# **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

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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 Pourtalès Terrace which is south of the Florida Keys and is reported separately. 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<sup>©</sup> 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 (<a href="www.cioert.org/FLoSEE2">www.cioert.org/FLoSEE2</a>); 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 km<sup>2</sup> (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 1m 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.

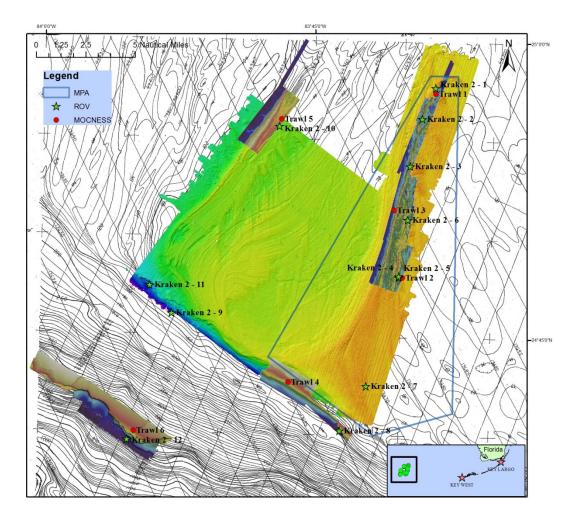


Figure 1. Region of the CIOERT Florida Shelf-Edge Exploration II (FLoSEE) Cruise on southern Pulley Ridge, September 12-19, 2011. Green stars- *Kraken 2* ROV dive sites, red dots-MOCNESS trawl sites, blue polygon- Pulley Ridge Habitat Area of Particular Concern (HAPC); background multibeam sonar map- 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	<b>Product Description</b>	Format	MD	Archive	Date
			rec.		Submitted
Data	ROV video- digital copies of	DVD, hard	Y	NCL	9/30/12
Data	all ROV dives	drive	1	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
	MB- processed files	CARIS,			
Data	(corrected for tides and sound	HDCS, XYZ,	Y	NGDC	9/30/12
	velocity)	ASCII			

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
Chin	MB- processed files (corrected for tides and	CARIS, HDCS,XYZ
Ship	sound velocity)	(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 Pourtalès 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).

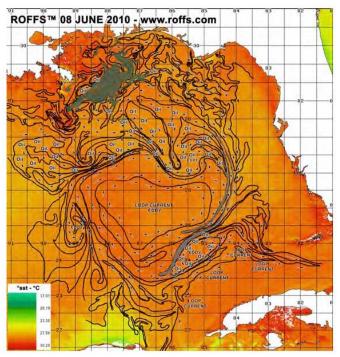


Figure 2. Surface currents and oil distribution in eastern Gulf of Mexico following the British Petroleum's Deepwater Horizon oil spill (from Roffer's Ocean Fishing Forcasting Service, Inc., June 8, 2010).

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 Pourtalès 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 quantity 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	CO, MOC
	Operations Center – Atlantic	
LT Joshua Slater	NOAA Ship Nancy Foster	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

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<sup>®</sup> 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  $\sim 1/4-1/2$  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 $^{\odot}$  (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 $^{\circ}$  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<sup>TM</sup> 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<sup>TM</sup> file. These video files can be played back and viewed on a Mac or PC with a standard QuickTime<sup>TM</sup> 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 cm<sup>2</sup> 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 having 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

- nmi<sup>2</sup>) 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 (<a href="www.cioert.org/FLoSEE">www.cioert.org/FLoSEE</a>) resembled the FLoSEE 2010 expedition web site (<a href="www.cioert.org/FLoSEE">www.cioert.org/FLoSEE</a>) 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**<sup>TM</sup> **to High School Students** – With NOAA's approval to permit Skype<sup>TM</sup> on the ship, a 30-minute Skype<sup>TM</sup> 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**

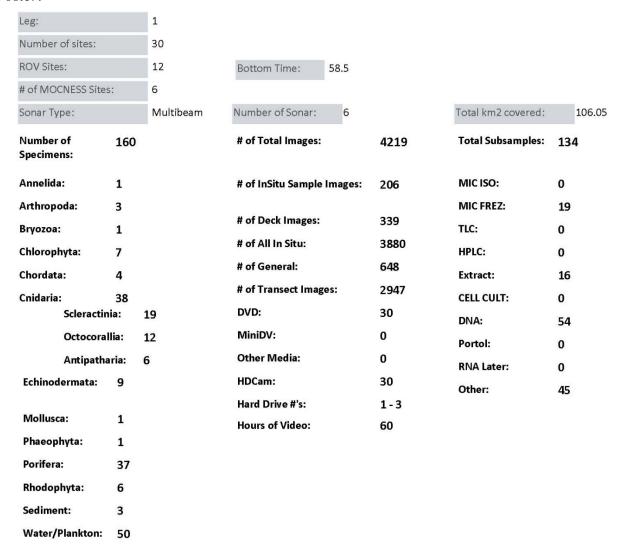
The student reports that resulted from this cruise are the following which will be presented in the Final Cruise Report:

- 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*.



## **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

September	r 12-19, 2011	, includ	ling RO	V dives, CI	D 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. Anadyonome 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 dominanted 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<sup>©</sup> 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:

<u>Leg 1 (CIOERT)</u>: 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).

<u>Leg 2 (NOAA DSCRP)</u>: 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	Anthias nicholsi	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	Antipathes hirta	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	Madrepora carolina	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	Asteroschema 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	Nicella guadalupensis	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	Spongosorites sp.	Kraken 2 - 10	83.5
18-IX-11-1-009	Porifera	Agelas sp.	Kraken 2 - 10	83.5
18-IX-11-1-010	Porifera	Discodermia 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	Theonella 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.

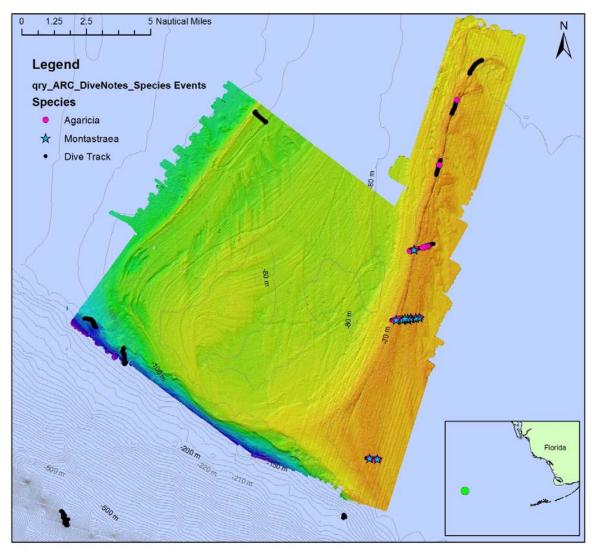


Figure 11. *Montastraea* and *Agaricia* coral observations on Pulley Ridge with *Kraken* 2 ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.



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

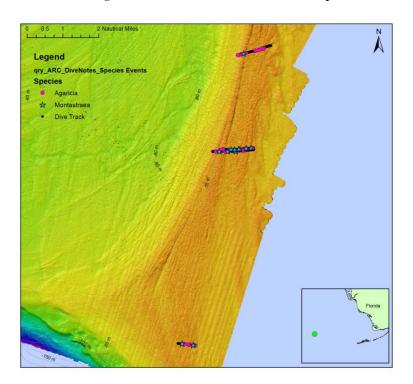


Figure 13. Montastraea and Agaricia coral observations, close-up of southern Pulley Ridge.

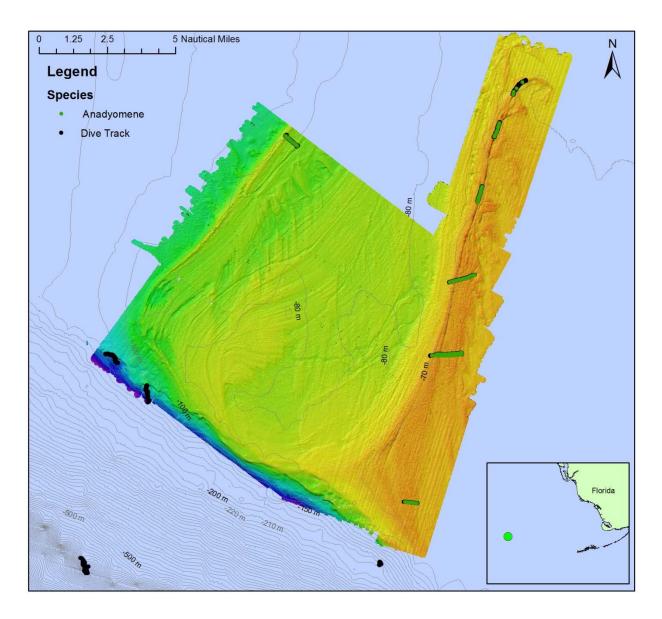


Figure 14. *Anadyomene* green algae observations on Pulley Ridge with *Kraken* 2 ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

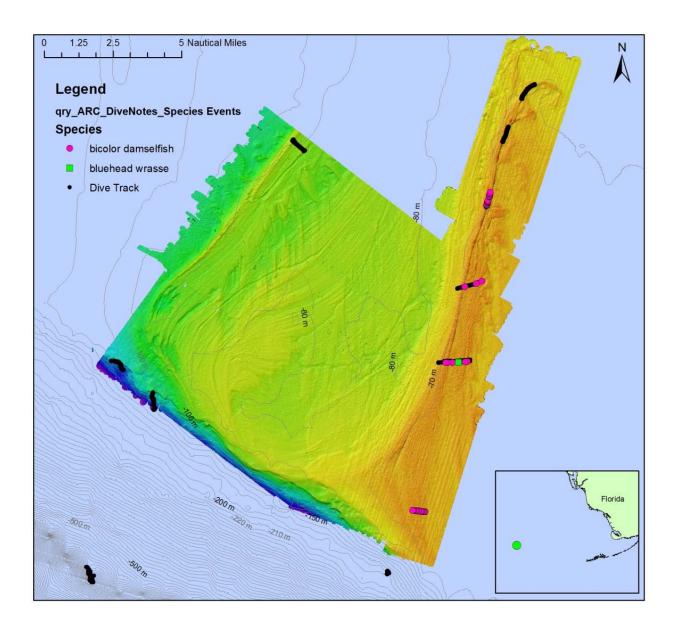


Figure 15. Bicolor damselfish and bluehead wrasse observations on Pulley Ridge with *Kraken* 2 ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

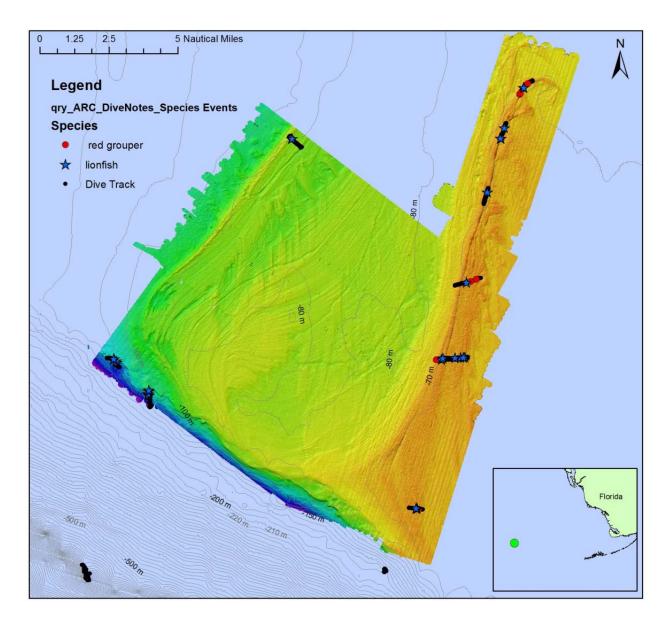


Figure 16. Red grouper and lionfish observations on Pulley Ridge with *Kraken* 2 ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

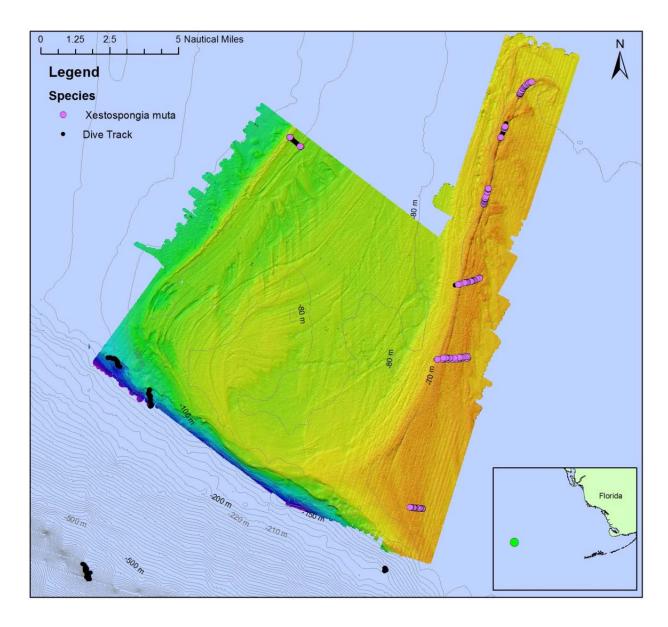


Figure 17. *Xestospongia muta* barrel sponge observations on Pulley Ridge with *Kraken* 2 ROV during Leg 1 of FLoSEE II cruise, September 12-19, 2011.

#### 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 bentho-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:

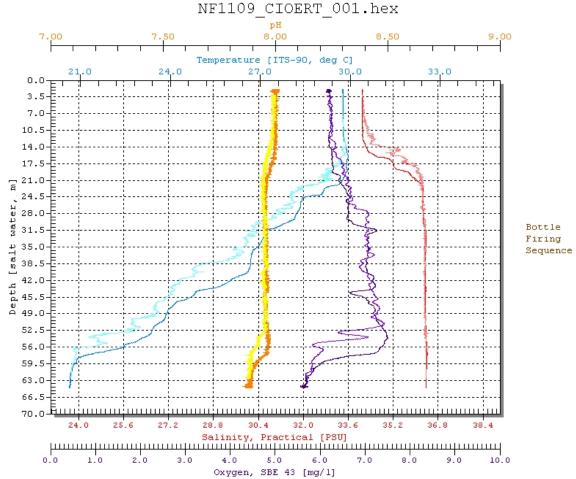


Figure 18. CTD cast on Pulley Ridge HAPC.

# 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.

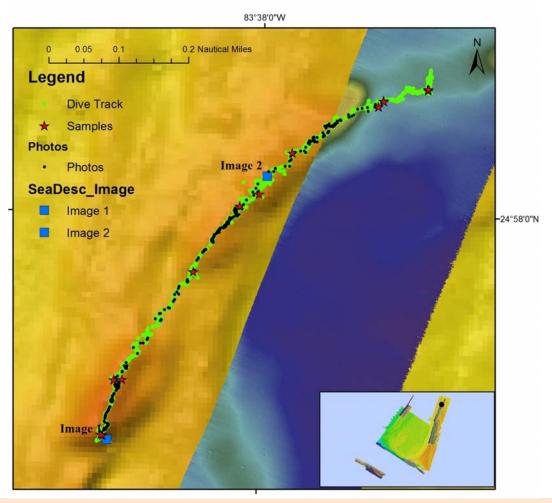
## **ACKNOWLEDGMENTS**

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

Location: Florida, Pulley Ridge HAPC; main ridge Dive Number: Kraken 2 - 1



#### **Dive Overview:**

**Date Compiled:** 

Project:	NOAA CIOERT DSCRP FLOSEE II Sensors Used:	No Sensors Used
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**Principal Investator: Digital Photos:** 366 John Reed

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 0

FL 34946 **HDCam:** 4 **Purpose:** CIOERT Y3 Field Research

DVD: 4 **Expedition** www.cioert.org\flosee2 **Specimens:** 17

2/17/2012

Dive #: Kraken 2 - 1 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge HAPC; **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_Nor

main ridge th\_1m

Date of Dive: 9/13/2011 **Scientific Observers:** Dennis Hanisak, John Reed, **Data Management:** Access Database, WinFrog

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 1 **Location:** Florida, Pulley Ridge HAPC; main ridge

#### **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

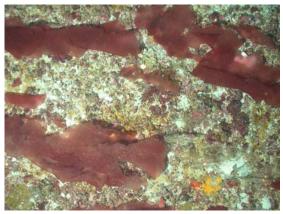


Figure 2: Large Rhodophyta blades on rock rubble habitat

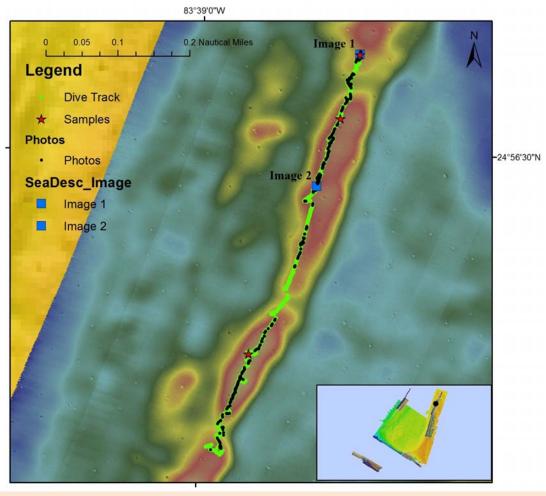
## Notes (Objectives, Site Description, Habitat, Fauna):

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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 Peyssonnellia 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 Aplydium(?). Echinodermata- Crinoidea, Asteroidea, no Echinoidea.

Location: Florida, Pulley Ridge HAPC; main ridge Dive Number: Kraken 2 - 2



## **Dive Overview:**

Date of Dive:

**Date Compiled:** 

NOAA CIOERT DSCRP FLOSEE II Sensors Used: **Project:** No Sensors Used

452 **Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 0

FL 34946 **HDCam:** 2

CIOERT Y3 Field Research **Purpose:** DVD: 2 **Expedition** www.cioert.org\flosee2 **Specimens:** 

9/14/2011

2/17/2012

Dive #: Kraken 2 - 2 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge HAPC; **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_Nor

main ridge th\_1m

**Scientific Observers:** Dennis Hanisak, John Reed, **Data Management:** Access Database, WinFrog

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

Dive Number: Kraken 2 - 2 **Location:** Florida, Pulley Ridge HAPC; main ridge

#### **Dive Data:**

Minimum Bottom Depth (m): 60 Total Transect Length (km): 1.39 Maximum Bottom Depth (m): 65 Surface Current (kn): 8.0

On Bottom (Time- GMT): 13:34 On Bottom (Lat/Long): 24°56.0890'N 83°38.9735'W Off Bottom (Time- GMT): Off Bottom (Lat/Long): 24°56.6273'N 83°38.7573'W 17:00

Physical (bottom); Temp (°C): Visibility (ft): 60 Salinity: Current (kn): 0.8



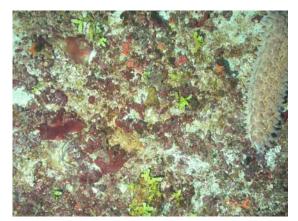


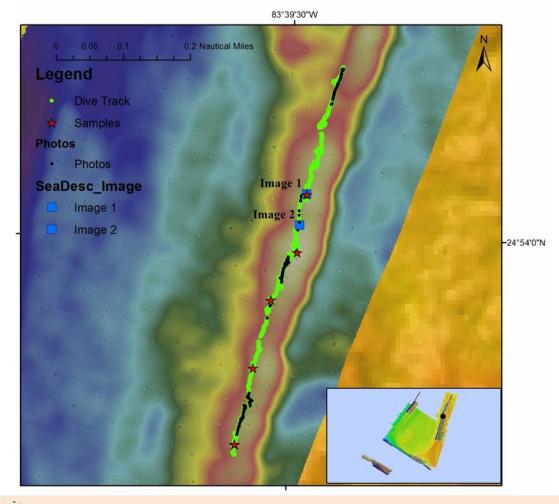
Figure 1: Leptoseris cuculata coral, Xestospongia muta Figure 2: Holothurian on rock rubble habitat sponge.

## 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 cucullatta; 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 Peyssonnellia 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.

Location: Florida, Pulley Ridge HAPC; main ridge Dive Number: Kraken 2 - 3



# **Dive Overview:**

Date of Dive:

**Date Compiled:** 

**Project:** NOAA CIOERT DSCRP FLOSEE II **Sensors Used:** No Sensors Used

264 **Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 0 FL 34946

**HDCam:** 2 CIOERT Y3 Field Research **Purpose:** DVD: 2

**Expedition** www.cioert.org\flosee2 **Specimens:** 8

9/14/2011

2/17/2012

Dive #: Kraken 2 - 3 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge HAPC; NF1109\_CIOERT\_PullyRidge\_Nor **Sonar Data:** main ridge

th\_1m

**Scientific Observers:** Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, **Data Management:** Access Database, WinFrog

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 3 **Location:** Florida, Pulley Ridge HAPC; main ridge

#### **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 Agracia sp.

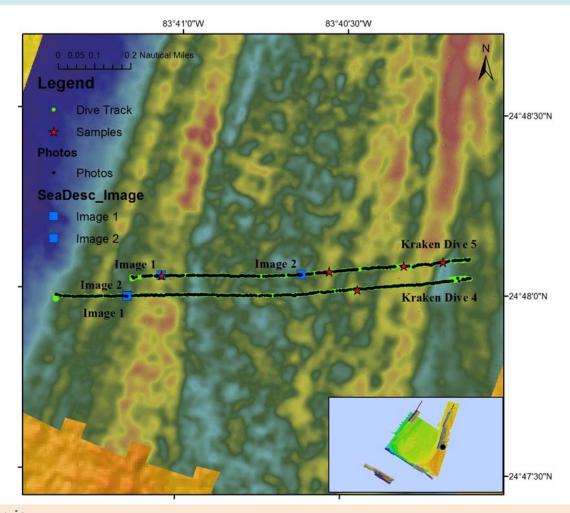
Figure 2: Gorgonian and Lobophora algae

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

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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. <u>Site Description- Habitat/Dominant Fauna:</u> 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; *Peyssonnellia* 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, *Aplydium*? Echinodermata- Crinoidea, abundant.

Dive Number: Kraken 2 - 4 Location: Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13



# **Dive Overview:**

Date of Dive:

**Date Compiled:** 

**Project:** NOAA CIOERT DSCRP FLOSEE II **Sensors Used:** No Sensors Used

381 **Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 1

FL 34946 **HDCam:** 2

**Purpose:** CIOERT Y3 Field Research DVD: 2 **Expedition** www.cioert.org\flosee2 **Specimens:** 1

2/17/2012

Dive #: Kraken 2 - 4 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge HAPC, **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_Sou

USGS SeaBoss Site 13

th\_1m 9/15/2011

**Scientific Observers:** Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi, **Data Management:** Access Database, WinFrog

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 4 **Location:** Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13

#### **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

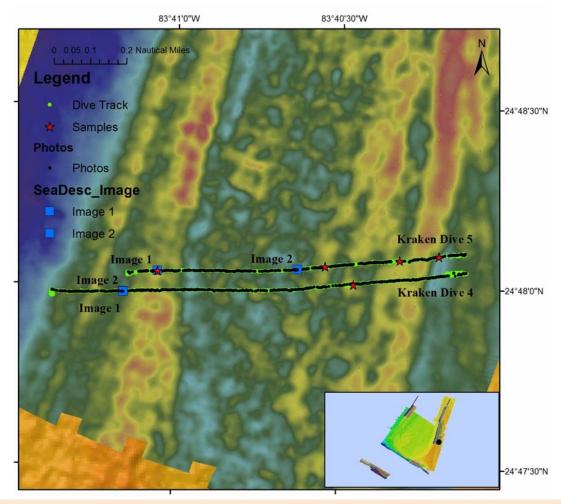
Figure 2: Red grouper burrow and surrounding habitat

## 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. <u>Dive Events:</u> 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; Peyssonnellia 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 Number: Kraken 2 - 5 Location: Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site

13



## **Dive Overview:**

**Data Management:** 

Project:	NOAA CIOERT DSCRP FLOSEE II	Sensors Used:	No Sensors Used

524 **Principal Investator: Digital Photos:** John Reed

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 1 FL 34946

**HDCam:** 2 **Purpose:** CIOERT Y3 Field Research DVD: 2 **Expedition** www.cioert.org\flosee2

Access Database, WinFrog

5 **Specimens:** Dive #: Kraken 2 - 5 **ROV Navigation Data:** 

Track Point 2, WinFrog Vessel: **NOAA Ship Nancy Foster** 

Location: Florida, Pulley Ridge HAPC, **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_Sou

100 m north of USGS SeaBoss th\_1m

**Ship Position System:** 

Site 13 **Scientific Observers:** 

Date of Dive: 9/15/2011 Joshua Voss, Shirley Pomponi,

Stephanie Farrington

Dennis Hanisak, John Reed,

**Report Analyst: Date Compiled:** 2/17/2012 John Reed, Stephanie

Farrington

**DGPS** 

**Dive Number:** Kraken 2 - 5 **Location:** Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site

13

#### **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 algae

Figure 2: Lionfish on Anadyomene dominated habitat

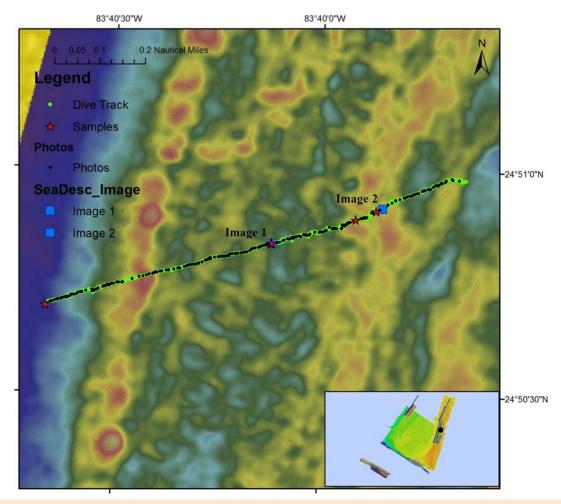
#### Notes (Objectives, Site Description, Habitat, Fauna):

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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 lamar*ki 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; *Peyssonnellia* 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 Number: Kraken 2 - 6 Location: Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11



## **Dive Overview:**

**Date Compiled:** 

**Project:** NOAA CIOERT DSCRP FLOSEE II Sensors Used: No Sensors Used

292 **Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 1

FL 34946 **HDCam:** 2

CIOERT Y3 Field Research **Purpose:** DVD: 2 **Expedition** www.cioert.org\flosee2 9 **Specimens:** 

2/17/2012

Dive #: Kraken 2 - 6 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge HAPC, **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_Mi

USGS SeaBoss Site 11 ddle\_1m

Date of Dive: 9/16/2011 **Scientific Observers:** Dennis Hanisak, John Reed, **Data Management:** Access Database, WinFrog

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 6 **Location:** Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11

#### **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):





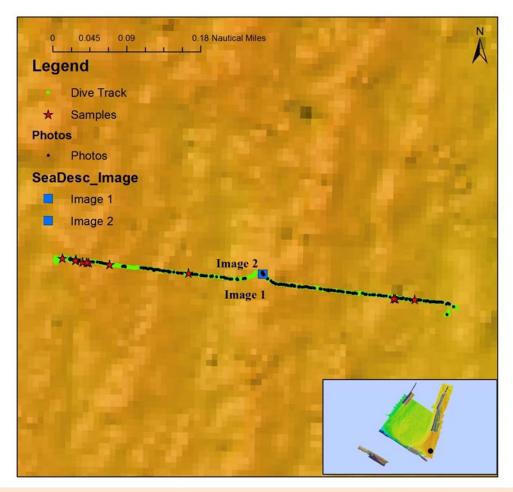
Figure 1: Anadyomene dominated habitat

Figure 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). Fishseveral 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, Peyssonnellia and other encrusting corallines dominate on dead coral plates and rubble; Codium, Lobophora, Dictyota. Sponges- Xestospongia muta, halichondrids, various unidentified Demospongiae, Geodia qibberosa, Niphates erecta, Cribrochalina. Antipathidae coral- Stichopathes. Ascidiacea- Aplidium.

**Dive Number:** Kraken 2 - 7 Location: Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10



## **Dive Overview:**

NOAA CIOERT DSCRP FLOSEE II Sensors Used: **Project:** No Sensors Used

**Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce

FL 34946

CIOERT Y3 Field Research **Purpose:** DVD: **Expedition** www.cioert.org\flosee2 **Specimens:** 

Dive #: Kraken 2 - 7

Vessel: **NOAA Ship Nancy Foster** Location: Florida, Pulley Ridge HAPC,

USGS SeaBoss Site 10

Date of Dive: 9/16/2011

**Data Management:** Access Database, WinFrog

**Date Compiled:** 2/17/2012

296 **Hard Drive:** 1 **HDCam:** 2 2 12

**ROV Navigation Data:** Track Point 2, WinFrog

**Ship Position System: DGPS** 

Sonar Data:

Scientific Observers: Dennis Hanisak, John Reed,

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 7 **Location:** Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10

#### **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

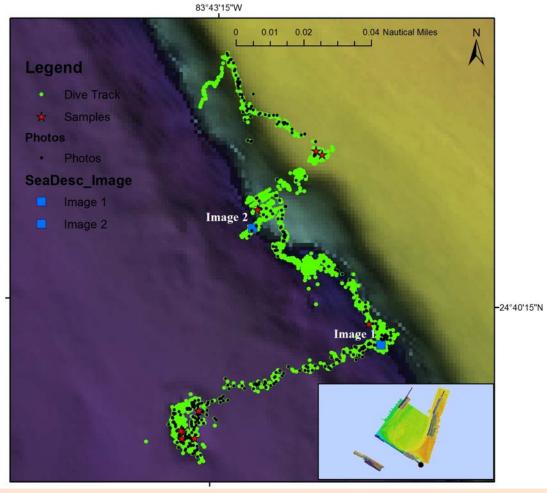
## Notes (Objectives, Site Description, Habitat, Fauna):

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:**

**Principal Investator:** 

**Data Management:** 

**Date Compiled:** 

**Project:** 

PI Contact Info:	5600 U.S. 1, North Fort Pierce	Hard Drive:	1
	FL 34946	HDCam:	3
Purpose:	CIOERT Y3 Field Research	DVD:	3
Expedition	www.cioert.org\flosee2	Specimens:	11
Dive #:	Kraken 2 - 8	<b>ROV Navigation Data:</b>	Track Point 2, WinFrog
Vessel:	NOAA Ship Nancy Foster	Ship Position System:	DGPS
Location:	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end	Sonar Data:	NF1109_CIOERT_PullyRidge_Sou thern_Dropoff_2m
Date of Dive:	9/17/2011	Scientific Observers:	Dennis Hanisak, John Reed, Joshua Voss, Shirley Pomponi,

**Digital Photos:** 

**Report Analyst:** 

No Sensors Used

Stephanie Farrington

John Reed, Stephanie

Farrington

384

NOAA CIOERT DSCRP FLOSEE II Sensors Used:

John Reed

Access Database, WinFrog

2/17/2012

**Dive Number:** Kraken 2 - 8 **Location:** Florida, Pulley Ridge, outside HAPC; southern escarpment, east

end

#### **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

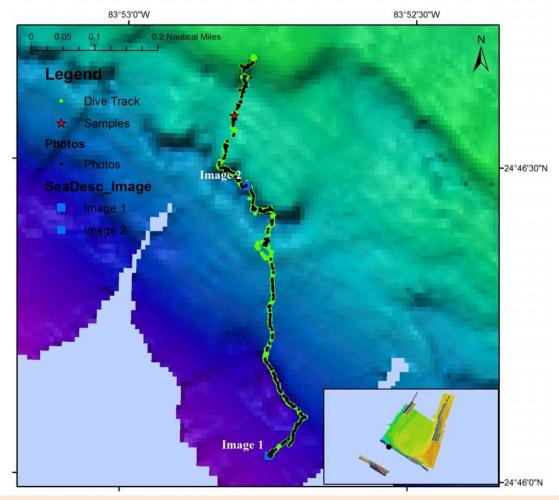
## Notes (Objectives, Site Description, Habitat, Fauna):

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, 30-450 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 DSCRP FLOSEE II <b>Sensors Used:</b>	No Sensors Used
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Principal Investator:John ReedDigital Photos:393

PI Contact Info: 5600 U.S. 1, North Fort Pierce Hard Drive: 1

FL 34946 **HDCam**: 2

Purpose:CIOERT Y3 Field ResearchDVD:2Expeditionwww.cioert.org\flosee2Specimens:6

**Dive #:** Kraken 2 - 9 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: NOAA Ship Nancy Foster Ship Position System: DGPS

Location: Florida, Pulley Ridge, outside Sonar Data:

HAPC; southern escarpment,

west end

Scientific Observers: Dennis Hanisak, John Reed,

Date of Dive:

9/17/2011

Joshua Voss, Shirley Pomponi,
Stephanie Farrington

**Data Management:** Access Database, WinFrog Report Analyst: John Reed, Stephanie

**Date Compiled:** 2/17/2012 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

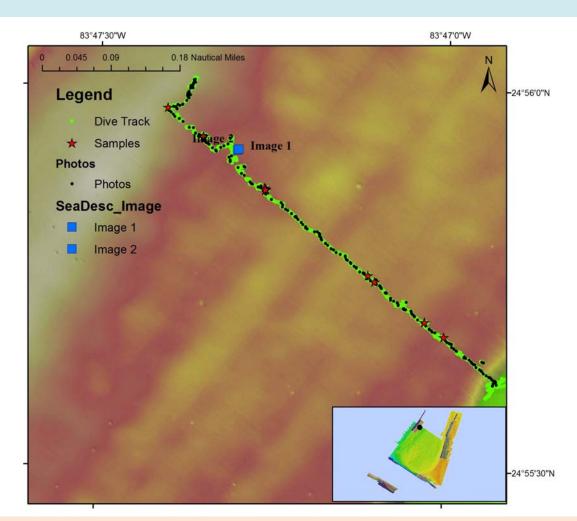
## Notes (Objectives, Site Description, Habitat, Fauna):

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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, roughtongue 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.

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



## **Dive Overview:**

**Purpose:** 

Date of Dive:

**Data Management:** 

**Date Compiled:** 

Dive Number: Kraken 2 - 10

Project:	NOAA CIOERT DSCRP FLOSEE II	Sensors Used:	No Sensors Used
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**Principal Investator:** 304 John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 1 FL 34946

**HDCam:** 3 CIOERT Y3 Field Research DVD: 3

**Expedition** www.cioert.org\flosee2 **Specimens:** 12

9/18/2011

2/17/2012

Access Database, WinFrog

Dive #: Kraken 2 - 10 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, Pulley Ridge, outside **Sonar Data:** NF1109\_CIOERT\_PullyRidge\_NW

HAPC; northwest ridge

\_2m

**Scientific Observers:** Dennis Hanisak, John Reed,

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 10 **Location:** Florida, Pulley Ridge, outside HAPC; northwest ridge

#### **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):

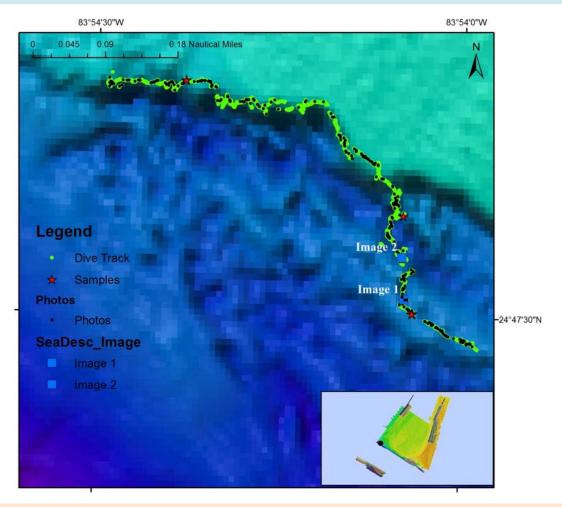
<u>Objectives:</u> Survey northwest area of Pulley Ridge (within USF multibeam map region) and ground truth previous USF sonar data (D. Naar) and new multibeam data (*Nancy Foster*, 2011). Conduct photographic/video benthic survey and collections.

<u>Dive Events:</u> 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 DSCRP FLOSEE II	Sensors Used:	No Sensors Used
Principal Investator:	John Reed	<b>Digital Photos:</b>	341
PI Contact Info:	5600 U.S. 1, North Fort Pierce	Hard Drive:	1
	FL 34946	HDCam:	2

Purpose: CIOERT Y3 Field Research DVD: 2

Expedition www.cioert.org\flosee2 Specimens: 6

**Dive #:** Kraken 2 - 11 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: NOAA Ship Nancy Foster Ship Position System: DGPS

Simple State of System.

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

west end

Scientific Observers: Dennis Hanisak, John Reed,

Date of Dive:

9/18/2011

Joshua Voss, Shirley Pomponi,
Stephanie Farrington

Data Management: Access Database, WinFrog Report Analyst: John Reed, Stephanie

**Date Compiled:** 2/17/2012 Farrington

**Dive Number:** Kraken 2 - 11 **Location:** Florida, Pulley Ridge, outside HAPC; southern escarpment,

west end

#### **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):

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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.

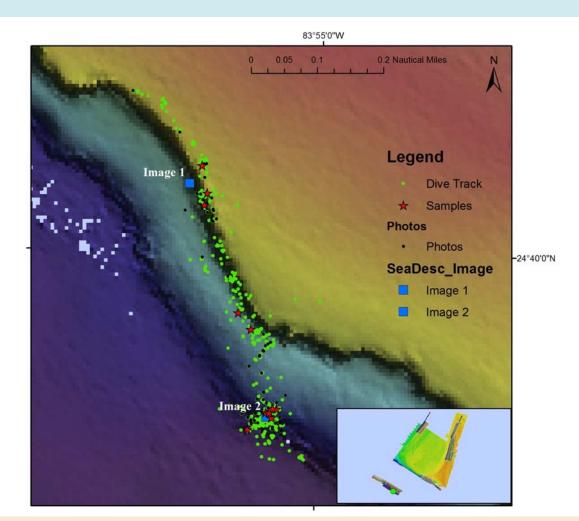
Site Description- Habitat/Dominant Fauna: On bottom on low relief feature south of base of wall; 122 m depth. 80% cover rubble and pavement with sand, 10-20 cm relief. Fairly barren; Fish- tattler, wrasse bass, chalk bass, short bigeye, roughtongue bass; fishing line; Algae- Dictyota, small brown algae, 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 Spongosorites 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.

Location: Florida, south of Pulley Ridge; 850 m escarpment



## **Dive Overview:**

Date of Dive:

**Data Management:** 

**Date Compiled:** 

Dive Number: Kraken 2 - 12

**Project:** NOAA CIOERT DSCRP FLOSEE II Sensors Used: No Sensors Used

222 **Principal Investator:** John Reed **Digital Photos:** 

PI Contact Info: 5600 U.S. 1, North Fort Pierce **Hard Drive:** 1

FL 34946 **HDCam:** 4 CIOERT Y3 Field Research

**Purpose:** DVD: 4 **Expedition** www.cioert.org\flosee2 **Specimens:** 19

9/19/2011

2/17/2012

Access Database, WinFrog

Dive #: Kraken 2 - 12 **ROV Navigation Data:** Track Point 2, WinFrog

Vessel: **NOAA Ship Nancy Foster Ship Position System: DGPS** 

Location: Florida, south of Pulley Ridge; **Sonar Data:** NF1109\_CIOERT\_800m\_PullyRid

850 m escarpment

ge\_Ledge\_10m

**Scientific Observers:** Dennis Hanisak, John Reed,

Joshua Voss, Shirley Pomponi,

Stephanie Farrington

**Report Analyst:** John Reed, Stephanie

**Dive Number:** Kraken 2 - 12 **Location:** Florida, south of Pulley Ridge; 850 m escarpment

#### **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):

2440N0833?08355W1888 19:49:52 00800 -632.



Figure 1: Boulder habitat

Figure 2: Chondrocladia sp., unusual sponge

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

<u>Objectives:</u> 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.

<u>Dive Events:</u> 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 mterraced 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 zoanthids; 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

**Dive Number:** Kraken 2 - 12 **Location:** Florida, south of Pulley Ridge; 850 m escarpment

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 ¾ - > 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.

									Bottom		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Туре	Sample Notes	Coral Notes
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main	24.96120833	-83.637395	56.993	9/13/2011 15:43	13-IX-11-1	on bottom	on bottom	НВ		
Nidkell 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.50120655	-03.03/333	30.553	9/13/2011 13.43	13-IX-11-1	on bottom	on bottom	пь		
Kraken 2 - 1	ridge	24.96125667	-83.63729833	56.619	9/13/2011 15:44	13-IX-11-1	amberjacks;	hard bottom; Flat	НВ		
							diving on North end of Pulley Ridge HAPC John Reed				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96124833	-83.63725333	52.649	9/13/2011 15:45	13-IX-11-1	and Stephanie Rogers, and Chris for fish, Launch 15:29, lasers are 20cm,	Flat Rock Rubble	НВ		
	Florida, Pulley Ridge HAPC; main	21130121033	03.03723333	52.0.5	3/13/2011 13:13	15 1/1 11 1	adding the code to the camera screen; getting ready	The Nock Habble			
Kraken 2 - 1	ridge	24.96138667	-83.63737333	56.245	9/13/2011 15:47	13-IX-11-1	to do a photo test,	hard bottom; flat	НВ		
	Florida Bullou Bidgo HADC, main						dominate: red algae, Halimeda, Gorgonacea;	hard battam, law raliaf rack rubble			
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96129167	-83.63726833	66.148	9/13/2011 15:50	13-IX-11-1	Plexauridae. Stopping to test still camera: No AUDIO YET	hard bottom; low relief rock rubble - 5-10 cm	НВ		
	Florida, Pulley Ridge HAPC; main				, ,		Test Photos - Starting 446 - looking good, 3 test				
Kraken 2 - 1	ridge	24.96134167	-83.63731667	66.568	9/13/2011 15:54	13-IX-11-1	images;				
							Rhodophyta; and Kallymenia; Ascidiacea; white possible Didemnidae; Anadyomene menziesii;				
	Florida, Pulley Ridge HAPC; main						hydroids; Gorgonacea - Plexauridae 10cm; bottom	hard bottom; Rock; 5-10 cm. Slope-			
Kraken 2 - 1	ridge	24.96133833	-83.637315	66.148	9/13/2011 15:55	13-IX-11-1	depth	flat;	НВ		
l I	Florida, Pulley Ridge HAPC; main ridge	24.96121333	-83.63717333	65.681	9/13/2011 15:59	12 IV 11 1	altimeter may be broken				
Nidkeli 2 - 1	nuge	24.90121333	-83.03/1/333	03.081	9/13/2011 13.39	13-IX-11-1	attilleter may be broken				
	Florida, Pulley Ridge HAPC; main						plate coralline algae; branching Rhodymenia; chalk				
Kraken 2 - 1	ridge	24.96119167	-83.63716667	66.195	9/13/2011 16:02	13-IX-11-1	bass; Halymenia sheets; 1cm red algae	hard bottom; Slope- flat; rubble;	НВ		
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;	НВ		
	Florida, Pulley Ridge HAPC; main	21130113007	03.03717	00.110	3/13/2011 10:03	15 1/1 11 1	masse, enam sass,	nara socioni, siope nat, rassie,			
Kraken 2 - 1	ridge	24.96119333	-83.63717167	65.494	9/13/2011 16:07	13-IX-11-1	15 cm Gorgonacea - Primnoids - white;	hard bottom; rubble; Slope- flat;	НВ		
	Florida Bullou Bidgo HADC, main						.25 kts current based on movement; Rhodophyta;				
	Florida, Pulley Ridge HAPC; main ridge	24.96119333	-83.637175	66.148	9/13/2011 16:08	13-IX-11-1	Chlorophyta; and some Gorgonacea; Plexauridae; chalk bass				
	-										
l I	Florida, Pulley Ridge HAPC; main	24.06440222	02 62747667	CF 0C1	0/12/2011 15:10	12 17 14 1	chalk bass; Anadyomene menziesii; Chlorophyta -	hand hassans multiple Claus flat	un		
Kraken 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.96119333	-83.63717667	65.961	9/13/2011 16:10	13-IX-11-1	Halimeda; Rhodophyta - Kallymenia?	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	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;	НВ		
	Florida, Pulley Ridge HAPC; main						1-2 cm thick white encrusting Ascidiacea -				
Kraken 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.96119333	-83.63717333	66.195	9/13/2011 16:12	13-IX-11-1	Eudistoma (not Didemnidae);	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	ridge	24.96119667	-83.63717167	66.148	9/13/2011 16:14	13-IX-11-1	Demospongiae - encrusting;	hard bottom; rubble; Slope- flat;	НВ		
l I	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge	24.96119333	-83.63717	66.242	9/13/2011 16:15	13-IX-11-1	testing audio;	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
					, ,		, , ,	, , , ,			
							Dominate species; Rhodophyta - 10-20 cm thin				
							blades - Kallymenia?; Chlorophyta - turf and encrusting types; Gorgonacea; Plexauridae 10-20				
							cm primnoids; chalk bass; Amber jacks; wrasses;				
l I	Florida, Pulley Ridge HAPC; main						sitting on bottom; getting multibeam onto the	hard bottom; rubble; Slope- flat; 5-			
Kraken 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.96119833	-83.63717667	66.242	9/13/2011 16:17	13-IX-11-1	Winfrog; still photos w	10 cm rock cobble	НВ		
Kraken 2 - 1	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;	НВ		
							ROV 15 m from the starting waypoint; we are taking	, , , , , ,			
l I	Florida, Pulley Ridge HAPC; main	24.0612	02 62740467	66.161	0/12/2011 15 22	12 IV 11 1	a heading and going to start a transect when we	hand hattans multiple Claus Co.			
Kraken 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.9612	-83.63718167	66.101	9/13/2011 16:22	13-IX-11-1	arrive	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	ridge	24.96119333	-83.63718167	65.307	9/13/2011 16:23	12 IV 11 1	stopping to collect algae	hard bottom; rubble; Slope- flat;	нв	1	

	Florida, Pulley Ridge HAPC; main	T.	ı	-		1	Т	ı	ı	
Kraken 2 - 1	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;	НВ	101	
Kiakeli 2 - 1	Florida, Pulley Ridge HAPC; main	24.90129333	-83.03730107	00.146	9/13/2011 10.20 13-18-11-1	Still prioto of Sample 101, video of Sample prioto	mard bottom, rubble, slope- nat,	ПВ	101	
Krakon 2 1		24.06128667	92 627205	CC 140	0/12/2011 16:22 12 IV 11 1	sample 103 photo and video of sample	hard battam, rubbla, Clana flat.	up.	102	
Kraken 2 - 1	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;	НВ	102	
K1 2 4	Florida, Pulley Ridge HAPC; main	24.06420022	02 6272	CC 200	0/12/2011 16:25 12 17 11 1	Photo of county 102	hand battana mabble Claus flat			
Kraken 2 - 1	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;	НВ		
	51 . 1 . 2 . 11 . 11 . 11 . 12									
	Florida, Pulley Ridge HAPC; main	24.06420222	02 62720467	67.540	0/40/2044 45 27 40 19/44 4	to 1st waypoint to position for 1st transect; 30 m				
Kraken 2 - 1	ridge	24.96128333	-83.63730167	67.549	9/13/2011 16:37 13-IX-11-1	from the actual starting waypoint of the start;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main					5 cm Demospongiae - Cinachyra; Anadyomene				
Kraken 2 - 1	ridge	24.96138833	-83.63737333	66.288	9/13/2011 16:42 13-IX-11-1	menziesii;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main					Demospongiae - Cinachyra - 122 m range in barring				
Kraken 2 - 1	ridge	24.961385	-83.63737	65.915	9/13/2011 16:43 13-IX-11-1	to waypoint; 300 degrees	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	ridge	24.96139333	-83.63732667	65.961	9/13/2011 16:45 13-IX-11-1	Demospongiae - xestospongia;	hard bottom; rubble; Slope- flat;	НВ		
						Photo XS (quantitative)- start; 439 images left.				
						Dominate species same; Rhodophyta - Rhodymenia;				
						Anadyomene menziesii; shooting about every 10				
	Florida, Pulley Ridge HAPC; main					seconds with out overlapping and with camera				
Kraken 2 - 1	ridge	24.96142	-83.63725833	66.008	9/13/2011 16:49 13-IX-11-1	recycling	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	ridge	24.961505	-83.63718	65.354	9/13/2011 16:51 13-IX-11-1	branching algae; Halimeda;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ		
	Florida, Pulley Ridge HAPC; main					orange Demospongiae, bicolor damsel, chalk bass,				
Kraken 2 - 1	ridge	24.961585	-83.63716333	62.458	9/13/2011 16:53 13-IX-11-1	reef butterfly, sand tile mound?,	hard bottom; pavement; Slope- flat;	НВ		
						2-3 meter mound of rubble (sandtile or red				
	Florida, Pulley Ridge HAPC; main					grouper). Ircinia strobilina, bicolor damsel, chalk				
Kraken 2 - 1	ridge	24.96171833	-83.63723333	63.299	9/13/2011 16:56 13-IX-11-1	bass	hard bottom; pavement; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main					Halimeda plates, Rhodophyta; 1/3 photo transect;				
Kraken 2 - 1	ridge	24.961795	-83.637215	62.645	9/13/2011 16:57 13-IX-11-1	encrusting orange demosponge; 20 photos so far	hard bottom; pavement; Slope- flat;	НВ		
						no Scleractinia; Rhodophyta; Chlorophyta; Fishing				
	Florida, Pulley Ridge HAPC; main					line? Human Debris; 1/2 way along transect; 24				
Kraken 2 - 1	ridge	24.96191333	-83.63714333	61.804	9/13/2011 16:59 13-IX-11-1	photos	hard bottom; pavement; Slope- flat;	НВ		
						another pile of rubble (tilefish), bicolor abundant,				
	Florida, Pulley Ridge HAPC; main					blue chromis, yellowtail reef fish, large school of				
Kraken 2 - 1	ridge	24.962005	-83.63709833	61.43	9/13/2011 17:01 13-IX-11-1	wrasse	hard bottom; pavement; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ		
1	Florida, Pulley Ridge HAPC; main					stop transect for drill Photo XS (quantitative)- End;				
Kraken 2 - 1	ridge	24.96216333	-83.63704833	61.384	9/13/2011 17:04 13-IX-11-1	cancel				
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	ridge	24.96217167	-83.63704167	60.589	9/13/2011 17:04 13-IX-11-1	Photo XS (quantitative)- start; drill canceled				
1	Florida, Pulley Ridge HAPC; main					2/3 way through transect; 30 pictures; more wrasse,	<u>.</u>			
Kraken 2 - 1	ridge	24.96214167	-83.637085	60.963	9/13/2011 17:05 13-IX-11-1	bicolor damsels Rhodophyta; Chlorophyta; X. muta;	hard bottom; rubble;	НВ		
	Florida, Pulley Ridge HAPC; main					dense bladed Rhodophyta; turf Chlorophyta; sparse				
Kraken 2 - 1	ridge	24.96224	-83.63705167	60.963	9/13/2011 17:07 13-IX-11-1	gorgonians; no ascidians; no scleractinia	Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ		
						Rhodophyta; Chlorophyta; 2m burrow with shaft				
	51 · 1 · 5 · 1 · 5 · · · · · · · ·					(maybe red grouper); X. muta (more than	4000/1 11 11 11 11 11			
	Florida, Pulley Ridge HAPC; main	24.0624465=	02 62655	64.55	0/40/2044 47 40 40	beginning); bicolor, blue chromis, chalk bass,	100%hard bottom; rubble; Slope-			
Kraken 2 - 1	ridge	24.96244667	-83.636895	61.524	9/13/2011 17:10 13-IX-11-1	primnoids gorgonian (more)	flat;	НВ		

	T			1		ı	1			1	
							similar biota and habitat; Ircinia strobilina,				
	Florida, Pulley Ridge HAPC; main						Rhodophyta; Chlorophyta; ended 100m transect but	100% hard bottom: rubble: Slone-			1
Kraken 2 - 1	ridge	24.96252167	-83.636895	61.337	9/13/2011 17:12	13-IX-11-1	need to continue to reach 50 photos	flat;	нв		1
	Florida, Pulley Ridge HAPC; main						Photo XS (quantitative)- End; stopping on photo	· · · · · · · · · · · · · · · · · · ·			
Kraken 2 - 1	ridge	24.96258833	-83.63693667	61.15	9/13/2011 17:14	13-IX-11-1	#390				1
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	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;	нв		1
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge	24.96262667	-83.636965	61.524	9/13/2011 17:19	13-IX-11-1	Photo; sample 001			001	
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge	24.96262167	-83.637	61.384	9/13/2011 17:21	13-IX-11-1	Switch to Tape 2, DVD 2				
	Florida, Pulley Ridge HAPC; main								l		1
Kraken 2 - 1	ridge	24.96261833	-83.63702	61.617	9/13/2011 17:23	13-IX-11-1	collecting sample 001	hard bottom; rubble; Slope- flat;	НВ	001	<u> </u>
	Florida, Pulley Ridge HAPC; main	24.05254	02 62704022	64.057	0/40/2044 47 27	42 11/44 4					1
Kraken 2 - 1	ridge	24.96261	-83.63701833	61.057	9/13/2011 17:27	13-IX-11-1	Ascidians zoom view, maybe an Aplydium	hard bottom; rubble; Slope- flat;	НВ		
K1 2 4	Florida, Pulley Ridge HAPC; main	24.00202007	02 627025	C4 757	0/12/2011 17:20	12 17 14 1	3 photos of sample 002 and sample 003, between			002 003	1
Kraken 2 - 1	ridge	24.96262667	-83.637025	61.757	9/13/2011 17:29	13-IX-11-1	1728 and 1730, video 1731			002, 003	
							finished sampling 002 and 003, camera back to 30				1
	Florida, Pulley Ridge HAPC; main						down and full field of view; several chalk bass,				1
Kraken 2 - 1	ridge	24.96263333	-83.63703333	61.711	9/13/2011 17:39	12_IY_11_1	yellowtail reef fish in area of 002 and 003 samples				1
KIAKEII Z - 1	riuge	24.90203333	-83.03703333	01.711	3/13/2011 17.33	13-IX-11-1	yellowtall reel lish in area of 002 and 003 samples		1		-
							sparse Gorgonacea; Rhodophyta; Chlorophyta;	100%hard bottom; rock rubble;			1
	Florida, Pulley Ridge HAPC; main						wrasses (sharp nose; photo); X. Muta; yellowtail	cobble, Slope- flat; 20% exposed			1
Kraken 2 - 1	ridge	24.962745	-83.63688333	60.263	9/13/2011 17:40	13-IX-11-1	reef fish	sand; no exposed ledges	НВ		1
Maken 2	- Tage	211302713	03.03000333	00.203	3,13,201117.10	10 1/1 11 1	reer non	sana, no exposed reages		1	<del>                                     </del>
							2m maybe redgrouper burrow (no sightings);				1
	Florida, Pulley Ridge HAPC; main						Gorgonacea (maybe diogogorgia); yellowtail reef	rubble; Slope- flat; soft bottom			1
Kraken 2 - 1	ridge	24.96289667	-83.63672	60.403	9/13/2011 17:42	13-IX-11-1	fish; Reef Butterflyfish; couple photos inside burrow	below rubble	SB		1
	ŭ						blade Rhodophyta; Chlorophyta; big Sand Tilefish		1		
							burrow; Yellowtail Reef fish; ; blue chromis; thin				1
	Florida, Pulley Ridge HAPC; main						encrusting sponge and bryozoan; primnoids				'
Kraken 2 - 1	ridge	24.96294333	-83.636725	61.43	9/13/2011 17:45	13-IX-11-1	Gorgonacea;	rubble;	НВ		1
							reddish tan tunicate; white tunicate; Rhodophyta;				
	Florida, Pulley Ridge HAPC; main						little Anadyomene menziesii; many primnoids				1
Kraken 2 - 1	ridge	24.96302167	-83.63674833	62.505	9/13/2011 17:46	13-IX-11-1	Gorgonacea;	hard bottom; rubble; Slope- flat;	нв		1
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge	24.96330167	-83.63638333	64.093	9/13/2011 17:50	13-IX-11-1		hard bottom; rubble; Slope- flat;	НВ		1
							general transect; dominated by Rhodophyta;				
							Chlorophyta; Halimeda, primnoids gorgonians,				1
							sparse Demospongiae; no scleractinia; few fish			1	1
							dominated by wrasse Yellowtail Reef fish, Reef			1	1
l	Florida, Pulley Ridge HAPC; main						Butterflyfish; X. Muta dominate and Ircinia	100% hard bottom; rock rubble and	l	1	1
Kraken 2 - 1	ridge	24.96345	-83.636485	62.925	9/13/2011 17:51	13-IX-11-1	strobilina	cobbles 5-10cm; Slope- flat;	НВ		<u> </u>
L	Florida, Pulley Ridge HAPC; main									1	1
Kraken 2 - 1	ridge	24.96354667	-83.636175	59.655	9/13/2011 17:53	13-IX-11-1		hard bottom; rubble; Slope- flat;	НВ	1	ļ'
L	Florida, Pulley Ridge HAPC; main									1	1
Kraken 2 - 1	ridge	24.96368333	-83.636175	62.038	9/13/2011 17:54	13-IX-11-1	swap to Jenny as recorder			1	ļ'
										1	1
	51 . 1 . 5 . 11 . 11 . 11 . 11						Rhodophyta - Rhodymenia; 5-10% cover of	hard bottom; small rock rubble;	1	1	1 '
Krakon 2 4	Florida, Pulley Ridge HAPC; main	24.00205	92 62620467	64.044	0/12/2011 17 55	12 17 14 1		Slope- flat; soft bottom underlying	шв	1	1
Kraken 2 - 1	ridge	24.96365	-83.63639167	61.944	9/13/2011 17:55	13-IX-11-1	mostly wrasse, chalk bass, Yellowtail Reef fish.	rubble. Rubble less than 10cm.	НВ		<b></b>
Krakor 2 1	Florida, Pulley Ridge HAPC; main	24.96395833	-83.635925	62.972	9/13/2011 17:58	12 17 11 1	Rhodophyta- Rhodymenia. 400 m to the next photo	hard bottom; rubble; Slope- flat;	НВ	1	1
Kraken 2 - 1	ridge	24.90395833	-03.035925	02.972	3/13/2011 17:58	T2-IV-TT-T	transect.	Slope- flat;	ПВ	+	<b></b> '
							Taking a few photo test shots # downward fasing			1	1
	Florida, Pulley Ridge HAPC; main						Taking a few photo test shots. # downward facing stills of X. muta, cyanobacteria; small white ovoid			1	1
Kraken 2 - 1	ridge	24.96409833	-83.63581	62.318	9/13/2011 17:59	13-IX-11-1	ascidians- common but not abundant;	hard bottom; rubble; Slope- flat;	НВ	1	1
MUNCH Z - 1		24.50405055	03.03361	02.510	J  13  2011 11.33	72 IV 11-1	assistant common but not abundant,	na. a bottom, rabbie, biope- nat,	1115		L

	The side Dulley Bides HADO seein 1			T 1		Indiana V Marke annull mark Sink Cond TileSink	Ibaad bassan milibla Claus flat	ı	1	
Krakan 2 1	Florida, Pulley Ridge HAPC; main	24.06422667	92 625965	64.024	0/12/2011 19:01 12 IV 11 1	More X. Muta, small reef fish, Sand Tilefish;	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	ridge	24.96422667	-83.635865	64.934	9/13/2011 18:01 13-IX-11-1	Yellowtail Reef fish; CCA	cloverleaf; less than 10 cm	нв		
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;	НВ		Madracis
						Ascidians- white and less than 10 cm; small wrasses;				
						Downward facing photo of the ascidians as well as				
	Florida, Pulley Ridge HAPC; main					small encrusting sponge in photo. 2-5% cover of	hard bottom; rubble; Slope- flat; 80-			
Kraken 2 - 1	ridge	24.96482667	-83.63538333	65.261	9/13/2011 18:06 13-IX-11-1	large blade Rhodophyta, greater cover of Halimeda.	90% rubble	НВ		
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	ridge	24.96504333	-83.635135	66.989	9/13/2011 18:08 13-IX-11-1	3	hard bottom; rubble; Slope- flat;	HB		
						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				
	Florida, Pulley Ridge HAPC; main					cardinal fish, bicoloered damsel; Turned off over-lay				
Kraken 2 - 1	ridge	24.965075	-83.63514333	66.055	9/13/2011 18:11 13-IX-11-1	for habitat video; yellow crinoid present- 10 cm acr	hard bottom; rubble; Slope- flat;	НВ		coral; cup coral,
	Florida, Pulley Ridge HAPC; main					overlay back on, but no in the right spot yet.				
Kraken 2 - 1	ridge	24.96526667	-83.63499167	66.849	9/13/2011 18:23 13-IX-11-1	Incorrect overlays on video.	hard bottom; rubble; Slope- flat;	нв		
						Decided to abandon collecting sample; Had				
						difficulties with collecting; Over-lay is still not				
	Florida, Pulley Ridge HAPC; main					functioning- it needs to be reset by Kevin; 18:30 the				
Kraken 2 - 1	ridge	24.96526667	-83.63499167	66.989	9/13/2011 18:29 13-IX-11-1	Kraken positioning is not accurate (lat - long)	hard bottom; pavement; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						hard bottom; rubble; sand tile			
Kraken 2 - 1	ridge	24.96526667	-83.63499167	65.354	9/13/2011 18:31 13-IX-11-1	Leaving sand tile mound and continuing on.	mound	НВ		
	Florida, Pulley Ridge HAPC; main					Moving on and track point positioning is working				
Kraken 2 - 1	ridge	24.96516667	-83.63506333	65.681	9/13/2011 18:32 13-IX-11-1	again. Rhodophyta; Chlorophyta;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						hard bottom; rubble; Slope- flat;			
Kraken 2 - 1	ridge	24.96541333	-83.634935	67.222	9/13/2011 18:34 13-IX-11-1	Rhodophyta blades; X. muta; cyanobacteria;	>90% rock rubble; less than 10 cm	НВ		
						Many different Scolymia (may actually be				
	Florida, Pulley Ridge HAPC; main					coralliomorpha); captured in photo; 3 crinoids;				
Kraken 2 - 1	ridge	24.96561	-83.63485	66.568	9/13/2011 18:36 13-IX-11-1	chalk bass	hard bottom; rubble; Slope- flat;	НВ		Scolymia
L	Florida, Pulley Ridge HAPC; main							l <u>.</u>		
Kraken 2 - 1	ridge	24.96572667	-83.63475333	66.242	9/13/2011 18:37 13-IX-11-1		hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main	24.06======	00.00.00		0/42/2044 45 15 15 11 11	same 2 lionfish in a sand tile rubble 60-70cm high at				
Kraken 2 - 1	ridge	24.96580833	-83.63465167	66.195	9/13/2011 18:40 13-IX-11-1	times.	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main	24.06507467	92 62440667	66 101	0/12/2011 19:41 12:19:44 4	Turning lasers back on, Kevin is working on over-lay;	hard battam, rubble, Clane, fl-t	НВ		
rraken 2 - 1	ridge	24.96597167	-83.63449667	66.101	9/13/2011 18:41 13-IX-11-1	tattler bass;	hard bottom; rubble; Slope- flat;	пв		
	Florida, Pulley Ridge HAPC; main					Over-lay back on at 18:52:42 and it is correct; We are beginning the second photo transect. Distance	hard bottom; rubble; Slope- flat;			
Kraken 2 - 1	ridge	24.96596833	-83.63449	65.915	9/13/2011 18:42 13-IX-11-1	100m. Plan on 0.2 knots	Slope- flat;	НВ		
Makeli Z - I	Trage	24.30330833	-03.03445	05.515	3/ 13/ 2011 10.42 13 1A-11-1	Rhodophyta; Starting photo transect here. We are	Stope flat,	0.10		
	Florida, Pulley Ridge HAPC; main					waiting a few seconds for the ship to get ahead of	hard bottom; 100%rubble; soft			
Kraken 2 - 1	ridge	24.96597167	-83.63448833	65.681	9/13/2011 18:44 13-IX-11-1	us to improve the tracking.	bottom underneath	НВ		
anc.i2 I	Florida, Pulley Ridge HAPC; main	255557107	55.55446655	55.001	-, 15, 2511 15.44 15 IN 11-1	tacking back online; officially starting photo transect	anderneadi	1		
Kraken 2 - 1	ridge	24.96600333	-83.63452	65.588	9/13/2011 18:46 13-IX-11-1	at 18:46:44	hard bottom; rubble; Slope- flat;	НВ		
					, .,	-	, , , , , , , , , , , , , , , , , , , ,			
						Starting at photo transect 9553; back to recording				
						mode; Yellowtail Reef fish; wrasses; reef butterfly				
						fish, Primnoids gorgonians; rusty red cyanobacteria;				
	Florida, Pulley Ridge HAPC; main					clump of 5 scolimia; colonial ascidians -3 white in				
Kraken 2 - 1	ridge	24.96600833	-83.634525	65.261	9/13/2011 18:47 13-IX-11-1	color and translucent; unidentified sponge RECH	hard bottom; rubble; Slope- flat;	НВ		
L	I				I	1	l			

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;	НВ		Scolymia
Krakon 2 1	Florida, Pulley Ridge HAPC; main	24.06622667	-83.63434167	64.887	9/13/2011 18:51	12 IV 11 1	guarter through 100m transact	hard bottom; rubble; Slope- flat;	нв		
Kraken 2 - 1	ridge	24.96622667	-65.05454107	04.667	9/13/2011 18.51	13-IX-11-1	quarter through 100m transect Rhodophyta; occasional chalk bass; CCA, small	naru bottom; rubbie; siope- nat;	ПВ		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96626667	-83.634335	63.859	9/13/2011 18:52	13-IX-11-1	encrusting sponges; lots of scolimia over 20 in a shot and 18:52:21	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96650333	-83.63407333	63.906	9/13/2011 18:56		Area dominated by Halimeda, one large hydroid; possible Nicella; Aplysina; reef butterfly fish; Niphates erect	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	нв		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ	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 sample officially collected into suction bucket	hard bottom; rubble; Slope- flat;	НВ	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	number 3. Moving on after quiver 10's lid is put back on.	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ	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;	НВ		

	T		-			1	1			1	1
	Florida, Pulley Ridge HAPC; main						stopping for photos of filamentous green rubble; purple encrusting coralline algae; Didemnidae; red algae; brown filamentous on sand is Cyanophyta;				
Kraken 2 - 1	ridge	24.96730667	-83.63328667	64.747	9/13/2011 19:54	13-IX-11-1	Didemnidae; Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
	_						Reef Butterflyfish; Sand Tilefish burrow; x. Muta;				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96765667	-83.63296167	63.486	9/13/2011 20:03	13-IX-11-1	encrusting Demospongiae - Spirastrellidae (spelling?);	hard bottom; 9-10 % cover of sand	НВ		
	Florida, Pulley Ridge HAPC; main							,			
Kraken 2 - 1	ridge	24.96769833	-83.63305667	63.299	9/13/2011 20:04	13-IX-11-1	Sand Tilefish burrow;	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
	Florida, Pulley Ridge HAPC; main						tracking back on; Hap-hazard photos' 2/3 length of	hard bottom; 90% rubble; Slope-			
Kraken 2 - 1	ridge	24.96783833	-83.63251	64.046	9/13/2011 20:07	13-IX-11-1	transect; chalk bass;	flat;	НВ		
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;	НВ		
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;	НВ		
							Haplosclerid Demospongiae 10 -15 cm tall, apical				
	Florida Dullou Bidge HADC, main						ossicle on some, orange, fingers 2cm diameter,				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96815833	-83.632445	65.074	9/13/2011 20:11	13-IX-11-1	paplo surface - may be Aka or Siphonodiction; Video of sample 006	hard bottom; rubble; Slope- flat;	НВ	006	
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge Florida, Pulley Ridge HAPC; main	24.96816167	-83.63236167	64.56	9/13/2011 20:14	13-IX-11-1	Photo Sample 006 - ~4	hard bottom; rubble; Slope- flat;	НВ	006	
Kraken 2 - 1	ridge	24.96815833	-83.63244667	64.793	9/13/2011 20:24	13-IX-11-1	Continuing general transect	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96821	-83.632335	64.326	9/13/2011 20:25	12_IV_11_1	wrasse; same biota	hard bottom; rubble; Slope- flat;	НВ		
NIAKEII Z - 1	Florida, Pulley Ridge HAPC; main	24.50821	-83.032333	04.320	3/13/2011 20.23	13-IV-11-1	red spirastrellid sponge; Sand Tilefish burrow5 m;	nard bottom, rubble, slope- nat,	ПВ		
Kraken 2 - 1	ridge	24.96817333	-83.63211	64.653	9/13/2011 20:26	13-IX-11-1	bicolor damsel	hard bottom; rubble; Slope- flat;	НВ		
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;	нв		
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;	НВ		
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;	НВ		
	Florida, Pulley Ridge HAPC; main						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;				
Kraken 2 - 1	ridge	24.968375	-83.632015	64.607	9/13/2011 20:33	13-IX-11-1	black hydroid; Plexauridae	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
	Florido Bullou Bid. 11486						large mollusk -2x nudibranch Umbraculum; amber				
Kraken 2 - 1	Florida, Pulley Ridge HAPC; main ridge	24.96855667	-83.6318	64.653	9/13/2011 20:37	13-IX-11-1	jack; brown encrusting Demospongiae; chalk bass; spirastrellid	hard bottom; rubble; Slope- flat;	нв		
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;	НВ		
	- 0 -		,	2 7 5	-, -5, 20.03			,	ļ <u>-</u>	1	1

	1						Tall the state of	T		1
	51 . 1 . 2 . 11 . 114.20						Rhodophyta; and orange Demospongiae; yellow	1 11 11 1000/ 5 111		
	Florida, Pulley Ridge HAPC; main						Demospongiae; 1/2 way through transect;	hard bottom; 100% < 5 cm rubble;		
Kraken 2 - 1	ridge	24.968635	-83.63153833	64.653	9/13/2011 20:39	13-IX-11-1	Halimeda;	Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ	
							continuing until we hit 50 photos ~ 40 m; Greater			
	Florida, Pulley Ridge HAPC; main						Amberjack; less Rhodophyta sheets; increase in			
Kraken 2 - 1	ridge	24.96883667	-83.63142167	64.186	9/13/2011 20:44	13-IX-11-1	sand and green filamentous algae; black hydroid	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	ridge	24.96883	-83.631365	63.439	9/13/2011 20:45	13-IX-11-1		hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC; main						change in bottom type, may be coming off the			
Kraken 2 - 1	ridge	24.96887833	-83.63134833	63.486	9/13/2011 20:45	13-IX-11-1	ridge;	hard bottom; Sand; rubble;	НВ	
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ	
							Snapper; just came off of the apparent hummock at			
1	Florida, Pulley Ridge HAPC; main						the end of the transect; looking for a sponge;	hard bottom; sand rubble; Slope-		
Kraken 2 - 1	ridge	24.96899667	-83.631245	63.953	9/13/2011 20:48	13-IX-11-1	Anadyomene menziesii; chalk bass;	flat;	НВ	
	Florida, Pulley Ridge HAPC; main			i				hard bottom; sand and rubble; Slope		
Kraken 2 - 1	ridge	24.968945	-83.631185	64.233	9/13/2011 20:52	13-IX-11-1	Codium; Photo;	flat;	нв	
<u> </u>	Florida, Pulley Ridge HAPC; main				,		,,	,		
Kraken 2 - 1	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;	нв	
	Florida, Pulley Ridge HAPC; main				-,,		trigger fish; verongid? Demospongiae 2-3 mm apical	hard bottom; rubble; Slope- flat;		
Kraken 2 - 1	ridge	24.96895667	-83.63119667	64.42	9/13/2011 20:55	13-IX-11-1	oscules;	Patchy	нв	
Kruken 2 1	Florida, Pulley Ridge HAPC; main	24.50055007	03.03113007	04.42	3/13/2011 20:55	13 IX 11 1	oscares,	raceny	nb	
Vrokon 2 1		24.96895667	-83.63119667	64.28	9/13/2011 20:57	12 IV 11 1	moving on	hard battam, rubble, Clana flat.	НВ	
Kraken 2 - 1	ridge	24.50853007	-03.03113007	04.28	3/13/2011 20.37	13-IV-11-1	moving on;	hard bottom; rubble; Slope- flat;	пь	
K1 2 1	Florida, Pulley Ridge HAPC; main	24.00005007	02 62440667	64.226	0/12/2011 20:50	12 17 14 1	Clicalida a caracilida facebban do esta como alta caraci	hand bassan milkla Clara flat	НВ	
Kraken 2 - 1	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;	нв	
							new way point on multibeam; going around the arc			
1	Florida, Pulley Ridge HAPC; main						on the northern end on Pulley Ridge; looking for X.			
Kraken 2 - 1	ridge	24.96891667	-83.63129333	63.953	9/13/2011 21:01	13-IX-11-1	muta; hydroid; Sand Tilefish burrow; chalk bass;	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC; main						Filograna; encrusting on a dead hydroid? Zoanthids?			
Kraken 2 - 1	ridge	24.968965	-83.631185	64.28	9/13/2011 21:03	13-IX-11-1	With blue green scum - Cyanophyta;	hard bottom; rubble; Slope- flat;	НВ	
							slowing down to look at Placospongia			
	Florida, Pulley Ridge HAPC; main						Demospongiae 5cm thick encrusting; good video;			
Kraken 2 - 1	ridge	24.968965	-83.631185	64.233	9/13/2011 21:06	13-IX-11-1	chalk bass;	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 1	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;	НВ	
	Florida, Pulley Ridge HAPC; main						İ		i i	
Kraken 2 - 1	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;	НВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; sand and rubble; Slope		
Kraken 2 - 1	ridge	24.96906333	-83.63091333	63.626	9/13/2011 21:09	13-IX-11-1	10 more minutes of video left;	flat;	нв	
<del>                                     </del>	Florida, Pulley Ridge HAPC; main							•	<del>                                     </del>	
Kraken 2 - 1	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;	нв	
	Florida, Pulley Ridge HAPC; main	255510555	23.03033	55.555	3, 13, 2311 21.11		another rock mound - Sand Tilefish burrow;	2 Socioni, sore socioni, russie,		
Kraken 2 - 1	ridge	24.96915	-83.63088	64.607	9/13/2011 21:12	13-IX-11-1	Hexactinellida? With zoanthids;	hard bottom; rubble; Slope- flat;	НВ	
Makeri Z - I	Florida, Pulley Ridge HAPC; main	24.50513	-03.03088	04.007	3, 13, 2011 21.12	13-IV-11-I	rickdetiremda: with zoahtmas,	nara socioni, rabbie, siope* liat,	110	
Kraken 2 1		24.96924667	-83.630725	65.541	9/13/2011 21:13	12_IY_11 1		hard hottom: rubble: Slope flat:	НВ	
Kraken 2 - 1	ridge	24.90924007	-03.030/25	05.541	2/13/2011 21:13	T2-IV-TT-T	handing to WD near grassent on Dullay Co. J.Til-fi-b	hard bottom; rubble; Slope- flat;	пв	
	Florido Bullou Bidos HADO						heading to WP near crescent on Pulley; Sand Tilefish			
L	Florida, Pulley Ridge HAPC; main	24000000	02 62050555	65.565	0/40/2044 25 55	42 11/44 :	mound with rubble; aplidium Ascidiacea stalked 10		l	
Kraken 2 - 1	ridge	24.96926667	-83.63059833	65.588	9/13/2011 21:14	13-IX-11-1	cm tall - good videos;	hard bottom; rubble; Slope- flat;	НВ	
							moving on; crinoid = sample 007 video and photos			
							of sample 007; and sponge behind is sample 008 -			
l	Florida, Pulley Ridge HAPC; main					l	and possibly to become sample octocoral under	<u> </u>	[ ]	
Kraken 2 - 1	ridge	24.96922333	-83.63048167	66.989	9/13/2011 21:16	13-IX-11-1	crinoid	hard bottom; rubble; Slope- flat;	НВ	
									-	

	[5] : 1					1		I			
	Florida, Pulley Ridge HAPC; main	24.00022	02 52020557	67.000	0/40/2044 24 26	42 11/44 4	continuing around the arc of Pulley Ridge; in a				
Kraken 2 - 1	ridge	24.96932	-83.63038667	67.222	9/13/2011 21:36	13-IX-11-1	valley between 2 of the higher hummocks;	hard bottom; rubble; Slope- flat;	НВ		
							white Ascidiacea; in the valley; rubble; egg mass -				
	Florida, Pulley Ridge HAPC; main						Photo of 20 cm ring - likely a Umbraculum egg	hard bottom; rubble increasing;			
Kraken 2 - 1	ridge	24.96943333	-83.63021833	67.316	9/13/2011 21:38	13-IX-11-1	mass;	Slope- flat;	HB		
	Florida, Pulley Ridge HAPC; main							hard bottom; more sediment rubble;			
Kraken 2 - 1	ridge	24.96940833	-83.63013667	68.717	9/13/2011 21:40	13-IX-11-1	continuing; burrows; chalk bass;	Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						sample 009 - images of x. Muta - Sample 010 will be				
Kraken 2 - 1	ridge	24.96941833	-83.63007333	67.736	9/13/2011 21:41	13-IX-11-1	the star fish	hard bottom; rubble; Slope- flat;	НВ		
KIUKCII Z I	Florida, Pulley Ridge HAPC; main	24.50541055	03.03007333	07.730	3/13/201121.41	13 IX 11 1	close up video of sample 009 and 010; and video of	nara socioni, rassie, siope nat,	110		
		24.05044022	02 62007022	60.047	0/40/2044 24 45	42 11/44	1				
Kraken 2 - 1	ridge	24.96944833	-83.63007833	68.017	9/13/2011 21:45	13-IX-11-1	another staled lobate sponge	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	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		
	Florida, Pulley Ridge HAPC; main						still collecting; yellow head jaw fish in the back				
Kraken 2 - 1	ridge	24.96945	-83.63005167	68.063	9/13/2011 22:04	13-IX-11-1	ground	hard bottom; rubble; Slope- flat;	НВ		
							heading to the end of the transect; X. Muta with				
	Florida, Pulley Ridge HAPC; main						Ascidiacea; Photo of Niphates digitalis with				
Kraken 2 - 1	ridge	24.96943333	-83.63004667	67.456	9/13/2011 22:06	13-IX-11-1	zoanthid; chalk bass;	hard bottom; rubble; Slope- flat;	НВ		
KIGKCII Z I	-	24.50545555	03.03004007	07.430	3/13/2011 22:00	15 1/1 11 1	Zouritria, Criaik Bass,	nara bottom, rabbie, slope nat,	110		
Karlan 2	Florida, Pulley Ridge HAPC; main	24.0004000	00.000=0	67.55	0/42/2044 22 22	12 17 11 1	Day Bilatina the BOV	hand harman milkly 61 - 61 -	un		
Kraken 2 - 1	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;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	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		
	Florida, Pulley Ridge HAPC; main						stopped on the bottom; focus on Halimeda;				
Kraken 2 - 1	ridge	24.96947667	-83.62973833	67.736	9/13/2011 22:11	13-IX-11-1	hadromerid;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						·				
Kraken 2 - 1	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;	НВ		
MIGNELL I	Florida, Pulley Ridge HAPC; main	21.30301007	03.023333	07.505	3/13/2011 22:12	15 1/1 11 1	moving again, wasse, nyarotas	nara sectorii, rabbie, siope nat,			
	· · · · · ·	24.000505	02.520505	67.476	0/40/2044 20 44	42 11/44 4					
Kraken 2 - 1	ridge	24.969505	-83.629595	67.176	9/13/2011 22:14	13-IX-11-1		hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	ridge	24.96975	-83.62941167	67.082	9/13/2011 22:15	13-IX-11-1	egg mass;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						no change in bottom; Rhodophyta; Halimeda;				
Kraken 2 - 1	ridge	24.96967	-83.629315	67.082	9/13/2011 22:17	13-IX-11-1	distance to end of transect is 80 m; X. muta;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main			<b> </b>	· ·		· · · · · · · · · · · · · · · · · · ·	, , , ,			
Kraken 2 - 1	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;	НВ		
KIUKCII Z I	Florida, Pulley Ridge HAPC; main	24.30372107	03.02030033	00.475	3/13/2011 22:20	13 1/1 11 1	rea sponge stop for viaco, sumple # 012	nara bottom, rabbie, slope nat,	1110		
K1 2 4		24.00000022	02 (2000022	67.456	0/12/2011 22:22	42 17 44 4	Photo of County 012 and older	band battana mibble Claus flat	НВ		
Kraken 2 - 1	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;	нв		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 1	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;	НВ		
	Florida, Pulley Ridge HAPC; main						waiting to leave and for the ship to get ahead of us -				
Kraken 2 - 1	ridge	24.96968667	-83.62893833	67.596	9/13/2011 22:36	13-IX-11-1	END OF DIVE	hard bottom; rubble; Slope- flat;	НВ		
									Bottom		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Туре	Sample Notes	Coral Notes
	Florida, Pulley Ridge HAPC; main	20, 22	201.9 00	_ spen ()	Jule, IIIIe		Tidditat and blota notes	100% hard bottom; rubble; Slope-	.,,,,,	zz.npic notes	30.0
Krakan 2 2		24 02402467	92 64052	F7 F07	0/14/2011 12:25	14 17 11 3	On hattam, ambariask,		un.		
Kraken 2 - 2	ridge	24.93482167	-83.64953	57.507	9/14/2011 13:35	14-17-11-2	On bottom; amberjack;	flat;	НВ		
						1	Lasers are on, downward facing digital still; taking a	hard bottom; pavement; Slope- flat;			
	Florida, Pulley Ridge HAPC; main						few test shots; red grouper; squirrel fish; grey angel;	40-50 cm small rubble with less than			
Kraken 2 - 2	ridge	24.93465333	-83.64924667	62.224	9/14/2011 13:37	14-IX-11-2	lionfish; more diversity on bottom than dive 1;	10cm rubble on top	HB		
	Florida, Pulley Ridge HAPC; main			l i			1/2 meter ledges; much more fish; ~8 lionfish;		1		
Kraken 2 - 2	ridge	24.93477	-83.649285	63.299	9/14/2011 13:40	14-IX-11-2	spotfin hogfish;	hard bottom; rubble; Slope- flat;	НВ		
<u> </u>	<u> </u>				, , :===:::0		Testing mike check in dry lab; purple reef fish; it's	, , , , , , , , , , , , , , , , , , , ,	1		
	Florida, Pulley Ridge HAPC; main										
K1 2 2		24.024755	02 64020022	62.265	0/44/2044 42 42	4417/443	probably a longspine squirrelfish; 30cm red	hand hassan milkle Class C.	LID		
Kraken 2 - 2	ridge	24.934755	-83.64928833	63.205	9/14/2011 13:42	14-IX-11-Z	grouper; more lionfish;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main					1	6 more lionfish less than 10m than the original				
	ridge	24.93476667	-83.64928833	63.299	9/14/2011 13:45	14-IX-11-2	group of 8 lionfish;	hard bottom; rubble; Slope- flat;	HB		
(raken 2 - 2	agc										

	, ,								<u> </u>	
							bicolored damsals, purple reef fish; Amber Jack; the			
	Florida, Pulley Ridge HAPC; main						main camera will be running at 30 degrees down on			
Kraken 2 - 2	ridge	24.93477	-83.649285	63.018	9/14/2011 13:46 14	4-IX-11-2	our transect; grey angel; graysby;	hard bottom; rubble; Slope- flat;	нв	
	Florida, Pulley Ridge HAPC; main						76 7 6 76 7 7	, , , ,		
Kraken 2 - 2	ridge	24.93477333	-83.64929	63.065	9/14/2011 13:49 14	4-IX-11-2	testing camera.	hard bottom; rubble; Slope- flat;	нв	
	Florida, Pulley Ridge HAPC; main						moving to a flatter spot to test the downward facing			
Kraken 2 - 2	ridge	24.93478333	-83.64929167	62.925	9/14/2011 13:50 14	4-IX-11-2	angle; toward waypoint;	hard bottom; rubble; Slope- flat;	НВ	
							crinoid; same large blade Rhodophyta but not as			
							dominant as last site; Anadyomene is more			
							dominant here; Crustose Coralline algae; just			
	Florida, Pulley Ridge HAPC; main	24.02506	02 64027467	64.272	0/44/2044 42 52 44		finished 6 downward facing photos; Halimeda; with			
Kraken 2 - 2	ridge	24.93506	-83.64937167	64.373	9/14/2011 13:52 14	4-IX-11-2	CrustoseCorallinee algae;	hard bottom; rubble; Slope- flat;	НВ	
							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			
	Florida, Pulley Ridge HAPC; main						the primary camera and the field of view at			
Kraken 2 - 2	ridge	24.93512167	-83.64930333	64.793	9/14/2011 13:53 14	4-IX-11-2	midscreen is ~ 1.4 m. This angle seems to be the bes	hard bottom: rubble: Slope- flat:	нв	
	Florida, Pulley Ridge HAPC; main				0,0,0000					
Kraken 2 - 2	ridge	24.93511333	-83.64930167	64.653	9/14/2011 13:56 14	4-IX-11-2	getting ready to start a transect	hard bottom; rubble; Slope- flat;	нв	
	-						~13:54 the overlay on the video stoppped and is	<u> </u>		
							incorrect; There seems to have a bit more current;			
	Florida, Pulley Ridge HAPC; main						algae are more bent over; Don estimates .8 knots			
Kraken 2 - 2	ridge	24.93511333	-83.64930167	64.513	9/14/2011 13:58 14	4-IX-11-2	coming form the west	hard bottom; rubble; Slope- flat;	НВ	
							Back to correct over-lay time on video; It was off for			
							4.5 min; We'll need to backcheck data when the			
	Florida, Pulley Ridge HAPC; main						trackpoint 2 signal system stops, the time stops on			
Kraken 2 - 2	ridge	24.93511667	-83.649265	64.793	9/14/2011 13:59 14	4-IX-11-2	the over-lay;	hard bottom; rubble; Slope- flat;	НВ	
1	Florida, Pulley Ridge HAPC; main						X.muta; bicolored damsals; a lot of Anadyomene	hard bottom; rubble; Slope- flat; 20-		
Kraken 2 - 2	ridge	24.93525	-83.64925833	63.859	9/14/2011 14:00 14	4-IX-11-2	menziesii; more X.muta	40cm relief	НВ	
							and the description to the second of the sec			
							small ledges occasionally, less than 40 cm; Aplysina sponge; Agelas sponge; corallimorphs; more			
	Florida, Pulley Ridge HAPC; main						bicolored damsals; Yellowtail Reef Fish; heavy			
Kraken 2 - 2	ridge	24.93516333	-83.649225	64.046	9/14/2011 14:01 14	1-IX-11-2	Anadyomene menziesii 20-30%;	hard bottom; rubble; Slope- flat;	нв	
Krukeri Z	liage	24.55510555	03.043223	04.040	3/14/2011 14:01 14	T IN 11 2	occasional squirrel fish; Yellowtail Reef Fish;	nara socioni, rassie, siepe nac,	110	
							possible orange sponges; many of the same sponges			
	Florida, Pulley Ridge HAPC; main						as seen yesterday as far as morphology in	hard bottom; rubble; pavement;		
Kraken 2 - 2	ridge	24.93529	-83.64936333	63.672	9/14/2011 14:02 14	4-IX-11-2	concerned; X. muta;	Slope- flat;	нв	
							Rhodophyta; Anadyomene menziesii; slowly moving	· · · · ·		
							up the slope; from 65 m to 63 m; some surpulid			
1	Florida, Pulley Ridge HAPC; main						worms; ascidian; aplydian 25 cm, white,			
Kraken 2 - 2	ridge	24.93541333	-83.64928333	63.252	9/14/2011 14:04 14	4-IX-11-2	translucent;	hard bottom; rubble; Slope- flat;	НВ	
							Large sand tile mound ~ 60 cm high; good			
							downward digital of sand tile mound; X. muta 25 cm			
	Florida, Pulley Ridge HAPC; main						in diameter; potentially 30 small blue chromis or	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93554833	-83.64923833	61.524	9/14/2011 14:05 14	4-IX-11-2	wrasses;	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main								l <u>.</u>	
Kraken 2 - 2	ridge	24.93566167	-83.6491	61.617	9/14/2011 14:07 14	4-IX-11-2	crinoid gorgonian;	hard bottom; rubble; Slope- flat;	НВ	
	Florida Dullou Bid UABO '						At the beginning of first at the transport Dec. (1)	hard battam, rubble, Clare		
Krakar 2 2	Florida, Pulley Ridge HAPC; main	24.02567467	93 64044667	64.054	0/14/2014 14:07	1 IV 11 2	At the beginning of first photo transect; Begin with	hard bottom; rubble; Slope-	up.	
Kraken 2 - 2	ridge	24.93567167	-83.64911667	61.851	9/14/2011 14:07 14	+-IV-TT-Z	Photo 9785; A few more large X.muta;	moderate (<35o);	НВ	
							Large Antipathes over 40cm tall; Stichopathes; small			
							turf alga, large blade Anadyomene menziesii;	hard bottom;95% biota cover, relief		
	Florida, Pulley Ridge HAPC; main						primnoid gorgonians; aplydian tunicates; Slowly	30 cm; few ledges; rubble; Slope-		
Kraken 2 - 2	ridge	24.93568333	-83.64913667	61.384	9/14/2011 14:08 14	4-IX-11-2	moving up slope	moderate (<35o);	нв	
3 2	0-	555005555	33.0.313007	01.504	-,1.,2011100				l <sup>···-</sup>	

_	1					1	1			
							Mostly small reef fish; mixture of wrasses; X.muta			
	Florida, Pulley Ridge HAPC; main						with crinoid on it; 8 primnoid gorgonians within	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93583	-83.649055	60.029	9/14/2011 14:10	14-IX-11-2	field of view; greater amberjack school;	moderate (<35o);	НВ	
	_							hard bottom; rubble; Slope-		
	Florida, Pulley Ridge HAPC; main						4 amberjack; large X.muta; 2 bicolored damsals;	moderate (<35o); sand and small		
Kraken 2 - 2	ridge	24.93591	-83.64902667	60.449	9/14/2011 14:11	14-IX-11-2	Yellowtail Reef Fish; crinoid; 50 cm sandtile mound	rubble	НВ	
	Florida, Pulley Ridge HAPC; main						Umbraculum nudibranch at least 20 cm in diamter;	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93593	-83.64899833	61.243	9/14/2011 14:12	14-IX-11-2	downward digital is looking really good;	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.935975	-83.64898167	60.543	9/14/2011 14:13	14-IX-11-2		moderate (<35o);	HB	
	Florida, Pulley Ridge HAPC; main						1/2 way along with Photo transect; Chalk Bass; 2 of	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93598	-83.648995	60.403	9/14/2011 14:13	14-IX-11-2	the same hydroid that were collected yesterday;	moderate (<35o);	НВ	
							Still have large blade Rhodophyta; a few more			
	Florida, Pulley Ridge HAPC; main		00.64000		0/44/00:	44 10/	_ · ·	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.936035	-83.64896167	60.076	9/14/2011 14:14	14-IX-11-2	primnoid gorgonians; Chalk Bass;	moderate (<35o);	НВ	
							continuing up clone: 2 more existed in digital atilli-			
							continuing up slope; 2 more crinoids in digital still; larger Antipathes 40-60cm tall, wavy, translucent			
							and appearing better in video than digital still;			
	Florida, Pulley Ridge HAPC; main						X.muta, sandtile mound; Red blade I spresent but	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93607167	-83.64893167	59.982	9/14/2011 14:15	1/LIY_11_2	not as dominant;	moderate (<35o);	НВ	
RIGREII Z - Z	riuge	24.93007107	-83.04833107	33.302	3/14/2011 14:13	14-17-11-2	not as dominant,	moderate (<350),	IID	
	Florida, Pulley Ridge HAPC; main						small bicolored damals; more of the aplydian	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93616833	-83.64891	60.029	9/14/2011 14:16	14-IX-11-2	tunicates; 70cm tall sandtile mound;	moderate (<35o);	нв	
					-,,					
							Chalk Bass; another mound and lots of small reef			
							fish; Yellowtail Reef Fish; blue chromis; larger			
	Florida, Pulley Ridge HAPC; main						mound so far- over 1m tall; the downward shots are			
Kraken 2 - 2	ridge	24.93621667	-83.64888	59.235	9/14/2011 14:16	14-IX-11-2	covered about 30%Crustose Coralline algae;		НВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93627667	-83.64886833	60.169	9/14/2011 14:17	14-IX-11-2	hydroids; Rhodophyta; Anadyomene menziesii;	moderate (<35o);	НВ	
							Amberjack ~4; could be same grouped following			
							along; Chalk Bass; thin branching black coral,			
	Florida, Pulley Ridge HAPC; main						potentially more abundant as are primnoid			
Kraken 2 - 2	ridge	24.93633333	-83.64886	60.122	9/14/2011 14:18	14-IX-11-2	gorgonians; more Chalk Bass;		HB	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		•
Kraken 2 - 2	ridge	24.93638833	-83.64881	59.842	9/14/2011 14:19	14-IX-11-2	20m left of photo transect;	moderate (<35o);	НВ	
							Rhodophyta; We lost power so we're going to stop			
							for a min- 21m from end of photo transect; we are	L		
L	Florida, Pulley Ridge HAPC; main						on photo 9860 and are going to cycle everything;	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93643333	-83.648805	59.889	9/14/2011 14:20	14-IX-11-2	video off;	moderate (<35o);	НВ	
L	Florida, Pulley Ridge HAPC; main								l	
Kraken 2 - 2	ridge	24.936355	-83.64868833	59.889	9/14/2011 14:22	14-IX-11-2	power cycling back on;		НВ	
	Florida, Pulley Ridge HAPC; main						restarting Photo transect; we need to reset the		l	
Kraken 2 - 2	ridge	24.93633833	-83.64868667	60.076	9/14/2011 14:22	14-IX-11-2	camer time;		НВ	
	Florida, Pulley Ridge HAPC; main	24 025 44555	02.64000000	60.075	0/44/2044 4 : - :	44 11/44 -	we are setting the date and time; still waiting to			
Kraken 2 - 2	ridge	24.93644333	-83.64880333	60.076	9/14/2011 14:24	14-IX-11-2	continue transect;		НВ	
Karalara 2 2	Florida, Pulley Ridge HAPC; main	24.025.465	02.6400046	60.075	0/11/2011 11 ==	4417/443			Lub	
Kraken 2 - 2	ridge	24.93644667	-83.64880167	60.076	9/14/2011 14:27	14-IX-11-2	still waiting to continue		НВ	
	Florido Pullou Pidgo HADC:						hask where were had stanned abote transact 10-			
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93645167	-83.64880167	60.169	9/14/2011 14:27	14 IV 11 2	back where were had stopped photo transect, 19m remaining; finishing photo transect;		НВ	
Makeli Z - Z	riuge	24.5504510/	-03.04000107	00.109	3/14/2011 14:2/	±4-IV-11-7	remaining, misning prioro transect;		ПВ	

	1					1		I		1
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;	НВ	
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 (<350);	нв	
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;		НВ	
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		НВ	
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;		НВ	
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 plannigng 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);	НВ	
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);	НВ	
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 (<350);	НВ	
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);	НВ	
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;	moderate (<35o);	нв	
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);	НВ	
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		НВ	
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	НВ	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93739167	-83.64821	59.795	9/14/2011 14:52		X.muta; Chalk Bass; wrasse; Aplysina; Rhodophyta; crimnoid gorgonian. 3 crinoids;	hard bottom; Slope- moderate (<35o);	НВ	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93739167	-83.64821	59.936	9/14/2011 14:53	14-IX-11-2	atill transitting between plants to account	hard bottom; Slope- moderate (<35o);	НВ	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge Florida, Pulley Ridge HAPC; main	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; Rhodophyta; 4 within 4 m of each other X.muta;	hard bottom; Slope- moderate (<35o); hard bottom; Slope- moderate	НВ	
Kraken 2 - 2	ridge	24.93766	-83.648035	60.263	9/14/2011 14:57	14-IX-11-2	Photo; Still in transit, still on ridge, same habitat; 40m from	(<35o);	НВ	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.93770833	-83.64800167	61.15	9/14/2011 14:57	14-IX-11-2	the saddle; ~16 crimnoid gorgonians; Butterfly; Chalk Bass;	hard bottom; Slope- moderate (<35o);	НВ	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge Florida, Pulley Ridge HAPC; main	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 (<350);	НВ	
Kraken 2 - 2	ridge Florida, Pulley Ridge HAPC; main	24.93782667	-83.64792667	62.925	9/14/2011 15:00	14-IX-11-2	Large red blades Rhodophyta; small fish Hallimeda; flat red blade Rhodophyta; Chalk Bass;	hard bottom; Slope- moderate (<35o); hard bottom; Slope- moderate	НВ	
Kraken 2 - 2	ridge Florida, Pulley Ridge HAPC; main	24.93794	-83.64801167	62.318	9/14/2011 15:01	14-IX-11-2	hydroids  Plateygreen algae- Anadyomene menziesii (lots of	(<35o); hard bottom; rubble; Slope-	НВ	
Kraken 2 - 2	ridge	24.93796	-83.64796	62.131	9/14/2011 15:02	14-IX-11-2	it); wrasses;	moderate (<35o);	НВ	

							_		, ,	
Kraken 2 - 2 r	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
	ridge	24.937965	-83.647925	60.636	9/14/2011 15:03	14-IX-11-2	school of wrasses; Chalk Bass;	moderate (<35o);	НВ	
1							Chalk Bass; still going ot next transect site;			
F	Florida, Pulley Ridge HAPC; main						Rhodophyta- looks like a couple differnent kinds;	hard bottom; rubble; Slope-		
Kraken 2 - 2 r	ridge	24.93811	-83.64779667	62.691	9/14/2011 15:04	14-IX-11-2	Anadyomene menziesii;	moderate (<350);	нв	
F	Florida, Pulley Ridge HAPC; main						·	hard bottom; rubble; Slope-	1	
	ridge	24.93829	-83.647625	62.645	9/14/2011 15:05	14-IX-11-2	bicolored damsals; Sand tilefish mound;	moderate (<350);	нв	
	-	24.33023	-83.047023	02.043	3/14/2011 13:03	14-IX-11-Z		moderate (<330),	TID	
	Florida, Pulley Ridge HAPC; main						Rhodophyta; Anadyomene menziesii; bumping up		1	
	ridge	24.93835833	-83.64763333	63.579	9/14/2011 15:06	14-IX-11-2	to .45 knots		НВ	
F	Florida, Pulley Ridge HAPC; main						common diademnid ascidins- white; setting ROV	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93835833	-83.64763333	63.579	9/14/2011 15:07	14-IX-11-2	down for a second;	moderate (<35o);	HB	
F	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2 r	ridge	24.93850167	-83.64770833	64.14	9/14/2011 15:08	14-IX-11-2	restarting transit to transect area	moderate (<35o);	НВ	
							Gorgonacea; Due to time contraints (late start). The		1	
	Florida, Pulley Ridge HAPC; main						higher importance is to fisnih the photo transect	hard bottom; rubble; Slope-		
	ridge	24.93855167	-83.64766333	63.626	9/14/2011 15:09	14 17 11 2	I =	moderate (<350);	нв	
	-	24.93633107	-83.04/00333	03.020	9/14/2011 15.09	14-IX-11-2	than collecting; Chalk Bass;	* **	ПВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
	ridge	24.93869833	-83.64759333	62.925	9/14/2011 15:10	14-IX-11-2	Orange sponge- Agelas;	moderate (<35o);	НВ	
F	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2 r	ridge	24.93865	-83.64762167	62.738	9/14/2011 15:11	14-IX-11-2	still continuing to photo transect area	moderate (<35o);	НВ	
							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			
	Florida, Pulley Ridge HAPC; main						screen; same habitat; more Anadyomene menziesii;			
Kraken 2 - 2	ridge	24.93887	-83.64752833	62.598	9/14/2011 15:12	14-IX-11-2	Sand ti	moderate (<35o);	НВ	
F	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2 r	ridge	24.93902333	-83.647475	61.57	9/14/2011 15:14	14-IX-11-2	still heading to transect area;	moderate (<35o);	НВ	
									1	
							certain sections are completely covered in algae-			
	Florida, Pulley Ridge HAPC; main						right now is one of the most dominant places; other	hard bottom; rubble; Slope-		
		24.93927	-83.64738167	62.411	9/14/2011 15:16	14 17 11 2	places don't have as much for quite a few meters		НВ	
	ridge	24.93927	-03.04/3010/	02.411	9/14/2011 15.10	14-IX-11-2	places don't have as much for quite a few meters	moderate (<35o);	ПВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.93960333	-83.64728667	61.991	9/14/2011 15:17	14-IX-11-2	Photo	moderate (<35o);	НВ	
F	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2 r	ridge	24.939615	-83.64728167	62.598	9/14/2011 15:18	14-IX-11-2	Ascidiacea white translucent;	moderate (<35o);	НВ	
F	Florida, Pulley Ridge HAPC; main						orange-backed bass- first one we have seen so far	hard bottom; rubble; Slope-	1	
	ridge	24.93979	-83.647235	62.178	9/14/2011 15:20	14-IX-11-2	~10 cm; hydroids;	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main	21133373	03.0 17233	02.170	3/11/2011 13:20	11 11/11 2	a fish that looked like a spot-finned hog; Chalk Bass;	hard bottom; rubble; Slope-	1.10	
		24.02070	02 647225	62.265	0/14/2011 15:21	14 17 11 2			up.	
	ridge	24.93979	-83.647235	62.365	9/14/2011 15:21	14-17-11-2	Photo;	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 2	ridge	24.94014667	-83.64714167	61.757	9/14/2011 15:23	14-IX-11-2	chaning(?) out videos		НВ	
F	Florida, Pulley Ridge HAPC; main									
Kraken 2 - 2 r	ridge	24.94050333	-83.64704167	61.991	9/14/2011 15:26	14-IX-11-2	Stephanie will cover while Jenny takes lunch		НВ	
		-					New tape; the ship has slowed aid were stopping			
<del> </del>						1	1	L	1 1	1
	Florida, Pulley Ridge HAPC main						Thecause the ROV spun and they teather needs to be	Ihard bottom: rubble: Slone-	1	
F	Florida, Pulley Ridge HAPC; main	24 94055222	-82 64710	62 210	9/14/2011 15:27	1 <i>A</i> -IX-11-2	because the ROV spun and they teather needs to be		HR	
F	Florida, Pulley Ridge HAPC; main ridge	24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	because the ROV spun and they teather needs to be checked	hard bottom; rubble; Slope- moderate (<350);	НВ	
F		24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked		НВ	
F		24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts.		нв	
F		24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat		НВ	
F		24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts.		НВ	
F		24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat		НВ	
Kraken 2 - 2 r	ridge	24.94055333	-83.64719	62.318	9/14/2011 15:27	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae; Ascidiacea - Aplydium?; primnoid Gorgonacea; sea	moderate (<350);	НВ	
Kraken 2 - 2 r	ridge Florida, Pulley Ridge HAPC; main						new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae;	moderate (<350); hard bottom; rock - rubble; Slope-		
Kraken 2 - 2 r	ridge Florida, Pulley Ridge HAPC; main ridge	24.94055333 24.940675	-83.64719 -83.64710833	62.318	9/14/2011 15:27 9/14/2011 15:29		checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae; Ascidiacea - Aplydium?; primnoid Gorgonacea; sea cucuumber - warty skin, beige color; more halimeda	moderate (<350); hard bottom; rock - rubble; Slope-moderate (<350);	НВ	
Kraken 2 - 2 r	Florida, Pulley Ridge HAPC; main ridge Florida, Pulley Ridge HAPC; main	24.940675	-83.64710833	61.197	9/14/2011 15:29	14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae; Ascidiacea - Aplydium?; primnoid Gorgonacea; sea cucuumber - warty skin, beige color; more halimeda - large clumps of halimeda 15-20 cm in diam; lionfish;	hard bottom; rock - rubble; Slope- moderate (<350); hard bottom; rubble; Slope-	НВ	
Kraken 2 - 2 r  Kraken 2 - 2 r  Kraken 2 - 2 r  F Kraken 2 - 2 r	Florida, Pulley Ridge HAPC; main ridge Florida, Pulley Ridge HAPC; main ridge					14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae; Ascidiacea - Aplydium?; primnoid Gorgonacea; sea cucuumber - warty skin, beige color; more halimeda - large clumps of halimeda 15-20 cm in diam; lionfish; bicolor damse;	hard bottom; rock - rubble; Slope- moderate (<350); hard bottom; rubble; Slope- moderate (<350);		
Kraken 2 - 2 r	Florida, Pulley Ridge HAPC; main ridge Florida, Pulley Ridge HAPC; main	24.940675	-83.64710833	61.197	9/14/2011 15:29	14-IX-11-2 14-IX-11-2	checked  new line; 109 meters 18 degrees north. At .2 kts. Reef Butterfly; Xestospongia muta; similar habitat Anadyomene menziesii; Rhodophyta; Antipathidae; Ascidiacea - Aplydium?; primnoid Gorgonacea; sea cucuumber - warty skin, beige color; more halimeda - large clumps of halimeda 15-20 cm in diam; lionfish;	hard bottom; rock - rubble; Slope- moderate (<350); hard bottom; rubble; Slope-	НВ	

										,	
							stopping for lost tracking - ship getting ahead of us				
	Florida, Pulley Ridge HAPC; main	24.044.054.57	02.54504	64.054	0/44/2044 45 24 44 10		to clear up the track;	hard bottom; rubble; Slope-			
Kraken 2 - 2	ridge	24.94106167	-83.64694	61.851	9/14/2011 15:34 14-IX	X-11-2		moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main						resuming photo transect; lots of Anadyomene	hard bottom; rubble; Slope-			
Kraken 2 - 2	ridge	24.94109833	-83.64695667	61.944	9/14/2011 15:36 14-IX	X-11-2	menziesii;	moderate (<350);	НВ		
							on western edge of ridge; still abundant				
							Anadyomene menziesii; dominant blade				
							Rhodophyta; Gorgonacea; maybe primnoid;				
	Florida, Pulley Ridge HAPC; main						10=20%Crustose Coralline algae; common bushy	hard bottom; 100%; rubble; Slope-			
Kraken 2 - 2	ridge	24.94122333	-83.646875	61.711	9/14/2011 15:38 14-IX	X-11-2	black Antipathidae;	moderate (<35o);	НВ		
							looked like a large 40-50 cm diameter sponge with a				
							large central apical oscule; crinoidsa couple;				
							mustard color turf algae or Cyanophyta;				
	Florida, Pulley Ridge HAPC; main						Xestospongia muta; also Ircinia?; 5 Ascidiacea;				
Kraken 2 - 2	ridge	24.941385	-83.646795	60.963	9/14/2011 15:40 14-IX	X-11-2	maybe Aplidium; Halimeda;	hard bottom; rubble;	НВ		
							Sand tilefish; about 1/2 way thru				
							transect;Cyanophyta-black, bushy, 2-4 cm knobs,				
							can see trichomes on edges; first occurrence of high				
	Florida, Pulley Ridge HAPC; main						abundance of Cyanophyta; more Primnoid				
Kraken 2 - 2	ridge	24.94161833	-83.64668667	61.337	9/14/2011 15:42 14-IX	X-11-2	Gorgonacea; more bushy Antipathidae;	hard bottom; rubble;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 2	ridge	24.94174333	-83.646655	60.963	9/14/2011 15:45 14-IX	X-11-2	just lost tracking	hard bottom; rubble;	НВ		
							tracking restored; photo transect resumed; similar				
							habitat type; similar dominant species; small				
	Florida, Pulley Ridge HAPC; main						wrasses & damselfish; Ircinia; > 30 cm Xestospongia				
Kraken 2 - 2	ridge	24.94177333	-83.64669	61.524	9/14/2011 15:47 14-IX	X-11-2	muta;	hard bottom; rubble;	НВ		
	Florida, Pulley Ridge HAPC; main						Photo XS (quantitative)- End; last photo number				
Kraken 2 - 2	ridge	24.94204167	-83.64655333	61.15	9/14/2011 15:50 14-IX	K-11-2	0055	hard bottom; rubble;	НВ		
	J.				, ,			, , ,			
	Florida, Pulley Ridge HAPC; main						Xestospongia muta; Antipathidae; large flat blade				
Kraken 2 - 2	ridge	24.94203833	-83.64666	61.384	9/14/2011 15:52 14-IX	X-11-2	Rhodophyta; less abundant Anadyomene menziesii;	hard bottom; pavement;	НВ		
	,				, ,			, , , , , , , , , , , , , , , , , , ,			
							Photo XS (quantitative)- End; transiting to NNE;Sand				
							tilefish; bicolor damsels; common Chalk Bass;				
	Florida, Pulley Ridge HAPC; main						Xestospongia muta; bushy Antipathidae; Yellowtail				
Kraken 2 - 2	ridge	24.94207	-83.64662833	60.403	9/14/2011 15:53 14-IX	X-11-2	Reef Fish; spotfin hogfish;	hard bottom; rubble;	НВ		
	- 0-				., ,		on top of ridge; approaching saddle; habitat similar	, ,			
							to previous;Slope- moderate (<35o);Sand tilefish;				
	Florida, Pulley Ridge HAPC; main						abundant flat blade Rhodophyta; primnoid	hard bottom; rubble; 100%; relief 70-			
Kraken 2 - 2	ridge	24.94217167	-83.64655333	61.15	9/14/2011 15:55 14-IX	X-11-2	Gorgonacea;	80 cm;	НВ		
	Florida, Pulley Ridge HAPC; main						<del>-</del> ·	,			
Kraken 2 - 2	ridge	24.94261167	-83.64635	59.655	9/14/2011 15:57 14-IX	X-11-2	Chalk Bass; lower relief: 10-20 cm;	hard bottom; rubble;	НВ		
	Florida, Pulley Ridge HAPC; main	201107	23.0.033	33.033	5, 5, 7, 2011 10:07 14 1/4		2.2		5		
Kraken 2 - 2	ridge	24.942495	-83.64637667	61.057	9/14/2011 15:58 14-IX	X-11-2	Collect; photo and video of sample 101 and 102;	hard bottom; rubble;	нв	101 102 103	
		2572755	05.0 1057007	31.037	5,1.,201115.50 14-18		zzzz., prioto and video of sumple 101 and 102,	= 3000011, 100010,		_31 102 103	
							Finished collection. Continuing; bicolored damsals;				
							sharp nose puffer; Chalk Bass; Yellowtail Reef Fish;				
							More X.muta than earlier; Anadyomene menziesii;				
	Florida, Pulley Ridge HAPC; main						The state of the s	hard bottom; rubble; Slope-			
Kraken 2 - 2	ridge	24.942495	-83.64638167	61.711	9/14/2011 16:15 14-IX	X-11-7	black corals;	moderate (<35o);	НВ		
MUNCH Z - Z		24.342433	05.04030107	01./11	5/17/2011 10:15/14-18	. 11.2	Sider Cordia,	hard bottom; rubble; 10-40 cm	.10		
	Florida, Pulley Ridge HAPC; main							relief; other areas less reflief; Slope-			
Kraken 2 - 2	ridge	24.94261667	-83.64637667	61.103	9/14/2011 16:16 14-IX	V-11-2	coming to one of the saddle areas to the ridge.		НВ		
MIDNEIL Z - Z	ŭ	24.74201007	-03.0403/00/	01.103	J/ 14/ 2011 10.10 14-IX	V-11 <u>-</u> 7	coming to one of the saddle areas to the ridge;	moderate (<350);	IID		
Krakon 2 2	Florida, Pulley Ridge HAPC; main	24.04270667	92 646245	61 477	0/14/2011 16:17 14 19	v 11 2	Few more Stichopathes; more Halimeda; Black	hard bottom; rubble; Slope-	up.		
Kraken 2 - 2	ridge	24.94270667	-83.646345	61.477	9/14/2011 16:17 14-IX	V-TT-7	cyanobacterial clumps;	moderate (<350);	HB		
Krakon 2 2	Florida, Pulley Ridge HAPC; main	24.04270	02 (46205	64 477	0/14/2014 45:40 44 5	v 11 3	Cama habitat tuna	hard bottom; rubble; Slope-	up.		
Kraken 2 - 2	ridge	24.94279	-83.646285	61.477	9/14/2011 16:18 14-IX	V-TT-7	Same habitat type	moderate (<35o);	НВ		

							T	1		
							The slope is getting a bit stronger as we get to the			!
	Florida, Pulley Ridge HAPC; main	24042025	02 54522022	64.057	0/44/2044 46 20	44.07.44.3	saddle- probably right at 30 degrees or so; didemnid			
Kraken 2 - 2	ridge	24.942925	-83.64622833	61.057	9/14/2011 16:20	14-IX-11-2	tunicate ascidian;	moderate (<35o);	НВ	
	51 .1 5 11 5.1 1456 .						Turning on the head lights for a moment to see a bit			
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94299333	-83.64620833	61.711	9/14/2011 16:21	14 17 11 2	better; so far it's better for viewing benthic areas with the lights on.		нв	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main	24.94299555	-03.04020033	01.711	9/14/2011 16.21	14-IX-11-Z	with the lights on.	hard bottom; rubble; Slope-	пв	
Kraken 2 - 2	ridge	24.94297833	-83.64613333	62.038	9/14/2011 16:22	14 IV 11 2	Some type of Urchin? 16:22:40;	moderate (<350);	нв	
Kiakeli 2 - 2	Florida, Pulley Ridge HAPC; main	24.54257655	-03.04013333	02.036	5/14/2011 10.22	14-IX-11-Z	We are currently searching for some corals; so the	hard bottom; rubble; Slope-	ПВ	
Kraken 2 - 2	ridge	24.94314333	-83.64611333	62.505	9/14/2011 16:23	1/LIY_11_2	speed is not too fast	moderate (<350);	нв	
KIAKEII Z - Z	riuge	24.54514555	-83.04011333	02.303	3/14/2011 10.23	14-17-11-2	speed is not too last	hard bottom; rock rubble; Slope-	ПВ	
								moderate (<350); little sand rubble		
								too by sandtile fish mounds; relief		
	Florida, Pulley Ridge HAPC; main						same habitat; Chalk Bass; less common black corals	less than 20 cm		
Kraken 2 - 2	ridge	24.94328	-83.646135	63.813	9/14/2011 16:24	14-IX-11-2	here; white translucent aplydium ascidian again;		нв	
	5						, , , , , , , , , , , , , , , , , , , ,			
							Still similar habitat; Rhodophyta; Anadyomene			
	Florida, Pulley Ridge HAPC; main						menziesii; small thin blade Rhodophyta; big X.muta;	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94330167	-83.646195	63.953	9/14/2011 16:26	14-IX-11-2	Chalk Bass; Cherub fish; Photo;	moderate (<35o);	нв	
	Florida, Pulley Ridge HAPC; main						Sponge possibly Verongula rigida (yellow with dark	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94336333	-83.646205	64.466	9/14/2011 16:28	14-IX-11-2	greenish on it;	moderate (<35o);	НВ	
				<b>†</b>						
	Florida, Pulley Ridge HAPC; main						Lots and lots of Crustose Coralline algae some	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.943435	-83.646165	64.607	9/14/2011 16:29	14-IX-11-2	screen shots look like 40%; Chalk Bass; Halimeda	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94352833	-83.64607333	64.56	9/14/2011 16:31	14-IX-11-2	Anadyomene menziesii;	moderate (<35o);	НВ	
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94353833	-83.646065	64.42	9/14/2011 16:31	14-IX-11-2	at bottom of saddle;	moderate (<35o);	НВ	
							Chalk Bass; Yellowtail Reef Fish; bicolor damsals;			
							400m until the start of the 3rd photo transect; we			
I I	Florida, Pulley Ridge HAPC; main						are debating keeping to our time tables or	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94369167	-83.64600333	64.186	9/14/2011 16:32	14-IX-11-2	continuing doing another photo transect;	moderate (<350);	НВ	
							Final decision: there will be another 15 min photo			
							transect; it will be in a different location than			
	Florida, Pulley Ridge HAPC; main						originally planned in order to finish by around	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94377833	-83.64597	63.766	9/14/2011 16:34	14-IX-11-2	13:00. It will be 100m;	moderate (<35o);	НВ	
							We will begin 3rd photo transect; waypoint on the			
							chart is labeled Dive 2 transect 4; It's still along the			
	Florido Pullou Pid UARC: -						top of the ridge feature; it's similar to transect 3 in	hard battam, rubble: Clere	1	
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main	24.94380333	-83.64597667	64 272	9/14/2011 16:38	14 17 11 2	morphology but its closer to our current locations;	hard bottom; rubble; Slope-	шь	
NI dKell Z - Z	ridge	24.94360333	-03.04397007	64.373	<i>5</i> /14/2011 15:38	14-17-11-2	The beginning photo is 0135; our beginni	moderate (<350);	НВ	
							Started photo transect; current in a little stronger		1	
							maybe 0.6-0.7 knots; more particulate matter in		1	
	Florida, Pulley Ridge HAPC; main						water; you can see it in downward facing water;	hard bottom; rubble; Slope-		
Kraken 2 - 2	ridge	24.94387333	-83.64595	63.532	9/14/2011 16:40	14-IX-11-2	coming up the ridge about 1 meter;	moderate (<350);	нв	
			53.5 .555	33.332	-,, 2011 10.40		The ringe about I meter)			
	Florida, Pulley Ridge HAPC; main						Our first Coral- Josh is making the call to collect the	hard bottom; Rock; rubble; less than	1	
Kraken 2 - 2	ridge	24.94391833	-83.64592	63.859	9/14/2011 16:41	14-IX-11-2	coral sample and cancel the photo transect;	30cm relief;	нв	Coral- Agaricia
	Florida, Pulley Ridge HAPC; main		22.2.332		-,,	<del></del>	we are currently looking for the coral that Josh	hard bottom; rubble; Slope-	<del>                                     </del>	
Kraken 2 - 2	ridge	24.94392167	-83.645965	64.186	9/14/2011 16:44	14-IX-11-2	spotted;	moderate (<350);	нв	
1 ,	1 ~				-, ,	<del> </del>	1. '		<del>                                     </del>	+
							1	ı		
							We are currently taking a photo of the Leptoseris			
	Florida, Pulley Ridge HAPC; main						We are currently taking a photo of the Leptoseris cuculata; 10 cm in diamter; it will be spicy mustard	hard bottom; rubble; Slope-		
Kraken 2 - 2	Florida, Pulley Ridge HAPC; main ridge	24.94399833	-83.64591667	64.186	9/14/2011 16:47	14-IX-11-2		hard bottom; rubble; Slope- moderate (<350);	нв	Leptoseris cuculata
		24.94399833	-83.64591667	64.186	9/14/2011 16:47	14-IX-11-2	cuculata; 10 cm in diamter; it will be spicy mustard	1 1	НВ	Leptoseris cuculata

Part											
		Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Part	Kraken 2 - 2	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!	moderate (<35o);	НВ	
Meritan   1.1   Meritan   1.2   Meritan   1.								crinoids; Anadyomene menziesii; Crustose Coralline			
Part								Algae; Rhodophyta; testing lights; branching			
Token 2 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 - 2 Protes, Pulley Ridge 149°C, main Park Service 1 Protes, Pulley Ridge 149°C, main Park Service		Florida, Pulley Ridge HAPC; main						Chlorophyta; 60 from the beginning waypoint;			
Section 7. 1 Profess Purify Video HAPC, read in Control 1. 1 Profess Purify Vi	Kraken 2 - 3	ridge	24.894575	-83.65966667	61.15	9/14/2011 19:07	14-IX-11-3	orange backed bass	hard bottom; rubble; Slope- flat;	НВ	
Section 7. 1 Profess Purify Video HAPC, read in Control 1. 1 Profess Purify Vi		-						on the move heading towards to the transect:			
March   Marc		Florida, Pulley Ridge HAPC: main						I			
Florida, Pulley Ridge PAPC, main   24,8944137   38,5596333   50,75   9/14/2011 19-20   18-11-12	Kraken 2 - 3		24 89462667	-83 65968	60 683	9/14/2011 19:08	14-IX-11-3		hard hottom: rubble: Slone- flat:	HB	
Fortica, Pulsy Ringer MarC, main   Cale	Krukeri 2 3	nage	24.03402007	03.03300	00.003	3/14/2011 13:00	14 IX 11 3	-	nara bottom, rabbie, slope mat,	110	
Marker   M		Florido Dullou Didos HADOin									
Florida Pulley Ridge PMAC, main   2.4.8948187   43.6996833   60.469   9/14/20111912   548-113   constant of route up, goory green alage   not bettom, rubble, Sope-flat;   18			24 00 402222	02.55052457	60.776	0/44/2044 40 40	44.07.44.0	1			
March   Marc	Kraken 2 - 3	_	24.89493333	-83.65963167	60.776	9/14/2011 19:10	14-IX-11-3	Coralline Algae;	nard bottom; rubble; Slope- flat;	нв	
Foreida Pulley Ridge FMPC main											
Final	Kraken 2 - 3	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;	НВ	
Fereign Pulser		Florida, Pulley Ridge HAPC; main						Photo globular green algae; Lobophora? -			
France   1   1   1   1   1   1   1   1   1	Kraken 2 - 3	ridge	24.89481167	-83.65966833	60.683	9/14/2011 19:12	14-IX-11-3	Phaeophyta;	hard bottom; rubble; Slope- flat;	НВ	
France   1   1   1   1   1   1   1   1   1		Florida, Pulley Ridge HAPC; main									
Finds   Funds   Fund	Kraken 2 - 3		24.89480667	-83.65964667	60.73	9/14/2011 19:14	14-IX-11-3		hard bottom: rubble: Slope- flat:	нв	
Markane   Mark	<u> </u>	_				. ,		Photo of gooey green algae to become sample 101	, , , , , , , , , , , , , , , , , , , ,	+ +	<del></del>
Farcial A Palley Ridge MAPC, main   Kraken 2 - 3   ridge   MAPC,	Kraken 2 - 3	· · · ·	24 89481167	-83 E20EV333	60 833	9/14/2011 10:15	1A-IX-11-2		hard hottom: rubble: Slone- flat:	HR	
	Makeli Z = 3	_	24.03401107	-03.03704333	00.023	J/ 14/ 2011 17:13	T4-IV-TT-2	- 0103-JPB Prioto number	nara bottom, rabbie, slope- lidt;	מוט	
Findia, Pulley Ridge HAPC; main   24,8948487   23,6596483   60,043   9/14/2011 1924   14/5-13			24 00 400000	02.55055457	60.70	0/44/2044 40 40	44.07.44.0	0 11 1 101 0 102			
Fordia, Pulley Ridge HAPC, main   Marker 1	Kraken 2 - 3	ridge	24.89480333	-83.65965167	60.73	9/14/2011 19:19	14-IX-11-3		hard bottom; rubble; Slope- flat;	нв	
Krisken 2 - 3   ridge											
Fordida, Pulley Ridge HAPC, main   24,8950487   83,659648   60,216   9/14/2011 19:27   14-18-113   1		Florida, Pulley Ridge HAPC; main						menziesii; heading to transect point; underway to			
Florida, Pulley Ridge HAPC, main   24.89494167   83.659645   60.216   9/14/2011 19:26   14-K1-13	Kraken 2 - 3	ridge	24.89484167	-83.65964833	60.403	9/14/2011 19:24	14-IX-11-3	WP for 1st transect;	Slope- flat - no ledges;	НВ	
Kraken 2 - 3 ridge								large Demospongiae; Sand Tilefish burrow;			
Florida, Pulley Ridge HAPC; main   24.8950833		Florida, Pulley Ridge HAPC; main						Yellowtail Reef fish; Bicolor reef fish; cherub fish;			
Florida, Pulley Ridge HAPC; main   24.8950833	Kraken 2 - 3	ridge	24.89494167	-83.659645	60.216	9/14/2011 19:26	14-IX-11-3	comatulid crinoid:	hard bottom: rubble: Slope- flat:	нв	
Florida, Pulley Ridge HAPC, main   24,8950883								<u> </u>	, , , , , , , , , , , , , , , , , , , ,	+	· · · · · · · · · · · · · · · · · · ·
Findia		Florida Pulley Ridge HAPC: main									
Florida, Pulley Ridge HAPC; main   24.89504   83.6595933   59.795   9/14/2011 19:29   14-IX-113   59heciospongia muta;   59heciospongia;   59hec	Vrakon 2 2		24 00502022	92 65060667	E0 70E	0/14/2011 10:27	14 17 11 2		hard bottom: rubble: Slone flat:	шв	
Kraken 2 - 3 ridge	Kiakeli 2 - 3	_	24.05303633	-83.03900007	35.753	3/14/2011 13.27	14-IX-11-3		nard bottom, rubble, slope- nat,	пь	
Florida, Pulley Ridge HAPC; main   24.8950167   -83.65960333   60.543   9/14/2011 19:30   14-IX-11-3   1090,pg   1			24.00504	02 65050222	50 705	0/44/2044 40 20	44.07.44.0				
Kraken 2 - 3 ridge	Kraken 2 - 3	_	24.89504	-83.65959333	59.795	9/14/2011 19:29	14-IX-11-3		hard bottom; rubble; Slope- flat;	нв	
Continuing transect; Anadyomene menziesii; flat Rhodophyta; hydroids; Codium or goove green in an indige   24.89508833   83.65959333   59.749   9/14/2011 19:31   14-IX-11-3											
Florida, Pulley Ridge HAPC; main ridge   24.8950833   -83.6595933   59.749   9/14/2011 19:31   14-IX-11-3   image   flat;   HB   Florida, Pulley Ridge HAPC; main ridge   24.8951833   -83.65954833   58.861   9/14/2011 19:32   14-IX-11-3   image   speed . 2 Anadyomene menziesii; Rhodophyta; bydroid; orange encrusting Demospongiae; Sand Tilefish burrow; Spirastrella, Demospongiae; Sand Tilefish; Bodophyta; Bishodophyta; Bishodophyta; Bishodophyta; Bishodophyta; Bishodophyta; Durrow Sand Tilefish; Reef Burrow; Sand Tilefish; Reef Mark ButterlifySh; Provide Sand Tilefish; Provide Sand Tilefish; Reef Mark ButterlifySh; Provide Sand Tilefish; Provide Sand	Kraken 2 - 3	ridge	24.89509167	-83.65960333	60.543	9/14/2011 19:30	14-IX-11-3	0190.jpg	hard bottom; rubble; Slope- flat;	НВ	
Kraken 2 - 3 ridge								continuing transect; Anadyomene menziesii; flat			
Speed .2 Anadyomene menziesii; Rhodophyta; hydroid; orange encrusting Demospongiae; Sand Tilefish burrow; Spirastrella, Demospongiae; Sand Tilefish; District Spirastrella, Demospongiae; Sand Tilefish burrow; Spirastrella, Demospongiae; Sand Tilefish; District Spirastrella, Demospongiae; Sand Tilefish; District Spirastrella, Demospongiae; Sand Tilefish; To cm black grouper - large; hard bottom; rubble; Slope-flat; hB   Durrow; Sand Tilefish; To cm black grouper - large; hard bottom; rubble; Slope-flat; hB   Durrow; Sand Tilefish; Rhodophyta; Durrow; Sand Tilefish;		Florida, Pulley Ridge HAPC; main						Rhodophyta; hydroids; Codium or gooey green in an	hard bottom; rock rubble; Slope-		
Florida, Pulley Ridge HAPC; main ridge   24.89531833   -83.65954833   58.651   9/14/2011 19:32   14-IX-11-3	Kraken 2 - 3	ridge	24.89508833	-83.65959333	59.749	9/14/2011 19:31	14-IX-11-3	image	flat;	нв	
Florida, Pulley Ridge HAPC; main ridge   24.89531833   -83.65954833   58.651   9/14/2011 19:32   14-IX-11-3								speed .2 Anadyomene menziesii; Rhodophyta;		1 1	
Florida, Pulley Ridge HAPC; main   24.8953183   -83.6595483   58.861   9/14/2011 19:32   14-IX-11-3   bass;   Anadyomene menziesii; Rhodophyta; burrow Sand ridge   Anadyomene menziesii; Rhodophyta; burrow Sand ridge; Anadyomene menziesii; Anadyomene menziesii; Rhodophyta; burrow Sand ri	I										
Kraken 2 - 3 ridge	1	Florida, Pulley Ridge HAPC: main						1			
Florida, Pulley Ridge HAPC; main ridge   24.8954   -83.65950333   59.655   9/14/2011 19:34   14-IX-11-3   1	Kraken 2 - 3	· · · ·	24 89531822	-83 65954833	58 861	9/14/2011 19-22	14-IX-11-3	hass.	hard hottom: rubble: Slone- flat:	HB	
Kraken 2 - 3 ridge	akcii 2 - 3	_	24.05551033	03.03934033	50.001	J/ 1-7/ 2011 1J.32	T- W TT-7	Anadyomene menziesii: Rhodonhyta: hurrow Cand	na. a bottom, rabbie, slope- nat,	110	
Florida, Pulley Ridge HAPC; main ridge  Florid	Krokon 2 2		24.0054	02 65050222	FO CEE	0/14/2011 10 21	14 17 44 2		hard battam, rubble Class fl	un	
Kraken 2 - 3 ridge 24.895475 -83.6594933 58.861 9/14/2011 19:35 14-IX-11-3 Butterflyfish; hard bottom; rubble; Slope-flat; HB 9	kraken 2 - 3	_	24.8954	-83.05950333	59.655	9/14/2011 19:34	14-IX-11-3		naru bottom; rupbie; Siope- fiat;	нв	
Florida, Pulley Ridge HAPC; main ridge  Z4.89551833  Z4.89551833  Z4.89551833  Z4.89551833  Z4.895575  Z4.89557833  Z4.8957833   L								l	I I		
Kraken 2 - 3 ridge 24.89551833 -83.659436 59.001 9/14/2011 19:36 14-IX-11-3 menziesii; hard bottom; rubble; Slope-flat; HB	Kraken 2 - 3		24.895475	-83.65949333	58.861	9/14/2011 19:35	14-IX-11-3		hard bottom; rubble; Slope- flat;	НВ	
Florida, Pulley Ridge HAPC; main ridge  Florid		Florida, Pulley Ridge HAPC; main						more blade Rhodophyta; less Anadyomene			
Kraken 2 - 3 ridge 2 - 4.895575 - 83.65942667 5 9.001 9/14/2011 19:37 14-IX-11-3 burrow; macro algae dominated bottom hard bottom; rubble; Slope-flat; HB	Kraken 2 - 3	ridge	24.89551833	-83.659435	59.001	9/14/2011 19:36	14-IX-11-3	menziesii;	hard bottom; rubble; Slope- flat;	НВ	
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 damsels; wrasse; chalk bass; Anadyomene menziesii becoming more dominate; 3/4 of the way hard bottom; rubble; Slope- flat;  Bicolor damselfish; comatulid crinoid; Condylactis gigantea Actiniaria; Yellowtail Reef fish;  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		Florida, Pulley Ridge HAPC; main									
Florida, Pulley Ridge HAPC; main ridge  24.8957483  -83.65937833  59.889  9/14/2011 19:40  14-IX-11-3  bicolor damsels; wrasse; chalk bass; Anadyomene menziesii becoming more dominate; 3/4 of the way hard bottom; rubble; Slope- flat;  Bicolor damsels; wrasse; chalk bass; Anadyomene menziesii becoming more dominate; 3/4 of the way hard bottom; rubble; Slope- flat;  Bicolor damselfish; comatulid crinoid; Condylactis gigantea Actiniaria; Yellowtail Reef fish;  Florida, Pulley Ridge HAPC; main ridge  24.89579333  -83.65936667  60.309  9/14/2011 19:40  14-IX-11-3  bicolor damselfish; comatulid crinoid; Condylactis gigantea Actiniaria; Yellowtail Reef fish;  hard bottom; rubble; Slope- flat;  HB  HB	Kraken 2 - 3	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;	НВ	
Kraken 2 - 3 ridge 24.8957483 -83.6593783 59.889 9/14/2011 19:40 14-IX-11-3 menziesii becoming more dominate; 3/4 of the way hard bottom; rubble; Slope-flat; HB	<u> </u>	-						-		+ +	<del></del>
Kraken 2 - 3 ridge 24.8957483 -83.6593783 59.889 9/14/2011 19:40 14-IX-11-3 menziesii becoming more dominate; 3/4 of the way hard bottom; rubble; Slope-flat; HB	1	Florida Pulley Ridge HAPC: main						hicolor damsels: wrasse: chalk hass: Anadyomene			
Florida, Pulley Ridge HAPC; main ridge L4.89579333 -83.65936667 60.309 9/14/2011 19:41 14-IX-11-3 gigantea Actiniaria; Yellowtail Reef fish; hard bottom; rubble; Slope- flat; HB Florida, Pulley Ridge HAPC; main Call Plorida, Pulley Ridge HAPC; main Call Plorid	Kraken 2 - 3		24 89574822	-83 65037833	50 880	9/14/2011 10:40	1A-IX-11-2		hard hottom: rubble: Slone- flat:	HR	
Kraken 2 - 3 ridge 24.8957933 -83.6593667 60.309 9/14/2011 19:41 14-IX-11-3 gigantea Actiniaria; Yellowtail Reef fish; hard bottom; rubble; Slope-flat; HB	Makeli Z = 3	Tidge	24.03374033	-03.03737633	33.003	J/ 14/ 2011 17.40	T4-IV-TT-2	menzican becoming more dominate, 5/4 or the way	nara bottom, rabbie, slope- lidt;	110	
Kraken 2 - 3 ridge 24.8957933 -83.6593667 60.309 9/14/2011 19:41 14-IX-11-3 gigantea Actiniaria; Yellowtail Reef fish; hard bottom; rubble; Slope-flat; HB	1	Florido Pullou Pid. 1120						bissles demonstrate and the control of the control			
Florida, Pulley Ridge HAPC; main chalk bass; comatulid crinoid; Anadyomene chalk bass; comatulid crinoid; Anadyomene			24.00======	00 650000		0/44/00:	44 11/				
	kraken 2 - 3	-	24.89579333	-83.65936667	60.309	9/14/2011 19:41	14-IX-11-3		nard bottom; rubble; Slope- flat;	HB	
Kraken 2 - 3   ridge   24.89587833   -83.65927667   59.795   9/14/2011 19:43   14-IX-11-3   menziesii;   hard bottom; rubble; Slope- flat;   HB	_				T						
	Kraken 2 - 3	ridge	24.89587833	-83.65927667	59.795	9/14/2011 19:43	14-IX-11-3	menziesii;	hard bottom; rubble; Slope- flat;	HB	

	1						1			1	
	Florida, Pulley Ridge HAPC; main						green gooey algae; chalk bass; bicolor damselfish;				
Kraken 2 - 3	ridge	24.89598333	-83.65926333	60.449	9/14/2011 19:45	14-IX-11-3	Xestospongia muta; black hydroids;	hard bottom; rubble; Slope- flat;	нв		
					-, , -		Anadyomene menziesii; flat Rhodophyta; agales	, , , ,			+
	Florida, Pulley Ridge HAPC; main						clathrodes Demospongiae; chalk bass; Didemnidae				
Kraken 2 - 3	ridge	24.89606833	-83.65929667	60.496	9/14/2011 19:46	14-IX-11-3	Ascidiacea;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 3	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;	НВ		
							underway; dominated by Anadyomene menziesii;				
							few Rhodophyta; black hydroids; 324 to next				
Krakan 2 2	Florida, Pulley Ridge HAPC; main	24.89618833	-83.659275	60.356	9/14/2011 19:48	14 17 11 2	transect point; Lobophora comatulid crinoid;	hard battam, rubble, Clana flat.	НВ		
Kraken 2 - 3	ridge	24.09010033	-63.039273	00.330	9/14/2011 19.48	14-17-11-2	serpulid	hard bottom; rubble; Slope- flat;	ПВ		
							Anadyomene menziesii dominate; occasional;				
							Xestospongia muta; comatulid crinoid; sharp nose				
							puffer; bicolor damselfish; Yellowtail Reef fish; Reef				
	Florida, Pulley Ridge HAPC; main						Butterflyfish; cherub fish; Xestospongia muta; Reef				
Kraken 2 - 3	ridge	24.89630833	-83.659295	59.609	9/14/2011 19:49	14-IX-11-3	Butterflyfish;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						black hydroids; comatulid crinoid; Anadyomene				
Kraken 2 - 3	ridge	24.89644833	-83.65926833	60.403	9/14/2011 19:51	14-IX-11-3	menziesii; black hydroids;	hard bottom; rubble; Slope- flat;	НВ		
							Anadyomene menziesii; bicolor damselfish; chalk				
	Florida, Pulley Ridge HAPC; main						bass; black hydroids; continuing on bottom, rock	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89656833	-83.65922167	59.468	9/14/2011 19:53	14-IX-11-3	rubble bottom;	moderate (<35o);	НВ		
	51 . 1 . 2 . 11 . 11 . 11 . 11						flat blade Rhodophyta; Anadyomene menziesii;				
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.896675	-83.65920333	59.468	9/14/2011 19:54	14 17 11 2	Gorgonacea; comatulid crinoid; yellow gorgonian to		НВ		
Kraken 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.890075	-63.03920333	39.408	9/14/2011 19.54	14-17-11-2	collect	moderate (<35o); hard bottom; rubble; Slope-	ПВ		
Kraken 2 - 3	ridge	24.89673833	-83.65918833	60.122	9/14/2011 19:56	14-IX-11-3	sample 001 - gorgonian Photo of sample 001	moderate (<350);	НВ	001	
Kruken 2 3	Florida, Pulley Ridge HAPC; main	24.03073033	03.03310033	00.122	3/14/2011 13:30	14 1/1 11 3	Sample out gargaman i noto di sample out	hard bottom; rubble; Slope-	110	001	+
Kraken 2 - 3	ridge	24.896735	-83.65919667	59.936	9/14/2011 20:03	14-IX-11-3	Collect 001;	moderate (<350);	нв		
	- 0				-, , -		continuing general transect; Anadyomene				+
							menziesii; Rhodophyta; black hydroids; Sand Tilefish				
	Florida, Pulley Ridge HAPC; main						burrow; purple reef fish; comatulid crinoid;				
Kraken 2 - 3	ridge	24.89673167	-83.65917667	59.422	9/14/2011 20:05	14-IX-11-3	Xestospongia muta;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						Sand Tilefish burrow Anadyomene menziesii;				
Kraken 2 - 3	ridge	24.89695667	-83.65911833	60.029	9/14/2011 20:07	14-IX-11-3	Rhodophyta; comatulid crinoid;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89716333	-83.659025	60.776	9/14/2011 20:10	14-IX-11-3	black hydroids;	moderate (<35o);	НВ		
	Florido Pullou Pidao HADC, maio						chalk bass; black hydroids; comatulid crinoid;	hard hattam, rubble, Clans			
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89731167	-83.65904167	60.403	9/14/2011 20:11	14-IX-11-3	mostly Anadyomene menziesii; Rhodophyta;	hard bottom; rubble; Slope- moderate (<35o);	НВ		
Kiakeli 2 - 3	Florida, Pulley Ridge HAPC; main	24.03/3110/	-83.03304107	00.403	3/14/2011 20.11	14-IX-11-J	Caulerpa Chlorophyta; bicolor damselfish;	hard bottom; rubble; Slope-	TID		+
Kraken 2 - 3	ridge	24.89741333	-83.659045	60.916	9/14/2011 20:13	14-IX-11-3	Ascidiacea;	moderate (<350);	нв		
	Florida, Pulley Ridge HAPC; main				., ,		,	hard bottom; rubble; Slope-	1	-	+
Kraken 2 - 3	ridge	24.89740333	-83.659035	60.916	9/14/2011 20:14	14-IX-11-3	overlay coming off for site video; cherub fish;	moderate (<350);	нв		
					·						1
							agales; Xestospongia muta; Ascidiacea; comatulid				
	Florida, Pulley Ridge HAPC; main						crinoid; Anadyomene menziesii; Didemnidae	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.897565	-83.65897	60.589	9/14/2011 20:16	14-IX-11-3	Ascidiacea; bicolor damselfish; wrasse;	moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main							soft bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89772333	-83.65891667	60.122	9/14/2011 20:18	14-IX-11-3	slopeing up; burrow; blue cromis;	moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main	24.007020	02 65006555	64.05=	0/44/2044 20 : 0	44.07.44.5					
Kraken 2 - 3	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;	НВ		
							Anadyomono monziosii: Crustosa Carallina Al				
							Anadyomene menziesii; Crustose Coralline Algae; less abundant flat Rhodophyta; Xestospongia muta;				
	Florida, Pulley Ridge HAPC; main						comatulid crinoid; black hydroids; 130 m to next				
Kraken 2 - 3	ridge	24.897855	-83.658835	59.889	9/14/2011 20:20	14-IX-11-3	transect; orange back bass	hard bottom; rubble; Slope- flat;	нв		
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	1	1					T	T	1	1	
	Florida, Pulley Ridge HAPC; main						Xestospongia muta; Anadyomene menziesii;	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89800167	-83.65882333	61.01	9/14/2011 20:22	14-IX-11-3	Rhodophyta; bicolor damselfish; 292 images left	moderate (<35o);	нв		
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89800167	-83.65882333	61.524	9/14/2011 20:23	14-IX-11-3	Geodia Demospongiae;	moderate (<35o);	НВ		
							Condalactus gigantia; bicolor damselfish;				
	Florida, Pulley Ridge HAPC; main						Anadyomene menziesii; Rhodophyta; Xestospongia				
Kraken 2 - 3	ridge	24.89815833	-83.65879	61.384	9/14/2011 20:24	14-IX-11-3	muta; burrow Sand Tilefish;	hard bottom; rubble; Slope- flat;	НВ		
							100 m from next transect; Geodia Demospongiae;				
	Florida, Pulley Ridge HAPC; main						chalk bass; bicolor damselfish; bridaled burr fish	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89823	-83.65878833	61.057	9/14/2011 20:25	14-IX-11-3	GREAT video for website	moderate (<350);	нв		
	Florida, Pulley Ridge HAPC; main						moving on; Sand Tilefish burrow; bicolor		+		+
Kraken 2 - 3	ridge	24.89821	-83.65885	61.197	9/14/2011 20:29	14-IX-11-3	damselfish; black hydroids;	hard bottom; rubble; Slope- flat;	нв		
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89831333	-83.65875667	59.842	9/14/2011 20:30	14-IX-11-3	burrow Sand Tilefish; bicolor damselfish;	moderate (<350);	НВ		
							Stichopathes and Leiopathes Antipathidae; 002 and				
	Florida, Pulley Ridge HAPC; main						003 images of these - 2 photos of 003 -	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89845667	-83.65872167	60.496	9/14/2011 20:31	14-IX-11-3	Stichopathes	moderate (<350);	НВ	003 x2	
Krakan 2 2	Florida, Pulley Ridge HAPC; main	24 90955	92 65964	FO 441	0/14/2011 20:51	14 17 11 2	under way; bicolor damselfish; chalk bass; wrasse;	hard bottom; rubble; Slope-	шв		
Kraken 2 - 3	ridge	24.89855	-83.65864	58.441	9/14/2011 20:51	14-IX-11-3	Codium	moderate (<350);	НВ	+	
	Florida, Pulley Ridge HAPC; main						30 m from 2nd photo transect site; black hydroids;	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.898755	-83.65854	59.375	9/14/2011 20:52	14-IX-11-3	Anadyomene menziesii; Rhodophyta;	moderate (<350);	нв		
									+		+
							Photo XS (quantitative)- start #2; ; starting on image				
	Florida, Pulley Ridge HAPC; main						0281.jpg; bicolor damselfish; comatulid crinoid;	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89904667	-83.65851833	59.188	9/14/2011 20:54	14-IX-11-3	waiting for them to position;	moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.89892333	-83.65844833	59.235	9/14/2011 20:56	14-IX-11-3	underway on photo transect 2; chalk bass;	moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main				. / /		black hydroids; Rhodophyta; Anadyomene	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.899035	-83.65844167	59.095	9/14/2011 20:57	14-IX-11-3	menziesii; Lobophora;	moderate (<350);	НВ		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89934333	-83.65837	58.908	9/14/2011 21:00	14 IV 11 2	Xestospongia muta; Sand Tilefish;	hard bottom; rubble; Slope- moderate (<35o);	НВ		
Kiakeli 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.85534333	-63.03637	36.506	3/14/2011 21.00	14-17-11-2	Dominant Anadyomene menziesii; Rhodophyta; and	moderate (<330),	ПВ	+	
Kraken 2 - 3	ridge	24.8994	-83.65835333	58.534	9/14/2011 21:01	14-IX-11-3	black hydroid; chalk bass;	hard bottom; Rock; rubble;	нв		
							Largest macro algae is the Anadyomene menziesii;	,,			+
	Florida, Pulley Ridge HAPC; main						small pink sponges; Crustose Coralline Algae;				
Kraken 2 - 3	ridge	24.89947667	-83.65831333	58.768	9/14/2011 21:03	14-IX-11-3	Lobophora; chalk bass;	hard bottom; rubble;	НВ		
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 3	ridge	24.89952167	-83.65828167	57.553	9/14/2011 21:04	14-IX-11-3	~50m till the end of the transect;		НВ		
	Florida, Pulley Ridge HAPC; main						Finished the Photo transect; continuing to next				
Kraken 2 - 3	ridge	24.89958667	-83.65826333	58.534	9/14/2011 21:05	14-IX-11-3	photo transect area		НВ		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89961167	-83.65823333	58.347	9/14/2011 21:06	1/1-17-11 2	Lost control of ROV. Going to have to do ao power		нв		1
Makell 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.0330110/	-03.03623333	30.347	3/14/2011 21:06	14-1V-11-2	cycle on the system;		ПВ		+
Kraken 2 - 3	ridge	24.899585	-83.658235	58.347	9/14/2011 21:06	14-IX-11-3	currentyl cycling power;		НВ		
akcii 2 3	Florida, Pulley Ridge HAPC; main	24.055585	03.030233	30.347	5,17,201121.00	1.1/11.3	carrette, eyemig power,		1.15		+
Kraken 2 - 3	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;	НВ		1
					-		21:09- back under control and now we are		1		+
	Florida, Pulley Ridge HAPC; main						proceeding to our next photo transect area;			1	
Kraken 2 - 3	ridge	24.89962167	-83.65824167	58.441	9/14/2011 21:08	14-IX-11-3	Planning on going .4 knots;		НВ		<u> </u>
	Florida, Pulley Ridge HAPC; main										
Kraken 2 - 3	ridge	24.89958	-83.658185	58.254	9/14/2011 21:10	14-IX-11-3	Bicolored damsals and wrasses;	hard bottom; rubble;	НВ		
											1
	Florida Dullov Pidgo HADC: ****						Orange sponge: possibly Astrophorida or Agelas;				
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.899645	-83.65808	57.927	9/14/2011 21:11	14-IX-11-3	two photos of the sponge: 338 and 339; The sponge will be sample 004 for this dive; Crinoid in the area.	hard hottom: rubble:	НВ	004	
MIGNETI Z = 3	павс	44.077043	-03.03608	31.341	3/14/2011 21:11	T-4-IV-TT-2	will be sample out for this tive, criticia in the area.	nara bottom, rabbie,	מוון	304	

	Ist : 1 p II p: 1 1400 : 1	1				1	Territoria de la compansión de la compan		_	1	1
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main ridge	24.89966333	-83.65804	57.507	9/14/2011 21:22	14 IV 11 2	Stephanie is sitting in for Shirley, Jen is sitting in for Steph		НВ		
Kraken 2 - 3	nage	24.89900333	-63.03604	37.307	9/14/2011 21.22	14-17-11-2	Starting transit again; Sand Tilefish mound;		ПВ		
	Florida Bullou Bidga HADCı main										
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89964833	-83.65803167	57.74	9/14/2011 21:22	14 IV 11 2	Anadyomene menziesii; black hydroid; crinoid; Test shot: 21:23:10.	hard bottom; rubble;	НВ		
Kraken 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.69904655	-63.03603107	37.74	9/14/2011 21.22	14-17-11-2	We're at the end at what was supposed to be	nard bottom; rubble;	ПВ		
Kraken 2 - 3		24.89986167	-83.65812167	57.647	9/14/2011 21:24	14 IV 11 2	transect 2; Heading toward transect 3;	hard bottom; rubble;	нв		
Kraken 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.89980107	-03.03012107	37.047	9/14/2011 21.24	14-17-11-2		nard bottom; rubble;	ПВ		
K1 2 2		24.00004	02 (5040222	57.88	0/14/2011 21:25	4417443	Ship is getting into postion and we'll start moving in	hand battana mikkla Claus flat	НВ		
Kraken 2 - 3	ridge	24.89984	-83.65810333	57.88	9/14/2011 21:25	14-IX-11-3	a min; Cherub fish 21:28;	hard bottom; rubble; Slope- flat;	нв		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89978667	-83.65801667	57.787	0/14/2011 21:29	14 17 11 2	Dominant species Anadyomene menziesii; Flat	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 3	ridge	24.89978007	-63.03601007	37.767	9/14/2011 21:28	14-17-11-2	Rhodophyta;	nard bottom; rubble; Slope- nat;	ПВ		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89979	-83.658055	57.787	9/14/2011 21:29	14 IV 11 2	ROV went dead again; Going to have to cycle the power; Gogonian in the picture;	hard bottom; rubble; Slope- flat;	НВ		
Kiakeli 2 - 3	ridge	24.03373	-63.036033	37.767	3/14/2011 21.23	14-17-11-2	power, dogorilan in the picture,	nard bottom, rubble, slope- nat,	ПВ		
Krakon 2 2	Florida, Pulley Ridge HAPC; main	24 90094167	02 65011222	F7 707	0/14/2011 21:20	14 17 11 2	Downered offi 21,20,07		uв		
Kraken 2 - 3	ridge	24.89984167	-83.65811333	57.787	9/14/2011 21:29	14-IX-11-3	Powered off: 21:30:07		НВ		
K1 2 2	Florida, Pulley Ridge HAPC; main	24 00005222	02 650005	F7 707	0/14/2011 21:20	4417443	Devise heavish heads and				
Kraken 2 - 3	ridge	24.89985333	-83.658095	57.787	9/14/2011 21:30	14-IX-11-3	Power brought back on;		НВ		
Krokon 2 2	Florida, Pulley Ridge HAPC; main	24 90005022	02 (50445	F7 F07	0/14/2011 21 21	14 17 44 2	DOV has never again and in a state and in		LIB.		
Kraken 2 - 3	ridge	24.89985833	-83.658115	57.507	9/14/2011 21:31	14-IX-11-3	ROV has power again and is moving again;		НВ		-
1	Florido Dullou Bidgo HADC:						Altitude is not working. Stoph is setting the		1		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.89999667	-83.65805333	58.628	9/14/2011 21:32	14 17 11 2	Altitude is not working; Steph is setting up the	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 3	ridge	24.89999007	-03.03003333	36.026	9/14/2011 21.32	14-17-11-2	camera and woking out the power outage kinks;	nard bottom; rubble; Slope- nat;	ПВ		
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.90021333	-83.65803333	57.693	9/14/2011 21:33	14 17 11 2	Continuing transit to transect; Rhodophyta;	hard battam, rubble, Clane flat.	НВ		
Kraken 2 - 3	ridge	24.90021333	-03.03003333	37.093	9/14/2011 21.33	14-17-11-2	Anadyomene menziesii;	hard bottom; rubble; Slope- flat;	ПВ		
	Florida, Pulley Ridge HAPC; main						Camera is set; Anadyomene menziesii are getting a little bit less; black coral; large hydroid; Gorgonians-				
Kraken 2 - 3	ridge	24.90029	-83.65801	58.067	9/14/2011 21:35	14 IV 11 2	primnoid;		НВ		
Kiakeli 2 - 3		24.50025	-03.03801	36.007	3/14/2011 21.33	14-17-11-2	<u>'</u>	hard battam, rubble, Clans	ПВ	<u> </u>	
Kraken 2 - 3	Florida, Pulley Ridge HAPC; main	24.90031167	-83.65797333	58.347	9/14/2011 21:36	14 IV 11 2	Anadyomene menziesii increasing again; There was	hard bottom; rubble; Slope- moderate (<35o);	НВ		
Kraken 2 - 3	ridge Florida, Pulley Ridge HAPC; main	24.90031167	-03.03/9/333	36.347	9/14/2011 21.30	14-17-11-2	a slight rise in slope;	moderate (<350);	ПВ		
Kraken 2 - 3	ridge	24.90046	-83.65799333	56.993	9/14/2011 21:37	1/LIY_11_3	Rhodophyta; Anadyomene menziesii; Black coral;	hard bottom; rubble; Slope- flat;	НВ		
Riakeli 2 - 3	Florida, Pulley Ridge HAPC; main	24.50040	-83.03733333	30.553	3/14/2011 21.37	14-17-11-3	Milodophyta, Anadyomene menziesii, biack corai,	mard bottom, rubbie, slope-mat,	TID		
Kraken 2 - 3	ridge	24.90059667	-83.65800333	59.282	9/14/2011 21:38	14 IV 11 2	chalk bass;	hard bottom; rubble; Slope- flat;	НВ		
Kiakeli 2 - 3	nuge	24.90039007	-03.03000333	33.202	3/14/2011 21.36	14-17-11-2	Same habitat; hydroids, bicolored damsal; crinoids;	nard bottom, rubble, slope- nat,	ПВ	<u> </u>	
	Florida, Pulley Ridge HAPC; main						lobophora; ascidian; Rhodophyta; Anadyomene				
Kraken 2 - 3	ridge	24.90082167	-83.65798667	59.001	9/14/2011 21:39	1 <i>A</i> -IX-11-3	menziesii;	hard bottom; rubble; Slope- flat;	нв		
Krukeri 2 3	nage	24.50002107	03.03730007	33.001	3/14/2011 21:33	14 IX 11 3	menziesii,	nara bottom, rabbie, slope mat,	1110		
	Florida, Pulley Ridge HAPC; main						Giant school of fish RECHECK Species; hydroids- lots				
Kraken 2 - 3	ridge	24.90101833	-83.65795667	58.861	9/14/2011 21:40	14-IX-11-3	of them; white crimnoid Gorgonacea;	hard bottom; rubble; Slope- flat;	нв		
THE STATE OF	Florida, Pulley Ridge HAPC; main	2 1130101033	03.03733007	50.001	3/11/201121110	1 11.5	Hydroid; Black coral; Taking a photo; downward	nara socioni, rassie, siope nat,			
Kraken 2 - 3	ridge	24.901075	-83.65795167	58.254	9/14/2011 21:42	14-IX-11-3	facing photo; Primnoids;	hard bottom; rubble; Slope- flat;	нв		
	Florida, Pulley Ridge HAPC; main				-,,			hard bottom; rubble; Slope- flat;	1		
Kraken 2 - 3	ridge	24.90108	-83.65795833	57.6	9/14/2011 21:43	14-IX-11-3		Rock;	нв		
	Florida, Pulley Ridge HAPC; main			20	., ,		We just lost tracking; Settleing down to adjust ROV	•	1	1	1
Kraken 2 - 3	ridge	24.90108	-83.65795833	58.114	9/14/2011 21:43	14-IX-11-3	momentarily;	hard bottom; rubble; Slope- flat;	нв		
	Florida, Pulley Ridge HAPC; main	50130		55.224	.,,	22 3			+		<del> </del>
Kraken 2 - 3	ridge	24.900975	-83.65778833	58.161	9/14/2011 21:44	14-IX-11-3	Corallinales Peyssonneliacea, Peyssonnelia;	hard bottom; rubble; Slope- flat;	нв		
	<u> </u>				, ,		Coral agaricia 15cm- green stripes and purple and	, , , , , , , , , , , , , , , , , , , ,	1	1	1
1							brown radiating colors; 21:48; Haplosclerids; Photo		1		
	Florida, Pulley Ridge HAPC; main						364. Used suction to collect the coral; Bicolored				
Kraken 2 - 3	ridge	24.901125	-83.65782	57.273	9/14/2011 21:46	14-IX-11-3	damsal;	hard bottom; rubble; Slope- flat;	нв	005	Coral- Agaricia
F	Florida, Pulley Ridge HAPC; main				., ,		,	, , , , , , , , , , , , , , , , , , , ,	1		
Kraken 2 - 3	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;	нв		
	-						Shirley is back; single Coral- Agaricia; Haplosclerid		1	<del> </del>	<del>                                     </del>
1	Florida, Pulley Ridge HAPC; main						sponges; chalk bass; bicolor damselfish; Transiting	hard bottom; Rock; rubble; Slope-	1		
Kraken 2 - 3	ridge	24.90114167	-83.65779667	57.834	9/14/2011 22:00	14-IX-11-3	to transect 3 area	flat;	нв		Coral- Agaricia
<del></del>	Ŭ				, , ======	<u> </u>	chalk bass; orange fish RECHECK Species; ; orange	*	1	<del> </del>	. 0
1	Florida, Pulley Ridge HAPC; main						sponge collected previosly (sample 4); Anadyomene		1		
Kraken 2 - 3	ridge	24.90122667	-83.65781167	58.441	9/14/2011 22:02	14-IX-11-3	menziesii; Rhodophyta;	hard bottom; rubble; Slope- flat;	НВ		
			-				1	, , , , , ,	1	l	l

State   1   Stat		T						T	T		
Autor   1.5		Florida, Pulley Ridge HAPC; main						= ' ' ' ' ' '			
Part	Kraken 2 - 3	ridge	24.9013	-83.65776833	58.161	9/14/2011 22:03	14-IX-11-3	menziesii;	flat;	НВ	
Forcials 2-1 of process, Pullary Ridge MAPC, main (age) 24-0014583		Florida, Pulley Ridge HAPC; main									
Selection   1   Selection	Kraken 2 - 3	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;	НВ	
Selection   1   Selection										<u> </u>	
Selection   1   Selection		Florida Pulley Ridge HAPC: main						Sand Tilefish hole: chalk hass: hicolor damselfish: A			
Norday   1.00   Norday   Nursy Rigger   NAPC, main   Nursy Rigger   NAPC, ma	Kraken 2 - 3		24 90145833	-83 65773167	58 055	0/14/2011 22:05	1/1-17-11-3		hard hottom: rubble: Slone- flat:	HB	
National   Part   Par	Krakeri 2 - 3	_	24.30143833	-03.03773107	36.333	3/14/2011 22.03	14-17-11-2	lot more usu, renowtan keemsn, chair bass,		TIB	
Randa   7-1   Partial											
Recision   1	Kraken 2 - 3	_	24.90169667	-83.65768667	58.254	9/14/2011 22:07	14-IX-11-3	mainly bicolor damselfish; bicolor damselfish;		НВ	
Floods, Pulley Rigge MAC, main   Ask 507505   Se.721   9/14/2011 22:09   14/1-13   Ask 500-200   Ask 507505   Se.721   9/14/2011 22:09   14/1-13   Ask 500-200   Ask 507505   Se.721   9/14/2011 22:00   14/1-13   Ask 500-200   Ask 507505   Se.721   Ask 507505   Se.721   9/14/2011 22:00   14/1-13   Ask 500-200   Ask 507505   Se.721   Ask 507505   Se.7		Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Rock; Slope-		
Name   1-9     Name   1-9     Name   1-9     Name   1-9	Kraken 2 - 3	ridge	24.90176	-83.65769333	58.674	9/14/2011 22:08	14-IX-11-3	same habitat; muttin snapper pretty large size;	flat;	НВ	
Florida, Pulley Ridge RMPC, main   2,4 050179   33.657305   55.488   9/14/2011 2210   14 K11-3		Florida, Pulley Ridge HAPC; main						chalk bass; Anadyomene menziesii; Rhodophyta;			
Florida, Pulley Ridge (MPC, main   2.4 of 1973)   3.8557366   55.488   9/14/2011 2210   14/6-113	Kraken 2 - 3	ridge	24.9018	-83.65765	58.721	9/14/2011 22:09	14-IX-11-3	Lobophora;	hard bottom; rubble; Slope- flat;	НВ	
From											<del></del>
Florida, Pulley Ridge HAPC, main   Florida, Pulle	Kraken 2 - 3		24 90179	-83 657505	50 100	0/14/2011 22:00	1/1-17-11-3	Vallowtail Reeffish: chalk hass:		HB	
Name   1-96	Krakeri 2 - 3	_	24.30173	-83.037333	36.466	3/14/2011 22.03	14-17-11-2	Tellowtali Neeriisii, Cilaik bass,		TIB	
Florida, Pulley Ridge HAPC, main   Associated   Associa	l										
Name   1   1   1   1   1   1   1   1   1	кгакеn 2 - 3		24.90187333	-83.65756167	58.347	9/14/2011 22:10	14-IX-11-3		· ·	HR	
Florida, Pulley Ridge HAPC, main   August Detection, Flooks, Publick, Stope- Ha   August Detection, Flooks, Publick,		Florida, Pulley Ridge HAPC; main			Ī		]	Anadyomene menziesii; Rhodophyta; Lobophora;	hard bottom; Rock; rubble; Slope-		
Markane 1	Kraken 2 - 3	ridge	24.90195833	-83.65751833	58.254	9/14/2011 22:11	14-IX-11-3	chalk bass; ; wrasse;	flat;	HB	
Markane 1		Florida, Pulley Ridge HAPC; main			1				hard bottom; Rock; rubble; Slope-		
Fordia, Pulley Ridge NAPC; main   24.90216167   83.657285   58.114   9/14/2011 22:13   14-0:11-3   merclessing	Kraken 2 - 3		24.90210167	-83.65750667	58.347	9/14/2011 22:12	14-IX-11-3	Xestospongia muta;		НВ	
Friedrick   Pulley Ridge   HAPC, main   Frie		_								+	-
Florids, Pulley Ridge HAPC; main   24.9023667   83.657435   58.674   9/14/2011 22:15   14:81-13   malk bass; close up   moderate (6:350);   H8	Kraken 2 - 2		24 90216167	-83 657525	50 11/	9/14/2011 22:12	1 <i>A</i> _IX_11_2			HR	
Kraken 2 - 3   ridge	Kiakeli 2 - 3		24.90210107	-63.03/323	30.114	5/14/2011 22.13	14-IX-11-3	menziesii,	,	ПВ	
Florida, Pulley Ridge HAPC; main   24.90237667   83.6574333   59.048   9/14/2011 22:17   14-W:11-3   24.9024676   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.90237667   24.9026767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023767   24.9023776   24.9023776   24.9023776   24.90237776   24.90237776   24.90237776   24.902377776   24.902377776   24.9023777777777777777777777777777777777777								l			
Kraken 2 - 3 ridge	Kraken 2 - 3	_	24.90219667	-83.65743	58.674	9/14/2011 22:15	14-IX-11-3	chalk bass; close up		нв	
Florida, Pulley Ridge HAPC; main ridge   24,90254833		Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Kraken 2 - 3   ridge	Kraken 2 - 3	ridge	24.90237667	-83.65741333	59.048	9/14/2011 22:17	14-IX-11-3	sand tile fish; bait fish chalk bass;	moderate (<35o);	НВ	
Kraken 2 - 3   ridge											
Kraken 2 - 3   ridge		Florida, Pulley Ridge HAPC: main						Sand Tilefish mound: chalk bass: wrasse: bicolor	hard bottom: rubble:Slope-		
Florida, Pulley Ridge HAPC; main ridge 24.90262667 -83.65743667 60.356 9/14/2011 22:20 14-IX-11-3 burrow Sand Tilefish; bicolor damselfish; chalk bass; Anadymene menziesii; Rhodophyta; comatulid crinoid; 169 meters till the next waypoint; moderate (<350); HB ridge HAPC; main ridge 24.90287333 -83.65724667 60.73 9/14/2011 22:23 14-IX-11-3 I50 mt III next transect moderate (<350); HB ridge HAPC; main ridge 48.000 profile Pulley Ridge HAPC; main ridge 24.9032033 -83.65724667 61.57 9/14/2011 22:25 14-IX-11-3 I50 mt III next transect moderate (<350); HB ridge HAPC; main ridge 24.90328167 -83.65723667 61.524 9/14/2011 22:25 14-IX-11-3 I50 mt III next transect moderate (<350); HB ridge HAPC; main ridge 48.000 profile Pulley Ridge HAPC; ma	Kraken 2 - 3		24.90254833	-83.657425	58.861	9/14/2011 22:18	14-IX-11-3			нв	
Kraken 2 - 3 ridge		_				-,,		,			
Burrow Sand Tilefish; bicolor damselfish; chalk bass; Anadyomene menziesi; Rhodophyta; comatulid crinoid; 169 meters till the next waypoint; moderate (<350); hB	Krakon 2 2		24 00262667	02 65742667	60.356	0/14/2011 22:20	14 17 11 2			LID.	
Anadyomene menziesii; Rhodophyta; comatulid crinoid; 169 meters till the next waypoint; moderate (<35o); hard bottom; rubble; Slopemoderate (<35o); hard b	Kraken 2 - 3	riuge	24.90202007	-83.03/4300/	00.330	9/14/2011 22:20	14-17-11-3		moderate (<550);	ПВ	
Florida, Pulley Ridge HAPC; main ridge 24.90287333 -83.65748667 60.73 9/14/2011 22:23 14-IX-11-3 150 m till next transect moderate (<350); HB mode											
Kraken 2 - 3   ridge   24.90287333   -83.65748667   60.73   9/14/2011 22:23   14-IN-11-3   Filograna;   moderate (<350);   HB											
Florida, Pulley Ridge HAPC; main ridge 24.9032033 -83.65724667 61.57 9/14/2011 22:25 14-IX-11-3 150 m till next transect moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; Caulerpa and Lobophora; bicolor damselfish; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; Caulerpa and Lobophora; bicolor damselfish; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; Caulerpa and Lobophora; bicolor damselfish; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; few Rhodophyta; chalk bass; 2 orange sponges probably the same as 4 moderate (<350); HB green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene menziesii; photo orange green globy algae; dominted by Anadyomene		Florida, Pulley Ridge HAPC; main						crinoid; 169 meters till the next waypoint;	hard bottom; rubble; Slope-		
Kraken 2 - 3 ridge	Kraken 2 - 3	ridge	24.90287333	-83.65748667	60.73	9/14/2011 22:23	14-IX-11-3	Filograna;	moderate (<35o);	НВ	
green globy algae; dominted by Anadyomene menziesii; few Rodophyta; Caulerpa and Lobophora; bicolor damselfish; chalk bass; 2 orange sprobably the same as 4 moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.90337333 -83.65718833 61.757 9/14/2011 22:27 14-IX-11-3 cherub fish; Rodophyta; comatulid crinoid; nice Rhodophyta; comatulid crinoid; nice Rhodophyta; comatulid crinoid; nice Rhodophyta; comatulid crinoid; nice Rhodophyta; hard bottom; rubble; Slopemoderate (<350); HB  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 moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9034333 -83.65715 61.944 9/14/2011 22:30 14-IX-11-3 of photo transect; fish to RECHECK Species; hard bottom; rubble; Slopemoderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9034333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.90354333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! mode		Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Florida, Pulley Ridge HAPC; main ridge 24.90328167 -83.65723667 61.524 9/14/2011 22:25 14-IX-11-3 sponges - probably the same as 4 moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.90337333 -83.65715667 61.664 9/14/2011 22:27 14-IX-11-3 cherub fish; moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.903405 -83.65715667 61.664 9/14/2011 22:30 14-IX-11-3 cherub fish; moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.903403 -83.65715667 61.664 9/14/2011 22:30 14-IX-11-3 cherub fish; moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.903403 -83.65715667 61.664 9/14/2011 22:30 14-IX-11-3 cherub fish; moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9034333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.90354333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida, Pulley Ridge HAPC; main ridge 24.9036667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 with a fish in it!! moderate (-350); HB  Florida	Kraken 2 - 3	ridge	24.90320333	-83.65724667	61.57	9/14/2011 22:25	14-IX-11-3	150 m till next transect	moderate (<35o);	нв	
Kraken 2 - 3 ridge		-								+	-
Florida, Pulley Ridge HAPC; main ridge  24.90328167 -83.65723667 61.524 9/14/2011 22:25 14-IX-11-3 sponges - probably the same as 4							1				
Kraken 2 - 3   ridge   24.90328167   -83.65723667   61.524   9/14/2011 22:25   14-IX-11-3   sponges - probably the same as 4   moderate (<350);   HB		Elorida Bullov Bidga HABC:					1		hard bottom: rubble: Clans		
Florida, Pulley Ridge HAPC; main ridge 24.90337333 -83.65718833 61.757 9/14/2011 22:27 14-IX-11-3 cherub fish; Rhodophyta; comatulid crinoid; nice Rhodophyta; hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); hard bottom; rubble; S	W1 2 2		24.0022245	02 (572265	64.50	0/44/2044 22 ==	44 17/ 44 3			LID	
Florida, Pulley Ridge HAPC; main ridge  24.90337333 -83.65718833 61.757 9/14/2011 22:27 14-IX-11-3 cherub fish;  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  Florida, Pulley Ridge HAPC; main ridge  Florida, Pulley Ridge HAPC; main ridge  24.9034333 -83.65715 61.944 9/14/2011 22:30 14-IX-11-3 of photo transect; fish to RECHECK Species; moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge  Florida, Pulley Ridge HAPC; main ridge  24.9034333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 of photo transect; fish to RECHECK Species; moderate (<350); HB  Florida, Pulley Ridge HAPC; main ridge  Florida, Pulley Ridge HAPC; main ridge  Photo XS (quantitative) - start; 0368.jpg is 1st image of photo transect; fish to RECHECK Species; moderate (<350); HB  Anadyomene menziesii; photo of transect image with a fish in it!!! workers of photo transect image with a fish in it!!! workers of photo transect image with a fish in it!!! workers of photo transect image with a fish in it!!! workers of photo transect image with a fish in it!!! workers of photo transect image with a fish in it!!! workers of photo provided by the provided by the photom; rubble; Slope-moderate (<350); HB  Florida, Pulley Ridge HAPC; main workers of photom; rubble; Slope-moderate (<350); HB  Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-moderate (<350); HB  Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-moderate (<350); HB	кгакеn 2 - 3	riage	24.90328167	-83.65/23667	ь1.524	9/14/2011 22:25	14-IX-11-3		moderate (<350);	HR	
Kraken 2 - 3   ridge   24.90337333   -83.65718833   61.757   9/14/2011 22:27   14-IX-11-3   cherub fish;   moderate (<350);   HB							1				
Florida, Pulley Ridge HAPC; main ridge  Z4.903403  -83.65715667  61.664  9/14/2011 22:30  14-IX-11-3  S kts and a going to start transect  Photo XS (quantitative)- start; 0368.jpg is 1st image moderate (<350);  HB  Florida, Pulley Ridge HAPC; main ridge  Z4.9034333  -83.65715  61.944  9/14/2011 22:30  14-IX-11-3  Anadyomene menziesii; photo of transect image with a fish in it!!!  Photo XS (quantitative)- start; 0368.jpg is 1st image moderate (<350);  HB  Florida, Pulley Ridge HAPC; main ridge  Z4.90354333  -83.65714333  63.018  9/14/2011 22:32  14-IX-11-3  Florida, Pulley Ridge HAPC; main		Florida, Pulley Ridge HAPC; main					1	Rhodophyta; comatulid crinoid; nice Rhodophyta;	hard bottom; rubble; Slope-		
Florida, Pulley Ridge HAPC; main ridge 24.903403 -83.65715667 61.664 9/14/2011 22:30 14-IX-11-3 .5 kts and a going to start transect moderate (<350); HB Photo XS (quantitative)- start; 0368.jpg is 1st image of photo XS (quantitative)-start; 0368.jpg is 1st image of photo XS (quantit	Kraken 2 - 3	ridge	24.90337333	-83.65718833	61.757	9/14/2011 22:27	14-IX-11-3	cherub fish;	moderate (<35o);	НВ	
Florida, Pulley Ridge HAPC; main ridge 24.903403 -83.65715667 61.664 9/14/2011 22:30 14-IX-11-3 .5 kts and a going to start transect moderate (<350); HB Photo XS (quantitative)- start; 0368.jpg is 1st image of photo XS (quantitative)-start; 0368.jpg is 1st image of photo XS (quantit		Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-		
Florida, Pulley Ridge HAPC; main ridge 24.9034333 -83.65715 61.944 9/14/2011 22:30 14-IX-11-3 of photo transect; fish to RECHECK Species; moderate (<350); HB Arad bottom; rubble; Slopemoderate (<350); HB Ar	Kraken 2 - 3		24.903405	-83.65715667	61.664	9/14/2011 22:30	14-IX-11-3	.5 kts and a going to start transect		НВ	
Kraken 2 - 3 ridge 24.9034333 -83.65715 61.944 9/14/2011 22:30 14-IX-11-3 of photo transect; fish to RECHECK Species; moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350		- 5-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,,	0			+ - +	<del></del>
Kraken 2 - 3 ridge 24.9034333 -83.65715 61.944 9/14/2011 22:30 14-IX-11-3 of photo transect; fish to RECHECK Species; moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350); HB Anadyomene menziesii; photo of transect image moderate (<350		Florida Pulley Pidge HAPC: main						Photo YS (quantitative)- start: 0368 ing is 1st image	hard hottom: rubble: Slone		
Florida, Pulley Ridge HAPC; main ridge  24.90354333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!!! who for transect image with a fish in it!!! who for transect image moderate (<350); HB  Florida, Pulley Ridge HAPC; main Florida, Pulley Ridge H	K1 2 2		24 00242222	02 (5745	61.044	0/44/2044 22 22	4417/443			LID	
Kraken 2 - 3 ridge 24.90354333 -83.65714333 63.018 9/14/2011 22:32 14-IX-11-3 with a fish in it!!! moderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); HB verongid sponge; heading down into the valley; hard bottom; rubble; Slopemoderate (<350); hard bottom; rubble; Slopemoderate (<35	кгакеn 2 - 3	_	24.90343333	-83.65/15	61.944	9/14/2011 22:30	14-IX-11-3	1		нв	
Florida, Pulley Ridge HAPC; main ridge  24.90366667  -83.657105  62.038  9/14/2011 22:33  14-IX-11-3  Reef Butterflyfish; Yellowtail Reeffish; moderate (<350); HB  Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-moderate (<350); hard bottom; rubble; Slope-moderate (<35											
Kraken 2 - 3 ridge 24.90366667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 Reef Butterflyfish; Yellowtail Reeffish; moderate (<350); HB Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-	Kraken 2 - 3	ridge	24.90354333	-83.65714333	63.018	9/14/2011 22:32	14-IX-11-3	with a fish in it!!!	moderate (<35o);	НВ	
Kraken 2 - 3 ridge 24.90366667 -83.657105 62.038 9/14/2011 22:33 14-IX-11-3 Reef Butterflyfish; Yellowtail Reeffish; moderate (<350); HB Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-		Florida, Pulley Ridge HAPC; main						verongid sponge; heading down into the valley;	hard bottom; rubble; Slope-		
Demospongiae; Anadyomene menziesii; Florida, Pulley Ridge HAPC; main  Demospongiae; Anadyomene menziesii; Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-	Kraken 2 - 3		24.90366667	-83.657105	62.038	9/14/2011 22:33	14-IX-11-3			НВ	
Florida, Pulley Ridge HAPC; main Xestospongia muta; primnoid; AWESOME sponge - hard bottom; rubble; Slope-		-					<b> </b>			+	-
		Florida Pulley Ridge HAPC: main					1		hard hottom: rubble: Slone-		
Truge 2 Truge	Kraken 2 - 2		24 90372822	-83 65700333	62 084	9/14/2011 22:24	1 <i>A</i> _IX_11_2			HR	
	Makell Z = 3	nose	24.30372033	-03.03/0333	02.004	J/ 14/ 2011 22:34	T4-IV-TT.2	Circula varians, Chaix Dass,	moderate (550),	מוז	

	1	T 1		1 1		1	Halimada, black budraida Vastaspandia muta	T	1	1	
	Florida, Pulley Ridge HAPC; main						Halimeda; black hydroids; Xestospongia muta; cherub fish; bicolor damselfish; chalk bass; Reef	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.90388833	-83.65701833	61.664	9/14/2011 22:36	1/LIY_11_3	Butterflyfish; wrasse;	moderate (<35o);	нв		
Krakeri 2 - 3	nuge	24.90300033	-03.03701033	01.004	3/14/2011 22.30	14-17-11-3		moderate (<330),	1110		
	Florido Dullou Bidgo HADC maio						Xestospongia muta; Anadyomene menziesii; chalk				
K1 2 2	Florida, Pulley Ridge HAPC; main	24.00407022	02 (5(02022	61.01	0/14/2011 22:20	4417443	bass; black hydroids; comatulid crinoid;	hand hastana mikhla Claus flat			
Kraken 2 - 3	ridge	24.90407833	-83.65693833	61.01	9/14/2011 22:38	14-IX-11-3	condylactus;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC; main						Photo XS (quantitative)- End; at 422.jpg; Ascidiacea	hard bottom; rubble; Slope-	1		
Kraken 2 - 3	ridge	24.904255	-83.656905	60.496	9/14/2011 22:40	14-IX-11-3	on Xestospongia muta; overlay off for Website;	moderate (<35o);	НВ		
	Florida, Pulley Ridge HAPC; main						images of Ascidiacea and Xestospongia muta; call	hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.90424	-83.65687333	60.87	9/14/2011 22:42	14-IX-11-3	for recovery; black hydroids;	moderate (<350);	НВ		
	Florida, Pulley Ridge HAPC; main							hard bottom; rubble; Slope-			
Kraken 2 - 3	ridge	24.90395333	-83.65708	61.897	9/14/2011 22:45	14-IX-11-3	burrow; ROV at the end of tether	moderate (<35o);	HB		
									Bottom		
DOV/ Div #	1	1-+ 00	1 DD	Donath (m)	D-4-/T:	11001 6:4- #	Habitat and Dieta Nata	Detter Description		Causala Natas	Caral Natas
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Type	Sample Notes	Coral Notes
							dominate algae Anadyomene menziesii;				
	Florida, Pulley Ridge HAPC, USGS						Stichopathes; Crustose Coralline Algae; other				
Kraken 2 - 4	SeaBoss Site 13	24.80081166	-83.66901833	66.475	9/15/2011 12:36	15-IX-11-1	encrusting green alga; comatulid crinoid;	hard bottom; rubble; Slope- flat;	НВ		
1			· · · · · · · · · · · · · · · · · · ·								
1							Yellowtail Reeffish; Demospongiae; Anadyomene		1		
							menziesii; increase in sponges from the 14th.				
	Florida, Pulley Ridge HAPC, USGS						Heading to the start of the waypoint at the				
Kraken 2 - 4	SeaBoss Site 13	24.80080166	-83.669055	66.008	9/15/2011 12:41	15-IX-11-1	beginning of SEABOSS 13; Xestospongia muta;	hard bottom; rubble; Slope- flat;	НВ		
							coming up off bottom slightly; recoding about 60				
							photos a half hour (plan); dominate fauna				
							Anadyomene menziesii; Crustose Coralline Algae;				
	51 .1 0 11 0.1 11000 11000						Lobophora; Niphates; Xestospongia muta; aplysina;				
	Florida, Pulley Ridge HAPC, USGS	24.00000000	02 660605	64.747	0/45/2044 42 42	45 0/44 4	goby; cardnal fish; Spheciospongia with small				
Kraken 2 - 4	SeaBoss Site 13	24.80082833	-83.668695	64.747	9/15/2011 12:42	15-IX-11-1	Xestospongia muta;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS						Xestospongia muta; comatulid crinoid;				
Kraken 2 - 4	SeaBoss Site 13	24.80074	-83.66862166	65.588	9/15/2011 12:45	15-IX-11-1	Spheciospongia;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS										
Kraken 2 - 4	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		
	Florida, Pulley Ridge HAPC, USGS										
Kraken 2 - 4	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;	НВ		
	Florida, Pulley Ridge HAPC, USGS						Starting transect of the SEABOSS; Photo XS				
Kraken 2 - 4	SeaBoss Site 13	24.800775	-83.66845833	65.167	9/15/2011 12:47	15-IX-11-1	(quantitative)- start; starting at image 0432.jpg.	hard bottom; rubble; Slope- flat;	нв		
					,		, , , , , , , , , , , , , , , , , , , ,	,,,	<del>                                     </del>		
							moving; chalk bass; and gobies; Niphates digitalis;				
							Xestospongia; Demosponge; Lobophora;		1		
	Florida, Pulley Ridge HAPC, USGS						Anadyomene menziesii; Crustose Coralline Algae;		1		
Kraken 2 - 4	SeaBoss Site 13	24.80078833	-83.66851	65.307	0/15/2011 12:40	1E IV 11 1	_ · · · · · · · · · · · · · · · · · · ·	hard bottom: rubble: Slane flat:	НВ		
KIAKEII Z - 4	Deadors Sife 12	24.000/0833	-03.00851	05.507	9/15/2011 12:49	12-IV-TI-I	yellow wrasse RECHECK Species;	hard bottom; rubble; Slope- flat;	ITD		
	E										
	Florida, Pulley Ridge HAPC, USGS			l <u>.                                    </u>			chalk bass; comatulid crinoid; Anadyomene	hard bottom; rubble; Slope- flat -	1		
Kraken 2 - 4	SeaBoss Site 13	24.80079	-83.66861833	65.447	9/15/2011 12:52	15-IX-11-1	menziesii; Xestospongia muta;	slightly lumpyier then yesterday;	НВ		
			·								
							dominate species Anadyomene menziesii; more		1		
							Crustose Coralline Algae then yesterday; more large		1		
							Demospongiae; Xestospongia muta are more barrel		1		
							shaped then yesterday; Loggerhead sponge -				
	Florida, Pulley Ridge HAPC, USGS						speciospongia; some spherical Geodia sponges;	hard bottom; rubble; Slope- flat -			
Kraken 2 - 4	SeaBoss Site 13	24.80066666	-83.66904666	65.821	9/15/2011 12:53	15-IX-11-1	smaller encrusting sp	more lumpy;	нв		
	Florida, Pulley Ridge HAPC, USGS				,			1: 77	1		
Kraken 2 - 4	SeaBoss Site 13	24.80062666	-83.66956666	66.008	9/15/2011 12:57	15-IX-11-1		hard bottom; rubble; Slope- flat	нв		
uncii 2 - 4	5005033 Site 15	2-1.00002000	03.00330000	30.008	J, 13, 2011 12.37	10 W 11-1	1	nara socioni, rabbie, slope- lidi	110		

Calest 2 - 4	
Florida, Pulley Ridge HAPC, USSS   24,80051283   48,36098   67,456   9/11/20113100   15-01-11   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter floridary interface (Fig. 1)   Physiometrial security in the parameter (Fig. 1)   Physiometrial security in	
Florida, Pulley Ridge HAPC, USGS   24,80061833   28,8673548   57,556   9/15/2011 13:00   15-W-11-   Portiongning to 3 at 34 for all the transects. Continues to the processor services and on the transects. Continues to the processor services and on the transects. Continues to the processor services and on the transect, Brocker and the transect, Brocker and on the transect, Brocker and on the transect, Brocker and on the transect, Brocker and the transect, Brocker and the transect and the transect, Brocker and the transect, Brocker and the transect and the transect and the transect and the transect and transect, Brocker and the transect and transect	
Finds, Pulley Ridge HAPC, USGS   24,8005   -83,670345   63,000   91,57,2011 13 of 15-04-11.   Statistics to several and on the transect. biologic flower and bettern, rubble; Stope flat; 48.0 and bottom; rubble; Stope flat; 49.0 and bottom; rubb	
Carbon 2 - 4   Seafloos Site 13	
Comparison   Com	
Florida, Pulley Ridge MAPC, USGS  Kraken 2 - 4  Seaboss Site 13  24 80012833  - 83 870566  53 672  9/15/20111300  15-K-11-1  the time becken beginner; skings on the 30 second mark on and bottom; rubble; Slope-flat; HB  And bottom; rubble; Slope-f	
Florida, Pulley Riage MAPC, USGS   24,8002833   83,670566   63,672   97(5/201113:06   15-W.1-1   the time   bedopings general and bottom; nubble; Slope-flat;   H8   Marken 2 - 4   24,8002835   24,8004566   83,67059666   63,672   97(5/201113:06   15-W.1-1   the time   bedopings general and bottom; nubble; Slope-flat;   H8   Marken 2 - 4   24,800456   83,67059666   83,67059666   83,67059666   83,67059666   83,672   97(5/201113:06   15-W.1-1   the time   bedopings general and bottom; nubble; Slope-flat;   H8   Marken 2 - 4   24,800456   83,67153666   83,672   97(5/201113:06   15-W.1-1   the time   bedopings general and bottom; nubble; Slope-flat;   H8   Marken 2 - 4   24,800456   83,67153666   83,467   97(5/201113:16   15-W.1-1   the time   bedopings general and bottom; nubble; Slope-flat;   H8   Marken 2 - 4   24,800456   24,800456   33,67153666   83,6715366	
Kraken 2 - 4   Seabos Site 13   24 800052838   83 87096   63 872   9/15/2011 13:06   15-W.1-1   the time various wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows wrases; bloophores, Geordia mutrum; hard bottom; rubble; Slope-flat; H8   Wardows W	
Florida, Pulley Ridge HAPC, USGS   43 A0045666   43 A7095666   43 A709	
Name	
Florida, Pulley Ridge HAPC, USGS   24,80046   -83,6715166   64,373   9/15/2011 3:11   15-W.11-1   Demospongiae;   Stichopathers, Calab basis; Cribordo-lalina   Demospongiae;   Stichopathers, Calab basis; Cribordo-lalina   Demospongiae;	
Florida, Pulley Ridge HAPC, USGS   24,80046   -83,6715166   64,373   9/15/2011 13:11   15-IX-11-1   15-IX-1	
Florida, Pulley Ridge HAPC, USGS   24,800435   83,6715366   63,345   9/15/2011 3:11   15-W-11-1   5-W-11-1	
Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  August Proida, Pulley Ridge HAPC, USGS SeaBoss Site	
Real Column   Acade   Sea   Sea   Siste   13   24.800435   83.67153666   63.345   9/15/2011   13:14   15-IK-11-1   Chemultinia, Reaf Butterflyfish, burrow Sand Tilefish;   Park by Anadymene menziesi;   Lobophora; Crustose Coralline Algae; large persospongiae; chalk bass; bicolor damselfish; large by Sope flat;   HB   Sea	
Record   R	
Florida, Pulley Ridge HAPC, USGS   24,80041333   -83,67174333   63,299   9/15/2011 13:15   15-Kx1-11	
Florida, Pulley Ridge HAPC, USGS   Sabbass Site 13   24.80037636   -83.67214   63.532   9/15/2011 13:15   15-W-11-1   15-W-11-1   10-W-11-1	
Florida, Pulley Ridge HAPC, USGS   Case   Seabors Site 13   24.80041333   -83.67174333   -83.672143   63.299   9/15/2011 13:15   15-W-11-1   5-W-11-1	
Kraken 2 - 4   SeaBoos Site 13   24,8003133   -83,67174333   63,299   9/15/2011 13:15   15-IK-11-1   school balt fish;   Slope-fiat;   HB   ScaBoos Site 13   24,8003766   -83,67214   63,532   9/15/2011 13:17   15-IK-11-1   Loggerhead sponge; Anadyomene menziesii;   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge - were at image 0.998/jpg   hard bottom; rubble; Slope-fiat;   HB   Crossed eastern main ridge e	
Kraken 2 - 4   SeaBoss Site 13   24.80037666   -83.67214   63.532   9/15/2011 13:17   15-IX-11-1   Loggerhead sponge; Anadyomene menziesii; nard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   Florida, Pu	
Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.80037833 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67228333 -83.67260166 -83.579 -9/15/2011 13:22	
Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.80037833   -83.67228333   63.672   9/15/2011 13:19   15-IX-11-1   15-IX-11-1   Anadyomene menziesij; Kestospongia muta; Demospongiae; Lobophora; chalk bass; Crustose Coralline Algae; Lobophora; chalk bass; Crustose Coralline Algae; Lobophora; green bloch parrot fish-juvenile; Siting at Butterflyfish;   hard bottom; rubble; Slope-flat; HB   HB   HB   HB   HB   HB   HB   HB	
Rraken 2 - 4   SeaBoss Site 13   24.80037833   -83.67228333   63.672   9/15/2011 13:19   15-IX-11-1   Anadyomene menziesii; Anadyo	
Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.8003433   -83.67260166   63.579   9/15/2011 13:22   15-IX-11-1   Demospongiae; Lobophora; chalk bass; Crustose Coralline Algae; Demospongiae; Custophora; green bloch parrot fish-juvenile; stifting still for a second or 2; Reef hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.8003166   -83.67275166   64.7   9/15/2011 13:23   15-IX-11-1   Butterflyfish; encrusting red Demospongiae - Spirastrella; Anadyomene menziesii; Crustose Coralline Algae; Doophora; green bloch parrot fish-juvenile; stilling still for a second or 2; Reef hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.80029166   -83.6733   65.401   9/15/2011 13:27   15-IX-11-1   SeaBoss Site 13   24.80024166   -83.67363166   65.354   9/15/2011 13:30   15-IX-11-1   SeaBoss Site 13   24.80024166   -83.67363366   65.354   9/15/2011 13:31   15-IX-11-1   SeaBoss Site 13   24.80022   -83.67373833   66.942   9/15/2011 13:31   15-IX-11-1   Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.800205   -83.67373833   66.942   9/15/2011 13:34   15-IX-11-1   Ragarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.800205   -83.6731166   64.98   9/15/2011 13:34   15-IX-11-1   SeaBoss Site 13   24.800205   -83.674135   64.046   9/15/2011 13:35   15-IX-11-1   SeaBoss Site 13   -IX-IX-11-1   Ragarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB   Ragarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB   Ragarica - REMOVE FROM TRANSECT; chalk bass; hard bottom; rubble; Slope-flat; HB   Ragarica - REMOVE FROM TRANSECT; chalk bass; hard bottom; rubble; Slope-flat; HB   Ragarica - Remove From the seaboss Site 13   Ragarica - Remove From transect image; A sample image not a transect image; hard bottom; rubble; Slop	
Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.80034333   -83.67260166   63.579   9/15/2011 13:22   15-IX-11-1   Demospongiae; Lobophora; chalk bass; Crustose   hard bottom; rubble; Slope- flat;   HB	
Kraken 2 - 4   SeaBoss Site 13   24.8003433   -83.67260166   63.579   9/15/2011 13:22   15-IX-11-1   Coralline Algae; bard bottom; rubble; Slope-flat; HB	
dominate species Anadyomene menziesii; Crustose Coralline Algae; Lobophora; green bloch parrot fishiuvenile; sitting still for a second or 2; Reef Butterflyfish; hard bottom; rubble; Slope-flat; HB	
Coralline Algae; Lobophora; green bloch parrot fish juvenile; sitting still for a second or 2; Reef SeaBoss Site 13  24.80033166 -83.67275166 64.7  9/15/2011 13:23 15-IX-11-1  Encrusting red Demospongiae - Spirastrella; Anadyomene menziesii; Crustose Coralline Algae; 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; Bard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge HAPC, USGS  Kraken 2 - 4  SeaBoss Site 13  24.80024166 -83.67373833 66.942  9/15/2011 13:30 15-IX-11-1  Florida, Pulley Ridge HAPC, USGS  Florida, Pulley Ridge	
Florida, Pulley Ridge HAPC, USGS   24.80033166   -83.67275166   64.7   9/15/2011 13:23   15-IX-11-1   13-IX-11-1   13-IX	
Kraken 2 - 4 SeaBoss Site 13	
Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13 24.80029166 -83.6733 65.401 9/15/2011 13:27 15-IX-11-1 Anadyomene menziesii; Crustose Coralline Algae; small rubble mound Sand Tilefish; small rubble; Slope-flat; hard bottom; rubble; Slope-flat; hard b	
Kraken 2 - 4         SeaBoss Site 13         24.80029166         -83.6733         65.401         9/15/2011 13:27         15-IX-11-1         small rubble mound Sand Tilefish;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         Florida, Pulley Ridge HAPC, USGS         24.80024166         -83.67363166         65.354         9/15/2011 13:30         15-IX-11-1         coral? Platy; another one;         Slope- flat;         HB           Kraken 2 - 4         SeaBoss Site 13         24.80022         -83.67373833         66.942         9/15/2011 13:31         15-IX-11-1         agaraicia. 6 in site in video (targeted an image of the Agarica - REMOVE FROM TRANSECT); chalk bass;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         SeaBoss Site 13         24.800205         -83.67391166         64.98         9/15/2011 13:34         15-IX-11-1         menziesii, wrasse;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         SeaBoss Site 13         24.800205         -83.673135         64.046         9/15/2011 13:34         15-IX-11-1         menziesii, wrasse;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         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	
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;	
Kraken 2 - 4         SeaBoss Site 13         24.80024166         -83.67363166         65.354         9/15/2011 13:30         15-IX-11-1         coral? Platy; another one;         Slope- flat;         HB           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         Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope- flat;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         SeaBoss Site 13         24.800205         -83.67391166         64.98         9/15/2011 13:34         15-IX-11-1         menziesii; wrasse; hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         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         SeaBoss Site 13         24.80020166         -83.674135         64.046         9/15/2011 13:35         15-IX-11-1         Creaping forward looking for a better specimin to collect         hard bottom; rubble; Slope- flat;         HB	
Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  24.80022 -83.67373833 66.942 9/15/2011 13:31 15-IX-11-1 Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope- flat; HB  Multibeam we are 1/2 across valley between the E and W ridge; Yellowtail Reeffish; Anadyomene merziesii; wrasse; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.800205 -83.67391166 64.98 9/15/2011 13:34 15-IX-11-1 Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.80020166 -83.674135 64.046 9/15/2011 13:35 15-IX-11-1 Creaping forward looking for a better specimin to collect hard bottom; rubble; Slope- flat; HB	
Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  24.80022 -83.67373833 66.942 9/15/2011 13:31 15-IX-11-1  Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB  Multibeam we are 1/2 across valley between the E and W ridge; Yellowtail Reeffish; Anadyomene merziesii; wrasse; Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.800205 -83.67391166 64.98 9/15/2011 13:34 15-IX-11-1 Photo XS (quantitative)- stopped; image .532 is a sample image not the Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB  Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge HAPC, USGS Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  24.80020166 -83.674135 63.859 9/15/2011 13:37 15-IX-11-1 Creaping forward looking for a better specimin to collect hard bottom; rubble; Slope-flat; HB	Coral- Agarica?
Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  24.80022 -83.67373833 66.942 9/15/2011 13:31 15-IX-11-1  Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB  Multibeam we are 1/2 across valley between the E and W ridge; Yellowtail Reeffish; Anadyomene merziesii; wrasse; Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 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 merziesii; wrasse; Photo XS (quantitative)- stopped; image .532 is a sample image not the Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.80020166 -83.674135 64.046 9/15/2011 13:35 15-IX-11-1 Creaping forward looking for a better specimin to collect hard bottom; rubble; Slope-flat; HB	
Kraken 2 - 4         SeaBoss Site 13         24.80022         -83.67373833         66.942         9/15/2011 13:31         15-IX-11-1         Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope- flat; HB         HB           Kraken 2 - 4         SeaBoss Site 13         24.800205         -83.67391166         64.98         9/15/2011 13:34         15-IX-11-1         Agarica - REMOVE FROM TRANSECT); chalk bass; hard bottom; rubble; Slope- flat; HB         hard bottom; rubble; Slope- flat; HB           Kraken 2 - 4         SeaBoss Site 13         24.80020166         -83.674135         64.046         9/15/2011 13:35         15-IX-11-1         menziesii, wrasse; menziesii, wrasse; hard bottom; rubble; Slope- flat; HB         hard bottom; rubble; Slope- flat; HB           Kraken 2 - 4         SeaBoss Site 13         24.80020166         -83.674135         64.046         9/15/2011 13:35         15-IX-11-1         sample image not a transect image; hard bottom; rubble; Slope- flat; HB           Kraken 2 - 4         SeaBoss Site 13         24.8002         -83.674135         63.859         9/15/2011 13:37         15-IX-11-1         Creaping forward looking for a better specimin to collect         hard bottom; rubble; Slope- flat; HB	
Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.800205 -83.67391166 64.98 9/15/2011 13:34 15-IX-11-1 menziesii; wrasse; Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.8002016 -83.674135 64.046 9/15/2011 13:35 15-IX-11-1 menziesii; wrasse; Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13  24.80020166 -83.674135 64.046 9/15/2011 13:35 15-IX-11-1 collect  Creaping forward looking for a better specimin to collect  National Multibeam we are 1/2 across valley between the E and W ridge; Yellowtail Reeffish; Anadyomene menziesii; wrasse; Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image .532 is a sample image not a transect image; Photo XS (quantitative) - stopped; image .532 is a sample image	Coral- Agaricia?
Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  24.800205  -83.67391166  64.98  9/15/2011 13:34  15-IX-11-1  and W ridge; Yellowtail Reeffish; Anadyomene menziesii; wrasse; hard bottom; rubble; Slope-flat; HB  Photo XS (quantitative)- stopped; image .532 is a sample image not a transect image; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge HAPC, USGS  Kraken 2 - 4  SeaBoss Site 13  24.80020166  -83.674135  64.046  9/15/2011 13:35  15-IX-11-1  Creaping forward looking for a better specimin to collect  hard bottom; rubble; Slope-flat; HB	
Kraken 2 - 4         SeaBoss Site 13         24.800205         -83.67391166         64.98         9/15/2011 13:34         15-IX-11-1         menziesii; wrasse;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         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           Florida, Pulley Ridge HAPC, USGS         Florida, Pulley Ridge HAPC, USGS         Creaping forward looking for a better specimin to collect         Creaping forward looking for a better specimin to collect         hard bottom; rubble; Slope- flat;         HB	
Kraken 2 - 4         SeaBoss Site 13         24.80020166         -83.674135         64.046         9/15/2011 13:35         15-IX-11-1         sample image not a transect image;         hard bottom; rubble; Slope- flat;         HB           Florida, Pulley Ridge HAPC, USGS         Kraken 2 - 4         SeaBoss Site 13         24.8002         -83.674135         63.859         9/15/2011 13:37         15-IX-11-1         collect         hard bottom; rubble; Slope- flat;         HB	
Florida, Pulley Ridge HAPC, USGS Kraken 2 - 4 SeaBoss Site 13 24.8002 -83.674135 63.859 9/15/2011 13:37 15-IX-11-1 collect Creaping forward looking for a better specimin to collect hard bottom; rubble; Slope-flat; HB	
Kraken 2 - 4         SeaBoss Site 13         24.8002         -83.674135         63.859         9/15/2011 13:37         15-IX-11-1         collect         hard bottom; rubble; Slope- flat;         HB	
Florida, Pulley Ridge HAPC, USGS	
Version 2. 4. Conduct Site 12. 24 00015555 92 57415222 64 512 0/15/2011 12:20 15 IV 11.1 of compile 001 # 522 525 ing. hard bettern with blockloss flat.   U.D.	Collect: Agarasia
Kraken 2 - 4         SeaBoss Site 13         24.80015666         -83.67416333         64.513         9/15/2011 13:38         15-IX-11-1         of sample 001 # 533-535.jpg         hard bottom; rubble; Slope- flat;         HB           Florida, Pulley Ridge HAPC, USGS         hard bottom; rubble; Slope- flat;         HB	Collect; Agaracia
Kraken 2 - 4 SeaBoss Site 13 24.80015166 -83.67416333 64.093 9/15/2011 13:53 15-IX-11-1 finished sampling abundant Agaricia HB	
Florida, Pulley Ridge HAPC, USGS	
Kraken 2 - 4 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	

Value   Valu		ı				1	comatulid crinoid; Anadyomene menziesii; Crustose	ı	1	1	1
Part		Florida Bullov Pidgo HARC LISCS					·				
Part	Kraken 2 - 4		24 80020166	-83 67424166	63 766	9/15/2011 13:58 15-IX-11-1		hard hottom: rubble: Slone- flat:	HR		
Section 1	Kruken 2 4	Scaboss site 15	24.00020100	03.07424100	03.700	3/13/2011 13:30 13 IX 11 1	buss, Acstospongia mata,	nara socioni, rassic, siope nat,	110		
Section 1							dominate speices Anadyomene menziesii:				
Rodard 2.4   Sealest Site 1   Sealest											
Richard   Author   State   Author   State   Author   Au							_ · · · · · · · · · · · · · · · · · · ·				
March   Marc		Florida Pulley Ridge HAPC USGS					_ · · · · · · · · · · · · · · · · · · ·				
Roofs Pulsy Rigge MAPC, USS   12	Kraken 2 - 4		24.80018	-83.67448833	63.859	9/15/2011 13:59 15-IX-11-1		hard bottom: rubble: Slope- flat:	нв		
Finding   Pulse   Sales   Sile   Sale   Sa						0, 0, 0, 000	_		1		
Findis, Pulley Ridge HAPC, USGS   24,8001166   33,6769533   65,541   21/5/2011   4:01   5 (4.7)   5 (4.7	Kraken 2 - 4		24.80011666	-83.67492333	65.774	9/15/2011 14:04 15-IX-11-1		hard bottom: rubble: Slope- flat:	нв		
Horida, Pully Nideg HAPC, USS   24 AB001166   34 A570033   34 A57003					*****	5, -5, -5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -			1		
France   Profess   Profe		Florida Pulley Ridge HAPC LISGS						hard hottom: rubble: Slone- flat: low			
France 2 - 4 Sealous Site 13 2 4,80001835 8 3,875,9883 64.26 9/15/2011 4:10 15-W-1-1 4 Agracia a few heads;  France 2 - 4 Sealous Site 13 2 4,80001856 9 3,875,9833 64.26 9/15/2011 4:11 15-W-1-1 15-W-1-	Kraken 2 - 4		24 80011166	-83 67505333	65 541	9/15/2011 14·06 15-IX-11-1			HB		
Marchan   March   Ma			2 11000111100	03.07303333	05.511	3,13,20111100 13 1/1111	changing capes,	rener,	1		
Florida, Pulley Ridge HAPC, USSS   24,80001666   83,8778933   64,28   9/15/2011 14.13   15-W-11-1	Kraken 2 - 4		24 80003833	-83 67569833	64 56	9/15/2011 14·10 15-IX-11-1	Agaracia a few heads:	hard hottom: rubble: Slone- flat:	HB	Ag	paracia
Florida, Pulley Ridge MAPC, USSS   24,8000166   93,8757833   64,88   915/20111413   15-K111   Horizonia Special Content of Content	KIUKCII Z 4	Scaboss site 15	24.00003033	03.07303033	04.50	3/13/2011 14:10 13 IX 11 1		nara socioni, rassic, siope nat,	110	7.6	garacia
Frame 1 4 Sealoos Site 13		Florida Pulley Ridge HARC LISGS						hard hottom: rubble: Slone- flat: low			
Foreign 2 - 4 Seabos Site 13 24,8000233 8,88,6769333 66,607 9/15/2011 14:13 15-0:11-1 4 Moving again: Agardicis: Analytimene mentiesi; Lobophore, Crustose Coralline Algae; Laking photose or 24 Seabos Site 13 24,8000266 8,83,675995 64,887 9/15/2011 14:13 15-0:11-1 4 Moving again: Agardicis: Analytimene mentiesi; Lobophore, Crustose Coralline Algae; Laking photose or 24 Seabos Site 13 24,8000266	Kraken 2 - 4		24 80001666	-83 67578333	64.28	9/15/2011 14:11 15-IX-11-1	-		HB		
Kraken 2 - 4 Sealous Site 1 3 Sealous Si	Krukeri 2 4		24.00001000	03.07370333	04.20	3/13/2011 14:11 13 IX 11 1	,	rener,	110		
Moving again: Agaracia: Anadyomene menziesi: Lobopring: Cristose Coralline Agaet: taking photos ever 30 seconds; very 40 second again; Agaracia: Anadyomene menziesi: Lobopring: Cristose Coralline Agaet: taking photos ever 30 seconds; very 40 second again; Agaracia: Anadyomene menziesi: Lobopring: Stichopathes; bowl Demospongles: maybe irrinis; plate coral aging the BOV track is with in a 10 ms wath; chalk basis; on image of the Stichopathes; bowl Demospongles may be refinis; plate coral aging the BOV track is with in a 10 ms wath; chalk basis; on image of the Stichopathes; bowl Demospongles: maybe irrinis; plate coral aging the BOV track is with in a 10 ms wath; chalk basis; on image of the Stichopathes; and the BOV track is with in a 10 ms wath; chalk basis; on image of the Stichopathes; and the mid point between the Stichopathes; and the province of the Stichopathes; and the Stichopathes; and the stichopathes; and the province of the Stichopathes; and the stichopathes; and the province of the Stichopathes; and the Stich	Kraken 2 - 4	, , ,	34 80003333	-83 67603333	64 607	9/15/2011 14:13 15-IV-11-1		hard hottom: rubble: Slone- flat:	HR		
Florida, Pulley Ridge HAPC, USSS   14,80002666   18,8675995   16,4887   17,520111412   15-11-11	Kiakeli 2 - 4	Seaboss Site 15	24.80002333	-83.07003333	04.007	3/13/2011 14:13 13-1X-11-1	there was a some boom from jets.	nard bottom, rubble, slope- nat,	ПБ		
Florida, Pulley Ridge HAPC, USSS   14,80002666   18,8675995   16,4887   17,520111412   15-11-11							Moving again: Agaraicia: Anadyomono monziccii:				
Portion   Port											
Fordia, Pulley Ridge HAPC, USGS   24,89995833   -83,676995   64,887   9/15/2011 14:12   15-W-11-1											
Florida, Pulley Ridge HAPC, USGS   24.80002666   83.675995   64.887   9/15/2011 14.18   15-W-11-   Velowali											
Kraken 2 - 4 SeaBous Site 13 24.80002666 38.675995 64.887 9/15/2011 14:12 15-14-11 15-14-14-14-14-14-14-14-14-14-14-14-14-14-		Florido Dullov Bidgo HADO LISOS									
Analypomen emorizesii; Coralinales- Peysonelia Case; Xestopongia muta; the ROV track is with in a 10 in swath, chalk bass; on image 675/gipz, Agraria-20 cm (Fagilio) 876/rida, Pulley Ridge HAPC, USGS 876/rida,	Krakon 2 4		24 90002666	92 675005	61 007	0/1E/2011 14:14 1E IV 11 1		hard bottom: rubble: Slope flat:	μр	C-0	aral Agaricia
Florida, Pulley Ridge HAPC, USG   Sabous Site 13   24.79988333   -83.6769833   65.821   9/15/2011 14:22   15-IK-11-1   40 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4	Kiakeli 2 - 4	Seaboss Site 15	24.80002000	-63.073553	04.007	9/13/2011 14:14 13-17-11-1		nard bottom, rubble, slope- nat,	ПВ		orar- Agaricia
Florida, Pulley Ridge HAPC, USGS   24.7995833   -83.676595   64.887   9/15/2011 14:18   15-W-11   10   575 (a)gg, Agraicia - 20 cm (fragilis)   14   15   15   15   15   15   15   15											
Kraken 2 - 4 SeaBoss Site 13		Florido Dullov Bidgo HADO LISOS									
Florida, Pulley Ridge HAPC, USGS   24.7998453   -83.6782166   65.821   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   3-83.6782166   65.824   9/15/2011 14:32   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79985   -83.67818833   65.354   9/15/2011 14:33   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   -83.6782168   64.793   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79984   -83.67874833   65.447   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79982   -83.6787566   65.588   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79982   -83.6787566   65.588   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Seaboss Site 13   24.79982   65.588   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Strake 2 - 4   Seaboss Site 13   24.79982   65.588   9/15/2011 14:34   15!-X-11-1   Strake 2 - 4   Strake	Krakon 2 4		24 70005922	92 676505	61 007	0/1E/2011 14:19 1E IV 11 1	_ · · · · · · · · · · · · · · · · · · ·	hard bottom: rubble: Slope flat:	μр		
Florida, Pulley Ridge HAPC, USGS   24.7998433   83.67876166   65.074   9/15/2011 14:22   5-1X-11-1	Kidkeli 2 - 4	Seaboss Site 15	24.79993033	-63.070353	04.007	9/13/2011 14:18 13-IA-11-1		nard bottom, rubble, slope-nat,	ПБ	ļ .	
Kraken 2 - 4 SeaBoss Site 13		Florida Bullov Pidgo HARC LISCS									
Stichopathes; Large - Coral-Montastraea; -50 cm (was in transect image); Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   SeaBoss Site 13   24.79984666   -83.67806   65.12   9/15/2011 14:32   15-IX-11-1   barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984666   -83.67806   65.12   9/15/2011 14:32   15-IX-11-1   barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984833   -83.67821666   65.364   9/15/2011 14:33   15-IX-11-1   barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Stopping to look at a Crustose Coralline Algae that over grew a knob?   Underway; Crustose Coralline Algae; Anadyomene menziesii; Crustose Coralline Algae; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79983   -83.67818833   65.354   9/15/2011 14:34   15-IX-11-1   Inderway; Crustose Coralline Algae; Comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79983   -83.67874833   65.47   9/15/2011 14:34   15-IX-11-1   Inderway; Crustose Coralline Algae; Comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79984   -83.67874833   65.47   9/15/2011 14:34   15-IX-11-1   Inderway; Crustose Coralline Algae; Comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79982   -83.67874833   65.47   9/15/2011 14:34   15-IX-11-1   Inderway; Crustose Coralline Algae; Comatulid Crinoid; Purple reef fish; hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79982   -83.67874833   65.47   9/15/2011 14:34   15-IX-11-1   Inderway; Crustose Coralline Algae; Comatulid Crinoid; Purple reef fish; hard bottom; rubble	Kraken 2 - 4		24 700005	-83 67608333	65 821	9/15/2011 14:22 15-IV-11-1		hard hottom: rubble: Slone- flat:	HR		
Florida, Pulley Ridge HAPC, USGS   24.7998833   83.67767166   65.074   9/15/2011 14:27   15-IX-11-2   (was in transect image); Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984666   83.67806   65.12   9/15/2011 14:30   15-IX-11-1   barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984666   83.6782166   65.868   9/15/2011 14:30   15-IX-11-1   barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984833   83.6782166   65.868   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79985   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79985   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79985   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Coral-Montastraea   Florida, Pulley Ridge HAPC, USGS   24.79984   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79984   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   24.79984   83.67818833   65.354   9/15/2011 14:30   15-IX-11-1   vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Florida, Pulley Ridge HAPC, USGS   Policy All Ref   Vergrew a knob?   hard bottom; rubble; Slope-flat; HB   Verg	Kiakeli 2 - 4	Seaboss Site 15	24.799903	-63.07036333	03.821	9/13/2011 14:22 13-18-11-1		nard bottom, rubble, slope- nat,	ПВ		
Seabos Site 13   24.7984833   -83.6782166   65.074   9/15/2011 14:27   15-IX-11-1		Florido Dullov Bidgo HADO LISOS					· · · · · -				
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; bard bottom; rubble; Slope-flat; HB forida, Pulley Ridge HAPC, USGS Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79985 -83.67818833 65.34 9/15/2011 14:33 15-IX-11-1 underway; Crustose Coralline Algae; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Purple redef fish; Comatulid crinoid; Purple redef fish; Comatulid crinoid; Nestospongia muta; burrow Sand Tilefish; Vellowtail Reef fish; chalk bass; Warforg crashed - ALL STOP; Photo XS (quantitative)-resume; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Nestospongia muta; burrow Sand Tilefish; Vellowtail Reef fish; chalk bass; Warforg crashed - ALL STOP; Photo XS (quantitative)-resume; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Nestospongia muta; burrow Sand Tilefish; Vellowtail Reef fish; chalk bass; Warforg crashed - ALL STOP; Photo XS (quantitative)-resume; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Nestospongia muta; burrow Sand Tilefish; Vellowtail Reef fish; chalk bass; Warforg crashed - ALL STOP; Photo XS (quantitative)-resume; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Nestospongia muta; burrow Sand Tilefish; Vellowtail Reef fish; chalk bass; Warforg crashed - ALL STOP; Photo XS (quantitative)-resume; Anadyomene menziesii; Stichopathese file beginning of the dive and we have 1400 m left on the Seaboss of the 13 transect; Market 150 m since the beginning of the dive and we have 1400 m left on the Seaboss of the 13 transect; Market 150 m since the beginning of the dive and we have 1400 m left on the Seaboss of the 13 transect; Market 150 m since the beginning of the dive and we have 1400 m left on the Seaboss of the 13 transect; Market 150 m since the beginning of the dive and we have 1400 m left on the Seaboss of the 13 transect; Market 150 m since the beginning of the dive and we have 1400 m left on the S	Krakan 2 4		24 70000222	92 67767166	CE 074	0/15/2011 14:27 15 IV 11 1		hard battam, rubble, Clane, flat.	шв	Co	aral Mantastrasa
Kraken 2 - 4 SeaBoss Site 13 24.7998466 -83.67806 65.12 9/15/2011 14:30 15-IX-11-1 barracuda; Anadyomene menziesii; hard bottom; rubble; Slope-flat; HB stopping to look at a Crustose Coralline Algae that over grew a knob?  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 underway; Crustose Scralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB underway; Crustose Coralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB underway; Crustose Coralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB underway; Crustose Coralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB underway; Crustose Coralline Algae; Anadyomene menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope-flat; HB underway; Crustose Coralline Algae; Anadyomene menziesii; Crustose C	Kraken 2 - 4		24./9900333	-83.07707100	05.074	9/15/2011 14.27 15-14-11-1	reerbassr; criaik bass;	nard bottom; rubble; slope- nat;	пь	Co	orai- Montastraea
Florida, Pulley Ridge HAPC, USGS Site 13 24.79984833 -83.67821666 65.868 9/15/2011 14:32 15-IX-11-1 over grew a knob? hard bottom; rubble; Slope-flat; HB where grew a knob?  Florida, Pulley Ridge HAPC, USGS 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 where grew a knob?  Anadyomene menziesii; Crustose Coralline Algae; Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Purple reef fish; hard bottom; rubble; Slope-flat; HB where grew a knob?  Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Purple reef fish; hard bottom; rubble; Slope-flat; HB where grew a knob?  Anadyomene menziesii; Crustose Coralline Algae; Comatulid crinoid; Vestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)-stop for winfrog; Slope-flat; hard bottom; rubble; Slope-flat; hB winfrog crashed - ALL STOP; Photo XS (quantitative)-stop for winfrog; Slope-flat; hB 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 Photo XS (quantitative)-resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef	K1 2 4		24 70004666	02.67006	CF 12	0/15/2011 14:20 15 IV 11 1	h	hand hastern military Claus flat			
Kraken 2 - 4         SeaBoss Site 13         24.79984833         -83.67821666         65.868         9/15/2011 14:32         15-IX-11-1         over grew a knob?         hard bottom; rubble; Slope-flat;         HB         HB           Florida, Pulley Ridge HAPC, USGS         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           Florida, Pulley Ridge HAPC, USGS         24.79983         -83.67818833         65.354         9/15/2011 14:34         15-IX-11-1         Tilefish; Yellowtail Reef fish; chalk bass;         hard bottom; rubble; Slope-flat;         HB           Kraken 2 - 4         5eaBoss Site 13         24.79984         -83.67874833         65.47         9/15/2011 14:37         15-IX-11-1         Tilefish; Yellowtail Reef fish; chalk bass;         hard bottom; rubble; Slope- flat;         HB           Kraken 2 - 4         5eaBoss Site 13         24.79984         -83.67874833         65.47         9/15/2011 14:37         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           Florida, Pulley Ridge HAPC, USGS         24.79982166         -83.67875666         65.588         9/15/2011 14:38<	Kraken 2 - 4		24.79984666	-83.67806	65.12	9/15/2011 14:30 15-IX-11-1		nard bottom; rubble; Slope- flat;	нв		
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;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79983 -83.678405 64.793 9/15/2011 14:34 15-IX-11-1 Tilefish; Yellowtail Reef fish; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79984 -83.67874833 65.447 9/15/2011 14:34 15-IX-11-1 Stop for winfrog; winfrog crashed - ALL STOP; Photo XS (quantitative)-stop for winfrog; we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on 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 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 45-IX-11-1 the Seaboss dive 13 transect;  Florida, Pulley Ridge HAPC, USGS SeaBoss	   		24 70004000	02.67024655	CF 0C0	0/45/2044 44 22 45 17 11 1		hand haman mild of the			
Kraken 2 - 4 SeaBoss Site 13 24.79985 -83.67818833 65.354 9/15/2011 14:33 15-IX-11-1 menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope- flat; HB Anadyomene menziesii; Crustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB Winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; Trustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB Winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; stop for winfrog; the dive and we have 1400 m left on the Seaboss Site 13 24.799816 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect; Photo XS (quantitative)- resume; Anadyomene menziesii; Crustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef	kraken 2 - 4	Seaboss Site 13	24.79984833	-83.6/821666	65.868	9/15/2011 14:32 15-IX-11-1	over grew a knob?	nard bottom; rubble; Slope- flat;	нв		
Kraken 2 - 4 SeaBoss Site 13 24.79985 -83.67818833 65.354 9/15/2011 14:33 15-IX-11-1 menziesii; comatulid crinoid; purple reef fish; hard bottom; rubble; Slope- flat; HB Anadyomene menziesii; Crustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB Winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; Trustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB Winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; stop for winfrog; the dive and we have 1400 m left on the Seaboss Site 13 24.799816 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect; Photo XS (quantitative)- resume; Anadyomene menziesii; Crustose Coralline Algae; comatulid crinoid; Xestospongia muta; burrow Sand Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope- flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef											
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Florida, Pulley Ridge HAPC, USGS Site 13  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  Flor	Kraken 2 - 4	Seaboss Site 13	24./9985	-83.6/818833	65.354	9/15/2011 14:33 15-IX-11-1	menziesii; comatulia crinola; purple reef fish;	nard bottom; rubble; Slope- flat;	нв		
Florida, Pulley Ridge HAPC, USGS Site 13  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13  Flor							1				
Kraken 2 - 4 SeaBoss Site 13 24.79983 -83.678405 64.793 9/15/2011 14:34 15-IX-11-1 Tilefish; Yellowtail Reef fish; chalk bass; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for winfrog; hard bottom; rubble; Slope-flat; HB winfrog crashed - ALL STOP; Photo XS (quantitative)- stop for wi		51 . 1 . 5 . 11 . 5									
Florida, Pulley Ridge HAPC, USGS SaBoss Site 13 24.79984 -83.67874833 65.447 9/15/2011 14:37 15-IX-11-1 stop for winfrog; hard bottom; rubble; Slope-flat; HB 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; HB 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; HB Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef	L						· _ · _ · _ · _ · _ · _ · _ · _ · _		l <u>.</u>		
Kraken 2 - 4 SeaBoss Site 13 24.79984 -83.67874833 65.447 9/15/2011 14:37 15-IX-11-1 stop for winfrog; hard bottom; rubble; Slope- flat; HB we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we back online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beck online: weve traveled 1150 m since the beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat; HB we beginning of the dive and we have 1400 m left on hard bottom; rubble; Slope- flat	Kraken 2 - 4		24.79983	-83.678405	64.793	9/15/2011 14:34 15-IX-11-1		hard bottom; rubble; Slope- flat;	НВ		
Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 we be beginning of the dive and we have 1400 m left on the Seaboss dive 13 transect; hard bottom; rubble; Slope-flat; HB Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef			24-225	00.6=0=-0	e	0/45/2044 4 : 25				1	
Florida, Pulley Ridge HAPC, USGS Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 beginning of the dive and we have 1400 m left on the Seaboss dive 13 transect; hard bottom; rubble; Slope-flat; HB HB Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef	Kraken 2 - 4	SeaBoss Site 13	24.79984	-83.67874833	65.447	9/15/2011 14:37 15-IX-11-1		hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 4 SeaBoss Site 13 24.79982166 -83.67875666 65.588 9/15/2011 14:38 15-IX-11-1 the Seaboss dive 13 transect; hard bottom; rubble; Slope-flat; HB											
Photo XS (quantitative)- resume; Anadyomene menziesii; Stichopathes; Aplysina; Yellowtail Reef											
Florida, Pulley Ridge HAPC, USGS menziesii; Stichopathes; Aplysina; Yellowtail Reef	Kraken 2 - 4	SeaBoss Site 13	24.79982166	-83.67875666	65.588	9/15/2011 14:38 15-IX-11-1	the Seaboss dive 13 transect;	hard bottom; rubble; Slope- flat;	НВ		
Florida, Pulley Ridge HAPC, USGS menziesii; Stichopathes; Aplysina; Yellowtail Reef									1	1	
							· · · · · · · · · · · · · · · · · ·				
Kraken 2 - 4   SeaBoss Site 13   24.79981833   -83.67874666   65.214   9/15/2011 14:40   15-IX-11-1   fish; 20-40 cm Corallinales- Peyssonneliaceae;   hard bottom; rubble; Slope- flat;   HB											
	Kraken 2 - 4	SeaBoss Site 13	24.79981833	-83.67874666	65.214	9/15/2011 14:40 15-IX-11-1	fish; 20-40 cm Corallinales- Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	НВ	<u> </u>	

	1						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			
	Florida, Pulley Ridge HAPC, USGS						scurted one of the 10 m multibeam depressions -			
Kraken 2 - 4	SeaBoss Site 13	24.79980833	-83.67904	64.046	9/15/2011 14:42 1	15-IX-11-1	we did see th	hard bottom; rubble; Slope- flat;	НВ	
mane	Florida, Pulley Ridge HAPC, USGS	2 3300033	03.07301	0 1.0 10	3,13,201111112	10 1/1 11 1	nearing a slight change in the multibeam and	nara socioni, rassie, siope nac,		
Kraken 2 - 4	SeaBoss Site 13	24.79979	-83.67951166	65.868	9/15/2011 14:45 1	15-IX-11-1	ground truthing it;	hard bottom; rubble; Slope- flat;	нв	
Krukeri 2 4	Scaboss site 15	24.73373	03.07331100	03.000	3/13/2011 14:43	13 1/1 11 1	ground truthing it,	nara bottom, rabbie, slope mat,	110	
							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;			
	Florida, Pulley Ridge HAPC, USGS						purple reef fish; wrasses; Anadyomene menziesii;			
Kraken 2 - 4	SeaBoss Site 13	24.79979166	-83.67967333	65.915	9/15/2011 14:46 1	15_IY_11_1	Coralli	hard bottom; rubble; Slope- flat;	нв	
Krakeri 2 - 4	Seaboss Site 15	24.73373100	-83.07307333	03.313	3/13/2011 14.40	13-14-11-1	Corain	mard bottom, rubble, slope- nat,	ПБ	
	Florida, Pulley Ridge HAPC, USGS						blank screen - the mac is recording the video but			
Kraken 2 - 4	SeaBoss Site 13	24.79979666	-83.680055	66.055	9/15/2011 14:50 1	15-IX-11-1	the DVCam tape is not recording photo 626.jpg	hard bottom; rubble; Slope- flat;	нв	
Munch 2 - 4	500000 Site 15	24.75575000	55.000055	50.055	3/13/2011 14.30	IV 11-1	are 5 - cum tupe is not recording prioto 620.jpg	a bottom, rabbie, biope- lidt,		
							half way across valley - date and DVD stopped			
							recording to wait for Digital tapes to start back up.			
							Sill recording on Mac hard drive; Agalas; chalk bass;			
	Florida, Pulley Ridge HAPC, USGS						bicolor damselfish; Yellowtail Reef fish; comatulid			
Kraken 2 - 4	SeaBoss Site 13	24.79981333	-83.68035666	65.354	9/15/2011 14:52 1	15_IY_11_1	crinoid; Anadyomene menziesii; Corallinales- Peys	hard bottom; rubble; Slope- flat;	нв	
Krukeri 2 4	Scaboss site 15	24.75501555	03.00033000	03.334	3/13/2011 14.32	13 1/1 11 1	ermola, Alladyomene menziesh, corannales 1 eys	nara bottom, rabbie, slope mat,	110	
							com up on another hummock - 1 m releif; dominate			
							Anadyomene menziesii; Corallinales-			
							Peyssonneliaceae; comatulid crinoid; Crustose			
	Florida, Pulley Ridge HAPC, USGS						Coralline Algae; taking photos @ 2 per minute on a			
Kraken 2 - 4	SeaBoss Site 13	24.799795	-83.680675	65.027	9/15/2011 14:55 1	15-IX-11-1	reguar interval for transect analysis	hard bottom; rubble; Slope- flat;	нв	
maneri 2	Florida, Pulley Ridge HAPC, USGS	233733	03.000073	05.027	3/15/2011 1 1155 1	10 1/1 11	regular interval for transcet analysis	nara sectorn, rassie, siepe nat,		
Kraken 2 - 4	SeaBoss Site 13	24.799785	-83.68103333	64.84	9/15/2011 14:58 1	15-IX-11-1	Photo XS (quantitative)- pause; to fix video; All Stop;	hard bottom: rubble: Slope- flat:	нв	
	Florida, Pulley Ridge HAPC, USGS				0, 10, 1011 1 1100		restart video and HD recording; 1181 m to go;	,,,,		
Kraken 2 - 4	SeaBoss Site 13	24.799795	-83.68103833	64.793	9/15/2011 15:04 1	15-IX-11-1	Yellowtail Reeffish;	hard bottom; rubble; Slope- flat;	нв	
mane 2	Florida, Pulley Ridge HAPC, USGS	2 33733	03.00103033	0 117 33	3,13,2011 13.0 .	10 1/1 11 1	Tello Mail Neemon,	nara socioni, rassie, siope nac,		
Kraken 2 - 4	SeaBoss Site 13	24.79979333	-83.68101666	64.373	9/15/2011 15:05 1	15-IX-11-1	underway;	hard bottom; rubble; Slope- flat;	нв	
maneri 2	Scasoss site 15	2 337 3333	03.00101000	01.373	3,13,2011 13:03	10 1/1 11	Coral- Agaricia increase; Xestospongia muta;	nara sectorn, rassie, siepe nat,		
							Anadyomene menziesii; Corallinales-			
	Florida, Pulley Ridge HAPC, USGS						Peyssonneliaceae; comatulid crinoid; Yellowtail			
Kraken 2 - 4	SeaBoss Site 13	24.799805	-83.68139333	64.98	9/15/2011 15:08 1	15-IX-11-1	Reeffish;	hard bottom; rubble; Slope- flat;	нв	Coral- Agaricia
		2 33303	33.00133333	050	2, 23, 2011 13.00		Coral- Montastraea cavernosa - 70 cm platy 2+	The state of the s		
	Florida, Pulley Ridge HAPC, USGS						colonies; Yellowtail Reef fish; reef bass? RECHECK			Coral- Montastraea
Kraken 2 - 4	SeaBoss Site 13	24.799815	-83.68178166	65.681	9/15/2011 15:10 1	15-IX-11-1	Species;	hard bottom; rubble; Slope- flat;	нв	cavernosa
		, 55515	22.232,0200	13.001	.,,		multi beam - in valley between 2 hummocks -	Table, stope hat,	+	
							approaching the main ridge - the next ridge is the			
							primary one; Yellowtail Reef fish; Anadyomene			
							menziesii; Agalas; Corallinales- Peyssonneliaceae;			
	Florida, Pulley Ridge HAPC, USGS						Crustose Coralline Algae; orange back bass?;			
Kraken 2 - 4	SeaBoss Site 13	24.79980833	-83.68211666	67.129	9/15/2011 15:12 1	15-IX-11-1	comatulid crinoid;	hard bottom; rubble; Slope- flat;	нв	
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-,,5:12			, , , , , , , , , , , , , , , , , , , ,	-	
							Lobster - Panularis argus; Anadyomene menziesii;			
							Corallinales- Peyssonneliaceae; still in valley east to			
1							the maid ridge; comatulid crinoid; contiuning still			
1	Florida, Pulley Ridge HAPC, USGS						photos at 2/ min; Yellowtail Reeffish; purple	hard bottom; rubble cobble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.7998	-83.68236	66.568	9/15/2011 15:14 1	15-IX-11-1	reeffish; Reef Butterflyfish;	flat;	нв	
<del></del>	Florida, Pulley Ridge HAPC, USGS				., .,		, , , . , . ,	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79981	-83.68272166	65.588	9/15/2011 15:17 1	15-IX-11-1	Anadyomene menziesii; Yellowtail Reeffish;	flat;	НВ	
					, .,		,,,	<u> </u>		

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	Florida, Pulley Ridge HAPC, USGS					On the multibeam sonar we are right at the base of			
Kraken 2 - 4	SeaBoss Site 13	24.79976	-83.68291	64.653	9/15/2011 15:19 15-IX-11-1	the east edge of the main terrace		НВ	
	Florida, Pulley Ridge HAPC, USGS								
Kraken 2 - 4	SeaBoss Site 13	24.79978166	-83.68293666	65.027	9/15/2011 15:19 15-IX-11-1	Bicolored damsals; reef bass;	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS						hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79977666	-83.6831	64.747	9/15/2011 15:20 15-IX-11-1	reef bass; Yellowtail Reeffish;	flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS						hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79977333	-83.68303833	-0.765	9/15/2011 15:21 15-IX-11-1	mutton snapper;	flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS								
Kraken 2 - 4	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;		НВ	
						We are restting the digital photo; Stopping the			
	Florida, Pulley Ridge HAPC, USGS					photo transect until photo is set up;			
Kraken 2 - 4	SeaBoss Site 13	24.79976333	-83.68300833	65.307	9/15/2011 15:22 15-IX-11-1			НВ	
	Florida, Pulley Ridge HAPC, USGS					continuing to wait for fixing the problems. When			
Kraken 2 - 4	SeaBoss Site 13	24.79977	-83.68301	65.307	9/15/2011 15:25 15-IX-11-1	photo transect begins, we are on photo 678.		HB	
	Florida, Pulley Ridge HAPC, USGS								
Kraken 2 - 4	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	
	Florida, Pulley Ridge HAPC, USGS					Dominant: Anadyomene menziesii; Crustose	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79977666	-83.68310333	64.653	9/15/2011 15:27 15-IX-11-1	Coralline Algae; Coral- Agaricia 10 cm;	flat;	НВ	Agaricia
	Florida, Pulley Ridge HAPC, USGS								
Kraken 2 - 4	SeaBoss Site 13	24.799775	-83.68315333	64.7	9/15/2011 15:27 15-IX-11-1	Possibly Aplysina; crinoid		НВ	
	Florida, Pulley Ridge HAPC, USGS					Rhodophyta; Anadyomene menziesii; Corallinales-	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79977666	-83.68319666	64.56	9/15/2011 15:27 15-IX-11-1	Peyssonneliaceae, Peyssonnelia;	flat;	НВ	
						Dominant organisms Anadyomene menziesii;			<del></del>
						Crustose Coralline Algae; plates of Peyssonnelia;			
						loggerhead sponges or Ircinia; wrasses; Yellowtail			
	Florida, Pulley Ridge HAPC, USGS					Reeffish; chalk bass; 15cm agaracia; bicolor	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79976833	-83.68349833	64.607	9/15/2011 15:29 15-IX-11-1	damselfish;	flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS					· · · · · · · · · · · · · · · · · · ·	hard bottom; Rock; rubble; Slope-		<del></del>
Kraken 2 - 4	SeaBoss Site 13	24.79977166	-83.68371333	64.84	9/15/2011 15:31 15-IX-11-1	lots of Anadyomene menziesii;	flat;	нв	
	Florida, Pulley Ridge HAPC, USGS				., ., .	on the edge of a horse-shoe feature on multibeam-	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.799735	-83.68398	64.373	9/15/2011 15:33 15-IX-11-1	halfway across main ridge.	flat;	НВ	
					-, -, -	,			
						Habitat has not changed, just maybe a little			
	Florida, Pulley Ridge HAPC, USGS					shallower; dominant alga Anadyomene menziesii;	rubble cooble bottom, not sure if its		
Kraken 2 - 4	SeaBoss Site 13	24.79973833	-83.68414	63.252	9/15/2011 15:35 15-IX-11-1	Crustose Coralline Algae; Peyssonnelia;	rock or dead coral;	НВ	
					., ., .	, , , , , , , , , , , , , , , , , , ,	,		
	Florida, Pulley Ridge HAPC, USGS					flat blade red alga- haven't been seeing too many in	hard bottom: Rock: rubble: Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79974	-83.684335	63.532	9/15/2011 15:36 15-IX-11-1	the last transect; chalk bass; wrasses;	flat;	нв	
			22.22.333		-, -,	large leafy red algae; this transect is what they		<del>-</del> +	<del></del>
	Florida, Pulley Ridge HAPC, USGS					claimed had 25% coral cover in 2004; most likely	hard bottom; Rock; rubble; Slope-		
Kraken 2 - 4	SeaBoss Site 13	24.79972	-83.68443333	63.906	9/15/2011 15:36 15-IX-11-1	saw an aplysina;	flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS	23372	35.005333	33.330	-,, 2011 15:50 15 IX 11 1	chalk bass; bicolor damselfish; Xestospongia muta;	hard bottom; Rock; rubble; Slope-		<del></del>
Kraken 2 - 4	SeaBoss Site 13	24.799735	-83.68473166	63.579	9/15/2011 15:39 15-IX-11-1	64 on top of the ridge; 65 at the base	flat;	НВ	
	Florida, Pulley Ridge HAPC, USGS	2 55, 55	33.33473100	55.575	-, 15, 2511 15.55 15 IN-11-1	2. 2 top of the riage, ob at the base	hard bottom; Rock; rubble; Slope-		<del></del>
Kraken 2 - 4	SeaBoss Site 13	24.79973	-83.68481666	64.093	9/15/2011 15:39 15-IX-11-1	Xestospongia muta;	flat:	нв	
Munch 2 - 4	Florida, Pulley Ridge HAPC, USGS	24.73373	05.05401000	54.033	5, 15, 2011 15.55 15-IA-11-1	on the sonar we are approaching depression;	hard bottom; Rock; rubble; Slope-		<del></del>
Kraken 2 - 4	SeaBoss Site 13	24.79970666	-83.68486	62.458	9/15/2011 15:40 15-IX-11-1	Xestospongia muta;	flat;	НВ	
Makell Z = 4	Scapuss Site 13	24.73370000	-65.06460	02.438	J <sub>1</sub> 1J <sub>1</sub> 2011 1J.40 1J-IA-11-1	Acatospongia muta,	nac,	110	<del></del>
						the multiheam shows a 10m depression about 10-			
						the multibeam shows a 10m depression about 10m to the south of us; we verified on sonar that we will			
						, and the second			
	Florida, Pulley Ridge HAPC, USGS					not be able to go to it (we are staying 10m away). As			
Kraken 2 - 4	SeaBoss Site 13	24.79972	-83.68503333	64.28	9/15/2011 15:41 15-IX-11-1	we came up the east slope of the main ridge there was no discernable slope; there were no ledge; no		нв	
NIdKell Z - 4	Deadoss Sile 15	24.79972	-03.00303333	04.28	5/15/2011 15.41 15-IX-11-1	was no discernable slope; there were no ledge; no		пВ	

_					-			Ī		1	
							Dominantly Anadyomene menziesii; Peyssonnelia;				
							larger sponges are Xestospongia muta and				
							spheciospongia or Ircinia; verongids; Whenevcer				
							the ROV runs into the bottom leaves large sheets of				
	Florida, Pulley Ridge HAPC, USGS						Peyssonneliaa are encrusting on 1m diameter dead	hard bottom; Rock; rubble- cobble;			
Kraken 2 - 4	SeaBoss Site 13	24.79967	-83.68528666	63.999	9/15/2011 15:43	15-IX-11-1	plate coral- possi	dead coral plates;	НВ		
	Florida, Pulley Ridge HAPC, USGS						Agaracia plate coral- live 40cm; orange back bass;	hard bottom; Rock; rubble; dead			
Kraken 2 - 4	SeaBoss Site 13	24.79969666	-83.68563833	65.821	9/15/2011 15:46	15-IX-11-1	chalk bass;	coral plates; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS						approaching another big crater 30m out; should be	hard bottom; Rock; rubble; dead			
Kraken 2 - 4	SeaBoss Site 13	24.79969666	-83.6857	66.101	9/15/2011 15:47	15-IX-11-1	able to go right over;	plate coral; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS	24 70000466	00 00570466	66.645	0/45/2044 45 40	45 11/44 4	currently attempting to set up waypoint tracking,				
Kraken 2 - 4	SeaBoss Site 13	24.79969166	-83.68572166	66.615	9/15/2011 15:49	15-IX-11-1	etc.	hand battana Dankan bila Claus	НВ		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79967666	-83.68567666	66.335	9/15/2011 15:50	1E IV 11 1	8m diameter craters 15m away from us and we'll try	flat;	нв		
Kraken 2 - 4	Seaboss Site 15	24./996/666	-83.08307000	00.333	9/15/2011 15:50	12-IV-11-1	and go directly over it.	nat,	ПБ		
							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				
	Florida, Pulley Ridge HAPC, USGS						reeffish; cherub fish; cardinal fish; anthiaed fish;	hard bottom; Rock; rubble; dead			
Kraken 2 - 4	SeaBoss Site 13	24.799665	-83.68583833	66.055	9/15/2011 15:50	15-IX-11-1	Yellowtail Reeffish; Reef Butterflyfish; Taking	plate coral; Slope- flat;	нв		
	Florida, Pulley Ridge HAPC, USGS						resuming Photo XS (quantitative)- start;				
Kraken 2 - 4	SeaBoss Site 13	24.79967166	-83.68605	66.242	9/15/2011 15:57	15-IX-11-1			НВ		
							we've come off the main ridge; we're in the west				
	Florida, Pulley Ridge HAPC, USGS						slope of the main ridge and there's one more ridge	hard bottom; Rock; Rock; rubble;			
Kraken 2 - 4	SeaBoss Site 13	24.79967666	-83.686125	66.895	9/15/2011 15:58	15-IX-11-1	to cross over;	Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS							hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.79968166	-83.686185	65.447	9/15/2011 15:58	15-IX-11-1	1.5 m Montastraea;	flat;	НВ	1	5 m Montastraea;
	Florida, Pulley Ridge HAPC, USGS						Yellowtail Reef fish; chalk bass; wrasses; red	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.79967166	-83.68633666	64.7	9/15/2011 15:59	15-IX-11-1	grouper holes?	flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS	24 70066	02 505 44022	65 700	0/45/2044 46 00	45 11/44 4					
Kraken 2 - 4	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;	НВ		
Kraken 2 - 4	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 13	24.79964	-83.68660166	65.307	0/15/2011 16:01	1F IV 11 1	Fact base of the western most ridge		нв		
Kraken 2 - 4	Seaboss Site 15	24.79904	-83.08000100	05.507	9/15/2011 16:01	12-IV-11-1	East base of the western most ridge  Reef Butterflyfish; Dominant: Anadyomene		пь		
	Florida, Pulley Ridge HAPC, USGS						menziesii; larger Demospongiae probably some	hard bottom; Rock; rubble;cobble;			
Kraken 2 - 4	SeaBoss Site 13	24.79965833	-83.68689666	64.7	9/15/2011 16:03	15-IX-11-1	clathriids;	dead coral; Slope- flat;	нв		
	Florida, Pulley Ridge HAPC, USGS			*	-,,			hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.799655	-83.68714333	64.42	9/15/2011 16:05	15-IX-11-1	chalk bass; wrasses; Reef Butterflyfish;	flat; dead coral;	нв		
	Florida, Pulley Ridge HAPC, USGS				-, -, -		very large leafy red alga probably 2 meteres across	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.79963833	-83.68738833	64.934	9/15/2011 16:07	15-IX-11-1	maybe Kallymenia;	flat;	нв		
	Florida, Pulley Ridge HAPC, USGS							hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.79963833	-83.68764	65.915	9/15/2011 16:08	15-IX-11-1	another large Kallymenia;	flat; dead coral;	НВ		
	Florida, Pulley Ridge HAPC, USGS						encrsuted sponge; calespongia; Geodia; chalk bass;	hard bottom; Rock- wall; rubble;			
Kraken 2 - 4	SeaBoss Site 13	24.79961	-83.68786666	66.382	9/15/2011 16:10	15-IX-11-1	wrasses; purple reeffish;	Slope- flat;	НВ		
							30 cm Coral- Agaricia; sonar 40m out 10m diameter				
	Florida, Pulley Ridge HAPC, USGS	24 7022	00.00-00-		0/45/2000	45.07.5.	crater, shows up on multibeam same position,				
Kraken 2 - 4	SeaBoss Site 13	24.79964166	-83.68792666	65.868	9/15/2011 16:12	15-IX-11-1	probably a red grouper burrow	hand hatters Bad 111 Cl	НВ	C	Coral- Agaricia
Vrakon 2 4	Florida, Pulley Ridge HAPC, USGS	24 70062666	03 60040	65 024	0/15/2011 16:14	1E IV 11 1	another large burrow about 10 degrees on active sonar	hard bottom; Rock; rubble; Slope-	μр		
Kraken 2 - 4	SeaBoss Site 13	24.79962666	-83.68818	65.821	9/15/2011 16:14	12-IX-11-J	******	flat; dead plate coral	НВ		
Vrakor 2 4	Florida, Pulley Ridge HAPC, USGS	24.79961	-83.688385	65.214	9/15/2011 16:15	1E IV 11 1	Anadyomene menziesii; Yellowtail Reeffish; chalk	hard bottom; Rock; rubble; Slope-	НВ		
Kraken 2 - 4	SeaBoss Site 13 Florida, Pulley Ridge HAPC, USGS	24./9961	-03.000385	05.214	3/13/2011 10:15	T2-IV-T1-T	bass; another large kallymenia Anadyomene menziesii; Xestospongia muta;	flat; dead plate coral hard bottom; Rock; rubble; Slope-	пВ		
Kraken 2 - 4	SeaBoss Site 13	24.799605	-83.68861833	64.98	9/15/2011 16:18	15-IX-11-1	occasional kallymenia;	flat; dead coral	нв		
MUNCH Z - 4	Florida, Pulley Ridge HAPC, USGS	24.733003	05.0001033	04.50	3/13/2011 10:10	70 IV 11-1	occasional kanymema,	hard bottom; Rock; rubble; Slope-	.10	-	
Kraken 2 - 4	SeaBoss Site 13	24.799625	-83.688845	66.008	9/15/2011 16:20	15-IX-11-1	chalk bass; purple reef fish;	flat;	нв		
		55 525	22.222015		.,,			,	1 - 1		

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	Florida, Pulley Ridge HAPC, USGS						at least 2 red fish burrows about 30 m out we are going to try to cross over; 3 burrows side by side,	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 4	SeaBoss Site 13	24.799625	-83.68888333	65.915	9/15/2011 16:20	15-IX-11-1	about 3 m in diameter	flat;	НВ		
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		НВ		
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 Reeffish; purple reef fish; juv angelfish		НВ		
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		НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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 Peyssonnellia hard to see on video; Reef Butterfly; cherub fish; orange back bass; Chalk Bass; wrasses; bicolored damsels;				Coral- Agaricia
Kraken <b>2</b> - 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;	нв		
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 Peyssonnellia; Xestospongia muta; Aplysina; crinoids on Anadyomene menziesii;	hard bottom; Rock; rubble; Slope- flat; less than 30cm relief;	НВ		
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;	НВ		

		1								1	1
	Florida, Pulley Ridge HAPC, 100 m						small potentially cyanobacteria clumps on bottom				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.801545	-83.66966167	67.456	9/15/2011 19:15 15-1	X-11-2	dark brown less than 5cm;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge HAPC, 100 m						orange encrusting sponge; orange reef fish (basset);				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80152	-83.66977833	66.802	9/15/2011 19:16 15-1	X-11-2	Yellowtail Reef Fish; starting to move a slope now				
							Coing to collect a Montactroop covernous about 25				
							Going to collect a Montastraea cavernosa; about 25- 30 cm across; brown with blue iridescent; 1.5 cm				
	Florida, Pulley Ridge HAPC, 100 m						polyps in diameter;				Montastraea
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80150667	-83.669905	66.989	9/15/2011 19:17 15-1		we are on the east slope of the eastern ridge;			001	cavernosa
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.801515	-83.66987667	66.242	9/15/2011 19:30 15-1	X-11-2	sample 001 completed;				
	51 .1 5 11 5 11 11456 400										
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 15-1	V 11 2	continuing with Photo XS (quantitative)- start; restarting with photo 842;	hard bottom; Rock; rubble; Slope- flat;	НВ		
Kiakeli 2 - 3	Horti of 0303 Seaboss Site 13	24.801303	-83.00388107	00.146	9/13/2011 19.30 13-1/	X-11-Z	restarting with photo 642,	ilat,	ПВ		
	Florida, Pulley Ridge HAPC, 100 m						Chalk Bass; bicolored damsels; sand tile fish mound	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80152	-83.66990333	65.728	9/15/2011 19:32 15-1	X-11-2	70cm high 2 m wide; another basset;	flat;	нв		
							Just come over some Coral- Agaricia; coming out of				
							the valley into the secondary ridge; interesting				
	Florida, Pulley Ridge HAPC, 100 m						sponge- Geodia barrel sponge with Strongylophora	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80149333	-83.670075	66.942	9/15/2011 19:33 15-IX	X-11-2	encrusting; more lobophora in this area; Halimeda	flat;	НВ		Coral- Agaricia
	Florida, Pulley Ridge HAPC, 100 m						about to come up to mounds on the top of the	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80144333	-83.670295	64.14	9/15/2011 19:35 15-1	X-11-2	ridge; purple reef fish; Reef Butterfly;	flat;	нв		
							coming up into a depression; basset; 5 lionfish	*			
							20cm long; purple reef fish; red grouper burrow				
	Florida, Pulley Ridge HAPC, 100 m						crater is 8m long, 1 meter deep; blue chromis;				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80138	-83.67043167	63.859	9/15/2011 19:36 15-1	X-11-2	goldentail moray;				
							big mound with black corals on top potentially an				
	Florida, Pulley Ridge HAPC, 100 m						Antipathidae; purple reef fish; Yellowtail Reef Fish;	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80139667	-83.67046667	63.859	9/15/2011 19:38 15-1	X-11-2	lots of mounds and ridges over 1m relief;	flat;	нв		
					0, 20, 2022 20:00 20 ::		vis has dropped noticeably; bicolor damsel; starting	,			
	Florida, Pulley Ridge HAPC, 100 m						to get a bit of current (less than .5 knots) to the				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80140333	-83.67059667	61.851	9/15/2011 19:39 15-1	X-11-2	south;				
	Florida, Pulley Ridge HAPC, 100 m	24 004 2022	02.67007	62.420	0/45/2044 40 40 45 11	v 44 2	bicolor damsel; crinoids; Geodia; large yellow barrel-				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80139333	-83.67087	63.439	9/15/2011 19:40 15-1	X-11-2	shaped sponge;	flat;	НВ		
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80138	-83.67095333	63.813	9/15/2011 19:41 15-1	X-11-2	serpulid worms Filograna growing on a sponge;				
	Florida, Pulley Ridge HAPC, 100 m						blue chromis; another 10m diameter redfish crater;	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80136833	-83.6711	63.906	9/15/2011 19:42 15-1	X-11-2	Chalk Bass; big Xestospongia muta with crinoids;	flat;	НВ		
							on ton of the cost sides, descine to the				
							on top of the east ridge; dominated by Anadyomene menziesii and some Crustose coralline				
	Florida, Pulley Ridge HAPC, 100 m						algae; lots of crinoids; we're coming to the edge of a	hard bottom; Rock: rubble: small			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80134667	-83.67120167	64.186	9/15/2011 19:43 15-1	X-11-2	big hole and we see a blue angelfish	rock ledges; less than 50cm relief;	НВ		
							spot fin butterfly; ~12 Yellowtail Reef Fish; 5 more	,			
	Florida, Pulley Ridge HAPC, 100 m						lionfish; few bled chromis; 2 Reef Butterfly;	in a hole hard bottom; Rock; rubble;			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80128	-83.67135333	63.579	9/15/2011 19:44 15-1	X-11-2	squirrelfish;	Slope- flat;	НВ		
	Florido Bullou Bid. 11400 400						and of halo constanting ways VIII at 110 CT	hand hattana Baad 111 Cl			
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 15-1	v 11 2	out of hole continuing west; Yellowtail Reef Fish; reef butterfly; Chalk Bass;	hard bottom; Rock; rubble; Slope- flat;	НВ		
Makeli Z = 3	north of O3G3 SedBOSS Site 13	24.00128	-03.0/14400/	03.933	3/13/2011 19:45 15-17	V-TT-7	reer butterny, Chaik bass,	nac,	пв	ļ	<u> </u>

_	T T						I	ı	1	1	
	Florida, Pulley Ridge HAPC, 100 m						hydroid with crinoids on it; Anadyomene menziesii;	hard bottom; Rock- wall; rubble;			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80129667	-83.67174833	64.326	9/15/2011 19:47	15-IX-11-2	either Crustose coralline algae or Peyssonnellia;	Slope- flat;	нв		
					0, -0, -0		we are stopping; Photo XS (quantitative)- End; we	in the state of th	1		
	Florida, Pulley Ridge HAPC, 100 m						are going to stop to collect an Coral- Agaricia	hard bottom; Rock; rubble; Slope-			Coral- Agaricia
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80130833	-83.67187167	64.747	9/15/2011 19:47	15-IX-11-2	lamarki;	flat:	нв	002	lamarki
				*****	0, -0, -0		,		1		
	Florida, Pulley Ridge HAPC, 100 m						collection successful in Q17; We are heading back				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.801305	-83.67184667	64.747	9/15/2011 20:01	15-IX-11-2	to				
									1	+	
	Florida, Pulley Ridge HAPC, 100 m						restarting Photo XS (quantitative)- start; With photo	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80130333	-83.671885	65.821	9/15/2011 20:03	15-IX-11-2	900;	flat;	НВ		
							lots of Anadyomene menziesii and lobophera; some				
							Crustose coralline algae; Photo XS (quantitative)-				
	Florida, Pulley Ridge HAPC, 100 m						End- transect paused; crinoids; Anadyomene	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80129333	-83.67197167	64.42	9/15/2011 20:04	15-IX-11-2	menziesii; lobophera; orange encrusting sponge;	flat; small ledges less than 50cm	НВ		
							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				
	Florida, Pulley Ridge HAPC, 100 m						the ship feed, so we will need to look at that when				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80129667	-83.67203833	65.12	9/15/2011 20:08	15-IX-11-2	we go over position data;				
	Florida, Pulley Ridge HAPC, 100 m							hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	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;	flat;	НВ		
							Anadyomene menziesii; 100's of crinoids; common				
	Stanida Bullan Bidaa HABC 100 aa						purple rope sponges; common Xestospongia muta;	hard bottom; Slope- flat; Rock;			Coral- Agaricia; Coral- Montastraea
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	1E IV 11 2	uncommon Coral- Agaricia; rare Montastraea cavernosa;	rubble; small rock ledges; less than 30cm relief	НВ		cavernosa
Kiakeli 2 - 3	Horti of 03d3 3eaboss site 13	24.801273	-83.07231007	04.7	9/13/2011 20.11	13-IX-11-2	interesting sponge for Shirley to ID later; cylindrical;	Sociii reliei	ПВ		Cavernosa
							yellow with purple; Dictyota; Chalk Bass;				
							Anadyomene menziesii; Corallinales or				
	Florida, Pulley Ridge HAPC, 100 m						Peyssonneliaceae; unidentified wrasse;				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.801215	-83.67267	65.401	9/15/2011 20:14	15-IX-11-2	holothurians;	Coral- coral rubble;	нв		
				******	0, -0, -0				1		
							picture 930 on photo transect; something (like a				
	Florida, Pulley Ridge HAPC, 100 m						fish) just took offleaving a cloud of sediment in the				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80122667	-83.67302	65.354	9/15/2011 20:17	15-IX-11-2	water; maybe it ducked into a hole;				
			-				coming up to the edge of another hole; at least 8		1		
							scamps; spot fin hogfish; several lionfish; black				
							groupers, all larger than 60 cm; squirrelfish;				
							bigeye?; another serranthid coming out of the hole				
	Florida, Pulley Ridge HAPC, 100 m						looks like a giant graysby, but unidentified (has a				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80123167	-83.67311833	64.934	9/15/2011 20:18	15-IX-11-2	roun				
							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				
	Florida, Pulley Ridge HAPC, 100 m	24 00424: 5	00.670.0		0/45/0044 22 23	45 0/ 44 5	reef fish; several Coral- Agaricia; dozens of crinoids	l			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80121167	-83.67318	64.7	9/15/2011 20:21	15-IX-11-2	in every video frame	rubble;	НВ		
	Florido Pullou Bid UABC 400						Bothony taking over as data language	hard battam, Carel			
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	1E IV 11 2	Bethany taking over as data logger; orange-back bass;	hard bottom; Coral- coral rubble; Rock;	нв		
KI dKell Z - 5	north or obob seaboss site 13	24.00110833	-03.0/3/000/	04.84	3/13/2011 20:24	13-14-11-5	Dass,	nuck,	пъ		

-	1		1			1	Io	1		1	
							Coral- Agaricia; in the middle point between the two ridges on pulley ridge; Anadyomene menziesii;				
							lots of crynoids; Corallinales or Peyssonneliaceae;				
	Florida, Pulley Ridge HAPC, 100 m						Crustose Coralline algae; Xestospongia muta;	hard bottom; Rock; Coral- coral			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80111833	-83.67414833	64.607	9/15/2011 20:26	15-IX-11-2	aplysina	rubble; Slope- flat;	НВ		Coral- Agaricia
Krukeri 2 3	north of obds scaboss site 15	24.00111033	03.07414033	04.007	3/13/2011 20:20	13 IX 11 Z	артузна	russic, slope hat,	1115		Corui Aguricia
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80107333	-83.67465167	65.728	9/15/2011 20:31	15-IX-11-2	same as previous				
	Florida, Pulley Ridge HAPC, 100 m						speed the camera up one stop, new shutter speed is				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80105	-83.67482333	65.821	9/15/2011 20:32	15-IX-11-2	1/250				
							lots of Corallinales or Peyssonneliaceae; orangeback				
							bass; goldentail moray eel; purple reef fish; agelas				
	Florida, Pulley Ridge HAPC, 100 m						clathrodes; lobophora; loggerhead sponge; dictyota;	hard bottom; Coral- coral rubble;			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80103667	-83.67493667	65.681	9/15/2011 20:34	15-IX-11-2	agaricid; Chalk Bass;	Slope- flat;	НВ		
							starting to come up and increase on the ridge;				
							bicolored damsel; common geodiids; Chalk Bass; purple reef fish; didemnid tunicate; bottom				
	Florida, Pulley Ridge HAPC, 100 m						dominated by Anadyomene menziesii; Corallinales	Rock; rubble; hard bottom; rock			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.801005	-83.67526833	64.093	9/15/2011 20:36	15-IX-11-2	or Peyssonneliaceae; Crustose Coralline algae;	ledges; Slope- flat;	нв		
THE STATE OF	101 (11 01 00 00 00 00 00 00 00 00 00 00 00 0	2 1.002003	03.07320033	0 11033	3,13,201120.30	10 1/1 12	or repositional action of assessed and all algue,	leages, stope that,	1		+
	Florida, Pulley Ridge HAPC, 100 m										Coral- Montastraea
Kraken 2 - 5	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	cavernosa
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	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				
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80096	-83.67562167	63.953	9/15/2011 20:52	15-IX-11-2	resume phototransect at photo 1006				
K1 2 5	Florida, Pulley Ridge HAPC, 100 m	24 000005	02 67566222	64.000	0/45/2044 20:52	45 IV 44 3	Court Accession Accession and accession to the contract of	hard bottom; Rock; rubble; Coral-			Caral Associate
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.800965	-83.67566333	64.093	9/15/2011 20:53	15-IX-11-Z	Coral- Agaricia; Anadyomene menziesii; lobophora	coral rubble;	НВ	1	Coral- Agaricia
							beginning with photo 1019 returning to a shutter				
							speed of 1/125 to increase depth of field; Geodia;				
							Crustose Coralline algae; Anadyomene menziesii;				
	Florida, Pulley Ridge HAPC, 100 m						Corallinales or Peyssonneliaceae; unidentified				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80093	-83.67586167	64.56	9/15/2011 20:54	15-IX-11-2	Demospongiae; purple rope sponges				
							1 0 71 1 1 0				
							Anadyomene menziesii; Crustose Coralline algae;				
							Corallinales or Peyssonneliaceae; uncommon Coral-				
							Agaricia; uncommon Coral- Montastraea;				
							uncommon Dictyota; uncommon Halimeda;	hard bottom; Rock; rubble; rock			Coral-
	Florida, Pulley Ridge HAPC, 100 m						common lobophora; abundant crynoids;	ledges; relatively little relief; Slope-			Montastraea;
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80090833	-83.67618167	65.12	9/15/2011 20:56	15-IX-11-2	orangeback bass; Chalk Bass; Reef Butterfly	flat;	НВ		Agaricia
	Florido Dellos Di L. 11400 400						about to olide off and little of a control of				
Krokor 3 5	Florida, Pulley Ridge HAPC, 100 m	24 00000	02 67654022	67.076	0/15/2011 20 50	1F IV 44 3	about to slide off one little ridge; one Stichopathes;	hard battam, Basic	НВ		
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80086	-83.67651833	67.876	9/15/2011 20:59	13-14-11-2	some black cyanobacteria clumps on the bottom;	hard bottom; Rock; rubble;	ПВ	1	1
	Florida, Pulley Ridge HAPC, 100 m										
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80083167	-83.676775	65.868	9/15/2011 21:01	15-IX-11-2	shirley relieving josh				
Munch 2 - 3		24.00003107	55.070773	03.000	3,13,201121.01	10 IV 11-7	Similar renewing josh			1	+
	Florida, Pulley Ridge HAPC, 100 m						small basslet; Anadyomene menziesii; Corallinales				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80081167	-83.67689833	65.214	9/15/2011 21:02	15-IX-11-2	or Peyssonneliaceae; 2 lionfish; Chalk Bass;				
										<u> </u>	1
	Florida, Pulley Ridge HAPC, 100 m						blue finger sponges; abundant Anadyomene				
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80078833	-83.677085	64.326	9/15/2011 21:04	15-IX-11-2	menziesii; Crustose Coralline algae;	hard bottom; rubble; cobble	нв		
-						•					

Flancis A. Pully Riggs PACT, 100m   Cycles 2-15   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87710607   65,507   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071857   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,8771285   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   85,8771285   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   83,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   83,87712853   65,505   9/15/2011 21/20   15-01-12   Common of LIGS Sandons Size 3.3   24,80071852   24,80071852   24,80071852   24,80071852   24,800		1	I					T			
Craken 2 - 5   Provide, Pulley Ridge PAMPC, 100 m   Craken 2 - 5   Provide, PamPC, 100 m   Provide, Pa		Florida, Pulley Ridge HAPC, 100 m						ROV has stopped due to being at the end of the			
Provide, Pulley Rigge HAPC, 100 m   24.80002167   43.67710167   65.307   9/15/20112107   50.112   75.011	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.800825	-83.67710667	65.588	9/15/2011 21:05	15-IX-11-2				
Particle, Pulley Ridge IMPC, 100 m   Vicility 1.5 doi:10.11.07   5-0.11.21   1-0.11.21											
Florida, Pulley (Rige HAPC, 100 m   Victor Sealmoss Size 13   2.4 80071607   48.8 67710107   65.329   9/15/2011 21:00   25.101-12   Victor Rige Hapch   Victor Rige											
Craitive 2 - 5   Order to USDG Seakous Site 13   24 800771607   85 807710147   65 307   9/15/2011 21:00   5 16:1-12   Clark Bases; Some sort of Petrosia sponge; Hard Bottom; Rock; ruibbir; Slope—Rit; Horida, Pulley Ridge MAPC, 100 m Craitive 2 - 5   Horida, Pulley Ridge MAPC, 100 m Craitive 2		Florida. Pulley Ridge HAPC, 100 m							hard bottom: Rock: rubble: Slope-		
Finds   Part	Kraken 2 - 5		24.80082167	-83.67710167	65.307	9/15/2011 21:07	15-IX-11-2			НВ	
Carleon 2 - 5   Ordin of USSS Seabloss Site 1 3   24 8007787   493 67732893   65 728   9/15/2011 21:00   15-K1-12   Seatospongia muta) wrasse;   flat;   flat   flat;   flat   flat;											
Florida, Pulley Ridge HAPC, 100 m (Kraken 2 - 5 north of USSS Seabos Site 13 24,80077833 - 83,677526 65,868 9/15/2011 211:0 15-W.11-2 Vellowtail Reef Flath, Analygomene menclesii, Personal Basslets, wrasses, abundant Analygomene menclesii, Person											
Frontide, Pulley Ridge HAPC, 100 m   Vision Sealous Stee 13   24 80077333   -83 67766607   66 205   9/15/2011 21:10   15-IK-11-2   Velowalis Reef Faity, Anadyyomene memziesity. Personnellar, Parallel basselsets wasses; hard buttom; Rock; rubble; Slope-flat; with a first time of USGS Sealous Stee 13   24 80078333   -83 67766607   66 205   9/15/2011 21:11   15-IK-11-2   Montastraea cavernous, Chalk Bass; Reef Butterfly, small basselsets wasses; hard buttom; Rock; rubble; Slope-flat; with a first time of USGS Sealous Stee 13   24 80074833   -83 67766607   66 205   9/15/2011 21:17   15-IK-11-2   Montastraea cavernous, Chalk Bass; Reef Butterfly, small basselsets wasses; hard buttom; Rock; rubble; Slope-flat; with a first time of USGS Sealous Stee 13   24 80074833   -83 67855333   65.12   9/15/2011 21:17   15-IK-11-2   Montastraea cavernous, Chalk Bass; Pellowalia Reef flat; purple reefflity, undertified Demospongiae; christopic meetings of the montastraea cavernous, Chalk Bass; Pellowalia Reef flat; purple reefflity, undertified Demospongiae; christopic meetings of the process of the pr	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80077667	-83.67732833	65.728	9/15/2011 21:09	15-IX-11-2	Xestospongia muta; wrasse;	flat;	НВ	
Examen 2 - 5		Florida Pulley Ridge HAPC 100 m							hard hottom: Rock: rubble: Slone-		
Ranken 2 - 5	Kraken 2 - 5		24.80077333	-83.67751	65.868	9/15/2011 21:10	15-IX-11-2	Yellowtail Reef Fish; Anadyomene menziesii;		НВ	
Ranken 2 - 5											
Florida, Pulley Ridge HAPC, 100 m   Craken 2 - 5   Flor											
Florida, Pulley Ridge HAPC, 100 m   Kraken 2 - 5   north of USGS SeaBoss Site 13   24.8007383   -83.67828   66.008   9/15/2011 21:17   15-W-11-2   1	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80078333	-83.67766667	66.055	9/15/2011 21:14	15-IX-11-2		flat;	НВ	
Florida, Pulley Ridge HAPC, 100 m		Florida Pulley Ridge HARC 100 m							hard hottom: Rock- wall: rubble:		Montastraea
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;  Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13 24.80073333 -83.67855333 65.12 9/15/2011 21:20 15-IX:11-2 lost is coming back in to relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; HB data or north of USGS SeaBoss Site 13 24.80072667 -83.678675 65.447 9/15/2011 21:20 15-IX:11-2 lost is coming back in to relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; HB data or north of USGS SeaBoss Site 13 24.80072667 -83.67892833 64.466 9/15/2011 21:20 15-IX:11-2 lost is coming back in to relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; mark or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; les less than 40 mm. HB and bottom; Rock; rubble; Slope-flat; less shirled or lost or relieve Shirley; Jenny is hard bottom; Rock; rubble; Slope-flat; HB and bottom; Rock;	Kraken 2 - 5		24.80074833	-83.67828	66.008	9/15/2011 21:17	15-IX-11-2			НВ	
Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Florida, Pulley Ridge HAPC, 100 m   Analyomene menziesii crinoid;   Flor						-, -, -					
Florida, Pulley Ridge HAPC, 100 m (Araken 2 - 5 north of USGS SeaBoss Site 13 24.80070333 -83.679225 65.28 9/15/2011 21:25 15-IX-11-2 Anadyomene menziesii is in crelieve Shirley; Jenny is north of USGS SeaBoss Site 13 24.80070333 -83.679225 65.588 9/15/2011 21:25 15-IX-11-2 Anadyomene menziesii is in crelieve Shirley; Jenny is north of USGS SeaBoss Site 13 24.80070333 -83.679225 65.588 9/15/2011 21:25 15-IX-11-2 Anadyomene menziesii is a crynoid; hard bottom; Rock; rubble; Slope-flat; small rock ledges; mostly calified; relief is less than 40 cm HB Anadyomene menziesii is a crynoid; hard bottom; Rock; rubble; Slope-flat; month 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; month of USGS SeaBoss Site 13 24.80070333 -83.679225 65.588 9/15/2011 21:25 15-IX-11-2 Anadyomene menziesii; crinoid; hard bottom; Rock; rubble; Slope-flat; month of USGS SeaBoss Site 13 24.80070333 -83.67925 65.588 9/15/2011 21:26 15-IX-11-2 Anadyomene menziesii; crinoid; hard bottom; Rock; rubble; Slope-flat; hard bottom		Florida, Pulley Ridge HAPC, 100 m							hard bottom; Rock; rubble; Slope-		
Real 2 - 5   North of USGS SeaBoss Site 13   24.80072667   -83.678675   65.447   9/15/2011 21:20   15-IX-11 - 2   logging; loggerhead sponge;   flat;   HB	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80073333	-83.67855333	65.12	9/15/2011 21:19	15-IX-11-2	ORANGEBACK BASS;	flat;	НВ	
Real 2 - 5   North of USGS SeaBoss Site 13   24.80072667   -83.678675   65.447   9/15/2011 21:20   15-IX-11 - 2   logging; loggerhead sponge;   flat;   HB											
## ## ## ## ## ## ## ## ## ## ## ## ##	Vrakon 2 E		24 90072667	92 679675	65 447	0/15/2011 21:20	1E IV 11 2	-		шв	
Elorida, Pulley Ridge HAPC, 100 m orth of USGS SeaBoss Site 13   24.80070333	Kidkeli 2 - 3	north of OSGS Seaboss Site 15	24.80072007	-83.078073	03.447	3/13/2011 21.20	13-IX-11-2	logging, loggerneau sponge,	ilat,	ПВ	
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 Anadyomene menziesii is a crynoid; alfat; mall rock ledges; mostly calified; relief is less than 40 cm HB hard bottom; Rock; rubble; Slope-flat; HB hard bottom; Roc								400m still remaining in transect; taking photos			
Rraken 2 - 5   north of USGS SeaBoss Site 13   24.8007   83.67892833   64.466   9/15/2011 21:22   15-IX-11-2   Anadyomene menziesii sa crynoid;   calified; relief is less than 40 cm   HB   HB								every 30 seconds; Anadyomene menziesii is still	hard bottom; Rock; rubble; Slope-		
Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13 24.80070333 -83.679255 65.728 9/15/2011 21:25 15-IX-11-2 Anadyomene menziesii; crinoid; ffat; HB ffat											
Kraken 2 - 5 north of USGS SeaBoss Site 13	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.8007	-83.67892833	64.466	9/15/2011 21:22	15-IX-11-2	Anadyomene menziesii is a crynoid;	calified; relief is less than 40 cm	НВ	
Kraken 2 - 5 north of USGS SeaBoss Site 13		Florida Pulley Ridge HARC 100 m							hard hottom: Rock: rubble: Slone-		
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;  Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13 24.80070833 -83.67926333 65.588 9/15/2011 21:27 15-IX-11-2 a few more larger Halimeda (discoidea?); hard bottom; Rock; rubble; Slope-flat; hard bottom; Rock; rubble; Slope-flat; hard bottom; Rock; rubble; Slope-flat; hard bottom; Rock-wall; rubble; Slope-fla	Kraken 2 - 5		24.80070333	-83.679225	65.728	9/15/2011 21:25	15-IX-11-2	Anadyomene menziesii: crinoid:		НВ	
Kraken 2 - 5 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; flat; HB									*		
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;  hard bottom; Rock-wall; rubble;  Slope-flat;  hard bottom; Rock-wall; rubble;  Slope-flat;  HB  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;  Slope-flat;  HB  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;  flat;  HB  Montastraea  Colony Montastraea cavernosa; orangeback bass  flat;  HB  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  66.0% Anadyomene menziesii cover; 20%  Peyssonnelia; 10-20% Crustose Coralline algae;  revices; overall relief is less than 30		Florida, Pulley Ridge HAPC, 100 m							hard bottom; Rock; rubble; Slope-		
Kraken 2 - 5 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?); flat; HB  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; Slope- flat; HB  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; flat; HB  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 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 florida, Pulley Ridge HAPC, 100 m Flori	Kraken 2 - 5	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;	flat;	НВ	
Kraken 2 - 5 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?); flat; HB  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; Slope- flat; HB  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; flat; HB  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 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 florida, Pulley Ridge HAPC, 100 m Flori		Florido Bullou Bidos HABC 100 on							hand haddens Bask milkler Claus		
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;  Florida, Pulley Ridge HAPC, 100 m north of USGS SeaBoss Site 13  24.80070333  -83.67975  65.634  9/15/2011 21:30 15-IX-11-2  Aplysina (purple rope sponge); Geodia; Chalk Bass;  Aplysina (purple rope sponge	Kraken 2 - 5		24 80070833	-83 679415	66 008	9/15/2011 21:27	15-IX-11-2	a few more larger Halimeda (discoidea?).		HR	
Kraken 2 - 5 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; Slope-flat; HB  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;  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 flat; HB  Montastraea cavernosa  Florida, Pulley Ridge HAPC, 100 m Florida, Pul	KIGKCII Z 3	north or obes scasoss site 15	24.00070033	03.073413	00.000	3/13/2011 21:27	13 IX 11 Z	a rew more larger riamineda (discolaca.),	nac,	110	
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;  flat;  HB  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  flat;  HB  Montastraea  cavernosa  60% Anadyomene menziesii cover; 20%  Peyssonnelia; 10-20% Crustose Coralline algae;  revices; overall relief is less than 30		Florida, Pulley Ridge HAPC, 100 m							hard bottom; Rock- wall; rubble;		
Kraken 2 - 5 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; flat; HB 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 flat; HB Montastraea cavernosa; orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback ba	Kraken 2 - 5	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;	Slope- flat;	НВ	
Kraken 2 - 5 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; flat; HB 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 flat; HB Montastraea cavernosa; orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback bass flat; HB Montastraea cavernosa orangeback bass flat; Cavernosa orangeback ba											
Florida, Pulley Ridge HAPC, 100 m Kraken 2 - 5 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 flat;  HB cavernosa  60% Anadyomene menziesii cover; 20% hard bottom; Rock; rubble; Slope-flat;  Peyssonnelia; 10-20% Crustose Coralline algae;  revices; overall relief is less than 30	K1 2 5		24 00070222	02.67002	CF 1C7	0/45/2044 24-24	45 IV 44 3			LID	
Kraken 2 - 5 north of USGS SeaBoss Site 13 24.80072 -83.68003833 65.447 9/15/2011 21:32 15-IX-11-2 colony Montastraea cavernosa; orangeback bass flat; HB cavernosa 60% Anadyomene menziesii cover; 20% hard bottom; Rock; rubble; small Peyssonnelia; 10-20% Crustose Coralline algae; crevices; overall relief is less than 30	KIRKEII Z - 5	morth of Osos seaboss site 13	24.6UU/U333	-63.67993	05.16/	3/13/2011 21:31	T2-IV-T1-5	possible tattler bass; orangeback bass;	iiat,	пВ	
Kraken 2 - 5 north of USGS SeaBoss Site 13 24.80072 -83.68003833 65.447 9/15/2011 21:32 15-IX-11-2 colony Montastraea cavernosa; orangeback bass flat; HB cavernosa 60% Anadyomene menziesii cover; 20% hard bottom; Rock; rubble; small Peyssonnelia; 10-20% Crustose Coralline algae; crevices; overall relief is less than 30		Florida, Pulley Ridge HAPC. 100 m						8 individual fragments probably from the same	hard bottom; Rock: rubble: Slone-		Montastraea
Florida, Pulley Ridge HAPC, 100 m Peyssonnelia; 10-20% Crustose Coralline algae; crevices; overall relief is less than 30	Kraken 2 - 5		24.80072	-83.68003833	65.447	9/15/2011 21:32	15-IX-11-2			НВ	
								60% Anadyomene menziesii cover; 20%	hard bottom; Rock; rubble; small		
Kraken 2 - 5   north of USGS SeaBoss Site 13   24.800675   -83.68019167   65.214   9/15/2011 21:33   15-IX-11-2   crinoid; Halted ROV   cm; Slope-flat;   HB						- 1 - 1					
, , , , , , , , , , , , , , , , , , ,	Kraken 2 - 5	north of USGS SeaBoss Site 13	24.800675	-83.68019167	65.214	9/15/2011 21:33	15-IX-11-2	crinoid; Halted ROV	cm; Slope- flat;	НВ	
Florida, Pulley Ridge HAPC, 100 m  Resumed movement; currently at photo 1123; Large hard bottom; Rock; rubble; Slope-		Florida Bulley Bidgo HABC 100						Resumed movements currently at photo 1133, Large	hard hottom: Rock: rubble: Slane		
Kraken 2 - 5 north of USGS SeaBoss Site 13 24.80068167 -83.68020167 64.793 9/15/2011 21:35 15-IX-11-2 Xestospongia muta ~40cm across; flat; HB	Kraken 2 - 5		24.80068167	-83.68020167	64.793	9/15/2011 21:35	15-IX-11-2			НВ	
old loggerhead sponge with lots of crinoids on it;				22.23020207	55	-,,1 21:55				+	
Florida, Pulley Ridge HAPC, 100 m jouvenile blue angel of some kind (blue or gray) hard bottom; Rock; rubble; Slope-		Florida, Pulley Ridge HAPC, 100 m					l		hard bottom; Rock; rubble; Slope-		[
Kraken 2 - 5   north of USGS SeaBoss Site 13   24.80068833   -83.68039667   64.98   9/15/2011 21:36   15-IX-11-2   Recheck;										1 1	

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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;	НВ	
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;	НВ	
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 eatern and western ridges;	НВ	
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 ususally; more Geodia	hard bottom; Rock; rubble; Slope- flat;	нв	
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;	НВ	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;	НВ	
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;	НВ	
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 longitignially along the western ridge of pulley ridge; domnant Anadyomene menziesii; lots of Crustose Coralline algae and Corallinales or Peyssonneliaceae; wrasse bass; abundant crinoids; occasional geodia	hard bottom; Rock; rubble; Slope-flat;	НВ	
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		Anadyomene menziesii; Xestospongia muta; large Xestospongia muta; orangeback bass; orange tubular sponge; Aplysina	hard bottom; Rock; rubble; Slope- flat;	НВ	
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;	НВ	
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;	НВ	
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 reeffish; orangeback bass;	hard bottom; Rock; rubble; Slope- flat;	НВ	
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;	НВ	

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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 back; orange unidentified basslet;	hard bottom; Slope- flat; Rock; rubble; less than 20cm relief;	НВ		
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;	НВ		
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;	НВ		
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;	НВ		
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- Agaricia about 40cm in diameter, might have Crustose Coralline algae gorwth 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;	НВ	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;	НВ		
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;	НВ		
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;	НВ		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;	НВ		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;	НВ		
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	нв		
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;	НВ		
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				

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	Florida, Pulley Ridge HAPC, 100 m						Photo XS (quantitative)- End; last photo 1294; Chalk Bass; bunch of Yellowtail Reef Fish; lionfish; cherub	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80060833	-83.68496667	65.214	9/15/2011 22:35	15-IX-11-2	fish	flat;	нв		
					0, 20, 2022 22:00			,			
							made it to western edge of main weatern ridge;				
							near waypoint D5T1WP014; about 30 m west of it is				
							where we ended the transect; Abundant:				
							Anadyomene menziesii; Corallinales or				
	Florida, Pulley Ridge HAPC, 100 m						Peyssonneliaceae; Crustose Coralline algae; crinoids	hard bottom; Rock; pavement;			
Kraken 2 - 5	north of USGS SeaBoss Site 13	24.80051833	-83.685475	65.821	9/15/2011 22:38	15-IX-11-2	common; uncommon Coral- Agar	rubble; very small ledges;	НВ		
									Bottom		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Туре	Sample Notes	Coral Notes
								hard bottom; Rock; rubble; mostly			
								crusts; 20 m east of the starting			
								waypoint; mid part of the eastern			
							Anadyomene menziesii; Corallinales-	ridge; a little north of the dives on			
	Florida, Pulley Ridge HAPC, USGS						Peyssonneliaceae; Crustose Coralline Algae; lot of	9/16/11; Kevin is plotting waypoints			
Kraken 2 - 6	SeaBoss Site 11	24.84967833	-83.66079333	65.494	9/16/2011 12:18	16-IX-11-1	plankton in water	based on USGS transect track	НВ		
	s						Anadyomene menziesii; Corallinales-				
K1 2 6	Florida, Pulley Ridge HAPC, USGS	24.04072667	02.66004	64.607	0/46/2044 42 22	16 17 11 1	Peyssonneliaceae; Crustose Coralline Algae; lots of	hand battana Dania subbla			
Kraken 2 - 6	SeaBoss Site 11	24.84973667	-83.66091	64.607	9/16/2011 12:23	16-IX-11-1	plankton in water column	hard bottom; Rock; rubble;	НВ		
							Photo XS (quantitative)- start;chalk bass; yellowtail				
	Florida, Pulley Ridge HAPC, USGS						reef fish;orangeback bass;wrasses;orange				
Kraken 2 - 6	SeaBoss Site 11	24.84971	-83.66097833	64.607	9/16/2011 12:26	16-IX-11-1	basslet;purple reef fish;	hard bottom; Rock; rubble;	нв		
Krukeri 2 0	Scaboss Site 11	24.04371	03.00037033	04.007	3/10/2011 12:20	10 1/1 11 1	bussiet, pur pie reer risti,	nara socioni, Nock, rassic,	110		
							Anadyomene menziesii; Corallinales-				
							Peyssonneliaceae; Lobophora; white Ascidiacea;				
							bicolor damselfish;Xestospongia muta; chalk bass;				
							Agelas clathrodes; petrosiidsmay be Xestospongia,				
	Florida, Pulley Ridge HAPC, USGS						but unusual morphologycluster of thick tubes;				
Kraken 2 - 6	SeaBoss Site 11	24.84964833	-83.66157167	64.934	9/16/2011 12:28	16-IX-11-1	Dictyota abundant; uni	rubble; Rock;	НВ		
							Anadyomene menziesii; Corallinales-				
							Peyssonneliaceae; Dictyota;comatulid crinoid;	rubble; Rock; 10-20 cm relief;cobble;			
							Crustose Coralline Algae; Stichopathes;Lobophora;	dead coral plates 0.5 m dia;90%			
	Florida, Pulley Ridge HAPC, USGS						unidentified orange basslets;Xestospongia muta	cover;small patches of exposed			
Kraken 2 - 6	SeaBoss Site 11	24.84954333	-83.66181333	65.307	9/16/2011 12:30	16-IX-11-1	common;	sand;Slope- flat;	НВ		
	s						Anadyomene menziesii; Corallinales-				
	Florida, Pulley Ridge HAPC, USGS	24.040000			0/46/06:	46.07	Peyssonneliaceae; Crustose Coralline Algae;	hard bottom; Rock; rubble; dead			
Kraken 2 - 6	SeaBoss Site 11	24.84938667	-83.66213	66.522	9/16/2011 12:33	10-IX-11-1	Lobophora;	coral;Slope- flat; low relief	НВ		
							Anadyomene menziesii; Corallinales-				
	Florida, Pulley Ridge HAPC, USGS						Peyssonneliaceae; Crustose Corallina Algae;				
Kraken 2 - 6	SeaBoss Site 11	24.84934	-83.66236	67.036	9/16/2011 12:34	16-IX-11-1	Lobophora; unidentified yellow Demospongiae;	rubble; Rock; dead coral	НВ		
Munch 2 - 0	5000000 5110 11	24.04334	03.00230	07.030	3/ 10/ 2011 12.34	70 IV 11-1	stopping to take video of unidentified yellow	. assic, nock, acad cora	.10		
							Demospongiae; shaggy surface; may be				
	Florida, Pulley Ridge HAPC, USGS						Halichondriid or could be spongiid (Shirley needs to				
Kraken 2 - 6	SeaBoss Site 11	24.849285	-83.66247833	66.895	9/16/2011 12:36	16-IX-11-1	check literature)				
					,		orange basslets;wrasse basses;red sponges may be				
							Spirastrellidae; Geodiids, probably G. gibberosa,	in valley between 2 ridges according			
	Florida, Pulley Ridge HAPC, USGS						appear to be common, they are encrusted with	to multibeam;rubble; Rock; dead			
Kraken 2 - 6	SeaBoss Site 11	24.84929	-83.66251667	66.195	9/16/2011 12:37	16-IX-11-1	other epibionts	coral rubble & cobble	НВ		
	Florida, Pulley Ridge HAPC, USGS										
Kraken 2 - 6	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	НВ		
	Florida, Pulley Ridge HAPC, USGS										
Kraken 2 - 6	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;				
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Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84888667	-83.663525	63.953	9/16/2011 12:44 16-IX-1:	filefish;did close-up video of erect blue finger sponge, Niphates erecta (this confirms that all of the erect blue fingers from the 9/15 dives are Niphates erecta, confirmed by Shirley & John); small longjaw squirrelfish; got nice video of the squirelfish				
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891833	-83.663495	64.42	9/16/2011 12:46 16-IX-1:	7 -	10 m diameter pit showing up on sonar;rubble; Rock; heading towards the pit to ground-truth the feature	нв		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.848915	-83.66372	64.326	9/16/2011 12:47 16-IX-1:		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;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891833	-83.66358333	64.466	9/16/2011 12:50 16-IX-1					
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84891167	-83.66357667	64.14	9/16/2011 12:52 16-IX-1:		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-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-1	-1 test	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84861333	-83.66406833	63.672	9/16/2011 13:03 16-IX-1:	-1	hard bottom;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84861167	-83.66406833	63.766	9/16/2011 13:03 16-IX-1	Photo XS (quantitative)- End; at aproximtly 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-1:	-1	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84858167	-83.66409667	64.186	9/16/2011 13:05 16-IX-1:	-1 Photo XS (quantitative)- ready to resume	data logger and her assistant (uh, that would be Shirley and John) had problems with the loggingsorry, 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-1:	big yellow verongid;Anadyomene menziesii; Crustose Coralline Algae; sporadic sightings of chalk	rubble; Rock; dead coral rubble;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84852333	-83.66432667	63.579	9/16/2011 13:09 16-IX-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-1:	still Collecting sample 1; John took over annotator	flat; 10-20 cm relief; rubble;cobble;dead coral plates;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84852667	-83.664315	63.626	9/16/2011 13:20 16-IX-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 less Anadyomene menziesii-maybe 50% cover;blue chromis;yellowtail reef fish; purple reef fish;	transect;on top of eastern ridge	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.848295	-83.66467	63.999	9/16/2011 13:23 16-IX-1:	Yellowtail Reeffish; chalk bass;Stichopathes luetkini (spelling?); more open Crustose Coralline Algae; Corallinales- Peyssonneliaceae; Geodiids;dark	entering another crater, filled with rubble; probably not an active redfish burrow;on sonar a small ridge about 40 m away	НВ		

	1						100 500/			
	Florida, Pulley Ridge HAPC, USGS						30-50% cover Anadyomene menziesii; chalk bass; orange back bass;wrasses;comatulid crinoid;	flat bottom;100 % hard		Coral- Agaricia
Kraken 2 - 6	SeaBoss Site 11	24.84823167	-83.66498167	64.466	9/16/2011 13:26 1	6-IX-11-1	Aplysina; Coral- Agaricia lamarcki;	bottom;rubble; dead coral plates	НВ	lamarki
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84820167	-83.66515167	63.859	9/16/2011 13:28 1	L6-IX-11-1	dominated by light pink Crustose Coralline Algae; may be Corallinales- Peyssonneliaceae; one single 10 cm diameter Coral- Agaricia; taking several photos; Photo XS (quantitative)- pause for collection;	on top of main eastern ridge;	НВ	Coral- Agaricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84815833	-83.665125	63.999	9/16/2011 13:36 1		starting with photo number 1360;bicolor damsels; Stichopathes; Agelas clathrodes; Xestospongia muta;purple reef fish; brown tube sponges may be Agelas (these were the ones Shirley thought might be Petrosiids, she thinks they're Agelas now); Photo XS (quan	less than 1/3 of the way thru transect;100% hard bottom; rubble; cobble;dead coral plates;	НВ	
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84809833	-83.6654	63.205	9/16/2011 13:40 1	L6-IX-11-1	Ascidiacea, may be Aplidiumwhite colonial;Ircinia strobilina;Dictyota;longjaw squirrelfish;weird Agelas or Geodia;Yellowtail Reeffish; bicolor damselfish;big spherical sponges;Xestospongia muta; Lobophora;	on top of one of the hummocs;slight undulation of bottom;	НВ	
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84801	-83.66562667	63.999	9/16/2011 13:44   1	L6-IX-11-1	Anadyomene menziesii; Crustose Coralline Algae; Lobophora; none of the platey fleshy algae;unidentified Demospongiae, vase, may be Ircinia;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	нв	
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.847855	-83.666055	65.167	9/16/2011 13:48 1		50% cover of Anadyomene menziesii; rest is Corallinales- Peyssonneliaceae; Crustose Coralline Algae; sparse sponges and gorgonians;Reef Butterflyfish; orange basslets;20 cm plate coral Coral- Agaricia lamarcki?;may be Spheciospongia vesparium;Xestospongia	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;	НВ	
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11 Florida, Pulley Ridge HAPC, USGS	24.84773333	-83.66649	64.84	9/16/2011 13:52 1	l6-IX-11-1	30-50% Crustose Coralline Algae; Anadyomene menziesii; occasional Aplidium Ascidiacea; on photo number 1389 in photo	depression in valley of multibeam; fish crater about 20 m out on sonar;about halfway through dive time-wise;	НВ	
Kraken 2 - 6	SeaBoss Site 11	24.84768	-83.66663833	65.261	9/16/2011 13:53 1	6-IX-11-1	transect;Cribrochalina;Xestospongia muta;			
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.847605	-83.66705	64.7	9/16/2011 13:56 1	6-IX-11-1	Yellowtail Reeffish; chalk bass;			
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84754333	-83.66705667	64.093	9/16/2011 13:57 1	l6-IX-11-1	2 rock beauties; blue chromis; Yellowtail Reeffish; Reef Butterflyfish; large Xestospongia muta; unidentified orange Demospongiae; chalk bass; Agelas clathrodes; Coral-Agaricia lamarcki?	hard bottom; 10-20 cm relief;Crustose Coraline Algae; 50% Anadyomene menziesii; Corallinales- Peysonneliaceae;	нв	
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84756333	-83.66742333	64.887	9/16/2011 14:00 1	l6-IX-11-1	Xestospongia muta; Anadyomene menziesii; Crustose Coralline Algae; mostly purple Corallinales- Peyssonneliaceae; comatulid crinoid; possible black hydroids; Yellowtail Reeffish about 8-10; no red grouper observed yel orange bassletstill unidentified;	hard bottom; 50% cover Anadyomene menziesii; rest is Corallinales- Peyssonneliaceae and Crustose Coraline Algae; valley according to multibeam; at most, we're seeing only a difference of 1 m depth;	НВ	

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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;	НВ		
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;	НВ		
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;	НВ		
	Florida, Pulley Ridge HAPC, USGS						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				
Kraken 2 - 6	SeaBoss Site 11	24.84726333	-83.668555	65.354	9/16/2011 14:12	16-IX-11-1	for video and collection  Photo number 1422; wrasse bass; getting a closer	;in valley between two ridges	НВ	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	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;	НВ		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. Cavernosa; 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		НВ		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 Florida, Pulley Ridge HAPC, USGS	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 Reeffish; pale brown massiv dominant biota is same; Reef Butterflyfish; Geodia?;	several hundred meters to end of transect;approaching hummock;90% cover dead coral plates on top of one of the hummocs in	НВ		
Kraken 2 - 6	SeaBoss Site 11	24.84705167	-83.66934833	65.027	9/16/2011 15:13	16-IX-11-1	Stichopathes;	central valley	НВ		
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;	НВ		
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;	нв		

	T.						1	I			
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11 Florida, Pulley Ridge HAPC, USGS	24.84678833	-83.67028	65.681	9/16/2011 15:19		2 orange back bass;dominant species Anadyomene menziesii; sharpnose puffer; Dictyota; unidentified yellow Demospongiae; 2 lionfishfirst ones we've seen today;Xestospongia muta; didemnid Ascidiacea; with the lionfish, there were 3 Yellowtail Reeffish; br a school of some small fish, more than 100, possibly	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	НВ		
Kraken 2 - 6	SeaBoss Site 11	24.8467	-83.671025	65.027	9/16/2011 15:22	16-IX-11-1	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; several Yellowtail Reeffish; Xestospongia muta;	600 m from end of transect; 200 yards from west ridge;hard bottom;	НВ		
	Florida, Pulley Ridge HAPC, USGS						several large 20-30 cm spherical and barrel	hard bottom; same bottom type as			
Kraken 2 - 6	SeaBoss Site 11	24.84646167	-83.67166333	65.074	9/16/2011 15:27	16-IX-11-1	unidentified Demospongiae;	previous	НВ		
	Florida, Pulley Ridge HAPC, USGS						50% Anadyomene menziesii; chalk bass; 1 orange				
Kraken 2 - 6	SeaBoss Site 11	24.84631833	-83.67224167	65.027	9/16/2011 15:30	16-IX-11-1	back bass	90% rubble; cobble	НВ		
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	НВ		
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	нв		
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;	НВ		
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11 Florida, Pulley Ridge HAPC, USGS	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;	НВ	С	oral- Agaricia
Kraken 2 - 6	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		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;	НВ		
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;			c	oral- 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;	НВ		
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			С	oral- Agaricia

	Islanda Nano Nano	1			1	Tony o III: I a I : II			
	Florida, Pulley Ridge HAPC, USGS	2404562022	02 67520022	64.007	0/45/2044 45 47 45 19 44 4	80% Coralline algae; Anadyomene menziesii;			
Kraken 2 - 6	SeaBoss Site 11	24.84563833	-83.67520833	64.887	9/16/2011 15:47 16-IX-11-1	Filograna surpluidae; verogind sponge;			
						almost at the base of the west ridge; orangeback			
						bass; Yellowtail Reeffish; 10 cm Coral- Agaricia;			
	Florida, Pulley Ridge HAPC, USGS					more sparse as we go down the slope almost to the			
Kraken 2 - 6	SeaBoss Site 11	24.84557	-83.67535	63.205	9/16/2011 15:48 16-IX-11-1	base	hard bottom;	HB	Coral- Agaricia
	Florida, Pulley Ridge HAPC, USGS					redfish burrow about 40 m out; cherub fish; chalk			
Kraken 2 - 6	SeaBoss Site 11	24.845535	-83.67547333	64.934	9/16/2011 15:48 16-IX-11-1	bass; orangeback bass			
						crater on the active sonar is verified on multibeam,			-
	Florida, Pulley Ridge HAPC, USGS					8m; scamp; blue angel; 1.5 m deep crater filled with			
Kraken 2 - 6	SeaBoss Site 11	24.84544667	-83.67564167	65.12	9/16/2011 15:49 16-IX-11-1	rubble and cobble			
Kruken 2 0	3cab033 Site 11	24.04344007	03.07304107	03.12	3/10/2011 13:43 10 IX 11 1	Photo XS (quantitative)- End; photo 1552; plenty of		-	
	Flacida Dullan Bidaa HABO HGGG								
	Florida, Pulley Ridge HAPC, USGS	24.045.42	02.675.605	65.060	0/45/2044 45 50 45 19/44 4	Yellowtail Reeffish; goldentail moray; 30 blue			
Kraken 2 - 6	SeaBoss Site 11	24.84542	-83.675695	65.868	9/16/2011 15:50 16-IX-11-1	chromas			
	Florida, Pulley Ridge HAPC, USGS					Photo XS (quantitative)- start; resuming			
Kraken 2 - 6	SeaBoss Site 11	24.84542	-83.67569833	66.008	9/16/2011 15:54 16-IX-11-1	phototransect 1554			
	Florida, Pulley Ridge HAPC, USGS					base of the west ridge; 30% Anadyomene menziesii;			
Kraken 2 - 6	SeaBoss Site 11	24.84535667	-83.67573667	65.214	9/16/2011 15:54 16-IX-11-1	Coral- coral rubble; cobble;	hard bottom;	HB	
						primnoid gorgonian; 4Yellowtail Reeffish; 1			
	Florida, Pulley Ridge HAPC, USGS					Kallymenia; Xestospongia muta; Geodia; possibly			
Kraken 2 - 6	SeaBoss Site 11	24.84546667	-83.675795	66.101	9/16/2011 15:55 16-IX-11-1	Scolymia coral (probably not; Corallimorpharia)	hard bottom;	НВ	Coral- Scolymia
Krukeri 2 0	3cab033 Site 11	24.04340007	03.073733	00.101	3/10/2011 13:33 10 IX 11 1	Scotyma coral (probably not, coralimorphana)	nara soccom,	110	Corur Scorymia
						Doof Butterflufish approaching 2 or 2 large craters			
						Reef Butterflyfish; approaching 2 or 3 large craters			
						about 20m out; Stichopathes; plate coral;			
	Florida, Pulley Ridge HAPC, USGS					Corallinales- Peyssonneliaceae; 10-20%			
Kraken 2 - 6	SeaBoss Site 11	24.84537667	-83.676205	66.662	9/16/2011 15:57 16-IX-11-1	Anadyomene menziesii; more Yellowtail Reeffish;			
						crossing another crater, 8m across, 1 m deep;			
						nonactive burrow; 10-12Yellowtail Reeffish; 2 blue			
						chromas; multibeam 1559 off the reef proper			
	Florida, Pulley Ridge HAPC, USGS					entering light blue zone; rubble; 20 Anadyomene			
Kraken 2 - 6	SeaBoss Site 11	24.84531833	-83.67638	66.428	9/16/2011 15:58 16-IX-11-1	menziesii; a few leafy reds; orangeback bass			
					., ., .	, , ,			
						chalk bass; about 10m out; 6m crater; grouper			
	51 · 1 · 5 · 1 · 5 · 1 · 1 · 1 · 1 · 1 ·					burrow, also on multibeam; 8m diameter, 1 m			
	Florida, Pulley Ridge HAPC, USGS					deep, sides all coral rubble, some burrow at the			
Kraken 2 - 6	SeaBoss Site 11	24.84525667	-83.67655667	66.942	9/16/2011 15:59 16-IX-11-1	bottom; Photo XS (quantitative)- End;			
						burrow is largle Rhodophyta; cherub fish; multiple			
	Florida, Pulley Ridge HAPC, USGS					Yellowtail Reeffish; Reef Butterflyfish; 1 m long			
Kraken 2 - 6	SeaBoss Site 11	24.84519	-83.67666833	67.409	9/16/2011 16:01 16-IX-11-1	kallymenia; purple reef fish; chalk bass;	hard bottom; Coral- unid. Coral;	HB	
	Florida, Pulley Ridge HAPC, USGS					continuing transect line Photo XS (quantitative)-			
Kraken 2 - 6	SeaBoss Site 11	24.84519833	-83.67666667	67.409	9/16/2011 16:03 16-IX-11-1	start; about 100 m to the end of the line			
	Florida, Pulley Ridge HAPC, USGS			55	; ,, : :::: = = = ::: = = =	chalk bass; purple reeffish; Yellowtail Reeffish; Reef		+ +	
Kraken 2 - 6	SeaBoss Site 11	24.84517667	-83.676825	67.69	9/16/2011 16:04 16-IX-11-1	Butterflyfish;			
akcii 2 0	Florida, Pulley Ridge HAPC, USGS	24.04517007	03.070023	07.03	3, 10, 2011 10.04 10 1.4-11-1	just crossed 30cm Coral- Agaricia; more		+ +	
Krakar 2 C		24.94542667	02 67602222	60.063	0/16/2011 16:05 16 17 11 1	F	hard battam	шв	Court Associati
Kraken 2 - 6	SeaBoss Site 11	24.84513667	-83.67692333	68.063	9/16/2011 16:05 16-IX-11-1	Rhodophyta; big red blade	hard bottom;	НВ	Coral- Agaricia
						1			
1						getting more barren; less Anadyomene menziesii;			
	Florida, Pulley Ridge HAPC, USGS					mostly Coralline algae; almost is darker blue on			
Kraken 2 - 6	SeaBoss Site 11	24.845105	-83.67705167	67.269	9/16/2011 16:06 16-IX-11-1	multibeam; occasional chalk bass;	hard bottom;	НВ	
						İ			
						112 m out; Stichopathes; 20-30cm relief; big sheets			
						of dead coral plates incrusted with Corallinales-			
	Florida, Pulley Ridge HAPC, USGS					Peyssonneliaceae; 5% or less Anadyomene			
Kraken 2 - 6	SeaBoss Site 11	24.84503833	-83.67729	69.138	9/16/2011 16:08 16-IX-11-1	menziesii; mostly Coralline algae	hard bottom;	нв	Coral- dead coral
		2 7505055	33.07,723	33.138	5, 10, 2011 10:00 10 IN 11-1	digue		1	COTAL ACAG COTAL

	Islanida Bullan Bidaa HABO HOOG I							1		1	1
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
Krakeri 2 0		24.04430007	03.07750	03.311	3/10/2011 10:10	10 1/1 11 1	in 8 m hole; filled with Coral- coral rubble and				Corui Aguricia
Kraken 2 - 6	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 11	24.84490167	-83.677655	69.465	9/16/2011 16:11	16 IV 11 1	sheets of loose Anadyomene menziesii; Photo XS (quantitative)- End number 1555				Coral- coral rubble
Kraken 2 - 0	Florida, Pulley Ridge HAPC, USGS	24.64490167	-83.077033	09.405	9/10/2011 16.11	10-IX-11-1	looking around the crater; sharpnose puffer; chalk				Corai- corai rubbie
Kraken 2 - 6	SeaBoss Site 11	24.84489	-83.677645	70.072	9/16/2011 16:12	16-IX-11-1	bass; wrass 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 IV 11 1	collecting sample 7				
Kiakeli 2 - 0	Florida, Pulley Ridge HAPC, USGS	24.04407033	-03.07703033	05.752	9/10/2011 10:13	10-IX-11-1	conecting sample /				
Kraken 2 - 6	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
							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,				
	Florida, Pulley Ridge HAPC, USGS						Crustose Coralline algae, Dityota, 40% Anadyomene menziesii and comatulid crinoids on the				
Kraken 2 - 7	SeaBoss Site 10	24.70835833	-83.69650167	51.481	9/16/2011 19:04	16-IX-11-2	Anadyomene menzies	water Column			Coral- dead coral
							Chalk Bass; bicolor damselfish; wrasses; green				
	Florida, Pulley Ridge HAPC, USGS						blotch parrot fish - juvenile; Anadyomene menziesii; Corallinales or Peyssonneliaceae; Crustose Coralline				
Kraken 2 - 7	SeaBoss Site 10	24.70856167	-83.69648333	65.821	9/16/2011 19:08	16-IX-11-2	algae;	hard bottom; rubble; Slope- flat;	НВ		
							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;				
	51 .1 0 11 0.1 11400 11600						Xestospongia muta; sharpnose puffer; Dictyota;				
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	Corallinales or Peyssonneliaceae; Scolymia - cup coral; Aply	hard bottom; rubble; Slope- flat;	НВ		Coral- Agaricia lamarki; Scolymia
					-, , , ·	-	Xestospongia muta; evenly distributed abundace				,,,,,,
							between 10-35 % of all of them; Anadyomene menziesii; Lobophora; Corallinales or				
							Peyssonneliaceae; Dictyota also common;				
K1 2 7	Florida, Pulley Ridge HAPC, USGS	24 70004222	02 (0607022	66 202	0/15/2011 10:11	16 IV 11 2	Xestospongia muta; small clumps of Cyanophyta or	hand bassans milela Claus flat.	LID		
Kraken 2 - 7	SeaBoss Site 10	24.70861333	-83.69687833	66.382	9/16/2011 19:11	16-IX-11-2	filimentous terf alga; Chalk Bass x2;	hard bottom; rubble; Slope- flat;	НВ		
							Biota same; Lobophora increasing to 40-6% in some				
	Florida, Pulley Ridge HAPC, USGS						spots 30% on average; mound about 2 m wide, 50 cm high; Chalk Bass; Xestospongia muta; Aplysina;				
Kraken 2 - 7	SeaBoss Site 10	24.70863833	-83.69709833	67.176	9/16/2011 19:13	16-IX-11-2	bicolor damselfish;	hard bottom; rubble; Slope- flat;	НВ		
							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				
Vrakon 2 7	Florida, Pulley Ridge HAPC, USGS	24 70065222	02 6077777	65.064	0/16/2011 10:15	16 IV 11 2	bleaching; sample 001; adjacent to colony is	hard bottom: rubble: Class flat	шв		Agaracia lamari:
Kraken 2 - 7	SeaBoss Site 10	24.70865333	-83.69727333	65.961	9/16/2011 19:15	10-1V-11-7	another 5cm colony	hard bottom; rubble; Slope- flat;	НВ		Agaracia lamarki
							Photo XS (quantitative)- start; photo 1593; Agelas				
	Florida, Pulley Ridge HAPC, USGS						clathrodes and 2 other Agelas; Yellowtail Reef Fish; Chalk Bass; cherub fish; wrasse bass; Lobophora;	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 7	SeaBoss Site 10	24.70864833	-83.69729	65.961	9/16/2011 19:25	16-IX-11-2	Callyspongia vaginalis	flat;	НВ		
Krakon 2 7	Florida, Pulley Ridge HAPC, USGS	24.70000467	92 60740467	65.541	0/16/2011 10:27	16 IV 44 3	Challe Dagge Vollaustail De of Fish Districts	hard bottom; Rock; rubble; Slope-	un.		
Kraken 2 - 7	SeaBoss Site 10	24.70866167	-83.69740167	65.541	9/16/2011 19:27	10-IX-11-2	5 Chalk Bass; Yellowtail Reef Fish; Dictyota;	flat;	НВ		

											,
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 bentihc: 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;		нв		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70867167	-83.69759667	66.335	9/16/2011 19:28	16-IV-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;	НВ	002 003	Coral- Agaricia; Coral- Montastraea cavernosa
Nukeli 2 7	Florida, Pulley Ridge HAPC, USGS	24.70007107	03.03733007	00.333	3/10/2011 13:20	10 1/4 11 2	Photo XS (quantitative)- resume with photo 1614; Corallinales or Peyssonneliaceae; Crustose Coralline algae; 50% Anadyomene menziesii; Chalk Bass;	100% hard bottom; Rock; rubble;		002 003	cuvernosa
Kraken 2 - 7	SeaBoss Site 10	24.708705	-83.69775333	66.242	9/16/2011 19:58	16-IX-11-2	Yellow wrasse; orangeback bass;	plates with coral	НВ		
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 butterflyflsih; Ree	hard bottom; Rock; rubble; Slope- flat;	НВ		
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; Aplydium- trnaslucent white ascidian;	hard bottom; Rock; rubble; Slope-flat;	НВ		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10 Florida, Pulley Ridge HAPC, USGS	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 Ircinia; occassional purple reeffish; Yellowtail Reef	hard bottom; Rock; Slope- flat;	НВ		
Kraken 2 - 7	SeaBoss Site 10	24.70878167	-83.69876667	65.167	9/16/2011 20:05	16-IX-11-2	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;	НВ		
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;	НВ		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70880333	-83.69919167	64.653	9/16/2011 20:08		orangeoack bass; Hydroid; red grouper; Xestospongia muta; there's a burrow here on sonar about 40m away; purple reeffish;	hard bottom; Rock; rubble; Slope- flat;	нв		
Karlan 2 7	Florida, Pulley Ridge HAPC, USGS	24 7000255	02 60027	64.05	0/46/2011 20 : 5	16 IV 11 2	should be a second of the seco	hard bottom; Rock; rubble; Slope-	lup.		
Kraken 2 - 7  Kraken 2 - 7	SeaBoss Site 10  Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70882667 24.708845	-83.69935 -83.69940167	64.98 64.653	9/16/2011 20:10 9/16/2011 20:10		cherub; bicolor damselfish; Yellowtail Reef Fish; mix of Lobophora; Anadyomene menziesii; Coral- Agaricia; Geodia; Crustose Coralline algae;	flat; hard bottom; Rock rubble; boulers; lots of plating; relief is less than 30cm; Slope- flat;	НВ		Coral- Agaricia

ey Ridge HAPC, USGS 10 10 10 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10	24.70885833 24.70887 24.70886833 24.70887833	-83.699605 -83.69970333 -83.69983667	65.167 65.261 64.607	9/16/2011 20:11 9/16/2011 20:12 9/16/2011 20:13	16-IX-11-2	bicolor damselfish; Chalk Bass; possible blue chromis; Coral- Agaricia probably larmarki; Dictyota; Leptoseris cuculata; Chalk Bass; big Xestospongia muta;	hard bottom; Rock; rubble; Slope- flat; hard bottom; Rock; rubble; Slope- flat; hard bottom; Rock; rubble; Slope-	НВ	lamari	- Agaricia ·ki oseris cuculata
ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS	24.70887 24.70886833	-83.69970333 -83.69983667	65.261	9/16/2011 20:12	16-IX-11-2	Dictyota; Leptoseris cuculata; Chalk Bass; big	hard bottom; Rock; rubble; Slope- flat;			
29 Ridge HAPC, USGS 10 29 Ridge HAPC, USGS 10 29 Ridge HAPC, USGS 20 29 Ridge HAPC, USGS	24.70886833	-83.69983667					flat;	НВ	Lepto	seris cuculata
ey Ridge HAPC, USGS  10  ey Ridge HAPC, USGS  10  ey Ridge HAPC, USGS	24.70886833	-83.69983667				Aestospongia muta,		ПВ	Серіс	
29 Ridge HAPC, USGS 10 29 Ridge HAPC, USGS			64.607	9/16/2011 20:13	16-IX-11-2					cacaidta
ey Ridge HAPC, USGS 10 ey Ridge HAPC, USGS			04.007	9/10/2011 20.13		Aplysina- yellow; squirrelfish; orange sponge;	flat;	НВ		
10 ey Ridge HAPC, USGS	24.70887833				10 1/1 11 2		iiat,	ПВ		
10 ey Ridge HAPC, USGS	24.70887833					Lionfish; 2 Reef Butterfly; 10Yellowtail Reef Fish; ~2				
10 ey Ridge HAPC, USGS	24.70887833					squirrel fish; purple reefish; Lobster - Panularis	hand battana Daala mabble Claus			
ey Ridge HAPC, USGS	24./088/833	-83.69994167	64.466	9/16/2011 20:14	16 IV 11 2	argus; 20cm rock ledge where all these fish are	hard bottom; Rock; rubble; Slope-	НВ		
		-83.09994107	64.466	9/16/2011 20:14	10-IX-11-2	hanging out;	flat;	ПВ		
						late of Districtor Anadromana manziasii. Crustosa				
						lots of Dictyota; Anadyomene menziesii; Crustose Coralline algae; Callyspongia vaginalis; Chalk Bass;	hard bottom; Rock; rubble; Slope-			
10	24.70888333	-83.69993667	64.653	9/16/2011 20:15	16 IV 11 2	Unidentified orange basslet; purple reeffish;	flat: less than 30cm relief	НВ		
	24.70666333	-83.09993007	04.033	9/16/2011 20:15	10-IA-11-Z	Offidentified orange basslet; purple reeffish;	nat; less than sociii reliei	ПВ		
ny Didge HADC HCCC						Lahanhara, Anadyamana manziasii, langsnayt	hard battam, Back, rubble, Clans			
ey Ridge HAPC, USGS	24 70000167	-83.70017667	64.793	0/16/2011 20:17	16 IV 11 2	Lobophora; Anadyomene menziesii; longsnout	hard bottom; Rock; rubble; Slope-	НВ		
10	24.70890167	-83.70017007	64.793	9/16/2011 20:17	10-IX-11-2	butterflyfish; aplysinid; Chalk Bass; Gorgonian fan;	flat;	ПВ		
ey Ridge HAPC, USGS	24 70004	02.70020022	CF 027	0/16/2011 20:10	16 IV 11 2	deviated slightly from transect to view this hole to	~40cm relief inthis area; going over			
10	24.70891	-83.70028833	65.027	9/16/2011 20:18	16-IX-11-2	the right	an old mound	нв		
10	24.70894833	-83.70041333	65.074	9/16/2011 20:19	16-IX-11-2	cherub; Yellowtail Reef Fish; 2 orangeback bass				
							The state of the s			- Agaricia;
	24.70902167	-83.70055833	65.307	9/16/2011 20:19	16-IX-11-2		flat;	нв	Coral-	- Leptoseris
10	24.70903167	-83.70058	64.466	9/16/2011 20:20	16-IX-11-2					
10	24.709095	-83.70064667	64.98	9/16/2011 20:21	16-IX-11-2	(quantitative)-	flat;	НВ		
						2 lobster; lionfish; resume Photo XS (quantitative)-				
						start with photo 1702; Chalk Bass; Anadyomene				
						menziesii; Lobophora; Corallinales or	100% hard bottom; Rock; rubble;			
						Peyssonneliaceae; Crustose Coralline algae;				
10	24.70915333	-83.700665	64.42	9/16/2011 20:25	16-IX-11-2	reeffiah;	less than 40cm relief	НВ		
ey Ridge HAPC, USGS						bicolor damselfish; Xestospongia muta; encrusted	hard bottom; Rock; rubble; Slope-			
10	24.70901	-83.70110167	65.634	9/16/2011 20:27	16-IX-11-2	aplysinid;	flat;	НВ		
						scallop in downward facing photos; another burrow				
						recently dug out; bicolor damselfish; less				
ey Ridge HAPC, USGS						Lobophora; more Corallinales or Peyssonneliaceae;	hard bottom; Rock; rubble; Slope-			
10	24.709005	-83.70123833	65.494	9/16/2011 20:28	16-IX-11-2	Chalk Bass; Dictyota;	flat;	НВ		
ey Ridge HAPC, USGS						there are more sponges here: loggerhead; in areas	ard bottom; Rock; rubble; Slope-			
10	24.70899833	-83.7014	65.494	9/16/2011 20:29	16-IX-11-2	with possible more currrent and flow	flat;	НВ		
ey Ridge HAPC, USGS							hard bottom; Rock; rubble; Slope-		-	
10	24.709015	-83.70149	65.494	9/16/2011 20:29	16-IX-11-2	unidentified orange basslet;	flat;	НВ		
								1 1		
						Crustose Coralline algae; Corallinales or				
	l					Peyssonneliaceae; 30% cover Anadyomene				
	l					menziesii; 5% Dictyota; occasional crinoids; sponges				
	l l				1	more abundant: Geodia, Alysina, and Xestospongia		1	1	
						Into a abundant. Geodia, Alysina, and Aestospongia			1	
ey Ridge HAPC, USGS						muta; wrasse bass; 2Reef Butterfly; 2 Yellowtail	100 %hard bottom; Rock; rubble;			
יובר ביו ביו ביו ביו ביו ביו ביו ביו ביו ביו	y Ridge HAPC, USGS 10 y Ridge HAPC, USGS 10 y Ridge HAPC, USGS 10 y Ridge HAPC, USGS 10 y Ridge HAPC, USGS	y Ridge HAPC, USGS 10 24.70894833  y Ridge HAPC, USGS 10 24.70902167  y Ridge HAPC, USGS 10 24.70903167  y Ridge HAPC, USGS 10 24.709095  y Ridge HAPC, USGS 10 24.70915333  y Ridge HAPC, USGS 10 24.70901  y Ridge HAPC, USGS 10 24.70901  y Ridge HAPC, USGS 10 24.70905  y Ridge HAPC, USGS 10 24.709083  y Ridge HAPC, USGS 10 24.70899833 y Ridge HAPC, USGS	y Ridge HAPC, USGS 10 24.70894833 -83.70041333  y Ridge HAPC, USGS 10 24.70902167 -83.70055833  y Ridge HAPC, USGS 10 24.70903167 -83.70058  y Ridge HAPC, USGS 10 24.709095 -83.70064667  y Ridge HAPC, USGS 10 24.70915333 -83.700665  y Ridge HAPC, USGS 10 24.70901 -83.70110167  y Ridge HAPC, USGS 10 24.70901 -83.70110167  y Ridge HAPC, USGS 10 24.709005 -83.70123833 y Ridge HAPC, USGS 10 24.7089833 -83.7014 y Ridge HAPC, USGS	y Ridge HAPC, USGS 10 24.70894833 -83.70041333 65.074  y Ridge HAPC, USGS 10 24.70902167 -83.70055833 65.307  y Ridge HAPC, USGS 10 24.70903167 -83.70058 64.466  y Ridge HAPC, USGS 10 24.709095 -83.70064667 64.98  y Ridge HAPC, USGS 10 24.70915333 -83.700665 64.42  y Ridge HAPC, USGS 10 24.70901 -83.70110167 65.634  y Ridge HAPC, USGS 10 24.709005 -83.70123833 65.494  y Ridge HAPC, USGS 10 24.709005 -83.70123833 65.494  y Ridge HAPC, USGS 10 24.70899833 -83.7014 65.494  y Ridge HAPC, USGS	y Ridge HAPC, USGS 10 24.70894833 -83.70041333 65.074 9/16/2011 20:19 y Ridge HAPC, USGS 10 24.70902167 -83.70055833 65.307 9/16/2011 20:19 y Ridge HAPC, USGS 10 24.70903167 -83.70058 64.466 9/16/2011 20:20  y Ridge HAPC, USGS 10 24.709095 -83.70064667 64.98 9/16/2011 20:21  y Ridge HAPC, USGS 10 24.70915333 -83.70064667 64.98 9/16/2011 20:25  y Ridge HAPC, USGS 10 24.70901 -83.70110167 65.634 9/16/2011 20:27  y Ridge HAPC, USGS 10 24.70905 -83.70123833 65.494 9/16/2011 20:28 y Ridge HAPC, USGS 10 24.709005 -83.70123833 65.494 9/16/2011 20:28 y Ridge HAPC, USGS 10 24.70899833 -83.7014 65.494 9/16/2011 20:29 y Ridge HAPC, USGS	y Ridge HAPC, USGS 10 24.70894833 -83.70041333 65.074 9/16/2011 20:19 16-IX-11-2 y Ridge HAPC, USGS 10 24.70902167 -83.70055833 65.307 9/16/2011 20:19 16-IX-11-2 y Ridge HAPC, USGS 10 24.70903167 -83.70058 64.466 9/16/2011 20:20 16-IX-11-2  y Ridge HAPC, USGS 10 24.709095 -83.70064667 64.98 9/16/2011 20:21 16-IX-11-2  y Ridge HAPC, USGS 10 24.70901 -83.7010167 65.634 9/16/2011 20:25 16-IX-11-2  y Ridge HAPC, USGS 10 24.70901 -83.70110167 65.634 9/16/2011 20:25 16-IX-11-2 y Ridge HAPC, USGS 10 24.70905 -83.70123833 65.494 9/16/2011 20:28 16-IX-11-2 y Ridge HAPC, USGS 10 24.70899833 -83.7014 65.494 9/16/2011 20:29 16-IX-11-2 y Ridge HAPC, USGS	Ridge HAPC, USGS   24.70894833   -83.70041333   65.074   9/16/2011 20:19   16-IX-11-2   16-IX-	y Ridge HAPC, USGS 10 24.70894833 -83.70041333 65.074 9/16/2011 20:19 16-IX-11-2 cheruly. Yellowtail Reef Fish; 2 orangeback bass hard bottom; Rock; rubble; Slope-fiat; Orallinales or Peyssonneliaceae; Crustose Coralline algae; cheruly. Yellowtail Reef Fish; 2 orangeback bass hard bottom; Rock; rubble; Slope-fiat; Orall-Agaricia; Coral-Leptoseris; Rat; Red grouper 50-60cm; 10m diameter hole; 1.5m deep; local manufacture of the properties of	y Ridge HAPC, USGS 24.70894838 -83.70041333 65.074 9/16/2011 20:19 16-IX-11-2 cherub; Yellowtali Reef Fish; 2 orangeback bass core Peysonneliaceae; Crustose Coralline algae; cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 2 orangeback bass cherub; Yellowtali Reef Fish; 3 orange Fish; 3 oran	y Ridge HAPC, USGS 10 24.70903167 83.7005833 65.07 9/16/2011 20:19 16-IX-11-2 (oral- Agaricia; Coral- Leptoseris; flat; Coral- Coral-

	Flacida Dullan Bidaa HABO HGGG					ı	I	hand hattana Daali mikkla Claus	1		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10	24.70905167	-83.701955	65.494	9/16/2011 20:33	16 IV 11 2	Anlysina, nurnle rene spenger	hard bottom; Rock; rubble; Slope- flat;	НВ		
Kraken 2 - 7	Seaboss Site 10	24.70905167	-63.701955	05.494	9/10/2011 20.33	10-IX-11-Z	Aplysina - purple rope sponge;	nat,	ПВ		
	Florido Dullou Bidoo HARC HACA						Xestospongia muta; Crustose Coralline algae;	hand hattana Daali mikkla Clana			
K1 2 7	Florida, Pulley Ridge HAPC, USGS	24 700005	02 70202222	CF C2.4	0/16/2011 20:24	16 17 11 2	possible verongida; green bloch parrot fish -	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 7	SeaBoss Site 10	24.709065	-83.70202333	65.634	9/16/2011 20:34	16-IX-11-2	juvenile;	flat;	НВ		
							Count Louisian Count Count Associate Louisian			CI	
	51 · 1 · 2 · 1 · 2 · 1 · 1 · 1 · 1 · 1 ·						Coral- Leptoseris; 60cm Coral- Agaricia lamarki;				Leptoseris;
	Florida, Pulley Ridge HAPC, USGS	24 70000	02 70222667	65.007	0/45/2044 20 25	46 11/44 2	Xestospongia muta; sponge; orange basslet;	hard bottom; Rock; rubble; Slope-			Agaricia
Kraken 2 - 7	SeaBoss Site 10	24.70909	-83.70223667	65.307	9/16/2011 20:35	16-IX-11-2	Anatipathes	flat;	НВ	lamark	KI
							Photo XS (quantitative)- pause; sample 004-				
							Antipathidae Antipathes atlantica- black coral with				
	Florida, Pulley Ridge HAPC, USGS						white polyps about 20 cm across roughly;	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 7	SeaBoss Site 10	24.7091	-83.70232333	65.074	9/16/2011 20:38	16-IX-11-2	Xestospongia muta;	flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS						finished collection 20:51; bicolor damselfish; telling				
Kraken 2 - 7	SeaBoss Site 10	24.70909167	-83.70227	66.849	9/16/2011 20:49	16-IX-11-2	ship to come back up to speed;	hard bottom; Rock- wall; rubble;	НВ		
	Florida, Pulley Ridge HAPC, USGS						Photo XS (quantitative)- resuming on photo 1743;	hard bottom; Rock- wall; rubble;			
Kraken 2 - 7	SeaBoss Site 10	24.70908167	-83.70238167	65.027	9/16/2011 20:52	16-IX-11-2	Yellowtail Reef Fish; Reef Butterfly;	Slope- flat;	HB		
							bicolor damselfish; Crustose Coralline algae;				
							Corallinales or Peyssonneliaceae; Lobophora;				
							Anadyomene menziesii; not too many crinoids;				
							Xestospongia muta; Geodia; another 2 Antipathes				
	Florida, Pulley Ridge HAPC, USGS						atlantica in downard-facing video. We're about 1/3	hard bottom; Rock- wall; rubble;			
Kraken 2 - 7	SeaBoss Site 10	24.709115	-83.70265333	64.84	9/16/2011 20:53	16-IX-11-2	of the way through t	Slope- flat; rock pavers;	НВ		
							Yellowtail Reef Fish; Reef Butterfly; purple reeffish;				
	Florida, Pulley Ridge HAPC, USGS						Anadyomene menziesii; Crustose Coralline algae;	hard bottom; Rock; rubble; Slope-			
Kraken 2 - 7	SeaBoss Site 10	24.70916	-83.70306333	64.186	9/16/2011 20:55	16-IX-11-2	Corallinales or Peyssonneliaceae;	flat;	HB		
							Another hole; Coral- Montastraea cavernosa;				
							orangeback bass; 3 Chalk Bass; Reef Butterfly;				
							bicolor damselfish; green blotch parrot fish -				
	Florida, Pulley Ridge HAPC, USGS						juvenile; Anadyomene menziesii; Crustose Coralline	hard bottom; Rock; rubble; Slope-		Coral-	Montastraea
Kraken 2 - 7	SeaBoss Site 10	24.709185	-83.703165	63.999	9/16/2011 20:56	16-IX-11-2	algae; some Lobophora;	flat;	НВ	cavern	nosa
							green blotch parrot fish - juvenile; Coral- 3 Agaricia				
							lamarki; Antipathidae; Yellowtail Reef Fish;				
	Florida, Pulley Ridge HAPC, USGS						orangeback bass; Antipathidae; Hydroid; Coral- 2				
Kraken 2 - 7	SeaBoss Site 10	24.709195	-83.70344333	63.906	9/16/2011 20:58	16-IX-11-2	more Agaricia lamarki	hard bottom; Rock- wall; rubble;	НВ	5 Aga	aricia lamarki;
	Florida, Pulley Ridge HAPC, USGS							hard bottom; Rock; rubble; Slope-			
Kraken 2 - 7	SeaBoss Site 10	24.709205	-83.70371667	64.56	9/16/2011 20:59	16-IX-11-2	Xestospongia muta; Aplysina ? Orange tube;	flat;	НВ		
	Florida, Pulley Ridge HAPC, USGS						yellow orange sponge 21:06:36- photos 1778-79;				
Kraken 2 - 7	SeaBoss Site 10	24.70925333	-83.70408833	64.28	9/16/2011 21:03	16-IX-11-2	Photo XS (quantitative)- pause; sample 005;				
	Florida, Pulley Ridge HAPC, USGS										
Kraken 2 - 7	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;	НВ		
	Florida, Pulley Ridge HAPC, USGS						Photo XS (quantitative)- resume; Chalk Bass;				
Kraken 2 - 7	SeaBoss Site 10	24.70924667	-83.704155	64.56	9/16/2011 21:15	16-IX-11-2	Anadyomene menziesii;	hard bottom; rubble; Slope- flat	НВ		
				1			fan Antipathidae; comatulid crinoid; orange back		1		
							bass; Demospongiae geodia; pictures every 30				
	Florida, Pulley Ridge HAPC, USGS						secconds; bicolor damselfish; Chalk Bass;				
Kraken 2 - 7	SeaBoss Site 10	24.70924833	-83.70412667	64.233	9/16/2011 21:17	16-IX-11-2	Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat;	НВ		
<u> </u>	Florida, Pulley Ridge HAPC, USGS		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		., .,		Agelas clathrodes; Xestospongia muta; Photo XS	, , , , , , , , , , , , , , , , , , , ,	+		
Kraken 2 - 7	SeaBoss Site 10	24.70929667	-83.70443167	64.56	9/16/2011 21:20	16-IX-11-2	(quantitative)- pause;	hard bottom; rubble; Slope- flat;	нв		
		5525657	22 3	050	-,,		1-1	Territory, Lease, Stope Hat,	1		
							Photo XS (quantitative)- resume; Agelas clathrodes;				
	Florida, Pulley Ridge HAPC, USGS						Anadyomene menziesii dominated 30% coverage;				
Kraken 2 - 7	SeaBoss Site 10	24.7093	-83.70442667	64.56	9/16/2011 21:20	16-IX-11-2	Corallinales or Peyssonneliaceae;	hard bottom; rubble; Slope- flat	нв		
		1033	22 3 . 12007	050	-,,				ı	L	

	I I						_			1
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:	нв		
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;		НВ		
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; Agalas 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;	НВ		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS	24.709263	-65.70451655	64.466	9/10/2011 21.23 10-IA-11-2	moved a but forward Xestospongia muta; Geodia;	naru bottom, rubbie; siope- nat,	ПВ		
Kraken 2 - 7	SeaBoss Site 10	24.709285	-83.70459	64.653	9/16/2011 21:28 16-IX-11-2	Anadyomene menziesii; Corallinales or	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 7	Florida, Pulley Ridge HAPC, USGS SeaBoss Site 10 Florida, Pulley Ridge HAPC, USGS	24.70927833	-83.70457	64.7	9/16/2011 21:29 16-IX-11-2	Peyssonneliaceae; Agalas; Geodia gibberosa; Chalk Bass; cherubfish; Photo XS (quantitative)- pause; for Niphates erecta;	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 7	SeaBoss Site 10 Florida, Pulley Ridge HAPC, USGS	24.70929833	-83.70467167	64.934	9/16/2011 21:30 16-IX-11-2	Photo 1796 and 1797.jpg	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 7	SeaBoss Site 10  Florida, Pulley Ridge HAPC, USGS	24.7093	-83.70464167	64.887	9/16/2011 21:36 16-IX-11-2	collected 007;  Photo XS (quantitative)- resuming; about 2 per minute; Anadyomene menziesii; aplydium?	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 7	SeaBoss Site 10	24.70930333	-83.70467667	64.793	9/16/2011 21:37 16-IX-11-2		hard bottom; rubble; Slope- flat;	НВ		
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		hard bottom; rubble; Slope- flat;	НВ		
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;	нв	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		hard bottom; Rock- wall; rubble; Slope- flat;	НВ	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;	НВ		
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;	НВ		
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;	НВ	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		hard bottom; Rock; rubble; Slope- flat;	нв		
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;				

									l		
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 course graned and attempt sampe 201 and take a core;	hard bottom;	нв		
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 (>350);	НВ		
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 (>350);	НВ		
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 encrusign patches Photo for sample 201 x2 # 1824 1825.jpg;	hard bottom; Rock- wall; Slope- steep (>35o);	НВ	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;	НВ		
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);	НВ		
Kraken 2 - 8	Florida, Pulley Ridge, outside HAPC; southern escarpment, east end Florida, Pulley Ridge, outside	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 (>350);	НВ	001	
Kraken 2 - 8	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);	НВ		
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 (>350);	НВ		
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 (>350); Collect;	НВ		
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 (>350);	НВ		
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 (>350);	НВ		
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);	НВ		
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);	НВ		
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 (>350);	НВ	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);	НВ		

	Florida, Pulley Ridge, outside		1			1			1	1	1
	HAPC; southern escarpment, east						Photo XS (quantitative)- resume; on top of mound;	hard bottom; Rock- wall; Slope-			
Kraken 2 - 8	end	24.67015167	-83.72084333	162.139	9/17/2011 14:00	17-IX-11-1	staring photo 1869.jpg; fish under rock;	steep (>350);	НВ		
	Florida, Pulley Ridge, outside				., , .		0 F				
	HAPC; southern escarpment, east										
Kraken 2 - 8	end	24.67029333	-83.72081167	167.651	9/17/2011 14:05	17-IX-11-1	[sample 005]	hard bottom; Rock- wall;	НВ	005	
							we completed Photo XS (quantitative) on top of the				
	Florida, Pulley Ridge, outside						wall but still continuing the Photo XS (quantitative)-				
	HAPC; southern escarpment, east						start; End on top of boulder. We're at the north				
Kraken 2 - 8	end	24.67032833	-83.72080833	168.772	9/17/2011 14:05	17-IX-11-1	end.	hard bottom; Rock;	НВ		
	Florida, Pulley Ridge, outside										
K1 2 0	HAPC; southern escarpment, east	24.67022	-83.72085167	170.22	0/47/2011 14:00	47 17 44 4	ataurius ta laul fau fish in the monad havidan	hand battana Danisha dana	НВ		
Kraken 2 - 8	end	24.67032	-03./200510/	170.22	9/17/2011 14:06	17-17-11-1	stopping to look for fish in the rugged boulder.	hard bottom; Rock boulders;	ПВ	+	
	Florida, Pulley Ridge, outside						north face of the boulder facing south; scorpean				
	HAPC; southern escarpment, east						fish; the north wall is much more rugged; we're				
Kraken 2 - 8	end	24.67033333	-83.72084833	170.734	9/17/2011 14:07	17-IX-11-1	near the base; possible spanish flag fish;	hard bottom; Rock boulders;	НВ		
	Florida, Pulley Ridge, outside						,, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,			
	HAPC; southern escarpment, east						the north face of this boulder rugged rock with 1-				
Kraken 2 - 8	end	24.67025167	-83.72092	171.902	9/17/2011 14:10	17-IX-11-1	2m ledges; encrusting yellow and green sponge;	rock boulder;	НВ		
										İ	
1	Florida, Pulley Ridge, outside						coming down the west base of the feature and are			1	
	HAPC; southern escarpment, east						cirumnavigating to the beginning of the same				
Kraken 2 - 8	end	24.67021167	-83.72091	171.154	9/17/2011 14:11	17-IX-11-1	feature; dead crab; there's clay down here.		HB		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, east	24.670225	02 72004022	470 470	0/47/2044 4 4 4 2	47 11/44 4	transiting down the west side of the boulder;				
Kraken 2 - 8	end	24.670235	-83.72094833	170.173	9/17/2011 14:12	17-IX-11-1	continuing photo transect;		НВ		
	Florido Pullou Pidgo outsido						This area is more rugged, possible netrified spange.				
	Florida, Pulley Ridge, outside HAPC; southern escarpment, east						This area is more rugged; possible petrified sponge; Stopped to collect sponge but wasn't able to obtain				
Kraken 2 - 8	end	24.670295	-83.72092167	170.127	9/17/2011 14:14	17-IX-11-1	it; Photo XS (quantitative)- End;				
Manchi 2	Florida, Pulley Ridge, outside	2 1107 0233	03.72032107	170.127	3/17/20111111	1, 11, 11	Photo XS (quantitative)- start; This transect is from			1	
	HAPC; southern escarpment, east						the boulder to the base of the wall; ~100m transect;				
Kraken 2 - 8	end	24.67031333	-83.72088	171.108	9/17/2011 14:19	17-IX-11-1	Starting photo 1926				
	Florida, Pulley Ridge, outside							Slope- moderate (<35o); Rock;			
	HAPC; southern escarpment, east						exposed clay escarpment about 1m tall; taking ~4	rubble; sand; rubble cobble rock			
Kraken 2 - 8	end	24.67031667	-83.720875	171.668	9/17/2011 14:20	17-IX-11-1	photos a min	boulder 30cm-1m;	НВ		
	Florida, Pulley Ridge, outside						Very barren; no marco epifauna; surface and rock is				
	HAPC; southern escarpment, east						heavily bored with 2-3 cm pits; Very strange bottom-	ruggged consolidated white clay; 1-2			
Kraken 2 - 8	end	24.67035667	-83.72069	170.594	9/17/2011 14:22	17-IX-11-1	similar to moon scape; Possible scorpian fish;	m relief;	SB		
1	Stanida Bullau Bidaa autai l						On the common on the state lead to 1.15			1	
1	Florida, Pulley Ridge, outside HAPC; southern escarpment, east						On the sonar we are about little less than halfway between the boulder and the base wall; scorpian			1	
Kraken 2 - 8	end	24.67043167	-83.72050167	171.248	9/17/2011 14:24	17-IX-11-1	fish; limestone with bored hold; very barren;				
Makeli 2 - 0	Florida, Pulley Ridge, outside	24.07043107	33.72030107	1/1.240	3,11,2011 14.24	T,-IV-TT-I	non, minescone with borea noia, very barrell,			+	
	HAPC; southern escarpment, east										1
Kraken 2 - 8	end	24.67047667	-83.720405	171.248	9/17/2011 14:27	17-IX-11-1	really no fish;	maybe 3m relief;	НВ		1
	Florida, Pulley Ridge, outside				• •		Some sort of long line but not a fishing line; We are	, , , , , , , , , , , , , , , , , , ,		+	
	HAPC; southern escarpment, east						approaching the base of the wall; still very rugged; 1-				1
Kraken 2 - 8	end	24.67050333	-83.72024	169.986	9/17/2011 14:28	17-IX-11-1	2 m relief; anthiids;				1
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, east							a lot of large boulders at the base of		1	
Kraken 2 - 8	end	24.67054333	-83.72006833	163.073	9/17/2011 14:30	17-IX-11-1	rough tongue bass;	the wall;	НВ	1	
							Near the foot of the wall ~ 20m from the vertical				
	Florida, Pulley Ridge, outside						wall; rugged boulders; 1-2m relief; essentially				1
	HAPC; southern escarpment, east	24.672222	00 70000	465	0/47/0000	47 10/	barren except for yellow and green encrusting				1
Kraken 2 - 8	end	24.67060833	-83.72003167	162.513	9/17/2011 14:31	1/-IX-11-1	sponge;	Rock boulders;	HB		

	Florida, Pulley Ridge, outside	ı				1	T	T		
	HAPC; southern escarpment, east									
Kraken 2 - 8	end	24.67062833	-83.71994	157.188	9/17/2011 14:33	17 <sub>-</sub> IY <sub>-</sub> 11 <sub>-</sub> 1	top of the wall is 118m;			
Riakeli 2 - 0	Florida, Pulley Ridge, outside	24.07002833	-83.71334	137.100	3/17/2011 14.33	17-17-11-1	top of the wan is 116m,			
	HAPC; southern escarpment, east						green/yellow and red (maybe Spirastrella)			
Kraken 2 - 8	end	24.67064	-83.719885	155.833	9/17/2011 14:34	17-IX-11-1	encrusting sponge; rough tongue bass;			
Riakeli 2 - 0	ena	24.07004	-83.713883	133.833	3/17/2011 14.34	17-17-11-1	encrusting sponge, rough tongue bass,			
							On the sonar we are at the base of the vertical wall;			
	Florida, Pulley Ridge, outside						possible lavender Crustose Coralline Algae; `10 cm			
	HAPC; southern escarpment, east						yellow/green encrusting sponge; little ball sponges-	30-45 degree slope; rock boulders		
Kraken 2 - 8	end	24.67063	-83.71983333	154.805	9/17/2011 14:35	17-IX-11-1	1cm spherical white;	and alcrops at 1-2 m;	нв	
Krukeri 2 0	Florida, Pulley Ridge, outside	24.07003	03.71303333	134.003	3/17/2011 14:55	17 1/11 1	Tem spriencui winte,	und dicrops at 1 2 m,	116	
	HAPC; southern escarpment, east						~5 Fish traps about 1m x 1m fish trap; pile of			
Kraken 2 - 8	end	24.67061167	-83.71980167	153.498	9/17/2011 14:38	17-IX-11-1	longline rope on top of it; no fish inside it			
Krukeri 2 0	Cild	24.07001107	03.71300107	133.430	3/17/2011 14:30	17 1/1 1	longime rope on top or it, no iisii iiiside it			
	Florida, Pulley Ridge, outside						close up video of 5 fish traps; possibly why there's			
	HAPC; southern escarpment, east						no fish here; right at the base of the vertical wall on			
Kraken 2 - 8	end	24.67068	-83.71983667	150.601	9/17/2011 14:39	17 <sub>-</sub> IY <sub>-</sub> 11 <sub>-</sub> 1	the sonar; cidaroid pencil urchin;			
Riakeli 2 - 0	ena	24.07008	-83.71383007	130.001	3/17/2011 14.33	17-17-11-1	the soriar, cidarola pericii diciiii,			
							continuing photo transect- now on a steep wall			
							about 70cm rock wall; diademnids			
	Florida, Pulley Ridge, outside						Centrostephanus? long spined black urchin; 40-			
	HAPC; southern escarpment, east							Slope- steep (>350); rugged wall 70-		
	end	24.67065667	-83.71980167	143.641	9/17/2011 14:42	17-IX-11-1	bass; yellow fish; some sort of basslet;	80 degrees; ledges	нв	
Krakeri 2 - 0	enu	24.07003007	-83.71380107	143.041	3/17/2011 14.42	17-IX-11-1	starting a new photo transect-Photo XS	oo degrees, ledges	ПБ	
	Florida, Pulley Ridge, outside						(quantitative)- start; going parallel to the wall along			
	HAPC; southern escarpment, east						140m depth contour; . Starting with photo 2035;			
Kraken 2 - 8	end	24.67074333	-83.71982	138.55	9/17/2011 14:46	17 IV 11 1	roughtongue bass;			
Kiakeli 2 - 6	end	24.07074333	-03.71302	136.33	3/17/2011 14.40	17-17-11-1	lavender Crustose Coralline Algae; different cidaroid			
	Florida, Pulley Ridge, outside						urching 10cm red and white test with 20cm long			
	HAPC; southern escarpment, east						spines; 2 bank butterfly; small anthiid; another	wall is 45 70 dagree slope, rugged		
Kraken 2 - 8	end	24.67071667	-83.71987	139.204	9/17/2011 14:48	17 17 11 1	unidentified urchin	wall is 45-70 degree slope; rugged, eroded; 1m ledges;	НВ	
Kraken 2 - o	ena	24.07071007	-03./190/	139.204	9/1//2011 14.48	17-18-11-1		eroded; Im ledges;	ПВ	
							anthiids; rock looks like karsted topography			
	Florido Dullou Bidos cutoido						(limestone eroded in the air- like rugged beach			
	Florida, Pulley Ridge, outside						rock); It goes from 45 degree slope to vertical; very			
K1 2 0	HAPC; southern escarpment, east	24.670005	02 74004222	140 105	0/17/2011 14:51	47 17 44 4	rugged karst topography; lavender Crustose			
Kraken 2 - 8	end	24.670805	-83.71991333	140.185	9/17/2011 14:51	17-IX-11-1	Coralline Algae;			
	Florida, Pulley Ridge, outside									
K1 2 0	HAPC; southern escarpment, east	24 67002022	02.74006	139.297	0/17/2011 14:54	47 17 44 4				
Kraken 2 - 8	end	24.67092833	-83.71996	139.297	9/17/2011 14:54	17-IX-11-1	anthiid;			
	Florido Pullou Bid						white round (circular) anemone; tracking has been			
	Florida, Pulley Ridge, outside						pretty bad for the past few seconds; its dropped out			
Kraken 2 - 8	HAPC; southern escarpment, east	24.670985	-83.72004833	139.111	9/17/2011 14:55	17 IV 11 1	on us; fish with white and orange stripes RECHECK			
ridkell 2 - 8	end	24.070985	-03./2004833	159.111	9/1//2011 14:55	T\-IV-TT-T	Species;			
	Florida, Pulley Ridge, outside									
Karlan 2 C	HAPC; southern escarpment, east	24 67405667	02 7204 4557	120.612	0/47/2044 4 4 50	47 17 44 4	elia ele III Deceatore le consciele e de consciele de la consciele de			
Kraken 2 - 8	end	24.67105667	-83.72014667	138.643	9/17/2011 14:59	1/-IX-11-1	slit shell Perotrochus possibly adansoni; anthiids;			
	Florida, Pulley Ridge, outside						still on vertical wall; rugged; highly eroded; 30-50%			
Krakon 2 0	HAPC; southern escarpment, east	24 67404222	02 72047222	120.074	0/17/2011 15 01	17 17 44 4	cover lavender Crustose Coralline Algae; some			
Kraken 2 - 8	end	24.67104333	-83.72017333	136.074	9/17/2011 15:01	1/-IX-11-1	yellow encrusting sponge;			
							1 100% 6 1 6 11: 11			
							nearly 100% Crustose Coralline Algae; wrasse bass;			
	Florida, Pulley Ridge, outside						some sort of shell embedded in the rock 2-3cm			
	HAPC; southern escarpment, east					l. <b>_</b>	bivalves- deep water oyster bar- possibly ostreidae;			
Kraken 2 - 8	end	24.67103667	-83.72019667	136.495	9/17/2011 15:02	17-IX-11-1	another slit shell 8cm Perotrochus	Slope- steep (>35o);		
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, east end	24.671005	-83.72024167		- 4 4-	l				
Kraken 2 - 8				138.316	9/17/2011 15:04	147 17 44 4	approaching cove in the wall; ~12 anthiids;	1		

	1					1	T-1 - 101	T.		1	1
							Photo XS (quantitative)- pause; attempting to				
							collect a sample 007- looks like a sponge; there was				
	Florida, Pulley Ridge, outside						also a possible sponge of some sort; white				
	HAPC; southern escarpment, east						elongated with a black line going along the apical				
Kraken 2 - 8	end	24.67102	-83.72023	138.97	9/17/2011 15:06	17-IX-11-1	length;			007	
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, east						vertical wall about halfway up; starting				
Kraken 2 - 8	end	24.67099667	-83.72021667	137.289	9/17/2011 15:27	17-IX-11-1	phototransect with photo number 2051;				
	Florida, Pulley Ridge, outside						heading up the wall; wall is very eroded and rugged,				
	HAPC; southern escarpment, east						90 degree slope; 1 m outcrops; dominant faunal is				
Kraken 2 - 8	end	24.67101	-83.72025667	142.1	9/17/2011 15:28	17-IX-11-1	lavander encrusting algae				
							Photo XS (quantitative)- start; top of the wall is 118				
	Florida, Pulley Ridge, outside						m; coming up an area on the multibeam that looks				
	HAPC; southern escarpment, east						like a shelf and then another wall; possibly a double				
Kraken 2 - 8	end	24.67107	-83.72039333	138.97	9/17/2011 15:29	17-IX-11-1	wall				
	Florida, Pulley Ridge, outside						coming up on a little shelf; bank butterfly;				
	HAPC; southern escarpment, east						yellowfish possibly spanish flag; rock is 100%				
Kraken 2 - 8	end	24.67112333	-83.72040167	135.187	9/17/2011 15:31	17-IX-11-1	encrusted with Coralline algae;				
							up on the shelf; 1 m rock outcrops; very rugged;				
	Florida, Pulley Ridge, outside						small orange encrusting sponges; small yellow				
1	HAPC; southern escarpment, east						encrusting sponges; 2 dozens anthiids; 30-40cm				
Kraken 2 - 8	end	24.67113667	-83.72037167	134.486	9/17/2011 15:31	17-IX-11-1	Scamp; bank butterfly;				
	Florida, Pulley Ridge, outside						more anthiids, could dozens; 30 degree slope still				
	HAPC; southern escarpment, east						on the shelf of the multibeam; about 50-60% cover				
Kraken 2 - 8	end	24.67122167	-83.72037667	133.272	9/17/2011 15:34	17-IX-11-1	with Coralline algae;				
THE CONTRACT OF	Cita	2 1107 122107	03.72037007	133.272	3/1//2011 13:31	17 17 11 1	30 degree slope on the shelf; halfway up the wall;		1		
							ruff tongue bass; anthias about 10cm long, light				
	Florida, Pulley Ridge, outside						pink in coloration with irregular yellowstriped,				
	HAPC; southern escarpment, east						stripe continuing through the eyeball and up to the				
Kraken 2 - 8	end	24.67127167	-83.72038333	132.571	9/17/2011 15:35	17 <sub>-</sub> IY <sub>-</sub> 11 <sub>-</sub> 1	mouth				
Krukeri 2 0	Florida, Pulley Ridge, outside	24.07127107	03.72030333	132.371	3/17/2011 15:55	17 17 11 1	mouth				
							Photo VS (quantitativa) start: heading up clone				
Vrakan 2 0	HAPC; southern escarpment, east end	24.67119833	-83.72053833	130.609	0/17/2011 15:42	17 IV 11 1	Photo XS (quantitative)- start; heading up slope				
Kraken 2 - 8	****	24.07119855	-03.72033033	130.609	9/17/2011 15:42	17-IX-11-1	about 20 degrees				
	Florida, Pulley Ridge, outside							61 . ( 25 )			
K1 2 0	HAPC; southern escarpment, east	24 674245	02 72046022	425 700	0/17/2011 15:42	47 IV 44 4	continuging Photo 2078; on platform about 1/2 way				
Kraken 2 - 8	end	24.671245	-83.72046833	125.798	9/17/2011 15:43	1/-IX-11-1	up wall	with ledges 30cm	НВ		
	51 . 1 . 5 . 11 . 5 . 1						; anthiid; this rock is more like a boulder a little				
	Florida, Pulley Ridge, outside						smoother not like the rugged rock like before.				
	HAPC; southern escarpment, east						According to multibeam we have a little ways to go				
Kraken 2 - 8	end	24.67126833	-83.72044833	124.63	9/17/2011 15:45	1/-IX-11-1	to get to the top of the wall.		ļ		
1											
1							Photo XS (quantitative)- paused for collection;				
							roughtongue bass; black featherpen-like				
							Antipathidae 008; black with whiteish polyps				
	Florida, Pulley Ridge, outside						Tanaecitipathes sp.10cm length; 1cm spines/polyps;				
1	HAPC; southern escarpment, east						3 digital still photos; going to take close up vides;				
Kraken 2 - 8	end	24.67132667	-83.72043833	120.239	9/17/2011 15:46	17-IX-11-1	about 1/2 dozen			008	
1	Florida, Pulley Ridge, outside										
1	HAPC; southern escarpment, east						resume Photo XS (quantitative)- start with photo				
Kraken 2 - 8	end	24.67149167	-83.720305	119.819	9/17/2011 15:57	17-IX-11-1	2089; tattler biggest one Chris has ever seen!!;	Slope- steep (>35o);			
							encrusted with small fuzzy black coral Antipathidae;				
	Florida, Pulley Ridge, outside						; 10cm unstalked dirty-white sponge 1cm diameter				
	HAPC; southern escarpment, east						with oscules along the surface (1mm) smooth				
Kraken 2 - 8	end	24.67134	-83.72050167	118.231	9/17/2011 15:59	17-IX-11-1	surface; new tattler	on top of the wall; smoth Rock;	НВ		
	Florida, Pulley Ridge, outside										
1	HAPC; southern escarpment, east										
Kraken 2 - 8	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	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;				<u> </u>

_							T		1	1	
							;Photo XS (quantitative)- start photo 2096;				
							numerous finger sponges (sample 9) that we				
							collected; also the black coral bottle-brushes				
	Florida, Pulley Ridge, outside						(sample 8) are common; still photos show small				
	HAPC; southern escarpment, east						sponges;rough tongue bass, more than 7; not much	top of wall;Rock; pavement; 10 cm			
Kraken 2 - 8	end	24.67138833	-83.72046833	117.67	9/17/2011 16:23	17-IX-11-1	Crustose Coralline Alga	relief;	НВ	009	
	Florida, Pulley Ridge, outside						rough tongue bass ~ 7; 4 more rough tongue bass;				
	HAPC; southern escarpment, east						black coral bottle brush dominant; even more RT	20 cm ledge; rock outcrop;0.5 m			
Kraken 2 - 8	end	24.67174333	-83.72040667	118.044	9/17/2011 16:27	17-IX-11-1	bass; small scamp;	rock outcrops	НВ		
	Florida, Pulley Ridge, outside						black coral brushes common;4 rough tongue bass	•			
	HAPC; southern escarpment, east						these are the dominant fish;comatulid	running along top of wall;Rock;			
Kraken 2 - 8	end	24.671635	-83.72055333	117.857	9/17/2011 16:30	17-IX-11-1	crinoids;Crustose Coralline Algae (lavender);	pavement;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, east										
Kraken 2 - 8	end	24.67192	-83.72062667	117.95	9/17/2011 16:32	17-IX-11-1	tattler;	continuing transect along top of wall	НВ		
	Florida, Pulley Ridge, outside						Photo XS (quantitative)- End; last photo number	<u> </u>			
	HAPC; southern escarpment, east						2152; another tattler 20 cmthe "trophy tattler";	we transected about 60 m along top			
Kraken 2 - 8	end	24.67197833	-83.72065	117.297	9/17/2011 16:33	17-IX-11-1	wrasse bass	edge of wall	НВ		
F	Florida, Pulley Ridge, outside		35 2303	/	-, ,				<del>                                     </del>	<u> </u>	
	HAPC; southern escarpment, east							Off bottom; moved away from wall			
Kraken 2 - 8	end	24.672045	-83.72070333	117.67	9/17/2011 16:35	17-IX-11-1		to begin ascent			
		2 20 13	22:: 22: 3333	==::07	.,,						
									Bottom		
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Type	Sample Notes	Coral Notes
							camera set to 250 down and Photo XS (quantitative)-				
	Florida, Pulley Ridge, outside						start; 3-4 a minute @.4 kts; 125 m to lower ridge;				
	HAPC; southern escarpment, west						verongid - yellow Demospongiae; Photo XS				
Kraken 2 - 9	end	24.76725167	-83.87883333	139.531	9/17/2011 18:52	17-IX-11-2	(quantitative)- End;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 9	end	24.76727	-83.87882	139.344	9/17/2011 18:55	17-IX-11-2		hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 9	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;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 9	end	24.76724	-83.878845	139.344	9/17/2011 18:58	17-IX-11-2	Tenacetipathes; yellow Demospongiae;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 9	end	24.76728	-83.8788	138.97	9/17/2011 19:03	17-IX-11-2	possilbe oil bubbles in the water column;	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						still looking to see if there is oil coming from the			[	
Kraken 2 - 9	end	24.767235	-83.87888	139.111	9/17/2011 19:08	17-IX-11-2	ROV or if it coming from somewhere else	hard bottom; rubble; Slope- flat;	НВ	<u>                                       </u>	
	Florida, Pulley Ridge, outside										
1	HAPC; southern escarpment, west						resume collection; getting into postion to collect			[	
Kraken 2 - 9	end	24.76724167	-83.87887167	139.111	9/17/2011 19:10	17-IX-11-2	001	hard bottom; rubble; Slope- flat;	НВ		
	Florida, Pulley Ridge, outside						Photo XS (quantitative)- start; sample 001 lost - 250			[	
	HAPC; southern escarpment, west						on camera Photo XS (quantitative)- End; stopping to			[	001 actually
Kraken 2 - 9	end	24.767235	-83.878895	139.111	9/17/2011 19:13	17-IX-11-2	collect a new specimen of 001	hard bottom; rubble; Slope- flat;	НВ	001	collected
							Photo XS (quantitative)- start; Photo; 2165.jpg start;				
							Madrepora coral; big eye; oranges Demospongiae;			[	
	Florida, Pulley Ridge, outside						Stichopathes with hydroid or comatulid crinoid;				
	HAPC; southern escarpment, west						bottle bush black corals Antipathidae; tatler; wrass			[	
Kraken 2 - 9	end	24.76726167	-83.878915	138.55	9/17/2011 19:21	17-IX-11-2	bass;	hard bottom; rubble; Slope- flat;	НВ	[	Coral- Madrepora
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						80 cm boulders; 40 m from the starting WP; bushy				
Kraken 2 - 9	end	24.76732	-83.87885667	138.784	9/17/2011 19:23	17-IX-11-2	Antipathidae or black hydroids;	hard bottom; Rock; Slope- flat;	НВ		
	1					1	1		·	1	

	Elecide Dulley Bides subside									
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west									
Kraken 2 - 9	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;	нв	
Kiakeli 2 - 3		24.70739107	-03.07073107	137.303	3/17/2011 13.24 17-18-	\-11-Z		mard bottom, rubble, slope- nat,	ПБ	
	Florida, Pulley Ridge, outside						on WP 1; big eye; Stichopathes; 40 m from base of	100% bard battam, rubbla, Slans		
Kraken 2 - 9	HAPC; southern escarpment, west	24.76752833	-83.87860167	134.72	9/17/2011 19:26 17-IX-	/ 11 2	lower ledge; white sm encrusting yellows; Antipathidae is dominate;	100% hard bottom; rubble; Slope- flat;	нв	
Kraken 2 - 9	*****	24./0/32633	-03.07000107	134.72	9/17/2011 19.20 17-18-	\-11-Z	Antipathidae is dominate;	ilat;	пь	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west	24.76770467	02 07025467	425.050	0/47/2044 40 20 47 11/		Narcissia trigonaria; rough toungue bass; 15-20 cm			
Kraken 2 - 9	end	24.76770167	-83.87835167	136.868	9/17/2011 19:28 17-IX-	(-11-2	boulders and outcrop;	hard bottom; Rock; Slope- flat;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west									
Kraken 2 - 9	end	24.76754333	-83.87833167	136.588	9/17/2011 19:28 17-IX-	(-11-2	scower spot; Stichopathes;	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge, outside						30 m from base of lower wall according to sonar; 3			
	HAPC; southern escarpment, west						species of black coral - 10-15 cm tall; 2 rough	100 % hard bottom; rubble; Slope-		
Kraken 2 - 9	end	24.76769	-83.87823	135.701	9/17/2011 19:29 17-IX-	(-11-2	toungue bass and tattler. 60 m from 2nd WP;	flat;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						low ledges with Crustose Coralline Algae; wrass	hard bottom; Rock 20-30 cm relief;		
Kraken 2 - 9	end	24.76801167	-83.878135	134.626	9/17/2011 19:31 17-IX-	(-11-2	bass; rugosity increasing in sonar;	Slope- flat;	НВ	
	Florida, Pulley Ridge, outside						30 m from 2nd WP which is the wall. Encrusting			
	HAPC; southern escarpment, west						Demospongiae; Crustose Coralline Algae;			
Kraken 2 - 9	end	24.76808833	-83.87808	134.019	9/17/2011 19:32 17-IX-	⟨-11-2	Antipathidae;	hard bottom; rubble; Slope- flat;	НВ	
							stopping to wait for ship; ship is at WP 2 at			
	Florida, Pulley Ridge, outside						southern end of deeper wall; Crustose Coralline			
	HAPC; southern escarpment, west						Algae; sm hydroids; Ascidiacea?; brush black coral			
Kraken 2 - 9	end	24.76827667	-83.87791167	132.478	9/17/2011 19:35 17-IX-	(-11-2	= australian pine;	hard bottom; rubble; Slope- flat;	НВ	
	Florida, Pulley Ridge, outside						Photo XS (quantitative)- start2; parallel to lower			
	HAPC; southern escarpment, west						drop off; .5 m ledge; rough tongue bass; lower ridge	hard bottom; rubble; rubble; Slope-		
Kraken 2 - 9	end	24.76827167	-83.87789833	133.365	9/17/2011 19:38 17-IX-	<b>(-11-2</b>	2 m high;	flat;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						continuing photo transect; parallel to slope ~ 2 m			
Kraken 2 - 9	end	24.768575	-83.87819333	133.225	9/17/2011 19:40 17-IX-	(-11-2	relief;	hard bottom; rubble; Slope- flat;	HB	
	Florida, Pulley Ridge, outside								İ	
	HAPC; southern escarpment, west							hard bottom; 80% rubble with		
Kraken 2 - 9	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	sediment; Slope- flat; low relief	НВ	
							barren; slight rise or ridge 20-30o slope; tattler; 133-			
							136 m; less fauna; ridge to the right getting steeper			
	Florida, Pulley Ridge, outside						as we travel parallel to the base of the wall; 2 cm			
	HAPC; southern escarpment, west						orange encrusting Demospongiae; rough tongue	hard bottom; 50% rubble - 10-20		
Kraken 2 - 9	end	24.76884833	-83.87851833	136.028	9/17/2011 19:45 17-IX-	⟨-11-2	bass at beginning of Dive09 2.mov;	cm; Slope- flat;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						width of wall ~ 20 m from base to top; rough	hard bottom 100%; rubble 70%;		
Kraken 2 - 9	end	24.769265	-83.87875667	133.785	9/17/2011 19:49 17-IX-	⟨-11-2	tongue bass; pinetree Antipathidae;	Slope- moderate (<35o);	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						yellow Demospongiae; madrapora; rocks are totally	hard bottom; rubble; Slope-		
Kraken 2 - 9	end	24.76949167	-83.87884833	132.898	9/17/2011 19:52 17-IX-	<b>(-11-2</b>	encrustes with Demospongiae;	moderate (<35o);	НВ	
									1	
							20 cm rock outcrops and boulders; 5 m relief from			
							the bottom of the ledge; 30 cm relief; Stichopathes;			
	Florida, Pulley Ridge, outside						top of the ledge; yellow wrasse RECHECK Species;			
	HAPC; southern escarpment, west						30 cm relief rock out crop ; fish behind it; cubyu;	hard bottom; rubble; Slope-		
Kraken 2 - 9	end	24.76962167	-83.87894333	131.73	9/17/2011 19:54 17-IX-		anthiids; black fin snapper; video clip DIVE09 4.mo	moderate (<35o);	нв	
	Florida, Pulley Ridge, outside						30 cm releif ledge; small anthead; australin pine			
	HAPC; southern escarpment, west						Antipathidae; Crustose Coralline Algae; big eye or	hard bottom; rubble; Slope-		
Kraken 2 - 9	end	24.769835	-83.87907833	131.917	9/17/2011 19:57 17-IX-	<b>⟨-11-2</b>	squirrel fish RECHECK Species; base is 136 to 131 m;		нв	
	l			- 1				· "		

Force, Pully Ridge, custoes  AC 2-7 and Comment occuprised, MA 70891507 83.8790830 131.684 97172011 2000 1746-112 2  France 2-8 process process of the comment occuprised occupr	HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern esc	
Particular   Par	Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plorida, Pulley Ridge, outside   Plor	
Penda, Pulley Mige, Locacion   Penda, Pulley Mige, Locacion	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florid	
SASK Coultern acceptance, word   Value   Val	HAPC; southern escarpment, west 24,76991833 -83.87908167 129.908 9/17/2011 20:01 17-18-11-2 mow transect line along the wall; camera 25 o down; moderate (<350); HB end 2-9 end 24,76991833 -83.87908333 125.891 9/17/2011 20:02 17-18-11-2 mowing; moderate (<350); HB end 2-9 end 24,7708167 -83.87908167 129.021 9/17/2011 20:02 17-18-11-2 mowing; moderate (<350); HB end 2-9 end 24,7708167 -83.8789667 127.059 9/17/2011 20:04 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 2-9 end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<35	
SASK Coultern acceptance, word   Value   Val	HAPC; southern escarpment, west 24,76991833 -83.87908167 129.908 9/17/2011 20:01 17-18-11-2 mow transect line along the wall; camera 25 o down; moderate (<350); HB end 2-9 end 24,76991833 -83.87908333 125.891 9/17/2011 20:02 17-18-11-2 mowing; moderate (<350); HB end 2-9 end 24,7708167 -83.87908167 129.021 9/17/2011 20:02 17-18-11-2 mowing; moderate (<350); HB end 2-9 end 24,7708167 -83.8789667 127.059 9/17/2011 20:04 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 2-9 end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 24,7708167 -83.8789683 125.751 9/17/2011 20:09 17-18-11-2 tattler; part of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 o down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<350); HB end 25 of the wall; camera 25 of down; moderate (<35	
Example   Continue	Kraken 2 - 9   end   24.76991833   -83.87908187   129.908   9/17/2011 20:01   17-IX-11-2   new transect line along the wall; camera 25 o down; moderate (<350); H8   H8	
Nortice, Pulley Ridge, cutation   National Processing Pulley Rid	Florida, Pulley Ridge, outside HAPC; southern escarpment, west	
MACC_southern exampment, west   24,77909833   38,8790333   125,901   27,77011 2002   7,7011 2002	MAPC; southern escarpment, west end   24.76998833   -83.87903333   125.891   9/17/2011 20:02   17-IX-11-2   moving; moving; moderate (<350);   HB	
Final Content   Content	Kraken 2 - 9   end   24.7698833   -83.87903333   125.891   9/17/2011 20:02   17-18-11-2   moving;   moderate (<350);   HB	i
Finds, Pulley Ridge, outside   1.5 cm purple among wasnes, tractiles, southerples, wasne    1.5 cm purple among wasnes, tractiles, southerples, wasnes   1.5 cm purple among wasnes, tractiles, southerples, wasnes, southerples, wasnes, southerples, wasnes, southerples, southerples, southerples, southerples, wasnes, southerples,	Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end  24.7708167  -83.87905167  129.021  9/17/2011 20:04  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 end  24.77088167  -83.87896833  125.144  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77088167  -83.87896833  125.144  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710883  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710833  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710833  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.7710833  -83.8789667  122.341  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  44.771083  -83.8789667  124.116  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  44.771083  -83.8789667  124.116  9/17/2011 20:10  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarp	
Florida, Pulley Rigida, nurside   Flor	Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9 Florida, Pulley Ridge, outside HAPC; southern escarpment, west Flor	
### ### ### ### ### ### ### ### ### ##	HAPC; southern escarpment, west end 24.77008167 -83.87905167 129.021 9/17/2011 20:04 17-IX-11-2 bass; rough tonge bass; tattler hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble 80-90 %; pavement; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); HB hard bottom; rubble; Slopemoderate (<350); H	l
Cacher 2 - 9   ord   Carbon 2 - 7   ord   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   Carbon 2 - 7   ord   ord   ord   ord   ord   ord   ord   ord   ord   ord   ord   ord	Kraken 2 - 9   end   24.77008167   -83.87905167   129.021   9/17/2011 20:04   17-IX-11-2   moderate (<350);   HB   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HAPC; southern escarpment, west   HB   HB   HAPC; southern escarpment, west   HB   HB   HB   HB   HB   HB   HB   H	l
Norlish, Pulley Riege, custide   1,47   1,50   1,	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end Florida, Pulley Ridge, outside HAPC; southern escarpment, west end Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment	l
### 1.00   ### 1.00	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 (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); HB slowed down to .3 kts. 1/2 of the way to the middle hard bottom; rubble; Slope-moderate (<350); H	
Carlots, Pulley Ridge, outside   24.77083   83.87889667   127.099   9/17/2011 2010   17-6-112   totter   carloters   carlote	Kraken 2 - 9 end 24.77033 -83.87889667 127.059 9/17/2011 20:06 17-IX-11-2 tattler; pavement; Slope-moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77085 -83.878955 125.751 9/17/2011 20:09 17-IX-11-2 tottler; slowed down to .3 kts. 1/2 of the way to the middle ridge; moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77088167 -83.87896833 125.144 9/17/2011 20:10 17-IX-11-2 WEBSITE video; Rhodymenia; hard bottom; rubble; Slope-moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.7710833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 outcrop; line or cable; big eye - went under 30 cm rock outcrop; end 24.7710833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 outcrop; large hard bottom; rock pavement; low relief outcrops; Slope-moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.7710833 -83.878965 122.341 9/17/2011 20:15 17-IX-11-2 outcrop; large hard bottom; rock pavement; low relief outcrops; Slope-moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 outcrop; large hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Outcrop; large hard bottom; rubble; Slope-flat; HB  Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
Fornids, Pulley Ridge, outside   Name   124,770785   83,878958   125,753   9/17/2011 2.000   71-18-112   124,770816   12	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;  bottle brush; Scamp - file Dive9 6.mov overlay off HAPC; southern escarpment, west end  24.77088167  -83.87896833  125.144  9/17/2011 20:10  17-IX-11-2  WEBSITE video; Rhodymenia;  bank butterfly; Stichopathes; wrasse; Human Debris - line or cable; big eye - went under 30 cm rock outcrop;  Boundary Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77100833  -83.87894667  124.116  9/17/2011 20:15  17-IX-11-2  Barren and flat; Human Debris - jar; bottle brush Antipathidae; Vertigellus Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77122667  -83.878965  122.341  9/17/2011 20:17  17-IX-11-2  Chlorophyta;  Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
HAPCS couthern exampment, west   24,770785   83,878955   125,751   9/17/2011 2010   77-8-11-2   10/17/2011 2010   17-8-11-2	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; moderate (<350); HB florida, Pulley Ridge, outside HAPC; southern escarpment, west end 2-9 end 24.77088167 -83.87896833 125.144 9/17/2011 20:10 17-IX-11-2 website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off moderate (<350); HB website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website brush; Scamp - file Dive9 6.mov overlay off website store in decision overlay off website brush; Scamp - file Dive9 6.mov overlay off website store in decision overlay off website store in decision overlay off website brush; Scamp - file Dive9 6.mov overlay off website; Slope-moderate (<350); HB website brush; Scamp - file Dive9 6.mov overlay off website; Slope-moderate (<350); HB website brush; Scamp - file Dive9 6.mov overlay off website; Slope-moderate (<350); HB website brush; Scamp - file Dive9 6.mov overlay off website; Slope-moderate (<350); HB website brush; Slope-file file outcomes overlay off website brush and bottom; rubble; Slope-moderate (<350); HB website brush and bottom; rubble; Slope-file file outcomes overlay off website brush and bottom; rubble; Slope-file file outcomes overlay off website brush and bottom; rubble; Slope-file file outcomes overlay off website brush and bottom; rubble; Slope-file file outcomes overlay off website brush and bottom; rubb	l
Kraken 2 - 9   end   24.770785   8.3.8789563   125.751   9/17/2011 2010   7-0x11-2   17-0x11-2   17-	Kraken 2 - 9 end 24.770785 -83.878955 125.751 9/17/2011 20:09 17-IX-11-2 ridge; moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77088167 -83.87896833 125.144 9/17/2011 20:10 17-IX-11-2 WEBSITE video; Rhodymenia; bank butterfly; Stichopathes; wrasse; Human Debris - line or cable; big eye - went under 30 cm rock outcrop; (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77100833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 outcrop; (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus (spelling) - Chlorophyta; hard bottom; rock pavement; low relief outcrops; Slope- moderate (<350); HB  ### April Divide Brush, Scamp - file Dive9 6.mov overlay off bard bottom 100%; rubble; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom 100%; rubble; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom 100%; rubble; Slope- moderate (<350); HB  ### Brush barren and flat; Human Debris - jar; bottle brush Antipathidae; Vertigellus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus (spelling) - Chlorophyta; hard bottom; rubble; Slope- flat; HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom 100%; rubble; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom; rock pavement; low relief outcrops; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom; rock pavement; low relief outcrops; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bard bottom; rock pavement; low relief outcrops; Slope- moderate (<350); HB  ### Brush bottle brush; Scamp - file Dive9 6.mov overlay off bottle brush; Scamp - file Dive9 6.mov overlay off bottle brush; S	
Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77088167  -83.87896833  125.144  9/17/2011 20:10  17-IX-11-2  WEBSITE video; Rhodymenia;  bottle brush; Scamp - file Dive9 6.mov overlay off moderate (<350);  HB  Bank butterfly; Stichopathes; wrasse; Human Debris - line or cable; big eye - went under 30 cm rock outcrop;  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77100833  -83.87894667  124.116  9/17/2011 20:15  17-IX-11-2  barren and flat; Human Debris - jar; bottle brush Antipathidae; Vertigelus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus 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  Chlorophyta; Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
MAPC, Southern excarpment, west   A27788157   83.87896833   125.144   9/17/2011 20.10   7/4/2011 20.10   7	HAPC; southern escarpment, west end 2 - 9 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 moderate (<350); HB hard bottom 100%; rubble; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-moderate (<350); HB hard bottom; rock pavement; low relief outcrop; Slope-mo	l
Kraken 2 - 9   end	Kraken 2 - 9 end 24.77088167 -83.87896833 125.144 9/17/2011 20:10 17-IX-11-2 WEBSITE video; Rhodymenia; moderate (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77100833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 outcrop; (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside	
Florida, Pulley Ridge, outside   Hab   Pulley Ridge, outside   H	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 relief outcrops; Slope- moderate (<350);  HB  bank butterfly; Stichopathes; wrasse; Human Debris - line or cable; big eye - went under 30 cm rock relief outcrops; Slope- moderate (<350);  HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77122667  -83.878965  122.341  9/17/2011 20:17  17-IX-11-2  Chlorophyta;  Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
HAPC; southern exarpment, west end = 24.77100833	HAPC; southern escarpment, west end 2-4.77100833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 line or cable; big eye - went under 30 cm rock (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 2-9 end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta;  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 2-9 end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta;  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 2-9 end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta;  Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Vertigellus; bottle brush Antipathidae; orange	l
HAPC, southern excarpment, west end   24.77100833   -83.87894667   124.116   9/17/2011 2015   17-18-11-2   27-18-11-2	HAPC; southern escarpment, west end 2.4.77100833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 line or cable; big eye - went under 30 cm rock outcrop; Capture (<350); HB barren and flat; Human Debris - jar; bottle brush Antipathidae; Vertigellus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus (spelling) - Chlorophyta; hard bottom; rubble; Slope- flat; HB Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	
Fordia, Pulley Ridge, outside   HAPC; southern exarpment, west end   24.771555   83.87888667   122.341   9/17/2011 20:20   17-W-11-2   1	Kraken 2 - 9 end 24.77100833 -83.87894667 124.116 9/17/2011 20:15 17-IX-11-2 outcrop; (<350); HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta; Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside	l
Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   24.77122667   -83.8788863   122.341   9/17/2011 20:17   17-W-11-2   2   2   2   2   2   2   2   2   2	Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside  Florida, Pulley Ridge, outside  HAPC; southern escarpment, west Plorida, Pulley Ridge, outside  Antipathidae; Vertigellus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus Chlorophyta; Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Plorida, Pulley Ridge, outside   H	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77122667  -83.878965  122.341  9/17/2011 20:17  17-IX-11-2  Antipathidae; Vertigelus (spelling) - Chlorophyta; rough tongue bass; aussie Antipathidae; Vertigellus Chlorophyta; hard bottom; rubble; Slope- flat; HB  Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	
MAPC; southern escarpment, west end   24.77122667   -83.878965   122.341   9/17/2011 20:17   17-W-11-2   17-W-11	HAPC; southern escarpment, west end 2-9 Plotter in the scarpment, west Florida, Pulley Ridge, outside Plotter in the scarpment, west end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 rough tongue bass; aussie Antipathidae; Vertigellus Chlorophyta; hard bottom; rubble; Slope- flat; HB Agglutinating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange	l
Kraken 2 - 9 end 24.77122667 -83.878965 122.341 9/17/2011 20:21 17-W-11-2 Chlorophyta; hard bottom; rubble; Slope-flat; H8	Kraken 2 - 9 end 24.77122667 -83.878965 122.341 9/17/2011 20:17 17-IX-11-2 Chlorophyta; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside Florida, Pulley Ridge, outside Against Ag	l
Agglutnating forams; Crustose Coralline Algae; vertegellus; bottle brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; hard bottom; rubble; Slope-flat; but brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; hard bottom; rubble; Slope-flat; but brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; orange enclusing Demospongiae; Asteroidea; cup coral; brush Antipathidae; brush An	Agglutinating forams; Crustose Coralline Algae; Florida, Pulley Ridge, outside vertegellus; bottle brush Antipathidae; orange	l
Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pul	Florida, Pulley Ridge, outside vertegellus; bottle brush Antipathidae; orange	
Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pulley Ridge, outside   HAPC; Florida, Pul	Florida, Pulley Ridge, outside vertegellus; bottle brush Antipathidae; orange	l
HAPC; southern escarpment, west end 24.7715967 -83.87888833 122.435 9/17/2011 20:20 17-IX-11-2 encrusting Demospongiae; Asteroidea; cup coral; Demospongiae; Asteroidea; cup coral; Demospongiae; Asteroidea; cup coral; Demospongiae; Asteroidea; Cup coral; Demospongiae; As		l
Kraken 2 - 9   end   24.77159667   -83.87888833   122.435   9/17/2011 20:20   17-IX-11-2   Demospongiae;   hard bottom; rubble; Slope- flat;   MB   Coral-Cup coral-	THAPC; Southern escarpment, west	l
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; releif HB  Florida, Pulley Ridge, outside HAPC; Southern escarpment, west end 24.77181333 83.87889833 121.501 9/17/2011 20:25 17-IX-11-2 5000000000000000000000000000000000000		Coral- Cup coral
HAPC; southern escarpment, west end 24.771655 -83.87888667 121.874 9/17/2011 20:22 17-IX-11-2 biolat; EEL - WEBSITE file Diveog 8.mov; tattler; leif Picelif, wrasse bass; hard bottom; rubble; Slope-flat; low releif HB    Canal Diversified Diveographies of the midridge, dense small biolat; EEL - WEBSITE file Diveog 8.mov; tattler; leif D		
Kraken 2 - 9   end   24.771655   -83.87888667   121.874   9/17/2011 20:22   17-IX-11-2   biota; EEL - WEBSITE file DiveO9 8.mov; tattler;   releif   HB   HB   HAPC; southern escarpment, west   HAPC; southern		l
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  Demospongiae; Antipathidae; Human Debris - mountain dew fresh can; anthiid; wrasse; Human Debris - line; serpulid; comatulid crinoid; tatler; rough tongue bass; Asteroidea;  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77197833  -83.87891  120.706  9/17/2011 20:26  17-IX-11-2  80 m from base of wall; open sediment; fish hard bottom; rubble; Slope-flat; hard bottom; page-flat; hard bottom; page-flat; hard bottom; page-f		l
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  Demospongiae; Antipathidae; Human Debris - mountain dew fresh can; anthild; wrasse; Human Debris - line; serpulid; comatulid crinoid; tatler; rough tongue bass; Asteroidea; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77197833 -83.87891 120.706 9/17/2011 20:26 17-IX-11-2 rough tongue bass; Asteroidea; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.77240667 -83.87897167 118.604 9/17/2011 20:31 17-IX-11-2 RECHECK Species; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.772405 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 RECHECK Species; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.772405 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end of the properties of the prope		
Kraken 2 - 9 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  Demospongiae; Antipathidae; Human Debris - mountain dew fresh can; antihid; wrasse; Human Debris - line; serpulid; comatulid crinoid; tatler; rough tongue bass; Asteroidea; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside  HAPC; southern escarpment, west end  Florida, Pulley Ridge, outside  HAPC; southern escarpment, west end  24.772465 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 80% sediment over rock pavement  Florida, Pulley Ridge, outside  HAPC; southern escarpment, west end  24.772465 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 Photo XS (quantitative)- End; end on 2292.jpg P		l
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west end Elorida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside Florida, Pulley Ri		l
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77197833  -83.87891  120.706  9/17/2011 20:26  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, we		
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77197833  -83.87891  120.706  9/17/2011 20:26  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, we	Demospongiae: Antipathidae: Human Debris -	l
HAPC; southern escarpment, west end 2.4.77197833 -83.87891 120.706 9/17/2011 20:26 17-IX-11-2 Debris - line; serpulid; comatulid crinoid; tatler; rough tongue bass; Asteroidea; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 2.4.77240667 -83.87897167 118.604 9/17/2011 20:31 17-IX-11-2 RECHECK Species; hard bottom; rubble; Slope-flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.772465 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 80% sediment over rock pavement; Slope-flat; 80% sediment over rock pavement HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.772465 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; HB  Kraken 2 - 9 end 24.772495 -83.87896667 118.604 9/17/2011 20:32 17-IX-11-2 Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB  Florida, Pulley Ridge, outside HB		
Kraken 2 - 9 end 24.77197833 -83.87891 120.706 9/17/2011 20:26 17-IX-11-2 rough tongue bass; Asteroidea; hard bottom; rubble; Slope- flat; HB  Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside		
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.77240667  -83.87897167  118.604  9/17/2011 20:31  17-IX-11-2  RECHECK Species;  hard bottom; rubble; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; 80% sediment over rock pavement hard bottom; pavement; Slope- flat; 80% sediment over rock pavement hard bottom; pavement; Slope- flat; 80% sediment over rock pavement hard bottom; rubble; Slope- flat; 80% sediment over rock pavement hard bottom; rubble; Slope- flat; 80% sediment over rock pavement hard bottom; rubble; Slope- flat; 9/17/2011 20:31  17-IX-11-2  Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; Photo XS (quantitative)- End; Photo XS (quantitative)- End; Photo XS (quantitative)- End;		
HAPC; southern escarpment, west Kraken 2 - 9 end 24.77240667 -83.87897167 118.604 9/17/2011 20:31 17-IX-11-2 RECHECK Species; hard bottom; rubble; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; pavement; Slope- flat; hard bottom; rubble; Slope- flat; hard bottom; pavement, west		
Kraken 2 - 9   end   24.77240667   -83.87897167   118.604   9/17/2011 20:31   17-IX-11-2   RECHECK Species;   hard bottom; rubble; Slope- flat;   HB   HAPC; southern escarpment, west end   24.772465   -83.87898   118.651   9/17/2011 20:31   17-IX-11-2   HB   Hard bottom; pavement; Slope- flat;   HB   Hard bottom; pavement; Slope- flat;   80% sediment over rock pavement   HB   HAPC; southern escarpment, west		
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end  24.772465  -83.87898  118.651  9/17/2011 20:31  17-IX-11-2  Florida, Pulley Ridge, outside HAPC; southern escarpment, west		
HAPC; southern escarpment, west end 24.772465 -83.87898 118.651 9/17/2011 20:31 17-IX-11-2 80% sediment over rock pavement HB Florida, Pulley Ridge, outside HAPC; southern escarpment, west end 24.772495 -83.8789667 118.604 9/17/2011 20:32 17-IX-11-2 Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitative)- End; end on 2992.jpg Ph		
Kraken 2 - 9         end         24.772465         -83.87898         118.651         9/17/2011 20:31         17-IX-11-2         80% sediment over rock pavement         HB           Florida, Pulley Ridge, outside HAPC; southern escarpment, west Kraken 2 - 9         end         24.772495         -83.8789667         118.604         9/17/2011 20:32         17-IX-11-2         Photo XS (quantitative)- End; end on 2292.jpg         Photo XS (quantitative)- End;         HB           Florida, Pulley Ridge, outside         moving ROV to next transect; Human Debris - line;         moving ROV to next transect; Human Debris - line;         HB		
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 Photo XS (quantitative)- End; HB Florida, Pulley Ridge, outside  ### Photo XS (quantitative) - End; end on 2292.jpg ### Photo XS (quantitativ		
HAPC; southern escarpment, west end 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 Photo XS (quantitative)- End; hard bottom; rubble; Slope- flat; Photo XS (quantitative)- End; end on 2292.jpg Photo XS (quantitativ		
Kraken 2 - 9         end         24.772495         -83.87896667         118.604         9/17/2011 20:32         17-IX-11-2         Photo XS (quantitative)- End; end on 2292.jpg         Photo XS (quantitative)- End;         HB           Florida, Pulley Ridge, outside         moving ROV to next transect; Human Debris - line;         moving ROV to next transect; Human Debris - line;		
Florida, Pulley Ridge, outside moving ROV to next transect; Human Debris - line;		
		İ
MAPC; soutnern escarpment, west many bottle brush Antipathidae; comatulid crinoid;		
Various 2 0   lead   24.777505   02.070202021   440.020   0/47/2044 20/24   47.1944 2		
Kraken 2 - 9 end 24.772585 -83.87920833 118.838 9/17/2011 20:34   17-IX-11-2   Antipathidae;   hard bottom; rubble; Slope- flat;   HB	ктакеп 2 - 9   enu   24.7/2585   -85.8/920835   118.838   9/1//2011 20:34   1/-IX-11-2   Antipatnidae;   hard bottom; rubble; Slope-flat;   HB	

	Islanida Dullau Bidan autai 1			1						ı	
	Florida, Pulley Ridge, outside							Scamp, hard bottom, navoment			
Kraken 2 - 9	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;	НВ		
Kiakeii 2 - 3	Florida, Pulley Ridge, outside	24.77208107	-63.87633	110.043	3/17/2011 20:37	17-17-11-2		rubbie, Nock,	ПВ		
	HAPC; southern escarpment, west										
Kraken 2 - 9	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;	НВ		
	Florida, Pulley Ridge, outside	·						, , , ,			
	HAPC; southern escarpment, west							hard bottom; Rock; Slope- moderate			
Kraken 2 - 9	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;	(<35o); pavement, 20-30 cm ledges;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						sparse bottle brush Antipatharia; amberjack; 90%	hard bottom; Rock; pavement; Slope-			
Kraken 2 - 9	end	24.77317667	-83.87907333	114.634	9/17/2011 20:46	17-IX-11-2	rock;	moderate (<35o);	HB		
	Florida, Pulley Ridge, outside						110 m. base of middle ridge, greater amberial				
Kraken 2 - 9	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;	НВ		
Munch Z - J	Florida, Pulley Ridge, outside	24.77304007	05.07090333	110.324	3/11/2011 20.43	1/ I// 11 <sup>-</sup> 4	bottle brush black coral; Stichopathes; fishing line;	a sediment veneer,			
	HAPC; southern escarpment, west						goby; 120 m; start photo transect along base of	hard bottom; pavement; Rock- wall;			
Kraken 2 - 9	end	24.773805	-83.87900833	118.558	9/17/2011 20:53	17-IX-11-2	middle ridge;	Slope- moderate (<350);	НВ		
	Florida, Pulley Ridge, outside							base of wall hard bottom; Rock;			
	HAPC; southern escarpment, west						amberjack; 120 m; some coralline algae, small	Slope- moderate (<350); mostly			
Kraken 2 - 9	end	24.7738	-83.87931667	119.492	9/17/2011 20:57	17-IX-11-2	encrusting sponges red and organge;	sediment; flat, rubble;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						61 6	hard bottom; pavement; Slope- flat;			
Kraken 2 - 9	end	24.77384333	-83.87952	121.033	9/17/2011 21:01	17-IX-11-2	reef butterfly;	base of wall; low ledges 10-20 cm;	НВ		
	Florida, Pulley Ridge, outside							soft hottom: 116 m; sadmant:			
Kraken 2 - 9	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; sedment; pavement; flat;	SB		
akcii 2	Florida, Pulley Ridge, outside	27.7,7422	03.07930	117.07	5,17,201121.04	1. IV 11 Z	Since printing,	parament, nat,	55		
	HAPC; southern escarpment, west							hard bottom; pavement; Slope-			
Kraken 2 - 9	end	24.774355	-83.87958833	115.335	9/17/2011 21:06	17-IX-11-2		moderate (<35o); 115 m	НВ		
							hydoids; purple reef fish; squirrel fish; crinoid;	hard bottom; Rock- wall; Slope-			
							cardinal fish; encrusting orange sponge;	steep (>35o); base of wall; rock wall;			
	Florida, Pulley Ridge, outside						roughtongue bass; 0.6 kn current from E; 2 goliath	wall of consolidated rubble,			
K1 2 2	HAPC; southern escarpment, west	24 77 44 4000	02 070744 ==	110 100	0/47/2011 21 22	47 17 44 2	grouper or warsaw; spots on head; 80 cm; lionfish;	carbonate; few small ledges; 2-3 m	LIB		
Kraken 2 - 9	end	24.77444333	-83.87974167	116.129	9/17/2011 21:06	17-IX-11-2	crinoids;	relief; 115 m	HB		
	Florida, Pulley Ridge, outside						graysby; amberjack; reef buitterfly hog; bank				
	HAPC; southern escarpment, west						butterfly; spanish hog; Photo XS (quantitative)-	hard bottom; Rock- wall; Slope-			
Kraken 2 - 9	end	24.774385	-83.87974333	115.054	9/17/2011 21:13	17-IX-11-2	start; about 1/2 way along wall on transect	steep (>350); 1-2 m ledges;	НВ		
							, , ,				
	Florida, Pulley Ridge, outside						orange fish; anthiids; snapper?; longtail bass?;				
	HAPC; southern escarpment, west						crinoids; longline; amberjack;? 2; almaco jack;	hard bottom; Rock; Rock- wall; Slope-			
Kraken 2 - 9	end	24.77457333	-83.88	117.67	9/17/2011 21:19	17-IX-11-2	lionfish 3; 117 m; cont xs along mid ridge;	moderate (<35o); 1-2 m ledges;	НВ		
	Florida, Pulley Ridge, outside						1 m warsaw?; schools pink fish>?; scamp several; 3	hand hattan Dade wall Da 1 Cl			
Kraken 2 - 9	HAPC; southern escarpment, west end	24.77483167	-83.880295	112.392	9/17/2011 21:25	17 <sub>-1</sub> y <sub>-</sub> 11 <sub>-</sub> 2	big grey grouper 60-90 cm; creole fish; bank	hard bottom; Rock- wall; Rock; Slope-	НВ		
Makeli Z - 9	Florida, Pulley Ridge, outside	24.//40310/	-03.000295	112.392	3/11/2011 21:25	1/-1/-11-2	butterfly; rock hind; greater amberjack; blue angel; creole fish; blue angel; crinoids; Photo XS	steep (>35o); hard bottom; Rock- wall; Slope-	110		
	HAPC; southern escarpment, west						(quantitative)- End; end transect of mid wall, photo	steep (>350); cont transect along			
Kraken 2 - 9	end	24.774855	-83.880325	111.131	9/17/2011 21:33	17-IX-11-2	2384;	mid wall; 110 m	нв		
					. , . = ====	_	bank buitterfly; creole; squirrel fish; encrusting	, -			
							small sponges; no large macro sponges or fauna;				
							bottle brush black coral; Stichopathes; crinoid;				
	Florida, Pulley Ridge, outside						greater amberjack school; longline; Photo XS				
	HAPC; southern escarpment, west						(quantitative)- start; start photo transect from mid	hard bottom; pavement; Slope-			
Kraken 2 - 9	end	24.77498667	-83.880515	110.57	9/17/2011 21:36	17-IX-11-2	ridge to	moderate (<35o); rock pavement	НВ		

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;	НВ		
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 organge; crinoid; crustose coralline algae; Stichopathes; seastar;	hard bottom; pavement; Slope- moderate (<35o); 10 cm relief; 1/2 way between mid and shallow ridges;	НВ		
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;	НВ	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);	нв		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77651833	-83.88000167	106.413	9/17/2011 22:11		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 elllisella in downward camera;	hard bottom; Rock- wall; pavement; < 5 cm rubble; Slope- moderate (<350);	НВ		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77693	-83.87986167	104.171	9/17/2011 22:14		Photo XS (quantitative)- start; heading up the wall according to the multibeam; lionfish; tatler; atheads; comatulid crinoid; Antipathidae; Gorgonacea; file DIVEO9 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	НВ		
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; Elliisella; Stichopathes; Antipathidae; tracking out at base of wall; oranges Demospongiae;	hard bottom; Rock- wall; pavement; Slope- moderate (<350);	НВ		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77726	-83.87966167	102.022	9/17/2011 22:20		tracking back; heading up the wall; Gorgonacea; black hydroids; comatulid crinoid; Reef Butterflyfish; fish head sucled into a hole; Photo XS (quantitative)- pause;	hard bottom; Rock- wall; pavement; Slope- moderate (<350);	НВ		
Kraken 2 - 9	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.77728833	-83.879905	102.816	9/17/2011 22:22		small Gorgonacea ~6 species, white planar, paramuricid; Stichopathes; alicina (?); amberjack x 25?;	hard bottom; Rock- wall; pavement; Slope- moderate (<350);	НВ		
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);	НВ		
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;	НВ		
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 releif	НВ		
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	нв		

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Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92693667	-83.782135	86.748	9/18/2011 12:36 18-IX-11-:	moving to waypoint to start transect; 20 yeards east of initial characterization site	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92697	-83.78196833	86.654	9/18/2011 12:37 18-IX-11-	Photo XS (quantitative)- start; No coral plates; Corallinales or Peyssonneliaceae; encrusted rubble; 10%Anadyomene menziesii; many sponges; barrel sponge; Yellowtail Reef Fish; Agelus, Halimenia;	hard bottom; rubble; Slope- flat;	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92716833	-83.78226833	84.832	9/18/2011 12:40 18-IX-11-	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;	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92736667	-83.78252333	83.711	9/18/2011 12:43 18-IX-11-	fauna same; 15 cm yellow barrel sponge; few fish; 20-40 blade Rhodophyta; Xestospongia muta	same	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92746333	-83.78261	83.431	9/18/2011 12:45 18-IX-11-	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	нв		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92765	-83.78292667	83.758	9/18/2011 12:49 18-IX-11-:	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	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92781833	-83.78310833	83.805	9/18/2011 12:52 18-IX-11-:	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	нв	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-	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	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92808167	-83.78353	82.357	9/18/2011 13:09 18-IX-11-	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	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92826	-83.78367833	84.132	9/18/2011 13:18 18-IX-11-	hard drive partition,		НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92826333	-83.783705	84.225	9/18/2011 13:32 18-IX-11-	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;	НВ		
Kraken 2 - 10	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.92839167	-83.783955	84.879	9/18/2011 13:35 18-IX-11-	dominated by CCA and Corallinales or Peyssonneliaceae; <5% Anadyomene menziesii and red leafy alga; 10-20 sponge species common; most yellow sponges appear simlar to sample 1, common; crinoid close up, 25 cm arms; different leafy red, brown color	80% rubble and cobble; hard bottom; Slope- flat;	нв		

	I					In	T		1	1
	Florida, Pulley Ridge, outside	24.02054	02 704245	02.424	0/40/2044 42 20 40 19/44 4	Bank butterfly; Yellowtail Reef Fish; yellow and	500/ 111 500/ 1: .			
Kraken 2 - 10	HAPC; northwest ridge	24.92854	-83.784215	83.431	9/18/2011 13:38 18-IX-11-1	orange tube sponges;	50% cobble, 50% sediment	НВ		
						Pause to look at 10 cm tall orange, cylindical				
	Florida, Pulley Ridge, outside					sponge, fuzzy surface with potential hydroids, 3 cm				
Kraken 2 - 10	HAPC; northwest ridge	24.928625	-83.784275	84.272	9/18/2011 13:39 18-IX-11-1	diameter		НВ		
						20 cm vase sponge, either Ircinia campana, or				
						Verongula? gigantea; bottle crush brush antipathes;				
	Florida, Pulley Ridge, outside					Geodia encrusting, red; Yellowtail Reef Fish; large	80% rock rubble and cobbles, 20%			
Kraken 2 - 10	HAPC; northwest ridge	24.92871	-83.78416167	84.179	9/18/2011 13:41 18-IX-11-1	crinoid (common);	sediment	HB		
						CCA dominant; less Peyssonneliaceae; less				
						Anadyomene menziesii than earlier; more "barren";	hard bottom; 90-50% rock rubble			
	Florida, Pulley Ridge, outside					few gorgonians, Geodia, Verongula, 1 Yellowtail	and cobble <10cm; some sediment;			
Kraken 2 - 10	HAPC; northwest ridge	24.92879167	-83.78455333	83.945	9/18/2011 13:44 18-IX-11-1	Reef Fish; smooth sonar; Halimeda	no ledges Slope- flat;	НВ		
						Numerous sponge, crinoids, gorgonian 30 cm (like				
						sample 2); yellow vase sponge; sharp nose puffer;				
	Florida, Pulley Ridge, outside					Yellowtail Reef Fislh, several; Wrasse base; Agelas;	hard bottom; 70-80% rock rubble			
Kraken 2 - 10	HAPC; northwest ridge	24.92905	-83.78479667	84.599	9/18/2011 13:48 18-IX-11-1	pause to look at orange sponge	and cobble <15cm;	НВ		003
	-					Continue transect with photo 2603; deep purple			<b>†</b>	
						Corallinales or Peyssonneliaceae not present; CCA;				
						some Anadyomene menziesii; some Rhodophyta; a				
	Florida, Pulley Ridge, outside					few sponges; Halimeda; vase yellow sponges	hard bottom; 60% rubble; 40%			
Kraken 2 - 10	HAPC; northwest ridge	24.92913833	-83.78492167	84.599	9/18/2011 13:57 18-IX-11-1	common	sediment	НВ		
Maken 2 10	Florida, Pulley Ridge, outside	2 1132313033	03.70132107	01.000	3,10,2011 13:37 10 :: 11 1		seament			
Kraken 2 - 10	HAPC; northwest ridge	24.92926833	-83.78509	84.786	9/18/2011 14:00 18-IX-11-1		stop to sample	нв	004	
					-,,		and the sample			
						Resume transect with photo 2610; bank butterfly;				
						encrusting CCA; 10-15% Anadyomene menziesii;				
	Florida, Pulley Ridge, outside					Astrophorid sponge, and "sample 1"; Tattler bass;	hard bottom; Slope- flat; 80% rock			
Kraken 2 - 10	HAPC; northwest ridge	24.92927167	-83.78508667	84.646	9/18/2011 14:08 18-IX-11-1	occasional leafyRhodophyta;	rubble and cobble < 10cm;	НВ		
Kruken 2 10	Florida, Pulley Ridge, outside	24.52527107	03.70300007	04.040	3/10/2011 14.00 10 1/11 1	occasionaricary modophyta,	rubble and cobble vicent,	110		
Kraken 2 - 10	HAPC; northwest ridge	24.92946333	-83.78542167	83.898	9/18/2011 14:11 18-IX-11-1		partition hard drive; swap tapes	НВ		
Klakeli 2 - 10	TIAR C, HOI CHWEST Huge	24.32340333	-83.78342107	65.656	3/18/2011 14.11 18-18-11-1		partition hard drive, swap tapes	ПБ		
						lowe diversity than beginning of ridge; orange finger				
						sponge, Geodia; leafy blade read alga; sparse				
	Slavida Dullau Bidaa autaida						Clara flat band battana 000/			
	Florida, Pulley Ridge, outside					Halimeda; crinoids; more of sample 1; Green band	Slope- flat; hard bottom; 90%			
Kraken 2 - 10	HAPC; northwest ridge	24.92955333	-83.785525	83.571	9/18/2011 14:13 18-IX-11-1	wrasse; Another like sample 3;	rubble;	НВ		
						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				
1	Florida, Pulley Ridge, outside					of a valley; 20-30 cm sperical Ircinia strobilina;	Slope- flat; hard bottom; 80%			
Kraken 2 - 10	HAPC; northwest ridge	24.929715	-83.78569167	83.805	9/18/2011 14:16 18-IX-11-1	Halimeda; 10%	rubble;	НВ		
		[				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				
	Florida, Pulley Ridge, outside					butterfly; Yellowtail Reef Fish; No signs of fish	Slope- flat; hard bottom; 80-90%			
Kraken 2 - 10	HAPC; northwest ridge	24.93006167	-83.78622833	83.758	9/18/2011 14:20 18-IX-11-1	burrows; Yel	rock rubble and cobble	НВ		
						10% Anadyomene menziesii; 20% Corallinales or				
						Peyssonneliaceae; 40% CCA; occasional red leafy				
						Rhodophyta; large 20 cm crinoids; Plexaura; 10-20				
	Florida, Pulley Ridge, outside	[				cm gorgonians; bushy gorgo previously collected;	Slope- flat; hard bottom; 90% rubble			
Kraken 2 - 10	HAPC; northwest ridge	24.93041	-83.78671833	84.459	9/18/2011 14:24 18-IX-11-1	weight is 70 m; several Yellowtail Reef Fish;	<10cm;	НВ		
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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;	НВ		
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; creaping orange tubular sponge, 20 cm long	Slope- flat; hard bottom; 90% rubble <10CM	нв	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	нв		
	Florida, Pulley Ridge, outside						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,	Slope- flat; hard bottom; 90%			
Kraken 2 - 10	HAPC; northwest ridge	24.93117	-83.78773667	82.824	9/18/2011 15:02	18-IX-11-1	slightl	rubble;	НВ		
	Florida, Pulley Ridge, outside HAPC; northwest ridge	24.93159333	-83.78827	83.431	9/18/2011 15:05		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 (<350);	нв		
	Florida, Pulley Ridge, outside						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	hard bottom; Slope- flat; 95 %			
Kraken 2 - 10	HAPC; northwest ridge	24.93159	-83.78809667	82.684	9/18/2011 15:08	18-IX-11-1	menziesii;	rubble;	НВ		
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;	НВ		
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;	НВ		
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; leapord toad fish x3; 2 spot; cardnial fish - Apogon pseuomaculatus; yellowf	hard bottom; rubble; Slope- flat;	НВ		
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;	НВ		
Krakan 2, 40	Florida, Pulley Ridge, outside	24.02200022	02 70022557	85.066	0/19/2011 15:27	10 IV 11 1	moving on; eastern slope of the west ridge; Crustose Coralline algae; Anadyomene menziesii;	hard battam, rubble, Clane 41-4	up.		
Kraken 2 - 10  Kraken 2 - 10	HAPC; northwest ridge  Florida, Pulley Ridge, outside  HAPC; northwest ridge	24.93200833 24.93215167	-83.78822667 -83.78841167	85.066 83.805	9/18/2011 15:27 9/18/2011 15:28		hogfish;  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; hard bottom; rubble; Slope- flat;	НВ		

Photo X5 (quantitative) - resume on Photo 206, continue used slope of the west ridge; 15% Analysmene mersiesil; dense 50% Coralilinates or Peysonnellaceae in 10-20 plate forms; numerous should be resulted for the should be resulted for the should be resulted for the should be resulted for the should be resulted for the should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted forms; numerous should be resulted form		[5] 0.11 0.11					1	1	I 1000/ I I I I I I I I I I I I I I I I I I			
Forcida, Pulley Ridge, Audided   24-93195331   43-789844   93-99   9/14/2011   15-31   86-01-1   10-14/14/14/14/14/14/14/14/14/14/14/14/14/1	Krakon 2 10		24 021065	02 70070667	02 024	0/10/2011 15:21	10 IV 11 1	hack on transact line:		ШΒ		
Florida, Pulsy Riggs, outside   94,51796333   83,789846   83,500   5/18/2011   533   18,814   1.0   Decolographic uses engregative use strong-legic uses as engraphic use as engaging use as engraphic use as engraphic use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as engaging use as en	Krakeri 2 - 10	HAPC, HOITHWEST Huge	24.931903	-03.70070007	02.024	3/18/2011 13.31	10-IV-11-1		Slope- liat,	ПВ		
Parida, Pulley Riggs, custate   24,91796331   38,7789648   81,909   9/38/20115331   80,011   Pariday Demographics was adaptive to the wart ridge   4,000   Pariday Riggs, custate   4,000   Pariday												
Accordance   Acc		Elorida Bullov Bidgo outcido										
Foreida, Pulley Ridge, curacide   24.9323817   83.7897833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.7897833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.7897833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.7897833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.7897833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.78978353   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.78978353   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323817   83.78978353   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9323833   83.199   9/18/2011   53   88-21-12   14/4/C continuents ridge   24.9328333   83.299   9/18/2011   53   88-21-12   14/4/			24 02406222	02 700045	02.002	0/40/2044 45:22	10 IV 11 1		hand battana mabble Claus flat	LID		
Process   Public   Process   Public   Process   Public   Process   Public	Kraken 2 - 10	HAPC; northwest ridge	24.93196333	-83.788845	83.992	9/18/2011 15:33	18-IX-11-1	Demospongiae;	nard bottom; rubble; Slope- flat;	нв		
Process   Public   Process   Public   Process   Public   Process   Public												
## APC, northwest ridge  APC, northwest ridg												
Florida, Pulley Ridge, outside   24.93221493   93.79996335   83.057   9/18/2011 15:38   13.04.11								= :				
Finds   Pulley Ridge	Kraken 2 - 10	HAPC; northwest ridge	24.932085	-83.78896833	83.198	9/18/2011 15:34	18-IX-11-1	Peyssonneliaceae; yellow Demospongiae;	moderate (<35o);	НВ		
Finds   Pulley Ridge												
Girdis, Pulley Ridge, outside   24 92214838   -83.7890433   83.077   9/18/201115.35   51.KL-11   51.KL-12												
AAPC, northwest ridge									,			
Princip Si (que teast along to the west ridge; 15% Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical); darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, Analysmene mentical; darker 27%, analysmene mentical; darker 27%, analysmene mentical; darker 27%, Analysmene mentical; darker 27%, analysmene mentical; darker 2		Florida, Pulley Ridge, outside						clip Dive10 9.mov and photos of sample 008; 20%	cover rubble; Slope- moderate			
Florida, Pulley Ridge, outside   24,93223167   83,78911667   83,007   97,187,2011 15,54   18,141-11   15,541   1	Kraken 2 - 10	HAPC; northwest ridge	24.93214833	-83.78906333	83.057	9/18/2011 15:35	18-IX-11-1	Anadyomene menziesii;	(<35o);	НВ	007 008 009	
Florida, Pulley Ridge, outside   24.9323167   23.78911667   83.057   9/18/2011 15.54   18.01.1-1   5.000   5								Photo XS (quantitative)- resume on Photo 2706;				
								continue up the east slope of the west ridge; 15%			]	
								Anadyomene menziesii; dense 50% Corallinales or			]	
MAPC, northwest ridge		Florida, Pulley Ridge, outside							hard bottom; Slope- flat; 100%			
Profida, Pulley Ridge, outside   Profida, Pulley Ridge, outside	Kraken 2 - 10		24.93223167	-83.78911667	83.057	9/18/2011 15:54	18-IX-11-1			НВ		
Suppose   Florida, Pulley Ridge, outside   Race					1				-	1		
Suppose   Florida, Pulley Ridge, outside   Race								briddled bur fish; several gorgonians; Stylaster, fan				
Florida, Pulley Ridge, outside raken 2 - 10   HAPC, northwest ridge   24,93225   -83,78924167   82.17   9/18/2011 15:58   38-18-11.1   Florida, Pulley Ridge, outside raken 2 - 10   HAPC, northwest ridge   24,9327483   -83,789283   80,488   9/18/2011 16:01   38-18-11.1   Florida, Pulley Ridge, outside raken 2 - 10   HAPC, northwest ridge   24,9326333   -83,7892833   80,675   9/18/2011 16:10   38-18-11.1   Indicate the process of the pro												
Florida, Pulley Ridge, outside   A4.9322   -83.78924167   82.17   9/18/2011 15.58   18-14.11   Analysement menziesi; orange fina sponge like   Anard bottom; Slope- finat; 100%   18   Coral-Stylaster   Coral-S												
raken 2 - 10		Florida Bullov Bidgo outsido							hard bottom: Slong flat: 100%			
Florida, Pulley Ridge, outside   APC; northwest ridge   24.93274833   -83.789985   80.488   9/18/2011 f6.01   18-IX-11-1	Vrakon 2 10		24 02222	02 7002/167	92 17	0/10/2011 15:50	10 IV 11 1			⊔р		Coral Stylastor
Florida, Pulley Ridge, outside 1APC; northwest ridge 24.93274833 -83.78965 80.488 9/18/2011 16.01 18-10-11.1 New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Corollinates or Peysonnelizaceae; 10% Anadyomene menziesii; about 100 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Corollinates or Peysonnelizaceae; 10% Anadyomene menziesii; about 100 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Corollinates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Corollinates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Corollinates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Large translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Large translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 104% Large translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect toward the NE along the top of rigge, 4-09% CCA2, 100% Large translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect translates or Peysonnelizaceae; 10% Anadyomene menziesii; about 200 m transect translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translates or Peysonnelizaceae; 10% CA2, 10% Large translat	Kraken 2 - 10	HAPC; Hortilwest Hage	24.93223	-03./092410/	02.17	9/16/2011 15.56	10-IV-11-1		rubble;	пь		Corai- Stylaster
Florida, Pulley Ridge, outside APC; northwest ridge 24.9327833 -83.78992833 80.675 9/18/2011 16:01 18-10-11 branching sponge moderate (<356); HB												
New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of ridge; 40-960°C, 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank putterfly fish;   New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of ridge; 40-960°C, 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank putterfly fish;   New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of ridge; 40-960°C, 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesii; willow the sponge with the sponge of very sponge or sponge or ange creeping, much sponge diversity; sample 10 Grage back bass;   Slope-flat; hard bottom; 90% rubble and corbbit:   New Photo XS (quantitative)- start; start on 2726; about 100 m transect toward the NE along the top of ridge; 40-960°C, 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesii; willow the sponge or sponge or ange creeping, much sponge diversity; sample 10 Grage back bass;   Slope-flat; hard bottom; 100 % rubble <10cm;   HB												
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 % Corallinates or Peysonnelizaces; 10% Anadyomene menziesil; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; ubtterfly fish; 10% Anadyomene menziesil; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; 10% Anadyomene menziesil; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30% Corallinates or Peysonnelizaces; X. Muta more common, yellow tube sponges orange creeping, much sponge diversity, sample 1, Orange back bass; 106pe- flat; hard bottom; 90% rubble and cobble; 10cm; 100% and cobble; 10cm; 100% and cobble; 10cm; 100% and cobble; 10cm; 100% and cobble; 10cm; 100% and cobble; 10cm; 100% and cobble; 10cm;												
Bout 100 m transect toward the NE along the top of ridge; 40-60% CCA; 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; Multa more common, yellow thus pospnego aronge creeping, much sponge diversity; sample 1; Orange back bass; more platellike CCA; abun	Kraken 2 - 10	HAPC; northwest ridge	24.93274833	-83.78985	80.488	9/18/2011 16:01	18-IX-11-1	branching sponge	moderate (<35o);	НВ		
Bout 100 m transect toward the NE along the top of ridge; 40-60% CCA; 20-40 % Corallinales or Peysonneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; 10% Anadyomene menziesi; multiple translucent red blade Rhodophyta; 2 bank butterfly fish; with part of the personneliaceae; Multa more common, yellow thus pospnego aronge creeping, much sponge diversity; sample 1; Orange back bass; more platellike CCA; abun												
Florida, Pulley Ridge, outside   24.93286333   -83.78992833   80.675   9/18/2011 16:16   18-K-11-1												
Peysonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank   Peysonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank   Peysonneliaceae; 10% Anadyomene menziesii; multiple translucent red blade Rhodophyta; 2 bank   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; many long arm crinoids; 20-30%   Peysonneliaceae; 10% Anadyomene menziesii; 40% CCA; 10% leafy Rhodophyta; 20-30%   Peysonneliaceae; 20% Peysonneliaceae; 10% Pey								= :				
Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge  Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge  Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge  Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge  Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge  Florida, Pulley Ridge, outside  Florida, Pulley								= -				
ROV Dive #   Location   Lat-DD   Long-DD   Depth (m)   Date/Time   HB   Care   Florida, Pulley Ridge, outside   HAPC; northwest ridge   24.93336   -83.789961167   121.827   9/18/2011 16:38   18-IX-11-2   I8-IX-11-2   I8-IX-1								Peyssonneliaceae; 10% Anadyomene menziesii;				
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; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; much sponge diversity; sample 1; Orange back bass; sample 1; Orange back back sample 1; Orange back back sample 1; Orange back back sample 1; Orange back back sample 1; Orange back back sample 1; Orange back back sample 1; Orange back back sample 1; Orange back		Florida, Pulley Ridge, outside						multiple translucent red blade Rhodophyta; 2 bank	Slope- flat; hard bottom; 100 %			
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; much sponge or sponge spo	Kraken 2 - 10	HAPC; northwest ridge	24.93286333	-83.78992833	80.675	9/18/2011 16:16	18-IX-11-1	butterfly fish;	rubble <10cm;	НВ		
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; much sponge or sponge spo												
Corallinales or Peyssonneliaceae; X. Muta more common, yellow tube sponges orange creeping, much sponge diversity; sample 1; Orange back bass; Slope- flat; hard bottom; 90% rubble and cobble; HB  Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge 24.932915 -83.78968833 81.236 9/18/2011 16:22 18-IX-11-1 Florida, Pulley Ridge, outside HAPC; northwest ridge 24.93347 -83.7893833 79.741 9/18/2011 16:29 18-IX-11-1 Florida, Pulley Ridge, outside HAPC; northwest ridge 24.93345 -83.78936 80.582 9/18/2011 16:39 18-IX-11-1 Florida, Pulley Ridge, outside HAPC; northwest ridge 44.93335 -83.78936 80.582 9/18/2011 16:39 18-IX-11-1 Florida, Pulley Ridge, outside HAPC; northwest ridge 45.7916 -83.78936 80.582 9/18/2011 16:39 18-IX-11-1 Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west HAPC; southern escarpment, west								10% Anadyomene menziesii; 40% CCA; 10% leafy				
Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge 24.932915 -83.78968833 81.236 9/18/2011 16:22 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside raken 2 - 10 HAPC; northwest ridge 24.93347 -83.78938833 79.741 9/18/2011 16:29 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside raken 2 - 10 HAPC; northwest ridge 24.93347 -83.78938833 79.741 9/18/2011 16:29 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside standard point ou								Rhodophyta; many long arm crinoids; 20-30%				
Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge 24.932915 -83.78968833 81.236 9/18/2011 16:22 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside raken 2 - 10 HAPC; northwest ridge 24.93347 -83.78938833 79.741 9/18/2011 16:29 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside raken 2 - 10 HAPC; northwest ridge 24.93347 -83.78938833 79.741 9/18/2011 16:29 18-IX-11-1 Photo XS (quantitative)- End; end diver; final photo outside standard point ou								Corallinales or Peyssonneliaceae; X. Muta more			]	
Florida, Pulley Ridge, outside HAPC; northwest ridge 24.932915 -83.78968833 81.236 9/18/2011 16:22 18-IX-11-1 more platelike CCA; abun Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge 14-93347 -83.7893833 79.741 9/18/2011 16:29 18-IX-11-1 2779; orange back bass; Florida, Pulley Ridge, outside raken 2 - 10 HAPC; northwest ridge 24.93347 -83.7893833 79.741 9/18/2011 16:29 18-IX-11-1 2779; orange back bass; 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 Off bottom  ROV Dive # Location Lat-DD Long-DD Depth (m) Date/Time HBOI Site # Habitat and Biota Notes Bottom Description Type Sample Notes Coral Notes On bottom; test shots; 100 %hard bottom; 80% rubble < 15 cm some plate like; 20% fine sediment; Dictyota, Encrusting sponges; Crustose Coralline HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Reef Butterflyfish; Photo XS (quantitative)- start; Reef Butterflyfish; Photo XS (quantitative)- start;											]	
raken 2 - 10 HAPC; northwest ridge 24.932915 -83.78968833 81.236 9/18/2011 16:22 18-IX-11-1 more platelike CCA; abun and cobble; HB Photo XS (quantitative)- End; end dive; final photo bottom; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm; 95% rubble <10cm;		Florida, Pulley Ridge. outside							Slope- flat; hard bottom: 90% rubble			
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raken 2 - 10 HAPC; northwest ridge 24.93347 -83.7893833 79.741 9/18/2011 16:29 18-IX-11-1 2779; orange back bass; bottom; 95% rubble <10cm; HB					52::200	-,,			,			
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ROV Dive # Location Lat-DD Long-DD Depth (m) Date/Time HBOI Site # Habitat and Biota Notes Bottom Description Type Sample Notes Coral Notes  Florida, Pulley Ridge, outside HAPC; southern escarpment, west end a provided that the provided end are provided to the provided end and the provided end are provided end and the provided end are provided end are provided end are provided end and the provided end are provi	Krakon 2 10		24 02225	02 70026	90 593	0/10/2011 16:20	10 IV 11 1	Off hottom	Off battom			
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ROV Dive # Location Lat-DD Long-DD Depth (m) Date/Time HBOI Site # Habitat and Biota Notes Bottom Description Type Sample Notes Coral Notes    Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   HAPC; southern escarpment, west   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside   Florida, Pulley Ridge, outside										Bottom		
Florida, Pulley Ridge, outside HAPC; southern escarpment, west end Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west HAPC; southern escarpment, west Florida, Pulley Ridge, outside HAPC; southern escarpment, west	ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description		Sample Notes	Coral Notes
Florida, Pulley Ridge, outside HAPC; southern escarpment, west raken 2 - 11 end 24.791095 -83.89961167 121.827 9/18/2011 18:58 18-IX-11-2 Algae; Algae; Algae; Algae Reef Butterflyfish; Photo XS (quantitative)- start;					, ,							
HAPC; southern escarpment, west raken 2 - 11 end 24.791095 -83.89961167 121.827 9/18/2011 18:58 18-IX-11-2 Algae; Dictyota, Encrusting sponges; Crustose Coralline hard bottom; rubble; Slope- flat; HB Reef Butterflyfish; Photo XS (quantitative)- start;		Florida, Pulley Ridge, outside										
raken 2 - 11 end 24.791095 -83.89961167 121.827 9/18/2011 18:58 18-IX-11-2 Algae; hard bottom; rubble; Slope-flat; HB Florida, Pulley Ridge, outside HAPC; southern escarpment, west Reef Butterflyfish; Photo XS (quantitative)- start;								•			[	
Florida, Pulley Ridge, outside HAPC; southern escarpment, west Reef Butterflyfish; Photo XS (quantitative)- start;	Kraken 2 - 11	·	24.791095	-83.89961167	121 827	9/18/2011 18:58	18-IX-11-2		hard bottom: rubble: Slope- flat:	нв	]	
HAPC; southern escarpment, west Reef Butterflyfish; Photo XS (quantitative)- start;			2 51033	55.55501107	121.02/	5, 10, 2011 10.30			= socion, rabbie, stope nat,		<del>                                     </del>	
								Reaf Rutterflyfish: Photo VS (quantitativa) start:			[	
14KEII 2 - 11 CIIU	Krakon 2 11		24 70117167	02 00060167	121 724	0/10/2011 10:00	10 IV 11 2		hard bottom: rubble: Clane flat	ШΒ	]	
	Kraken 2 - 11	enu	24./911/16/	-83.89960167	121./34	9/18/2011 19:00	TO-IY-TT-5	2700.jpg;	naru bottom; rubbie; Siope- flat;	пв		

											•
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west						Rough Tongue bass; yellow purple and orange Demospongiae; Gorgonacea; basket star; Stichopathes; lumpy hard bottom; 60-70 cm relief; fillimentous Phaeophyta; 5-10 cm high finger	hard bottom; 80% rubble; Slope-			
Kraken 2 - 11	end	24.791125	-83.899755	121.22	9/18/2011 19:02 18	3-IX-11-2	Demospongiae;	moderate (<35o);	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79123167	-83.89985	122.995	9/18/2011 19:05 18		up slight slope; sediment depressions and hard bottom; 30 cm relief; Stichopathes; filimentous Phaeophyta; tatler; 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;	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791415	-83.90028667	121.734	9/18/2011 19:09 18	3-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	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79152667	-83.90055167	122.295	9/18/2011 19:11 18	3-IX-11-2	small gooey green algae; Gorgonacea - lavander bifribcated 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 - ocasional ledges; Slope- moderate (<350); <40 cm releif;	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79171833	-83.900995	121.921	9/18/2011 19:14 18	3-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;	НВ	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	3-IX-11-2	sucessfully collected 001 and 002; now trying for sample 101	hard bottom; Slope- moderate (<35o); rubble;	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.791735	-83.90101	122.248	9/18/2011 19:29 18		resume on photo 2835.jpg; Photo XS (quantitative)- resume; filimentous 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 (<350); Photo XS (quantitative)- resume; higher releif spot;	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79182167	-83.90108333	122.388	9/18/2011 19:32 18	3-IX-11-2	1/2 way along low relief ridge south of the main wall; changing course in 10 m to another bump; tattler; wrasse bass; Gorgonacea; Antipathidae; Photo XS (quantitative)- End;	8-% hard bottom; rubble; Slope- moderate (<350);	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79187333	-83.90120333	122.715	9/18/2011 19:34 18	3-IX-11-2	Human Debris; changing course to northen 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 patteren very dark, and photo on still photo.	100 % hard bottom; 90% rubble; Slope- moderate (<350);	НВ		
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79204	-83.90116167	122.435	9/18/2011 19:38 18	3-IX-11-2	Reef Butterflyfish; more ledges and holes; excavated hole - 1.8 m in diam; white lavander Gorgonacea; Reef Butterflyfish; scorpean fish in downward shot; tattler; plexaurid Gorgonacea; 2- cm Demospongiae; orange back bass;	hard bottom; rubble 25 - 30 cm; Slope- moderate (<35o); increased rigosity	НВ		

				1						1
Kraken 2 - 11	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.792295	-83.90121333	121.874	9/18/2011 19:40 1	18-IX-11-2	occasional small anthiid; < 5 cm green alga x 30- 40; rough tongue bass; filimentous Dictyota; Phaeophyta; plexaurids Gorgonacea; Reef Butterflyfish; basketstar on Gorgonacea; baby bank butterfly fish; scorpian fish; (Purposefull shots - remove from XS) -	80-90% hard bottom; rubble; Slope- moderate (<35o);	НВ	
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west						continue on: roughtongue bass; tattler; rough toungue bass; yellow wrasse RECHECK Species;	hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.79266833	-83.901035	119.912	9/18/2011 19:43 1	L8-IX-11-2	Stichopathes;	moderate (<35o);	нв	
	Florida, Pulley Ridge, outside							· · · · · ·		
	HAPC; southern escarpment, west							hard bottom; rubble; Slope-		
Kraken 2 - 11	end Florida, Pulley Ridge, outside	24.79295	-83.901295	124.677	9/18/2011 19:45 1	18-IX-11-2	tatler;	moderate (<35o); hard bottom; rubble; Slope-	НВ	
	HAPC; southern escarpment, west						going 20 m to the NW to go threw hole; Photo XS	moderate (<35o); Photo XS		
Kraken 2 - 11	end	24.79296333	-83.90127833	125.705	9/18/2011 19:46 1	L8-IX-11-2	(quantitative)- pause; ridge on the Sonar;	(quantitative)- pause;	НВ	
	Florida, Pulley Ridge, outside									
K1 2 11	HAPC; southern escarpment, west	24.70200222	02 00422667	125 700	0/10/2011 10:47 1	10 17 44 3	170 m to wall; Human Debris - pipe with eel;	hard bottom; rubble; Slope-	LID	
Kraken 2 - 11	end Florida, Pulley Ridge, outside	24.79300333	-83.90133667	125.798	9/18/2011 19:47 1	18-IX-11-Z	current is ~0; DIVE11 6.mov. hole and grouper; clip dive11 7.mov - 50 cm scamp	moderate (<35o);	НВ	
	HAPC; southern escarpment, west						cat paw pattern - RECHECK Species may be a yellow	hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.79288667	-83.90120167	124.817	9/18/2011 19:50 1	18-IX-11-2	mouth;	moderate (<35o);	нв	
							poor signal on track point; continuing north;			
	Florida, Pulley Ridge, outside						Human Debris; bank butterfly; 125 m; Demospongiae - Aplysina yellow; Photo XS	100 %hard bottom; rubble and ledges; Slope- moderate (<350); 50		
	HAPC; southern escarpment, west						(quantitative)- resume;	cm releif with pits and hole; Photo		
Kraken 2 - 11	end	24.79319	-83.90173	123.789	9/18/2011 19:52 1	18-IX-11-2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	XS (quantitative)- resume;	нв	
	Florida, Pulley Ridge, outside						tracking resumes; Geodia Demospongiae; yellow fin			
K1 2 44	HAPC; southern escarpment, west	24 70224667	02.004.42	125 227	0/10/2011 10:54	10 17 11 2	bass RECHECK Species; rough tongue bass;	hard bottom; rubble; Slope-	LIB	
Kraken 2 - 11	end Florida, Pulley Ridge, outside	24.79321667	-83.90143	125.237	9/18/2011 19:54 1	18-IX-11-Z	depressions on the Sonar; resume ship @ .4 kts; filimentous Phaeophyta;	moderate (<35o);	НВ	
	HAPC; southern escarpment, west						tattler; wrasse bass; small encrusting	hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.793325	-83.901535	123.462	9/18/2011 19:56 1	18-IX-11-2	Demospongiae;	moderate (<35o); (30% sediment)	нв	
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west						turning due north; sample 201109182001 from last dive - astrophorid; tattler; same depth as other	hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.79347833	-83.901595	125.424	9/18/2011 19:59 1	L8-IX-11-2	ridge from past dive; tattlers are quite large;	moderate (<350);	нв	
							filimentous Phaeophyta; yellow Demospongiae;			
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west						anthiids; Photo XS (quantitative)- pause; stopping to collect 003 DIVE11 10.mov for both fish and sample	90% hard hottom: rubble: Slone-		
Kraken 2 - 11	end	24.79367167	-83.90152833	127.106	9/18/2011 20:01 1	L8-IX-11-2	001; still images of 001	moderate (<350); 30 cm releif;	нв	
	Florida, Pulley Ridge, outside						-			
	HAPC; southern escarpment, west						loss power - doing a reset; cidaroid urchin; NO	hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.793805	-83.901345	127.199	9/18/2011 20:05 1	18-IX-11-2	RESPONSE FROM still CAMERA;	moderate (<35o);	НВ	
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west							hard bottom; rubble; Slope-		
Kraken 2 - 11	end	24.793845	-83.9014	127.386	9/18/2011 20:08 1	18-IX-11-2	reseting still camera data/time	moderate (<350);	нв	
	Florida, Pulley Ridge, outside									
Krokon 2 11	HAPC; southern escarpment, west	24 7020117	02.00120022	120 22	0/18/2011 20:42	10 IV 11 3	looking at Ellisellidae - Junicella sp. (Ellisella?)	hard bottom; rubble; Slope-	шр	
Kraken 2 - 11	end Florida, Pulley Ridge, outside	24.79381167	-83.90138833	128.32	9/18/2011 20:13 1	10-IV-11-7	Gorgonacea;	moderate (<35o); hard bottom; rubble; Slope-	НВ	
	HAPC; southern escarpment, west						Photo XS (quantitative)- resume; running transect	moderate (<35o) running NE to SW		
Kraken 2 - 11	end	24.79380667	-83.90137167	127.199	9/18/2011 20:14 1	18-IX-11-2	north;	@ 20 o;	нв	
	Florida, Pulley Ridge, outside			$\neg$				h		
Kraken 2 - 11	HAPC; southern escarpment, west end	24.79380333	-83.90134167	127.246	9/18/2011 20:15 1	I 8-IX-11-2	filimentous Phaeophyta; coming up ridge 1 m;	hard bottom; 60-70% rubble; Slope- moderate (<350); 30-40 cm releif	НВ	
Munch Z - 11		27.7500555	03.50134107	127.240	3/ 10/ 2011 20.13	IN 11-2	ap nage 1 III,			

							1		,		
							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;				
	Florida, Pulley Ridge, outside						Asteroidea; encrusting small Demospongiae; more				
	HAPC; southern escarpment, west						Crustose Coralline Algae 5-10 % cover; bright yellow	hard bottom; rubble; Slope- steep			
Kraken 2 - 11	end	24.793935	-83.90143	123.929	9/18/2011 20:16	18-IX-11-2	Demospo	(>35o); Rock- wall;	нв		
							· · · · · · · · · · · · · · · · · · ·				
	Florida, Pulley Ridge, outside						Gorgonacea; bottle brush Antipathidae; Human				
	HAPC; southern escarpment, west							hard bottom; Rock; Rock- wall 8 m			
Kraken 2 - 11	end	24.79398	-83.90133833	119.726	9/18/2011 20:19	10 IV 11 2	butterfly; big eye; Photo XS (quantitative)- End;	tall; Slope- steep (>350);	нв		
Kiakeli 2 - 11	enu	24.75356	-03.50133033	119.720	3/10/2011 20:13	10-IX-11-Z	butterny, big eye, Photo A3 (quantitative)- End,	tall, Slope- steep (2530),	ПВ		
							Human Debris; top of rock ledge feature; Ellisella;				
							tiny fish - antheads; set down on btoom to zoom;				
	Florida, Pulley Ridge, outside						Gorgonacea with basket stars; bottle brush				
	HAPC; southern escarpment, west						Antipathidae; wrasse bass - file DIVE 11 12.mov.	hard bottom; Rock; Rock- wall; Slope-	ł		
Kraken 2 - 11	end	24.79424	-83.901455	119.445	9/18/2011 20:22	18-IX-11-2	Current .8 kts; comatulid crinoid;	steep (>35o);	НВ		
										1	
							wrasse bass; Stichopathes; along edge of wall	hard bottom; Rock; Rock- wall; Slope-	l	[	
	Florida, Pulley Ridge, outside					1	toward NW; Steeply sloped; and ares more gentle	steep (>350) - ~ 600; wall cointues to		]	
	HAPC; southern escarpment, west					1	with sediment; lots of Antipathidae; wrasse; bridled	go up in front with rock ledges and			
Kraken 2 - 11	end	24.79423333	-83.90138	117.81	9/18/2011 20:26	10 IV 11 2	goby RECHECK Species;	outcrops; high releif > 1 m	НВ		
Kraken 2 - 11		24./9423333	-03.90130	117.01	9/18/2011 20.20	10-IX-11-2	goby Recheck Species;	outcrops; flight relent > 1 fli	ПВ		
	Florida, Pulley Ridge, outside						1	l			
	HAPC; southern escarpment, west						sediment covered hard bottom; wrasse; move 30 m	hard bottom; Rock- wall; Rock; Slope-		[	
Kraken 2 - 11	end	24.79457167	-83.90177167	121.033	9/18/2011 20:29	18-IX-11-2	due north for next WP;	steep (>35o);	НВ	<u> </u>	
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west							hard bottom; Rock; rubble; Slope-			
Kraken 2 - 11	end	24.79461833	-83.90182	120.006	9/18/2011 20:31	18-IX-11-2	wrasse bass; were on top of wall	steep (>35o) - ~ 60 o slope;	нв		
	Florida, Pulley Ridge, outside				-, -, -		Stichopathes in main view; small gooey green;	,			
	HAPC; southern escarpment, west						encrusiting orange Demospongiae; fine filimentous	hard bottom; pocks in hard bottom;			
Kraken 2 - 11	end	24.79482167	-83.90184	110.944	9/18/2011 20:32	10 IV 11 2	Phaeophyta; 30% sediment;	Slope- moderate (<350);	НВ		
Kiakeli 2 - 11	enu	24./546210/	-03.50104	110.944	3/10/2011 20.32	10-IX-11-Z	rnaeopnyta, 30% seuiment,	Slope- Hoderate (<530),	ПВ		
							turning to NW - Photo XS (quantitative)- start; rough				
							tongue bass; squirrl fish; large grouper 60 cm -				
	Florida, Pulley Ridge, outside						pointy tail tips ahead of us RECHECK Species; ledges	hard bottom; Rock; Slope- moderate			
	HAPC; southern escarpment, west						and sand patches; small yellow wrasse; more 5m	(<35o); Photo XS (quantitative)-			
Kraken 2 - 11	end	24.79487667	-83.90186333	111.364	9/18/2011 20:34	18-IX-11-2	green algal - 5% cover; rough tongue bass; lionfish	start; - along top of wall;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						corallimorph or sea pansey purposful photos - 6 cm				
Kraken 2 - 11	end	24.79498667	-83.90213833	111.878	9/18/2011 20:37	18-IX-11-2	dark purple with pink tips - DIVE11 14.mov	hard bottom; Rock; rubble;	нв		
JKCII Z II	Florida, Pulley Ridge, outside	24.75450007	33.30213033	111.070	5,10,201120.57	10 1/1 11 2		na. a sectorn, nock, rabbic,		<del>                                     </del>	
						1	Photo XS (quantitative)- resume; small fish; rough				
	HAPC; southern escarpment, west	24	00.000.000	44	0/40/00	40 0/	toungue bass; bottle brush Antipathidae; more				
Kraken 2 - 11	end	24.795035	-83.90219833	111.971	9/18/2011 20:38	18-IX-11-2	ledge and crevices;		НВ		
	Florida, Pulley Ridge, outside								1	ı	
	HAPC; southern escarpment, west					1	grouper in distance; triton shell - DIVE11 15.mov	hard bottom; Rock; rubble; Slope-		]	
Kraken 2 - 11	end	24.79507	-83.90225167	111.318	9/18/2011 20:39	18-IX-11-2	Photo XS (quantitative)- pause;	steep (>35o);	НВ	[	003
	Florida, Pulley Ridge, outside						Photo XS (quantitative)- resume; Vertigellis - gooey			1	
	HAPC; southern escarpment, west						green algae; tattler; green banned wrasse;	hard bottom; Rock- wall; Slope-			
Kraken 2 - 11	end	24.79512333	-83.90231833	110.103	9/18/2011 20:41	18-IX-11-2	Gorgonacea; basketstars;	moderate (<35o);	нв		
<u> </u>			22.2 3231033	0.103	5, 25, 2011 20.41		0,,		l	<del>                                     </del>	
						1	2 scamp; DIVE11 18. Mov; wall is starting to receed			]	
	Florido Dullou Bid										
	Florida, Pulley Ridge, outside					1	to the north; - fix may not be real - bad tracking;				
l	HAPC; southern escarpment, west				- 1 - 1 -			hard bottom; rubble; Slope-	l		
Kraken 2 - 11	end	24.79502167	-83.90247167	112.298	9/18/2011 20:42	18-IX-11-2	wrasse bass; green band wrasse	moderate (<350);	НВ		
	Florida, Pulley Ridge, outside	_									
1							deep crevise that dropps 2 m to sandy bottom NW	hard bottom; Rock- wall; Slope-			
	HAPC; southern escarpment, west										
Kraken 2 - 11	HAPC; southern escarpment, west end	24.79517167	-83.90261167	111.785	9/18/2011 20:45	18-IX-11-2	to SW; flying along northern side;	steep (>35o);	HB		
Kraken 2 - 11	end	24.79517167	-83.90261167	111.785	9/18/2011 20:45	18-IX-11-2	1	steep (>35o);	НВ		
Kraken 2 - 11	end Florida, Pulley Ridge, outside	24.79517167	-83.90261167	111.785	9/18/2011 20:45	18-IX-11-2	switching to tape 26; along upper edge of the deep	steep (>35o);	НВ		
Kraken 2 - 11  Kraken 2 - 11	end Florida, Pulley Ridge, outside HAPC; southern escarpment, west	24.79517167 24.79527167	-83.90261167 -83.90262	111.785 111.691	9/18/2011 20:45		1	steep (>35o);	НВ		

	T		1			1	T	T		
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	roughtongue bass; small encrusting sponges; small anthiids; 30-45 degree slope; black coral and Stichopathes; 2 more roughtongue 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	НВ	
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; roughtongue bass; green band wrass; Reef Butterflyfish; large Scamp 30-40cm; approaching the wakepoint where we will turn		НВ	
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 roughtongue bass; anthiids; wrass bass; squirrelfish; rock fairly smooth;	Rock; cobble	НВ	
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;		НВ	
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		НВ	
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		НВ	
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 visiblitiy; squirrelfish		НВ	
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;		НВ	
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 incrusted with dense population of gorgonians 2-3 species; red incrusting sponges possibly hallicia(?); crinoids; lionfish; 50 cmScamp; giant gag 60-70cm; another lionfish		НВ	
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;		НВ	
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;		НВ	
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 phototransect photo number 2977; Scamp; traveling westerly on the top edge of the wall;		НВ	
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;		нв	

	Florido Bullou Bidgo outsido					ı	T	T		
	Florida, Pulley Ridge, outside						going down the base of the wall a little deeper still			
	HAPC; southern escarpment, west end	24.79615833	-83.90423333	111.411	9/18/2011 21:20	10 IV 11 2	going down the base of the wall a little deeper, still doing phototransect;		НВ	
		24.79015655	-63.90423333	111.411	9/18/2011 21.20	10-IX-11-Z	doing priototransect;		пь	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west end	24 706025	02.004455	116 100	0/40/2044 24:24	40 IV 44 2	i		НВ	
		24.796025	-83.904455	116.409	9/18/2011 21:21	18-IX-11-Z	going along the base of the wall;		нв	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west	24 70504667	02.00444	440.465	0/40/2044 24 22	40 11/44 2		mostly sediment; a little bit of		
	end	24.79591667	-83.90441	119.165	9/18/2011 21:22	18-IX-11-2	in a sediment slope; Stichopathes	rubble;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west							30% rock rubble cover; rest is a fine	l <u>.</u>	
	end	24.79602667	-83.9046	119.632	9/18/2011 21:24	18-IX-11-2	tatler; 3 roughtongue bass;	white sediment	НВ	
	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		НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						working back up from the base; Stichopathes;			
	end	24.79614333	-83.90470333	117.11	9/18/2011 21:26	18-IX-11-2	almost 100% sediment, slope 60%		НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						as we work our way up getting more hard bottom;			
	end	24.796185	-83.90474333	115.195	9/18/2011 21:26	18-IX-11-2	yellow sponges; green band;		НВ	
	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	НВ	
	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;		НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						drifted back off the top of the ledge, working the			
	end	24.796025	-83.90512167	116.269	9/18/2011 21:30	18-IX-11-2	top of the wall; bouncing to the northwest; tatler;		НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						squirrelfish; rough tongue; lots of green algae on			
	end	24.79613	-83.90525333	115.755	9/18/2011 21:32	18-IX-11-2	the bottom, Verdigellas; yellow sponge;		НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west						very little biota except for common Stichopathes 30-			
	end	24.79600667	-83.90539167	120.987	9/18/2011 21:35	18-IX-11-2	40 cm [date/time added post cruise - estimated]	sediment	НВ	
	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	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west	24 70646	02 00550467	440.074	0/40/2044 24 27	40 11/44 2				
Kraken 2 - 11	end	24.79616	-83.90550167	118.371	9/18/2011 21:37	18-IX-11-2	back at the base of the wall;		НВ	
[	Florido Bullou Bid						2 roughtongue bass; lots of small orange incrusting			
	Florida, Pulley Ridge, outside						sponges; rock ledges about 40cm relief; multiple			
	HAPC; southern escarpment, west	24.70629922	92 00556222	110 031	0/10/2011 24:20	10 IV 11 3	small green algae, possibly Verdigellas; quick view	200/ hard battam, Back, ruk -	LID.	
	end	24.79638833	-83.90556333	118.931	9/18/2011 21:38	10-IY-11-5	of a red fish;	80% hard bottom; Rock; rubble;	НВ	
	Florida, Pulley Ridge, outside									
	HAPC; southern escarpment, west end	24.79644	-83.90568	114.914	0/10/2011 21:40	10 IV 11 2	ship has made their shift hask toward 200 d		НВ	
	Florida, Pulley Ridge, outside	24.79044	-03.5058	114.914	9/18/2011 21:40	TO-IV-TT-7	ship has made their shift back toward 300 degrees		IID	
							lets of Vordigallas in the day, and Stick			
	HAPC; southern escarpment, west	24 70640222	02 00571022	114.072	9/18/2011 21:41	10 IV 11 2	lots of Verdigellas in the downward; Stichopathes; a		шь	
Kraken 2 - 11	end	24.79649333	-83.90571833	114.073	2/10/2011 21:41	TO-IV-TT-Z	few Aplysina; bank butterflyfish; baby tatler bass;		НВ	
[	Elorida Bullov Bidga autaida						filamentous brown algae; Verdigellas; Scamp; red			
	Florida, Pulley Ridge, outside						colored snapper about 20-25 cm, deep red fading to	909/ hard bottom: Back rubble: Back		
	HAPC; southern escarpment, west end	24.79652167	-83.905795	113.606	9/18/2011 21:42	10 IV 11 2	white at the throat, forked tail, mostly-like a silk	80% hard bottom; Rock rubble; Rock	нв	
	Florida, Pulley Ridge, outside	24./903210/	-63.503/95	113.006	2/10/2011 21:42	TO-IV-TT-Z	snapper;	ledges; 40-60cm relief	ПВ	
	HAPC; southern escarpment, west									
	end	24.79651667	-83.90590333	113.747	9/18/2011 21:44	10_IV_11_2	continuing on the same course		НВ	
Kraken 2 - 11										

	Florida, Pulley Ridge, outside	1	1	1			T	T		1	
	HAPC; southern escarpment, west										
Kraken 2 - 11	end	24.79651167	-83.90595	113.933	9/18/2011 21:45	18-IX-11-2	a few small gorgonians; short bigeye;		нв		
	Florida, Pulley Ridge, outside						2 roughtongue bass; wrass bass; 20-30cm band	100% hard bottom; rubble;			
	HAPC; southern escarpment, west						sponges attached along the base, could be	pavement; less than 20cm relief; less			
Kraken 2 - 11	end	24.79650167	-83.90608167	114.12	9/18/2011 21:46	18-IX-11-2	raspalliidae or hexactinelida	than 35% slope	НВ		
	Florida, Pulley Ridge, outside						sample #4: starting collection 10cm tall about 30 cm				
	HAPC; southern escarpment, west						wide, tan with spicule fringe, uncommon to rare,				
Kraken 2 - 11	end	24.79651833	-83.90622667	115.008	9/18/2011 21:49	18-IX-11-2	top of the brow of the wall,		НВ	004	
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						continuing on transect line; Stichopathes;	100% hard bottom; with sand			
Kraken 2 - 11	end	24.79648167	-83.90630833	116.97	9/18/2011 22:02	18-IX-11-2	scorpionfish; 2 lizardish; roughtongue bass	overtop; slope about 40 degrees	НВ		
							turning towards due west; down near the base of				
	Florida, Pulley Ridge, outside						the wall; pretty big features coming up infront of				
K1 2 44	HAPC; southern escarpment, west	24.706405	02 006 424 67	110 745	9/18/2011 22:04	40 IV 44 3	us; 2 m tall rock directly in front of us right at the		НВ		
Kraken 2 - 11	end	24.796405	-83.90643167	118.745	9/18/2011 22:04	18-IX-11-Z	base of the wall;		нв		
							wrass; back to the base of the wall; Stichopathes; 6 rough tongue bass; 2 tatler, one really big; another				
	Florida, Pulley Ridge, outside						of sample 4; lots of small branching gorgonians				
	HAPC; southern escarpment, west						mostly fine branches less than 5 cm tall; bank	transitioning from sediment to hard			
Kraken 2 - 11	end	24.796335	-83.906485	122.622	9/18/2011 22:06	18-IX-11-2	butterfly;	bottom	НВ		
	Florida, Pulley Ridge, outside				-,,		,				
	HAPC; southern escarpment, west										
Kraken 2 - 11	end	24.79641667	-83.90666167	120.052	9/18/2011 22:09	18-IX-11-2	loss of power; power reboot		НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 11	end	24.79645	-83.90672833	118.885	9/18/2011 22:13	18-IX-11-2	back underway; taking phototransect E to W;		НВ		
							big fish in the background; 3 regular bigeyes;				
							pinkish snapper (probably blackfin snapper) of some				
	Florida, Pulley Ridge, outside						sort; lots of orange encrusting sponges; gorgonians;				
	HAPC; southern escarpment, west						lots of tiny wrasses; lots of brown algaae,	70-80% hard bottom; 40-50 cm			
Kraken 2 - 11	end	24.79644167	-83.906795	117.764	9/18/2011 22:14	18-IX-11-2	Verdigellas; blenny in the downward	relief	НВ		
	Florida, Pulley Ridge, outside						tatler bass; bank butterflyfish; as we move to the				
	HAPC; southern escarpment, west						West, the top of the wall is sloping downward, now				
Kraken 2 - 11	end	24.79647	-83.90720833	116.643	9/18/2011 22:18	18-IX-11-2	about 115, slope of about 30 degrees;		НВ		
	Florida, Pulley Ridge, outside						very small cup coral in the downward view; small				
	HAPC; southern escarpment, west						antipathid gorgonian with basketstar, plenty of				
Kraken 2 - 11	end	24.7965	-83.90734	116.829	9/18/2011 22:19	18-IX-11-2	roughtongues;		НВ		Coral- Cup coral
	Florido Bullou Bid						in a bit of a crevice, 1 m relief top to bottom, WNW				
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west						to ESE, 3-4 m wide; squirrelfish; occasional gorgonians; small anthiids; roughtongue bass; few				
Kraken 2 - 11	end	24.79648333	-83.90747833	117.53	9/18/2011 22:20	18-IX-11-2	wrasses; Stichopathes;	90% hard bottom; 10% sediment	НВ		
Makeri Z = 11	Cita	24.7 3040333	-03.30747033	11/.35	3/ 10/ 2011 22:20	10-IV-11 <u>-</u> 7	wrasses, suchopathes,	5577 Hard Bottom, 1076 Sediment	/ID	+	
							small school of fish, not sure what kind; coming up				
							apon a whole at the base of the wall, wall extending				
	Florida, Pulley Ridge, outside						to the right, lots of small very hard to identitfy small				
	HAPC; southern escarpment, west						fish; at least 20 snapper and scamp; fishing debris				
Kraken 2 - 11	end	24.79639333	-83.90772	117.67	9/18/2011 22:23	18-IX-11-2	on the ground, longline; big scamp		НВ		
				<b> </b>		<b> </b>	rocky outcropping at the wall, large rock boulders;			+	1
							seen a number of probably blackfin snapper; a				
	Florida, Pulley Ridge, outside						1				
	Florida, Pulley Ridge, outside HAPC; southern escarpment, west end	24.79644167	-83.90787833	116.549	9/18/2011 22:25		seen a number of probably blackfin snapper; a		НВ		

	Flacida Dullau Bidaa autaida						1	1		1	
	Florida, Pulley Ridge, outside						6 15 51 11 6 11				
	HAPC; southern escarpment, west						Swifia; Plexauridae; lots of encrusting sponges; huge				
Kraken 2 - 11	end	24.79650667	-83.907965	117.904	9/18/2011 22:26	18-IX-11-2	relief boulders 2.3-3 m;	100% hard bottom;	НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west										
Kraken 2 - 11	end	24.79643667	-83.90797833	116.035	9/18/2011 22:28	18-IX-11-2	large black Plexaurid; Scamp; snapper;		НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						seen at least 8 Scamp; getting back to the school of				
Kraken 2 - 11	end	24.79640833	-83.907955	114.354	9/18/2011 22:29	18-IX-11-2	at lease 20 snapper;		НВ		
KIUKCII Z II		24.73040033	03.307333	114.554	3/10/2011 22:23	10 1/1 11 2			1110		
	Florida, Pulley Ridge, outside						more scamp; school of silk snapper, about 12 of				
	HAPC; southern escarpment, west						them; lots of rock ledges 1-2 m relief; confirm on				
Kraken 2 - 11	end	24.79640833	-83.907955	114.12	9/18/2011 22:29	18-IX-11-2	the blackfin snapper; blue angel		НВ		
	Florida, Pulley Ridge, outside										
	HAPC; southern escarpment, west						Off bottom; stopped images at 22:38:46 pm - last				
Kraken 2 - 11	end	24.796365	-83.90777333	115.195	9/18/2011 22:31	18-IX-11-2	image 3086.jpg		НВ		
									Bottom		
2011 2: "				5 11 ( )	D . /T						
ROV Dive #	Location	Lat-DD	Long-DD	Depth (m)	Date/Time	HBOI Site #	Habitat and Biota Notes	Bottom Description	Туре	Sample Notes	Coral Notes
	Florida, south of Pulley Ridge; 850							dense bioturbations; 10-20cm pitts			
Kraken 2 - 12	m escarpment	24.66259667	-83.91861167	812.682	9/19/2011 13:26	19-IX-11-1		and mounds; very fine silky clay;	SB		
							The tracking is reall ybad right now; golden or red			<b>i</b>	
	Florida, south of Pulley Ridge; 850						crab Chaceon with a 10cm carapace 15cm black				
Kraken 2 - 12	m escarpment	24.66233833	-83.91834833	819.362	9/19/2011 13:28	10-IV-11-1	fish maybe some sort of rat tale;		SB		
KI akeli 2 - 12		24.00233833	-03.31034033	813.302	3/13/2011 13.20	13-17-11-1	lish maybe some sort of rat tale,		36		
	Florida, south of Pulley Ridge; 850										
Kraken 2 - 12	m escarpment	24.66229167	-83.91823667	826.462	9/19/2011 13:30	19-IX-11-1	large burrow 1m;		SB		
								soft bottom; the sediment is very			
							on bottom; some sort of rat tale fish Nezumia?	fine; very little carbonate shells;			
	Florida, south of Pulley Ridge; 850						~15cm; very slight current from the west maybe .25	sediment piled up form some sort of			
Kraken 2 - 12	m escarpment	24.66229167	-83.91823667	826.368	9/19/2011 13:30	19-IX-11-1	knots;	polycheate	SB		
	Florida, south of Pulley Ridge; 850				0, 00, 000		red shrimp about 10cm reddish purple on top;				
Kraken 2 - 12	m escarpment	24.66168167	-83.91727333	826.929	9/19/2011 13:38	10 IV 11 1	squid came across video		SB		
Kraken 2 - 12	iii escarpinent	24.00108107	-03.91/2/333	820.929	9/19/2011 15.56	19-IX-11-1	squid carrie across video		SB		
							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				
	Florida, south of Pulley Ridge; 850						and pits; no evidence that it's tilefish burrows, so	fine white silky clay; hole; mounds			
Kraken 2 - 12	m escarpment	24.66217167	-83.91752	820.95	9/19/2011 14:02	19-IX-11-1	probably infaunas;	and pitts;	SB		
	Florida, south of Pulley Ridge; 850				-,,		probably Acanthacaris burrow; Slope- steep (>350);				
Kraken 2 - 12		24.66237833	-83.91755333	811.935	0/10/2011 11:00	10 17 11 1			SB		
Kraken 2 - 12	m escarpment	24.66237833	-83.91/55333	811.935	9/19/2011 14:06	19-IX-11-1	big burrow 10-15 - 80m crater;		28		
						1	1				
	Florida, south of Pulley Ridge; 850					1	shrimp; squat lobster; yellow/orange 1m whip coral-				
Kraken 2 - 12	m escarpment	24.66233167	-83.91745667	802.592	9/19/2011 14:11	19-IX-11-1	for sure Cnidarian; vertical clay wall		SB		
								70 degree slope pocketed with		1	
						1		burrows and holes; part of it is clay			
								and part of it is solid rock; where			
	Florida, south of Pulley Ridge; 850			]				there is black there's rock			
		24 66226222	02.04.776	702 674	0/10/2011 1:25	10 17 11 1					
Kraken 2 - 12	m escarpment	24.66226333	-83.91776	793.671	9/19/2011 14:26	19-IX-11-1	yellow plexaridae gorgonian; squat lobster;	escarpments;	НВ		
	Florida, south of Pulley Ridge; 850										
Kraken 2 - 12	m escarpment	24.66236833	-83.91767833	794.044	9/19/2011 14:30	19-IX-11-1	sea whip pink colored black coral;		НВ		
							sample 002 is Hyalonema; stalking encrusted over				
	Florida, south of Pulley Ridge; 850						with orange zoanthids; Antipathidae; Antipathes	1-2m boulder; 45 degree slope;			
	m escarpment	24.66261	-83.91787667	786.991	9/19/2011 14:35	19-IX-11-1	bicornada(?); lower third of this sediment slope;	sediment between the boulders	НВ	002	
Makeli Z = 1Z		24.00201	-03.31/0/00/	700.771	JJ 1JJ 2011 14.33	T3-IV-TT-T	1	Scament between the boulders	110	002	
	Florida, south of Pulley Ridge; 850	24.66	00.04		0/40/00000	40 11/	15 cm white planar gorgonian; 1/2 dozen species of				
Kraken 2 - 12	m escarpment	24.66272167	-83.91765833	785.73	9/19/2011 14:40	19-IX-11-1	cnidaria; hexactinellid sponges;		НВ		
							Different Hyalonema 30cm stalk with white cup-				
						1	shaped head and yellow zoanthids on stalk; .5 knot				
	Florida, south of Pulley Ridge; 850						current from the west; 20cm stalk with little				
Kraken 2 - 12		24.662495	-83.91798167	779.471	9/19/2011 14:47	19-IX-11-1	branches- Hexactinellid;	fine white silky clay;	SB		
	11 P 11 1				-, -, -===,		,	,	<u> </u>		

		1		1		l	1		1	1	T
	Florida, south of Pulley Ridge; 850						60cm Paramuriceidae tall fan-shaped short curved				
Kraken 2 - 12	m escarpment	24.66234167	-83.91811333	779.517	9/19/2011 14:56	19-IX-11-1	branches orange, long .5cm tubular polyps	soft bottom;	SB		
							sample 003; what's left of the Hyalomema stalking				
	Florida, south of Pulley Ridge; 850						with zoanthids on it with scale worms on the stalk;				
Kraken 2 - 12	m escarpment	24.66244	-83.91806167	779.003	9/19/2011 15:00	19-IX-11-1	Nezumia present; Acanthacaris- lobster;		SB	003	
	51 .1 .1 (5.11 5.1 65.6						continuing with sample collection; squid; squat				
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66232	-83.91812	778.583	9/19/2011 15:10	10 IV 11 1	lobster; large yellow gorgonian sea fan; surface current is about 1.5 knots;		SB		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850	24.00232	-03.91012	//6.363	9/19/2011 15:10	19-14-11-1	blind white lobster about 15-20cm Acanthacaris		SB	1	
Kraken 2 - 12	m escarpment	24.662655	-83.91773667	778.396	9/19/2011 15:27	19-IX-11-1	ceaca		SB		
MIGNETIZ IZ	Florida, south of Pulley Ridge; 850	2 11002033	03.31773007	776.550	3,13,201113.27	13 1/1 11 1			-	†	
Kraken 2 - 12	m escarpment	24.66250667	-83.91788167	775.266	9/19/2011 15:30	19-IX-11-1		rock ledges; terrace slope;	нв		
	Florida, south of Pulley Ridge; 850						Rattail and a Green eye fish- Chloropthalmus;	3 , , ,		1	
Kraken 2 - 12	m escarpment	24.66259833	-83.917995	776.808	9/19/2011 15:33	19-IX-11-1	another rat tail fish;		нв		
	Florida, south of Pulley Ridge; 850						sea fan gorgonian; Chrysogorgia; squat lobster on a				
Kraken 2 - 12	m escarpment	24.66235833	-83.91748	776.574	9/19/2011 15:36	19-IX-11-1	gorgonian;	going on a vertical rock wall	НВ		
	Florida, south of Pulley Ridge; 850										
Kraken 2 - 12	m escarpment	24.66252667	-83.91784667	767.699	9/19/2011 15:53	19-IX-11-1	crinoid creature;		НВ		
	Florida, south of Pulley Ridge; 850										
Kraken 2 - 12	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		
	Florida, south of Pulley Ridge; 850	24 66264467	02 04770022	756.060	0/40/2044 46 44	40 11/44 4	6 H + 006	hard bottom; Rock- wall; Slope-		005	
Kraken 2 - 12	m escarpment	24.66261167	-83.91779833	756.068	9/19/2011 16:11	19-IX-11-1	Collect 006	steep (>35o);	НВ	006	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850	24.6624	-83.91814167	758.31	9/19/2011 16:26	10 IV 11 1	stannar 12 rassuared	hard bottom; Rock- wall; Slope-	НВ		
Kraken 2 - 12	m escarpment	24.0024	-03.91014107	/38.31	9/19/2011 16.26	19-17-11-1	stopper 12 recovered; Photo XS (quantitative)- start; starting on photo;	steep (>35o);	пь	+	
							3154.jpg; starting trans 750; dense bioterbation 10-				
							30 cm pits and mounds; acanthacaris burrows; were				
	Florida, south of Pulley Ridge; 850						on on the light blue slope on the sonar; rat tail;	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment	24.66203333	-83.91771333	756.395	9/19/2011 16:27	19-IX-11-1	squid	steep (>35o);	нв		
	Florida, south of Pulley Ridge; 850							soft bottom; Rock- wall; Slope- steep		1	
Kraken 2 - 12	m escarpment	24.66259667	-83.91801333	747.894	9/19/2011 16:30	19-IX-11-1	changing tapes; 20o camera angle	(>350);	SB		
	Florida, south of Pulley Ridge; 850						eyeballs - white squid in sediment; changing colors				
Kraken 2 - 12	m escarpment	24.66307	-83.91742	746.82	9/19/2011 16:31	19-IX-11-1	to red; shrimp; rattail; nuzumia; eel; crinoid;	soft bottom; Slope- steep (>35o);	SB		
	Florida, south of Pulley Ridge; 850						squid; Bathynomus giganteus on video - 30 cm;	soft bottom; fine white silky clay;			
Kraken 2 - 12	m escarpment	24.66353167	-83.91754	731.031	9/19/2011 16:46	19-IX-11-1	Chaunax and a school of squid;	Slope- steep (>35o);	SB		
	Florida, south of Pulley Ridge; 850	24 66226667	02.04024667	700.044	0/40/2044 46 52	40 11/44 4		soft bottom; fine white silky clay;	c n		
Kraken 2 - 12	m escarpment	24.66336667	-83.91821667	730.844	9/19/2011 16:53	19-IX-11-1	squid and tri pod; Photo 3165.jpg;	Slope- moderate (<350);	SB		
Krakon 2 12	Florida, south of Pulley Ridge; 850	24.66306	-83.91824333	722.577	0/10/2011 16:59	10 IV 11 1	squid; half way across the lower slope; 150 m to the		SB		
Kraken 2 - 12	m escarpment Florida, south of Pulley Ridge; 850	24.66396	-03.91024333	722.377	9/19/2011 16:58	19-17-11-1	wall; squid ink; Nezumia;	Slope- moderate (<350); soft bottom; fine white silky clay;	SB	+	
Kraken 2 - 12	m escarpment	24.66408	-83.91814667	718.513	9/19/2011 17:00	19-IX-11-1	Bathynomus giganteus; 60 m from wall;	Slope- moderate (<350);	SB		
Munch Z - 1Z	essurpment	24.00408	05.51014007	, 10.313	3/13/2011 17:00	72 IV 11-1	Satisfied Biguitteds, 60 III II offi wall,	siepe moderate (550),	35	-	-
	Florida, south of Pulley Ridge; 850						moving on again; base of wall is 690; Acanthacaris;	soft bottom; fine white silky clay;			
Kraken 2 - 12	m escarpment	24.66411	-83.91813333	718.186	9/19/2011 17:02	19-IX-11-1	bioterbation is inceasing; Nezumia;	Slope- moderate (<350);	SB		
	Florida, south of Pulley Ridge; 850						<u> </u>	soft bottom; fine white silky clay;		1	
Kraken 2 - 12	m escarpment	24.66434333	-83.91795667	710.338	9/19/2011 17:06	19-IX-11-1	ledge is 60 yds away; Nezumia;	Slope- moderate (<350);	SB		
							Slope- moderate (<35o); 50 % cover of cobble;				
	Florida, south of Pulley Ridge; 850						tunicate and hydroids; definite Lophelia and solitary				Coral- Lophelia;
Kraken 2 - 12	m escarpment	24.66441	-83.91785667	706.882	9/19/2011 17:08	19-IX-11-1	coral rubble; stopped for 202 and sample 007;	coral rubble;	SB	007 & 202	Coral- coral rubble
								soft bottom; fine white silky clay;			
	Florida, south of Pulley Ridge; 850	24.66465	02 04700000	707 500	0/40/2044 4= = :	40 11/44 :		coral rubble; Slope- moderate	c n		
Kraken 2 - 12	m escarpment	24.664325	-83.91799833	707.536	9/19/2011 17:24	19-IX-11-1	Chaunax; Coral- coral rubble;	(<350);	SB	1	Coral- coral rubble
	Florida couth of Bullou Bid 050						ledge wall ahead; rock slabs - 20-30 cm thick; 1-3 m	hard battam, Back, wall, Clare			
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.664445	-83.91797833	701.463	9/19/2011 17:25	10-IV-11-1	large; Slope- steep (>350); large rock slabs and ledges with sediment between;	hard bottom; Rock- wall; Slope- steep (>350);	НВ		
KI dKEII Z - 1Z	пі езсагріпені	44.004445	-03.71/3/633	/01.403	2/12/2011 17:25	12-14-11-1	reages with seament between;	steep (>330),	ПВ		<u> </u>

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Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66454833	-83.91807	700.716	9/19/2011 17:28 19	9-IX-11-1	600 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 (>350);	НВ		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	9-IX-11-1	occasional navigational errors in the track;	soft bottom; Slope- steep (>350);	SB		
	Florida, south of Pulley Ridge; 850						-	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment	24.66482	-83.91846667	701.557	9/19/2011 17:45 19	9-IX-11-1	Acanthacaris;	steep (>35o);	НВ		
	Florida, south of Pulley Ridge; 850						Acanthacaris; go towards wall and stopping to	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment	24.665035	-83.91856333	694.597	9/19/2011 17:47 19	9-IX-11-1	collect whip coral	steep (>35o);	НВ	009	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.665245	-83.91864833	690.953	9/19/2011 17:56 19	9-IX-11-1	done collecting; back to wall; heading strait to wall; and going to travel horizontal; 70-800 slope; horizonal layering @ 688 m; light sedimeintation; sebstrate looks like rock as opposed to clay; cont ex NW parallel to the wall;	hard bottom; Rock- wall; Slope- steep (>35o);	НВ		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66536333	-83.91880167	687.357	9/19/2011 17:58 19	9-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 horizonal ledge about 2 m wide; very poor tracking; rat tail; Antipathidae; comat	hard bottom; Rock- wall; Slope- steep (>350); Photo XS (quantitative)- start;	НВ		
	Florida, south of Pulley Ridge; 850	24.66562222	02.040725	670 600	0/40/2044 40 40	0.11/44.4	moving up to 650 m; going up shelf to shallower	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment Florida, south of Pulley Ridge; 850	24.66562333	-83.918735	679.603	9/19/2011 18:10 19	9-IX-11-1	water depth; slups out of the wall(?); yellow gorgonian - plate like branches; bi lateral < 1	steep (>35o); hard bottom; Rock- wall; Slope-	НВ		
Kraken 2 - 12	m escarpment	24.666145	-83.91887333	665.916	9/19/2011 18:26 19	9-IX-11-1	cm wide ~ 20 cm tall - yellow	steep (>350);	НВ		
Manch 2 12	escarpinent	2 1.0001 15	03.31007333	005.510	3, 13, 2011 10:20 1:	J 1/1 1 1	consolidated clay and carbonate - highly eroded -	steep (* 330),	-		
	Florida, south of Pulley Ridge; 850						still collecting 010; Hexactinellida; not getting	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment	24.66600833	-83.91884667	668.625	9/19/2011 18:29 19	9-IX-11-1	digtial photos on the wall;	steep (>35o);	нв		
	Florida, south of Pulley Ridge; 850						cerianthid; corallimorph; crinoids; antipatharians;	hard bottom; Rock- wall; Slope-			
Kraken 2 - 12	m escarpment	24.665965	-83.91910667	669.98	9/19/2011 18:30 19	9-IX-11-1	squid;	steep (>35o);	НВ		
	Florida, south of Pulley Ridge; 850						Stichopathes; gorgonians; heading to the top of the				
Kraken 2 - 12	m escarpment	24.666715	-83.91919667	643.168	9/19/2011 18:53 19	9-IX-11-1	ledge		НВ		
Krakon 2 12	Florida, south of Pulley Ridge; 850	24 66702	92 01047	641.010	0/10/2011 10:50 10	0 IV 11 1	10 m ladge squid in the downward		шв		
Kraken 2 - 12	m escarpment	24.66703	-83.91947	641.019	9/19/2011 18:58 19	9-IX-11-1	10 m ledge; squid in the downward		НВ		
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66746833	-83.91962167	632.144	9/19/2011 19:12 19	9-IX-11-1	start more downward photos; Photo XS (quantitative)- start; starting at photo number 3185; brotulid;		НВ		
K1 2 42	Florida, south of Pulley Ridge; 850	24 667775	02.04074222	624.042	0/10/2011 10:10 1	0.17.14.1	and the broken the order order over				
Kraken 2 - 12	m escarpment  Florida, south of Pulley Ridge; 850	24.667775	-83.91974333	634.013	9/19/2011 19:18 19	9-IX-11-1 -	moving back to the edge; golden crab; 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		НВ		
Kraken 2 - 12	m escarpment	24.66772833	-83.91952	632.378	9/19/2011 19:22 19	9-IX-11-1	greenish yell		НВ		<u> </u>
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66817	-83.91980167	632.565	9/19/2011 19:24 19	9-IX-11-1	trying to collect a possible holothuroidea;		НВ	012	
Kraken 2 - 12	Florida, south of Pulley Ridge; 850 m escarpment	24.66839333	-83.92018	630.836	9/19/2011 19:49 19	9-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		

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							pretty much lost our angle in our downward facing		
	Florida, south of Pulley Ridge; 850						shot, probably only getting half benthos, half water		
Kraken 2 - 12	m escarpment	24.66768	-83.919685	632.752	9/19/2011 19:53	19-IX-11-1	column;	НВ	
	Florida, south of Pulley Ridge; 850						changing our heading; heading back NW; lots of		
Kraken 2 - 12	m escarpment	24.66795	-83.91962167	631.537	9/19/2011 20:01	19-IX-11-1	hydroids;	НВ	
							golden crab Chaceoni; another fish of some sort;		
	Florida, south of Pulley Ridge; 850						crinoid in sediment just off the edge; facing about		
	m escarpment	24.66878667	-83.91974	631.444	9/19/2011 20:08	19-IX-11-1	30 degrees; but moving laterally at 330	нв	
					-,,				
							large anemone more than 20cm across; top of the		
	Florida, south of Pulley Ridge; 850						wall is getting about a m or 2 shallower; more large		
Kraken 2 - 12		24.66868667	-83.91970833	630.229	9/19/2011 20:09	10 IV 11 1	branching gorgonians; 2 squid	нв	
Kraken 2 - 12	m escarpment	24.00808007	-03.91970033	030.229	9/19/2011 20:09	19-IX-11-1	branching gorgonians; 2 squid	ПВ	
							continuing along the top of the wall; big beautiful		
							sea star probably Brisinga; lion lobster; stylaster; 2		
							Beryx; Stichopathes; Antipathes; yellow branching		
	Florida, south of Pulley Ridge; 850						gorgonians; golden crab; the top of the wall is		
Kraken 2 - 12	m escarpment	24.668905	-83.919725	628.501	9/19/2011 20:26	19-IX-11-1	continuing upward; another lion lobster; another	HB	
							flying along the top of the wall; lots of envagination;		
							lots of CaCO2; 4 crinoids; a couple holothoridian;		
	Florida, south of Pulley Ridge; 850						another lion lobster on the downview;		
Kraken 2 - 12	m escarpment	24.66968333	-83.92049167	626.632	9/19/2011 20:31	19-IX-11-1	Stichopathes; yellow sea start about 15 cm across;	НВ	
	Florida, south of Pulley Ridge; 850								
Kraken 2 - 12	m escarpment	24.670205	-83.92087167	624.577	9/19/2011 20:34	19-IX-11-1	holothoridan; Stichopathes; crinoid	нв	
							· · · · · ·		
							moving up further north, looks ike 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-		
	Florida, south of Pulley Ridge; 850						60cm relief; soft sediement on both sides; lion		
	, , , , , , , , , , , , , , , , , , , ,	24 670205	02 02007467	624 577	0/40/2044 20 24	40 11/44			
Kraken 2 - 12	m escarpment	24.670205	-83.92087167	624.577	9/19/2011 20:34	19-IX-11-1	lobster Acanthacaris caeca; brotulidae fish;	НВ	
							Beryx; wall just went instantly vertical; secondary		
							little ledge just off the top of the wall; lacey little		
							sponges we collected earlier; purple branching		
	Florida, south of Pulley Ridge; 850						gorgonians; corallimorph; sheer vertical about 80		
Kraken 2 - 12	m escarpment	24.67059333	-83.92138333	624.203	9/19/2011 20:39	19-IX-11-1	degree slope; crinoid; Stichopathes;	НВ	
	Florida, south of Pulley Ridge; 850								
Kraken 2 - 12	m escarpment	24.67069667	-83.92168667	631.163	9/19/2011 20:42	19-IX-11-1	4 squid; Antipathes bipinnata;	НВ	