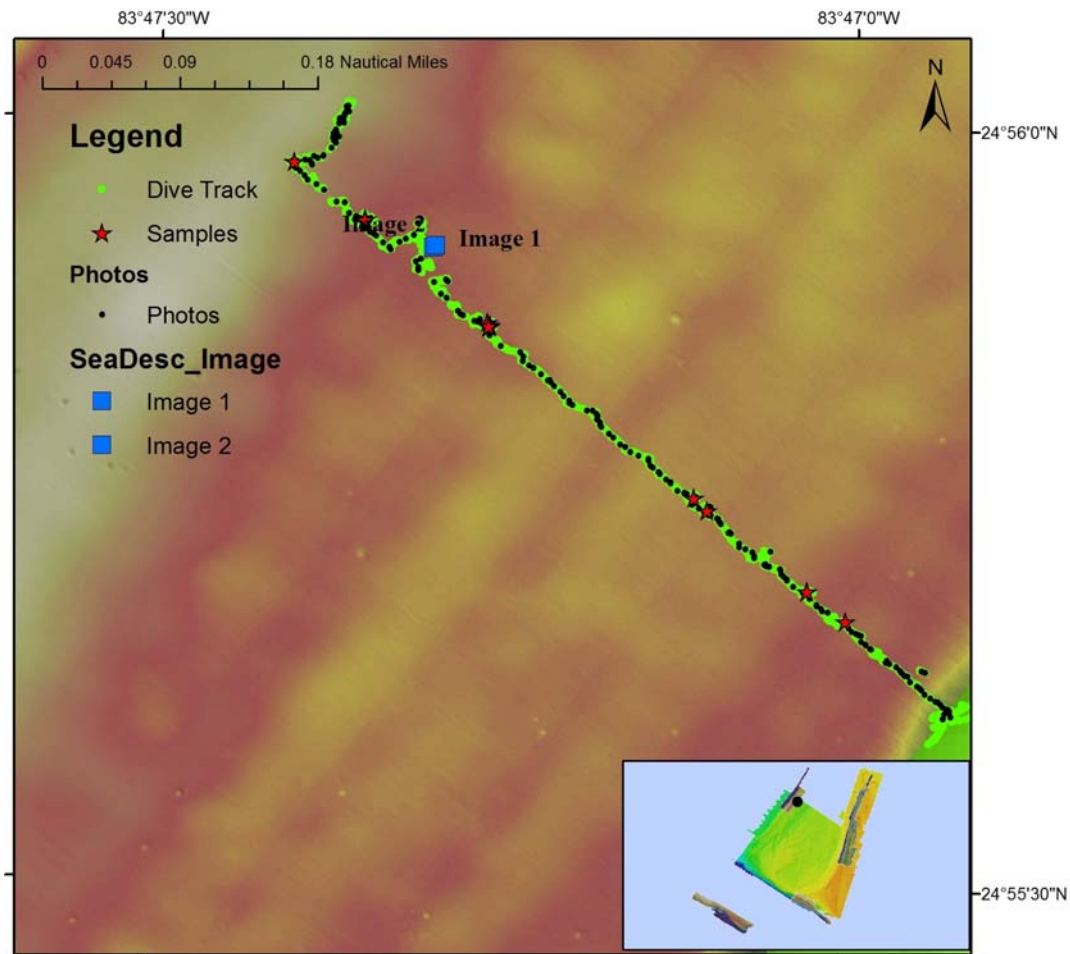
Objectives: Survey deep drop-off and escarpment at southwest corner of Pulley Ridge region within USF (D. Naar) multibeam sonar map. Sonar map shows a series of three escarpments on the wall. Ground truth previous USF sonar map; no new multibeam data (*Nancy Foster, 2011*) available at this site. Conduct photographic/video benthic survey and collections.

Dive Events: Conducted 1 nmi transect S-N on deep drop off, across and along each escarpment from 136 m to 98 m. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: 100% hard bottom, rock rubble, pavement, and ledges. Lower ledge, 136-130 m depth. Very low relief, <35° slope, few areas of low relief ledges (1-2 m relief). Dominant fauna: Hard coral- *Madrepora* sp.; Fish- tattler, wrasse bass cubbyu, anthiids, black fin snapper, rough tongue bass, bank butterfly; Algae- crustose coralline algae on rocks; Porifera- Demospongiae several spp. common; Antipathidae- several spp. common, *Tanacetipathes*, *Stichopathes*; Echinodermata- comatulid crinoids, *Narcissia*. Rock pavement and rubble between lower and middle ledge. Depth 122 m- Algae- Chlorophyta, *Verdigellas*(?), crustose coralline algae; Antipathidae; cup corals. Middle ledge, 114 to 119 m. Transect along face, some areas with 1-2 m ledges and rugged rock with dense population of reef fish; video of at least 3 large (60-100 cm) Warsaw grouper, some scamp, dozens of greater amberjack, purple reef fish, lionfish, snapper?; fishing line; hydroids. Transect from middle ledge to upper ledge fairly flat, rock pavement and rubble; small reef fish, 1 m shark, bank butterfly, squirrelfish; Algae- crustose coralline algae, *Dictyota*; Porifera- small encrusters; Antipathidae- 3+ spp.; Gorgonacea- *Ellisella*, several paramuriceids spp. Wall from 105 m to upper ledge, 35° slope; tattler, lionfish; Antipathidae, Gorgonacea. Top of wall, 98 m; flat rock pavement, rock cobble, rubble; 80% cover; lionfish, Antipathidae, *Stichopathes*, black hydroids, comatulids.

Dive Number: Kraken 2 - 10

Location: Florida, Pulley Ridge, outside HAPC; northwest ridge



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	304
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	3
Expedition	www.cioert.org/flosee2	DVD:	3
Dive #:	Kraken 2 - 10	Specimens:	12
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge, outside HAPC; northwest ridge	Ship Position System:	DGPS
Date of Dive:	9/18/2011	Sonar Data:	NF1109_CIOERT_PullyRidge_NW _2m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	80	Total Transect Length (km):	1.2
Maximum Bottom Depth (m):	87	Surface Current (kn):	<.25
On Bottom (Time- GMT):	12:02	On Bottom (Lat/Long):	24°55.4622'N 83°46.9065'W
Off Bottom (Time- GMT):	16:38	Off Bottom (Lat/Long):	24°56.0014'N 83°47.3606'W
Physical (bottom); Temp (°C):		Salinity:	Visibility (ft):
			Current (kn):



Figure 1: Red grouper in burrow with lionfish



Figure 2: Lionfish on ledge of red grouper burrow

Notes (Objectives, Site Description, Habitat, Fauna):

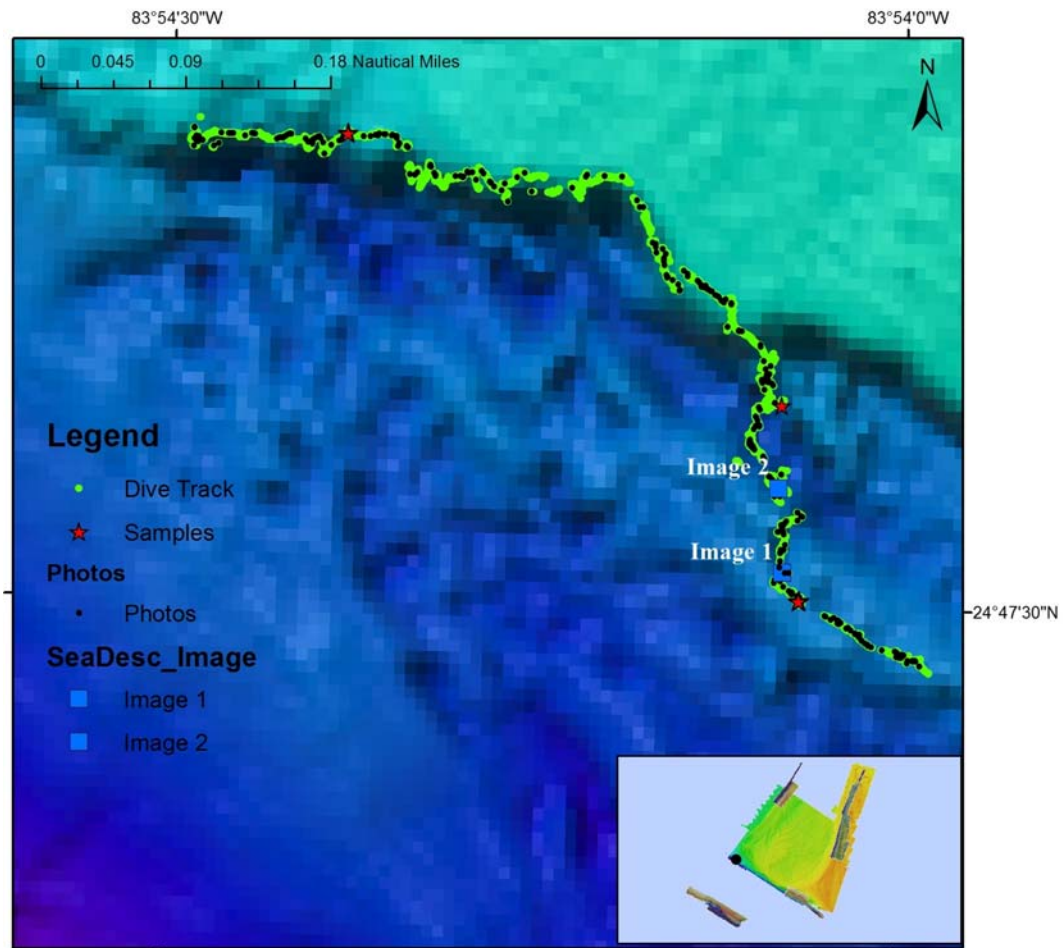
Objectives: Survey northwest area of Pulley Ridge (within USF multibeam map region) and ground truth previous USF sonar data (D. Naar) and new multibeam data (*Nancy Foster, 2011*). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted transect E to W across west ridge feature from eastern ridge to main ridge, approx. 1100 m. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: Eastern base of east ridge is 86.4 m; 100% hard bottom, all rock rubble, cobble 5-10 cm, no dead plate coral. Dominant species: Algae- *Anadyomene*, deep purple encrusting corallines mostly *Peyssonnelia*, large blade Rhodophyta, *Kallymenia?*, sparse *Halimeda*; Porifera- *Callyspongia*, *Bubaris*; Antipathidae. Transect east to top of east ridge, 83.8 m at top; same habitat, no ledges, 75-90% cover rock rubble and cobble. Fish- yellow tail reef fish, squirrel fish, sharpnose puffer, green band bass; Algae- *Peyssonnelia*, *Anadyomene* common; Porifera- 15-20 spp. of Demosponges >5 cm to 20 cm, orange, yellow very common, *Xestospongia muta*, Astrophorids, *Geodia*, or fan *Agelas*, *Petrosia*, *Aplysina archeri*, *Ircinia campana*; yellow vase sponges 20 cm appear to be *Verongula gigantea* (sample proves it to be Astrophorida; fan *Antipathes*; 20 cm crinoids (*Antidon?*) common. East slope of west ridge, 83.3 m, 95% cover of rubble, cobble and very dense biota, dense sponges, densest seen on all of Pulley Ridge. Three craters visible on Foster sonar; one ground truthed is 10 m diameter crater, depth 84 m, with 50 cm red grouper, numerous anthiids, spotfin hogfish, yellow tail reef fish, 10 lionfish, 2 graysby, wrasse bass, 2 spot cardinalfish, red barbier; great video. Transect up east slope of west ridge. Dense sponges- *Aplysina*, or fan *Agelas*; 100% cover cobble encrusted with crustose corallines, *Peyssonnelia*, *Anadyomene* (low cover). Top of west main ridge- 80.4 m, numerous patches, 10-20 cm of creeping branching *Discodermia* (confirmed by spicule prep). 100% cover rubble/cobble, dense biota cover. Transect along top of ridge heading N. No hard corals or dead plate corals observed on entire dive.

Dive Number: Kraken 2 - 11

Location: Florida, Pulley Ridge, outside HAPC; southern escarpment, west end



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	341
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	2
Expedition	www.cioert.org/flosee2	DVD:	2
Dive #:	Kraken 2 - 11	Specimens:	6
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	Ship Position System:	DGPS
Date of Dive:	9/18/2011	Sonar Data:	
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	100	Total Transect Length (km):	1.37
Maximum Bottom Depth (m):	144	Surface Current (kn):	1
On Bottom (Time- GMT):	18:58	On Bottom (Lat/Long):	24°47.4692'N 83°53.9775'W
Off Bottom (Time- GMT):	22:31	Off Bottom (Lat/Long):	24°47.7943'N 83°54.4847'W
Physical (bottom); Temp (°C):		Salinity:	
		Visibility (ft):	
		Current (kn):	



Figure 1: Scamp grouper



Figure 2: Eel in pipe debris

Notes (Objectives, Site Description, Habitat, Fauna):

Objectives: Survey southwest drop-off and escarpment of Pulley Ridge (within USF multibeam map); site was selected a site a few miles west of Dive 9 where saw large grouper. Sonar shows rugged topography at base of E-W wall. Ground truth previous USF sonar data (D. Naar); no new multibeam data (Nancy Foster, 2011) available. Conduct photographic/video benthic survey and collections.

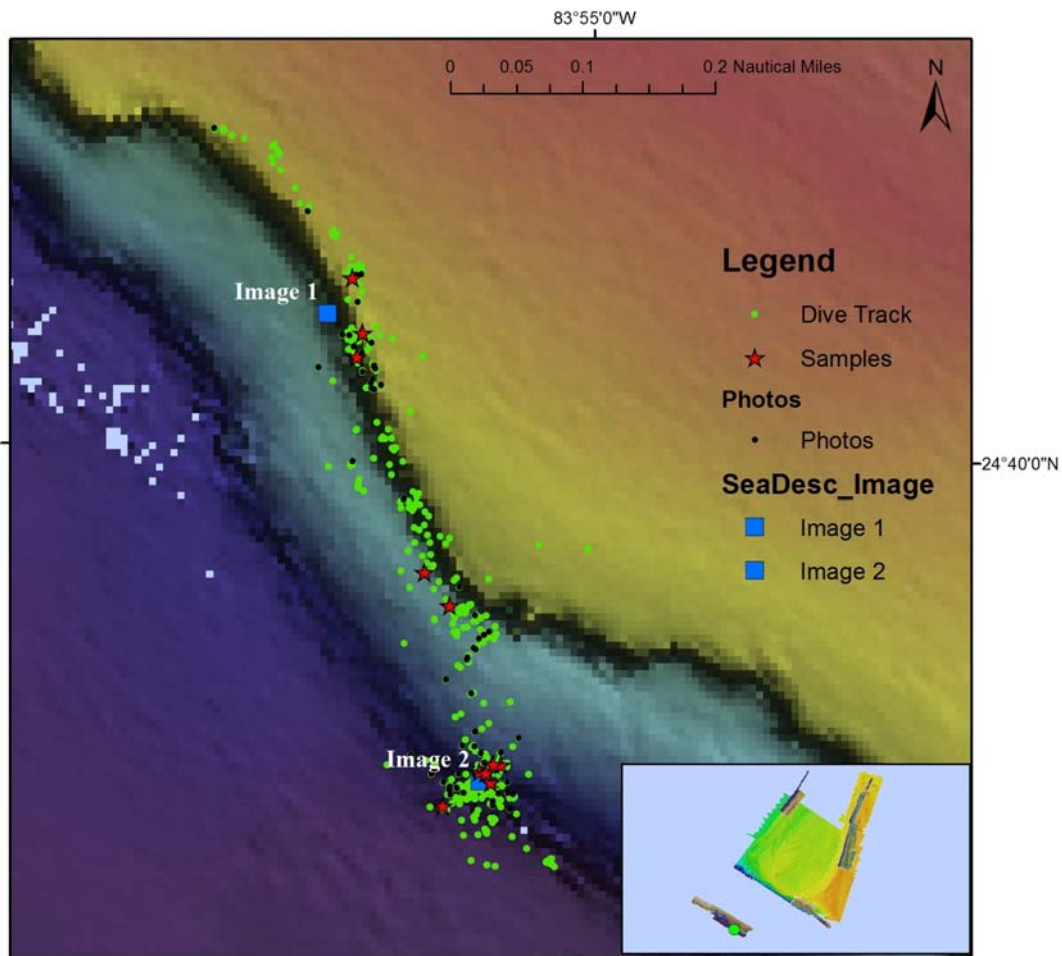
Dive Events: Conducted transect NW along two lower ledges, then west along wall escarpment. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: On bottom on low relief feature south of base of wall; 122 m depth. 80% cover rubble and pavement with sand, 10-20 cm relief. Fairly barren; Fish- tattler, wrasse bass, chalk bass, short bigeye, roughtongue bass; fishing line; Algae- *Dictyota*, small brown algae, brown filamentous algae, no large Rhodophyta, small green stalked plates algae; Porifera- few Demospongiae, 10 cm finger sponges; Gorgonacea- small plexaurids, small gorgonians with basket stars; hydroids; Antipatharia- bottle brush Antipathidae, *Stichopathes*; hydroids; red starfish. Change heading to N toward second low ledge of sonar; 80% cover 5-20 cm rock cobble; 25 cm scamp; reef butterfly, scorpion fish, 2 m hole with 50 cm scamp small; encrusters on rock, sparse large fauna. No current. Head NW along lower ledge; no exposed outcrops, just a low relief elongate mound; some 30 cm relief. In valley south of lower ledge, 127 m. 80% cobble, low ledges. One 2 cm cup coral (ruined on collection). 30 cm Ellisellidae whip corals. Head north up face of deep wall, 127-121 m, smooth rock, ledges, holes. Bottle brush Antipathidae, lionfish, encrusting red and orange sponges. 1 m rock ledges on top, 3 m rock outcrops, 8 m relief wall smooth surface; longline; bank butterfly, roughtongue bass; hydroids; small plexaurids. 60 dg slope; head NW along deep wall; 110 m on top. Top of wall, 70% cover rock cobble, encrusting algae, filamentous brown algae. Continue transect along top of wall to NW; 10 cm relief, flat; 60 cm grouper, 20 cm tattlers; abundant *Verdigellas* green algae (several spp. per Hanisak). Two 50 cm scamp at top edge of wall with low relief ledges. Area of dense *Spongisorites* sponges. Edge of wall with 45 dg rock rubble slope. Spotted morays in holes. Current 0.7 kn from east. 40 cm scamp, three 50 cm scamp. 111 m, top edge, two Warsaw grouper 60 cm, 6 more scamp, 50 cm speckled hind, 2 snapper (dog snapper?), 60 cm gag (first seen on cruise); dense small gorgonians, 15 cm; *Halisarca* red encrusting sponge. Head down wall to 120 m, into 100% sediment, rock starts about 118 m. Continue back along top edge 115- 110 m; rock cobble 20 cm ledges. Near end of transect another area of numerous scamp,

Dive Number: Kraken 2 - 11

Location: Florida, Pulley Ridge, outside HAPC; southern escarpment,
west end

silky snapper.



Dive Overview:

Project:	NOAA CIOERT DSCR P FLOSEE II	Sensors Used:	No Sensors Used
Principal Investigator:	John Reed	Digital Photos:	222
PI Contact Info:	5600 U.S. 1, North Fort Pierce FL 34946	Hard Drive:	1
Purpose:	CIOERT Y3 Field Research	HDCam:	4
Expedition	www.cioert.org/flosee2	DVD:	4
Dive #:	Kraken 2 - 12	Specimens:	19
Vessel:	NOAA Ship Nancy Foster	ROV Navigation Data:	Track Point 2, WinFrog
Location:	Florida, south of Pulley Ridge; 850 m escarpment	Ship Position System:	DGPS
Date of Dive:	9/19/2011	Sonar Data:	NF1109_CIOERT_800m_PullyRidge_Ledge_10m
Data Management:	Access Database, WinFrog	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, Stephanie Farrington
Date Compiled:	2/17/2012	Report Analyst:	John Reed, Stephanie Farrington

Dive Data:

Minimum Bottom Depth (m):	512	Total Transect Length (km):	1.15
Maximum Bottom Depth (m):	827	Surface Current (kn):	125
On Bottom (Time- GMT):	13:26	On Bottom (Lat/Long):	24°39.6902'N 83°55.0128'W
Off Bottom (Time- GMT):	20:44	Off Bottom (Lat/Long):	24°40.2444'N 83°55.3118'W
Physical (bottom); Temp (°C):		Salinity:	
		Visibility (ft):	
		Current (kn):	



Figure 1: Boulder habitat

Figure 2: *Chondrocladia* sp., unusual sponge

Notes (Objectives, Site Description, Habitat, Fauna):

Objectives: Survey rock escarpment at 800 m depth, ~6 nmi south of the Pulley Ridge (outside of USF multibeam region). Ground truth new multibeam data (*Nancy Foster*, 2011). Conduct photographic/video benthic survey and collections.

Dive Events: Conducted transect from base of wall to top. Navigation sporadic throughout dive; difficulty with station keeping, often pulled by umbilical. Upon recovery found aft 2" aluminum frame had broke off on starboard side. Conducted Skype education event with MOA high school for 30 minutes inside ROV van. For quantitative photos, digital still photos were taken every 30 sec traveling at 0.4-0.6 kn for entire dive; stopping for species-specific, non-quantitative photos. Atlas standard definition video camera- 20 cm parallel lasers; Scorpio digital still camera- 10 cm lasers.

Site Description- Habitat/Dominant Fauna: The new *Nancy Foster* multibeam sonar shows 205 m high wall, base 825 m, top 620 m. Surface current 1.5 kn from NE later slacking to near zero. On bottom near base of slope at 826 m; 100% soft bottom, white silty-clay, dense bioturbation 10-50 cm craters and mounds, but no craters with obvious shafts of tilefish; current ¼ kn from west. Fish- rattail fish, tripod fish; Decapod crustacea- *Acanthacaris caecae*, blind white lobster with burrows, *Chaceon* (possibly red crab; *C. quinquedens*), red shrimp. Depth 802 m- vertical, apparent consolidated white clay, horizontally layered, 2 m vertical escarpments. 30 cm orange whip Antipathidae; squat lobster *Eumunida*, *Chaceon fenneri*. Depth 796 m- terraced with 45° mud slopes and 1-2 m rock escarpments, 1 m boulders, pocketed consolidated clay; 1-2 m rock slab slumped from wall, vertical cracks in rock, some of the rock appears black, possibly phosphoritic. Fish- Brotulids common and *Nezumia* rattails common; Porifera- *Hyalonema* with zoanths; two species, one the usual form and one with 3 lobed head; Gorgonacea- 60 cm Isididae, 30 cm yellow Paramuriceidae; 20 cm diam comatulid crinoids on sediment are common. Depth 768 m- 100% sediment on 30-45° slope; current 0. Bottom wall was at foot of slope from 836 m to 768 m, then sediment slope up to base of main wall; moderate bioturbation. Fish- *Chaunax* toadfish, pogo stick fish (20 cm long, hanging vertical in water just off bottom); Porifera- fan shaped Hexactinellids; thin mesh fan bryozoan; Paramuriceids common; *Bathynomus gigantean* crustacean; squid common. Depth 708 m- base of vertical wall on sonar, 30° slope, sediment with *Lophelia* coral rubble. Current ¾ kn from NW. Depth 703 m- vertical wall, consolidated clay and rock escarpment. Clay highly bioeroded with pits. Depth 690 m- vertical, apparent consolidated clay, pitted with 1-2 cm holes. Hexactinellids, 50 cm whip Antipathidae; *Acanthacaris*. Depth 688 m- vertical rock (not the white clay), with horizontal layering, 1 m slumped rock. Rock wall from 680 m to 650 m. Depth 668 m- rock slump, with

smooth rock slabs on ledge. Hard coral- 30 cm standing dead *Lophelia pertusa*; 30 cm *Beryx*; 30 cm Chrysogorgiidae; *Chaceon fenneri*. Depth 634 m- top of vertical wall, 10° sediment slope, series of <1m ledges as continue north above wall. Pavement, cobble boulders interspersed with sediment. Depth 633 m- transect along top edge of wall. Wall oriented in this section NNW to SSE. Current $\frac{3}{4}$ - > 1kn from S along wall. Hard coral- one 30 cm colony of *Madrepora*, one 10 cm *Lophelia pertusa* live; purple Paramuriceidae, orange Paramuriceidae, black whip coral; demosponges; sea cucumber; *Chaceon fenneri*. Unable to go south against current; tension on cable 2000 lbs. Turned to go N along wall with current; handled very well in this direction. 2 m escarpment at top of wall, then slope; then vertical wall below 630 m. Vermetids and serpulids on vertical rock edge; several 20 cm corallimorphs; Primnoids common; *Acanthacaris* very common, two *Chaceon* crabs.

ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96120833	-83.637395	56.993	9/13/2011 15:43	13-IX-11-1	on bottom	on bottom	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96125667	-83.63729833	56.619	9/13/2011 15:44	13-IX-11-1	amberjacks;	hard bottom; flat	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96124833	-83.63725333	52.649	9/13/2011 15:45	13-IX-11-1	diving on North end of Pulley Ridge HAPC John Reed and Stephanie Rogers, and Chris for fish, Launch 15:29, lasers are 20cm,	Flat Rock Rubble	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96138667	-83.63737333	56.245	9/13/2011 15:47	13-IX-11-1	adding the code to the camera screen; getting ready to do a photo test,	hard bottom; flat	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96129167	-83.63726833	66.148	9/13/2011 15:50	13-IX-11-1	dominate: red algae, Halimeda, Gorgonacea; Plexauridae. Stopping to test still camera: No AUDIO YET	hard bottom; low relief rock rubble - 5-10 cm	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96134167	-83.63731667	66.568	9/13/2011 15:54	13-IX-11-1	Test Photos - Starting 446 - looking good, 3 test images;				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96133833	-83.637315	66.148	9/13/2011 15:55	13-IX-11-1	Rhodophyta; and Kallymenia; Ascidiacea; white possible Didemnidae; Anadyomene menziesii; hydroids; Gorgonacea - Plexauridae 10cm; bottom depth	hard bottom; Rock; 5-10 cm. Slope-flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96121333	-83.63717333	65.681	9/13/2011 15:59	13-IX-11-1	altimeter may be broken				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119167	-83.63716667	66.195	9/13/2011 16:02	13-IX-11-1	plate coralline algae; branching Rhodymenia; chalk bass; Halymenia sheets; 1cm red algae	hard bottom; Slope- flat; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119667	-83.63717	66.148	9/13/2011 16:05	13-IX-11-1	wrasse; chalk bass;	hard bottom; Slope- flat; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63717167	65.494	9/13/2011 16:07	13-IX-11-1	15 cm Gorgonacea - Primmoids - white;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.637175	66.148	9/13/2011 16:08	13-IX-11-1	25 kts current based on movement; Rhodophyta; Chlorophyta; and some Gorgonacea; Plexauridae; chalk bass				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63717667	65.961	9/13/2011 16:10	13-IX-11-1	chalk bass; Anadyomene menziesii; Chlorophyta - Halimeda; Rhodophyta - Kallymenia?	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63716833	66.055	9/13/2011 16:11	13-IX-11-1	unid polyp looking thing	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63717333	66.195	9/13/2011 16:12	13-IX-11-1	1-2 cm thick white encrusting Ascidiacea - Eudistoma (not Didemnidae);	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119667	-83.63717167	66.148	9/13/2011 16:14	13-IX-11-1	Demospongiae - encrusting;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63717	66.242	9/13/2011 16:15	13-IX-11-1	testing audio;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96120333	-83.637165	66.101	9/13/2011 16:16	13-IX-11-1	Start of Dive - Audio working, on the ridge; Rudy - pilot, John - navigation	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119833	-83.63717667	66.242	9/13/2011 16:17	13-IX-11-1	Dominate species; Rhodophyta - 10-20 cm thin blades - Kallymenia?; Chlorophyta - turf and encrusting types; Gorgonacea; Plexauridae 10-20 cm primmoids; chalk bass; Amber jacks; wrasses; sitting on bottom; getting multibeam onto the Winfrog; still photos w	hard bottom; rubble; Slope- flat; 5-10 cm rock cobble	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.961185	-83.63715333	66.148	9/13/2011 16:19	13-IX-11-1	Reef Butterflyfish; Ascidiacea - encrusting white 1-2 cm thick -	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.9612	-83.63718167	66.101	9/13/2011 16:22	13-IX-11-1	ROV 15 m from the starting waypoint; we are taking a heading and going to start a transect when we arrive	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.63718167	65.307	9/13/2011 16:23	13-IX-11-1	stopping to collect algae	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96129333	-83.63730167	66.148	9/13/2011 16:26	13-IX-11-1	Still photo of Sample 101, video of sample photo	hard bottom; rubble; Slope- flat;	HB	101	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96128667	-83.637305	66.148	9/13/2011 16:33	13-IX-11-1	sample 102 - photo and video of sample	hard bottom; rubble; Slope- flat;	HB	102	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96128833	-83.6373	66.288	9/13/2011 16:35	13-IX-11-1	Photo of sample 102	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96128333	-83.63730167	67.549	9/13/2011 16:37	13-IX-11-1	to 1st waypoint to position for 1st transect; 30 m from the actual starting waypoint of the start;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96138833	-83.63737333	66.288	9/13/2011 16:42	13-IX-11-1	5 cm Demospongiae - Cinachyra; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.961385	-83.63737	65.915	9/13/2011 16:43	13-IX-11-1	Demospongiae - Cinachyra - 122 m range in barring to waypoint; 300 degrees	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96139333	-83.63732667	65.961	9/13/2011 16:45	13-IX-11-1	Demospongiae - xestospongia;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96142	-83.63725833	66.008	9/13/2011 16:49	13-IX-11-1	Photo XS (quantitative)- start; 439 images left. Dominate species same; Rhodophyta - Rhodymenia; Anadyomene menziesii; shooting about every 10 seconds with out overlapping and with camera recycling	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.961505	-83.63718	65.354	9/13/2011 16:51	13-IX-11-1	branching algae; Halimeda;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96154167	-83.637135	64.466	9/13/2011 16:52	13-IX-11-1	every 10 seconds are non-overlapping photos.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.961585	-83.63716333	62.458	9/13/2011 16:53	13-IX-11-1	orange Demospongiae, bicolor damsel, chalk bass, reef butterfly, sand tile mound?,	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96171833	-83.63723333	63.299	9/13/2011 16:56	13-IX-11-1	2-3 meter mound of rubble (sandtile or red grouper). Ircinia strobilina, bicolor damsel, chalk bass	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.961795	-83.637215	62.645	9/13/2011 16:57	13-IX-11-1	Halimeda plates, Rhodophyta; 1/3 photo transect; encrusting orange demosponge; 20 photos so far	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96191333	-83.63714333	61.804	9/13/2011 16:59	13-IX-11-1	no Scleractinia; Rhodophyta; Chlorophyta; Fishing line? Human Debris; 1/2 way along transect; 24 photos	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.962005	-83.63709833	61.43	9/13/2011 17:01	13-IX-11-1	another pile of rubble (tilefish), bicolor abundant, blue chromis, yellowtail reef fish, large school of wrasse	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96211333	-83.63703833	60.543	9/13/2011 17:02	13-IX-11-1	1m relief, 10cm wrasse schools, X. muta,	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96216333	-83.63704833	61.384	9/13/2011 17:04	13-IX-11-1	stop transect for drill Photo XS (quantitative)- End; cancel				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96217167	-83.63704167	60.589	9/13/2011 17:04	13-IX-11-1	Photo XS (quantitative)- start; drill canceled				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96214167	-83.637085	60.963	9/13/2011 17:05	13-IX-11-1	2/3 way through transect; 30 pictures; more wrasse, bicolor damsels Rhodophyta; Chlorophyta; X. muta;	hard bottom; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96224	-83.63705167	60.963	9/13/2011 17:07	13-IX-11-1	dense bladed Rhodophyta; turf Chlorophyta; sparse gorgonians; no ascidians; no scleractinia	100% hard bottom; rubble 5-10cm; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96237833	-83.63695833	61.243	9/13/2011 17:09	13-IX-11-1	1 m amberjack (dozens); X. muta	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96244667	-83.636895	61.524	9/13/2011 17:10	13-IX-11-1	Rhodophyta; Chlorophyta; 2m burrow with shaft (maybe red grouper); X. muta (more than beginning); bicolor, blue chromis, chalk bass, primnoids gorgonian (more)	100%hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96252167	-83.636895	61.337	9/13/2011 17:12	13-IX-11-1	similar biota and habitat; <i>Ircinia strobilina</i> , Rhodophyta; Chlorophyta; ended 100m transect but need to continue to reach 50 photos	100% hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96258833	-83.63693667	61.15	9/13/2011 17:14	13-IX-11-1	Photo XS (quantitative)- End; stopping on photo #390				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96262833	-83.63680667	61.664	9/13/2011 17:16	13-IX-11-1	all stop; Rhodophyta; Chlorophyta; 10cm gorgonian	hard bottom; rock rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96262667	-83.636965	61.524	9/13/2011 17:19	13-IX-11-1	Photo; sample 001			001	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96262167	-83.637	61.384	9/13/2011 17:21	13-IX-11-1	Switch to Tape 2, DVD 2				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96261833	-83.63702	61.617	9/13/2011 17:23	13-IX-11-1	collecting sample 001	hard bottom; rubble; Slope- flat;	HB	001	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96261	-83.63701833	61.057	9/13/2011 17:27	13-IX-11-1	Ascidians zoom view, maybe an <i>Aplyidium</i>	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96262667	-83.637025	61.757	9/13/2011 17:29	13-IX-11-1	3 photos of sample 002 and sample 003, between 1728 and 1730, video 1731			002, 003	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96263333	-83.63703333	61.711	9/13/2011 17:39	13-IX-11-1	finished sampling 002 and 003, camera back to 30 down and full field of view; several chalk bass, yellowtail reef fish in area of 002 and 003 samples				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.962745	-83.63688333	60.263	9/13/2011 17:40	13-IX-11-1	sparse Gorgonacea; Rhodophyta; Chlorophyta; wrasses (sharp nose; photo); <i>X. Muta</i> ; yellowtail reef fish	100%hard bottom; rock rubble; cobble, Slope- flat; 20% exposed sand; no exposed ledges	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96289667	-83.63672	60.403	9/13/2011 17:42	13-IX-11-1	2m maybe redgrouper burrow (no sightings); Gorgonacea (maybe <i>diogorgia</i>); yellowtail reef fish; Reef Butterflyfish; couple photos inside burrow	rubble; Slope- flat; soft bottom below rubble	SB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96294333	-83.636725	61.43	9/13/2011 17:45	13-IX-11-1	blade Rhodophyta; Chlorophyta; big Sand Tilefish burrow; Yellowtail Reef fish; ; blue chromis; thin encrusting sponge and bryozoan; primnoids Gorgonacea;	rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96302167	-83.63674833	62.505	9/13/2011 17:46	13-IX-11-1	reddish tan tunicate; white tunicate; Rhodophyta; little <i>Anadyomene menziesii</i> ; many primnoids Gorgonacea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96330167	-83.63638333	64.093	9/13/2011 17:50	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96345	-83.636485	62.925	9/13/2011 17:51	13-IX-11-1	general transect; dominated by Rhodophyta; Chlorophyta; Halimeda, primnoids gorgonians, sparse Demospongiae; no scleractinia; few fish dominated by wrasse Yellowtail Reef fish, Reef Butterflyfish; <i>X. Muta</i> dominate and <i>Ircinia strobilina</i>	100% hard bottom; rock rubble and cobbles 5-10cm; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96354667	-83.636175	59.655	9/13/2011 17:53	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96368333	-83.636175	62.038	9/13/2011 17:54	13-IX-11-1	swap to Jenny as recorder				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96365	-83.63639167	61.944	9/13/2011 17:55	13-IX-11-1	Rhodophyta - Rhodymenia; 5-10% cover of Rhodophyta and Chlorophyta; Reef fish uncommon, mostly wrasse, chalk bass, Yellowtail Reef fish.	hard bottom; small rock rubble; Slope- flat; soft bottom underlying rubble. Rubble less than 10cm.	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96395833	-83.635925	62.972	9/13/2011 17:58	13-IX-11-1	Rhodophyta- Rhodymenia. 400 m to the next photo transect.	hard bottom; rubble; Slope- flat; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96409833	-83.63581	62.318	9/13/2011 17:59	13-IX-11-1	Taking a few photo test shots. # downward facing stills of <i>X. muta</i> , cyanobacteria; small white ovoid ascidians- common but not abundant;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96422667	-83.635865	64.934	9/13/2011 18:01	13-IX-11-1	More X. Muta, small reef fish, Sand Tilefish; Yellowtail Reef fish; CCA	hard bottom; rubble; Slope- flat; cloverleaf; less than 10 cm	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96453667	-83.63550333	64.98	9/13/2011 18:03	13-IX-11-1	Purple rope sponge- Aplysina sp.; Ircinia, Rhodophyta; Downward facing photo- saw fist coral Madracis, small orange encrusting sponges.	hard bottom; pavement; Slope- flat;	HB		Madracis
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96482667	-83.63538333	65.261	9/13/2011 18:06	13-IX-11-1	Ascidians- white and less than 10 cm; small wrasses; Downward facing photo of the ascidians as well as small encrusting sponge in photo. 2-5% cover of large blade Rhodophyta, greater cover of Halimeda.	hard bottom; rubble; Slope- flat; 80-90% rubble	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96504333	-83.635135	66.989	9/13/2011 18:08	13-IX-11-1	3	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.965075	-83.63514333	66.055	9/13/2011 18:11	13-IX-11-1	First hard coral collected on coral; cup coral, stopping to collect; There's an eel here- spotted moray or a golden tale; Yellowtail Reef fish; more cardinal fish, bicolored damsel; Turned off over-lay for habitat video; yellow crinoid present- 10 cm acr	hard bottom; rubble; Slope- flat;	HB		coral; cup coral,
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96526667	-83.63499167	66.849	9/13/2011 18:23	13-IX-11-1	overlay back on, but no in the right spot yet. Incorrect overlays on video.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96526667	-83.63499167	66.989	9/13/2011 18:29	13-IX-11-1	Decided to abandon collecting sample; Had difficulties with collecting; Over-lay is still not functioning- it needs to be reset by Kevin; 18:30 the Kraken positioning is not accurate (lat - long)	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96526667	-83.63499167	65.354	9/13/2011 18:31	13-IX-11-1	Leaving sand tile mound and continuing on.	hard bottom; rubble; sand tile mound	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96516667	-83.63506333	65.681	9/13/2011 18:32	13-IX-11-1	Moving on and track point positioning is working again. Rhodophyta; Chlorophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96541333	-83.634935	67.222	9/13/2011 18:34	13-IX-11-1	Rhodophyta blades; X. muta; cyanobacteria;	hard bottom; rubble; Slope- flat; >90% rock rubble; less than 10 cm	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96561	-83.63485	66.568	9/13/2011 18:36	13-IX-11-1	Many different Scolymia (may actually be coralliomorpha); captured in photo; 3 crinoids; chalk bass	hard bottom; rubble; Slope- flat;	HB		Scolymia
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96572667	-83.63475333	66.242	9/13/2011 18:37	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96580833	-83.63465167	66.195	9/13/2011 18:40	13-IX-11-1	same 2 lionfish in a sand tile rubble 60-70cm high at times.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96597167	-83.63449667	66.101	9/13/2011 18:41	13-IX-11-1	Turning lasers back on, Kevin is working on over-lay; tattler bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96596833	-83.63449	65.915	9/13/2011 18:42	13-IX-11-1	Over-lay back on at 18:52:42 and it is correct; We are beginning the second photo transect. Distance 100m. Plan on 0.2 knots	hard bottom; rubble; Slope- flat; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96597167	-83.63448833	65.681	9/13/2011 18:44	13-IX-11-1	Rhodophyta; Starting photo transect here. We are waiting a few seconds for the ship to get ahead of us to improve the tracking.	hard bottom; 100% rubble; soft bottom underneath	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96600333	-83.63452	65.588	9/13/2011 18:46	13-IX-11-1	tacking back online; officially starting photo transect at 18:46:44	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96600833	-83.634525	65.261	9/13/2011 18:47	13-IX-11-1	Starting at photo transect 9553; back to recording mode; Yellowtail Reef fish; wrasses; reef butterfly fish, Primnoids gorgonians; rusty red cyanobacteria; clump of 5 scolimia; colonial ascidians -3 white in color and translucent; unidentified sponge RECH	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96612833	-83.634465	64.513	9/13/2011 18:49	13-IX-11-1	Scolymia very common here. In almost every other photograph; solitary ascidians also white and less than 3 cm in diameter; on average 5-10% of large blade Rhodophyta in each photo; persistent rusty brown cyanobacteria	hard bottom; rubble; Slope- flat;	HB		Scolymia
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96622667	-83.63434167	64.887	9/13/2011 18:51	13-IX-11-1	quarter through 100m transect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96626667	-83.634335	63.859	9/13/2011 18:52	13-IX-11-1	Rhodophyta; occasional chalk bass; CCA, small encrusting sponges; lots of scolimia over 20 in a shot and 18:52:21	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96633833	-83.634245	64.093	9/13/2011 18:53	13-IX-11-1	Big X. muta; Rhodophyta; a sea star is visible; tunicate RECHECK Species; Chlorophyta; Halimeda	hard bottom; pavement; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96639667	-83.63416833	64.42	9/13/2011 18:54	13-IX-11-1	Many things that appear green tinted in forward facing video, when we hit with strobe they are brown color; Most of the green algae are Halimeda; large and small Rhodophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96646167	-83.63399667	62.738	9/13/2011 18:55	13-IX-11-1	2/3 way through transect; >80% sparse biota: Halimeda, Niphates sp., 3 hydroids, occasional fish; Rhodophyta;	hard bottom; lower relief rock rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96650333	-83.63407333	63.906	9/13/2011 18:56	13-IX-11-1	Area dominated by Halimeda, one large hydroid; possible Nicella; Aplysina; reef butterfly fish; Niphates erect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.966575	-83.63398833	66.242	9/13/2011 18:58	13-IX-11-1	another large hydroid; Rhodophyta; [had to add date time post cruise - estimated]	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96668833	-83.633905	63.065	9/13/2011 19:00	13-IX-11-1	slowing down just a bit to let the ship get back out in front of us;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96673833	-83.63393833	62.925	9/13/2011 19:00	13-IX-11-1	Different green alga, 6cm across, bulbous and lumpy, solid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96681167	-83.633895	63.159	9/13/2011 19:01	13-IX-11-1	The overall distance at the end is deviating a touch. May be over 100m	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.966805	-83.6338	63.299	9/13/2011 19:01	13-IX-11-1	Photo XS (quantitative)- End;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.966835	-83.63362333	64.887	9/13/2011 19:04	13-IX-11-1	Sting still to determine next course - going to finish transect.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96684833	-83.633725	64.233	9/13/2011 19:07	13-IX-11-1	looking at hydroid	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96685	-83.633735	64.186	9/13/2011 19:08	13-IX-11-1	looking at stinging hydroid, Photo; sample 004	hard bottom; rubble; Slope- flat;	HB	004	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.966845	-83.63370833	64.046	9/13/2011 19:10	13-IX-11-1	Photo; sample 4	hard bottom; rubble; Slope- flat;	HB	004	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.966865	-83.633785	64.326	9/13/2011 19:35	13-IX-11-1	sample officially collected into suction bucket number 3. Moving on after quiver 10's lid is put back on.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96685833	-83.633735	63.579	9/13/2011 19:36	13-IX-11-1	continue general transect on 40o, camera tilted down 30o	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96689833	-83.63370167	62.925	9/13/2011 19:38	13-IX-11-1	chalk bass; Sand Tilefish mound; photos general; X. muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96697	-83.63355167	63.439	9/13/2011 19:39	13-IX-11-1	Rhodophyta; Chlorophyta - Halimeda; scolymia (may actually be Corallimorpharia), X. Muta; Ascidiacea;	hard bottom 100%; rubble5-10 cm; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.967175	-83.63342	64.7	9/13/2011 19:41	13-IX-11-1	Video of orange ball sponge - Cinachyra	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96718833	-83.63344167	64.653	9/13/2011 19:43	13-IX-11-1	Photo of sample 005; x 3	hard bottom; rubble; Slope- flat;	HB	005	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96718333	-83.633345	63.719	9/13/2011 19:53	13-IX-11-1	Continuing general transect	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96730667	-83.63328667	64.747	9/13/2011 19:54	13-IX-11-1	stopping for photos of filamentous green rubble; purple encrusting coralline algae; Didemnidae; red algae; brown filamentous on sand is Cyanophyta; Didemnidae; Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96743	-83.63337167	62.832	9/13/2011 19:58	13-IX-11-1	possible burrow;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96739833	-83.63333833	61.664	9/13/2011 19:58	13-IX-11-1	Off bottom;	hard bottom; rubble; Slope- flat; Off bottom;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96749667	-83.63295833	64.373	9/13/2011 20:00	13-IX-11-1	Cyanophyta encrusting - brown on zoom; branching Demospongiae; Halimeda; X. Muta; Didemnidae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.9676	-83.633095	64.186	9/13/2011 20:01	13-IX-11-1	stopping to look at red algae	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96765667	-83.63296167	63.486	9/13/2011 20:03	13-IX-11-1	Reef Butterflyfish; Sand Tilefish burrow; x. Muta; encrusting Demospongiae - Spirastrellidae (spelling?);	hard bottom; 9-10 % cover of sand	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96769833	-83.63305667	63.299	9/13/2011 20:04	13-IX-11-1	Sand Tilefish burrow;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96783	-83.632695	63.766	9/13/2011 20:05	13-IX-11-1	lost tracking; stopping	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96783833	-83.63251	64.046	9/13/2011 20:07	13-IX-11-1	tracking back on; Hap-hazard photos' 2/3 length of transect; chalk bass;	hard bottom; 90% rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96805333	-83.63247167	64.607	9/13/2011 20:09	13-IX-11-1	Ascidiacea; close up	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96812667	-83.63246167	64.466	9/13/2011 20:10	13-IX-11-1	lobate finger Demospongiae; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96815833	-83.632445	65.074	9/13/2011 20:11	13-IX-11-1	Haplosclerid Demospongiae 10 -15 cm tall, apical ossicle on some, orange, fingers 2cm diameter, paplo surface - may be Aka or Siphonodiction; Video of sample 006	hard bottom; rubble; Slope- flat;	HB	006	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96816167	-83.63236167	64.56	9/13/2011 20:14	13-IX-11-1	Photo Sample 006 - ~4	hard bottom; rubble; Slope- flat;	HB	006	
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96815833	-83.63244667	64.793	9/13/2011 20:24	13-IX-11-1	Continuing general transect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96821	-83.632335	64.326	9/13/2011 20:25	13-IX-11-1	wrasse; same biota	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96817333	-83.63211	64.653	9/13/2011 20:26	13-IX-11-1	red spirastrellid sponge; Sand Tilefish burrow - .5 m; bicolor damsel	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96830167	-83.63206	64.42	9/13/2011 20:28	13-IX-11-1	stopping to settle and then going to begin transect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96836333	-83.63205	64.607	9/13/2011 20:28	13-IX-11-1	Photo XS (quantitative)- start; 9658.jpg was last photo before start of transect; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96835167	-83.63205167	64.793	9/13/2011 20:32	13-IX-11-1	sonar indicating a huge borrow in front of us;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.968375	-83.632015	64.607	9/13/2011 20:33	13-IX-11-1	Photo XS (quantitative)- start; starting to move and beginning transect 3; 2 m red grouper? burrow with Reef Butterflyfish; chalk bass; Yellowtail Reef fish; Cyanophyta; Rhodophyta; Gorgonacea; x. Muta; black hydroid; Plexauridae	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96852833	-83.63190333	64.7	9/13/2011 20:36	13-IX-11-1	Gorgonacea; brown sponge; spirastrellidae	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96855667	-83.6318	64.653	9/13/2011 20:37	13-IX-11-1	large mollusk -2x nudibranch Umbraculum; amber jack; brown encrusting Demospongiae; chalk bass; spirastrellid	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96864	-83.63166833	64.373	9/13/2011 20:39	13-IX-11-1	Ascidiacea;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.968635	-83.63153833	64.653	9/13/2011 20:39	13-IX-11-1	Rhodophyta; and orange Demospongiae; yellow Demospongiae; 1/2 way through transect; Halimeda;	hard bottom; 100% < 5 cm rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96884833	-83.63147	63.999	9/13/2011 20:43	13-IX-11-1	X. muta; wrasse? Or basselet?;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96883667	-83.63142167	64.186	9/13/2011 20:44	13-IX-11-1	continuing until we hit 50 photos ~ 40 m; Greater Amberjack; less Rhodophyta sheets; increase in sand and green filamentous algae; black hydroid	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96883	-83.631365	63.439	9/13/2011 20:45	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96887833	-83.63134833	63.486	9/13/2011 20:45	13-IX-11-1	change in bottom type, may be coming off the ridge;	hard bottom; Sand; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96898333	-83.63130167	62.972	9/13/2011 20:47	13-IX-11-1	Photo XS (quantitative)- End; last photo 9706.jpg	hard bottom; Sand; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96899667	-83.631245	63.953	9/13/2011 20:48	13-IX-11-1	Snapper; just came off of the apparent hummock at the end of the transect; looking for a sponge; Anadyomene menziesii; chalk bass;	hard bottom; sand rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.968945	-83.631185	64.233	9/13/2011 20:52	13-IX-11-1	Codium; Photo;	hard bottom; sand and rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96895667	-83.63119667	64.326	9/13/2011 20:54	13-IX-11-1	moving on; Demospongiae; chalk bass; Ascidiacea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96895667	-83.63119667	64.42	9/13/2011 20:55	13-IX-11-1	trigger fish; verongid? Demospongiae 2-3 mm apical oscules;	hard bottom; rubble; Slope- flat; Patchy	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96895667	-83.63119667	64.28	9/13/2011 20:57	13-IX-11-1	moving on;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96895667	-83.63118667	64.326	9/13/2011 20:59	13-IX-11-1	Ellisellidae; serpulid - feather duster worm; aka sp.;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96891667	-83.63129333	63.953	9/13/2011 21:01	13-IX-11-1	new way point on multibeam; going around the arc on the northern end on Pulley Ridge; looking for X. muta; hydroid; Sand Tilefish burrow; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.968965	-83.631185	64.28	9/13/2011 21:03	13-IX-11-1	Filograna; encrusting on a dead hydroid? Zoanths? With blue green scum - Cyanophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.968965	-83.631185	64.233	9/13/2011 21:06	13-IX-11-1	slowing down to look at Placospongia Demospongiae 5cm thick encrusting; good video; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96902667	-83.631025	63.672	9/13/2011 21:08	13-IX-11-1	yellow Demospongiae; primnoids Gorgonacea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96904833	-83.63098	64.093	9/13/2011 21:09	13-IX-11-1	possible Sand Tilefish burrow off to the left	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96906333	-83.63091333	63.626	9/13/2011 21:09	13-IX-11-1	10 more minutes of video left;	hard bottom; sand and rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96910333	-83.63099	63.999	9/13/2011 21:11	13-IX-11-1	RECHECK Species mutton snapper? X2	hard bottom; soft bottom; rubble;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96915	-83.63088	64.607	9/13/2011 21:12	13-IX-11-1	another rock mound - Sand Tilefish burrow; Hexactinellida? With zoanths;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96924667	-83.630725	65.541	9/13/2011 21:13	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96926667	-83.63059833	65.588	9/13/2011 21:14	13-IX-11-1	heading to WP near crescent on Pulley; Sand Tilefish mound with rubble; aplidium Ascidiacea stalked 10 cm tall - good videos;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96922333	-83.63048167	66.989	9/13/2011 21:16	13-IX-11-1	moving on; crinoid = sample 007 video and photos of sample 007; and sponge behind is sample 008 - and possibly to become sample octocoral under crinoid	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96932	-83.63038667	67.222	9/13/2011 21:36	13-IX-11-1	continuing around the arc of Pulley Ridge; in a valley between 2 of the higher hummocks;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96943333	-83.63021833	67.316	9/13/2011 21:38	13-IX-11-1	white Ascidiacea; in the valley; rubble; egg mass - Photo of 20 cm ring - likely a Umbraculum egg mass;	hard bottom; rubble increasing; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96940833	-83.63013667	68.717	9/13/2011 21:40	13-IX-11-1	continuing; burrows; chalk bass;	hard bottom; more sediment rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96941833	-83.63007333	67.736	9/13/2011 21:41	13-IX-11-1	sample 009 - images of x. Muta - Sample 010 will be the star fish	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96944833	-83.63007833	68.017	9/13/2011 21:45	13-IX-11-1	close up video of sample 009 and 010; and video of another staled lobate sponge	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96944667	-83.63007167	68.157	9/13/2011 21:47	13-IX-11-1	photos of sample 009, 010 and 011	hard bottom; Photo; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96945	-83.63005167	68.063	9/13/2011 22:04	13-IX-11-1	still collecting; yellow head jaw fish in the back ground	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96943333	-83.63004667	67.456	9/13/2011 22:06	13-IX-11-1	heading to the end of the transect; X. Muta with Ascidiacea; Photo of Niphates digitalis with zoanthid; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96946833	-83.62976	67.456	9/13/2011 22:09	13-IX-11-1	Don Piloting the ROV;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96947333	-83.62973667	67.83	9/13/2011 22:11	13-IX-11-1	increase in Halimeda;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96947667	-83.62973833	67.736	9/13/2011 22:11	13-IX-11-1	stopped on the bottom; focus on Halimeda; hadromerid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96964667	-83.629555	67.503	9/13/2011 22:12	13-IX-11-1	moving again; wrasse; hydroids	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.969505	-83.629595	67.176	9/13/2011 22:14	13-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96975	-83.62941167	67.082	9/13/2011 22:15	13-IX-11-1	egg mass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96967	-83.629315	67.082	9/13/2011 22:17	13-IX-11-1	no change in bottom; Rhodophyta; Halimeda; distance to end of transect is 80 m; X. muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96972167	-83.62896833	66.475	9/13/2011 22:20	13-IX-11-1	red sponge - stop for video; Sample # 012	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96980833	-83.62890833	67.456	9/13/2011 22:22	13-IX-11-1	Photo of Sample 012 and video	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96973	-83.62891667	67.363	9/13/2011 22:30	13-IX-11-1	Tripping the niskin; water sample number 301	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96968667	-83.62893833	67.596	9/13/2011 22:36	13-IX-11-1	waiting to leave and for the ship to get ahead of us - END OF DIVE	hard bottom; rubble; Slope- flat;	HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93482167	-83.64953	57.507	9/14/2011 13:35	14-IX-11-2	On bottom; amberjack;	100% hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93465333	-83.64924667	62.224	9/14/2011 13:37	14-IX-11-2	Lasers are on, downward facing digital still; taking a few test shots; red grouper; squirrel fish; grey angel; lionfish; more diversity on bottom than dive 1;	hard bottom; pavement; Slope- flat; 40-50 cm small rubble with less than 10cm rubble on top	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93477	-83.649285	63.299	9/14/2011 13:40	14-IX-11-2	1/2 meter ledges; much more fish; ~8 lionfish; spotfin hogfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.934755	-83.64928833	63.205	9/14/2011 13:42	14-IX-11-2	Testing mike check in dry lab; purple reef fish; it's probably a longspine squirrelfish; 30cm red grouper; more lionfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93476667	-83.64928833	63.299	9/14/2011 13:45	14-IX-11-2	6 more lionfish less than 10m than the original group of 8 lionfish;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93477	-83.649285	63.018	9/14/2011 13:46	14-IX-11-2	bicolored damsals, purple reef fish; Amber Jack; the main camera will be running at 30 degrees down on our transect; grey angel; graysby;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93477333	-83.64929	63.065	9/14/2011 13:49	14-IX-11-2	testing camera.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93478333	-83.64929167	62.925	9/14/2011 13:50	14-IX-11-2	moving to a flatter spot to test the downward facing angle; toward waypoint;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93506	-83.64937167	64.373	9/14/2011 13:52	14-IX-11-2	crinoid; same large blade Rhodophyta but not as dominant as last site; Anadyomene is more dominant here; Crustose Coralline algae; just finished 6 downward facing photos; Halimeda; with CrustoseCorallinee algae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93512167	-83.64930333	64.793	9/14/2011 13:53	14-IX-11-2	still testing camera angles; Sand tilefish; the fringing branched red alga is also present here but not as abundant as the flat blades; The 25 degree down for the primary camera and the field of view at midscreen is ~ 1.4 m. This angle seems to be the bes	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93511333	-83.64930167	64.653	9/14/2011 13:56	14-IX-11-2	getting ready to start a transect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93511333	-83.64930167	64.513	9/14/2011 13:58	14-IX-11-2	~13:54 the overlay on the video stoppped and is incorrect; There seems to have a bit more current; algae are more bent over; Don estimates .8 knots coming form the west	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93511667	-83.649265	64.793	9/14/2011 13:59	14-IX-11-2	Back to correct over-lay time on video; It was off for 4.5 min; We'll need to backcheck data when the trackpoint 2 signal system stops, the time stops on the over-lay;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93525	-83.64925833	63.859	9/14/2011 14:00	14-IX-11-2	X.muta; bicolored damsals; a lot of Anadyomene menziesii; more X.muta	hard bottom; rubble; Slope- flat; 20-40cm relief	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93516333	-83.649225	64.046	9/14/2011 14:01	14-IX-11-2	small ledges occasionally, less than 40 cm; Aplysina sponge; Agelas sponge; corallimorphs; more bicolored damsals; Yellowtail Reef Fish; heavy Anadyomene menziesii 20-30%;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93529	-83.64936333	63.672	9/14/2011 14:02	14-IX-11-2	occasional squirrel fish; Yellowtail Reef Fish; possible orange sponges; many of the same sponges as seen yesterday as far as morphology in concerned; X. muta;	hard bottom; rubble; pavement; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93541333	-83.64928333	63.252	9/14/2011 14:04	14-IX-11-2	Rhodophyta; Anadyomene menziesii; slowly moving up the slope; from 65 m to 63 m; some surpulid worms; ascidian; aplydian 25 cm, white, translucent;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93554833	-83.64923833	61.524	9/14/2011 14:05	14-IX-11-2	Large sand tile mound ~ 60 cm high; good downward digital of sand tile mound; X. muta 25 cm in diameter; potentially 30 small blue chromis or wrasses;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93566167	-83.6491	61.617	9/14/2011 14:07	14-IX-11-2	crinoid gorgonian;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93567167	-83.64911667	61.851	9/14/2011 14:07	14-IX-11-2	At the beginning of first photo transect; Begin with Photo 9785; A few more large X.muta;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93568333	-83.64913667	61.384	9/14/2011 14:08	14-IX-11-2	Large Antipathes over 40cm tall; Stichopathes; small turf alga, large blade Anadyomene menziesii; primnoid gorgonians; aplydian tunicates; Slowly moving up slope	hard bottom;95% biota cover, relief 30 cm; few ledges; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93583	-83.649055	60.029	9/14/2011 14:10	14-IX-11-2	Mostly small reef fish; mixture of wrasses; X.muta with crinoid on it; 8 primnoid gorgonians within field of view; greater amberjack school;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93591	-83.64902667	60.449	9/14/2011 14:11	14-IX-11-2	4 amberjack; large X.muta; 2 bicolored damsals; Yellowtail Reef Fish; crinoid; 50 cm sandtile mound	hard bottom; rubble; Slope-moderate (<35o); sand and small rubble	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93593	-83.64899833	61.243	9/14/2011 14:12	14-IX-11-2	Umbraculum nudibranch at least 20 cm in diameter; downward digital is looking really good;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.935975	-83.64898167	60.543	9/14/2011 14:13	14-IX-11-2		hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93598	-83.648995	60.403	9/14/2011 14:13	14-IX-11-2	1/2 way along with Photo transect; Chalk Bass; 2 of the same hydroid that were collected yesterday;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.936035	-83.64896167	60.076	9/14/2011 14:14	14-IX-11-2	Still have large blade Rhodophyta; a few more surplid worms in downward facing shots; at least 7 primnoid gorgonians; Chalk Bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93607167	-83.64893167	59.982	9/14/2011 14:15	14-IX-11-2	continuing up slope; 2 more crinoids in digital still; larger Antipathes 40-60cm tall, wavy, translucent and appearing better in video than digital still; X.muta, sandtile mound; Red blade I present but not as dominant;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93616833	-83.64891	60.029	9/14/2011 14:16	14-IX-11-2	small bicolored damsals; more of the aplydian tunicates; 70cm tall sandtile mound;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93621667	-83.64888	59.235	9/14/2011 14:16	14-IX-11-2	Chalk Bass; another mound and lots of small reef fish; Yellowtail Reef Fish; blue chromis; larger mound so far- over 1m tall; the downward shots are covered about 30%Crustose Coralline algae;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93627667	-83.64886833	60.169	9/14/2011 14:17	14-IX-11-2	hydroids; Rhodophyta; Anadyomene menziesii;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93633333	-83.64886	60.122	9/14/2011 14:18	14-IX-11-2	Amberjack ~4; could be same grouped following along; Chalk Bass; thin branching black coral, potentially more abundant as are primnoid gorgonians; more Chalk Bass;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93638833	-83.64881	59.842	9/14/2011 14:19	14-IX-11-2	20m left of photo transect;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93643333	-83.648805	59.889	9/14/2011 14:20	14-IX-11-2	Rhodophyta; We lost power so we're going to stop for a min- 21m from end of photo transect; we are on photo 9860 and are going to cycle everything; video off;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.936355	-83.64868833	59.889	9/14/2011 14:22	14-IX-11-2	power cycling back on;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93633833	-83.64868667	60.076	9/14/2011 14:22	14-IX-11-2	restarting Photo transect; we need to reset the camer time;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93644333	-83.64880333	60.076	9/14/2011 14:24	14-IX-11-2	we are setting the date and time; still waiting to continue transect;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93644667	-83.64880167	60.076	9/14/2011 14:27	14-IX-11-2	still waiting to continue		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93645167	-83.64880167	60.169	9/14/2011 14:27	14-IX-11-2	back where were had stopped photo transect, 19m remaining; finishing photo transect;		HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.936445	-83.64880167	59.936	9/14/2011 14:29	14-IX-11-2	officially restarting photo transect; digital photos are good; back online with photo transect; last 5th of 100 m; habitat still similar; less Anadyomene menziesii; than first; less of large blade Rhodophyta; ; more of branching black coral; occasional se	hard bottom; rubble; Slope-moderate (<35o); cloverleaf;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93656167	-83.64873167	58.908	9/14/2011 14:30	14-IX-11-2	on top of ridge but still decent bit of current; 1.2 m tall sand tile mound; bicolored Yellowtail Reef Fish;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93661	-83.64870833	58.908	9/14/2011 14:31	14-IX-11-2	20% encrusted with Crustose Coralline algae on top of mound;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93665333	-83.64871	60.076	9/14/2011 14:32	14-IX-11-2	officially end transect; ended with photo 9872		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93667833	-83.64868333	60.169	9/14/2011 14:32	14-IX-11-2	transitting to next pho transect; still on top of ridge about 60 m; continue for transit and should drop back at break in ridge line;		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93677167	-83.64861167	59.982	9/14/2011 14:33	14-IX-11-2	Chalk Bass; bicolored damsals; large serapathes and plannign on sampling probably at least 2 m total with a basket star bundled with it; polychaetes along bottom; there's an ophiuroid next to it;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93700833	-83.64865167	60.449	9/14/2011 14:44	14-IX-11-2	successful collection;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93701333	-83.64856	59.001	9/14/2011 14:45	14-IX-11-2	Sand tilefish ~40cm in length; 7 bicolored fish; cherub fish; sandtile mound also has a ledge on it ~60cm high; 6 Chalk Bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.937105	-83.64840333	59.235	9/14/2011 14:47	14-IX-11-2		hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93719167	-83.648315	60.122	9/14/2011 14:48	14-IX-11-2	transitting toward valley between 2 photo transects, sandtile mound 60cm high; Sand tilefish;	hard bottom; rubble; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.937265	-83.64827333	60.076	9/14/2011 14:49	14-IX-11-2	few white aplydian ascidians on mound;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93727167	-83.64828	59.468	9/14/2011 14:50	14-IX-11-2	Reef Butterfly; Yellowtail Reef Fish; Blue chromis; bicolored damsals		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93714	-83.64834167	59.936	9/14/2011 14:51	14-IX-11-2	wavy slope on top, relief up and down by a meter; less of large Rhodophyta; Anadyomene menziesii; more Primnoid; Crustose Coralline algae;	hard bottom; Slope- moderate (<35o); more common sandtile mounds 60-70cm high over 1 m in diameter	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93739167	-83.64821	59.795	9/14/2011 14:52	14-IX-11-2	X.muta; Chalk Bass; wrasse; Aplysina; Rhodophyta; crimnoid gorgonian. 3 crinoids;	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93739167	-83.64821	59.936	9/14/2011 14:53	14-IX-11-2		hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93747167	-83.648205	59.936	9/14/2011 14:55	14-IX-11-2	still transitting between photo transect; more bicolored damsals; X.muta;	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93766	-83.648035	60.263	9/14/2011 14:57	14-IX-11-2	Rhodophyta; 4 within 4 m of each other X.muta; Photo;	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93770833	-83.64800167	61.15	9/14/2011 14:57	14-IX-11-2	Still in transit, still on ridge, same habitat; 40m from the saddle ; ~16 crimnoid gorgonians; Butterfly; Chalk Bass;	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93781	-83.64793667	61.57	9/14/2011 14:59	14-IX-11-2	Shirley is covering for Josh momentarily; transitting to next transect area	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93782667	-83.64792667	62.925	9/14/2011 15:00	14-IX-11-2	Large red blades Rhodophyta; small fish	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93794	-83.64801167	62.318	9/14/2011 15:01	14-IX-11-2	Hallimeda; flat red blade Rhodophyta; Chalk Bass; hydroids	hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93796	-83.64796	62.131	9/14/2011 15:02	14-IX-11-2	Plateygreen algae- Anadyomene menziesii (lots of it); wrasses;	hard bottom; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.937965	-83.647925	60.636	9/14/2011 15:03	14-IX-11-2	school of wrasses; Chalk Bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93811	-83.64779667	62.691	9/14/2011 15:04	14-IX-11-2	Chalk Bass; still going ot next transect site; Rhodophyta- looks like a couple differnet kinds; Anadyomene menziesii;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93829	-83.647625	62.645	9/14/2011 15:05	14-IX-11-2	bicolored damsals; Sand tilefish mound;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93835833	-83.64763333	63.579	9/14/2011 15:06	14-IX-11-2	Rhodophyta; Anadyomene menziesii; bumping up to .4-.5 knots		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93835833	-83.64763333	63.579	9/14/2011 15:07	14-IX-11-2	common diademnid ascidins- white; setting ROV down for a second;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93850167	-83.64770833	64.14	9/14/2011 15:08	14-IX-11-2	restarting transit to transect area	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93855167	-83.64766333	63.626	9/14/2011 15:09	14-IX-11-2	Gorgonacea; Due to time conctrains (late start). The higher importance is to fisnih the photo transect than collecting; Chalk Bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93869833	-83.64759333	62.925	9/14/2011 15:10	14-IX-11-2	Orange sponge- Agelas;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93865	-83.64762167	62.738	9/14/2011 15:11	14-IX-11-2	still continuing to photo transect area	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93887	-83.64752833	62.598	9/14/2011 15:12	14-IX-11-2	Halimeda; The altitude is working (seems to be fixed from bumping it on the ground); passed the saddle; 200m form beginning of photo transect; 5 degree slope; west; 1m lower on left hand side of the screen; same habitat; more Anadyomene menziesii; Sand ti	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93902333	-83.647475	61.57	9/14/2011 15:14	14-IX-11-2	still heading to transect area;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93927	-83.64738167	62.411	9/14/2011 15:16	14-IX-11-2	certain sections are completely covered in algae- right now is one of the most dominant places; other places don't have as much for quite a few meters	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93960333	-83.64728667	61.991	9/14/2011 15:17	14-IX-11-2	Photo	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.939615	-83.64728167	62.598	9/14/2011 15:18	14-IX-11-2	Asciidiacea white translucent;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93979	-83.647235	62.178	9/14/2011 15:20	14-IX-11-2	orange-backed bass- first one we have seen so far ~10 cm; hydroids;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93979	-83.647235	62.365	9/14/2011 15:21	14-IX-11-2	a fish that looked like a spot-finned hog; Chalk Bass; Photo;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94014667	-83.64714167	61.757	9/14/2011 15:23	14-IX-11-2	chaning(?) out videos		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94050333	-83.64704167	61.991	9/14/2011 15:26	14-IX-11-2	Stephanie will cover while Jenny takes lunch		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	New tape; the ship has slowed ajd were stopping because the ROV spun and they teather needs to be checked	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.940675	-83.64710833	61.197	9/14/2011 15:29	14-IX-11-2	new line ; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae ; Asciidiacea - Aplydium?; primnoid Gorgonacea; sea cucumber - warty skin, beige color; more halimeda -	hard bottom; rock - rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.941	-83.64695	60.87	9/14/2011 15:32	14-IX-11-2	large clumps of halimeda 15-20 cm in diam; lionfish; bicolor damse;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.941135	-83.64686	62.785	9/14/2011 15:33	14-IX-11-2	Photo XS (quantitative)- start; start on number 9982.jpg; crinoid;	hard bottom; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94106167	-83.64694	61.851	9/14/2011 15:34	14-IX-11-2	stopping for lost tracking - ship getting ahead of us to clear up the track;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94109833	-83.64695667	61.944	9/14/2011 15:36	14-IX-11-2	resuming photo transect; lots of Anadyomene menziesii;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94122333	-83.646875	61.711	9/14/2011 15:38	14-IX-11-2	on western edge of ridge; still abundant Anadyomene menziesii; dominant blade Rhodophyta; Gorgonacea; maybe primnoid; 10=20%Crustose Coralline algae; common bushy black Antipathidae;	hard bottom; 100%; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.941385	-83.646795	60.963	9/14/2011 15:40	14-IX-11-2	looked like a large 40-50 cm diameter sponge with a large central apical oscule; crinoids--a couple; mustard color turf algae or Cyanophyta; Xestospongia muta; also Ircinia?; 5 Ascidiacea; maybe Aplidium; Halimeda;	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94161833	-83.64668667	61.337	9/14/2011 15:42	14-IX-11-2	Sand tilefish; about 1/2 way thru transect;Cyanophyta-black, bushy, 2-4 cm knobs, can see trichomes on edges; first occurrence of high abundance of Cyanophyta; more Primnoid Gorgonacea; more bushy Antipathidae;	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94174333	-83.646655	60.963	9/14/2011 15:45	14-IX-11-2	just lost tracking	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94177333	-83.64669	61.524	9/14/2011 15:47	14-IX-11-2	tracking restored; photo transect resumed; similar habitat type; similar dominant species; small wrasses & damselfish; Ircinia; > 30 cm Xestospongia muta;	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94204167	-83.64655333	61.15	9/14/2011 15:50	14-IX-11-2	Photo XS (quantitative)- End; last photo number 0055	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94203833	-83.64666	61.384	9/14/2011 15:52	14-IX-11-2	Xestospongia muta; Antipathidae; large flat blade Rhodophyta; less abundant Anadyomene menziesii;	hard bottom; pavement;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94207	-83.64662833	60.403	9/14/2011 15:53	14-IX-11-2	Photo XS (quantitative)- End; transiting to NNE;Sand tilefish; bicolor damsels; common Chalk Bass; Xestospongia muta; bushy Antipathidae; Yellowtail Reef Fish; spotfin hogfish;	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94217167	-83.64655333	61.15	9/14/2011 15:55	14-IX-11-2	on top of ridge; approaching saddle; habitat similar to previous;Slope- moderate (<35o);Sand tilefish; abundant flat blade Rhodophyta; primnoid Gorgonacea;	hard bottom; rubble; 100%; relief 70-80 cm;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94261167	-83.64635	59.655	9/14/2011 15:57	14-IX-11-2	Chalk Bass; lower relief: 10-20 cm;	hard bottom; rubble;	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.942495	-83.64637667	61.057	9/14/2011 15:58	14-IX-11-2	Collect; photo and video of sample 101 and 102;	hard bottom; rubble;	HB	101 102 103	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.942495	-83.64638167	61.711	9/14/2011 16:15	14-IX-11-2	Finished collection. Continuing; bicolored damsals; sharp nose puffer; Chalk Bass; Yellowtail Reef Fish; More X.muta than earlier; Anadyomene menziesii; Primnoid Gorgonacea; translucent ascidians; bushy black corals;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94261667	-83.64637667	61.103	9/14/2011 16:16	14-IX-11-2	coming to one of the saddle areas to the ridge;	hard bottom; rubble; 10-40 cm relief; other areas less relief; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94270667	-83.646345	61.477	9/14/2011 16:17	14-IX-11-2	Few more Stichopathes; more Halimeda; Black cyanobacterial clumps;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94279	-83.646285	61.477	9/14/2011 16:18	14-IX-11-2	Same habitat type	hard bottom; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.942925	-83.64622833	61.057	9/14/2011 16:20	14-IX-11-2	The slope is getting a bit stronger as we get to the saddle- probably right at 30 degrees or so; didemnid tunicate ascidian;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94299333	-83.64620833	61.711	9/14/2011 16:21	14-IX-11-2	Turning on the head lights for a moment to see a bit better; so far it's better for viewing benthic areas with the lights on.		HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94297833	-83.64613333	62.038	9/14/2011 16:22	14-IX-11-2	Some type of Urchin? 16:22:40;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94314333	-83.64611333	62.505	9/14/2011 16:23	14-IX-11-2	We are currently searching for some corals; so the speed is not too fast	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94328	-83.646135	63.813	9/14/2011 16:24	14-IX-11-2	same habitat; Chalk Bass; less common black corals here; white translucent aplidium ascidian again;	hard bottom; rock rubble; Slope-moderate (<35o); little sand rubble too by sandtile fish mounds; relief less than 20 cm	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94330167	-83.646195	63.953	9/14/2011 16:26	14-IX-11-2	Still similar habitat; Rhodophyta; Anadyomene menziesii; small thin blade Rhodophyta; big X.muta; Chalk Bass; Cherub fish; Photo;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94336333	-83.646205	64.466	9/14/2011 16:28	14-IX-11-2	Sponge possibly Verongula rigida (yellow with dark greenish on it);	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.943435	-83.646165	64.607	9/14/2011 16:29	14-IX-11-2	Lots and lots of Crustose Coralline algae some screen shots look like 40%; Chalk Bass; Halimeda	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94352833	-83.64607333	64.56	9/14/2011 16:31	14-IX-11-2	Anadyomene menziesii;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94353833	-83.646065	64.42	9/14/2011 16:31	14-IX-11-2	at bottom of saddle;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94369167	-83.64600333	64.186	9/14/2011 16:32	14-IX-11-2	Chalk Bass; Yellowtail Reef Fish; bicolor damsals; 400m until the start of the 3rd photo transect; we are debating keeping to our time tables or continuing doing another photo transect;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94377833	-83.64597	63.766	9/14/2011 16:34	14-IX-11-2	Final decision: there will be another 15 min photo transect; it will be in a different location than originally planned in order to finish by around 13:00. It will be 100m;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94380333	-83.64597667	64.373	9/14/2011 16:38	14-IX-11-2	We will begin 3rd photo transect; waypoint on the chart is labeled Dive 2 transect 4; it's still along the top of the ridge feature; it's similar to transect 3 in morphology but its closer to our current locations; The beginning photo is 0135; our beginni	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94387333	-83.64595	63.532	9/14/2011 16:40	14-IX-11-2	Started photo transect; current in a little stronger maybe 0.6-0.7 knots; more particulate matter in water; you can see it in downward facing water; coming up the ridge about 1 meter;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94391833	-83.64592	63.859	9/14/2011 16:41	14-IX-11-2	Our first Coral- Josh is making the call to collect the coral sample and cancel the photo transect;	hard bottom; Rock; rubble; less than 30cm relief;	HB		Coral- Agaricia
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94392167	-83.645965	64.186	9/14/2011 16:44	14-IX-11-2	we are currently looking for the coral that Josh spotted;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94399833	-83.64591667	64.186	9/14/2011 16:47	14-IX-11-2	We are currently taking a photo of the Leptoseris cuculata; 10 cm in diameter; it will be spicy mustard color with green polyps on deck	hard bottom; rubble; Slope-moderate (<35o);	HB		Leptoseris cuculata
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.944	-83.64590833	64.14	9/14/2011 16:53	14-IX-11-2	The coral was found and we are currently collecting it; Collect;	hard bottom; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.944	-83.64589333	64.046	9/14/2011 16:57	14-IX-11-2	sample has been collected; Don did a great job!	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.894575	-83.65966667	61.15	9/14/2011 19:07	14-IX-11-3	crinoids; Anadyomene menziesii; Crustose Coralline Algae; Rhodophyta; testing lights; branching Chlorophyta; 60 from the beginning waypoint; orange backed bass	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89462667	-83.65968	60.683	9/14/2011 19:08	14-IX-11-3	on the move heading towards the transect; Anadyomene menziesii; Rhodophyta; Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89493333	-83.65963167	60.776	9/14/2011 19:10	14-IX-11-3	flat blade Rhodophyta; comatulid crinoid; flat Rhodophyta; Anadyomene menziesii; Crustose Coralline Algae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.894835	-83.65966333	60.449	9/14/2011 19:12	14-IX-11-3	comatulid crinoid close up; gooey green algae	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89481167	-83.65966833	60.683	9/14/2011 19:12	14-IX-11-3	Photo globular green algae; Lobophora? - Phaeophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89480667	-83.65964667	60.73	9/14/2011 19:14	14-IX-11-3		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89481167	-83.65964333	60.823	9/14/2011 19:15	14-IX-11-3	Photo of gooey green algae to become sample 101 = 0189.jpg photo number	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89480333	-83.65965167	60.73	9/14/2011 19:19	14-IX-11-3	Collect 101 & 102	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89484167	-83.65964833	60.403	9/14/2011 19:24	14-IX-11-3	on the move again; Rhodophyta; Anadyomene menziesii; heading to transect point; underway to WP for 1st transect;	hard bottom; rubble and cobble; Slope- flat - no ledges;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89494167	-83.659645	60.216	9/14/2011 19:26	14-IX-11-3	large Demospongiae; Sand Tilefish burrow; Yellowtail Reef fish; Bicolor reef fish; cherub fish; comatulid crinoid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89503833	-83.65960667	59.795	9/14/2011 19:27	14-IX-11-3	Niphates digitalis Demospongiae; flat red Rhodophyta; plate like Phaeophyta; comatulid crinoid; Filigrana;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89504	-83.65959333	59.795	9/14/2011 19:29	14-IX-11-3	underway again; Xestospongia muta; Spheciospongia; hydroids;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89509167	-83.65960333	60.543	9/14/2011 19:30	14-IX-11-3	Photo XS (quantitative)- start; starting at image 0190.jpg	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89508833	-83.65959333	59.749	9/14/2011 19:31	14-IX-11-3	continuing transect; Anadyomene menziesii; flat Rhodophyta; hydroids; Codium or gooey green in an image	hard bottom; rock rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89531833	-83.65954833	58.861	9/14/2011 19:32	14-IX-11-3	speed .2 Anadyomene menziesii; Rhodophyta; hydroid; orange encrusting Demospongiae; Sand Tilefish burrow; Spirastrella, Demospongiae; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.8954	-83.65950333	59.655	9/14/2011 19:34	14-IX-11-3	Anadyomene menziesii; Rhodophyta; burrow Sand Tilefish; 70 cm black grouper - large;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.895475	-83.65949333	58.861	9/14/2011 19:35	14-IX-11-3	burrow Sand Tilefish; and Sand Tilefish; Reef Butterflyfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89551833	-83.659435	59.001	9/14/2011 19:36	14-IX-11-3	more blade Rhodophyta; less Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.895575	-83.65942667	59.001	9/14/2011 19:37	14-IX-11-3	burrow; macro algae dominated bottom	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89574833	-83.65937833	59.889	9/14/2011 19:40	14-IX-11-3	bicolor damselfish; wrasse; chalk bass; Anadyomene menziesii becoming more dominate; 3/4 of the way	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89579333	-83.65936667	60.309	9/14/2011 19:41	14-IX-11-3	bicolor damselfish; comatulid crinoid; Condylactis gigantea Actiniaria; Yellowtail Reef fish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89587833	-83.65927667	59.795	9/14/2011 19:43	14-IX-11-3	chalk bass; comatulid crinoid; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89598333	-83.65926333	60.449	9/14/2011 19:45	14-IX-11-3	green gooey algae; chalk bass; bicolor damselfish; Xestospongia muta; black hydroids;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89606833	-83.65929667	60.496	9/14/2011 19:46	14-IX-11-3	Anadyomene menziesii; flat Rhodophyta; agales clathrodes Demospongiae; chalk bass; Didemnidae Ascidiacea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89614833	-83.65928167	60.589	9/14/2011 19:47	14-IX-11-3	Photo XS (quantitative)- End; last photo 0271.jpg	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89618833	-83.659275	60.356	9/14/2011 19:48	14-IX-11-3	underway; dominated by Anadyomene menziesii; few Rhodophyta; black hydroids; 324 to next transect point; Lobophora comatulid crinoid; serpulid	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89630833	-83.659295	59.609	9/14/2011 19:49	14-IX-11-3	Anadyomene menziesii dominate; occasional; Xestospongia muta; comatulid crinoid; sharp nose puffer; bicolor damselfish; Yellowtail Reef fish; Reef Butterflyfish; cherub fish; Xestospongia muta; Reef Butterflyfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89644833	-83.65926833	60.403	9/14/2011 19:51	14-IX-11-3	black hydroids; comatulid crinoid; Anadyomene menziesii; black hydroids;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89656833	-83.65922167	59.468	9/14/2011 19:53	14-IX-11-3	Anadyomene menziesii; bicolor damselfish; chalk bass; black hydroids; continuing on bottom, rock rubble bottom;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.896675	-83.65920333	59.468	9/14/2011 19:54	14-IX-11-3	flat blade Rhodophyta; Anadyomene menziesii; Gorgonacea; comatulid crinoid; yellow gorgonian to collect	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89673833	-83.65918833	60.122	9/14/2011 19:56	14-IX-11-3	sample 001 - gorgonian Photo of sample 001	hard bottom; rubble; Slope- moderate (<35o);	HB	001	
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.896735	-83.65919667	59.936	9/14/2011 20:03	14-IX-11-3	Collect 001;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89673167	-83.65917667	59.422	9/14/2011 20:05	14-IX-11-3	continuing general transect; Anadyomene menziesii; Rhodophyta; black hydroids; Sand Tilefish burrow; purple reef fish; comatulid crinoid; Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89695667	-83.65911833	60.029	9/14/2011 20:07	14-IX-11-3	Sand Tilefish burrow Anadyomene menziesii; Rhodophyta; comatulid crinoid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89716333	-83.659025	60.776	9/14/2011 20:10	14-IX-11-3	black hydroids;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89731167	-83.65904167	60.403	9/14/2011 20:11	14-IX-11-3	chalk bass; black hydroids; comatulid crinoid; mostly Anadyomene menziesii; Rhodophyta;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89741333	-83.659045	60.916	9/14/2011 20:13	14-IX-11-3	Caulerpa Chlorophyta; bicolor damselfish; Ascidiacea;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89740333	-83.659035	60.916	9/14/2011 20:14	14-IX-11-3	overlay coming off for site video; cherub fish;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.897565	-83.65897	60.589	9/14/2011 20:16	14-IX-11-3	agales; Xestospongia muta; Ascidiacea; comatulid crinoid; Anadyomene menziesii; Didemnidae Ascidiacea; bicolor damselfish; wrasse;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89772333	-83.65891667	60.122	9/14/2011 20:18	14-IX-11-3	sloping up; burrow; blue cromis;	soft bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89783833	-83.65886333	61.057	9/14/2011 20:19	14-IX-11-3	swimming crinoid for website video	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.897855	-83.658835	59.889	9/14/2011 20:20	14-IX-11-3	Anadyomene menziesii; Crustose Coralline Algae; less abundant flat Rhodophyta; Xestospongia muta; comatulid crinoid; black hydroids; 130 m to next transect; orange back bass	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89800167	-83.65882333	61.01	9/14/2011 20:22	14-IX-11-3	Xestospongia muta; Anadyomene menziesii; Rhodophyta; bicolor damselfish; 292 images left	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89800167	-83.65882333	61.524	9/14/2011 20:23	14-IX-11-3	Geodia Demospongiae;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89815833	-83.65879	61.384	9/14/2011 20:24	14-IX-11-3	Condalactus gigantia; bicolor damselfish; Anadyomene menziesii; Rhodophyta; Xestospongia muta; burrow Sand Tilefish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89823	-83.65878833	61.057	9/14/2011 20:25	14-IX-11-3	100 m from next transect; Geodia Demospongiae; chalk bass; bicolor damselfish; bridaled burr fish GREAT video for website	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89821	-83.65885	61.197	9/14/2011 20:29	14-IX-11-3	moving on; Sand Tilefish burrow ; bicolor damselfish; black hydroids;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89831333	-83.65875667	59.842	9/14/2011 20:30	14-IX-11-3	burrow Sand Tilefish; bicolor damselfish;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89845667	-83.65872167	60.496	9/14/2011 20:31	14-IX-11-3	Stichopathes and Leiopathes Antipathidae; 002 and 003 images of these - 2 photos of 003 - Stichopathes	hard bottom; rubble; Slope-moderate (<35o);	HB	003 x2	
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89855	-83.65864	58.441	9/14/2011 20:51	14-IX-11-3	under way; bicolor damselfish; chalk bass; wrasse; Codium	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.898755	-83.65854	59.375	9/14/2011 20:52	14-IX-11-3	30 m from 2nd photo transect site; black hydroids; Anadyomene menziesii; Rhodophyta;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89904667	-83.65851833	59.188	9/14/2011 20:54	14-IX-11-3	Photo XS (quantitative)- start #2; ; starting on image 0281.jpg; bicolor damselfish; comatulid crinoid; waiting for them to position;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89892333	-83.65844833	59.235	9/14/2011 20:56	14-IX-11-3	underway on photo transect 2; chalk bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.899035	-83.65844167	59.095	9/14/2011 20:57	14-IX-11-3	black hydroids; Rhodophyta; Anadyomene menziesii; Lobophora;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89934333	-83.65837	58.908	9/14/2011 21:00	14-IX-11-3	Xestospongia muta; Sand Tilefish;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.8994	-83.65835333	58.534	9/14/2011 21:01	14-IX-11-3	Dominant Anadyomene menziesii; Rhodophyta; and black hydroid; chalk bass;	hard bottom; Rock; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89947667	-83.65831333	58.768	9/14/2011 21:03	14-IX-11-3	Largest macro algae is the Anadyomene menziesii; small pink sponges; Crustose Coralline Algae; Lobophora; chalk bass;	hard bottom; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89952167	-83.65828167	57.553	9/14/2011 21:04	14-IX-11-3	~50m till the end of the transect;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89958667	-83.65826333	58.534	9/14/2011 21:05	14-IX-11-3	Finished the Photo transect; continuing to next photo transect area		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89961167	-83.65823333	58.347	9/14/2011 21:06	14-IX-11-3	Lost control of ROV. Going to have to do ao power cycle on the system;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.899585	-83.658235	58.347	9/14/2011 21:06	14-IX-11-3	currentyl cycling power;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89957833	-83.65823	58.347	9/14/2011 21:06	14-IX-11-3	Power back on; waiting to continue transit- 21:08;	hard bottom; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89962167	-83.65824167	58.441	9/14/2011 21:08	14-IX-11-3	21:09- back under control and now we are proceeding to our next photo transect area; Planning on going .4 knots;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89958	-83.658185	58.254	9/14/2011 21:10	14-IX-11-3	Bicolored damsals and wrasses;	hard bottom; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.899645	-83.65808	57.927	9/14/2011 21:11	14-IX-11-3	Orange sponge: possibly Astrophorida or Agelas; two photos of the sponge: 338 and 339; The sponge will be sample 004 for this dive; Crinoid in the area.	hard bottom; rubble;	HB	004	

Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89966333	-83.65804	57.507	9/14/2011 21:22	14-IX-11-3	Stephanie is sitting in for Shirley, Jen is sitting in for Steph		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89964833	-83.65803167	57.74	9/14/2011 21:22	14-IX-11-3	Starting transit again; Sand Tilefish mound; Anadyomene menziesii; black hydroid; crinoid; Test shot: 21:23:10.	hard bottom; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89986167	-83.65812167	57.647	9/14/2011 21:24	14-IX-11-3	We're at the end at what was supposed to be transect 2; Heading toward transect 3;	hard bottom; rubble;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89984	-83.65810333	57.88	9/14/2011 21:25	14-IX-11-3	Ship is getting into position and we'll start moving in a min; Cherub fish 21:28;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89978667	-83.65801667	57.787	9/14/2011 21:28	14-IX-11-3	Dominant species Anadyomene menziesii; Flat Rhodophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89979	-83.658055	57.787	9/14/2011 21:29	14-IX-11-3	ROV went dead again; Going to have to cycle the power; Gogonian in the picture;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89984167	-83.65811333	57.787	9/14/2011 21:29	14-IX-11-3	Powered off: 21:30:07		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89985333	-83.658095	57.787	9/14/2011 21:30	14-IX-11-3	Power brought back on;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89985833	-83.658115	57.507	9/14/2011 21:31	14-IX-11-3	ROV has power again and is moving again;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89999667	-83.65805333	58.628	9/14/2011 21:32	14-IX-11-3	Altitude is not working; Steph is setting up the camera and woking out the power outage kinks;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90021333	-83.65803333	57.693	9/14/2011 21:33	14-IX-11-3	Continuing transit to transect; Rhodophyta; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90029	-83.65801	58.067	9/14/2011 21:35	14-IX-11-3	Camera is set; Anadyomene menziesii are getting a little bit less; black coral; large hydroid; Gorgonians-primnoid;		HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90031167	-83.65797333	58.347	9/14/2011 21:36	14-IX-11-3	Anadyomene menziesii increasing again; There was a slight rise in slope;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90046	-83.65799333	56.993	9/14/2011 21:37	14-IX-11-3	Rhodophyta; Anadyomene menziesii; Black coral;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90059667	-83.65800333	59.282	9/14/2011 21:38	14-IX-11-3	chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90082167	-83.65798667	59.001	9/14/2011 21:39	14-IX-11-3	Same habitat; hydroids, bicolored damsal; crinoids; lobophora; ascidian; Rhodophyta; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90101833	-83.65795667	58.861	9/14/2011 21:40	14-IX-11-3	Giant school of fish RECHECK Species; hydroids- lots of them; white crinoid Gorgonacea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.901075	-83.65795167	58.254	9/14/2011 21:42	14-IX-11-3	Hydroid; Black coral; Taking a photo; downward facing photo; Primnoids;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90108	-83.65795833	57.6	9/14/2011 21:43	14-IX-11-3		hard bottom; rubble; Slope- flat; Rock;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90108	-83.65795833	58.114	9/14/2011 21:43	14-IX-11-3	We just lost tracking; Settling down to adjust ROV momentarily;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.900975	-83.65778833	58.161	9/14/2011 21:44	14-IX-11-3	Corallinales Peyssonneliacea, Peyssonnelia;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.901125	-83.65782	57.273	9/14/2011 21:46	14-IX-11-3	Coral agaricia 15cm- green stripes and purple and brown radiating colors; 21:48; Haplosclerids; Photo 364. Used suction to collect the coral; Bicolored damsal;	hard bottom; rubble; Slope- flat;	HB	005	Coral- Agaricia
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90113667	-83.65779833	58.067	9/14/2011 21:59	14-IX-11-3	chalk bass; bicolored damsal;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90114167	-83.65779667	57.834	9/14/2011 22:00	14-IX-11-3	Shirley is back; single Coral- Agaricia; Haplosclerid sponges; chalk bass; bicolor damselfish; Transiting to transect 3 area	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Agaricia
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90122667	-83.65781167	58.441	9/14/2011 22:02	14-IX-11-3	chalk bass; orange fish RECHECK Species; ; orange sponge collected previously (sample 4); Anadyomene menziesii; Rhodophyta;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.9013	-83.65776833	58.161	9/14/2011 22:03	14-IX-11-3	Crustose Coralline Algae; Rhodophyta; Anadyomene menziesii;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90139333	-83.65775667	58.301	9/14/2011 22:04	14-IX-11-3	327m to next photo transect site;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90145833	-83.65773167	58.955	9/14/2011 22:05	14-IX-11-3	Sand Tilefish hole; chalk bass; bicolor damselfish; A lot more fish; Yellowtail Reeffish; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90169667	-83.65768667	58.254	9/14/2011 22:07	14-IX-11-3	mainly bicolor damselfish; bicolor damselfish;	hard bottom; rubble; Slope- flat; Rock;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90176	-83.65769333	58.674	9/14/2011 22:08	14-IX-11-3	same habitat; muttin snapper pretty large size;	hard bottom; rubble; Rock; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.9018	-83.65765	58.721	9/14/2011 22:09	14-IX-11-3	chalk bass; Anadyomene menziesii; Rhodophyta; Lobophora;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90179	-83.657595	58.488	9/14/2011 22:09	14-IX-11-3	Yellowtail Reeffish; chalk bass;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90187333	-83.65756167	58.347	9/14/2011 22:10	14-IX-11-3	lionfish	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90195833	-83.65751833	58.254	9/14/2011 22:11	14-IX-11-3	Anadyomene menziesii; Rhodophyta; Lobophora; chalk bass ; wrasse;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90210167	-83.65750667	58.347	9/14/2011 22:12	14-IX-11-3	Xestospongia muta;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90216167	-83.657525	58.114	9/14/2011 22:13	14-IX-11-3	Xestospongia muta; Rhodophyta; Anadyomene menziesii;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90219667	-83.65743	58.674	9/14/2011 22:15	14-IX-11-3	chalk bass; close up	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90237667	-83.65741333	59.048	9/14/2011 22:17	14-IX-11-3	sand tile fish; bait fish chalk bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90254833	-83.657425	58.861	9/14/2011 22:18	14-IX-11-3	Sand Tilefish mound; chalk bass; wrasse; bicolor damselfish; Spongosorites; black hydroids;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90262667	-83.65743667	60.356	9/14/2011 22:20	14-IX-11-3		hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90287333	-83.65748667	60.73	9/14/2011 22:23	14-IX-11-3	burrow Sand Tilefish; bicolor damselfish; chalk bass; Anadyomene menziesii; Rhodophyta; comatulid crinoid; 169 meters till the next waypoint; Filograna;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90320333	-83.65724667	61.57	9/14/2011 22:25	14-IX-11-3	150 m till next transect	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90328167	-83.65723667	61.524	9/14/2011 22:25	14-IX-11-3	green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; Caulerpa and Lobophora; bicolor damselfish; chalk bass; 2 orange sponges - probably the same as 4	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90337333	-83.65718833	61.757	9/14/2011 22:27	14-IX-11-3	Condylactis image; Anadyomene menziesii; Rhodophyta; comatulid crinoid; nice Rhodophyta; cherub fish;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.903405	-83.65715667	61.664	9/14/2011 22:30	14-IX-11-3	.5 kts and a going to start transect	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90343333	-83.65715	61.944	9/14/2011 22:30	14-IX-11-3	Photo XS (quantitative)- start; 0368.jpg is 1st image of photo transect; fish to RECHECK Species;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90354333	-83.65714333	63.018	9/14/2011 22:32	14-IX-11-3	Anadyomene menziesii; photo of transect image with a fish in it!!!	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90366667	-83.657105	62.038	9/14/2011 22:33	14-IX-11-3	verongid sponge; heading down into the valley; Reef Butterflyfish; Yellowtail Reeffish;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90372833	-83.65709333	62.084	9/14/2011 22:34	14-IX-11-3	Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - Cliona varians; chalk bass;	hard bottom; rubble; Slope-moderate (<35o);	HB		

Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90388833	-83.65701833	61.664	9/14/2011 22:36	14-IX-11-3	Halimeda; black hydroids; Xestospongia muta; cherub fish; bicolor damselfish; chalk bass; Reef Butterflyfish; wrasse;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90407833	-83.65693833	61.01	9/14/2011 22:38	14-IX-11-3	Xestospongia muta; Anadyomene menziesii; chalk bass; black hydroids; comatulid crinoid; condylactus;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.904255	-83.656905	60.496	9/14/2011 22:40	14-IX-11-3	Photo XS (quantitative)- End; at 422.jpg; Ascidiacea on Xestospongia muta; overlay off for Website;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90424	-83.65687333	60.87	9/14/2011 22:42	14-IX-11-3	images of Ascidiacea and Xestospongia muta; call for recovery; black hydroids;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.90395333	-83.65708	61.897	9/14/2011 22:45	14-IX-11-3	burrow; ROV at the end of tether	hard bottom; rubble; Slope-moderate (<35o);	HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80081166	-83.66901833	66.475	9/15/2011 12:36	15-IX-11-1	dominate algae Anadyomene menziesii; Stichopathes; Crustose Coralline Algae; other encrusting green alga; comatulid crinoid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80080166	-83.669055	66.008	9/15/2011 12:41	15-IX-11-1	Yellowtail Reef fish; Demospongiae; Anadyomene menziesii; increase in sponges from the 14th. Heading to the start of the waypoint at the beginning of SEABOSS 13; Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80082833	-83.668695	64.747	9/15/2011 12:42	15-IX-11-1	coming up off bottom slightly; recoding about 60 photos a half hour (plan); dominate fauna Anadyomene menziesii; Crustose Coralline Algae; Lobophora; Niphates; Xestospongia muta; aplysina; goby; cardinal fish; Spheciospongia with small Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80074	-83.66862166	65.588	9/15/2011 12:45	15-IX-11-1	Xestospongia muta; comatulid crinoid; Spheciospongia;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.800755	-83.66861833	65.774	9/15/2011 12:46	15-IX-11-1	close up of Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80075	-83.66849	65.167	9/15/2011 12:47	15-IX-11-1	Sand Tilefish burrow;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.800775	-83.66845833	65.167	9/15/2011 12:47	15-IX-11-1	Starting transect of the SEABOSS; Photo XS (quantitative)- start; starting at image 0432.jpg.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80078833	-83.66851	65.307	9/15/2011 12:49	15-IX-11-1	moving; chalk bass; and gobies; Niphates digitalis; Xestospongia; Demosponge; Lobophora; Anadyomene menziesii; Crustose Coralline Algae; yellow wrasse RECHECK Species;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80079	-83.66861833	65.447	9/15/2011 12:52	15-IX-11-1	chalk bass; comatulid crinoid; Anadyomene menziesii; Xestospongia muta;	hard bottom; rubble; Slope- flat - slightly lumpy then yesterday;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80066666	-83.66904666	65.821	9/15/2011 12:53	15-IX-11-1	dominate species Anadyomene menziesii; more Crustose Coralline Algae then yesterday; more large Demospongiae; Xestospongia muta are more barrel shaped then yesterday; Loggerhead sponge - speciospongia; some spherical Geodia sponges; smaller encrusting sp	hard bottom; rubble; Slope- flat - more lumpy;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80062666	-83.66956666	66.008	9/15/2011 12:57	15-IX-11-1		hard bottom; rubble; Slope- flat	HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80061833	-83.66985	67.456	9/15/2011 13:00	15-IX-11-1	dominate is Anadyomene menziesii; Crustose Coralline Algae; depressions - but not Sand Tilefish; changing to 3.3 kts for all the transects. Corallinales-Peyssonneliaceae; Yellowtail Reeffish;	hard bottom; rubble; Slope- flat <5o;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80055	-83.670345	65.401	9/15/2011 13:04	15-IX-11-1	tracking is correct and on the transect; bicolor damselfish; Halimeda;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80052833	-83.67064	63.672	9/15/2011 13:06	15-IX-11-1	chalk bass; Reef Butterflyfish; Yellowtail Reeffish; cherubfish; higher relief; photo count - 640 left; lobophora; taking imgase on the 30 second mark on the time	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80045666	-83.67095666	63.672	9/15/2011 13:08	15-IX-11-1	various wrasses; lobophora; Geodia nuptunii; breaking harddrive file	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80046	-83.67115166	64.373	9/15/2011 13:11	15-IX-11-1	zooming in on basslet RECHECK Species; Agelas; comatulid crinoid; Anadyomene menziesii; Stichopathes; chalk bass; Cribrochalina Demospongiae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.800435	-83.67153666	63.345	9/15/2011 13:14	15-IX-11-1	Niphates digitalis; Aplysina archerii; chalk bass; cherubfish; Reef Butterflyfish; burrow Sand Tilefish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80041333	-83.67174333	63.299	9/15/2011 13:15	15-IX-11-1	didemniidae; dominate by Anadyomene menziesii; Lobophora; Crustose Coralline Algae; large Demospongiae; chalk bass; bicolor damselfish; large school bait fish;	hard bottom; rubble-cobble; <10o Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80037666	-83.67214	63.532	9/15/2011 13:17	15-IX-11-1	Loggerhead sponge; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80037833	-83.67228333	63.672	9/15/2011 13:19	15-IX-11-1	crossed eastern main ridge - were at image 0498.jpg - (622 images remaining - estimation is off); Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80034333	-83.67260166	63.579	9/15/2011 13:22	15-IX-11-1	Anadyomene menziesii; Xestospongia muta; Demospongiae; Lobophora; chalk bass; Crustose Coralline Algae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80033166	-83.67275166	64.7	9/15/2011 13:23	15-IX-11-1	dominate species Anadyomene menziesii; Crustose Coralline Algae; Lobophora; green bloch parrot fish - juvenile; sitting still for a second or 2; Reef Butterflyfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80029166	-83.6733	65.401	9/15/2011 13:27	15-IX-11-1	encrusting red Demospongiae - Spirastrella; Anadyomene menziesii; Crustose Coralline Algae; small rubble mound Sand Tilefish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80024166	-83.67363166	65.354	9/15/2011 13:30	15-IX-11-1	coral? Platy; another one;	hard bottom; rubble; Slope- flat; Slope- flat;	HB		Coral- Agarica?
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80022	-83.67373833	66.942	9/15/2011 13:31	15-IX-11-1	platy corals maybe? Agaricia; several patches of agaracia. 6 in site in video (targeted an image of the Agarica - REMOVE FROM TRANSECT); chalk bass;	hard bottom; rubble; Slope- flat;	HB		Coral- Agaricia?
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.800205	-83.67391166	64.98	9/15/2011 13:34	15-IX-11-1	Multibeam we are 1/2 across valley between the E and W ridge; Yellowtail Reeffish; Anadyomene menziesii; wrasse;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80020166	-83.674135	64.046	9/15/2011 13:35	15-IX-11-1	Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.8002	-83.674135	63.859	9/15/2011 13:37	15-IX-11-1	Creeping forward looking for a better specimen to collect	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80015666	-83.67416333	64.513	9/15/2011 13:38	15-IX-11-1	Collect; Agaracia sample 001; still image and video of sample 001 # 533-535.jpg	hard bottom; rubble; Slope- flat;	HB		Collect; Agaracia
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80015166	-83.67416333	64.093	9/15/2011 13:53	15-IX-11-1	finished sampling	hard bottom; rubble; Slope- flat; abundant Agaricia	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80017166	-83.67418833	63.439	9/15/2011 13:55	15-IX-11-1	Photo XS (quantitative)- restart; ; photo 536	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80020166	-83.67424166	63.766	9/15/2011 13:58	15-IX-11-1	comatulid crinoid; Anadyomene menziesii; Crustose Coralline Algae; purple reef fish; Lobophora; chalk bass; Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80018	-83.67448833	63.859	9/15/2011 13:59	15-IX-11-1	dominate speices Anadyomene menziesii; Lobophora; Crustose Coralline Algae; large froups of Yellowtail Reeffish; chalk bass; Xestospongia muta; Spirastrella; Photographs every 30 seconds; next WP 120 m bearing 265.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80011666	-83.67492333	65.774	9/15/2011 14:04	15-IX-11-1	zoom in on green bloch parrot fish - juvenile; sitting to tape fish; back underway;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80011166	-83.67505333	65.541	9/15/2011 14:06	15-IX-11-1	dominate species Anadyomene menziesii; Corallinales- Peyssonneliaceae; less Demospongiae; changing tapes;	hard bottom; rubble; Slope- flat; low relief;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80003833	-83.67569833	64.56	9/15/2011 14:10	15-IX-11-1	Agaracia a few heads;	hard bottom; rubble; Slope- flat;	HB		Agaracia
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80001666	-83.67578333	64.28	9/15/2011 14:11	15-IX-11-1	discussion on weather or not the bottom is coral rubble or rock rubble; dominate Anadyomene menziesii;	hard bottom; rubble; Slope- flat; low relief;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80002333	-83.67603333	64.607	9/15/2011 14:13	15-IX-11-1	Holding position - entire boat shook... aperntly there was a sonic boom from jets.	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.80002666	-83.675995	64.887	9/15/2011 14:14	15-IX-11-1	Moving again; Agaracia; Anadyomene menziesii; Lobophora; Crustose Coralline Algae; taking photos ever 30 seconds; verongid Demospongiae; Stichopathes; bowl Demospongiae - maybe ircinia; plate coral right; Reef Butterflyfish; purple reef fish; Yellowtail	hard bottom; rubble; Slope- flat;	HB		Coral- Agaracia
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79995833	-83.676595	64.887	9/15/2011 14:18	15-IX-11-1	Anadyomene menziesii; Corallinales- Peyssonneliaceae; Xestospongia muta; the ROV track is with in a 10 m swath; chalk bass; on image 0576.jpg; Agraicia -20 cm (fragilis)	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799905	-83.67698333	65.821	9/15/2011 14:22	15-IX-11-1	40 Agaracia. fragilis; we are at the mid point between the E and W ridge in the valley; reefbass?; cherubfish; Yellowtail Reeffish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79988333	-83.67767166	65.074	9/15/2011 14:27	15-IX-11-1	Stichopathes; Large - Coral- Montastraea; -50 cm (was in transect image); Anadyomene menziesii; reefbass?; chalk bass;	hard bottom; rubble; Slope- flat;	HB		Coral- Montastraea
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79984666	-83.67806	65.12	9/15/2011 14:30	15-IX-11-1	barracuda; Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79984833	-83.67821666	65.868	9/15/2011 14:32	15-IX-11-1	stopping to look at a Crustose Coralline Algae that over grew a knob?	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79985	-83.67818833	65.354	9/15/2011 14:33	15-IX-11-1	underway; Crustose Coralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79983	-83.678405	64.793	9/15/2011 14:34	15-IX-11-1	Anadyomene menziesii; Crustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79984	-83.67874833	65.447	9/15/2011 14:37	15-IX-11-1	winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79982166	-83.67875666	65.588	9/15/2011 14:38	15-IX-11-1	we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on the Seaboss dive 13 transect;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79981833	-83.67874666	65.214	9/15/2011 14:40	15-IX-11-1	Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef fish; 20-40 cm Corallinales- Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79980833	-83.67904	64.046	9/15/2011 14:42	15-IX-11-1	Speciospongia or ircinia; Anadyomene menziesii; 65.5 m to the bottom of the depression 10 m in diameter and 1.5 m deep; chalk bass; blue cromis; orange back bass? RECHECK Species; the ROV track scurted one of the 10 m multibeam depressions - we did see th	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79979	-83.67951166	65.868	9/15/2011 14:45	15-IX-11-1	nearing a slight change in the multibeam and ground truthing it;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79979166	-83.67967333	65.915	9/15/2011 14:46	15-IX-11-1	we just crossed on of the apparent hummocks - there was no change in habitat in the video the depth dropped from 65 - 66 m; almaco jack; Reef Butterfly fish; spotfin butterfly; Yellowtail Reef fish; purple reef fish; wrasses; Anadyomene menziesii; Coralli	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79979666	-83.680055	66.055	9/15/2011 14:50	15-IX-11-1	blank screen - the mac is recording the video but the DVCam tape is not recording photo 626.jpg	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79981333	-83.68035666	65.354	9/15/2011 14:52	15-IX-11-1	half way across valley - date and DVD stopped recording to wait for Digital tapes to start back up. Sill recording on Mac hard drive; Agalax; chalk bass; bicolor damselfish; Yellowtail Reef fish; comatulid crinoid; Anadyomene menziesii; Corallinales- Peys	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799795	-83.680675	65.027	9/15/2011 14:55	15-IX-11-1	com up on another hummock - 1 m relief; dominate Anadyomene menziesii; Corallinales- Peyssonneliaceae; comatulid crinoid; Crustose Coralline Algae; taking photos @ 2 per minute on a reguar interval for transect analysis	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799785	-83.68103333	64.84	9/15/2011 14:58	15-IX-11-1	Photo XS (quantitative)- pause; to fix video; All Stop;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799795	-83.68103833	64.793	9/15/2011 15:04	15-IX-11-1	restart video and HD recording; 1181 m to go; Yellowtail Reeffish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79979333	-83.68101666	64.373	9/15/2011 15:05	15-IX-11-1	underway;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799805	-83.68139333	64.98	9/15/2011 15:08	15-IX-11-1	Coral- Agaricia increase; Xestospongia muta; Anadyomene menziesii; Corallinales- Peyssonneliaceae; comatulid crinoid; Yellowtail Reeffish;	hard bottom; rubble; Slope- flat;	HB		Coral- Agaricia
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799815	-83.68178166	65.681	9/15/2011 15:10	15-IX-11-1	Coral- Montastraea cavernosa - 70 cm platy 2+ colonies; Yellowtail Reef fish; reef bass? RECHECK Species;	hard bottom; rubble; Slope- flat;	HB		Coral- Montastraea cavernosa
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79980833	-83.68211666	67.129	9/15/2011 15:12	15-IX-11-1	multi beam - in valley between 2 hummocks - approaching the main ridge - the next ridge is the primary one; Yellowtail Reef fish; Anadyomene menziesii; Agalax; Corallinales- Peyssonneliaceae; Crustose Coralline Algae; orange back bass?; comatulid crinoid;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.7998	-83.68236	66.568	9/15/2011 15:14	15-IX-11-1	Lobster - Panularis argus; Anadyomene menziesii; Corallinales- Peyssonneliaceae; still in valley east to the maid ridge; comatulid crinoid; contiuning still photos at 2/ min; Yellowtail Reeffish; purple reeffish; Reef Butterflyfish;	hard bottom; rubble cobble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79981	-83.68272166	65.588	9/15/2011 15:17	15-IX-11-1	Anadyomene menziesii; Yellowtail Reeffish;	hard bottom; Rock; rubble; Slope- flat;	HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79976	-83.68291	64.653	9/15/2011 15:19	15-IX-11-1	On the multibeam sonar we are right at the base of the east edge of the main terrace		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79978166	-83.68293666	65.027	9/15/2011 15:19	15-IX-11-1	Bicolored damals; reef bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977666	-83.6831	64.747	9/15/2011 15:20	15-IX-11-1	reef bass; Yellowtail Reeffish;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977333	-83.68303833	-0.765	9/15/2011 15:21	15-IX-11-1	mutton snapper;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79976	-83.68300333	-0.765	9/15/2011 15:21	15-IX-11-1	We lost communication with ROV. Resetting Nav;		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79976333	-83.68300833	65.307	9/15/2011 15:22	15-IX-11-1	We are restting the digital photo; Stopping the photo transect until photo is set up;		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977	-83.68301	65.307	9/15/2011 15:25	15-IX-11-1	continuing to wait for fixing the problems. When photo transect begins, we are on photo 678.		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977333	-83.68301166	65.307	9/15/2011 15:26	15-IX-11-1	Resuming photo transect at a rate of 2 per minute.		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977666	-83.68310333	64.653	9/15/2011 15:27	15-IX-11-1	Dominant: Anadyomene menziesii; Crustose Coralline Algae; Coral- Agaricia 10 cm;	hard bottom; Rock; rubble; Slope- flat;	HB	Agaricia	
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799775	-83.68315333	64.7	9/15/2011 15:27	15-IX-11-1	Possibly Aplysina; crinoid		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977666	-83.68319666	64.56	9/15/2011 15:27	15-IX-11-1	Rhodophyta; Anadyomene menziesii; Corallinales- Peyssonneliaceae, Peyssonnelia;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79976833	-83.68349833	64.607	9/15/2011 15:29	15-IX-11-1	Dominant organisms Anadyomene menziesii; Crustose Coralline Algae; plates of Peyssonnelia; loggerhead sponges or Ircinia; wrasses; Yellowtail Reeffish; chalk bass; 15cm agaricia; bicolor damselfish;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79977166	-83.68371333	64.84	9/15/2011 15:31	15-IX-11-1	lots of Anadyomene menziesii;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799735	-83.68398	64.373	9/15/2011 15:33	15-IX-11-1	on the edge of a horse-shoe feature on multibeam- halfway across main ridge.	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79973833	-83.68414	63.252	9/15/2011 15:35	15-IX-11-1	Habitat has not changed, just maybe a little shallower; dominant alga Anadyomene menziesii; Crustose Coralline Algae; Peyssonnelia;	rubble cooble bottom, not sure if its rock or dead coral;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79974	-83.684335	63.532	9/15/2011 15:36	15-IX-11-1	flat blade red alga- haven't been seeing too many in the last transect; chalk bass; wrasses;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79972	-83.68443333	63.906	9/15/2011 15:36	15-IX-11-1	large leafy red algae; this transect is what they claimed had 25% coral cover in 2004; most likely saw an aplysina;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799735	-83.68473166	63.579	9/15/2011 15:39	15-IX-11-1	chalk bass; bicolor damselfish; Xestospongia muta; 64 on top of the ridge; 65 at the base	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79973	-83.68481666	64.093	9/15/2011 15:39	15-IX-11-1	Xestospongia muta;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79970666	-83.68486	62.458	9/15/2011 15:40	15-IX-11-1	on the sonar we are approaching depression ; Xestospongia muta;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79972	-83.68503333	64.28	9/15/2011 15:41	15-IX-11-1	the multibeam shows a 10m depression about 10m to the south of us; we verified on sonar that we will not be able to go to it (we are staying 10m away). As we came up the east slope of the main ridge there was no discernable slope; there were no ledge; no		HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967	-83.68528666	63.999	9/15/2011 15:43	15-IX-11-1	Dominantly Anadyomene menziesii; Peyssonnelia; larger sponges are Xestospongia muta and spheciospongia or Ircinia; verongids; Whenever the ROV runs into the bottom leaves large sheets of Peyssonnelia are encrusting on 1m diameter dead plate coral- possi	hard bottom; Rock; rubble- cobble; dead coral plates;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79969666	-83.68563833	65.821	9/15/2011 15:46	15-IX-11-1	Agaracia plate coral- live 40cm; orange back bass; chalk bass;	hard bottom; Rock; rubble; dead coral plates; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79969666	-83.6857	66.101	9/15/2011 15:47	15-IX-11-1	approaching another big crater 30m out; should be able to go right over;	hard bottom; Rock; rubble; dead plate coral; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79969166	-83.68572166	66.615	9/15/2011 15:49	15-IX-11-1	currently attempting to set up waypoint tracking, etc.		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967666	-83.68567666	66.335	9/15/2011 15:50	15-IX-11-1	8m diameter craters 15m away from us and we'll try and go directly over it.	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799665	-83.68583833	66.055	9/15/2011 15:50	15-IX-11-1	nice red grouper ~30cm; 2 lionfish; we are inside of the crater. It showed up on sonar; it's about 8m across; outer edge 63 m; juvenile angel fish; purple reefish; cherub fish; cardinal fish; anthiaed fish; Yellowtail Reefish; Reef Butterflyfish; Taking	hard bottom; Rock; rubble; dead plate coral; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967166	-83.68605	66.242	9/15/2011 15:57	15-IX-11-1	resuming Photo XS (quantitative)- start;		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967666	-83.686125	66.895	9/15/2011 15:58	15-IX-11-1	we've come off the main ridge; we're in the west slope of the main ridge and there's one more ridge to cross over;	hard bottom; Rock; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79968166	-83.686185	65.447	9/15/2011 15:58	15-IX-11-1	1.5 m Montastraea;	hard bottom; Rock; rubble; Slope- flat;	HB		1.5 m Montastraea;
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967166	-83.68633666	64.7	9/15/2011 15:59	15-IX-11-1	Yellowtail Reef fish; chalk bass; wrasses; red grouper holes?	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79966	-83.68641833	65.728	9/15/2011 16:00	15-IX-11-1	Anadyomene menziesii; Rhodophyta;	sandy-rubble bottom; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79964	-83.68660166	65.307	9/15/2011 16:01	15-IX-11-1	East base of the western most ridge		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79965833	-83.68689666	64.7	9/15/2011 16:03	15-IX-11-1	Reef Butterflyfish; Dominant: Anadyomene menziesii; larger Demospongiae probably some clathriids;	hard bottom; Rock; rubble; cobble; dead coral; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799655	-83.68714333	64.42	9/15/2011 16:05	15-IX-11-1	chalk bass; wrasses; Reef Butterflyfish;	hard bottom; Rock; rubble; Slope- flat; dead coral;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79963833	-83.68738833	64.934	9/15/2011 16:07	15-IX-11-1	very large leafy red alga probably 2 meters across maybe Kallymenia;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79963833	-83.68764	65.915	9/15/2011 16:08	15-IX-11-1	another large Kallymenia;	hard bottom; Rock; rubble; Slope- flat; dead coral;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79961	-83.68786666	66.382	9/15/2011 16:10	15-IX-11-1	encrusted sponge; calespongia; Geodia; chalk bass; wrasses; purple reefish;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79964166	-83.68792666	65.868	9/15/2011 16:12	15-IX-11-1	30 cm Coral- Agaricia; sonar 40m out 10m diameter crater, shows up on multibeam same position, probably a red grouper burrow		HB		Coral- Agaricia
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79962666	-83.68818	65.821	9/15/2011 16:14	15-IX-11-1	another large burrow about 10 degrees on active sonar	hard bottom; Rock; rubble; Slope- flat; dead plate coral	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79961	-83.688385	65.214	9/15/2011 16:15	15-IX-11-1	Anadyomene menziesii; Yellowtail Reefish; chalk bass; another large kallymenia	hard bottom; Rock; rubble; Slope- flat; dead plate coral	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799605	-83.68861833	64.98	9/15/2011 16:18	15-IX-11-1	Anadyomene menziesii; Xestospongia muta; occasional kallymenia;	hard bottom; Rock; rubble; Slope- flat; dead coral	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799625	-83.688845	66.008	9/15/2011 16:20	15-IX-11-1	chalk bass; purple reef fish;	hard bottom; Rock; rubble; Slope- flat;	HB		

Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799625	-83.68888333	65.915	9/15/2011 16:20	15-IX-11-1	at least 2 red fish burrows about 30 m out we are going to try to cross over; 3 burrows side by side, about 3 m in diameter	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.799645	-83.68919666	66.242	9/15/2011 16:22	15-IX-11-1	active sonar shows at least 3 burrows, multibeam shows the same; approaching the burrow right now		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79965166	-83.68923333	66.568	9/15/2011 16:22	15-IX-11-1	large red grouper, 70cm; spotfin hogfish; Yellowtail Reef fish; purple reef fish; juv angelfish		HB		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79968333	-83.68934833	66.475	9/15/2011 16:23	15-IX-11-1	Photo XS (quantitative)- End; final photo #0791; sea whip Stichopathes; Off bottom		HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80166833	-83.66861833	66.148	9/15/2011 19:01	15-IX-11-2	On bottom:18:58:40 ; similar to before Crustose coralline algae; Anadyomene menziesii; bare rubble patches; crinoids; Xestospongia muta; doing some test shots with camera down;	hard bottom; Rock; rubble; less than 30cm relief;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801625	-83.66859667	65.915	9/15/2011 19:03	15-IX-11-2	Dictyota; Anadyomene menziesii; Rhodophyta; continuing with test shots;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80167333	-83.66857167	64.934	9/15/2011 19:04	15-IX-11-2	beginning long photo transect here; every 30 seconds; Dictyota; gray angelfish;	hard bottom; Rock; rubble;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80166833	-83.66860667	65.681	9/15/2011 19:06	15-IX-11-2	Photo XS (quantitative)- start; First photo of transect is 808;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80166167	-83.66878333	65.728	9/15/2011 19:08	15-IX-11-2	Anadyomene menziesii; Rhodophyta; orange sponge	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80164333	-83.66886667	65.214	9/15/2011 19:08	15-IX-11-2	occasional sand tile fish mounds; same dominant biota;	hard bottom; Rock; rubble; less than 30cm relief; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80162833	-83.66898	66.195	9/15/2011 19:09	15-IX-11-2	Aplydium ascidians- same as before- translucent white;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80161833	-83.669035	65.868	9/15/2011 19:09	15-IX-11-2	sea cucumber; crinoids on the Anadyomene menziesii; Aplysina;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80162333	-83.66907833	66.475	9/15/2011 19:10	15-IX-11-2	Coral- Agaricia very small, less than 5 cm; sheets of Crustose coralline algae or Peyssonnelia hard to see on video; Reef Butterfly; cherub fish; orange back bass; Chalk Bass; wrasses; bicolored damselfish;				Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80160667	-83.669225	66.849	9/15/2011 19:11	15-IX-11-2	on the multibeam we're in the valley between 2 ridges; more hemispherical light pink hard structures 10-15cm, might be hard coral or sponge but hard to identify, but are common;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80160167	-83.66934167	66.942	9/15/2011 19:12	15-IX-11-2	Dominant Anadyomene menziesii 40-50% cover; red benthic alga could be Crustose coralline algae or Peyssonnelia; Xestospongia muta; Aplysina; crinoids on Anadyomene menziesii;	hard bottom; Rock; rubble; Slope-flat; less than 30cm relief;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80157333	-83.66954833	67.363	9/15/2011 19:14	15-IX-11-2	Chalk Bass; stating to move up a little bit;	hard bottom; Rock; rubble; Slope-flat;	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801545	-83.66966167	67.456	9/15/2011 19:15	15-IX-11-2	small potentially cyanobacteria clumps on bottom dark brown less than 5cm;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80152	-83.66977833	66.802	9/15/2011 19:16	15-IX-11-2	orange encrusting sponge; orange reef fish (basset); Yellowtail Reef Fish; starting to move a slope now				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80150667	-83.669905	66.989	9/15/2011 19:17	15-IX-11-2	Going to collect a Montastraea cavernosa; about 25-30 cm across; brown with blue iridescent; 1.5 cm polyps in diameter; we are on the east slope of the eastern ridge;			001	Montastraea cavernosa
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801515	-83.66987667	66.242	9/15/2011 19:30	15-IX-11-2	sample 001 completed;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801505	-83.66988167	66.148	9/15/2011 19:30	15-IX-11-2	continuing with Photo XS (quantitative)- start; restarting with photo 842;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80152	-83.66990333	65.728	9/15/2011 19:32	15-IX-11-2	Chalk Bass; bicolored damsels; sand tile fish mound 70cm high 2 m wide; another basset;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80149333	-83.670075	66.942	9/15/2011 19:33	15-IX-11-2	Just come over some Coral- Agaricia; coming out of the valley into the secondary ridge; interesting sponge- Geodia barrel sponge with Strongylophora encrusting; more lobophora in this area; Halimeda	hard bottom; Rock; rubble; Slope- flat;	HB		Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80144333	-83.670295	64.14	9/15/2011 19:35	15-IX-11-2	about to come up to mounds on the top of the ridge; purple reef fish; Reef Butterfly;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80138	-83.67043167	63.859	9/15/2011 19:36	15-IX-11-2	coming up into a depression; basset; 5 lionfish 20cm long; purple reef fish; red grouper burrow crater is 8m long, 1 meter deep ; blue chromis; goldentail moray;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80139667	-83.67046667	63.859	9/15/2011 19:38	15-IX-11-2	big mound with black corals on top potentially an Antipathidae; purple reef fish; Yellowtail Reef Fish; lots of mounds and ridges over 1m relief;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80140333	-83.67059667	61.851	9/15/2011 19:39	15-IX-11-2	vis has dropped noticeably; bicolor damsel; starting to get a bit of current (less than .5 knots) to the south;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80139333	-83.67087	63.439	9/15/2011 19:40	15-IX-11-2	bicolor damsel; crinoids; Geodia; large yellow barrel-shaped sponge;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80138	-83.67095333	63.813	9/15/2011 19:41	15-IX-11-2	serpulid worms Filograna growing on a sponge;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80136833	-83.6711	63.906	9/15/2011 19:42	15-IX-11-2	blue chromis; another 10m diameter redfish crater; Chalk Bass; big Xestospongia muta with crinoids;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80134667	-83.67120167	64.186	9/15/2011 19:43	15-IX-11-2	on top of the east ridge; dominated by Anadyomene menziesii and some Crustose coralline algae; lots of crinoids; we're coming to the edge of a big hole and we see a blue angelfish	hard bottom; Rock; rubble; small rock ledges; less than 50cm relief;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80128	-83.67135333	63.579	9/15/2011 19:44	15-IX-11-2	spot fin butterfly; ~12 Yellowtail Reef Fish; 5 more lionfish; few bled chromis; 2 Reef Butterfly; squirrelfish;	in a hole hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80128	-83.67144667	63.953	9/15/2011 19:45	15-IX-11-2	out of hole continuing west; Yellowtail Reef Fish; reef butterfly; Chalk Bass;	hard bottom; Rock; rubble; Slope- flat;	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80129667	-83.67174833	64.326	9/15/2011 19:47	15-IX-11-2	hydroid with crinoids on it; Anadyomene menziesii; either Crustose coralline algae or Peyssonnelia;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80130833	-83.67187167	64.747	9/15/2011 19:47	15-IX-11-2	we are stopping; Photo XS (quantitative)- End; we are going to stop to collect an Coral- Agaricia lamarki;	hard bottom; Rock; rubble; Slope- flat;	HB	002	Coral- Agaricia lamarki
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801305	-83.67184667	64.747	9/15/2011 20:01	15-IX-11-2	collection successful in Q17; We are heading back to				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80130333	-83.671885	65.821	9/15/2011 20:03	15-IX-11-2	restarting Photo XS (quantitative)- start; With photo 900;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80129333	-83.67197167	64.42	9/15/2011 20:04	15-IX-11-2	lots of Anadyomene menziesii and lobophera; some Crustose coralline algae; Photo XS (quantitative)- End- transect paused; crinoids; Anadyomene menziesii; lobophera; orange encrusting sponge;	hard bottom; Rock; rubble; Slope- flat; small ledges less than 50cm	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80129667	-83.67203833	65.12	9/15/2011 20:08	15-IX-11-2	resuming Photo XS (quantitative)- start; we will be going to a speed of .4knots; there may be some issues in the past 20 minutes with tracking based on the ship feed, so we will need to look at that when we go over position data;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80129667	-83.67214	63.859	9/15/2011 20:10	15-IX-11-2	Chalk Bass; basset; Anadyomene menziesii; Geodia;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801275	-83.67231667	64.7	9/15/2011 20:11	15-IX-11-2	Anadyomene menziesii; 100's of crinoids; common purple rope sponges; common Xestospongia muta; uncommon Coral- Agaricia; rare Montastraea cavernosa;	hard bottom; Slope- flat; Rock; rubble; small rock ledges; less than 30cm relief	HB		Coral- Agaricia; Coral- Montastraea cavernosa
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801215	-83.67267	65.401	9/15/2011 20:14	15-IX-11-2	interesting sponge for Shirley to ID later; cylindrical; yellow with purple; Dictyota; Chalk Bass; Anadyomene menziesii; Corallinales or Peyssonneliaceae; unidentified wrasse; holothurians;	Coral- coral rubble;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80122667	-83.67302	65.354	9/15/2011 20:17	15-IX-11-2	picture 930 on photo transect; something (like a fish) just took off--leaving a cloud of sediment in the water; maybe it ducked into a hole;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80123167	-83.67311833	64.934	9/15/2011 20:18	15-IX-11-2	coming up to the edge of another hole; at least 8 scamps; spot fin hogfish; several lionfish; black groupers, all larger than 60 cm; squirrelfish; bigeye?; another serranid coming out of the hole-- looks like a giant graysby, but unidentified (has a roun				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80121167	-83.67318	64.7	9/15/2011 20:21	15-IX-11-2	back up out of the hole; 40-50% cover, mostly Dictyota; yellow massive amorphous Demospongiae; Chalk Bass; Anadyomene menziesii; Xestospongia muta-common; Geodiid; 20 yellowtail reef fish; several Coral- Agaricia; dozens of crinoids in every video frame	rubble;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80116833	-83.67376667	64.84	9/15/2011 20:24	15-IX-11-2	Bethany taking over as data logger; orange-back bass;	hard bottom; Coral- coral rubble; Rock;	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80111833	-83.67414833	64.607	9/15/2011 20:26	15-IX-11-2	Coral- Agaricia; in the middle point between the two ridges on pulley ridge; Anadyomene menziesii; lots of crynoids; Corallinales or Peyssonneliaceae; Crustose Coralline algae; Xestospongia muta; aplysina	hard bottom; Rock; Coral- coral rubble; Slope- flat;	HB		Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80107333	-83.67465167	65.728	9/15/2011 20:31	15-IX-11-2	same as previous				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80105	-83.67482333	65.821	9/15/2011 20:32	15-IX-11-2	speed the camera up one stop, new shutter speed is 1/250				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80103667	-83.67493667	65.681	9/15/2011 20:34	15-IX-11-2	lots of Corallinales or Peyssonneliaceae; orangeback bass; goldentail moray eel; purple reef fish; agelas clathrodes; lobophora; loggerhead sponge; dictyota; agaricid; Chalk Bass;	hard bottom; Coral- coral rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.801005	-83.67526833	64.093	9/15/2011 20:36	15-IX-11-2	starting to come up and increase on the ridge; bicolored damsel; common geodiids; Chalk Bass; purple reef fish; didemnid tunicate; bottom dominated by Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline algae;	Rock; rubble; hard bottom; rock ledges; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80096667	-83.675585	64.513	9/15/2011 20:39	15-IX-11-2	Coral- Montastraea cavernosa; collection 003			003	Coral- Montastraea cavernosa
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80096833	-83.67561	64.56	9/15/2011 20:47	15-IX-11-2	beginning of new tape				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80096	-83.67562167	63.953	9/15/2011 20:52	15-IX-11-2	resume phototranssect at photo 1006				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800965	-83.67566333	64.093	9/15/2011 20:53	15-IX-11-2	Coral- Agaricia; Anadyomene menziesii; lobophora	hard bottom; Rock; rubble; Coral- coral rubble;	HB		Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80093	-83.67586167	64.56	9/15/2011 20:54	15-IX-11-2	beginning with photo 1019 returning to a shutter speed of 1/125 to increase depth of field; Geodia; Crustose Coralline algae; Anadyomene menziesii; Corallinales or Peyssonneliaceae; unidentified Demospongiae; purple rope sponges				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80090833	-83.67618167	65.12	9/15/2011 20:56	15-IX-11-2	Anadyomene menziesii; Crustose Coralline algae; Corallinales or Peyssonneliaceae; uncommon Coral- Agaricia; uncommon Coral- Montastraea; uncommon Dictyota; uncommon Halimeda; common lobophora; abundant crynoids; orangeback bass; Chalk Bass; Reef Butterfly	hard bottom; Rock; rubble; rock ledges; relatively little relief; Slope- flat;	HB		Coral- Montastraea; Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80086	-83.67651833	67.876	9/15/2011 20:59	15-IX-11-2	about to slide off one little ridge; one Stichopathes; some black cyanobacteria clumps on the bottom;	hard bottom; Rock; rubble;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80083167	-83.676775	65.868	9/15/2011 21:01	15-IX-11-2	shirley relieving josh				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80081167	-83.67689833	65.214	9/15/2011 21:02	15-IX-11-2	small basslet; Anadyomene menziesii; Corallinales or Peyssonneliaceae; 2 lionfish; Chalk Bass;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80078833	-83.677085	64.326	9/15/2011 21:04	15-IX-11-2	blue finger sponges; abundant Anadyomene menziesii; Crustose Coralline algae;	hard bottom; rubble; cobble	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800825	-83.67710667	65.588	9/15/2011 21:05	15-IX-11-2	ROV has stopped due to being at the end of the tether, ship is not moving				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80082167	-83.67710167	65.307	9/15/2011 21:07	15-IX-11-2	orangeback bass; resuming transect; upright branching sponges common- might be aplysina; large areas of Peyssonellia; abundant Anadyomene menziesii; common Geodeads; Yellowtail Reef Fish; Chalk Bass;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80077667	-83.67732833	65.728	9/15/2011 21:09	15-IX-11-2	orangeback bass; Some sort of Petrosia sponge; Xestospongia muta; wrasse;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80077333	-83.67751	65.868	9/15/2011 21:10	15-IX-11-2	Yellowtail Reef Fish; Anadyomene menziesii;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80078333	-83.67766667	66.055	9/15/2011 21:14	15-IX-11-2	Chalk Bass; Reef Butterfly; small basslets; wrasses; abundant Anadyomene menziesii; Peyssonellia;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80074833	-83.67828	66.008	9/15/2011 21:17	15-IX-11-2	Montastraea cavernosa; Chalk Bass; Yellowtail Reef Fish; purple reef fish; unidentified Demospongiae; crinoid;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		Montastraea cavernosa;
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80073333	-83.67855333	65.12	9/15/2011 21:19	15-IX-11-2	ORANGEBACK BASS;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80072667	-83.678675	65.447	9/15/2011 21:20	15-IX-11-2	Josh is coming back in to relieve Shirley; Jenny is logging; loggerhead sponge;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.8007	-83.67892833	64.466	9/15/2011 21:22	15-IX-11-2	400m still remaining in transect; taking photos every 30 seconds; Anadyomene menziesii is still dominant; Peyssonellia; roughly every 3 blades of Anadyomene menziesii is a crinoid;	hard bottom; Rock; rubble; Slope-flat; small rock ledges; mostly calified; relief is less than 40 cm	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80070333	-83.679225	65.728	9/15/2011 21:25	15-IX-11-2	Anadyomene menziesii; crinoid;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80070333	-83.67926333	65.588	9/15/2011 21:26	15-IX-11-2	6-7 Chalk Bass;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80070833	-83.679415	66.008	9/15/2011 21:27	15-IX-11-2	a few more larger Halimeda (discoidea?);	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80071333	-83.67975	65.634	9/15/2011 21:30	15-IX-11-2	Aplysina (purple rope sponge); Geodia; Chalk Bass;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80070333	-83.67993	65.167	9/15/2011 21:31	15-IX-11-2	possible tattler bass; orangeback bass;	hard bottom; Rock rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80072	-83.68003833	65.447	9/15/2011 21:32	15-IX-11-2	8 individual fragments probably from the same colony Montastraea cavernosa; orangeback bass	hard bottom; Rock; rubble; Slope-flat;	HB		Montastraea cavernosa
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800675	-83.68019167	65.214	9/15/2011 21:33	15-IX-11-2	60% Anadyomene menziesii cover; 20% Peyssonellia; 10-20% Crustose Coralline algae; crinoid; Halted ROV	hard bottom; Rock; rubble; small crevices; overall relief is less than 30 cm; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80068167	-83.68020167	64.793	9/15/2011 21:35	15-IX-11-2	Resumed movement; currently at photo 1123; Large Xestospongia muta ~40cm across;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80068833	-83.68039667	64.98	9/15/2011 21:36	15-IX-11-2	old loggerhead sponge with lots of crinoids on it; juvenile blue angel of some kind (blue or gray) Recheck;	hard bottom; Rock; rubble; Slope-flat;	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80067167	-83.68062167	65.261	9/15/2011 21:38	15-IX-11-2	Dominant biota is the same with a few more Xestospongia muta in this area; 4Chalk Bass;	hard bottom; Rock; rubble; rock ledges; slightly more relief: 30-40 cm;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80071333	-83.68074	65.634	9/15/2011 21:40	15-IX-11-2	Anadyomene menziesii; [date/time added post cruise - estimated]	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80071667	-83.68105333	65.821	9/15/2011 21:42	15-IX-11-2	lots and lots Anadyomene menziesii; school ~ 10 Yellowtail Reef Fish; heavy cover by Crustose Coralline algae and Peyssonnelia as well; Still abundant crinoids;	hard bottom; Rock; rubble; not changed much over past few 100m; flat slightly depressed area between eastern and western ridges;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800695	-83.68124167	65.027	9/15/2011 21:44	15-IX-11-2	serpulid worm; occasional aplysina (common); cherub fish; Chalk Bass; very small Coral- Agaricia;				Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80069667	-83.68147833	65.074	9/15/2011 21:45	15-IX-11-2	few Chalk Bass; Reef Butterfly; orangeback bass; very large crinoid of a different species than we have been seeing usually; more Geodia	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80069167	-83.68159167	64.7	9/15/2011 21:47	15-IX-11-2	Scolymia coral in the downward-facing digital;	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Scolymia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80069	-83.68171	65.588	9/15/2011 21:48	15-IX-11-2	biota and habitat are similar; slightly less crinoids but not by much; Geodia 30cm across; yellow sponge	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80069833	-83.68191333	67.409	9/15/2011 21:50	15-IX-11-2	Chalk Bass; Aplydium (at least we think); Aplysina;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80068333	-83.68214333	66.989	9/15/2011 21:51	15-IX-11-2	flat areas that have lots of Corallinales or Peyssonneliaceae and Crustose Coralline algae on the downward-facing camera there's very clumpy area of cyanobacteria				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80067667	-83.68223833	66.709	9/15/2011 21:52	15-IX-11-2	Multibeam says we're at a depression that runs longitudinally along the western ridge of pulley ridge; dominant Anadyomene menziesii; lots of Crustose Coralline algae and Corallinales or Peyssonneliaceae; wrasse bass; abundant crinoids; occasional geodia	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80069167	-83.68261333	65.821	9/15/2011 21:55	15-IX-11-2	Anadyomene menziesii; Xestospongia muta; large Xestospongia muta; orangeback bass; orange tubular sponge; Aplysina	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80067667	-83.68275333	65.167	9/15/2011 21:57	15-IX-11-2	We have reached the western edge of this valley and starting to move up onto the first rise up on the western ridge of pulley ridge; so should be 1-1.5 m higher than before;	hard bottom; Rock; rubble;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80068667	-83.68297667	64.793	9/15/2011 21:58	15-IX-11-2	orangeback bass; 2-3 Xestospongia muta; Chalk Bass; mini abundant crinoids; abundant Anadyomene menziesii; unidentified orange fish;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800655	-83.68307667	64.42	9/15/2011 21:59	15-IX-11-2	Yellowtail Reef Fish; purple reef fish; orangeback bass;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80065167	-83.68316167	64.326	9/15/2011 22:00	15-IX-11-2	Chalk Bass; green bloch parrot fish - juvenile;	hard bottom; Rock; rubble; Slope-flat;	HB		

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80063833	-83.68323667	64.607	9/15/2011 22:01	15-IX-11-2	flat part just to the east of the eastern part of pulley ridge; Abundant crinoid; Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline algae; few of the black cyanobacterial clumps; orangeback bass; orange unidentified basslet;	hard bottom; Slope- flat; Rock; rubble; less than 20cm relief;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80065667	-83.683705	64.56	9/15/2011 22:04	15-IX-11-2	orangeback bass; 900 m remaining	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80064333	-83.68382167	64.14	9/15/2011 22:05	15-IX-11-2	unidentified orange basslet; Anadyomene menziesii; orange encrusting sponge;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80062333	-83.68396833	63.953	9/15/2011 22:06	15-IX-11-2	right in the middle of the western ridge of pulley ridge, in a slightly depressed area, north and south are higher points, a slight valley between to hummicks; 30-40% Anadyomene menziesii; lots of Crustose Coralline algae; Corallinales or Peyssonneliaceae	hard bottom; Rock; rubble; less than 30cm relief;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800665	-83.684075	63.392	9/15/2011 22:09	15-IX-11-2	we are stopping to collect some more coral- Coral- Agaricia about 40cm in diameter, might have Crustose Coralline algae growth over it as well as some bleached areas; There are a few different areas on coral some of it is bleached and around CrustoseCoral	hard bottom; Rock; rubble; Slope- flat;	HB	004	Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80065167	-83.68410333	64.28	9/15/2011 22:25	15-IX-11-2	collection successful;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800655	-83.68411167	63.532	9/15/2011 22:26	15-IX-11-2	proceeding; resuming at 22:26:16 resuming with photo 1254;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80062833	-83.68422333	65.401	9/15/2011 22:27	15-IX-11-2	Coral- Agaricia in downward-facing camera;	hard bottom; Rock; rubble; Slope- flat;	HB		Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80062667	-83.68436833	63.813	9/15/2011 22:29	15-IX-11-2	common Coral- Agaricia and about 10% are bleached or denuded area on skeleton; abundant Anadyomene menziesii; Crustose Coralline algae; and Peyssonnelia; orangeback bass;	hard bottom; Rock; rubble; rock ledges; less than 30cm relief;	HB		Coral- Agaricia
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800635	-83.68457167	66.101	9/15/2011 22:30	15-IX-11-2	orangeback bass; aplysina; crinoids are still common but not as abundant as before; some geodea; Xestospongia muta; uncommon Lobophora;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800625	-83.68466333	64.56	9/15/2011 22:31	15-IX-11-2	bicolored damsal; wrasse; orange encrusting sponge;	hard bottom; Rock; rubble; Slope- flat; large sandtile mound 1.2 m across burrow next to it	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80061667	-83.68479833	64.513	9/15/2011 22:33	15-IX-11-2	sand tile mound; Yellowtail Reef Fish;				
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80061	-83.68488333	64.28	9/15/2011 22:33	15-IX-11-2	Anadyomene menziesii;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.800595	-83.68505167	64.98	9/15/2011 22:35	15-IX-11-2	slightly sped up				

Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80060833	-83.68496667	65.214	9/15/2011 22:35	15-IX-11-2	Photo XS (quantitative)- End; last photo 1294; Chalk Bass; bunch of Yellowtail Reef Fish; lionfish; cherub fish	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 5	Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13	24.80051833	-83.685475	65.821	9/15/2011 22:38	15-IX-11-2	made it to western edge of main western ridge; near waypoint D5T1WP014; about 30 m west of it is where we ended the transect; Abundant: Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline algae; crinoids common; uncommon Coral- Agar	hard bottom; Rock; pavement; rubble; very small ledges;	HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84967833	-83.66079333	65.494	9/16/2011 12:18	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Crustose Coralline Algae; lot of plankton in water	hard bottom; Rock; rubble; mostly crusts; 20 m east of the starting waypoint; mid part of the eastern ridge; a little north of the dives on 9/16/11; Kevin is plotting waypoints based on USGS transect track	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84973667	-83.66091	64.607	9/16/2011 12:23	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Crustose Coralline Algae; lots of plankton in water column	hard bottom; Rock; rubble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84971	-83.66097833	64.607	9/16/2011 12:26	16-IX-11-1	Photo XS (quantitative)- start;chalk bass; yellowtail reef fish;orangeback bass;wrasses;orange basslet;purple reef fish;	hard bottom; Rock; rubble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84964833	-83.66157167	64.934	9/16/2011 12:28	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Lobophora; white Ascidiacea; bicolor damselfish;Xestospongia muta; chalk bass; Agelas clathrodes;petrosiids--may be Xestospongia, but unusual morphology--cluster of thick tubes; Dictyota abundant; uni	rubble; Rock;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84954333	-83.66181333	65.307	9/16/2011 12:30	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Dictyota;comatulid crinoid; Crustose Coralline Algae; Stichopathes;Lobophora; unidentified orange basslets;Xestospongia muta common;	rubble; Rock; 10-20 cm relief;cobble; dead coral plates 0.5 m dia;90% cover;small patches of exposed sand;Slope- flat;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84938667	-83.66213	66.522	9/16/2011 12:33	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Crustose Coralline Algae; Lobophora;	hard bottom; Rock; rubble; dead coral;Slope- flat; low relief	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84934	-83.66236	67.036	9/16/2011 12:34	16-IX-11-1	Anadyomene menziesii; Corallinales-Peyssonneliaceae; Crustose Coralline Algae; Lobophora; unidentified yellow Demospongiae;	rubble; Rock; dead coral	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.849285	-83.66247833	66.895	9/16/2011 12:36	16-IX-11-1	stopping to take video of unidentified yellow Demospongiae; shaggy surface; may be Halichondriid or could be spongiid (Shirley needs to check literature)				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84929	-83.66251667	66.195	9/16/2011 12:37	16-IX-11-1	orange basslets;wrasse basses;red sponges may be Spirastrellidae;Geodiids, probably G. gibberosa, appear to be common, they are encrusted with other epibionts	in valley between 2 ridges according to multibeam;rubble; Rock; dead coral rubble & cobble	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.849045	-83.66317167	65.541	9/16/2011 12:41	16-IX-11-1	chalk bass; geodiid	Rock; rubble; dead coral rubble	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84900833	-83.66332167	65.261	9/16/2011 12:42	16-IX-11-1	15 minutes into the dive; photo number 1328;				

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84888667	-83.663525	63.953	9/16/2011 12:44	16-IX-11-1	filefish;did close-up video of erect blue finger sponge, <i>Niphates erecta</i> (this confirms that all of the erect blue fingers from the 9/15 dives are <i>Niphates erecta</i> , confirmed by Shirley & John); small longjaw squirrelfish; got nice video of the squirrelfish				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891833	-83.663495	64.42	9/16/2011 12:46	16-IX-11-1	Anadyomene menziesii; Corallinales- Peyssonneliaceae; Crustose Coralline Algae; <i>Xestospongia muta</i> ;	10 m diameter pit showing up on sonar;rubble; Rock; heading towards the pit to ground-truth the feature	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.848915	-83.66372	64.326	9/16/2011 12:47	16-IX-11-1	close up video to ID fish in the crater/pit;no obvious red grouper; seems like the fish have all hidden; still looking for fish--panning the video to search;juvenile graysby?; it has 3 white spots just below dorsal fin; long whit strip down the head, betw	side of pit is Sand Tilefish rubble pile; 10 m diameter crater, 1-1.5 m deep, all rocky; slope of pit to bottom is layers of rock;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891833	-83.66358333	64.466	9/16/2011 12:50	16-IX-11-1	Photo XS (quantitative) paused to look at fish; continuing notes from previous: fish is probably juvenile graysby; 10 cm long				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891167	-83.66357667	64.14	9/16/2011 12:52	16-IX-11-1	Photo XS (quantitative)- resuming photo transect; small school of purple reef fish;	on eastern edge of main reef system			
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.848745	-83.66385833	63.532	9/16/2011 12:55	16-IX-11-1	15 cm unidentified Demospongiae or Ascidiacea; Agelas (brown?); [date/time added post cruise - estimated]				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84859667	-83.66408667	63.766	9/16/2011 13:02	16-IX-11-1	test	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84861333	-83.66406833	63.672	9/16/2011 13:03	16-IX-11-1		hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84861167	-83.66406833	63.766	9/16/2011 13:03	16-IX-11-1	Photo XS (quantitative)- End; at aproximtlly 12:55 do to data base error				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.8486	-83.66407333	63.486	9/16/2011 13:03	16-IX-11-1		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84858167	-83.66409667	64.186	9/16/2011 13:05	16-IX-11-1	Photo XS (quantitative)- ready to resume	data logger and her assistant (uh, that would be Shirley and John) had problems with the logging...sorry, Steph			
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84856333	-83.66422	63.252	9/16/2011 13:08	16-IX-11-1	big yellow verongid;Anadyomene menziesii; Crustose Coralline Algae; sporadic sightings of chalk bass;	rubble; Rock; dead coral rubble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84852333	-83.66432667	63.579	9/16/2011 13:09	16-IX-11-1	first sighting of coral;Coral- Agaricia; collecting sample; dominant biota Anadyomene menziesii; Crustose Coralline Algae; encrusting didemnid Ascidiacea; Photo XS (quantitative)- pausing to collect sample			001	Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84854	-83.66428667	63.719	9/16/2011 13:17	16-IX-11-1	still Collecting sample 1; John took over annotator from Dennis; Anadyomene menziesii;	flat; 10-20 cm relief; rubble;cobble;dead coral plates;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84852667	-83.664315	63.626	9/16/2011 13:20	16-IX-11-1	Anadyomene menziesii-dominated community; also Crustose Coralline Algae; purple reef fish;a few basses;chalk bass; rock beauty;cherub fish; Photo XS (quantitative)- resuming video	transect;on top of eastern ridge	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.848295	-83.66467	63.999	9/16/2011 13:23	16-IX-11-1	less Anadyomene menziesii--maybe 50% cover;blue chromis;yellowtail reef fish; purple reef fish; Yellowtail Reefish; chalk bass;Stichopathes luetkini (spelling?); more open Crustose Coralline Algae; Corallinales- Peyssonneliaceae; Geodiids;dark purple Pey	entering another crater, filled with rubble; probably not an active redfish burrow;on sonar a small ridge about 40 m away	HB		

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84823167	-83.66498167	64.466	9/16/2011 13:26	16-IX-11-1	30-50% cover <i>Anadyomene menziesii</i> ; chalk bass; orange back bass; wrasses; comatulid crinoid; Aplysina; Coral- <i>Agaricia lamarcki</i> ;	flat bottom; 100% hard bottom; rubble; dead coral plates	HB		Coral- <i>Agaricia lamarcki</i>
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84820167	-83.66515167	63.859	9/16/2011 13:28	16-IX-11-1	dominated by light pink Crustose Coralline Algae; may be Corallinales- <i>Peyssonneliaceae</i> ; one single 10 cm diameter Coral- <i>Agaricia</i> ; taking several photos; Photo XS (quantitative)- pause for collection;	on top of main eastern ridge;	HB		Coral- <i>Agaricia</i>
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84815833	-83.665125	63.999	9/16/2011 13:36	16-IX-11-1	starting with photo number 1360; bicolor damselfish; <i>Stichopathes</i> ; <i>Agelas clathrodes</i> ; <i>Xestospongia</i> <i>muta</i> ; purple reef fish; brown tube sponges may be <i>Agelas</i> (these were the ones Shirley thought might be <i>Petrosiids</i> , she thinks they're <i>Agelas</i> now); Photo XS (quan	less than 1/3 of the way thru transect; 100% hard bottom; rubble; cobble; dead coral plates;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84809833	-83.6654	63.205	9/16/2011 13:40	16-IX-11-1	Asciacea, may be <i>Aplidium</i> --white colonial; <i>Ircinia</i> <i>strobilina</i> ; <i>Dictyota</i> ; longjaw squirrelfish; weird <i>Agelas</i> or <i>Geodia</i> ; Yellowtail Reef fish; bicolor damselfish; big spherical sponges; <i>Xestospongia muta</i> ; <i>Lobophora</i> ;	on top of one of the hummocks; slight undulation of bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84801	-83.66562667	63.999	9/16/2011 13:44	16-IX-11-1	<i>Anadyomene menziesii</i> ; Crustose Coralline Algae; <i>Lobophora</i> ; none of the platey fleshy algae; unidentified <i>Demospongiae</i> , vase, may be <i>Ircinia</i> ; Sand Tilefish burrow;	at western edge of east ridge; hard bottom; 90% cover; rubble; dead coral plates; tracking is more erratic today; about 10 m off the transect line	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.847855	-83.666055	65.167	9/16/2011 13:48	16-IX-11-1	50% cover of <i>Anadyomene menziesii</i> ; rest is Corallinales- <i>Peyssonneliaceae</i> ; Crustose Coralline Algae; sparse sponges and gorgonians; Reef Butterflyfish; orange basslets; 20 cm plate coral Coral- <i>Agaricia lamarcki</i> ?; may be <i>Spheciospongia</i> <i>vesparium</i> ; <i>Xestospongia</i>	in the valley between the east and west ridge; at base of east ridge; at most, the drop off was 0.5 m ; hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84773333	-83.66649	64.84	9/16/2011 13:52	16-IX-11-1	30-50% Crustose Coralline Algae; <i>Anadyomene</i> <i>menziesii</i> ; occasional <i>Aplidium</i> <i>Asciacea</i> ;	depression in valley of multibeam; fish crater about 20 m out on sonar; about halfway through dive time-wise;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84768	-83.66663833	65.261	9/16/2011 13:53	16-IX-11-1	on photo number 1389 in photo transect; <i>Cribrorchalina</i> ; <i>Xestospongia muta</i> ;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.847605	-83.66705	64.7	9/16/2011 13:56	16-IX-11-1	Yellowtail Reef fish; chalk bass;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84754333	-83.66705667	64.093	9/16/2011 13:57	16-IX-11-1	2 rock beauties; blue chromis; Yellowtail Reef fish; Reef Butterflyfish; large <i>Xestospongia muta</i> ; unidentified orange <i>Demospongiae</i> ; chalk bass; <i>Agelas clathrodes</i> ; Coral- <i>Agaricia lamarcki</i> ?	hard bottom; 10-20 cm relief; Crustose Coralline Algae; 50% <i>Anadyomene menziesii</i> ; Corallinales- <i>Peyssonneliaceae</i> ;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84756333	-83.66742333	64.887	9/16/2011 14:00	16-IX-11-1	<i>Xestospongia muta</i> ; <i>Anadyomene menziesii</i> ; Crustose Coralline Algae; mostly purple Corallinales- <i>Peyssonneliaceae</i> ; comatulid crinoid; possible black hydroids; Yellowtail Reef fish about 8-10; no red grouper observed yel orange basslet--still unidentified;	hard bottom; 50% cover <i>Anadyomene menziesii</i> ; rest is Corallinales- <i>Peyssonneliaceae</i> and Crustose Coralline Algae; valley according to multibeam; at most, we're seeing only a difference of 1 m depth;	HB		

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84746	-83.66768667	65.12	9/16/2011 14:03	16-IX-11-1	Anadyomene menziesii; uncommon A. clathrodes; Stichopathes luetkeni; chalk bass; comatulid crinoid; Shirley is seeing some amorphous spherical sponges which might be Geodia with unidentified encrusting sponges ;orange back bass; chalk bass;	hard bottom; 90% coral plates; rubble; cobble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84735667	-83.6681	65.541	9/16/2011 14:07	16-IX-11-1	Stichopathes (curly whip);	approaching hummoc; in valley; hard bottom; rubble; cobble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84729833	-83.668235	65.214	9/16/2011 14:08	16-IX-11-1	changing tapes; changing pilots; photo number is 1416; Rudy is navigator; Don is pilot				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84730333	-83.668315	65.12	9/16/2011 14:11	16-IX-11-1	Anadyomene menziesii; Anadyomene menziesii; Dictyota; Photo XS (quantitative)- resuming photo transect;	1/3 through valley between east and west ridges; hard bottom; 90% coralline plates; rubble; cobble; maybe 50% cover Anadyomene menziesii;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84726333	-83.668555	65.354	9/16/2011 14:12	16-IX-11-1	cluster of about 20 Coral- Agaricia plates, 10-30 cm dia; possibly Ircinia campana; the algae on the Agaricia are Valonia (Ventricaria?) and ?Codium; finished collection at 14:25 (took about 15 minutes to collect); Photo XS (quantitative)- pause for video and collection	; in valley between two ridges	HB	003	Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84727333	-83.66853667	65.354	9/16/2011 14:26	16-IX-11-1	Photo number 1422; wrasse bass; getting a closer look at the Agaricia: 20-40 cm; many appear healthy, but some have central white patch, others have central patch with encrusted algae; discussion: mortality or bleaching?; how do you tell the difference?;	zooming out to confirm Ircinia i.d.; also Collect another Coral- Agaricia;	HB		closer look at the Agaricia: 20-40 cm
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84725167	-83.66857	65.494	9/16/2011 14:53	16-IX-11-1	starting at photo number 1425; M. Caverosa; decided to stop to collect M cavernosa; Photo XS (quantitative)- resuming after Collecting Coral- Agaricia; half-way through transect; hard bottom; Photo XS (quantitative)- pause		HB		M cavernosa;
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84725667	-83.668565	66.475	9/16/2011 14:55	16-IX-11-1	20-30 cm M cavernosa; Dictyota; comatulid crinoid in B7comatuli; Photo XS (quantitative)- pause for collection of Montastrea cavernosa	; on multibeam, still down in the valley, at base of one of the hummocs			Montastrea cavernosa
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.847255	-83.66857	65.354	9/16/2011 15:09	16-IX-11-1	Photo XS (quantitative)- resuming after collection; photo number 1431; Ircinia sp; 30% Anadyomene menziesii; rest Crustose Coralline Algae and Corallinales- Peyssonneliaceae; sparse Demospongiae; possibly Geodia head; Yellowtail Reef fish; pale brown massiv	several hundred meters to end of transect; approaching hummock; 90% cover dead coral plates	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84705167	-83.66934833	65.027	9/16/2011 15:13	16-IX-11-1	dominant biota is same; Reef Butterflyfish; Geodia?; Stichopathes;	on top of one of the hummocs in central valley	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84691833	-83.66963333	65.588	9/16/2011 15:15	16-IX-11-1	orange back bass (4); 6 unidentified orange fish; Xestospongia muta; cherub fish; Halimeda; no large Kallymenia; no big fish yet, either; comatulid crinoid--different, larger than the common ones; sharpnose puffer;	going over western slope of a hummoc; hard bottom; rubble; cobble; dead algal plates; 50% Anadyomene menziesii; rest is Corallinales- Peyssonneliaceae;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84687167	-83.670045	66.148	9/16/2011 15:17	16-IX-11-1	Anadyomene menziesii; Xestospongia muta; large comatulid crinoid;	hard bottom; rubble; cobble; Slope-flat; dead algal plates; dead coral plates;	HB		

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84678833	-83.67028	65.681	9/16/2011 15:19	16-IX-11-1	2 orange back bass; dominant species Anadyomene menziesii; sharpnose puffer; Dictyota; unidentified yellow Demospongiae; 2 lionfish--first ones we've seen today; Xestospongia muta; didemnid Ascidacea; with the lionfish, there were 3 Yellowtail Reeffish; br	on multibeam, can see about one dozen large craters, possibly made by red grouper; still in central region of multi-beam between two ridges; mostly dead algal plates	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.8467	-83.671025	65.027	9/16/2011 15:22	16-IX-11-1	a school of some small fish, more than 100, possibly small wrasses				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84668833	-83.67102833	65.214	9/16/2011 15:24	16-IX-11-1	about 50% macroalgal cover Corallinales-Peyssonneliaceae; Anadyomene menziesii; barracuda; massive unidentified Demospongiae; Ircinia; Geodia; 2 orange back bass; more Halimeda; Xestospongia muta;	600 m from end of transect; 200 yards from west ridge; hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84646167	-83.67166333	65.074	9/16/2011 15:27	16-IX-11-1	several Yellowtail Reeffish; Xestospongia muta; several large 20-30 cm spherical and barrel unidentified Demospongiae;	hard bottom; same bottom type as previous	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84631833	-83.67224167	65.027	9/16/2011 15:30	16-IX-11-1	50% Anadyomene menziesii; chalk bass; 1 orange back bass	90% rubble; cobble	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84631	-83.67236333	64.7	9/16/2011 15:31	16-IX-11-1		at east base of west ridge	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84623833	-83.67254167	64.747	9/16/2011 15:32	16-IX-11-1	photo number 1483; Yellowtail Reeffish; Stichopathes; maybe a patch of Cliona varians????; chalk bass; Reef Butterflyfish; several large massive, amorphous, unidentified Demospongiae;	hard bottom; rubble; field of view in multibeam 100 x 150 m, there are about a dozen grouper holes	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.846165	-83.67298333	64.14	9/16/2011 15:34	16-IX-11-1	50% Anadyomene menziesii; barrel, massive sponges; Yellowtail Reeffish; bicolor damselfish; purple reef; Reef Butterflyfish; Geodia; unidentified orange Demospongiae; Sand Tilefish crater and rubble pile;	hard bottom; east slope; 100% dead coral plates encrusted by Crustose Coraline Algae;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84607333	-83.67344333	61.384	9/16/2011 15:38	16-IX-11-1	30% cover Anadyomene menziesii; chalk bass; orange back bass; bicolor damsels; 1 blue chromis; Coral- Agaricia;	on top of west ridge; no difference in habitat; 90% rubble, cobble;	HB		Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84598667	-83.673785	61.991	9/16/2011 15:40	16-IX-11-1	changing over data logger position from Shirley to Bethany;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.845965	-83.673885	63.299	9/16/2011 15:41	16-IX-11-1	Geodia; 1 orangeback bass; almost to the western edge of the west ridge; 20 Yellowtail Reeffish; 2 bicolored; lots of small reef fish here				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84584	-83.67438833	63.439	9/16/2011 15:42	16-IX-11-1	west slope of the west ridge; 30-50% Anadyomene menziesii; 3 Yellowtail Reeffish;	hard bottom; Rock; rubble; Coral-coral plate rubble;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84573833	-83.67462167	64.046	9/16/2011 15:43	16-IX-11-1	30% Anadyomene menziesii; 3 chalk bass; orangeback bass; several redish demosponges; large school of Yellowtail Reeffish; 2 Reef Butterflyfish; Xestospongia muta; more Yellowtail Reeffish; 2 bicolored 30 cm Coral- Montastraea cavernosa;				Coral- Montastraea
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84571333	-83.67485167	63.672	9/16/2011 15:44	16-IX-11-1	getting more sparse algae; dropping of west side of the reef; Geodia with didemnidae encrusted;	hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84564833	-83.67508333	64.607	9/16/2011 15:46	16-IX-11-1	Yellowtail Reeffish; Reef Butterflyfish; 2 bicolored; orange unidentified; Coral- Agaricia; 3 more bicolored; Cribrochalina sponge				Coral- Agaricia

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84563833	-83.67520833	64.887	9/16/2011 15:47	16-IX-11-1	80% Coralline algae; Anadyomene menziesii; Filograna surpluidae; verogind sponge;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84557	-83.67535	63.205	9/16/2011 15:48	16-IX-11-1	almost at the base of the west ridge; orangeback bass; Yellowtail Reef fish; 10 cm Coral- Agaricia; more sparse as we go down the slope almost to the base	hard bottom;	HB		Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.845535	-83.67547333	64.934	9/16/2011 15:48	16-IX-11-1	redfish burrow about 40 m out; cherub fish; chalk bass; orangeback bass				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84544667	-83.67564167	65.12	9/16/2011 15:49	16-IX-11-1	crater on the active sonar is verified on multibeam, 8m; scamp; blue angel; 1.5 m deep crater filled with rubble and cobble				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84542	-83.675695	65.868	9/16/2011 15:50	16-IX-11-1	Photo XS (quantitative)- End; photo 1552; plenty of Yellowtail Reef fish; goldentail moray; 30 blue chromas				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84542	-83.67569833	66.008	9/16/2011 15:54	16-IX-11-1	Photo XS (quantitative)- start; resuming phototranssect 1554				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84535667	-83.67573667	65.214	9/16/2011 15:54	16-IX-11-1	base of the west ridge; 30% Anadyomene menziesii; Coral- coral rubble; cobble;	hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84546667	-83.675795	66.101	9/16/2011 15:55	16-IX-11-1	primnoid gorgonian; 4Yellowtail Reef fish; 1 Kallymenia; Xestospongia muta; Geodia; possibly Scolymia coral (probably not; Corallimorpharia)	hard bottom;	HB		Coral- Scolymia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84537667	-83.676205	66.662	9/16/2011 15:57	16-IX-11-1	Reef Butterflyfish; approaching 2 or 3 large craters about 20m out; Stichopathes; plate coral; Corallinales- Peyssonneliaceae; 10-20% Anadyomene menziesii; more Yellowtail Reef fish;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84531833	-83.67638	66.428	9/16/2011 15:58	16-IX-11-1	crossing another crater, 8m across, 1 m deep; nonactive burrow; 10-12Yellowtail Reef fish; 2 blue chromas; multibeam 1559 off the reef proper entering light blue zone; rubble; 20 Anadyomene menziesii; a few leafy reds; orangeback bass				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84525667	-83.67655667	66.942	9/16/2011 15:59	16-IX-11-1	chalk bass; about 10m out; 6m crater; grouper burrow, also on multibeam; 8m diameter, 1 m deep, sides all coral rubble, some burrow at the bottom; Photo XS (quantitative)- End;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84519	-83.67668833	67.409	9/16/2011 16:01	16-IX-11-1	burrow is large Rhodophyta; cherub fish; multiple Yellowtail Reef fish; Reef Butterflyfish; 1 m long kallymenia; purple reef fish; chalk bass;	hard bottom; Coral- unid. Coral;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84519833	-83.67666667	67.409	9/16/2011 16:03	16-IX-11-1	continuing transect line Photo XS (quantitative)- start; about 100 m to the end of the line				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84517667	-83.676825	67.69	9/16/2011 16:04	16-IX-11-1	chalk bass; purple reef fish; Yellowtail Reef fish; Reef Butterflyfish;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84513667	-83.67692333	68.063	9/16/2011 16:05	16-IX-11-1	just crossed 30cm Coral- Agaricia; more Rhodophyta; big red blade	hard bottom;	HB		Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.845105	-83.67705167	67.269	9/16/2011 16:06	16-IX-11-1	getting more barren; less Anadyomene menziesii; mostly Coralline algae; almost is darker blue on multibeam; occasional chalk bass;	hard bottom;	HB		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84503833	-83.67729	69.138	9/16/2011 16:08	16-IX-11-1	112 m out; Stichopathes; 20-30cm relief; big sheets of dead coral plates incrustated with Corallinales- Peyssonneliaceae; 5% or less Anadyomene menziesii; mostly Coralline algae	hard bottom;	HB		Coral- dead coral

Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84501	-83.67743333	69.091	9/16/2011 16:09	16-IX-11-1	flattening out; dark blue of multibeam;				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84496667	-83.67758	69.511	9/16/2011 16:10	16-IX-11-1	8m crater coming up; Dictyota; Geodia; Coral- Agaricia; branching and red algae; very little Anadyomene menziesii; almost all coralline algae				Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84490167	-83.677655	69.465	9/16/2011 16:11	16-IX-11-1	in 8 m hole; filled with Coral- coral rubble and sheets of loose Anadyomene menziesii; Photo XS (quantitative)- End number 1555				Coral- coral rubble
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84489	-83.677645	70.072	9/16/2011 16:12	16-IX-11-1	looking around the crater; sharpnose puffer; chalk bass; wrasse bass; Geodia				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84487833	-83.67765833	69.792	9/16/2011 16:15	16-IX-11-1	collecting sample 7				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84487333	-83.67768	70.772	9/16/2011 16:21	16-IX-11-1	last photo number 1555				
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70835833	-83.69650167	51.481	9/16/2011 19:04	16-IX-11-2	60 m south of the WP. Bottom in sight. 100% Hard bottom, 0o slope, 20-30 cm relief. Mostly rock rubble and cobbles. Dead coral plates, Lobophora, Crustose Coralline algae, Dityota, 40% Anadyomene menziesii and comatulid crinoids on the Anadyomene menzies	water Column			Coral- dead coral
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70856167	-83.69648333	65.821	9/16/2011 19:08	16-IX-11-2	Chalk Bass; bicolor damselfish; wrasses; green blotch parrot fish - juvenile; Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline algae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70857667	-83.69651333	67.036	9/16/2011 19:08	16-IX-11-2	Photo XS (quantitative)- start; 1st photo. Current out of the North @ .5 kts. Coral- Agaricia lamarki - 15 cm. 2 almco jacks' 2 orange back bass; Xestospongia muta; sharpnose puffer; Dictyota; Corallinales or Peyssonneliaceae; Scolymia - cup coral; Aply	hard bottom; rubble; Slope- flat;	HB		Coral- Agaricia lamarki; Scolymia
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70861333	-83.69687833	66.382	9/16/2011 19:11	16-IX-11-2	Xestospongia muta; evenly distributed abundace between 10-35 % of all of them; Anadyomene menziesii; Lobophora; Corallinales or Peyssonneliaceae; Dictyota also common; Xestospongia muta; small clumps of Cyanophyta or filamentous terf alga; Chalk Bass x2;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70863833	-83.69709833	67.176	9/16/2011 19:13	16-IX-11-2	Biota same; Lobophora increasing to 40-6% in some spots 30% on average; mound about 2 m wide, 50 cm high; Chalk Bass; Xestospongia muta; Aplysina; bicolor damselfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70865333	-83.69727333	65.961	9/16/2011 19:15	16-IX-11-2	ALL STOP. Photo XS (quantitative)- pause; purposfull images of Agaracia lamarki 30 cm, maybe 2 colonies, Lobophora over growth, minor pail pigement on ridges; concentric rings, no disease or bleaching; sample 001; adjacent to colony is another 5cm colony	hard bottom; rubble; Slope- flat;	HB		Agaracia lamarki
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70864833	-83.69729	65.961	9/16/2011 19:25	16-IX-11-2	Photo XS (quantitative)- start; photo 1593; Agelas clathrodes and 2 other Agelas ; Yellowtail Reef Fish; Chalk Bass; cherub fish; wrasse bass; Lobophora; Callyspongia vaginalis	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70866167	-83.69740167	65.541	9/16/2011 19:27	16-IX-11-2	5 Chalk Bass; Yellowtail Reef Fish; Dictyota;	hard bottom; Rock; rubble; Slope- flat;	HB		

Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70866333	-83.69746	66.522	9/16/2011 19:27	16-IX-11-2	Reef Butterfly; bicolor damselfish; mixed benthic: Anadyomene menziesii; Chalk Bass; dictyota; Corallinales or Peyssonneliaceae; Crustose Coralline algae; sponges are more common here than most of the locations on the cruise so far;	100%hard bottom; Rock; rubble; cobble with plates old coral and algae; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70867167	-83.69759667	66.335	9/16/2011 19:28	16-IX-11-2	Aplysinid; Chalk Bass; orangeback bass; sponge; Photo XS (quantitative)- pause; M. cavernosa and Agaricia together; Area with about 1.4-1.5 m across mixed with corals Coral- Montastraea cavernosa and Coral- Agaricia; Goby; there's another patch of Coral-	hard bottom; Rock; rubble; Slope-flat;	HB	002 003	Coral- Agaricia; Coral- Montastraea cavernosa
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.708705	-83.69775333	66.242	9/16/2011 19:58	16-IX-11-2	Photo XS (quantitative)- resume with photo 1614; Corallinales or Peyssonneliaceae; Crustose Coralline algae; 50% Anadyomene menziesii; Chalk Bass; Yellow wrasse; orangeback bass;	100% hard bottom; Rock; rubble; plates with coral	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70871667	-83.69797167	65.868	9/16/2011 20:00	16-IX-11-2	20cm tubular Agelas , tube-shaped; lots of Lobophora; cover of Corallinales or Peyssonneliaceae; heavy Lobophora through this section ~50-60%; Geodia on downward facing camera; 30cm Xestospongia muta; Chalk Bass; cherubfish; Long snout butterflyfish; Ree	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70873833	-83.69824167	65.447	9/16/2011 20:02	16-IX-11-2	orange unidentified basslet (OUF); less than 3cm black cyanobacteria clumps on bottom; Xestospongia muta; Lobophora is patchy but when there it's about 60%; Reef Butterfly; Aplyidium-translucent white ascidian;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70873667	-83.69833	65.634	9/16/2011 20:03	16-IX-11-2	Mostly Lobophora; 40-50% Anadyomene menziesii; Crustose Coralline algae; Corallinales or Peyssonneliaceae less abundant than earlier; occasional Xestospongia muta and Geodia; 4 species of Agelas; Antipatharian; Chalk Bass; bicolor damselfish; orangeback b	hard bottom; Rock; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70878167	-83.69876667	65.167	9/16/2011 20:05	16-IX-11-2	Ircinia; occasional purple reef fish; Yellowtail Reef Fish; cherub fish;				
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70878833	-83.69888833	64.28	9/16/2011 20:06	16-IX-11-2	less Lobophora; more Dictyota; Anadyomene menziesii; Crustose Coralline algae; encrusting sponges; longjaw squirrel fish; beige encrusting tunicate; Chalk Bass; bicolor damselfish; orangeback bass; Sand tilefish 30-35 cm, has a burrow here;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70880333	-83.69905833	65.261	9/16/2011 20:08	16-IX-11-2	area with lots of Corallinales or Peyssonneliaceae-like encrusting algae; Crustose Coralline algae; crinoids (which have been less abundant on the Anadyomene menziesii than at other sites; orangeback bass;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.7088	-83.69919167	64.653	9/16/2011 20:08	16-IX-11-2	Hydroid; red grouper; Xestospongia muta; there's a burrow here on sonar about 40m away; purple reef fish;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70882667	-83.69935	64.98	9/16/2011 20:10	16-IX-11-2	cherub; bicolor damselfish; Yellowtail Reef Fish;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.708845	-83.69940167	64.653	9/16/2011 20:10	16-IX-11-2	mix of Lobophora; Anadyomene menziesii; Coral-Agaricia; Geodia; Crustose Coralline algae;	hard bottom; Rock rubble; boulders; lots of plating; relief is less than 30cm; Slope- flat;	HB		Coral- Agaricia

Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70885833	-83.699605	65.167	9/16/2011 20:11	16-IX-11-2	bicolor damselfish; Chalk Bass; possible blue chromis; Coral- Agaricia probably lamarki;	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Agaricia lamarki
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70887	-83.69970333	65.261	9/16/2011 20:12	16-IX-11-2	Dictyota; Leptoseris cuculata; Chalk Bass; big Xestospongia muta;	hard bottom; Rock; rubble; Slope-flat;	HB		Leptoseris cuculata
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70886833	-83.69983667	64.607	9/16/2011 20:13	16-IX-11-2	Aplysina- yellow; squirrelfish; orange sponge;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70887833	-83.69994167	64.466	9/16/2011 20:14	16-IX-11-2	Lionfish; 2 Reef Butterfly; 10Yellowtail Reef Fish; ~2 squirrel fish; purple reefish; Lobster - Panularis argus; 20cm rock ledge where all these fish are hanging out;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70888333	-83.69993667	64.653	9/16/2011 20:15	16-IX-11-2	lots of Dictyota; Anadyomene menziesii; Crustose Coralline algae; Callyspongia vaginalis; Chalk Bass; Unidentified orange basslet; purple reefish;	hard bottom; Rock; rubble; Slope-flat; less than 30cm relief	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70890167	-83.70017667	64.793	9/16/2011 20:17	16-IX-11-2	Lobophora; Anadyomene menziesii; longsnout butterflyfish; aplysinid; Chalk Bass; Gorgonian fan;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70891	-83.70028833	65.027	9/16/2011 20:18	16-IX-11-2	deviated slightly from transect to view this hole to the right	~40cm relief in this area; going over an old mound	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70894833	-83.70041333	65.074	9/16/2011 20:19	16-IX-11-2	longsnout butterfly; purple reefish; Lobophora; Chalk Bass; 30%Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline algae; cherub; Yellowtail Reef Fish; 2 orangeback bass				
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70902167	-83.70055833	65.307	9/16/2011 20:19	16-IX-11-2	Coral- Agaricia; Coral- Leptoseris;	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Agaricia; Coral- Leptoseris
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70903167	-83.70058	64.466	9/16/2011 20:20	16-IX-11-2	Red grouper 50-60cm; 10m diameter hole; 1.5m deep;				
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709095	-83.70064667	64.98	9/16/2011 20:21	16-IX-11-2	longsnout butterfly; 4 lionfish; purple reefish; bicolor damselfish; Yellowtail Reef Fish; 3 rock beauty; longjaw; squirrelfish; wrasse; blue chromis; 2 Lobster - Panularis argus; ~8 more lionfish; peppermint shrimp; wrasse bass; Photo XS (quantitative)-	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70915333	-83.700665	64.42	9/16/2011 20:25	16-IX-11-2	2 lobster; lionfish; resume Photo XS (quantitative)- start with photo 1702; Chalk Bass; Anadyomene menziesii; Lobophora; Corallinales or Peyssonneliaceae; Crustose Coralline algae; bicolored damsal; Yellowtail Reef Fish; purple reefish;	100% hard bottom; Rock; rubble; Slope- flat; cobbles with plates overlapping in some small ledges; less than 40cm relief	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70901	-83.70110167	65.634	9/16/2011 20:27	16-IX-11-2	bicolor damselfish; Xestospongia muta; encrusted aplysinid;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709005	-83.70123833	65.494	9/16/2011 20:28	16-IX-11-2	scallop in downward facing photos; another burrow recently dug out; bicolor damselfish; less Lobophora; more Corallinales or Peyssonneliaceae; Chalk Bass; Dictyota;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70899833	-83.7014	65.494	9/16/2011 20:29	16-IX-11-2	there are more sponges here: loggerhead; in areas with possible more current and flow	ard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709015	-83.70149	65.494	9/16/2011 20:29	16-IX-11-2	unidentified orange basslet;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70902833	-83.70157833	65.401	9/16/2011 20:31	16-IX-11-2	Crustose Coralline algae; Corallinales or Peyssonneliaceae; 30% cover Anadyomene menziesii; 5% Dictyota; occasional crinoids; sponges more abundant: Geodia, Alysina, and Xestospongia muta; wrasse bass; 2Reef Butterfly; 2 Yellowtail Reef Fish; Xestospongia	100 %hard bottom; Rock; rubble; Slope- flat; 40% relief; rock plate	HB		

Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70905167	-83.701955	65.494	9/16/2011 20:33	16-IX-11-2	Aplysina - purple rope sponge;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709065	-83.70202333	65.634	9/16/2011 20:34	16-IX-11-2	Xestospongia muta; Crustose Coralline algae; possible verongida; green blotch parrot fish - juvenile;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70909	-83.70223667	65.307	9/16/2011 20:35	16-IX-11-2	Coral- Leptoseris; 60cm Coral- Agaricia lamarki; Xestospongia muta; sponge; orange basslet; Anapathes	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Leptoseris; Coral- Agaricia lamarki
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.7091	-83.70232333	65.074	9/16/2011 20:38	16-IX-11-2	Photo XS (quantitative)- pause; sample 004- Antipathidae Antipathes atlantica- black coral with white polyps about 20 cm across roughly; Xestospongia muta;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70909167	-83.70227	66.849	9/16/2011 20:49	16-IX-11-2	finished collection 20:51; bicolor damselfish; telling ship to come back up to speed;	hard bottom; Rock- wall; rubble;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70908167	-83.70238167	65.027	9/16/2011 20:52	16-IX-11-2	Photo XS (quantitative)- resuming on photo 1743; Yellowtail Reef Fish; Reef Butterfly;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709115	-83.70265333	64.84	9/16/2011 20:53	16-IX-11-2	bicolor damselfish; Crustose Coralline algae; Corallinales or Peyssonneliaceae; Lobophora; Anadyomene menziesii; not too many crinoids; Xestospongia muta; Geodia; another 2 Antipathes atlantica in downward-facing video. We're about 1/3 of the way through t	hard bottom; Rock- wall; rubble; Slope- flat; rock pavers;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70916	-83.70306333	64.186	9/16/2011 20:55	16-IX-11-2	Yellowtail Reef Fish; Reef Butterfly; purple reef fish; Anadyomene menziesii; Crustose Coralline algae; Corallinales or Peyssonneliaceae;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709185	-83.703165	63.999	9/16/2011 20:56	16-IX-11-2	Another hole; Coral- Montastraea cavernosa; orangeback bass; 3 Chalk Bass; Reef Butterfly; bicolor damselfish; green blotch parrot fish - juvenile; Anadyomene menziesii; Crustose Coralline algae; some Lobophora;	hard bottom; Rock; rubble; Slope-flat;	HB		Coral- Montastraea cavernosa
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709195	-83.70344333	63.906	9/16/2011 20:58	16-IX-11-2	green blotch parrot fish - juvenile; Coral- 3 Agaricia lamarki; Antipathidae; Yellowtail Reef Fish; orangeback bass; Antipathidae; Hydroid; Coral- 2 more Agaricia lamarki	hard bottom; Rock- wall; rubble;	HB		5 Agaricia lamarki;
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709205	-83.70371667	64.56	9/16/2011 20:59	16-IX-11-2	Xestospongia muta; Aplysina ? Orange tube;	hard bottom; Rock; rubble; Slope-flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70925333	-83.70408833	64.28	9/16/2011 21:03	16-IX-11-2	yellow orange sponge 21:06:36- photos 1778-79; Photo XS (quantitative)- pause; sample 005;				
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70925	-83.70415	64.466	9/16/2011 21:14	16-IX-11-2	zooming in on orange sponge;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70924667	-83.704155	64.56	9/16/2011 21:15	16-IX-11-2	Photo XS (quantitative)- resume; Chalk Bass; Anadyomene menziesii;	hard bottom; rubble; Slope- flat	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70924833	-83.70412667	64.233	9/16/2011 21:17	16-IX-11-2	fan Antipathidae; comatulid crinoid; orange back bass; Demospongiae geodia; pictures every 30 seconds; bicolor damselfish; Chalk Bass; Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70929667	-83.70443167	64.56	9/16/2011 21:20	16-IX-11-2	Agelas clathrodes; Xestospongia muta; Photo XS (quantitative)- pause;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.7093	-83.70442667	64.56	9/16/2011 21:20	16-IX-11-2	Photo XS (quantitative)- resume; Agelas clathrodes; Anadyomene menziesii dominated 30% coverage; Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat	HB		

Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70930167	-83.70455667	64.373	9/16/2011 21:21	16-IX-11-2	bicolor damselfish; Photo XS (quantitative)- resume	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70927667	-83.70453	64.14	9/16/2011 21:22	16-IX-11-2	Anadyomene menziesii; bicolor damselfish; Corallinales or Peyssonneliaceae; zoom on Agelas; bicolor damselfish; Photo XS (quantitative)- resume;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709285	-83.70451833	64.466	9/16/2011 21:23	16-IX-11-2	Photo XS (quantitative)- resume; Agelas clathrodes is commong; zooming in on Demospongiae; this is sample 006 video and photos; 7 or 8 o'clock from target is Agelas clathrodes. Photo; 1791 and 1792.jpg	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709285	-83.70459	64.653	9/16/2011 21:28	16-IX-11-2	moved a but forward Xestospongia muta; Geodia; agelas; Photo XS (quantitative)- start;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70927833	-83.70457	64.7	9/16/2011 21:29	16-IX-11-2	Anadyomene menziesii; Corallinales or Peyssonneliaceae; Agelas; Geodia gibberosa; Chalk Bass; cherubfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70929833	-83.70467167	64.934	9/16/2011 21:30	16-IX-11-2	Photo XS (quantitative)- pause; for Niphates erecta; Photo 1796 and 1797.jpg	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.7093	-83.70464167	64.887	9/16/2011 21:36	16-IX-11-2	collected 007;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70930333	-83.70467667	64.793	9/16/2011 21:37	16-IX-11-2	Photo XS (quantitative)- resuming; about 2 per minute; Anadyomene menziesii; aplydium? Xestospongia muta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70931667	-83.70482833	65.167	9/16/2011 21:38	16-IX-11-2	Photo XS (quantitative)- stopped; orange backed bass; green bloch parrot fish - juvenile; FOR JENNY; 21:39:35; Ircinia campana or stobilina - groups of oscules surrounded by epibiot; fish on left looks like a hawk fish; file DIVE07 file 6; Recheck; GOOD	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709315	-83.70483333	64.887	9/16/2011 21:42	16-IX-11-2	small yellow sponge; either Cinachyrella or Tethya; oscular area that are irregular; 3 - 4 cm in diam. Sample 008; and maybe able to collect a sclerosponge next to sample 008; Didemnid tunicate; circular tunicate	hard bottom; rubble; Slope- flat;	HB	008	
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70932833	-83.70483833	64.793	9/16/2011 21:54	16-IX-11-2	collecting spherical ascidian sample 010; ending photo is 1808; the spherical ascidian is attached to a Xestospongia muta; may be a sponge with a single apical oscule;	hard bottom; Rock- wall; rubble; Slope- flat;	HB	010	
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.709315	-83.70486833	65.12	9/16/2011 22:04	16-IX-11-2	resuming Photo XS (quantitative)- start; Chalk Bass; bicolor damselfish; orange basslet; red- agilus; orange-back bass;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70933833	-83.704935	65.588	9/16/2011 22:06	16-IX-11-2	yellow Verongid sponge will be sample 011; orange encrusting sponge- placospongia elongated oscules- looks like scars; black sponge; Chalk Bass; ~5 photos ending with photo 1818;				
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70934	-83.70496667	65.027	9/16/2011 22:15	16-IX-11-2	resuming Photo XS (quantitative)- start; Chalk Bass; Yellowtail Reef Fish; orangeback bass;	hard bottom; Rock- wall; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70936167	-83.70513	66.055	9/16/2011 22:17	16-IX-11-2	Geodia; possible speciospongia (large purple- looking sponge) -sample 012 at 22:19:41 3 photos with last photo being 1822; Red finger-like sponge present Amphimedon compressa;	hard bottom; Rock; rubble; Slope- flat;	HB	012	
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70934667	-83.705185	66.382	9/16/2011 22:31	16-IX-11-2	We are finishing with the collection; Chalk Bass;	hard bottom; Rock; rubble; Slope- flat;	HB		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70926	-83.70525833	65.681	9/16/2011 22:36	16-IX-11-2	off bottom; off bottom;				

ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67018333	-83.72090833	170.22	9/17/2011 12:42	17-IX-11-1	bottom report; base of large bolder 20 m wide and 40 -50 m long going NW to SE axis; pillowy; barren; there are green encrusting patches and some small sponges; sediment circling rock is coarse grained and attempt sampe 201 and take a core;	hard bottom;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67018667	-83.72090833	169.986	9/17/2011 12:45	17-IX-11-1	taking sample 201 at base of boulder	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670195	-83.7209	169.986	9/17/2011 12:48	17-IX-11-1	sponge zoom; surface of rock appears as consolidated, agglutinated rubble	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670195	-83.7209	169.893	9/17/2011 12:50	17-IX-11-1	10-15 cm encrusion patches Photo for sample 201 x2 # 1824 1825.jpg;	hard bottom; Rock- wall; Slope- steep (>35o);	HB	201	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67016833	-83.72091833	169.753	9/17/2011 12:57	17-IX-11-1	small fish under ledge;	hard bottom; Rock- wall;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67015833	-83.72090833	169.94	9/17/2011 13:01	17-IX-11-1	sitting at base of rock determingn if there was more to collect	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67017167	-83.720905	168.445	9/17/2011 13:02	17-IX-11-1	video of sample 001 no photo:	hard bottom; Rock; Slope- steep (>35o);	HB	001	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67016	-83.720905	169.8	9/17/2011 13:08	17-IX-11-1	CHECK SCATTER ON DIVE TRACK - since weve been sitting here for a while.	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67018667	-83.72091	169.8	9/17/2011 13:14	17-IX-11-1	small anthiid in the hole;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67019167	-83.7209	169.893	9/17/2011 13:18	17-IX-11-1	photo of 002 AND 003	hard bottom; Rock; Slope- steep (>35o); Collect;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670195	-83.72090333	169.893	9/17/2011 13:33	17-IX-11-1	Moving on: starting on photo #1826.jpg; Photo XS (quantitative)- start; coming off ground and a bit and doing a crab crawl on west face of wall;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67019167	-83.72091333	166.67	9/17/2011 13:36	17-IX-11-1	parallel face of wall; Asteroidea; 165 m/ 1/5 way up wall; firing photos as often as possible; Spider crab (Libinia); fish RECHECK Species;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67009667	-83.72082	163.447	9/17/2011 13:39	17-IX-11-1	SW face of wall; fish in cracks and pits; southern SW corner; cidaroid urchin;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670175	-83.720815	163.494	9/17/2011 13:42	17-IX-11-1	30o slope with cavites in the rock; zoom on fish: Photo XS (quantitative)- stop;	hard bottom; Rock- wall; Slope- moderate (<35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67012333	-83.72089167	163.307	9/17/2011 13:50	17-IX-11-1	heading to do transect on top of mound; Photo XS (quantitative)- start; Rock is barren; 162 m on top of mound transect toward N end; video of white sponge; Photo XS (quantitative)- pause for sample;	hard bottom; Rock- wall; Slope- steep (>35o);	HB	006	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67012833	-83.72084333	162.092	9/17/2011 13:59	17-IX-11-1	heading east to base of wall in a minute; going to contine over the length of mound	hard bottom; Rock- wall; Slope- steep (>35o);	HB		

Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67015167	-83.72084333	162.139	9/17/2011 14:00	17-IX-11-1	Photo XS (quantitative)- resume; on top of mound; staring photo 1869.jpg; fish under rock;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67029333	-83.72081167	167.651	9/17/2011 14:05	17-IX-11-1	[sample 005]	hard bottom; Rock- wall;	HB	005	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67032833	-83.72080833	168.772	9/17/2011 14:05	17-IX-11-1	we completed Photo XS (quantitative) on top of the wall but still continuing the Photo XS (quantitative)- start; End on top of boulder. We're at the north end.	hard bottom; Rock;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67032	-83.72085167	170.22	9/17/2011 14:06	17-IX-11-1	stopping to look for fish in the rugged boulder.	hard bottom; Rock boulders;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67033333	-83.72084833	170.734	9/17/2011 14:07	17-IX-11-1	north face of the boulder facing south; scorpean fish; the north wall is much more rugged; we're near the base; possible spanish flag fish;	hard bottom; Rock boulders;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67025167	-83.72092	171.902	9/17/2011 14:10	17-IX-11-1	the north face of this boulder rugged rock with 1-2m ledges; encrusting yellow and green sponge;	rock boulder;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67021167	-83.72091	171.154	9/17/2011 14:11	17-IX-11-1	coming down the west base of the feature and are circumnavigating to the beginning of the same feature; dead crab; there's clay down here.		HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670235	-83.72094833	170.173	9/17/2011 14:12	17-IX-11-1	transiting down the west side of the boulder; continuing photo transect;		HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670295	-83.72092167	170.127	9/17/2011 14:14	17-IX-11-1	This area is more rugged; possible petrified sponge; Stopped to collect sponge but wasn't able to obtain it; Photo XS (quantitative)- End;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67031333	-83.72088	171.108	9/17/2011 14:19	17-IX-11-1	Photo XS (quantitative)- start; This transect is from the boulder to the base of the wall; ~100m transect; Starting photo 1926				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67031667	-83.720875	171.668	9/17/2011 14:20	17-IX-11-1	exposed clay escarpment about 1m tall; taking ~4 photos a min	Slope- moderate (<35o); Rock; rubble; sand; rubble cobble rock boulder 30cm-1m;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67035667	-83.72069	170.594	9/17/2011 14:22	17-IX-11-1	Very barren; no marco epifauna; surface and rock is heavily bored with 2-3 cm pits; Very strange bottom- similar to moon scape; Possible scorpiian fish;	rugged consolidated white clay; 1-2 m relief;	SB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67043167	-83.72050167	171.248	9/17/2011 14:24	17-IX-11-1	On the sonar we are about little less than halfway between the boulder and the base wall; scorpiian fish; limestone with bored hold; very barren;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67047667	-83.720405	171.248	9/17/2011 14:27	17-IX-11-1	really no fish;	maybe 3m relief;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67050333	-83.72024	169.986	9/17/2011 14:28	17-IX-11-1	Some sort of long line but not a fishing line; We are approaching the base of the wall; still very rugged; 1-2 m relief; anthiids;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67054333	-83.72006833	163.073	9/17/2011 14:30	17-IX-11-1	rough tongue bass;	a lot of large boulders at the base of the wall;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67060833	-83.72003167	162.513	9/17/2011 14:31	17-IX-11-1	Near the foot of the wall ~ 20m from the vertical wall; rugged boulders; 1-2m relief; essentially barren except for yellow and green encrusting sponge;	Rock boulders;	HB		

Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67062833	-83.71994	157.188	9/17/2011 14:33	17-IX-11-1	top of the wall is 118m;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67064	-83.719885	155.833	9/17/2011 14:34	17-IX-11-1	green/yellow and red (maybe Spirastrella) encrusting sponge; rough tongue bass;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67063	-83.71983333	154.805	9/17/2011 14:35	17-IX-11-1	On the sonar we are at the base of the vertical wall; possible lavender Crustose Coralline Algae; 10 cm yellow/green encrusting sponge; little ball sponges-1cm spherical white;	30-45 degree slope; rock boulders and alcrops at 1-2 m;		HB	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67061167	-83.71980167	153.498	9/17/2011 14:38	17-IX-11-1	~5 Fish traps about 1m x 1m fish trap; pile of longline rope on top of it; no fish inside it				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67068	-83.71983667	150.601	9/17/2011 14:39	17-IX-11-1	close up video of 5 fish traps; possibly why there's no fish here; right at the base of the vertical wall on the sonar; cidaroid pencil urchin;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67065667	-83.71980167	143.641	9/17/2011 14:42	17-IX-11-1	continuing photo transect- now on a steep wall about 70cm rock wall; diademids Centrostephanus? long spined black urchin; 40-50cm scamp fish; bank butterfly fish; rough tongue bass; yellow fish; some sort of basslet;	Slope- steep (>35o); rugged wall 70-80 degrees; ledges		HB	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67074333	-83.71982	138.55	9/17/2011 14:46	17-IX-11-1	starting a new photo transect-Photo XS (quantitative)- start; going parallel to the wall along 140m depth contour; . Starting with photo 2035; roughtongue bass;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67071667	-83.71987	139.204	9/17/2011 14:48	17-IX-11-1	lavender Crustose Coralline Algae; different cidaroid urching 10cm red and white test with 20cm long spines; 2 bank butterfly; small anthiid; another unidentified urchin	wall is 45-70 degree slope; rugged, eroded; 1m ledges;		HB	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670805	-83.71991333	140.185	9/17/2011 14:51	17-IX-11-1	anthiids; rock looks like karsted topography (limestone eroded in the air- like rugged beach rock); It goes from 45 degree slope to vertical; very rugged karst topography; lavender Crustose Coralline Algae;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67092833	-83.71996	139.297	9/17/2011 14:54	17-IX-11-1	anthiid;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.670985	-83.72004833	139.111	9/17/2011 14:55	17-IX-11-1	white round (circular) anemone; tracking has been pretty bad for the past few seconds; its dropped out on us; fish with white and orange stripes RECHECK Species;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67105667	-83.72014667	138.643	9/17/2011 14:59	17-IX-11-1	slit shell Peretrochus possibly adansonii; anthiids;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67104333	-83.72017333	136.074	9/17/2011 15:01	17-IX-11-1	still on vertical wall; rugged; highly eroded; 30-50% cover lavender Crustose Coralline Algae; some yellow encrusting sponge;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67103667	-83.72019667	136.495	9/17/2011 15:02	17-IX-11-1	nearly 100% Crustose Coralline Algae; wrasse bass; some sort of shell embedded in the rock 2-3cm bivalves- deep water oyster bar- possibly ostreidae; another slit shell 8cm Peretrochus	Slope- steep (>35o);			
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.671005	-83.72024167	138.316	9/17/2011 15:04	17-IX-11-1	approaching cove in the wall; ~12 anthiids;				

Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67102	-83.72023	138.97	9/17/2011 15:06	17-IX-11-1	Photo XS (quantitative)- pause; attempting to collect a sample 007- looks like a sponge; there was also a possible sponge of some sort; white elongated with a black line going along the apical length;				007
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67099667	-83.72021667	137.289	9/17/2011 15:27	17-IX-11-1	vertical wall about halfway up; starting phototransect with photo number 2051;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67101	-83.72025667	142.1	9/17/2011 15:28	17-IX-11-1	heading up the wall; wall is very eroded and rugged, 90 degree slope; 1 m outcrops; dominant faunal is lavender encrusting algae				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67107	-83.72039333	138.97	9/17/2011 15:29	17-IX-11-1	Photo XS (quantitative)- start; top of the wall is 118 m; coming up an area on the multibeam that looks like a shelf and then another wall; possibly a double wall				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67112333	-83.72040167	135.187	9/17/2011 15:31	17-IX-11-1	coming up on a little shelf; bank butterfly; yellowish possibly spanish flag; rock is 100% encrusted with Coralline algae;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67113667	-83.72037167	134.486	9/17/2011 15:31	17-IX-11-1	up on the shelf; 1 m rock outcrops; very rugged; small orange encrusting sponges; small yellow encrusting sponges; 2 dozens anthiids; 30-40cm Scamp; bank butterfly;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67122167	-83.72037667	133.272	9/17/2011 15:34	17-IX-11-1	more anthiids, could dozens; 30 degree slope still on the shelf of the multibeam; about 50-60% cover with Coralline algae;				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67127167	-83.72038333	132.571	9/17/2011 15:35	17-IX-11-1	30 degree slope on the shelf; halfway up the wall; ruff tongue bass; anthias about 10cm long, light pink in coloration with irregular yellowstriped, stripe continuing through the eyeball and up to the mouth				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67119833	-83.72053833	130.609	9/17/2011 15:42	17-IX-11-1	Photo XS (quantitative)- start; heading up slope about 20 degrees				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.671245	-83.72046833	125.798	9/17/2011 15:43	17-IX-11-1	continuing Photo 2078; on platform about 1/2 way up wall	Slope- steep (>35o); smooth rock with ledges 30cm		HB	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67126833	-83.72044833	124.63	9/17/2011 15:45	17-IX-11-1	; anthiid; this rock is more like a boulder a little smoother not like the rugged rock like before. According to multibeam we have a little ways to go to get to the top of the wall.				
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67132667	-83.72043833	120.239	9/17/2011 15:46	17-IX-11-1	Photo XS (quantitative)- paused for collection; rough tongue bass; black featherpen-like Antipathidae 008; black with whiteish polyps Tanaecitipathes sp.10cm length; 1cm spines/polyps; 3 digital still photos; going to take close up vides; about 1/2 dozen				008
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67149167	-83.720305	119.819	9/17/2011 15:57	17-IX-11-1	resume Photo XS (quantitative)- start with photo 2089; tattler biggest one Chris has ever seen!!;	Slope- steep (>35o);			
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67134	-83.72050167	118.231	9/17/2011 15:59	17-IX-11-1	encrusted with small fuzzy black coral Antipathidae; ; 10cm unstalked dirty-white sponge 1cm diameter with oscules along the surface (1mm) smooth surface; new tattler	on top of the wall; smoth Rock;		HB	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67157833	-83.72019	117.483	9/17/2011 16:10	17-IX-11-1	We start a new transect starting with photo 2097;				

Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67138833	-83.72046833	117.67	9/17/2011 16:23	17-IX-11-1	;Photo XS (quantitative)- start photo 2096; numerous finger sponges (sample 9) that we collected; also the black coral bottle-brushes (sample 8) are common; still photos show small sponges; rough tongue bass, more than 7; not much Crustose Coralline Alga	top of wall; Rock; pavement; 10 cm relief;	HB	009	
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67174333	-83.72040667	118.044	9/17/2011 16:27	17-IX-11-1	rough tongue bass ~ 7; 4 more rough tongue bass; black coral bottle brush dominant; even more RT bass; small scamp;	20 cm ledge; rock outcrop; 0.5 m rock outcrops	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.671635	-83.72055333	117.857	9/17/2011 16:30	17-IX-11-1	black coral brushes common; 4 rough tongue bass-- these are the dominant fish; comatulid crinoids; Crustose Coralline Algae (lavender);	running along top of wall; Rock; pavement;	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67192	-83.72062667	117.95	9/17/2011 16:32	17-IX-11-1	tattler;	continuing transect along top of wall	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.67197833	-83.72065	117.297	9/17/2011 16:33	17-IX-11-1	Photo XS (quantitative)- End; last photo number 2152; another tattler 20 cm--the "trophy tattler"; wrasse bass	we transected about 60 m along top edge of wall	HB		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	24.672045	-83.72070333	117.67	9/17/2011 16:35	17-IX-11-1		Off bottom; moved away from wall to begin ascent			
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76725167	-83.87883333	139.531	9/17/2011 18:52	17-IX-11-2	camera set to 250 down and Photo XS (quantitative)- start; 3-4 a minute @ .4 kts; 125 m to lower ridge; verongid - yellow Demospongiae; Photo XS (quantitative)- End;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76727	-83.87882	139.344	9/17/2011 18:55	17-IX-11-2		hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76725167	-83.87884167	139.157	9/17/2011 18:56	17-IX-11-2	still images of sample 001	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76724	-83.878845	139.344	9/17/2011 18:58	17-IX-11-2	Tenacetipathes; yellow Demospongiae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76728	-83.87888	138.97	9/17/2011 19:03	17-IX-11-2	possilbe oil bubbles in the water column;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.767235	-83.87888	139.111	9/17/2011 19:08	17-IX-11-2	still looking to see if there is oil coming from the ROV or if it coming from somewhere else	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76724167	-83.87887167	139.111	9/17/2011 19:10	17-IX-11-2	resume collection; getting into position to collect 001	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.767235	-83.878895	139.111	9/17/2011 19:13	17-IX-11-2	Photo XS (quantitative)- start; sample 001 lost - 250 on camera Photo XS (quantitative)- End; stopping to collect a new specimen of 001	hard bottom; rubble; Slope- flat;	HB	001	001 actually collected
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76726167	-83.878915	138.55	9/17/2011 19:21	17-IX-11-2	Photo XS (quantitative)- start; Photo; 2165.jpg start; Madrepora coral; big eye; oranges Demospongiae; Stichopathes with hydroid or comatulid crinoid; bottle bush black corals Antipathidae; tattler; wrasse bass;	hard bottom; rubble; Slope- flat;	HB		Coral- Madrepora
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76732	-83.87885667	138.784	9/17/2011 19:23	17-IX-11-2	80 cm boulders; 40 m from the starting WP; bushy Antipathidae or black hydroids;	hard bottom; Rock; Slope- flat;	HB		

Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76739167	-83.87879167	137.989	9/17/2011 19:24	17-IX-11-2	20 m from starting Wp; rough tongue bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76752833	-83.87860167	134.72	9/17/2011 19:26	17-IX-11-2	on WP 1; big eye; Stichopathes; 40 m from base of lower ledge; white sm encrusting yellows; Antipathidae is dominate;	100% hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76770167	-83.87835167	136.868	9/17/2011 19:28	17-IX-11-2	Narcissia trigonaria; rough tongue bass; 15-20 cm boulders and outcrop;	hard bottom; Rock; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76754333	-83.87833167	136.588	9/17/2011 19:28	17-IX-11-2	scower spot; Stichopathes;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76769	-83.87823	135.701	9/17/2011 19:29	17-IX-11-2	30 m from base of lower wall according to sonar; 3 species of black coral - 10-15 cm tall; 2 rough tongue bass and tattler. 60 m from 2nd WP;	100 % hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76801167	-83.878135	134.626	9/17/2011 19:31	17-IX-11-2	low ledges with Crustose Coralline Algae; wrass bass; rugosity increasing in sonar;	hard bottom; Rock 20-30 cm relief; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76808833	-83.87808	134.019	9/17/2011 19:32	17-IX-11-2	30 m from 2nd WP which is the wall. Encrusting Demospongiae; Crustose Coralline Algae; Antipathidae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76827667	-83.87791167	132.478	9/17/2011 19:35	17-IX-11-2	stopping to wait for ship; ship is at WP 2 at southern end of deeper wall; Crustose Coralline Algae; sm hydroids; Ascidiacea?; brush black coral = australian pine;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76827167	-83.87789833	133.365	9/17/2011 19:38	17-IX-11-2	Photo XS (quantitative)- start2; parallel to lower drop off; .5 m ledge; rough tongue bass; lower ridge 2 m high;	hard bottom; rubble; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.768575	-83.87819333	133.225	9/17/2011 19:40	17-IX-11-2	continuing photo transect; parallel to slope ~ 2 m relief;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76864167	-83.87836	135.14	9/17/2011 19:43	17-IX-11-2	1/2 way along lower ridge; sea biscuit test	hard bottom; 80% rubble with sediment; Slope- flat; low relief	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76884833	-83.87851833	136.028	9/17/2011 19:45	17-IX-11-2	barren; slight rise or ridge 20-30o slope; tattler; 133-136 m; less fauna; ridge to the right getting steeper as we travel parallel to the base of the wall; 2 cm orange encrusting Demospongiae; rough tongue bass at beginning of Dive09 2.mov;	hard bottom; 50% rubble - 10-20 cm; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.769265	-83.87875667	133.785	9/17/2011 19:49	17-IX-11-2	width of wall ~ 20 m from base to top; rough tongue bass; pinetree Antipathidae;	hard bottom 100%; rubble 70%; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76949167	-83.87884833	132.898	9/17/2011 19:52	17-IX-11-2	yellow Demospongiae; madrapora; rocks are totally encrustes with Demospongiae;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76962167	-83.87894333	131.73	9/17/2011 19:54	17-IX-11-2	20 cm rock outcrops and boulders; 5 m relief from the bottom of the ledge; 30 cm relief; Stichopathes; top of the ledge; yellow wrasse RECHECK Species; 30 cm relief rock out crop ; fish behind it; cubyu; anthiids; black fin snapper; video clip DIVE09 4.mo	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.769835	-83.87907833	131.917	9/17/2011 19:57	17-IX-11-2	30 cm relief ledge; small anthead; australian pine Antipathidae; Crustose Coralline Algae; big eye or squirrel fish RECHECK Species; base is 136 to 131 m;	hard bottom; rubble; Slope- moderate (<35o);	HB		

Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76981667	-83.87906833	131.684	9/17/2011 20:00	17-IX-11-2	Photo XS (quantitative)- End; 2250.jpg is last photo for the transect;	hard bottom; rubble; Slope-moderate (<35o)	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76991833	-83.87908167	129.908	9/17/2011 20:01	17-IX-11-2	lower ridge due north to the middle ridge starting at 2251.jpg Photo XS (quantitative)- start; starting a new transect line along the wall; camera 25 o down;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.76998833	-83.87903333	125.891	9/17/2011 20:02	17-IX-11-2	moving;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77008167	-83.87905167	129.021	9/17/2011 20:04	17-IX-11-2	15 cm purple anemone kooshball Actiniaria - Liponema; wrasse; tattler; Stichopathes; wrasse bass; rough tonge bass; tattler	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77033	-83.87889667	127.059	9/17/2011 20:06	17-IX-11-2	tattler;	hard bottom; rubble 80-90 %; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.770785	-83.878955	125.751	9/17/2011 20:09	17-IX-11-2	slowed down to .3 kts. 1/2 of the way to the middle ridge;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77088167	-83.87896833	125.144	9/17/2011 20:10	17-IX-11-2	bottle brush; Scamp - file Dive9 6.mov overlay off WEBSITE video; Rhodymenia;	hard bottom 100% ; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77100833	-83.87894667	124.116	9/17/2011 20:15	17-IX-11-2	bank butterfly; Stichopathes; wrasse; Human Debris - line or cable; big eye - went under 30 cm rock outcrop;	hard bottom; rock pavement; low relief outcrops; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77122667	-83.878965	122.341	9/17/2011 20:17	17-IX-11-2	barren and flat; Human Debris - jar; bottle brush Antipathidae; Vertigellus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus Chlorophyta;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77159667	-83.87888833	122.435	9/17/2011 20:20	17-IX-11-2	Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange encrusting Demospongiae; Asteroidea; cup coral; Demospongiae;	hard bottom; rubble; Slope- flat;	HB		Coral- Cup coral
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.771655	-83.87888667	121.874	9/17/2011 20:22	17-IX-11-2	120 m from the base of the midridge, dense small biota; EEL - WEBSITE file Dive09 8.mov; tattler;	hard bottom; rubble; Slope- flat; low relief	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77181333	-83.87889833	121.501	9/17/2011 20:25	17-IX-11-2	scoured area with a bit if relief; wrasse bass;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77197833	-83.87891	120.706	9/17/2011 20:26	17-IX-11-2	Demospongiae; Antipathidae; Human Debris - mountain dew fresh can; anthiid; wrasse; Human Debris - line; serpulid; comatulid crinoid; tatler; rough tongue bass; Asteroidea;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77240667	-83.87897167	118.604	9/17/2011 20:31	17-IX-11-2	80 m from base of wall; open sediment; fish RECHECK Species;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.772465	-83.87898	118.651	9/17/2011 20:31	17-IX-11-2		hard bottom; pavement; Slope- flat; 80% sediment over rock pavement	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.772495	-83.87896667	118.604	9/17/2011 20:32	17-IX-11-2	Photo XS (quantitative)- End; end on 2292.jpg	hard bottom; rubble; Slope- flat; Photo XS (quantitative)- End;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.772585	-83.87920833	118.838	9/17/2011 20:34	17-IX-11-2	moving ROV to next transect; Human Debris - line; many bottle brush Antipathidae; comatulid crinoid; Antipathidae;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77268167	-83.87899	116.643	9/17/2011 20:37	17-IX-11-2		Scamp; hard bottom; pavement; rubble; Rock;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77284667	-83.87916667	114.494	9/17/2011 20:39	17-IX-11-2	greater amberjack, 50+; few almaco jacks;	hard bottom; hard bottom; Rock;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77300167	-83.87907833	115.802	9/17/2011 20:44	17-IX-11-2	squirel fish;n reef bultterfly, spot hog; 115 m;	hard bottom; Rock; Slope- moderate (<35o); pavement, 20-30 cm ledges;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77317667	-83.87907333	114.634	9/17/2011 20:46	17-IX-11-2	sparse bottle brush Antipatharia; amberjack; 90% rock;	hard bottom; Rock; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77364667	-83.87890333	118.324	9/17/2011 20:49	17-IX-11-2	119 m; base of middle ridge; greater amberjack dozens, 70 cm black grouper;	thin sediment veneer;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.773805	-83.87900833	118.558	9/17/2011 20:53	17-IX-11-2	bottle brush black coral; Stichopathes; fishing line; goby; 120 m; start photo transect along base of middle ridge;	hard bottom; pavement; Rock- wall; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.7738	-83.87931667	119.492	9/17/2011 20:57	17-IX-11-2	amberjack; 120 m; some coralline algae, small encrusting sponges red and organge;	base of wall hard bottom; Rock; Slope- moderate (<35o); mostly sediment; flat, rubble;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77384333	-83.87952	121.033	9/17/2011 21:01	17-IX-11-2	reef butterfly;	hard bottom; pavement; Slope- flat; base of wall; low ledges 10-20 cm;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77422	-83.87956	117.67	9/17/2011 21:04	17-IX-11-2	small primnoid;	soft bottom; 116 m; sediment; pavement; flat;	SB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.774355	-83.87958833	115.335	9/17/2011 21:06	17-IX-11-2		hard bottom; pavement; Slope- moderate (<35o); 115 m	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77444333	-83.87974167	116.129	9/17/2011 21:06	17-IX-11-2	hydroids; purple reef fish; squirrel fish; crinoid; cardinal fish; encrusting orange sponge; rough tongue bass; 0.6 kn current from E; 2 goliath grouper or warsaw; spots on head; 80 cm; lionfish; crinoids;	hard bottom; Rock- wall; Slope- steep (>35o); base of wall; rock wall; wall of consolidated rubble, carbonate; few small ledges; 2-3 m relief; 115 m	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.774385	-83.87974333	115.054	9/17/2011 21:13	17-IX-11-2	graysby; amberjack; reef buitterfly hog; bank butterfly; spanish hog; Photo XS (quantitative)- start; about 1/2 way along wall on transect	hard bottom; Rock- wall; Slope- steep (>35o); 1-2 m ledges;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77457333	-83.88	117.67	9/17/2011 21:19	17-IX-11-2	orange fish; anthiids; snapper?; longtail bass?; crinoids; longline; amberjack;? 2; almaco jack; lionfish 3; 117 m; cont xs along mid ridge;	hard bottom; Rock; Rock- wall; Slope- moderate (<35o); 1-2 m ledges;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77483167	-83.880295	112.392	9/17/2011 21:25	17-IX-11-2	1 m warsaw?; schools pink fish>; scamp several; 3 big grey grouper 60-90 cm; creole fish; bank butterfly; rock hind; greater amberjack; blue angel;	hard bottom; Rock- wall; Rock; Slope- steep (>35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.774855	-83.880325	111.131	9/17/2011 21:33	17-IX-11-2	creole fish; blue angel; crinoids; Photo XS (quantitative)- End; end transect of mid wall, photo 2384;	hard bottom; Rock- wall; Slope- steep (>35o); cont transect along mid wall; 110 m	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77498667	-83.880515	110.57	9/17/2011 21:36	17-IX-11-2	bank buitterfly; creole; squirrel fish; encrusting small sponges; no large macro sponges or fauna; bottle brush black coral; Stichopathes; crinoid; greater amberjack school; longline; Photo XS (quantitative)- start; start photo transect from mid ridge to	hard bottom; pavement; Slope- moderate (<35o); rock pavement	HB		

Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77533833	-83.88033667	107.207	9/17/2011 21:41	17-IX-11-2	reef butterfly; 1 m shark; back butterfly; squirrelfish; bottle brush black coral; planar black coral, Stichopathes; lionfish; pile of fishing line; bigeye; crinoids; Dictyota; school amberjack;	hard bottom; pavement; Slope- flat; pavement, 15 cm relief;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77584667	-83.88007167	106.553	9/17/2011 21:49	17-IX-11-2	dozens of greater amberjack; squirrel fish; encrusting sponges red and orange; crinoid; crustose coralline algae; Stichopathes; seastar;	hard bottom; pavement; Slope-moderate (<35o); 10 cm relief; 1/2 way between mid and shallow ridges;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.776265	-83.88012167	106.973	9/17/2011 22:03	17-IX-11-2	photos of 002 003 004	hard bottom; pavement; Slope- flat;	HB	002 003 004	
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77629667	-83.88008833	107.114	9/17/2011 22:09	17-IX-11-2	Photo XS (quantitative)- start; mid way between ridge and northern ridge on pavement hard bottom; going 107 m to true north;	hard bottom; Rock- wall; Slope-moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77651833	-83.88000167	106.413	9/17/2011 22:11	17-IX-11-2	rough tongue bass; Ellisella; Dictyota; Crustose Coralline Algae; < 5 cm rubble; Antipathidae; almost at the foot of the wall 105 m at the base; comatulid crinoid; and image of ellisella in downward camera;	hard bottom; Rock- wall; pavement; < 5 cm rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77693	-83.87986167	104.171	9/17/2011 22:14	17-IX-11-2	Photo XS (quantitative)- start; heading up the wall according to the multibeam; lionfish; tatler; atheads; comatulid crinoid; Antipathidae; Gorgonacea; file DIVE09 14.mov - tatler and lionfish stand off; rough tongue bass x3; tatler; rock ledges and hol	hard bottom; Rock- wall; Slope-moderate (<35o); 70 cm relief	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.777115	-83.87978333	104.171	9/17/2011 22:18	17-IX-11-2	comatulid crinoid; Ellisella; Stichopathes; Antipathidae; tracking out at base of wall; oranges Demospongiae;	hard bottom; Rock- wall; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77726	-83.87966167	102.022	9/17/2011 22:20	17-IX-11-2	tracking back; heading up the wall ; Gorgonacea; black hydroids; comatulid crinoid; Reef Butterflyfish; fish head sucked into a hole; Photo XS (quantitative)- pause;	hard bottom; Rock- wall; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77728833	-83.879905	102.816	9/17/2011 22:22	17-IX-11-2	small Gorgonacea ~6 species, white planar, paramuricid; Stichopathes; alicina (?); amberjack x 25?;	hard bottom; Rock- wall; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77720667	-83.879875	103.564	9/17/2011 22:24	17-IX-11-2	Photo XS (quantitative)- resume; still in school of AJ; multibeam says were at top of feature it was a gradual slope;	hard bottom; Rock- wall; pavement; Slope- moderate (<35o);	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77752667	-83.87984333	99.173	9/17/2011 22:27	17-IX-11-2	Top of wall at 99 m flattened rock pavement cobble rubble - 80% cover; Human Debris; black hydroids; lionfish; comatulid crinoid; Antipathidae; Stichopathes;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77765333	-83.87963	97.258	9/17/2011 22:29	17-IX-11-2	comatulid crinoid; Stichopathes; AJ; Photo XS (quantitative)- End; dive called ending on photo 2515.jpg	hard bottom; rubble; Slope- flat; <20 cm relief	HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92691667	-83.78193167	80.582	9/18/2011 12:20	18-IX-11-1	Moon jellies at 20m; salps				
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.926935	-83.78204	84.973	9/18/2011 12:23	18-IX-11-1	Rhodophyta; Rhodymenia; orange encrusting sponges; yellow and orange Verongida; "Shirley site"; more than a dozen sponges in the field of view; 15 cm geodidae; dark purple encrusting, likely Corallinales or Peyssonneliaceae; orange branching sponges, may	cobble field; no obvious coral plates	HB		

Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92693667	-83.782135	86.748	9/18/2011 12:36	18-IX-11-1	moving to waypoint to start transect; 20 yards east of initial characterization site	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92697	-83.78196833	86.654	9/18/2011 12:37	18-IX-11-1	Photo XS (quantitative)- start; No coral plates; Corallinales or Peyssonneliaceae; encrusted rubble; 10%Anadyomene menziesii; many sponges; barrel sponge; Yellowtail Reef Fish; Agelus, Halimena; Callispongia vaginalis;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92716833	-83.78226833	84.832	9/18/2011 12:40	18-IX-11-1	Dominated by Corallinales or Peyssonneliaceae encrusted rubble: Ircinia strobilina; 10%Anadyomene menziesii; Plexaura; mesh black coral; numerous yellow and orange encrusting lobate sponges; on top of the ridge; 2 meter relief to top of ridge; no evidence	hard bottom; 80% rock rubble and cobble up to 10 cm;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92736667	-83.78252333	83.711	9/18/2011 12:43	18-IX-11-1	fauna same; 15 cm yellow barrel sponge; few fish; 20-40 blade Rhodophyta; Xestospongia muta	same	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92746333	-83.78261	83.431	9/18/2011 12:45	18-IX-11-1	tracking right on the line; Peyssonneliaceae dominant; Anadyomene menziesii second dominant; blade Rhodophyta; 10-15 sponges species observed; wrasse bass; yellow fan sponge; brown fan sponge; zooming on yellow hemispherical sponge, central apical oscula,	100% hard bottom; 90% rock rubble	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92765	-83.78292667	83.758	9/18/2011 12:49	18-IX-11-1	Corallinales or Peyssonneliaceae; sparse Anadyomene menziesii; many sponges; no plate corals; 10 meter deeper than the eastern Pulley Ridge; wrasse; X. Muta; Aplysina; orange back bass;	hard bottom; rock rubble 5-10 cm	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92781833	-83.78310833	83.805	9/18/2011 12:52	18-IX-11-1	tracking well on transect line; Corallinales or Peyssonneliaceae dominant; 10% Anadyomene menziesii; many Demospongia; 10 cm amorphous yellow lobate sponges, membranous, apical oscula;	100% hard bottom; 90% rubble 10cm	HB	001	
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92793667	-83.78325667	83.852	9/18/2011 13:05	18-IX-11-1	continuing transect, resume transect with photo #2564; all encrusted rubble with Corallinales or Peyssonneliaceae; Anadyomene menziesii; second most dominant; Halimeda; 20 cm brown/ orange barrel sponges with 3 apical oscula Astrophorid, possible Geodiid	100% hard bottom; ; 90% rock rubble and cobble 5-10 cm	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92808167	-83.78353	82.357	9/18/2011 13:09	18-IX-11-1	same fauna; at least 20 species of sponges; sand depressions; 25 cm fan shaped, fine mesh, gorgonian, 12 Yellowtail Reef Fish; 1 Squirrel fish	50% rubble; 50% sediment	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92826	-83.78367833	84.132	9/18/2011 13:18	18-IX-11-1	hard drive partition,		HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92826333	-83.783705	84.225	9/18/2011 13:32	18-IX-11-1	photo number 2570; Aplysina archeri; squirrelfish inside; sharpnose puffer; Yellowtail Reef Fish 5; possible Geodia; leaf blade Rhodophyta; crinoids	Photo XS (quantitative)- start; 90% rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92839167	-83.783955	84.879	9/18/2011 13:35	18-IX-11-1	dominated by CCA and Corallinales or Peyssonneliaceae; <5% Anadyomene menziesii and red leafy alga; 10-20 sponge species common; most yellow sponges appear similar to sample 1, common; crinoid close up, 25 cm arms; different leafy red, brown color	80% rubble and cobble; hard bottom; Slope- flat;	HB		

Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92854	-83.784215	83.431	9/18/2011 13:38	18-IX-11-1	Bank butterfly; Yellowtail Reef Fish; yellow and orange tube sponges;	50% cobble, 50% sediment	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.928625	-83.784275	84.272	9/18/2011 13:39	18-IX-11-1	Pause to look at 10 cm tall orange, cylindrical sponge, fuzzy surface with potential hydroids, 3 cm diameter		HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92871	-83.78416167	84.179	9/18/2011 13:41	18-IX-11-1	20 cm vase sponge, either Ircinia campana, or Verongula? gigantea; bottle crush brush antipathes; Geodia encrusting, red; Yellowtail Reef Fish; large crinoid (common);	80% rock rubble and cobbles, 20% sediment	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92879167	-83.78455333	83.945	9/18/2011 13:44	18-IX-11-1	CCA dominant; less Peyssonneliaceae; less Anadyomene menziesii than earlier; more "barren"; few gorgonians, Geodia, Verongula, 1 Yellowtail Reef Fish; smooth sonar; Halimeda	hard bottom; 90-50% rock rubble and cobble <10cm; some sediment; no ledges Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92905	-83.78479667	84.599	9/18/2011 13:48	18-IX-11-1	Numerous sponge, crinoids, gorgonian 30 cm (like sample 2); yellow vase sponge; sharp nose puffer; Yellowtail Reef Fish, several; Wrasse base; Agelas; pause to look at orange sponge	hard bottom; 70-80% rock rubble and cobble <15cm;	HB		003
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92913833	-83.78492167	84.599	9/18/2011 13:57	18-IX-11-1	Continue transect with photo 2603; deep purple Corallinales or Peyssonneliaceae not present; CCA; some Anadyomene menziesii; some Rhodophyta; a few sponges; Halimeda; vase yellow sponges common	hard bottom; 60% rubble; 40% sediment	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92926833	-83.78509	84.786	9/18/2011 14:00	18-IX-11-1		stop to sample	HB	004	
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92927167	-83.78508667	84.646	9/18/2011 14:08	18-IX-11-1	Resume transect with photo 2610; bank butterfly; encrusting CCA; 10-15% Anadyomene menziesii; Astrophorid sponge, and "sample 1"; Tattler bass; occasional leafyRhodophyta;	hard bottom; Slope- flat; 80% rock rubble and cobble < 10cm;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92946333	-83.78542167	83.898	9/18/2011 14:11	18-IX-11-1		partition hard drive; swap tapes	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92955333	-83.785525	83.571	9/18/2011 14:13	18-IX-11-1	lowe diversity than beginning of ridge; orange finger sponge, Geodia; leafy blade read alga; sparse Halimeda; crinoids; more of sample 1; Green band wrasse; Another like sample 3;	Slope- flat; hard bottom; 90% rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.929715	-83.78569167	83.805	9/18/2011 14:16	18-IX-11-1	similar biota; occasional Plexaura; Aplysina; orange yellow finger sponge; crinoid might by "Antimedon?"; lobate orange sponge; another sample 1; roughly halfway across the ridge; in a bit of a valley; 20-30 cm sperical Ircinia strobilina; Halimeda; 10%	Slope- flat; hard bottom; 80% rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93006167	-83.78622833	83.758	9/18/2011 14:20	18-IX-11-1	Halfway across west ridge; CCA; 10%Anadyomene menziesii; 20-30% Corallinales or Peyssonneliaceae; many sponges, Plexuara; orange back bass; sample 1; Halimeda; Squirelfish; wrasse bass; 2 reef butterfly; Yellowtail Reef Fish; No signs of fish burrows; Yel	Slope- flat; hard bottom; 80-90% rock rubble and cobble	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93041	-83.78671833	84.459	9/18/2011 14:24	18-IX-11-1	10% Anadyomene menziesii; 20% Corallinales or Peyssonneliaceae; 40% CCA; occasional red leafy Rhodophyta; large 20 cm crinoids; Plexaura; 10-20 cm gorgonians; bushy gorgo previously collected; weight is 70 m; several Yellowtail Reef Fish;	Slope- flat; hard bottom; 90% rubble <10cm;	HB		

Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93068	-83.78709167	83.198	9/18/2011 14:28	18-IX-11-1	10 % Anadyomene menziesii; 40% CCA; 20% Corallinales or Peyssonneliaceae; multiple sponge species; Plexaura; many gorgonians; yellow hemispherical Astrophorid with encrusting Desmacella; crinoids; Yellowtail Reef Fish;	Slope- flat; hard bottom; 90 %rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93090833	-83.78747167	83.711	9/18/2011 14:32	18-IX-11-1	20% Anadyomene menziesii; ; 30% CCA; 40% Corallinales or Peyssonneliaceae; 30-40 sponge species, not including cryptics; creeping orange tubular sponge, 20 cm long	Slope- flat; hard bottom; 90% rubble <10CM	HB	005 201	
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93114	-83.78757167	83.571	9/18/2011 14:59	18-IX-11-1	Resume photo transect with photo 2666; ENCUSTED WITH 30% Corallinales or Peyssonneliaceae; 30% CCA; 5% Anadyomene menziesii; orange sea star; many 10-20 cm sponges;	hard bottom; Slope- flat; 90% rubble	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93117	-83.78773667	82.824	9/18/2011 15:02	18-IX-11-1	300m from western end of the transect; little change in type of fauna, variations in density; 15% Anadyomene menziesii; 6 Yellowtail Reef Fish; 1 wrasse; 60% Corallinales or Peyssonneliaceae; 30% CCA; few Plexaura; occasional read leafy different, slightl	Slope- flat; hard bottom; 90% rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93159333	-83.78827	83.431	9/18/2011 15:05	18-IX-11-1	fish crater, 2m diameter, 0.5 m deep; 2 green band wrasse; eastern slope of west ridge; steep sides to crater	hard bottom; 80% rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93159	-83.78809667	82.684	9/18/2011 15:08	18-IX-11-1	Astrophorids; 20% Anadyomene menziesii; dozen of sponges in FOV; another crater spoter on sonar, oval, 10 m by 6 m; 40% Corallinales or Peyssonneliaceae; 40% CCA; 10% Anadyomene menziesii;	hard bottom; Slope- flat; 95 % rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93174333	-83.78829333	83.758	9/18/2011 15:11	18-IX-11-1	stopping to pan; same as sample #3; crater in the Sonar - x5 with 4-5 m diam ahead;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93207167	-83.788465	83.384	9/18/2011 15:13	18-IX-11-1	sediment mound 1 m diam; red grouper and a crater 2 m diam - 40 cm grouper; Move clip - 10 5.mov; school of 8 cm fish - antheads Recheck; green ban wrasse; crater is large - 10 m diam, old and filled with rock rubble and cobble;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93195167	-83.7883	83.571	9/18/2011 15:17	18-IX-11-1	Grouper - red; there is a ridge and a burrow in the hole - 50 cm and a lionfish x6; Yellowtail Reef Fish; spotfin hogfish; capturing file and overlay off; Dive10 6.mov; graysby; leopard toad fish x3; 2 spot ; cardnial fish - Apogon pseuomaculatus; yellowf	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93200667	-83.788225	84.412	9/18/2011 15:23	18-IX-11-1	continuing; spotfin hog fish; Crustose Coralline algae; Yellowtail Reef Fish; wrasse bass; red barbier; toad fish; 2 species of anthiids - 6 more lionfish; Anadyomene menziesii; sopt fin hog; dive10 7.mov - overhead still off;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93200833	-83.78822667	85.066	9/18/2011 15:27	18-IX-11-1	moving on; eastern slope of the west ridge; Crustose Coralline algae; Anadyomene menziesii; hogfish;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93215167	-83.78841167	83.805	9/18/2011 15:28	18-IX-11-1	Photo XS (quantitative)- start; 2685.jpg; East slope of the west ridge; dense 5-10 cm rock cobble coated with light pink Crustose Coralline algae and purple Corallinales or Peyssonneliaceae; Anadyomene menziesii; Demospongiae dense and diverse; small fi	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.931965	-83.78878667	82.824	9/18/2011 15:31	18-IX-11-1	back on transect line;	100% hard bottom; 90% rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93196333	-83.788845	83.992	9/18/2011 15:33	18-IX-11-1	moving ahead; Anadyomene menziesii; Crustose Coralline algae; Corallinales or Peyssonneliaceae; tattler; Demospongiae; vase astrophorid Demospongiae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.932085	-83.78896833	83.198	9/18/2011 15:34	18-IX-11-1	starting to move up slope; Anadyomene menziesii; Crustose Coralline algae; Corallinales or Peyssonneliaceae; yellow Demospongiae;	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93214833	-83.78906333	83.057	9/18/2011 15:35	18-IX-11-1	1/2 way up the easter slope of the west ridge; Photo XS (quantitative)- pause; Sample 008 - video clip Dive10 9.mov and photos of sample 008; 20% Anadyomene menziesii;	hard bottom; 10-15 cm diam 90% cover rubble; Slope- moderate (<35o);	HB	007 008 009	
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93223167	-83.78911667	83.057	9/18/2011 15:54	18-IX-11-1	Photo XS (quantitative)- resume on Photo 2706; continue up the east slope of the west ridge; 15% Anadyomene menziesii; dense 50% Corallinales or Peyssonneliaceae in 10-20 plate forms; numerous sponges;	hard bottom; Slope- flat; 100% rubble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93223	-83.78924167	82.17	9/18/2011 15:58	18-IX-11-1	bridled bur fish; several gorgonians; Stylaster, fan shaped, first observation; dense Corallinales or Peyssonneliaceae; large crinoids 25 cm; 10% Anadyomene menziesii; orange fan sponge like sample 9; more leafy Rhodophyta;	hard bottom; Slope- flat; 100% rubble;	HB		Coral- Stylaster
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93274833	-83.78985	80.488	9/18/2011 16:01	18-IX-11-1	Ircinia strobilina, many sponges, sample 8, 9; Dichtyota; 15% Anadyomene menziesii; 35% CCA, 40% Corallinales or Peyssonneliaceae; brown branching sponge	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93286333	-83.78992833	80.675	9/18/2011 16:16	18-IX-11-1	New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of ridge; 40-60% CCA; 20-40 % Corallinales or Peyssonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank butterfly fish;	Slope- flat; hard bottom; 100 % rubble <10cm;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.932915	-83.78968833	81.236	9/18/2011 16:22	18-IX-11-1	10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30% Corallinales or Peyssonneliaceae; X. Muta more common, yellow tube sponges orange creeping, much sponge diversity; sample 1; Orange back bass; more platelike CCA; abun	Slope- flat; hard bottom; 90% rubble and cobble;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93347	-83.78933833	79.741	9/18/2011 16:29	18-IX-11-1	Photo XS (quantitative)- End; end dive; final photo 2779; orange back bass;	Slope- moderate (<35o);hard bottom; 95% rubble <10cm;	HB		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93335	-83.78936	80.582	9/18/2011 16:38	18-IX-11-1	Off bottom	Off bottom			
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791095	-83.89961167	121.827	9/18/2011 18:58	18-IX-11-2	On bottom; test shots; 100 %hard bottom; 80% rubble < 15 cm some plate like; 20% fine sediment; Dictyota, Encrusting sponges; Crustose Coralline Algae;	hard bottom; rubble; Slope- flat;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79117167	-83.89960167	121.734	9/18/2011 19:00	18-IX-11-2	Reef Butterflyfish; Photo XS (quantitative)- start; 2786.jpg;	hard bottom; rubble; Slope- flat;	HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791125	-83.899755	121.22	9/18/2011 19:02	18-IX-11-2	Rough Tongue bass; yellow purple and orange Demospongiae; Gorgonacea; basket star; Stichopathes; lumpy hard bottom; 60-70 cm relief; filamentous Phaeophyta; 5-10 cm high finger Demospongiae;	hard bottom; 80% rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79123167	-83.89985	122.995	9/18/2011 19:05	18-IX-11-2	up slight slope; sediment depressions and hard bottom; 30 cm relief; Stichopathes; filamentous Phaeophyta; tatlter; wrasse bass; Demospongiae; Asteroidea; Gorgonacea - plexaurids; Antipathidae - bottle brush; tan finger Demospongiae; chalk bass; Aplysina D	hard bottom; rubble; Slope-moderate (<35o); Photo XS (quantitative)- pause;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791415	-83.90028667	121.734	9/18/2011 19:09	18-IX-11-2	hydroids; anthiids - yellow fin bass RECHECK Species; wrasse; Orange Asteroidea; 12 bottle brush Antipathidae; Gorgonacea;	hard bottom; rubble; Slope-moderate (<35o); Photo XS (quantitative)- resume; Rock Ledge	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79152667	-83.90055167	122.295	9/18/2011 19:11	18-IX-11-2	small gooey green algae; Gorgonacea - lavender bifurcated branches ~20 cm across - Plexauridae?; 1-2 small gooey greens in the downward shot; Bottle brush Antipathidae; <15 cm wrasse	60 - 70% hard bottom; rubble - occasional ledges; Slope- moderate (<35o); <40 cm relief;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79171833	-83.900995	121.921	9/18/2011 19:14	18-IX-11-2	Stichopathes; lobate finger sponge; Photo XS (quantitative)- pause; "Chicken foot" sponge - Axinellidae? Comatulid crinoid; Gorgonacea; yellow fin bass and sample 001 and 002 on clip DIVE 11 01.mov.	hard bottom; rubble; Slope-moderate (<35o); Photo XS (quantitative)- pause;	HB	001 002	
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79174833	-83.90097833	122.528	9/18/2011 19:25	18-IX-11-2	successfully collected 001 and 002; now trying for sample 101	hard bottom; Slope- moderate (<35o); rubble;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791735	-83.90101	122.248	9/18/2011 19:29	18-IX-11-2	resume on photo 2835.jpg; Photo XS (quantitative)- resume; filamentous Phaeophyta; bottle brush Antipathidae; tiny encrusting < 5 cm Demospongiae; 20-40 % sediment; fine turf alga; finger Aplysina; paramuricid; 20 cm short Big eye; rough tongue bass x3;	hard bottom; rubble 15-20 cm cobble; Slope- moderate (<35o); Photo XS (quantitative)- resume; higher relief spot;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79182167	-83.90108333	122.388	9/18/2011 19:32	18-IX-11-2	1/2 way along low relief ridge south of the main wall; changing course in 10 m to another bump; tatlter; wrasse bass; Gorgonacea; Antipathidae; Photo XS (quantitative)- End;	8-% hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79187333	-83.90120333	122.715	9/18/2011 19:34	18-IX-11-2	Human Debris; changing course to northern track; Photo XS (quantitative)- start; #2843.jpg; yellow wrasse; anthiid RECHECK Species; small encrusting Demospongiae; scamp - File Dive11 2.mov - 15 cm scamp cat paw pattern very dark, and photo on still photo.	100 % hard bottom; 90% rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79204	-83.90116167	122.435	9/18/2011 19:38	18-IX-11-2	Reef Butterflyfish; more ledges and holes; excavated hole - 1.8 m in diam; white lavender Gorgonacea; Reef Butterflyfish; scorpean fish in downward shot; tatlter; plexaurid Gorgonacea; 2-cm Demospongiae; orange back bass;	hard bottom; rubble 25 - 30 cm; Slope- moderate (<35o); increased rigosity	HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.792295	-83.90121333	121.874	9/18/2011 19:40	18-IX-11-2	occasional small anthiid; < 5 cm green alga x 30- 40; rough tongue bass; filamentous Dictyota; Phaeophyta; plexaurids Gorgonacea; Reef Butterflyfish; basketstar on Gorgonacea; baby bank butterfly fish; scorpionian fish; (Purposefull shots - remove from XS) -	80-90% hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79266833	-83.901035	119.912	9/18/2011 19:43	18-IX-11-2	continue on: rough tongue bass; tattler; rough tongue bass; yellow wrasse RECHECK Species; Stichopathes;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79295	-83.901295	124.677	9/18/2011 19:45	18-IX-11-2	tattler;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79296333	-83.90127833	125.705	9/18/2011 19:46	18-IX-11-2	going 20 m to the NW to go threw hole; Photo XS (quantitative)- pause; ridge on the Sonar;	hard bottom; rubble; Slope-moderate (<35o); Photo XS (quantitative)- pause;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79300333	-83.90133667	125.798	9/18/2011 19:47	18-IX-11-2	170 m to wall; Human Debris - pipe with eel; current is ~0; DIVE11 6.mov.	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79288667	-83.90120167	124.817	9/18/2011 19:50	18-IX-11-2	hole and grouper; clip dive11 7.mov - 50 cm scamp cat paw pattern - RECHECK Species may be a yellow mouth;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79319	-83.90173	123.789	9/18/2011 19:52	18-IX-11-2	poor signal on track point; continuing north; Human Debris; bank butterfly; 125 m ; Demospongiae - Aplysina yellow; Photo XS (quantitative)- resume;	100 %hard bottom; rubble and ledges; Slope- moderate (<35o); 50 cm releif with pits and hole; Photo XS (quantitative)- resume;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79321667	-83.90143	125.237	9/18/2011 19:54	18-IX-11-2	tracking resumes; Geodia Demospongiae; yellow fin bass RECHECK Species; rough tongue bass; depressions on the Sonar;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.793325	-83.901535	123.462	9/18/2011 19:56	18-IX-11-2	resume ship @ .4 kts; filamentous Phaeophyta; tattler; wrasse bass; small encrusting Demospongiae;	hard bottom; rubble; Slope-moderate (<35o); (30% sediment)	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79347833	-83.901595	125.424	9/18/2011 19:59	18-IX-11-2	turning due north; sample 201109182001 from last dive - astrophorid; tattler; same depth as other ridge from past dive; tattlers are quite large;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79367167	-83.90152833	127.106	9/18/2011 20:01	18-IX-11-2	filimentous Phaeophyta; yellow Demospongiae; anthiids; Photo XS (quantitative)- pause; stopping to collect 003 DIVE11 10.mov for both fish and sample 001; still images of 001	90% hard bottom; rubble; Slope-moderate (<35o); 30 cm releif;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.793805	-83.901345	127.199	9/18/2011 20:05	18-IX-11-2	loss power - doing a reset; cidaroid urchin; NO RESPONSE FROM still CAMERA;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.793845	-83.9014	127.386	9/18/2011 20:08	18-IX-11-2	reseting still camera data/time	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79381167	-83.90138833	128.32	9/18/2011 20:13	18-IX-11-2	looking at Ellisellidae - Junicella sp. (Ellisella?) Gorgonacea;	hard bottom; rubble; Slope-moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79380667	-83.90137167	127.199	9/18/2011 20:14	18-IX-11-2	Photo XS (quantitative)- resume; running transect north;	hard bottom; rubble; Slope-moderate (<35o) running NE to SW @ 20 o;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79380333	-83.90134167	127.246	9/18/2011 20:15	18-IX-11-2	filimentous Phaeophyta; coming up ridge ... 1 m;	hard bottom; 60-70% rubble; Slope-moderate (<35o); 30-40 cm releif	HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.793935	-83.90143	123.929	9/18/2011 20:16	18-IX-11-2	top of wall; solid rock few bolder and many pock marks; 1.5 m high - wall is ~ 5-6 m high; wrasse bass; bottle brush Antipathidae; lionfish 15 cm; Asteroidea; encrusting small Demospongiae; more Crustose Coralline Algae 5-10 % cover; bright yellow Demospo	hard bottom; rubble; Slope- steep (>35o); Rock- wall;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79398	-83.9013833	119.726	9/18/2011 20:19	18-IX-11-2	Gorgonacea; bottle brush Antipathidae; Human Debris; tatlter bass; Asteroidea; spotfin hogfish; bank butterfly; big eye; Photo XS (quantitative)- End;	hard bottom; Rock; Rock- wall 8 m tall; Slope- steep (>35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79424	-83.901455	119.445	9/18/2011 20:22	18-IX-11-2	Human Debris; top of rock ledge feature; Ellisella; tiny fish - antheads; set down on bloom to zoom; Gorgonacea with basket stars; bottle brush Antipathidae; wrasse bass - file DIVE 11 12.mov. Current .8 kts; comatulid crinoid;	hard bottom; Rock; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79423333	-83.90138	117.81	9/18/2011 20:26	18-IX-11-2	wrasse bass; Stichopathes; along edge of wall toward NW; Steeply sloped; and are more gentle with sediment; lots of Antipathidae; wrasse; bridled goby RECHECK Species;	hard bottom; Rock; Rock- wall; Slope- steep (>35o) - ~ 60o; wall continues to go up in front with rock ledges and outcrops; high relief > 1 m	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79457167	-83.90177167	121.033	9/18/2011 20:29	18-IX-11-2	sediment covered hard bottom; wrasse; move 30 m due north for next WP;	hard bottom; Rock- wall; Rock; Slope- steep (>35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79461833	-83.90182	120.006	9/18/2011 20:31	18-IX-11-2	wrasse bass; were on top of wall	hard bottom; Rock; rubble; Slope- steep (>35o) - ~ 60 o slope;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79482167	-83.90184	110.944	9/18/2011 20:32	18-IX-11-2	Stichopathes in main view; small gooey green; encrusting orange Demospongiae; fine filamentous Phaeophyta; 30% sediment;	hard bottom; pocks in hard bottom; Slope- moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79487667	-83.90186333	111.364	9/18/2011 20:34	18-IX-11-2	turning to NW - Photo XS (quantitative)- start; rough tongue bass; squirrel fish; large grouper 60 cm - pointy tail tips ahead of us RECHECK Species; ledges and sand patches; small yellow wrasse; more 5m green algal - 5% cover; rough tongue bass; lionfish	hard bottom; Rock; Slope- moderate (<35o); Photo XS (quantitative)- start; - along top of wall;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79498667	-83.90213833	111.878	9/18/2011 20:37	18-IX-11-2	corallimorph or sea pansy purposful photos - 6 cm dark purple with pink tips - DIVE11 14.mov	hard bottom; Rock; rubble;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.795035	-83.90219833	111.971	9/18/2011 20:38	18-IX-11-2	Photo XS (quantitative)- resume; small fish; rough tongue bass; bottle brush Antipathidae; more ledge and crevices;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79507	-83.90225167	111.318	9/18/2011 20:39	18-IX-11-2	grouper in distance; triton shell - DIVE11 15.mov Photo XS (quantitative)- pause;	hard bottom; Rock; rubble; Slope- steep (>35o);	HB		003
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79512333	-83.90231833	110.103	9/18/2011 20:41	18-IX-11-2	Photo XS (quantitative)- resume; Vertigellis - gooey green algae; tattler; green banned wrasse; Gorgonacea; basketstars;	hard bottom; Rock- wall; Slope- moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79502167	-83.90247167	112.298	9/18/2011 20:42	18-IX-11-2	2 scamp; DIVE11 18. Mov; wall is starting to recede to the north; - fix may not be real - bad tracking; Spongosorites x6; Antipathidae; drop off to the left; wrasse bass; green band wrasse	hard bottom; rubble; Slope- moderate (<35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79517167	-83.90261167	111.785	9/18/2011 20:45	18-IX-11-2	deep crevice that drops 2 m to sandy bottom NW to SW; flying along northern side;	hard bottom; Rock- wall; Slope- steep (>35o);	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79527167	-83.90262	111.691	9/18/2011 20:47	18-IX-11-2	switching to tape 26; along upper edge of the deep wall; bethany logging; john annotating; Photo XS (quantitative)- start; photo 2965;		HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79528	-83.90262167	111.224	9/18/2011 20:50	18-IX-11-2	rougtongue bass; small encrusting sponges; small anthiids; 30-45 degree slope; black coral and Stichopathes; 2 more rougtongue bass; spotted eel; heading is North, current is coming from the right; on the rock we have incrusting Corallinales-Peyssonnel	hard bottom; 50-70% Rock; cobble; pavement; 20-30cm rock outcrops	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79536	-83.90270833	112.252	9/18/2011 20:53	18-IX-11-2	halfway along the northern oriented wall; bank butterfly; small atheids; wrass; a few small gorgonians 15cm; hydroids; Stichopathes; rougtongue bass; green band wrass; Reef Butterflyfish; large Scamp 30-40cm; approaching the wakepoint where we will turn		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79564	-83.90280833	110.383	9/18/2011 20:55	18-IX-11-2	more rougtongue bass; anthiids; wrass bass; squirrelfish; rock fairly smooth;	Rock; cobble	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79584167	-83.90288667	109.87	9/18/2011 20:57	18-IX-11-2	quite a bit of Verdigellas; 30 degree drop off; 2m drop into sand bottom; Dictyota;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.795865	-83.90293333	110.991	9/18/2011 20:58	18-IX-11-2	according to the multibeam, we are at the apex of the northern wall; changing heading, heading almost due west; mostly small encrusters; small red and orange encrusting sponges; another spotted moray; 3 squirrelfish; wrasses		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796115	-83.90312333	110.15	9/18/2011 21:00	18-IX-11-2	dense (10cm) Verdigellas; smooth rock with a little relief dropping off 30-40 degrees; coming around to head about westerly; wrass bass; various 10-15 cm gorgonians, probably nicella; other common incrusters Verdigellas, orange and yellow encrusters, squi		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796125	-83.90337	109.87	9/18/2011 21:02	18-IX-11-2	3 Scamp, 40-50 cm; at least 2 warsaw grouper 40-50cm, half meter relief top of the wall; speckled hind about 50cm; 2 lionfish; rock outcrops about 50cm relief; large fish out in the distnace just outside our visibility; squirrelfish		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79607333	-83.90356	109.636	9/18/2011 21:07	18-IX-11-2	6 Scamp; 2 or 3 snapper, probably dog snapper; large grouper in the distance;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79598333	-83.90358833	112.532	9/18/2011 21:09	18-IX-11-2	good sized probably dog snapper; rocks incrustated with dense population of gorgonians 2-3 species; red incrusting sponges possibly hallicia(?); crinoids; lionfish; 50 cmScamp; giant gag 60-70cm; another lionfish		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79603167	-83.90364833	111.318	9/18/2011 21:15	18-IX-11-2	more and more Scamp;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796015	-83.90365833	111.224	9/18/2011 21:16	18-IX-11-2	about 3 blue angelfish; lots of Scamp; another speckled hind;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79594167	-83.90391	112.112	9/18/2011 21:17	18-IX-11-2	moving again; continuing phototranssect photo number 2977; Scamp; traveling westerly on the top edge of the wall;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79595333	-83.90414667	110.15	9/18/2011 21:19	18-IX-11-2	2 Scamp;		HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79615833	-83.90423333	111.411	9/18/2011 21:20	18-IX-11-2	going down the base of the wall a little deeper, still doing phototransect;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796025	-83.904455	116.409	9/18/2011 21:21	18-IX-11-2	going along the base of the wall;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79591667	-83.90441	119.165	9/18/2011 21:22	18-IX-11-2	in a sediment slope; Stichopathes	mostly sediment; a little bit of rubble;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79602667	-83.9046	119.632	9/18/2011 21:24	18-IX-11-2	tatler; 3 roughtongue bass;	30% rock rubble cover; rest is a fine white sediment	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79607667	-83.90464167	118.745	9/18/2011 21:25	18-IX-11-2	josh is annotating		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79614333	-83.90470333	117.11	9/18/2011 21:26	18-IX-11-2	working back up from the base; Stichopathes; almost 100% sediment, slope 60%		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796185	-83.90474333	115.195	9/18/2011 21:26	18-IX-11-2	as we work our way up getting more hard bottom; yellow sponges; green band;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79611	-83.90478667	111.971	9/18/2011 21:27	18-IX-11-2	top of the slope; 1 short bigeye; roughtongue bass;	rock pavement with depressions	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796095	-83.905025	113.186	9/18/2011 21:29	18-IX-11-2	Stichopathes; little yellow wrass;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796025	-83.90512167	116.269	9/18/2011 21:30	18-IX-11-2	drifted back off the top of the ledge, working the top of the wall; bouncing to the northwest; tatler;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79613	-83.90525333	115.755	9/18/2011 21:32	18-IX-11-2	squirrelfish; rough tongue; lots of green algae on the bottom, Verdigellas; yellow sponge;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79600667	-83.90539167	120.987	9/18/2011 21:35	18-IX-11-2	very little biota except for common Stichopathes 30-40 cm [date/time added post cruise - estimated]	sediment	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79608833	-83.90545333	118.698	9/18/2011 21:36	18-IX-11-2	Dictyota; fine algae on the sediment;	100% sediment sample	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79616	-83.90550167	118.371	9/18/2011 21:37	18-IX-11-2	back at the base of the wall;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79638833	-83.90556333	118.931	9/18/2011 21:38	18-IX-11-2	2 roughtongue bass; lots of small orange incrusting sponges; rock ledges about 40cm relief; multiple small green algae, possibly Verdigellas; quick view of a red fish;	80% hard bottom; Rock; rubble;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79644	-83.90568	114.914	9/18/2011 21:40	18-IX-11-2	ship has made their shift back toward 300 degrees		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79649333	-83.90571833	114.073	9/18/2011 21:41	18-IX-11-2	lots of Verdigellas in the downward; Stichopathes; a few Aplysina; bank butterflyfish; baby tatler bass;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79652167	-83.905795	113.606	9/18/2011 21:42	18-IX-11-2	filamentous brown algae; Verdigellas; Scamp; red colored snapper about 20-25 cm, deep red fading to white at the throat, forked tail, mostly-like a silk snapper;	80% hard bottom; Rock rubble; Rock ledges; 40-60cm relief	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79651667	-83.90590333	113.747	9/18/2011 21:44	18-IX-11-2	continuing on the same course		HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79651167	-83.90595	113.933	9/18/2011 21:45	18-IX-11-2	a few small gorgonians; short bigeye;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79650167	-83.90608167	114.12	9/18/2011 21:46	18-IX-11-2	2 roughtongue bass; wrass bass; 20-30cm band sponges attached along the base, could be raspalliidae or hexactinellida	100% hard bottom; rubble; pavement; less than 20cm relief; less than 35% slope	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79651833	-83.90622667	115.008	9/18/2011 21:49	18-IX-11-2	sample #4: starting collection 10cm tall about 30 cm wide, tan with spicule fringe, uncommon to rare, top of the brow of the wall,		HB	004	
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79648167	-83.90630833	116.97	9/18/2011 22:02	18-IX-11-2	continuing on transect line; Stichopathes; scorpionfish; 2 lizardish; roughtongue bass	100% hard bottom; with sand overtop; slope about 40 degrees	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796405	-83.90643167	118.745	9/18/2011 22:04	18-IX-11-2	turning towards due west; down near the base of the wall; pretty big features coming up in front of us; 2 m tall rock directly in front of us right at the base of the wall;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796335	-83.906485	122.622	9/18/2011 22:06	18-IX-11-2	wrass; back to the base of the wall; Stichopathes; 6 rough tongue bass; 2 tatlter, one really big; another of sample 4; lots of small branching gorgonians mostly fine branches less than 5 cm tall; bank butterfly;	transitioning from sediment to hard bottom	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79641667	-83.90666167	120.052	9/18/2011 22:09	18-IX-11-2	loss of power; power reboot		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79645	-83.90672833	118.885	9/18/2011 22:13	18-IX-11-2	back underway; taking phototransect E to W;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79644167	-83.906795	117.764	9/18/2011 22:14	18-IX-11-2	big fish in the background; 3 regular bigeyes; pinkish snapper (probably blackfin snapper) of some sort; lots of orange encrusting sponges; gorgonians; lots of tiny wrasses; lots of brown algaeae, Verdigellas; blenny in the downward	70-80% hard bottom; 40-50 cm relief	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79647	-83.90720833	116.643	9/18/2011 22:18	18-IX-11-2	tatlter bass; bank butterflyfish; as we move to the West, the top of the wall is sloping downward, now about 115, slope of about 30 degrees;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.7965	-83.90734	116.829	9/18/2011 22:19	18-IX-11-2	very small cup coral in the downward view; small antipathid gorgonian with basketstar, plenty of roughtongues;		HB		Coral- Cup coral
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79648333	-83.90747833	117.53	9/18/2011 22:20	18-IX-11-2	in a bit of a crevice, 1 m relief top to bottom, WNW to ESE, 3-4 m wide; squirrelfish; occasional gorgonians; small anthiids; roughtongue bass; few wrasses; Stichopathes;	90% hard bottom; 10% sediment	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79639333	-83.90772	117.67	9/18/2011 22:23	18-IX-11-2	small school of fish, not sure what kind; coming up upon a whole at the base of the wall, wall extending to the right, lots of small very hard to identify small fish; at least 20 snapper and scamp; fishing debris on the ground, longline; big scamp		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79644167	-83.90787833	116.549	9/18/2011 22:25	18-IX-11-2	rocky outcropping at the wall, large rock boulders; seen a number of probably blackfin snapper; a number of Scamp as well, one about 60cm; ship stopped to poke around, getting close to the end of the dive		HB		

Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79650667	-83.907965	117.904	9/18/2011 22:26	18-IX-11-2	Swifia; Plexauridae; lots of encrusting sponges; huge relief boulders 2.3-3 m;	100% hard bottom;	HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79643667	-83.90797833	116.035	9/18/2011 22:28	18-IX-11-2	large black Plexaurid; Scamp; snapper;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79640833	-83.907955	114.354	9/18/2011 22:29	18-IX-11-2	seen at least 8 Scamp; getting back to the school of at lease 20 snapper;		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79640833	-83.907955	114.12	9/18/2011 22:29	18-IX-11-2	more scamp; school of silk snapper, about 12 of them; lots of rock ledges 1-2 m relief; confirm on the blackfin snapper; blue angel		HB		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.796365	-83.90777333	115.195	9/18/2011 22:31	18-IX-11-2	Off bottom; stopped images at 22:38:46 pm - last image 3086.jpg		HB		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Bottom Type	Sample Notes	Coral Notes
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66259667	-83.91861167	812.682	9/19/2011 13:26	19-IX-11-1		dense bioturbations; 10-20cm pits and mounds; very fine silky clay;	SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66233833	-83.91834833	819.362	9/19/2011 13:28	19-IX-11-1	The tracking is reall ybad right now; golden or red crab Chaceon with a 10cm carapace 15cm black fish maybe some sort of rat tale;		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66229167	-83.91823667	826.462	9/19/2011 13:30	19-IX-11-1	large burrow 1m;		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66229167	-83.91823667	826.368	9/19/2011 13:30	19-IX-11-1	on bottom ; some sort of rat tale fish Nezumia? ~15cm; very slight current from the west maybe .25 knots;	soft bottom; the sediment is very fine; very little carbonate shells; sediment piled up form some sort of polycheate	SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66168167	-83.91727333	826.929	9/19/2011 13:38	19-IX-11-1	red shrimp about 10cm reddish purple on top; squid came across video		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66217167	-83.91752	820.95	9/19/2011 14:02	19-IX-11-1	Photo XS (quantitative)- start with photo 3120; we changed the shutter speed to 1/250 of a second- it was too bright ; heavy bioturbation; 50cm mounds and pits; no evidence that it's tilefish burrows, so probably infaunas;	fine white silky clay; hole; mounds and pits;	SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66237833	-83.91755333	811.935	9/19/2011 14:06	19-IX-11-1	probably Acanthacaris burrow; Slope- steep (>35o); big burrow 10-15 - 80m crater;		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66233167	-83.91745667	802.592	9/19/2011 14:11	19-IX-11-1	shrimp; squat lobster; yellow/orange 1m whip coral- for sure Cnidarian; vertical clay wall		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66226333	-83.91776	793.671	9/19/2011 14:26	19-IX-11-1	yellow plexaridae gorgonian; squat lobster;	70 degree slope pocketed with burrows and holes; part of it is clay and part of it is solid rock; where there is black there's rock escarpments;	HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66236833	-83.91767833	794.044	9/19/2011 14:30	19-IX-11-1	sea whip pink colored black coral;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66261	-83.91787667	786.991	9/19/2011 14:35	19-IX-11-1	sample 002 is Hyalonema; stalking encrusted over with orange zoanths; Antipathidae; Antipathes bicornada(?); lower third of this sediment slope;	1-2m boulder; 45 degree slope; sediment between the boulders	HB	002	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66272167	-83.91765833	785.73	9/19/2011 14:40	19-IX-11-1	15 cm white planar gorgonian; 1/2 dozen species of cnidaria; hexactinellid sponges;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.662495	-83.91798167	779.471	9/19/2011 14:47	19-IX-11-1	Different Hyalonema 30cm stalk with white cup-shaped head and yellow zoanths on stalk; .5 knot current from the west; 20cm stalk with little branches- Hexactinellid;	fine white silky clay;	SB		

Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66234167	-83.91811333	779.517	9/19/2011 14:56	19-IX-11-1	60cm Paramuriceidae tall fan-shaped short curved branches orange, long .5cm tubular polyps	soft bottom;	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66244	-83.91806167	779.003	9/19/2011 15:00	19-IX-11-1	sample 003; what's left of the Hyalomema stalking with zoanths on it with scale worms on the stalk ; Nezumia present; Acanthacaris- lobster;		SB	003		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66232	-83.91812	778.583	9/19/2011 15:10	19-IX-11-1	continuing with sample collection; squid; squat lobster; large yellow gorgonian sea fan; surface current is about 1.5 knots;		SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.662655	-83.91773667	778.396	9/19/2011 15:27	19-IX-11-1	blind white lobster about 15-20cm Acanthacaris ceaca		SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66250667	-83.91788167	775.266	9/19/2011 15:30	19-IX-11-1		rock ledges; terrace slope;	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66259833	-83.917995	776.808	9/19/2011 15:33	19-IX-11-1	Rattail and a Green eye fish- Chlorophthalmus; another rat tail fish;		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66235833	-83.91748	776.574	9/19/2011 15:36	19-IX-11-1	sea fan gorgonian; Chrysogorgia; squat lobster on a gorgonian;	going on a vertical rock wall	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66252667	-83.91784667	767.699	9/19/2011 15:53	19-IX-11-1	crinoid creature;		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66287833	-83.91767	758.404	9/19/2011 16:06	19-IX-11-1	~12 crinoids;	soft bottom; fine white silky clay;	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66261167	-83.91779833	756.068	9/19/2011 16:11	19-IX-11-1	Collect 006	hard bottom; Rock- wall; Slope- steep (>35o);	HB	006		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.6624	-83.91814167	758.31	9/19/2011 16:26	19-IX-11-1	stopper 12 recovered;	hard bottom; Rock- wall; Slope- steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66203333	-83.91771333	756.395	9/19/2011 16:27	19-IX-11-1	Photo XS (quantitative)- start; starting on photo; 3154.jpg; starting trans 750; dense bioturbation 10-30 cm pits and mounds; acanthacaris burrows; were on on the light blue slope on the sonar; rat tail; squid	hard bottom; Rock- wall; Slope- steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66259667	-83.91801333	747.894	9/19/2011 16:30	19-IX-11-1	changing tapes; 20o camera angle	soft bottom; Rock- wall; Slope- steep (>35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66307	-83.91742	746.82	9/19/2011 16:31	19-IX-11-1	eyeballs - white squid in sediment; changing colors to red; shrimp; rattail; nuzumia; eel; crinoid;	soft bottom; Slope- steep (>35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66353167	-83.91754	731.031	9/19/2011 16:46	19-IX-11-1	squid; Bathynomus giganteus on video - 30 cm; Chaunax and a school of squid;	soft bottom; fine white silky clay; Slope- steep (>35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66336667	-83.91821667	730.844	9/19/2011 16:53	19-IX-11-1	squid and tri pod; Photo 3165.jpg;	soft bottom; fine white silky clay; Slope- moderate (<35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66396	-83.91824333	722.577	9/19/2011 16:58	19-IX-11-1	squid; half way across the lower slope; 150 m to the wall; squid ink; Nezumia;	soft bottom; fine white silky clay; Slope- moderate (<35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66408	-83.91814667	718.513	9/19/2011 17:00	19-IX-11-1	Bathynomus giganteus; 60 m from wall;	soft bottom; fine white silky clay; Slope- moderate (<35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66411	-83.91813333	718.186	9/19/2011 17:02	19-IX-11-1	moving on again; base of wall is 690; Acanthacaris; bioturbation is inceasing; Nezumia;	soft bottom; fine white silky clay; Slope- moderate (<35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66434333	-83.91795667	710.338	9/19/2011 17:06	19-IX-11-1	ledge is 60 yds away; Nezumia;	soft bottom; fine white silky clay; Slope- moderate (<35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66441	-83.91785667	706.882	9/19/2011 17:08	19-IX-11-1	Slope- moderate (<35o); 50 % cover of cobble; tunicate and hydroids; definite Lophelia and solitary coral rubble; stopped for 202 and sample 007;	soft bottom; fine white silky clay; coral rubble;	SB	007 & 202	Coral- Lophelia; Coral- coral rubble	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.664325	-83.91799833	707.536	9/19/2011 17:24	19-IX-11-1	Chaunax; Coral- coral rubble;	soft bottom; fine white silky clay; coral rubble; Slope- moderate (<35o);	SB		Coral- coral rubble	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.664445	-83.91797833	701.463	9/19/2011 17:25	19-IX-11-1	ledge wall ahead; rock slabs - 20-30 cm thick; 1-3 m large; Slope- steep (>35o); large rock slabs and ledges with sediment between;	hard bottom; Rock- wall; Slope- steep (>35o);	HB			

Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66454833	-83.91807	700.716	9/19/2011 17:28	19-IX-11-1	60o slope near vertical slope - going to move up the wall and transect along the wall; on the multibeam we are on top of the wall; pile of coral rubble that burrowed out and of consolidated vertical shaft - very smooth; consolidate clay;	hard bottom; Rock- wall; Slope-steep (>35o);	HB			Coral- Coral rubble
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66462167	-83.9179	693.336	9/19/2011 17:39	19-IX-11-1	occasional navigational errors in the track;	soft bottom; Slope- steep (>35o);	SB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66482	-83.91846667	701.557	9/19/2011 17:45	19-IX-11-1	Acanthacaris;	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.665035	-83.91856333	694.597	9/19/2011 17:47	19-IX-11-1	Acanthacaris; go towards wall and stopping to collect whip coral	hard bottom; Rock- wall; Slope-steep (>35o);	HB	009		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.665245	-83.91864833	690.953	9/19/2011 17:56	19-IX-11-1	done collecting; back to wall; heading strait to wall; and going to travel horizontal; 70-80o slope; horizontal layering @ 688 m; light sedimeintation; sebrstrate looks like rock as opposed to clay; cont ex NW parallel to the wall;	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66536333	-83.91880167	687.357	9/19/2011 17:58	19-IX-11-1	Photo XS (quantitative)- start; Antipathidae - whips; very barren small Antipathidae; barren; ledges are 1-2 m; pocked marked; Brotrulid fish 20 cm; Hexactinellida; definite horizontal ledge about 2 m wide; very poor tracking; rat tail; Antipathidae; comat	hard bottom; Rock- wall; Slope-steep (>35o); Photo XS (quantitative)- start;	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66562333	-83.918735	679.603	9/19/2011 18:10	19-IX-11-1	moving up to 650 m; going up shelf to shallower water depth; slups out of the wall(?);	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.666145	-83.91887333	665.916	9/19/2011 18:26	19-IX-11-1	yellow gorgonian - plate like branches; bi lateral < 1 cm wide ~ 20 cm tall - yellow	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66600833	-83.91884667	668.625	9/19/2011 18:29	19-IX-11-1	consolidated clay and carbonate - highly eroded - still collecting 010; Hexactinellida; not getting digtal photos on the wall;	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.665965	-83.91910667	669.98	9/19/2011 18:30	19-IX-11-1	cerianthid; corallimorph; crinoids; antipatharians; squid;	hard bottom; Rock- wall; Slope-steep (>35o);	HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.666715	-83.91919667	643.168	9/19/2011 18:53	19-IX-11-1	Stichopathes; gorgonians; heading to the top of the ledge		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66703	-83.91947	641.019	9/19/2011 18:58	19-IX-11-1	10 m ledge; squid in the downward		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66746833	-83.91962167	632.144	9/19/2011 19:12	19-IX-11-1	start more downward photos; Photo XS (quantitative)- start; starting at photo number 3185; brotulid;		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.667775	-83.91974333	634.013	9/19/2011 19:18	19-IX-11-1	moving back to the edge; golden crab;		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66772833	-83.91952	632.378	9/19/2011 19:22	19-IX-11-1	snapping pictures along the margin of the wall; many gorgonians; break right at 232; on the top of the break continues upward at a much gentler slop about 10-20 degrees with roughly all sand; squid; orange Stichopathes; a couple paramericeid greenish yell		HB			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66817	-83.91980167	632.565	9/19/2011 19:24	19-IX-11-1	trying to collect a possible holothuroidea;		HB	012		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66839333	-83.92018	630.836	9/19/2011 19:49	19-IX-11-1	start working towards the SSE; another jellyfish guy; lots of erosion in the rock; 50cm tall, multiple branches 1-2cm long, burnt orange antipathid; primnoid gorgonians; another galatheid; lots of Stichopathes;	100% sediment; 20% slope	SB			

Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66768	-83.919685	632.752	9/19/2011 19:53	19-IX-11-1	pretty much lost our angle in our downward facing shot, probably only getting half benthos, half water column;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66795	-83.91962167	631.537	9/19/2011 20:01	19-IX-11-1	changing our heading; heading back NW; lots of hydroids;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66878667	-83.91974	631.444	9/19/2011 20:08	19-IX-11-1	golden crab Chaceoni; another fish of some sort; crinoid in sediment just off the edge; facing about 30 degrees; but moving laterally at 330		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66868667	-83.91970833	630.229	9/19/2011 20:09	19-IX-11-1	large anemone more than 20cm across; top of the wall is getting about a m or 2 shallower; more large branching gorgonians; 2 squid		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.668905	-83.919725	628.501	9/19/2011 20:26	19-IX-11-1	continuing along the top of the wall; big beautiful sea star probably Brisinga; lion lobster; stylaster; 2 Beryx; Stichopathes; Antipathes; yellow branching gorgonians; golden crab; the top of the wall is continuing upward; another lion lobster; another		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66968333	-83.92049167	626.632	9/19/2011 20:31	19-IX-11-1	flying along the top of the wall; lots of envagination; lots of CaCO ₂ ; 4 crinoids; a couple holothoridian; another lion lobster on the downview; Stichopathes; yellow sea start about 15 cm across;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.670205	-83.92087167	624.577	9/19/2011 20:34	19-IX-11-1	holothoridian; Stichopathes; crinoid		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.670205	-83.92087167	624.577	9/19/2011 20:34	19-IX-11-1	moving up further north, looks like there might be a secondary ridge on the sonar; rubble pile; kind fo a line of rubble that parallels the top of the wall; 40-60cm relief; soft sediement on both sides; lion lobster Acanthacaris caeca; brotulidae fish;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.67059333	-83.92138333	624.203	9/19/2011 20:39	19-IX-11-1	Beryx; wall just went instantly vertical; secondary little ledge just off the top of the wall; lacy little sponges we collected earlier; purple branching gorgonians; corallimorph; sheer vertical about 80 degree slope; crinoid; Stichopathes;		HB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.67069667	-83.92168667	631.163	9/19/2011 20:42	19-IX-11-1	4 squid; Antipathes bipinnata;		HB		