North Topsail Beach Shoreline Protection Project Draft Environmental Impact Statement

APPENDIX H

Coastal Planning & Engineering, Inc. Nearshore and Offshore Hardbottom Investigation Results

SUMMARY OF FIELD OBSERVATIONS

Date:	June 2006
Project:	North Topsail Beach Shoreline Protection Project
Location:	North Topsail Beach, North Carolina
Commission Number:	4600.21
Field Representatives:	Erin Hague, Robert Baron, Angela Delaney - Marine
	Biologists; and Patrick Bardes - Marine Biologist Technician

CPE marine biologists conducted *in situ* investigations in June, August and October 2005 in the near shore (-18 to -25 feet) and offshore (-36 to -44 feet) waters of North Topsail Beach. Field investigations were performed to confirm the delineations of potential and probable hardbottom resources in the project area to collect benthic community data from representative locations.

From June 21 through 24, 2005, CPE marine biologists confirmed the sidescan sonar results of potential and/or probable hardbottom located 1) in the near shore of Onslow Beach, 2) offshore of New River Inlet near a potential sand source location, 3) in the near shore of the north section of North Topsail Beach, and 4) at select sites in the vicinity of the offshore borrow area.

Field investigations conducted from August 3 through 7, 2005 included diver verification of potential and/or probable hardbottom areas located 1) in the New River Inlet Significant Natural Heritage Area, 2) in the central section, including the establishment of four (4) temporary transects (TS5 to TS8) on confirmed hardbottom, 3) along the northwest hardbottom edge between TS10 through TS13, and SNHA 4) at the three USACE sites resulting in only one site (TS9) as diver verified hardbottom. Refer to Figure 1.

The June and August 2005 investigations confirmed near shore hardbottom resources located approximately 350 meters (1,150 feet) from the February-March 2002 mean high water line; and offshore hardbottom areas located 121.9 to 304.9 meters (400 to 1,000 feet) from the proposed borrow area. The hardbottom communities identified by the sidescan sonar results and confirmed by marine biologists in June and August 2005, were quantified in the project GIS to determine the total identified near shore (2,000 feet or less from shore) and offshore (greater than 2,000 feet from shore) hardbottom resources. The near shore hardbottom community totaled $260,537m^2$ and the offshore hardbottom totaled $1,652,857m^2$. The 'rule of thumb' applied to hardbottom communities without a baseline dataset is to characterize $\pm/-1/10,000^{\text{th}}$ of the area to achieve adequate representation. In using this approach, the optimum sample area is approximately $26m^2$ and $165m^2$ for the near shore and offshore hardbottom communities, respectively.

Researchers conducted near shore and offshore investigations from October 20 through 23, 2005 to ground-truth and characterize diver verified hardbottom resources identified during the June and August 2005 field investigations. Ten (10) temporary transects (TS5

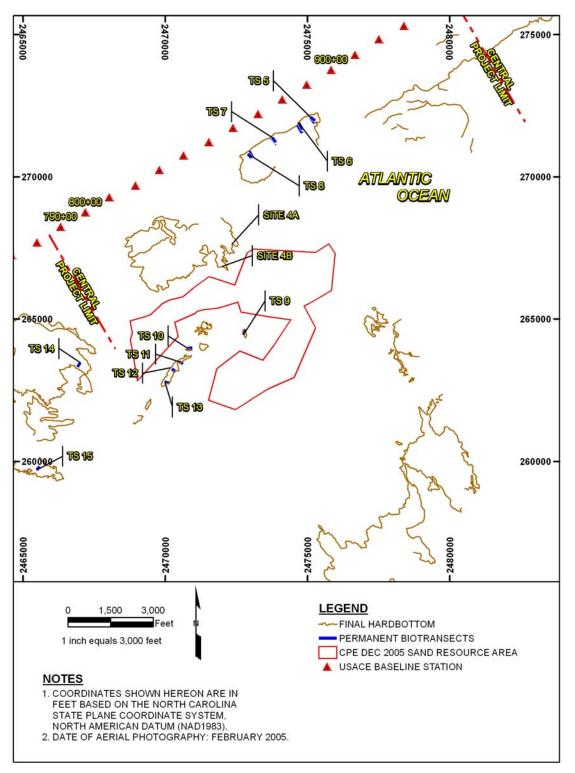


Figure 1

North Topsail Beach Hardbottom Monitoring Stations

to TS15) were established to characterize the near shore (TS5 to TS8) and the offshore (TS9 to TS15) hardbottom resources. See Figure 1.

Two methods of habitat characterization and documentation were used during these investigations: 1) the Benthic Ecological Assessment for Marginal Reefs (BEAMR) developed by Coastal Planning & Engineering, Inc., and 2) digital video that may be used to further analyze the hardbottom communities present within each study area. The biological community data collected in October 2005 was input into the project database to be included in a comprehensive pre-construction baseline survey assessment. Refer to the December 2005 Marine Resources Baseline Investigation Plan regarding the BEAMR methodology and video documentation (CPE, 2005).

A summary of findings from the 2005 investigations are provided below.

Near shore Hardbottom Resources

Northern Section

Photos 1 and 2 shown below are representative of the hardbottom features confirmed in the north section (TS1) in June 2005. Heavy sediment and particulate loading observed in the water column during the video collection prevented CPE marine biologists from completing the flora and fauna surveys (visibility ranged from 0 to \leq 30cm). The optical capabilities of a video camera far exceeds human visual optics, therefore the images shown below appear to be in relatively clear water. Further investigations of the north section confirmed hardbottom intermittently exposed between USACE baseline stations 1030+00 to 1070+50.



Oculina robusta

Eudistoma sp.

Photos 1 and 2 – Representative biotic coverage at TS1 shown above includes stony coral (*Oculina robusta*), sponge (*Siphonodictyon coralliphagum*) and tunicate (*Eudistoma* sp.).

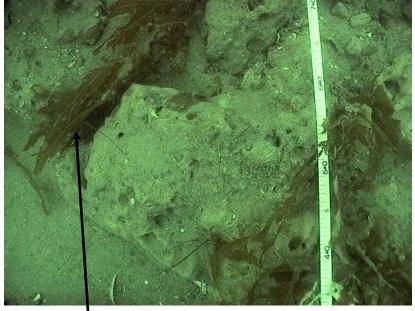
Siphonodictyon coralliphagum

During the June 2005 investigations at TS1, investigators used a $1m^2$ sample quadrat to collect a representative sample. The measuring tape was laid across the hardbottom feature and was stretched perpendicular to the shoreline for a total of 100 meters, sampling every 10 meters along the transect. Observations of the physical and biological

characteristics of the hardbottom features at TS1 documented the following: minimum and maximum relief recorded 0cm and 60cm, respectively; sediment type is comprised of sand and shell (average sediment depth is 3.2cm); macroalgae cover averaged 4.3% (algal species include *Gelidium*, *Graciliaria*, with *Cryptonemia* and *Dasya* as the dominant types); bare hard substrate averaged 15.4%; stony coral cover (*Oculina robusta*) averaged 1%, ranging in size from ≤ 1 to 7 cm; additional functional groups included bryozoans, annelids, porifera, hydroids and tunicates. Poor visibility (averaging 1 to 4 inches) prevented CPE marine biologists from conducting further detailed benthic characterizations on the near shore hardbottom communities of the north section during August and October 2005 investigations. As a result of these limiting conditions, the near shore sample area was limited to the central section.

Central Section

In the central section, hardbottom is exposed between stations 850+50 to 880+50. Four (4) temporary monitoring transects (TS5 to TS8) were established in August and October 2005 on the confirmed hardbottom area. In October, investigators used a 0.25 square meter ($0.25m^2$) quadrat to sample every 2.5 meters along the 60m temporary transects, for a total sample size of $24m^2$. Similar to the offshore monitoring efforts, the BEAMR methodology was used to collect physical and biological characteristics of the hardbottom features in the central section. Results of these investigations confirmed an average relief of 7.32 cm, with a maximum relief measuring 35 cm. Sediment depth averaged 2.3 cm with a maximum depth measured to 10 cm. Sediment type was dominated by sand and shell, with occasional mud, averaging 36% cover of the total sample area. See Photo 3 showing the irregular topography and Rhodophyte (*Cryptonemia* sp.) observed at TS7. *Cryptonemia* is typically found in low-light habitats, which is supported by the poor visibility observed during the 2005 in-water investigations (Littler and Littler, 2000).



Cryptonemia sp.

Photo 3 – Exposed hardbottom in near shore zone of central section (TS7).

Shell fragments were commonly observed in the limestone substrate, along with a thin veneer of sediment on the limestone. Bryozoans were occasionally observed representing 1% of the sample quadrat in the central section. As opposed to sessile annelids (feather duster worms) which ranged from 0 to 80% cover (ave. 6%) along TS7. Macroalgae cover at stations TS5 through TS8 was documented on 1% of the sample quadrats, dominated by *Cryptonemia* sp. shown above, with occasional *Gracilaria* sp.

The average non-biotic cover (e.g., turf, cyanobacteria, sediment, and bare hard substrate) occurring along the near shore hardbottom sample area is 87.3%. While the average macrobiotic cover is 10.5%.

The fish species observed during the near shore characterization was limited to the black sea bass (*Centropristis striata*). No other fish species were seen during the in-water investigations due to the limited visibility.

A summary of the hardbottom investigations conducted offshore of New River Inlet in June 2005 are not included in this report since the proposed activities for this area are no longer included in the project.

The June 2005 in-water investigations of the nine (9) sites conducted in the near shore of Onslow Beach confirmed coarse sand, fine silt and wooden debris.

Offshore Hardbottom Resources

In June 2005, CPE marine biologists investigated eight (8) probable hardbottom areas (formerly NTB BA Sites 1 through 8) within 300 meters of the proposed borrow area. All eight sites were confirmed hardbottom of varying relief and benthic community coverage. In August 2005, three (3) additional sites (USACE Sites 1 through 3) were investigated for the presence or absence of hardbottom habitats. Only USACE Site 3 was confirmed as hardbottom by CPE marine biologists; while USACE Sites 1 and 2 were confirmed as shell hash. These sites were documented by visual observations of the benthic communities, video documentation and mapping using DGPS positioning and HYPACK[®]MAX software. A summary of in-water observations conducted at USACE Sites 1 and 2 are not provided in this report.

Due to their proximity to the borrow area, the rock/sand interface at TS10 through TS13 were mapped in August 2005 to delineate the extent of hardbottom communities near the borrow area. The offshore hardbottom located near TS 11 through TS 13 measured 1 to 4 feet in height.

Hardbottom characterizations of the offshore communities were conducted in October 2005, which included the establishment of seven (7) 50 m temporary transects at TS9 through TS15 (formerly USACE 3, BA 1 and 2, 7 and 8). In June 2005, CPE marine biologists confirmed hardbottom at Sites 4A and 4B. However, in October 2005, the hardbottom at these sites was found covered with greater than 60 cm of mud. Therefore a temporary transect was not established at this location.

Transects were established at the sand/rock interface and extended in a southerly direction, away from the borrow area. The distance from the proposed borrow area to

TS15 is approximately 4,400 feet. Project dredging affects are not anticipated due to the distance from the sand resource area, therefore this site will be reported as the control transect (see Figure 1).

Sample stations were established every 2.5 m along the temporary transects using a $1m^2$ sample quadrat for a total representative sample size of $140m^2$. The BEAMR surveying method was conducted at each of these offshore sites to identify benthic community coverage and diversity, as well as sediment depth and cover.

The average macrobiotic cover per sample quadrat is 5.4% along the offshore transects. Sessile benthos observed along the hardbottom is dominated by macroalgae, octocorals, encrusting red algae, sessile worms and stony corals (presented in decreasing order). The dominant macroalgae observed along the offshore transects is the red algae Cryptonemia. The octocoral Leptogorgia virgulata averages the greatest percent cover along the offshore transects. This octocoral is one of the most common types found in the South Atlantic Bight, ranging from Chesapeake Bay to Georgia, to the western coasts of Florida and Brazil (SERTC, 2006). Titanideum frauenfeldii occurs less frequently on the This octocoral commonly occurs on rock and sand mixed offshore hardbottom. substrates located in current-swept environments (NOAA, 2006). The stony coral Oculina robusta is present along most offshore transects as recruits (<3cm). This shallow water form of *Oculina* has a temperature range of 52 to 93 °F and is abundant off the west coast of Florida (Reef, 2006; Humann, 2002). Results from aquarium observations conducted by the Reef Ball Foundation, Inc. indicated that O. robusta is "very hardy" and has a high silt tolerance (Reef, 2006). Refer to Photo 4.



Photo 4 – Oculina robusta stony coral recruits observed at TS9 during the October

The average non-biotic cover (e.g., turf, cyanobacteria, sediment, and bare hard substrate) occurring along the offshore hardbottom, as observed along the representative monitoring transects, is 94.2%. The maximum height measured within the offshore sample quadrats is 35 cm (average 4 cm). The average sediment cover per sample quadrat is 83.5% with a maximum depth measured at 30 cm (average depth 9 cm). Visual observations of the surface sediment indicated that it is primarily composed of sand and shell fragments.

New River Inlet Outcrop- Significant Natural Heritage Area (SNHA)

In August 2005, CPE marine biologists investigated four (4) probable hardbottom areas identified from the side scan sonar results and located in the New River Inlet Outcrop SNHA. The four areas are identified in the project GIS as SNHA 1, 2, 4 and 4A. All four probable hardbottom areas are located in the western region of the SNHA. Both SNHA 1 and 2 are low relief (\leq 30 cm) hardbottom features with 3 to 4 cm of sediment covering the rock. Tunicates, sponges, encrusting red algae and the stony coral *Oculina robusta* were common at both sites. The *O. robusta* corals ranged in size from 2 to 5 cm at SNHA 2. No attached macroalgae was observed at SNHA 1. At SNHA 2, the chlorophytes *Caulerpa* and *Codium* were present, as well as the phaeophytes *Dictyota*, *Lobophora* and *Sargassum*.

Investigation areas SNHA 4 and 4A are located in proximity to one another near the northwest corner of the New River Inlet Outcrop SNHA. SNHA 4 is a ridge and trough feature that was observed with a thin veneer of sand and silt. The maximum relief measured at this site was 45 cm. CPE marine biologists observed a 2.1 meter stepping ledge with a maximum base depth of 32 feet and a minimum platform depth of 25 feet. In addition to the organisms observed at SNHA 1 and 2; hydroids, red cyanobacteria mats, the rhodophyte *Gracilaria* and the red coralline algae *Amphiroa* were also observed. *O. robusta* colonies observed at SNHA 4A were measured between 2 and 3 cm, with an occasional 5 cm colony.

The following table lists the finfish observed near the offshore hardbottom stations during the August 2005 investigations.

Common Name	Scientific Name
GRUNTS	HAEMULIDAE
White Grunts	Haemulon plumierii
Tomtate	Haemulon aurolineatum
pigfish	Orthopristis chrysoptera
Unidentified juvenile grunts	Haemulon sp.
PORGIES	SPARIDAE
Spottail Pinfish	Diplodus holbrooki
Pinfish	Lagodon rhomboides
Longspine Porgy	Stenotomus caprinus
Sheepshead	Archosargus probatocephalus
Scup	Steotomus chrysops
DRUMS	SCIAENIDAE
Highhat	Pareques acuminatus
GOATFISH	MULLIDAE
Dwarf Goatfish	Upeneus parvus
COMBTOOTH BLENNIES	BLENNIIDAE
Seaweed Blenny	Parablennius marmoreus
MACKERELS	SCOMBRIDAE
Spanish Mackerel	Scomberomorus maculatus
PUFFERFISH	TETRAODONTIDAE
Bandtail Puffer	Sphoeroides spengleri
Sharpenose Puffer	Canthigaster rostrata
SEABASSES AND GROUPERS	SERRANIDAE
Black Sea Bass	Centropristis striata
Pygmy Sea Bass	Seranniculus pumilio
Belted Sandfish	Serranus subligarius
JACKS	CARANGIDAE
Bar Jack	Caranx ruber
Mackerel Scad	Decapterus macarellus
Unidentified Scad	Selar/Decapterus sp.
SPADEFISH AND SILVERSIDES	EPHIPPIDAE
Atlantic Spadefish	Chaetodipterus faber
TOADFISH AND SCORPIONFISH	BATRACHOIDIDAE
Leopard Toadfish	Opsanus pardus
WRASSES	LABRIDAE
Slippery Dick	Halichoeres bivittatus
FLOUNDER	PARALICHTHYIDAE
Summer Flounder	Paralichthyus dentatus
LIZARDFISH	SYNODONTIDAE
Sand Diver	Synodus intermedius
REMORA	ECHENEIDAE
Whitefin Sharksucker	Echeneis neucratoides

References

- Baron, R. and M. Lybolt, 2004. Coastal Planning & Engineering, Inc. Rolls Out the New BEAMR (Benthic Ecological Assessment for Marginal Reefs): A Standardized Marine Resource Benthic Cover Assessment Method. Coastal Planning & Engineering, Inc.
- Coastal Planning & Engineering, Inc. Rev. December 2005. North Topsail Beach Shoreline Protection Project, Marine Resource Baseline Investigation Plan, North Topsail Beach, NC.
- Humann, P., 2002. *Reef Coral Identification*, Jacksonville, F.L.: New World Productions Inc., 278p.
- Littler, D.S. and Littler, M.M., 2000. *Caribbean Reef Plants, An Identification Guide to the Reef Plants of the Caribbean, Bahamas, Florida and Gulf of Mexico*, Washington, D.C.: Offshore Graphics, Inc., 542p.
- NOAA, 2006. Grey's Reef National Marine Sanctuary: Habitat and Depth of *Titanideum frauenfeldii*. <u>http://graysreef.noaa.gov/</u>
- Reef Ball Foundation, Inc. (Reef), 2006. Robust Ivory Tree Coral (*Oculina Robusta*) Field and aquarium observations, <u>http://www.artificialreefs.org/index.html</u>.
- Southeastern Regional Taxonomic Center (SERTC), 2006. *Leptogorgia virgulata* (sea whip), *L. hebes* (regal sea fan), and their associates. http://www.dnr.sc.gov/marine/sertc/Leptogorgia.pdf

FIELD OBSERVATION REPORT

DATE:	August 29-30, 2006
PROJECT:	North Topsail Beach Shoreline Protection Project
COMMISSION NUMBER:	4600.55/5
LOCATION:	North Topsail Beach, North Carolina
FIELD REPRESENTATIVES:	E. Hague (Senior Marine Scientist), M. Lybolt (Senior
	Marine Biologist), C. Barrett (Marine Biologist), J. Craft
	(Marine Biologist), K. Willson (Coastal Geologist), A.
	Spencer (Marine Technician)

Introduction

In June 2006, the Southern Section (USACE baseline stations 580+00 to 781+00) was added to the North Topsail Beach Shoreline Protection project. Investigations were therefore needed to determine if hardbottom resources are located in the nearshore (152 to 457 m)of the South Section or near the extended offshore borrow area approximately 767 m from the 2002 mean high water line at USACE baseline stations 850+00 to 890+00.

Sidescan sonar surveys were first conducted in August 2006 by Coastal Planning & Engineering, Inc. (CPE) geologists to determine if potential and probable hardbottom resources exist in the extended project area. Following the survey data reduction, CPE marine biologists and geologists conducted underwater (SCUBA) reconnaissance surveys to confirm the presence or absence of these resources. In addition to confirming hardbottom resources, goals of these investigations included: 1) establish two additional temporary monitoring transects (TS 16 and TS 17) near the offshore borrow area, as requested by the NCDCM; 2) collect baseline turbidity samples in the nearshore and offshore water column; and 3) collect relief measurements monitoring stations TS 11 and TS 12; and 4) determine the feasibility of placing hardbottom monitoring stations in the nearshore of the Southern Section.

Mobilization

Two field boats (Scuba Tech – M/V Tsunami and M/V Seahawk) were mobilized at 0700 hours on August 29th. The CPE crews arrived at the first investigation sites at approximately 0900 hours. Air temperature during the survey was approximately 83°F (28°C). Sea state conditions were 0.6 to 0.9 m at 0900 hours and increased to 1.2 to 1.8 m at 1400 hours. Winds ranged from 10 to 15 mph and a north current of ≤ 0.5 knots was observed. The two boats with CPE crew returned to the dock at 1600 hours.

On August 30^{th} , one field boat (*M/V Tusnami*) was mobilized by the CPE crew with a captain from Scuba Tech. The crew left the fuel dock at 0730 hours and arrived at the first site at 0825 hours. Air temperature during the survey was approximately 83° F (28° C). Sea state conditions were 0.6 to 0.9 m seas at 0900 hours and increased to 1.2 to 1.8 m at 1430 hours. Winds ranged from 10 to 25 mph with a slight north current. The CPE crew returned to the dock at 1700 hours.

Methods

The divers descended on a buoy deployed near the center of each potential and/or probable hardbottom area, and proceeded to conduct an exploratory search around the buoy for significant benthic resources. If none were found in the vicinity of the buoy, divers would then swim a compass bearing through the longest axis of the potential habitat. If an isolated resource or point of interest was observed, divers would record the location by pulling the dive flag below the surface of the water several times, signaling the boat crew to record the position using a Trimble AgDGPS Global Positioning System (GPS) with Pro Beacon. The buoy was on the shortest possible tether, such that the buoy was positioned directly over the sampling location. The positioning data were recorded and stored in the HYPACK 6.2a software program, a multifunctional navigation and hydrographic surveying program. Transitions in sediment were also recorded (*e.g.*, mud to sand, shellhash).

Benthic characterization along the temporary transects (confirmed hardbottom habitat) included the BEAMR methodology supported by videographic documentation.

<u>Results</u>

Investigations conducted offshore of USACE baseline station 850+00 (seaward of TS 5 to TS 8) confirmed mud, sand and shellhash. No hardbottom resources were found in this area. Refer to Figure 1.

Temporary transects were established offshore of USACE baseline station 800+00, identified as TS 16 and TS 17. BEAMR data was collected at these sites by a qualified marine biologist to characterize the benthic community. Underwater video was also collected along the transect line. Sample data was recorded every 2.5 m along the 50 m transect. Species observed were similar to those recorded at the offshore transects, with the exception of the octocorals *Titanidium* sp. and *Carijoa* sp.

At TS 11 and TS 12, relief measurements were collected landward side of the exposed hardbottom formation to determine if these features qualified as "high relief" under the North Carolina definition. The North Carolina code NCAC 07H. 0208(b)(12)(A)(iv)) states "*Mining activities shall not be conducted on or within 500 meters of significant biological communities, such as high relief hardbottom areas. High relief is defined for this standard as relief greater than or equal to one-half meter per five meters of horizontal distance.*" Vertical relief was measured for five meters in either direct (northeast and southwest) from the start of the transect. The results determined that the average relief along TS 11 is 0.16 m; while average relief along TS 12 ranges from 0.40 to 0.45 m. Relief measurements collected at the time of these investigations determined that these resources do not qualify as high relief under the State definition. BEAMR data and video was also collected at TS 11 and TS 12.

Underwater investigations conducted in the nearshore of the Southern Section confirmed to areas of hardbottom resources (near USACE baseline station 670+00 and between 725+00 and 750+00). CPE marine biologists attempted to establish temporary transects (TS 18 and TS 19) between 725+00 and 750+00, however poor visibility prevented divers from collecting data. These sites will be included in future investigations. Refer to Figure 2.

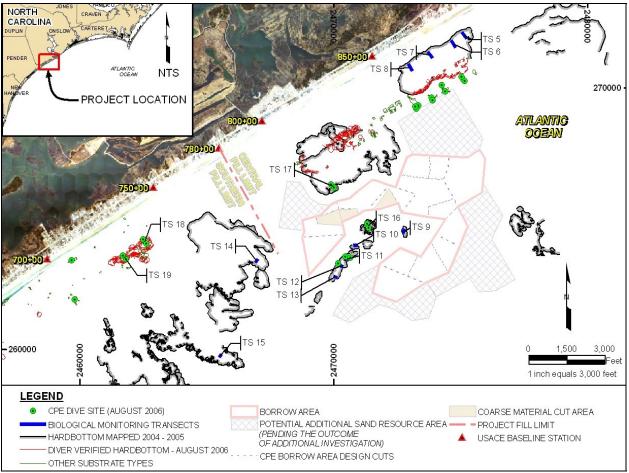


Figure 1. Underwater investigation sites of potential and probable hardbottom resources. August 2006 dive locations shown as green targets.

Water quality data was also collected at four sites in the nearshore and offshore during the August 2006 investigations. Turbidity levels were measured using a LaMotte 2020 turbidimeter. In the nearshore (USACE baseline stations 590+00 and 595+00), turbidity levels were measured at 35.2 and 9.67 Nephelometric Turbidity Units (NTU). Samples were collected at depth, approximately 2 m above the seafloor.

Turbidity samples collected in the offshore, at depth, include TS 12 (4.5 NTU), TS 16 (0.50 and 0.76 NTU) and TS 19 (-17.6, 22.5 and 23.0 NTU). Surface samples were also collected at TS 17 which averaged 0.43 NTU. The results of the turbidity sampling confirmed the poor visibility observed during the underwater investigations.

Additionally, the hardbottom edge digitized from the 2005 and 2006 sidescan sonar surveys at TS 18 and TS 19 indicated a change in exposed hardbottom from 5.25 acres in 2005 to 8.27 acres in 2006. The three acre change in exposed hardbottom confirms the ephemeral nature of this resource.

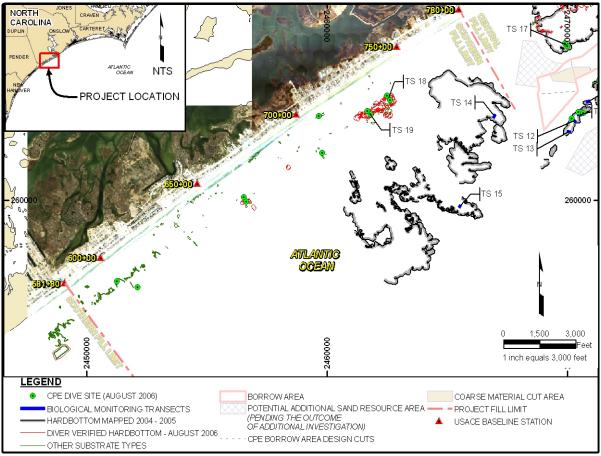


Figure 2. Underwater investigations in the nearshore of the Southern Section confirmed two hardbottom areas (near USACE baseline station 670+00 and between 725+00 and 750+00).

P:\North Carolina\North Topsail Beach\4600.08-35 Environmental\Hardbottom Investigations

Project Name		,	Dete Maill	61	Tansect Maine /	\mathcal{I}	6 .41Fi	necif
Date 29	1-Ang	-06	Data Coll	ecto	or <u>n(L</u>		Data Entry	
Quad Label: Sample Name or #	0	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		ample Name or #	SI	ist every coral colony	% cover or max size (cm)
Max Relief (cm)	6	Trikennun	2,	м	ax Relief (cm)	8	te ster for a state of the second	
Max Sediment Depth (cm)		Lepto-V	31/35/28	м	ax Sediment Depth (cm)			
Sessile Benthos	% Cover	Osob = lan	¹ ;1)	s	essile Benthos	<u>% Cover</u>		
Sediment- (circle all; sand shell mud)	86	Lento-V	16/15	(0	ediment- sircle all; sand shell mud)	75		
Macroalgae- Fleshy+Calcareous	1	Carijoa	2/2/1		lacroalgae- leshy+Calcareous	ſ	Tridemnum	6/4
Turf-algae+cyanobacteria (circle all: g r (b))	5	O. rob= 1cm	9	T (urf-algae+cyanobacteria circle all: $g \in b$)	15	Triclemmum	6/5
Encrusting Red Algae	2				incrusting Red Algae	3	Lepto-h	7
Sponge	1				ponge	0	O.robelan	16
Hydroid	0			0	lydroid	0	O, robe lang	26
Octocoral	1			2	Octocoral	1	Qrobe/an	17
Stony Coral	1				Stony Coral	1		
Tunicate	1			1 [lunicate	A		1
Bare Hard Substrate	i	1			Bare Hard Substrate	1		1
other		0		1 f	other	17	i kan derimiteten der periget i net in den in ein i ter gestennen in specifier versigerige in	
2 June	1	Annelich	/	11			a barranna Milling an	1
	st = 100%				Total Mus	st = 100%		<u> </u>
Quad Label:	5	List macroalgae Genus List every coral colony ~and coral condition(s)	% Cover or max size (cm)]	Quad Label: /-	?5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max : (cm)
Max Relief (cm)	17	Lepto-V	3/9		Max Relief (cm)	7	Tribumun	5
Max Sediment Depth (cm)	7	Tridemann	3/3		Max Sediment Depth (cm)	5	Trifomnum	8/5
Sessile Benthos	% Cove		2/2		Sessile Benthos	% Cover	1	1/2
Sediment- (circle all:(sand shell muc	55	Lepto-h	7		Sediment- (circle all: sand shell mud	,65	Lepto-V 4	1/17
Macroalgae- Fleshy+Calcareous	1	O.rob=icm	23		Macroalgae- Fieshy+Calcareous		Cariloa	34/
Turf-algae+cyanobacteria (circle all: g r b)20	34	· Orrob=ler	6		Turf-algae+cyanobacteria (circle all: / g ((b))	10	Orob	1/3/1
Encrusting Red Algae	3				Encrusting Red Algae	12		4/1/
Sponge	0			20	Sponge	C		14
	1			8	Hydroid		1/	1/1
Hydroid	9				Octocoral	ľ		
Octocoral					Stony Corel	1		
	1							1
Octocoral	/				Tunicate	1		
Octocoral	/							
Octocoral Stony Coral Tunicate					Tunicate			

í

/ ``.

Macroalgae: Pool to Genus = Genu or Genus; Avra. Bryopsis, Bryothamnion, Caul, Codi, Dasve, Dasveladus, Grac, Heli, Hypn, Sarg. Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurelia=Plia, Pseudoptexaura=Psi Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S in Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other- includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid.

Ĩ	ate S [24]	0		Data Coll					
_									
	uad Label:			% cover or max size (cm)		ample Name or #	35	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max (cm)
	ax Relief (cm)	14			N	lax Relief (cm)	9		
	ax Sediment Depth (cm)	3	Currijoa	3	N	lax Sediment Depth (cm)	4	Carloa	2/3
		% Cover	Lepto -V	33	5	essile Benthos	% Cover	Dirob	Vill
	ediment-	55	Drob	Milile	5	ediment- circle all: sand shell mud)	65	1	VIII
Ň	lacroalgae-			1. hhh	Ň	Aacroalgae- fieshy+Calcareous	ſ		111
17	leshy+Calcareous url- algae+cyanobacteria	17		1/1/1	1	furf-algae+cyanobacteria	27		1/1/1
<u> </u>	circle ell: g (Xb))20	41		17.7.7.		circle all: g r b/) 0	2	1	
ך לי	Encrusting Red Algae	\sum_{i}			2	Encrusting Red Algae			
20	Sponge	/		1/1/1/1	35	Sponge			4//
Į	lydroid		\bigcirc	1/1/1		Hydroid	↓/		_17/4/
ļ	Octocoral	ţ.				Octocoral	<u> </u>	<u>, v</u> .	
,	Stony Coral					Stony Coral		1.e.170-1	13
	Tunicate	5				Tunicate		·	
	Bare Hard Substrate	2				Bare Hard Substrate	1		
ľ	A. C.V	2				other Inemone	1		
ľ	other		Jachnone	1 .				-	· .
L	Total Mus	it = 100%		<u>.</u>		Total Mu	st = 100%		1
Ī	Quad Label: 🥭		List macroalgae Genus List every coral colony	% % cover or max size	ן ן	Quad Label:	-7 -2	List macroalgae Genus List every coral colony	% % co or ma
	Sample Name or #	>	~and coral condition(s)	(cm)		Sample Name or #	, 5	~and coral condition(s)	(cm)
	Max Relief (cm)	5	Carsjon	3/3	_	Max Relief (cm)	9		
	Max Sediment Depth (cm)	2	Lepto-V	23		Max Sediment Depth (cm)			
v.	Sessile Benthos	% Cove	I. J, rob	11/1/1/1	_	Sessile Benthos	<u>% Cov</u>	0.100010	
-	Sediment- (circle all: sand shell mud	60		1/1/1		Sediment- (circle all: sand shell mu	n 50	Virobe lam	
of-	Macroalgae- Fleshy+Calcareous	1		ing		Macroalgae- Fleshy+Calcareous		O.robelev	~ 3
2	Turl- algae+cyanobacteria (circle all: g r (b))	,31	•	$\frac{1}{1}$		Turf-algae+cyanobacteri (circle all: g (r/b))	a - O		
121	Encrusting Red Algae	3	V	i/1		Encrusting Red Algae	4		
✓,	Sponge	Ð	· ·	1	- 20	Sponge	0		
<u> </u>		Ø			.,,	Hydroid	0		z.
2	Hydroid	1 .				Octocoral	0	· ·	
ر	Octocoral	- 6		· · ·			1		
<u>_</u>	Stony Coral	\square				Stony Coral	0		<u>`</u>
	Tunicate	$-\frac{U}{1}$	_			Tunicate	1		
63	Bare Hard Substrate	<u> </u>				Bare Hard Substrate	1		
R	other 3r 712 060					other(36702	4		
	Totel M	ust = 100%	· ·			Annelid Total A	/ Aust = 100'	<u> </u>	
	Standard Abbreviations: and abbreviation formats	Macros	lase: Pool to Genus = Gel	nu or Genus: A	vra. I	Bryopsis, Bryothamnion, Ca	ul. Codi. D	asva. Dasvciadus. Grac. H pt. Plexaurella=Plla, Pseu	lali, Hypn

- Water Jon Constant

Date 19-	Avis -c	16	Data Col	llecto	or ML		Data Entry	ç.
	0	List macroalgae Genus % List every coral colony	% cover or max size (cm)		Quad Label: 22	.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cove or max (cm)
Max Relief (cm)	0			M	lax Relief (cm)	3		
Max Sediment Depth (cm)	2			N N	lax Sediment Depth (cm)	10		
Sessile Benthos	<u>% Cover</u>			<u>s</u>	essile Benthos	% Cover		
(circle all; sand shell mud)	99	Lepto-V	28		ediment- circle all: sand shell mud)	89	Lepto-V 43/	28/13
Macroalgae Fleshy+Calcareous	Ω	-		Ŀ	Aacroalgae- Teshy+Calcareous		Lepto-V	39
Turf-algae+cyanobacteria (circle ali: g r b)	0				furf-algae+cyanobacteria circle all: g r ())	2		
Encrusting Red Algae	0				Encrusting Red Algae	1		
Sponge	0			4	Sponge	0	Orob	
Hydroid	0				Hydroid	D		-
Octocoral	i				Octocoral	5		
Stony Coral	(.				Stony Coral	1		
Tunicate	C			ļ	Tunicate	0		
Bare Hard Substrate	0				Bare Hard Substrate	1		
other	2				other Annelid	(
· ·								
Total Must	= 100%				Total Mus	1 = 100%		
r		It ist macroalgae Genus	6 % cover	ור			List macroalgae Genus	6 % CL
Quad Label: 2	5	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label: Sample Name or #		List macroalgae Genus List every coral colony ~and coral condition(s)	% CL or max (Cm)
/	25	List every coral colony	or max size		Quad Label:		List every coral colony	or max
Sample Name or #	25	List every coral colony	or max size		Quad Label: Sample Name or #		List every coral colony	or max
Sample Name or #	25 [] 5 % Cove	List every coral colony -and coral condition(s)	or max size (cm)		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	<u>% Cove</u>	List every coral colony ~and coral condition(s)	or max
Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	11 5 <u>% Cove</u>	List every coral colony -and coral condition(s)	or max size (cm)		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae-	11 5 <u>% Cove</u>	List every coral colony -and coral condition(s) C = v(y) = c C = y = c C = v(y) = c C	or max size (cm)		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae-	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Reliet (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment (circle all: sand shell mud)	11 5 % Cove	List every coral colony -and coral condition(s) Cav(j) d = $Ce_{M} e - V$	or max size (cm) 1/2 75 37/35/3		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> <u>Sediment- (circle all: sand shell mud)</u> <u>Macroalgae- Fleshy+Calcareous</u> Turf- algae+cyanobacteria	11 5 % Cove	List every coral colony -and coral condition(s) C = v(y) = c L = p = -v L = p = -v L = p = -v T = c = m m m	or max size (cm) 1/2 75 37/35/3 8, 7		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobactena	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g : []b) / 0	11 5 % Cove	List every coral colony -and coral condition(s) Cavijoa Legho-V Legho-V Triclemun O.rob=lem	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g : Tb)) / 0 Encrusting Red Algae	11 5 % Cove	List every coral colony -and coral condition(s) Carryde- Lepte- Lepte- Lopte- V Trickemmu O.robelen D.ribe in	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: send shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (b)) / / 0 <u>Encrusting Red Algae</u> <u>Sponge</u>	11 5 % Cove	List every coral colony -and coral condition(s) Carryde- Lepte- Lepte- Lopte- V Trickemmu O.robelen D.ribe in	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g : Tb)) / 0 Encrusting Red Algae Sponge <u>Hydroid</u>	11 5 % Cove	List every coral colony -and coral condition(s) Carryde- Lepte- Lepte- Lopte- V Trickemmu O.robelen D.ribe in	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g f(b)) / 0 Encrusting Red Algae Sponge Hydroid Octocoral	 5 /0 17 17 17	List every coral colony -and coral condition(s) Carryde- Lepte- Lepte- Lopte- V Trickemmu O.robelen D.ribe in	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: send shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	% Cove	List every coral colony ~and coral condition(s)	or max
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessite Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g f(b)) / 0 Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral	11 5 % Cove	List every coral colony -and coral condition(s) Carryde- Lepte- Lepte- Lopte- V Trickemmu O.robelen D.ribe in	or max size (cm) 1/2_ 75/ 37/35/3 8, 7 1 C		Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: send shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	% Cove	List every coral colony ~and coral condition(s)	or max

and abbreviation formats

~

۰.

3 ...

Macroaldae: Pool to Genus - Genus - Genus: Arie, propsis, prountaminon, Gau, Cool, Dasya, Dasya, Dasya, Grac, Hail, Hybri, Sena Octocoral: Genus of each colony = Genu: Gorg, Lepi, Plex..., except Pseudoplerogorale=Psot, Plexeurella=Plia, Pseudoplexeure=Psot Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat. M ann. M cav. P ame. O dif, S rad, S sid, S bou, S hya, S in Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes; Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid,

Date <u>Alb</u>	· · ·		Data Co	lec	tor SC		Data Entry	میں ند ن _و
Quad Label: J	\supset	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)		Quad Label: 2	TK I	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max si (cm)
fax Relief (cm)	5	Orobilly	1		Max Relief (cm)	\mathcal{F}	-	
fax Sediment Depth (cm)	T	0.10h 111	2		Max Sediment Depth (cm)	8		
Sessile Benthos	% Cover	Titon	1-7		Sessile Benthos	% Cover		
Sediment- circle all: sand shell mud) Macroalgae-	CS I	<u>litan</u>	5		Sediment- (circle all/ sand shell mud) Macroalgae-	98		
Fleshy+Calcareous Furf- algae+cyanobacteria circle all: g r, b)	-8	L VIK	31		Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1		
Encrusting Red Algae		(ari	L		Encrusting Red Algae		Martine data and an and an and an and	
Sponge	U		_	55	Sponge		······	
Hydroid	1			Ъ	Hydroid			
Octo <u>cor</u> al	C				Octocoral			
Stony Coral		· · · · · · · · · · · · · · · · · · ·			Stony Coral			
Tunicate					Tunicate		2 2 2	
Bare Hard Substrate	\hat{U}				Bare Hard Substrate			
other 0.00	:			-	other			<u> </u>
() ()					<u> </u>		1	
Total Mus	it = 100%	List macroelgae Genus	% % cover	-	Total Mus	t = 100%	List macroalgae Genus %	% cov.
Quad Label: Sample Name or #		List every coral colony ~and coral condition(s)	or max size (cm)		Quad Label: Sample Name or #		List every coral colony ~and coral condition(s)	or max (cm)
Max Relief (cm)					Max Relief (cm)			
					Max Relief (cm) Max Sediment Depth (cm)			
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	<u>% Cover</u>				Max Sediment Depth (cm) Sessile Benthos	<u>% Cover</u>		
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud)					Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	/		
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous			
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae-)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-			
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Tun- algae+cyanobacteria)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria			
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Tun- algae+cyanobacteria (circle all: g r b))				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)		Coop, J.	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Tun- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae		Solo Alexandree	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge)				Max Sediment Depth (cm) Sessife Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge		Solution of the second	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid		Solution of the second	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral		S. J.	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral)				Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral			

 Macroelgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasva, Dasvcladus, Grac, Hali, Hvpn, Sara...

 Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plia, Pseudoptexaura=Pspl

 Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M enn, M cav, P ame, O dif, S rad, S sid, S bou, S hva, S int...

 Coral condition: W=white disease(s). O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

 Other- Includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepore, sp., Seegrass, Zoanthid.

	The			e/T			Data Entry	*1. ···
Date <u> </u>	100		Data Coll	ecto			Data Chury	. (
Quad Labei:		list macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		mple Name or #	75		% cover or max size (cm)
Max Relief (cm)	ò			M	ax Relief (cm)		TAGIN	5
Max Sediment Depth (cm)	6			м	ax Sediment Depth (cm)	\bigcirc		
Sessile Benthos	% Cover			<u>S</u>	essile Benthos	<u>% Cover</u>		
Sediment- (circle all: sand <u>\shell mud)</u>	94			(0	ediment- ircle ali: sand shell mud)	95	<u>0. nb</u>	1
Macroalgae- Fleshy+Calcareous	.)				acroalgae- eshy+Calcareous		ld (1
Turi- algae+cyanobacteria (circle all: g_r b_)	\odot			T	urf-algae+cyanobacteria Aircle all: g r b)			
Encrusting Red Algae				LΕ	ncrusting Red Algae	j		
Sponge	1			3-05	ponge			
Hydroid	\Box	THAN	ê	١ů	lydroid			
Octocoral		Col			Octocoral	1		
Stony Coral		20 01		5	Stony Coral	1		
Tunicate	\bigcirc				unicate			
Bare Hard Substrate		0 mil			Bare Hard Substrate)		
other		$ \uparrow\uparrow\uparrow\circ\rangle$	1 '		other brud	}-		
· .		(new Circle	Cin 18	5-A)			
Total Mus	st = 100%)	- 0	Total Mus	st = 100%		
Quad Label:	45	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cover or max size (cm)		Quad Label:	125	List macroalgae Genus List every coral colony ~and coral condition(s)	% C or max J (cm)
Max Relief (cm)	\overline{Q}	Livira	40] [Max Relief (cm)	4	1 jira	34
	TO			-1 I		-		1 .
Max Sediment Depth (cm)	1 - 1	L. VITA	44		Max Sediment Depth (cm)	8	Tian	1
	1 - 1		44 440	-1 1	Max Sediment Depth (cm) Sessile Benthos	<u>% Cove</u>	Tirny Citar	1
Max Sediment Depth (cm)	% Cover				Sessile Benthos Sediment- (circle all: sand shell mud	<u>% Cove</u>	r Tinny Citan Titan	94
Max Sediment Depth (cm) Sessile Benthos Sediment	% Cover		46		Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous	% Cove	i I a	4
Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud Macroalgae	<u>% Cover</u>) 9(0		40		Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae-	% Cove	<u>hiton</u>	1 9 4 5 8
Max Sediment Depth (cm) Sessile Benthos Sediment (circle all' sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% Cover</u>) 9(0	THAK THAK	40		Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% Cover</u>) 9(0	THAK THAK	40	<i>√7</i>	Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) Sessile Benthos Sediment (circle all' sand shell mud Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b) Encrusting Red Algae	<u>% Cover</u>	THAK THAK	40		Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: send shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) <u>Encrusting Red Algae</u> <u>Sponge</u>	<u>% Cover</u>) 9(0	THAK THAK	40	<i>√7</i>	Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all send shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% Cover</u>	THAK THAK	40	<i>√7</i>	Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% Cover</u>	THAK THAK	40	<i>√7</i>	Sessile Benthos Sediment (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	% Cove	<u>lifau</u> Caui	4
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% Cover</u>	THAK THAK	40	<i>√7</i>	Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	% Cove	<u>lifau</u> Caui	4

í.

~ ~

÷

Inst = 100% <u>Macroalgae: Pitt to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sara,</u> <u>Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex..., except Pseudopterogorgia=Pspt, Plexaurelia=Plia, Pseudoptexaura=Psr</u> <u>Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat. M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S in Coral condition: W=white disease(s), 0=other disease(s), B=bleaching, Coral Stress Index # 0. 1. 2. 3 <u>Other-Includes: Anemore, Annetid-sessile, Barnacle, Bivalve, Bryozoan, Millepore</u> sp., Seagrass, Zoanthid.</u>

roject Name			Data Coll	ector		Data Entry	
Quad Label:	\cap L	ist macroalgae Genus % ist every coral colony and coral condition(s)	% cover or max size (cm)	Quad Label:	75	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)
lax Relief (cm)	3	NIY	25	Max Relief (cm)	8	<u>dy. 0</u>	}
lax Sediment Depth (cm)	5	1 heb	10	Max Sediment Depth (cm)	9	191	
essile Benthos	<u>% Cover</u>	(nob	·	Sessile Benthos	<u>% Cover</u>	THAN	2
iediment. circle all; sand shell mud)	94	Titan	O	Sediment- (circle all: sand shell muc	189		4
Aacroalgae- leshy+Calcareous	M	THAN	6	Macroalgae- Fleshy+Calcareous	Q.	: -	(
furf-algae+cyanobacteria circle all: g t b)	\bigcirc	THER	N)	Turf-algae+cyanobacteria (circle all: g r b)		j(9
Encrusting Red Algae		Telan	Ð.	S Encrusting Red Algae	\bigcirc	ſ <u>\</u>	
Sponge		TH(2.)	13	Sponge	i	Lilici	
Hydroid	\bigcirc	THON	0	Hydroid	\bigcirc	i Mur	<u></u>
Octocoral	CÓ.	TITGA	A	Octocoral	3	5.11	
Stony Coral	()	Titan	5	Stony Coral	1. 	Lhs -	
Tunicate	Õ	intan	2	Tunicate		1 14.13	
Bare Hard Substrate				Bare Hard Substrate	2	<u>Car</u>	-
other				other 👸 🖽		Groid	
	,			(LOrn		1 Alter	
Total Mus	st = 100%			Total N	Aust = 100%	List macroalgae Genus	5 % % COV
Quad Label:	35	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cover or max size (cm)	Quad Label:	305	List every corat colony ~and coral condition(s)	or max
Max Relief (cm)	()	D'roid	6	Max Relief (cm)	5	LIIY	30
Max Sediment Depth (cm)	15		- 0	Max Sediment Depth (c	m) 3	LIVIV	34
Sessile Benthos	% Cove	O rob U		Sessile Benthos	% Cove		
Sediment- (circle all: sand shell muc	088	. VIEG	28	Sediment- (circle all: sand shell m	nud) 7 ()	
Macroalgae. Fleshy+Calcareous	\bigcirc	VR	50	Macroalgae- Fleshy+Calcareous	and the second) }
Turf-algae+cyanobacteria (circle all: g (r(b))	1.	· L v Md	14Đ	Turf-algae+cyanobacte (circle all: g r b	enia 15	-	$-\frac{\alpha}{\alpha}$
Encrusting Red Algae	1.	Lyira.	156	Encrusting Red Algae			
Sponge	ð	THGn-	5	Sponge	3		8
Hydroid	\bigcirc	<u>`</u>	10	Hydroid	\square	/ '.	100 6
Octocoral	3	· · · ·	3	Octocoral	- 2		25
Stony Coral	1	<u>``</u>	Y	Stony Coral			3
Tunicate	\bigcirc		19 F	Tunicate	\bigcirc	(2
Turncate					5		10
Bare Hard Substrate	1			Bare Hard Substrate			
		(1000m =	4	other(100 m	~	0 06	7

.

 Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sara...

 Octocorat: Genus of each colony = Genu: Gorg, Lept, Plex..., except Pseudopterogorgia=Pspt, Plexaurella=Plia, Pseudoptexaura=Pspl

 Stony Coral: Genus species of each colony = G spe; A cer, A aga, C nat, M ann, M cay, P ame, O dif, S rad, S sid, S bou, S hya, S int...

 Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1, 2, 3

 Other- includes: Anemone, Annelid-sessile, Bamacle, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid.

Project Name	No la	\sim		Transect Name			<u>11 1</u>
Date C	129/		Data Coll	ector (Data Entry	
Quad Label: Sample Name or #	()	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:	15	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cove; or max size (cm)
Max Relief (cm)	05	Orric	1	Max Relief (cm)	(0)	$O^{+}O^{+}$	
Max Sediment Depth (cm)	9	Can1 30		Max Sediment Depth (cm)	1	O.J)
Sessile Benthos	% Cover		E	Sessile Benthos	% Cover	C) roly	9
Sediment- (circle all: sand shell mud)	25	27	+	Sediment- (circle ali: sand shell mud)	\bigcirc	() rdl	18
Macroalgae- Fleshy+Calcareous	10	Circie	5	Macroalgae- mixy H		C rus	3
Turf-algae+cyanobacteria (circle all: g r b)	Cit.	······································		Turf-algae+cyanobacteria (circle all: $g(r(b))$)		Ci. K.L.	, i
Encrusting Red Algae	4			C Encrusting Red Algae	\mathbf{D}	II.	đ
Sponge	2			Sponge	į	1 1	17.
Hydroid	1			Hydroid	10		
Octocoral	d			Octocoral	1.L-		-
				Stony Coral	Ĩ.		
Stony Coral	Tin			,			
Tunicate	3			Tunicate	3		
Bare Hard Substrate				Bare Hard Substrate	12	or t	
other	N.			other			
	st = 100%		1	Total Mu	ist = 100%		
Quad Label:	1	List macroalgae Genus	% % cover		/	List macroalgae Genus	% % c
Sample Name or #	\bigcirc	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	.15	List every coral colony ~and coral condition(s)	
	$\frac{5}{6}$	~and coral condition(s)	or max size		. <u>.5</u>	List every coral colony	or max si
Max Relief (cm)	5		or max size	Sample Name or #	$\frac{1}{2}$	List every coral colony	or max si
	2	-and coral condition(s)	or max size	Sample Name or # Mex Relief (cm)	$\frac{1}{2}$	List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	3 <u>% Cove</u>	-and coral condition(s)	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment	<u>% Cove</u>	List every coral colony ~and coral condition(s)	or max si
Max Relief (cm) Max Sediment Depth (cm Sessile Benthos Sediment- (circle all: sand shell mu Macroalgae	3 <u>% Cove</u>	-and coral condition(s) QLAC Ampt DDD	or max size (cm) (0) (0) (0)	Sample Name or # Mex Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell, mu Macroalgaz-	<u>% Cove</u>	List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mu Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteri	3 <u>% Cover</u> 1) ()- 8	-and coral condition(s)	or max size (cm) (0) (0) (0)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell, mu) Macroalgaa- Fieshy+Calcareous Turf- algae+cyanobacteria	d) 2	List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mu Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteri (circle all: g r b)) Encrusting Bed Algae	3 <u>% Cover</u> 1) ()- 3 3 5 2	- and coral condition(s)	or max size (cm) (0 5 (0 5 5 5 7	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all; sand shell, mu Macroalgas- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b)	d) 2	List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mu Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteri (circle all: g r b) Encrusting Red Algae	3 <u>% Cove</u> 1) ()- 3) 3) ()- 3) 4) ()- 3) 4) ()- 4) 5) 2) 4) ()- 4) ()) ()- 4) ()) ()- 4) ()) ()- 4) ()) ()) ()) ()) ()) ()) ()) ()) ()) (- and coral condition(s) Q a ($ a = 0a = 0 $	or max size (cm) (0 5 (0 5 5	Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (Circle all: sand shell, mu Macroalgea- Fleshy+Calcareous Turf- algae+cyanobacterin (Circle all: g r b) <u>Encrusting Red Algae</u>	d) 2 () 2 (List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mu Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteri (circle all; g r b)) Encrusting Red Algae Sponge	3 <u>% Cover</u> 1) ()- 3 3 5 2	- and coral condition(s)	or max size (cm) (0 5 (0 5 5 5 7	Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell, mu Macroalgaa- Fieshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) <u>Encrusting Red Algae</u> <u>Sponge</u>	d) 2	List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mu Macroelgae- Fleshy+Calcareous Turf- algae+cyanobacteri (circle all: g r b) Encrusting Red Algae Sponge Hydroid	3 <u>% Cover</u> 9 9 9 9 9 9 9 9 9 9 9 9 9	- and coral condition(s) Qrac $AmpleDmbO.$	or max size (cm) (0 5 (0 5 5 5 7 1 1 2 0 2 2	Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell, mu Macroalgea- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) <u>Encrusting Red Algae</u> <u>Sponge</u> <u>Hydroid</u>	d) 2 () 2 (List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shelf mu Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacterii (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral	3 <u>% Cove</u> 1) ()- 3) 3) ()- 3) 4) ()- 3) 4) ()- 4) 5) 2) 4) ()- 4) ()) ()- 4) ()) ()- 4) ()) ()- 4) ()) ()) ()) ()) ()) ()) ()) ()) ()) (- and coral condition(s) Qra($PmpiDm$		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell, mu Macroalgea- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	d) 2 () 2 (List every coral colony ~and coral condition(s)	or max si (cm)
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shelf mu Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteri (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	3 <u>% Cover</u> 3 5 7 7 7 7 7 7 7 7 7 7 7 7 7	- and coral condition(s) Q(Q(Amp() Amp() (Amp() (Amp() (Amp() (Amp()) (Amp() (Amp()) (Amp() (Amp()) (Amp() (Amp()		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell, mu Macroalgea- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	d) 2 () 2 (List every coral colony ~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mu) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacceria (circle all; g r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	3 <u>% Cover</u> 1) ()- 3 5 2 5 2 1 0 1 0 - 2 - 2 - 2 - 2 - - - - - - - - - - - - -	-and coral condition(s) Q(Q(P($P($ $P($ $P($ $P($ $P($ $P($ $P($		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell, mu Macroalgaæ- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	d) 2 () 2 (List every coral colony ~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shelf mu Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteri (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	3 <u>% Cover</u> <u>% Cover</u>	-and coral condition(s) Q(Q(P($P($ $P($ $P($ $P($ $P($ $P($ $P($	or max size (cm) (0 5 5 5 5 5 5 5 7 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell, mu Macroalgea- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	d) 2 () 2 (List every coral colony ~and coral condition(s)	or max siz (cm) 58 58 57 58 77 77 77 77 77 77 77 77 77 77

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothannion, Caul, Codi, Dasva, Dasvcladus, Grac, Hali, Hypn, Sart, Octocoral: Genus of each colony = Genu: Gora, Lept, Plex..., except Pseudopterogorgia=Pspt, Plexaurella=Plia, Pseudoptexaura=Psr Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat. M ann. M cav, P ame. O dif, S rad, S sid, S bou, S hye, S in Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1, 2, 3 Other- includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid,

Leris Fitan **Project Name** Date

C ·		C - 11 - C
Site Name / 1	GallAs Fransect Name	- 7 N-O

Data Collector

-1

Data Entry

Quad Label: Sample Name or #	O	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	10	Anabin	4
Max Sediment Depth (cm)	3	Chiar	3
	% Cover	Saia	Đ.
Sediment- (circle all sand) shell (mud)	12	Omb	8
Macroalgae-	10	O. roh	11
Fleshy+Calcareous Turf-algae+cyanobacteria	E.L		O
(circle all: g(1 (b))	$\frac{1}{2}$	11	12
Encrusting Red Algae	8	(3
Sponge	$\frac{O}{O}$		6
Hydroid	0		$\frac{1}{10}$
Octocoral	2		9
Stony Coral	0		<u> </u>
Tunicate	\overline{O}	Orob	10
Bare Hard Substrate	8	(<u>00 201</u>	355
other USUDA	3	<u> </u>	FP 5
6740		5 \	330
Total Must	= 100%		
			. 1
Quad Label:)	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Sample Name or #		List every coral colony	or max size
Sample Name or #) 	List every coral colony ~and coral condition(s)	or max size (cm)
Sample Name or #) 	List every coral colony ~and coral condition(s) Cit (cc Ampli)	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment	115	List every coral colony ~and coral condition(s) Cit (cc Ampto Di (Ay Source	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae-	115	List every coral colony ~and coral condition(s) Cit (c Ampli) Di City Source	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyapobacteria	115	List every coral colony ~and coral condition(s) Cit (cc Ampto Di (Ay Source	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (r, b))	15	List every coral colony ~and coral condition(s) Cit (c Ampli) Di City Source	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (r b)) Encrusting Red Algae	115	List every coral colony ~and coral condition(s) Cit (c Ampli) Di City Source	or max size (cm)
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sedimenff- (circle all; send shell mud) Macroalgae- <u>Fleshy+Calcareous</u> Turf- algae+cyanobacteria (circle all: g (r) b) <u>Encrusting Red Algae</u> <u>Sponge</u>	15.00	List every coral colony ~and coral condition(s) Cit (c Ampli) Di City Scuro PDI City Inv Tutophic	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sedimenff- (circle all; send shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (r) b) Encrusting Red Algae Sponge Hydroid	15.00	List every coral colony ~and coral condition(s) Cit (c Ampli) Di City Scuro PDI City Inv Tutophic	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g (r b)) Encrusting Red Algae <u>Sponge</u> <u>Hydroid</u> Octocoral	15.00	List every coral colony -and coral condition(s) CHAC Amphi Di CHY Strop CHAC CHAC CHAC Amphi CHAC Amphi CHAC	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sedimenff- (circle all; send shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (r) b) Encrusting Red Algae Sponge Hydroid	15.00	List every coral colony -and coral condition(s) CHAC Amphi Di CHY Strop CHAC CHAC CHAC Amphi CHAC Amphi CHAC	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell: mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g (r b)) Encrusting Red Algae <u>Sponge</u> <u>Hydroid</u> Octocoral	5.0064-1076	List every coral colony -and coral condition(s) CHAC Amphi Di CHY Strop CHAC CHAC CHAC Amphi CHAC Amphi CHAC	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all; sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	15.00	List every coral colony -and coral condition(s) CHAC Amphi Di CHY Strop CHAC CHAC CHAC Amphi CHAC Amphi CHAC	

10 2 million and an

Quad Label:	5.7	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Max Relief (cm)		ENGE-6	
Max Sediment Depth (cm)	2	AID174	
Sessile Benthos	<u>% Cover</u>	Sala-3	
Sediment- (circle all; sand shell mud)	12	(dor c)	9
Macroalgae- Fieshy+Calcareous	15	0.10K	7
Turf-algae+cyanobacteria (circle all: g/r, b)	49	QUI, Ĵ	2
Encrusting Red Algae	3	<u>Č, ti </u>	8
Sponge	(1)	(11
Hydroid		<u>(</u>	4
Octocoral	5	17	J.
Stony Coral	2-	1 132	
Tunicate)	l'itan 1	
Bare Hard Substrate	2)		
other	2	Tite -	15
- myo	[·	Auto ciato	18.31
`Total Mus	st = 100%		1

1.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max (cm)
15		12
galantar	Angoly.	2
<u>% Cover</u>	1	
12	OND (!!!	2
18		14
40		03
1-1-	Carl : DU	
		5
- Əi	1 11]
Ì	J II	2
UC .		
5		
6		
14		
	12844	$\frac{15}{1}$ $\frac{1}{Anply}$ $\frac{12}{12}$ $\frac{0}{12}$ $\frac{0}{12}$ $\frac{0}{12}$ $\frac{12}{12}$ $\frac{0}{12}$ $\frac{12}{12}$ $\frac{0}{12}$ $\frac{11}{12}$ $\frac{11}{12$

Standard Abbreviations: and abbreviation formats

Oruí

9

Total Must = 100%

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasva, Dasvaladus, Grac, Hali, Hypn, Sensitiv Octocorat: Genus of each colony = Genu: Gorg. Lept. Plex... except Pseudopterogorgia=Pspt. Plexaurella=Plia. Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer. A age. C nat. M ann. M cay. P ame. O dif. S rad. S sid. S bou, S hya. S int... Coral condition: W=white disease(s). O=other disease(s). B=bleaching. Coral Stress Index # 0 1 2 3 Other- includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepora sp., Seagrass, Zoanthid.

2

i Č: Ši

· still

at it ber and of OPP. Sides, **Project Name**

Date

Site Name / Transect Name **Data Collector**

Data Entry

KUP-2-41

Quad Label:	C	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	<u>Cr</u>	(100	5
Max Sediment Depth (cm)		Empla.	. [.]
Sessile Benthos	<u>% Cover</u>	Saia	'A
Sediment- (circle all:(sand)shell mud)	15	0	
Macroalgae- Fleshy+Calcareous	12	heb	21
Turf-algae+cyanobacteria (circle all: g (r b)	55	Nmb ()
Encrusting Red Algae	·Ľ	Jub	J
Sponge	(.0)	O.ob_	30
Hydroid	Ĵ.	CON STOCK	6-17-14
Octocoral	.3.		14
Stony Coral	9-		
Tunicate	3	X (I) X	3
Bare Hard Substrate	0	\sum] ()
other 01410	6		
1001m	\ominus		
Total Mus	st = 100%		

Quad Label: 20	2.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	.2	Cuar	
Max Sediment Depth (cm)	3	ALION	
Sessile Benthos	<u>% Cover</u>	SSERCI	
(circle all sand shell mud)	E		
Macroalgae- Fleshy+Calcareous	13-	(iv)	-
Turf-algae+cyanobacteria (circle all: g r b)	52	Linia	63
Encrusting Red Algae	8.	<u>0.00)</u>	:
Sponge	10	0.m	<u></u>
Hydroid	1	O_{10}	
Octocoral	3	<u></u>	
Stony Coral		C'ar "	<i>l</i> [
Tunicate	3	$\left[\left(\underline{n}, \dots, \underline{n} \right) \right]$	0
Bare Hard Substrate	10	C_{α} ()	13
other UMCM	Ì.	O. o.	6
Oruo			
Total Mu	st = 100%		

Quad Label:		List macroalgae Genus % List every coral colony	or max size
Sample Name or #		~and coral condition(s)	(cm)
Max Relief (cm)			
Max Sediment Depth (cm)			
Sessile Benthos	<u>% Cover</u>		
Sediment- (circle all: sand shell mud) Macroalgae- Sischurgae-			
Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: <u>g r</u> b)	`		
Encrusting Red Algae			
Sponge			
Hydroid			
Octocoral			
Stony Coral			
Tunicate			
Bare Hard Substrate			
other			

Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% c∢ or max∠e (cm)
Max Relief (cm)			
Max Sediment Depth (cm)			
Sessile Benthos	<u>% Cover</u>		
Sediment- (circle all: sand shell mud)			
Macroalgae- Fleshy+Calcareous			
Turl-algae+cyanobacleria (circle all: <u>g</u> rb)			
Encrusting Red Algae	 		
Sponge	 		
Hydroid			
Octocoral	<u> </u>		-
Stony Coral			
Tunicate			
Bare Hard Substrate		-	
other	╂		
1			

Total Must = 100%

Standard Abbreviations: and abbreviation formats Total Must = 100%

 It = 100%
 It = 100%

 Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasva, Dasycladus, Grac, Hali, Hypn, Sarg.,

 Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex..., except Pseudopterogorgla=Pspt, Plexaurella=Plia, Pseudoptexaure=Psp

 Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int

 Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

 Other- includes: Anemone, Annelid-sessile, Barnacke, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid.

Project Name JC Date 8 20/0	6		Data Coll	ector ML		Data Entry	
Quad Label: //	Ó	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: 27	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% 67 (C
Max Relief (cm)	/	Auphiroe	6	Max Relief (cm)	(unphiron_	-
Max Sediment Depth (cm)	2	Sarg)	Max Sediment Depth (cm)		Sirg	
Sessile Benthos	% Cover	Grac		Sessile Benthos	% Cover	Grac	
Sediment- (circle all: sand_shell/mud)	10			Sediment- (circle all: sand shell mud)	2	Carljon	12
Macroalgae- Fleshy+Calcareous	CI	Carnea	10/1/413	Macroalgae- Fleshy+Calcareous	10	O. rob	Ĩ
Turf-algae+cyanobacteria (circle all: _g (f)b)30	52-	Lepto-V	42/48	Turf-algae+cyanobacteria (circle all: g () b/) 27	61	T:demnum	1
Encrusting Red Algae	4	Cariloa	5/4/4/-	Encrusting Red Algae	4	Carijon	1
Sponge	Ê	U. rob	3/11/0	8 Sponge	8	c, rob	_//
Hydroid	2	Carijung	2/12/2	Hydroid	3	Carljon	Ľ
Octocoral	4	O.rob	10/1/2/2	Octocoral	Ĺ	s.r.b	_
Stony Coral		Laster h	16/7	Stony Corel		Circo	
Tunicate	(ir	Curripan	4/21	Tunicate	6	Carjoe	_
Bare Hard Substrate	2	17. azatanan	6	Bare Hard Substrate		Carillon	_
other Bryoz	3			other	12	,	\downarrow
Vi achiel				Siveive	/		
Total Mus	st = 100%		0/10/	Total Mus	st = 100%	List macroalgae Genus	o/ 1
Quad Label:	1 Sm F deep	List macroalgae Genus List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #		List every coral colony ~and coral condition(s)	70
Max Relief (cm)		like Gracilong		Max Relief (cm)	<u> </u>		
Max Sediment Depth (cm)	2	5-18	12	Max Sediment Depth (cm)	ļ		
Sessile Benthos	% Cove	1 Anyhora	4	Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud		- Carijua	3:12/5	Sediment- (circle all: sand shell mud	<u>)</u>		
Macroalgae- Fleshy+Calcareous	8 112	Simepto-h	7	Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria			
Turl-algae+cyanobacteria (circle all: g r b)	60	Leyio-V	14/65/4	(circle all: g r b)		-	
Encrusting Red Algae	6	Lepto-V	40/70	Encrusting Red Algae			
Sponge	5	Corner	12/2/2	Sponge			
Hydroid	3	1,00	1 21	Hydroid			
Octocoral	64	Orrob	5 4/1	Octocoral			
		Grijoa	3/2/1_	Stony Coral			
Stony Corel		- v		Tunicate			
Stony Coral	5						
	5 I mi			Bare Hard Substrate			

- 5

Macroelgae: Pool to Genus = Genu or Genus: Avre, Bryopeis, Bryothamnion, Caul, Codi, Dasva, Dasvoladus, Grac, Hali, Hypn, Sargu, Octocoral; Genus of each colony = Genu: Gorg, Lept, Plex..., except Pseudopterogorgia=Pspt, Plexaurella=Plia, Pseudoptexeure=Psp Stony Coral: Genus species of each colony = G spe: A cer, A age, C nat, M enn, M cay, P ame, O dif, S rad, S sid, S bou, S hya, S int Coral condition: W=white disease(s), 0=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other- includes; Anemone, Annelid-sessile, Barnacle, Bivatye, Bryozoan, Millepore, sp., Seagrass, Zoanthid.

nk

Project Name /// Date %/29/5	the second s			e / Transect Name # ector ML		Data Entry	. . .
Quad Labei: Sample Name or #	(4C		% cover or max size (cm)	Quad Label: 3	7; 1	ist macroalgae Genus % ist every coral colony -and coral condition(s)	% cover or max siz (cm)
lax Relief (cm)	0	Tires	4	Max Relief (cm)	9	Jarr	
Max Sediment Depth (cm)	2	V Sing Com	3	Max Sediment Depth (cm)	1	Grai	
Sessile Benthos	% Cover	15/44	8	Sessile Benthos	<u>% Cover</u>	Aughtion	5
Sediment- circle all: sand shall mud) Macroalgae-	-		2.4	Sediment- (circle all:/sand shell mud) Macroalgae-	12	Dirob	1/2/
Fleshy+Calcareous Furf- algae+cyanobacteria	10	<u> </u>	1-	Fleshy+Calcareous Turf- algae+cyanobacteria		Callion	1 5/1
(circle all: g r b) 20	<u> </u>	<u> </u>	6-1.	(circle all: $g r (b^2)^2$			1/01
Encrusting Red Algae	5	$\frac{1}{2}$	185	♥ Encrusting Red Algae ♥ Sponge	17	Car.jon	1/2/
Sponge	1.	1, rub	613 1/2 1		12	Orrob	- 3/"
Hydroid	2	(arijoc	1816	Hydroid	0	Diron	1/3/
Octocoral	<u>×</u>	1.000	7/3	Octocoral	.7	Carijoa	118
Stony Coral	3	O. rob		Stony Coral	5.	Conjo	
Tunicate	2	<u>C. cjn</u>	1/2/9	Tunicate	5	Cirob	3/1
Bare Hard Substrate	4	Q. rog	3/2/	Bare Hard Substrate	$\frac{3}{1}$		-
other	<u> </u>		12/1	other	11,		
Total Mus	1 - 1008/		4/2	Sr. Hel.	ust = 100%	Bryoz	
		1				List macroalgae Genus	
Quad Label:	35	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: Sample Name or #	32.5	List every coral colony ~and coral condition(s)	or max ((cm)
Max Relief (cm)	1	Soray	3	Max Relief (cm)		Sarg	5
Max Sediment Depth (cm)	12	Victor	3	Max Sediment Depth (cm	<u>}</u>	Grac	12
Sessile Benthos	% Cove	r Luphing	5	Sessile Benthos	% Cover	A. 4, 21. 10m	5
Sediment- (circle all: sand shell mud)	12	V		Sediment- (circle all:(sand shell mu	d) 🔨	Lepto-V	13/3
Macroalgae- Fleshy+Calcareous	j L	Dirob	4/1/5	Macroalgae Fleshy+Calcareous	12	Orob	2/2/
Turf-algae+cyanobacteria (circle all: g r (/b /) 2.9	,39	Carijoa	12/4/1	Turl-algae+cyanobacteri (circle all: g r b)	a 52	Lepto-h	13
Encrusting Red Algae	5	Le, ito-V	100	Encrusting Red Algae	4	Carijon	4/11
Sponge	12	U.rob	3,6	Sponge	8	Conjoa.	1/01/
Hydroid	5	Carijue	5/3/1/1	8 Hydroid	3	O.rub	: 1/1/
Octocorai	J.	. Carijoa	1//1/2	Octocoral	2	Trichammun	- 61
Stony Coral	2	J.rob .	6/1	Stony Coral	Z	Carijoa	2/
Tunicate	8	Caroloa	2/1/3	Tunicate	6	Carijon.	4/1
Tunicate	-27		17		2	17.1	1/51
Bare Hard Substrate	10	Lexto-h	6	Bare Hard Substrate	1	Vioh	

and abbreviation formats

÷

Macroelgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasva, Dasvcladus, Grac, Heli, Hvpn, Sara Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Papt, Plexaurelia=Pile, Pseudoptexaure=Psi Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cay, P ame, O dif, S rad, S sid, S bou, S hvia, S tr Coral condition: W=white disease(s), 0=other disease(s), 8=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepore, sp., Seagrass, Zoanthid, 1.2.3 <u>iss. Zoanthid.</u> 1/2 ver seen sinch 1 Prob recruit 24. to Surfice / of Cilvia

- , \mathcal{C}

Project N Date		29/00	, ,	Data Col	lec	tor ML		345 From C Data Entry	
	1	(
Quad La Sample Name		O	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)		Quad Label:	15	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cove or max s (cm)
Max Relief (cm)	12	Sarg	3		Max Relief (cm)	6	is-ra-	3
Max Sediment			Amphiron	3		Max Sediment Depth (cm)	2	Surg	
Sessile Bent		<u>% Cover</u>	likiterac	3		Sessile Benthos	% Cover		
Sediment- (circle all: san	shell mud)	2				Sediment- (circle allk sand shell mud)	35	Lepto-V	29
Macroalgae Fleshy+Calca		10	Lepto-h			Macroalgae- Fleshy+Calcareous	5	Carijua	8/8
Turf-algae+c; (circle all: g	anobacteria	67	V Titanideum	28		Turf-algae+cyanobacteria (circle all: g r b) (5	39	Carijua 1. Titanideum 1. octo	9
Encrusting Re	<u> </u>	5	Carijua	F	N N	Encrusting Red Algae	3	Carlies	3/4
Sponge		5	J.rob	3	60	Sponge	5		62
Hydroid	1	Martin rua	1	42		Hydroid	2	Levio-V	5
Octocoral		\$2	Frijon	16		Octocoral	X	4 Titunideum	17
Stony Coral		1	Curijon	3		Stony Corel	ļ.	Leylo-V 4 Szilanideum 4 Szilanideum	5
Tunicate		3	Churjoe	3		Tunicate	4		
Bare Hard Su	bstrate	1.	Orob	3		Bare Hard Substrate	/		
other		1/	Cariba	4/6/3		other Brzoz	2		
	-	2	Ű.	· · .		Annelid		· · ·	-
	Total Must	= 100%), o	d'a':	7MC Total Mu	st = 100%		
Quad L	abel:	5	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cover or max size (cm)		Quad Label:	12.5	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cov or ma: (cm)
Max Relief (c	(m)	ļ	Sarx	4		Max Relief (cm)	27	Gra-	3.
Max Sedime	nt Depth (cm)	1	Grac	5		Max Sediment Depth (cm)		Jarg	1
<u>Sessile Ben</u>	thos	% Cover	Insticon			Sessile Benthos	<u>.% Cove</u>	r_epto-v	21
Sediment- (circle all: sa	nd shell mud)	15	с П			Sediment- (circle all: sand shell muc	12	Lepto-1	30
Macroalgae- Fleshy+Calc	areous		O. rob	3		Macroalgae- Fleshy+Calcareous	32	Orob	9
	cyanobacteria]_r_b_) 2.0	41	Leptor	32		Turf-algae+cyanobacteria (circle all: g r b)2	0 7 in	Cariloa	8/2
Encrusting F	ed Algae	C-1	Carriso	2		Encrusting Red Algae	5		2/
Sponge		Ĺf		ć		Sponge	l.	Carijon	2/
-) <u>Hydroid</u>		2	Lepil - V	· _		Hydroid	2	O. Kob	1
Octocoral		5	1 - Carlos and	65	, ,	V Octocoral			
G Stony Coral		1	Quob	3		Stony Coral			
Tunicate		10	0,106	3		Tunicate	10		
Bare Hard S	ubstrate					Bare Hard Substrate			
other, An	nefici	B2				other Frysk	2		
Br									1

Standard Abbreviations:

and abbreviation formats 1)+ Kinow Mis

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasva, Dasvaladus, Grac, Hali, Hypn, Sara... Delocoral: Genus of each colony = Genu: Geru: Ge

		NC		e / Transect Name		Data Entra	
Date <u>SO</u> A	<u>10-01</u>	Ω	Data Coll	ector		Data Entry	. <u>بالمح</u>
	<u> </u>		1			int manual man Damus At	
Quad Label:		List macroalgae Genus % List every coral colony	% cover or max size	Quad Label:	100	List macroalgae Genus % List every coral colony	% cover or max size
Sample Name or #	\bigcirc [~and coral condition(s)	(cm)	Sample Name or #		-and coral condition(s)	(Cm)
		1			12	Act	
Max Relief (cm)	-0	U: 1.ra		Max Relief (cm)	\mathcal{D}	['ari	1
	IL	Orb ² Ca.	$K \rightarrow$		α	Evira	2
Max Sediment Depth (cm)			1	Max Sediment Depth (cm)		Cond Milling	
Sessile Benthos	% Cover	C to W.		Sessile Benthos	<u>% Cover</u>	(), 10PS 11	
Sediment	n.		-	Sediment	.14	Mah VI	0
(circle all: sand shell mud)	d.		$\overline{\mathbf{C}}$	(circle all sand shell muc		0.00	L
Macroalgae-			11_	Macroalgae-			
Fleshy+Calcareous				Fleshy+Calcareous Turf- algae+cyanobacteria		••••••••••••••••••••••••••••••••••••••	
Turf-algae+cyanobacteria (circle all: g(r)b)	67	(Λ)		(circle all: g (r b))	15		
	<u> </u>			"mativ"	NV 1		1
Encrusting Red Algae	9.			^o Encrusting Red Algae	1	······	ļ
	9						
Sponge	· · ·			Sponge			1
Hydroid	i Ì			Hydroid			· ·
							1
Octocoral	2			Octocoral			
	r			Stony Com!	ł		
Stony Corel	0.			Stony Coral			
Tunicate	3			Tunicate	2		
Tunicate	<u> </u>				1		
Bare Hard Substrate	0			Bare Hard Substrate	1.		_
		:		other			
other	 - ;			N N N	, (1	
in inc	1	SMOL		Digo	$-\lambda$	<u> </u>	
Total Mu	st = 100%	·····)		Tòtal N	lust = 100%		
		List macroalgae Genus	% cover			List macroalgae Genus	
Quad Label:		List macroalgae Genus List every coral colony	or max size	Quad Label:	7.5	List every coral colony	or max s
Quad Label: Sample Name or #			or max size	Quad Label: Sample Name or #	7.5	List every coral colony ~and coral condition(s)	or max si (cm)
Sample Name or #		List every coral colony ~and coral condition(s)	or max size	Sample Name or #	7.5	List every coral colony	or max si (cm)
	5	List every coral colony	or max size		<u>_</u>	List every coral colony ~and coral condition(s)	or max si (cm) 5,8,2
Sample Name or #	5 20 8	List every coral colony ~and coral condition(s) Cit Cit Coll 1	or max size (cm)	Sample Name or #		List every coral colony ~and coral condition(s)	or max si (cm) 5,8,2
Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	5 20 8	List every coral colony -and coral condition(s) Start G	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr	m) 4	List every coral colony ~and coral condition(s)	or max s
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos		List every coral colony ~and coral condition(s) Cit C Colored	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos		List every coral colony ~and coral condition(s)	or max si (cm) 5,8,2
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Colling Litta Litta Colling Litta Litt	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment-	m) LF	List every coral colony ~and coral condition(s)	or max si (cm) 5,8,2
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all, sand) shell muc	5 & & & Cover	List every coral colony -and coral condition(s) Scirca Callin Corbination List every coral colony -and coral condition(s) Scirca 	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all sand shell m	m) LF	List every coral colony ~and coral condition(s)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous	m) L4 <u>% Cove</u> aud) (05	List every coral colony ~and coral condition(s)	or max si (cm) 5, 8, 2 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand, shell muc Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria	20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte	m) L4 <u>% Cove</u> aud) (05	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all' sand, shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous	m) Lf <u>% Cove</u> uud) (0,5 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell muc Macroalgae Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b))	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b)	m) Lf <u>% Cove</u> uud) (0,5 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell muc Macroalgae Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b))	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell muc Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b))	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all: sand shell m Macroalgee- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g t b)	m) Lf <u>% Cove</u> uud) (0,5 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 7 5 X
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment (circle all' sand shell muc Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacteria (circle all: g r (b)) <u>Encrusting Red Algae</u> <u>Sponge</u>	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacter (circle all: g (r) b)) Charles (circle all: g (r) b)) Charles (circle all: g (r) b)) Charles (circle all: g (r) b)) Sponge	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b)) Encrusting Red Algae	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) C Encrusting Red Algae	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b) <u>Encrusting Red Algae</u> <u>Sponge</u> <u>Hydroid</u>	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g (r)b)) Calcareous Turf- algae+cyanobacte (circle all: g (r)b)) Calcareous Sponge Hydroid	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> <u>Sediment</u> (circle all: sand shell muc Macroalgae- <u>Fteshy+Calcareous</u> Turf- algae+cyanobacteria (circle all: g (r) b)) <u>Encrusting Red Algae</u> <u>Sponge</u>		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all: sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 7 5 X
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b) <u>Encrusting Red Algae</u> <u>Sponge</u> <u>Hydroid</u>	5 20 8 % Cover	List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra	or max size (cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g (r)b)) Calcareous Turf- algae+cyanobacte (circle all: g (r)b)) Calcareous Sponge Hydroid	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell muc Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b)) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all: sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) C Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b)) Encrusting Red Algae Sponge Hydrold Octocoral		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all: sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand, shell muc Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral Tunicate		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacte (circle all: g r)b) C Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	m) L <u>% Cove</u> uud) (05 1 uria 1 –	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max si (cm) 5, 8, 2 4 7 7 5 X
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand) shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r)b)) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral Tunicate Bare Hard Substrate		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacter (circle all: g r)b)) C Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	n) 4 <u>% Cove</u> 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max su (cm) 5, 8, 2 4 7 7 5 X 1
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell muc Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral Tunicate		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacte (circle all: g r)b) C Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	m) 4 <u>% Cove</u> ud) (05 1 ria 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max su (cm) 5, 8, 2 4 7 7 5 X 1
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment (circle all' sand shell muc Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral Tunicate Bare Hard Substrate		List every coral colony ~and coral condition(s) Citra Colling Colling Colling Kitra Kitra Kitra Colling Kitra		Sample Name or # Max Relief (cm) Max Sediment Depth (cr Sessile Benthos Sediment- (circle all:sand shell m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacter (circle all: g r)b)) C Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	n) 4 <u>% Cove</u> 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	List every coral colony ~and coral condition(s) (1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	or max su (cm) 5, 8, 2 4 7 7 5 X 1

and abbreviation formats

Octooral: Genus of each colony = Genu: Gora, Lepi, Piex... except Pseudopterogorala=Pspi, Piexaurella=Plia, Pseudoptexeura=Psi Stony Corel: Genus species of each colony = G spe: A cer. A aga, C nat. M ann. M cay. P ame. O dif. S rad. S sid. S bou, S hva. S in Coral condition: W=white disease(s). O=other disease(s). B=bleaching. Coral Stress Index # 0 1 2 3 Other-includes: Anemone. Annelid-sessile. Barnacle. Bivatve. Bryozoen. Millepore ap., Seagrass. Zoanthid.

Project Name	2	1.00	Data Col	ector	CAL		Data Entry	
)-00	Data Out		<u> </u>)	Data Entry	
Quad Label:) 🥌 🛯	ist macroalgae Genus % ist every coral colony and coral condition(s)	% cover or max size (cm)	Quad L Sample Nam		5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm))	Tri deminiur	6	Max Relief (c	am)	0	Na terre my statistic film success à state success my succi tierte my mus	
Max Sediment Depth (cm)	11	ridemun	4	Max Sedimer	nt Depth (cm)	18		
Sessile Benthos	% Cover	Puller		Sessile Ben	thos	<u>% Cover</u>		
Sediment- circle all: sand shell mud)	95	<u></u>		Sediment-	nd shell mud)	$\left[\Omega \right]$		
Macroalgae- Fleshy+Calcareous	\bigcirc			Macroalgae- Fleshy+Calc	/	1		1
Turf-algae+cyanobacteria (circle all: (g/r_b)					cyanobacteria			
Encrusting Red Algae	\bigcirc			Encrusting F				
Sponge	$\langle \rangle$			Sponge				
Hydroid	\bigcirc			ν η Hydroid				
Octocoral)			<u>Octocoral</u>				
Stony Coral				Stony Coral				
Tunicate	\bigcirc			Tunicate				
Bare Hard Substrate	\bigcirc	1		Bare Hard	Substrate			
	()			other				
other \ADIM						• •		,
other \/ \/ (Y)	t = 100%				Total Mu	st = 100%		
Total Mus	i = 100%	List macroalgae Genus List every coral colony ~and coral condition(s)	% cover or max size (cm)]	Total Mu: Label:	st = 100%	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cc or max _ (cm)
Total Mus Quad Label: Sample Name or #	i = 100%		or max size	Quad Sample N	Total Mu: Label: ame or #	st = 100%	List every coral colony	or max _
Total Mus	a.5	List every coral colony	or max size	Quad Sample Na Max Relief	Total Mu: Label: ame or #	10	List every coral colony ~and coral condition(s)	or max . (cm)
Total Mus Total Mus Sample Name or #	25	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief	Total Mu: Label: ame or # (cm) ment Depth (cm)	10	List every coral colony ~and coral condition(s)	or max . (cm)
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Bo Sediment (circle all:	Total Mu: Label: ame or # (cm) nent Depth (cm) enthos sand shell muc	10 5 4 % Cover	List every coral colony ~and coral condition(s)	or max . (cm)
Total Mus Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all) sand shell mud Macroalgae	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Be Sediment (circle all f Macroalga	Total Mu: Label: ame or # (cm) nent Depth (cm) enthos sand shell muc	10 5 4 % Cover	List every coral colony ~and coral condition(s) Indem Indem Correction	or max . (cm)
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all) send shell mud	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Br Sediment (circle all' Macroalga Fleshy+Ca Turf- algae	Total Mu: Label: ame or # (cm) nent Depth (cm) enthos sand shell muc) () 4 <u>% Cover</u> 1) (5)()	List every coral colony ~and coral condition(s) Indem Indem Corridem Corridem	
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all) sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Ba Sediment (circle all: Macroalga Fleshy+Ca Turf- algae (circle all:	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell mut accareous e- alcareous e+cyañobacteria	10 4 96 Cover	List every coral colony ~and coral condition(s) Indem Indem Indem Indem Indem Indem Indem	
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all's sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Ba Sediment (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Encrusting Sponge	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc alcareous atcareous atcareous	10 5 4 96 Cover 1) 50 1 3 6	List every coral colony ~and coral condition(s) Indem I	
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all's sand shell mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Br Sediment (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Encrusting	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc alcareous atcareous atcareous	10 5 4 96 Cover 1) 50 1 3 6	List every coral colony ~and coral condition(s) Indem Indem Indem I OCMIN II II II II	
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Sample Na Max Relief Max Sedim Sessile Bo Sediment (circle all: Macroalga Fleshy+Cz Turf-algao (circle all: Encrusting Sponge	Total Mu: Label: ame or # (cm) nent Depth (cm) enthos sand shell muc re- alcareous a+cyafiobacteria (g /(r //b)) g Red Algae	10 5 4 96 Cover 1) 50 1 3 6	List every coral colony ~and coral condition(s) Indem I	
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Sample Na Max Relief Max Sedim Sessile Bo Sediment (circle all: Macroalga Fleshy+Ca Turf-algae (circle all: Macroalga Fleshy+Ca Turf-algae (circle all: Sponge Hydroid	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc le- alcareous e+cyañobacleria (g /(/b)) g Red Algae	10 4 % Cove 1) 50 1 50 1 50	List every coral colony ~and coral condition(s) Indem I	
Total Mus Total Mus Cuad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle allà send shell mud) Macroalgae: Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Sample Na Max Relief Max Sedim Sessile Bo Sediment/ (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Sponge Hydroid Octocoral	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc le- alcareous e+cyañobacleria (g /(/b)) g Red Algae	10 4 56 Cover 10 50 10 10 10 10 10 10 10 10 10 10 10 10 10	List every coral colony -and coral condition(s) Indem I	
Total Mus Total Mus Cuad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/send shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Bo Sediment/ (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Sponge Hydroid Octocoral Stony Cou Tunicate	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc le- alcareous e+cyañobacleria (g /(/b)) g Red Algae	10 4 % Cove 1) 50 1 50 1 50	List every coral colony -and coral condition(s) Indem I	
Total Mus Total Mus Cuad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud) Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	2,5 0 15 % Cover	List every coral colony ~and coral condition(s)	or max size	Quad Sample Na Max Relief Max Sedim Sessile Bo Sediment (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Macroalga Fleshy+Ca Turf- algae (circle all: Sponge Hydroid Octocoral Stony Co Tunicate Bare Han other	Total Mu: Label: ame or # (cm) ment Depth (cm) enthos sand shell muc isand shell shell muc isand shell muc isand shell muc isand shell muc isand shell muc isand shell s	10 4 56 Cover 10 50 10 10 10 10 10 10 10 10 10 10 10 10 10	List every coral colony -and coral condition(s) Indem I	

Other- includes: Anemone. Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepora sp., Seagrass, Zoanthid,

Det	ject Name	$\langle \rangle$	-7		Data Coi	last	7 7242		r	Data Entry	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10
Dat	e	<u>X-</u>	<, '	D'D'	Data CO	ieci(or <u>CAAS</u>			Jala Lilliy	
	ad Label:).5	- Lu	ist macroalgae Genus % ist every coral colony and coral condition(s)	% cover or max size (cm)		uad Label:	5	լլ	ist macroalgae Genus % ist every coral colony and coral condition(s)	% cover or max siz (cm)
	Relief (cm)	Ĉ	Î			M	ax Relief (cm)	\bigcirc			
	Sediment Depth (cm)	1	7-			M	ax Sediment Depth (cm)	20			
Sess	lle Benthos	% Cov	<u>er</u>			<u>s</u>	essile Benthos	<u>% Co</u>	ver		
(circi	nent e all: sand shell mud) calgae	101					ediment- drole all; sand shell mud) lacroalgae-	10	6		
Flest	ny+Calcareous		_			LE	leshy+Calcareous	1	4		
Turi- (circl	algae+cyanobacteria e all: g r b)			•			urf-elgee+cyanobacteria circle all: g r b }	$\left - \right $	-		
Encr	usting Red Algae					Т.Г	ncrusting Red Algae	┞┼			
Spor	1ge				<u> </u>	a di	ponge	++			
<u>Hydr</u>	oid		4			┨╠	łydroid	$\left\{ + \right\}$			
Octo	ocoral					- 4	Octocoral	$\left - \right $			
Ston	y Coral			durphn ananna a mar air na ar		-	Stony Coral				
Tuni	cate					-	l'unicate				
Bare	Hard Substrate			14/2		-	Bare Hard Substrate				
othe	N			- Notes			other	(/		+
					· · ·] [<u>.</u>
	Total Mus	t = 100	%				Total Mu	st = 10	0%		
	uad Label: /	22.	5	List macroalgae Genus List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	2	\bigcirc	List macroalgae Genus ? List every coral colony -and coral condition(s)	or max 。 (cm)
Max	Relief (cm)	Ć	>] [Max Relief (cm)	_	7	Tridemnum	5
Max	Sediment Depth (cm)	1	5				Max Sediment Depth (cm)	1	F	Leptogorg	40
Ses	slie Benthos	1	over		1		Sessile Benthos				1 1
	alle Denniosa.	<u>% Ci</u>		4			gessie Dennosta	%(-over	acellina	4
(circ	liment cle all: sand shell mud	$\frac{1}{\alpha}$	1			-	Sediment- (circle all: sand shell mud		4	aniliana	- 4
(circ Mac Fles	liment- cle all: sand shell mud croalgae- shy+Calcareous	q (<u>}</u>			-	Sediment- (circle all:sand shell mud Macroalgae Fleshy+Calcareous	" 9 (acellina	4
(circ Mac Fles Turi	liment cle all: sand shell mud croalgae	q (<u>}</u>			-	Sediment- (circle all:(sand shell mud Macroalgae-	" 9 (acellina	
(circ Mac Fles Tur (circ	liment cle al: sand shell mud croalgae- shy+Calcareous f- algae+cyanobacteria	q (<u>}</u>				Sediment- (circle all:sand shell mud Macroalgae Fleshy+Calcareous Turf-elgae+cyanobacteria	" 9 (Collina	
(circ Mac Fles Turi (circ Enc	liment cle all: sand shell mud shy+Calcareous f- algae+cyanobacteria cle all: g r b)	q (<u>}</u>	· · · · · · · · · · · · · · · · · · ·		-	Sediment- (circle all:(sand shell muc Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: (g t b)	" 9 (Collina	
(circ Mac Fles Turi (circ Enc Spc	liment cle all: sand shell mud shy+Calcareous f- slgae+cyanobacteria cle all: g r b) crusting Red Algae	q (· · · · · · · · · · · · · · · · · · ·			Sediment- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: 9 b) Encrusting Red Algae	" 9 (Cellina	
(cinc Mac Fles Turi (cinc Enc Spc Hyc	liment cle all sand shell mud croalgae- shy+Calcareous f- algae+cyanobacteria cle all: (g r b) crusting Red Algae	q (Sediment- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g b) Encrusting Red Algae Sponge	" 9 (Cellina	
(circ Mac Fles Turi (circ Enc Spc Hyc	liment cle all: sand shell mud croalgae- shy+Calcareous f- algae+cyanobacteria cle all: g r b) crusting Red Algae onge	q (7				Sediment- (circle all:sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g b) Encrusting Red Algae Sponge Hydroid	" 9 (Cellina	
(circ Mac Fles Turi (circ Enc Spc Hyc Sto	liment cle all: sand shell mud croalgae- shy+Calcareous f- algae+cyanobacteria cle all: (g r b) crusting Red Algae onge crusting Ced Algae crusting Ced Algae	q (Sediment- (circle all:(sand shell mut Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: (g) b) Encrusting Red Algae Sponge Hydroid Octocoral	" 9 (
(circ Mac Flean (circ Enc Spc Spc Spc Spc Spc Spc Spc Tur Spc Spc Spc Tur Spc Spc Spc Spc Spc Spc Spc Spc Spc Spc	liment cle all: sand shell mud croalgae- shy+Calcareous f- algae-toyanobacteria cle all: g r b) crusting Red Algae crusting Red Algae crusting Red Algae crusting Red Algae	q (Sediment- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	" 9 (5 5
(circ Mac Fles Tur (cirr Spc Sto Sto Tur Baa	liment cle all: sand shell mud croalgae- shy+Calcareous f- sigae+cyanobacteria cle all: g r b) crusting Red Algae onge drold tocoral ony Corel nicate	q (Sediment- (circle all:(sand) shell mut Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: (g) b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	" 9 (

·· .

5. . . ²¹

Macrosipae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul. Codi, Dasva, Dasvoladus, Grac, Hali, Hyon, Sato... Octocoral: Genus of each colony = Genu: Goro, Lent, Ptex..., except Pseudopterogorgia=Papt, Ptexaurella=Plia, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat, M ann. M cav. P ame. O dif. S rad. S sid. S bou, S hya. S int... Coral condition: W=white disease(s), 0=ofher disease(s), B=blasching. Coral Stress Index # 0 1, 2, 3 Other- includes: Anemone. Annelid-sessile. Barnacle, Bivalve, Bryozoan. Millepore, ap., Seagrass, Zoanthid.

Date			Data Col	lec	tor	Data Entry		
Quad Label: 3	7,5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	<u>}</u> 5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	0				Max Relief (cm)	\bigcirc		1
Max Sediment Depth (cm)	12				Max Sediment Depth (cm)	19		
Sessile Benthos	% Cover				Sessile Benthos	<u>% Cover</u>		
Sediment- (circle all: sand shell mud)	100				Tones ant ourse fortes the	100	· · · · · ·	
Macroalgae- Fleshy+Calcareous					Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r b)					Turf-algae+cyanobacteria (circle all: g r b)			
Encrusting Red Algae				ŝ	Encrusting Red Algae			
Sponge				ſ	Sponge			
Hydroid	Í				Hydroid		· ·	
Octocoral					Octocoral			
Stony Corel					Stony Coral			
Tunicate					Tunicate		-	
Bare Hard Substrate					Bare Hard Substrate			
other					other			
· · ·								
Total Mus	st = 100%				Total Must	= 100%		
Qued Lebels		List macroalgae Genus List every coral colony	% % cover or max size		Quad Label:	20	List macroalgae Genus List every coral colony	% % C or max
Sample Name or #	2.5	~and coral condition(s)	(cm)		Sample Name or #	$\underline{\mathcal{O}}$	~and coral condition(s)	(cm)
Quad Label: 3	2.5		(cm)	-	Sample Name or #	$\frac{50}{6}$		
Mex Relief (cm)	R		(cm)			50		
	R	~end corel condition(s)	(cm)		Max Relief (cm)	20 20 <u>% Cove</u>	~and coral condition(s)	
Mex Relief (cm) Mex Sediment Depth (cm) Sessile Benthos Sediment-	% Cove	~end corel condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment-	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, sand shell muc Macroalgae	% Cove	~end corel condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2 56 Cove 1 2- 56 Cove 1 0 0	~end corel condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b)	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous_ Turf-algae+cyanobacteria (circle all: g_r b)	% Cove	~and coral condition(s)	
Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sedimenf- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) <u>Encrusting Red Algae</u>	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	% Cove	~and coral condition(s)	
Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sedimenf- (circle all:sand shell muc Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) <u>Encrusting Red Algae</u> <u>Sponge</u>	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae_ Fleshy+Calcareous_ Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	% Cove	~and coral condition(s)	
Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all, sand shell muc Macroalgae- <u>Fieshy+Calcareous</u> Turf-algae+cyanobacteria (circle all: g_r_b) <u>Encrusting Red Algae</u> <u>Sponge</u> <u>Hydroid</u>	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all:sand shell much Macroalgae- Fleshy+Calcareous Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b) Encrusting Red Algae Sponge Hydroid Octocoral	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell much Macroalgaa- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroelgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	% Cove	~and coral condition(s)	
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell much Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	2 56 Cove 1 2- 56 Cove 1 0 0	~end coral condition(s)			Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	% Cove	~and coral condition(s)	

7

Story Coral: Genus of each colony = G spe: A cer. A soa. C nat. M ann. M cev. P ame. O dif. S rad. S sid. S bou. S hva. S in Coral condition: W=white disease(s). O=other disease(s). B=bleeching. Coral Stress Index # 0 1 2 3 Other-includes: Anemone. Annelid-sessite. Bamacle. Bivalve. Brvozoan. Millepore.ap., Seagrass. Zoanthid.

D	ate		-01-	Data Col	llect	or FB	1	Data Entry	. F ^{. b}
—		56							
	Luad Label:	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	15- 1	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cove or max s (cm)
Ма	ax Relief (cm)	l.				Max Relief (cm)	\mathbf{O}		
М	ax Sediment Depth (cm)				ļļ	Max Sediment Depth (cm)	18.		
Se	essile Benthos	<u>% Cover</u>			-1 -		<u>% Cover</u>		<u></u>
	ediment- arcle all:(sand shell mud)	(ov				Sediment- / (circle ali: śand/shell_mud)	, DD		
M	lacroalgae- leshy+Calcareous	1	·			Macroalgae- Fleshy+Calcareous	۲. 		
T	urf-algae+cyanobacteria circle ali: g r b)					Turf-algae+cyanobacteria (circle all: g r b)		·	
E	ncrusting Red Algae					Encrusting Red Algae		······	
s	sponge				-1- 0	Sponge			
н	lydroid	\ ·			_	Hydroid			
0	Detocoral					Octocoral		······	
s	Stony Coral					Stony Coral	2 Contraction of the local data		
Ţ	[unicate					Tunicate			
B	Bare Hard Substrate					Bare Hard Substrate			_
<u>_</u>	other					other			
						-	<u> </u>	· · · · ·	
	Total Musi	t = 100%				Total Mus	st = 100%		
					_				
- 1	Quad Label: Sample Name or #	42.5	List macroalgae Genus List every coral colony ~and coral condition(s)	% Cover or max size (cm)	e	Quad Label:	tD	List macroalgae Genus List every coral colony ~and coral condition(s)	or m
ł	Quad Label:	1	List every coral colony	or max size	e	Quad Label: Sample Name or # Max Relief (cm)	D O	List every coral colony	% % cc or ma (cm)
- -	Quad Label: Sample Name or #	1	List every coral colony	or max size	B	Sample Name or #		List every coral colony	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	1	List every coral colony ~and coral condition(s)	or max size	B	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos		List every coral colony ~and coral condition(s)	or m
۲ ۲	Quad Label: Sample Name or # Max Relie! (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- Sediment-	42.5 0 1	List every coral colony ~and coral condition(s)	or max size	8	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud		List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relie! (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand, shell mud) Macroalgae- Fleshy+Calcareous	42.5 0 1	List every coral colony ~and coral condition(s)	or max size	B	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relie! (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Ceircle ell: sand shell mud) Macroalgae	42.5 0 1	List every coral colony ~and coral condition(s)	or max size	B	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae-	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand, shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) C Encrusting Red Algae	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle ell: sand, shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud Macroalgee- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle ell: sand, shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) <u>C</u> Encrusting Red Algae	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- Circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) C Encrusting Red Algae	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand, shell mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Flesty+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- Coircle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgee- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand, shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Corel Tunicate	42.5 0 1	List every coral colony ~and coral condition(s)	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	26 Cover 16 Cover 17 Cover	List every coral colony ~and coral condition(s)	or m
	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyenobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Corel Tunicate Bare Hard Substrate other	42.5 0 1	List every coral colony ~and coral condition(s) er	or max size		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	26 Cover 16 Cover 17 Cover	List every coral colony -and coral condition(s)	or m

Date	411	10-06	Data Col	lect	Or N		Data Entry	
	<u> </u>							
Quad Label: Sample Name or #	\bigcirc	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	بر. ر	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz (cm)
Max Relief (cm)	15	O. J.J. D.X	lan		Max Relief (cm))		
Max Sediment Depth (cm)		Can		1 F	Max Sediment Depth (cm)	10		
Sessile Benthos	<u>% Cover</u>	······································			Sessile Benthos	% Cover		ļ
Sedimenty (circle all: sand shell_mud) Macroalgae-	-3				Sediment- (circle all: sand shell mud) Macroalgae	96		
Fleshy+Calcareous	1				Fleshy+Calcareous	i		ļ
Turf-algae+cyanobacteria (circle all: $g(r)b$)	15				Turl-algae+cyanobacteria (circle all: g r b)			ļ
Encrusting Red Algae	1				Encrusting Red Algae	·		<u> </u>
Sponge	\bigcirc			5/6	Sponge	 	······································	
Hydroid	()			1 1	Hydroid			
Octocoral	1				Octocoral			
Stony Coral	1				Stony Coral			
Tunicate					Tunicate			
Bare Hard Substrate	5				Bare Hard Substrate	1		-
other () : ()					other		-	
UUN	1.					st = 100%		
Total Mu	ist = 100%		1.0/	٦	i otal Mu	st = 100%	List macroalgae Genus	1 1 10
Quad Label: Sample Name or #	5	List macroalgae Genus List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	7.5	List macroalgae Genus List every coral colony ~and coral condition(s)	or max (cm)
Max Relief (cm)					Max Relief (cm)	-		
Max Sediment Depth (cm)	12				Max Sediment Depth (cm)			
Sessile Benthos	<u>% Cove</u>	r			Sessile Benthos	<u>% Cove</u>	<u> </u>	_
Sediment- (circle all: sand shell mu	<u>n 99</u>				Sediment- (circle all: sand shell muc	$M(\overline{w})$		
Macroalgae- Fleshy+Calcareous					Macroalgae Fleshy+Calcareous			
Turf-algae+cyanobacterit (circle all: g r b)		`			Turf-algae+cyanobacteria (circle all: g r b)			
Encrusting Red Algae				_	Encrusting Red Algae			
Sponge					Sponge		_	
Hydroid					Hydroid			
Octocorai					Octocoral	_		
Stony Corat				_	Stony Coral			
Tunicate				-	Tunicate	-		
Bare Hard Substrate				_	Bare Hard Substrate			
other i DC m					other			

..... **N**-

Stany Coral: Genus of each colony = Genu: Gond. Len, Prex., except Pseudopjerodordia=Pspi, Piexaureita=Plia, Pseudopjexaure=rep Stany Coral: Genus species of each colony = G spe; A ger, A ega, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hva, S ini Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bivalve, Bryozoan, Millepora, sp., Seagrass, Zoanthid,

)eto			Data Coll	actor		Data Entry	
)ate			Data Coll	eulor		Data Elitry	
Quad Label:		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max si (cm)
ample name or #				Max Relief (cm)			
fax Sediment Depth (cm)	15			Max Sediment Depth (cm)		-	
essile Benthos	% Cover			Sessile Benthos	% Cover		
iediment-	100			Sediment-			
circle all: sand shell mud) Aacroalgae-	100.			(circle ati; send shell mud) Macroalgae-			
leshy+Calcareous urf- algae+cyanobacteria				Fleshy+Calcareous Turf- algae+cyanobacteria			
circle all: g r b)				(circle all: g t b)			
Encrusting Red Algae			Ç	Encrusting Red Algae			
Sponge		· XX C	7	Sponge			<u> </u>
Hydroid	-	CA VI		Hydroid			- "
Octocoral	-(R C		Octocoral	<u> </u>		
Stony Coral				Stony Coral			
Tunicate	~			Tunicate			
Bare Hard Substrate				Bare Hard Substrate			-
other				other			
			· · · ·				·.
Total Mus	st = 100%			Total Mus	st = 100%		
Quad Label: Sample Name or #		List macroalgae Genus List every coral colony ~and coral condition(s)	% Cover or max size (cm)	Quad Label: Sample Name or #		List macroalgae Genus List every coral colony ~and coral condition(s)	% % cc or max (cm)
Max Relief (cm)	l			Max Relief (cm)			
				there i the light			
Max Sediment Depth (cm)				Max Sediment Depth (cm)			
	% Cover	r			% Cove	c	
Max Sediment Depth (cm) Sessile Benthos Sediment-	<u>% Cover</u>	r		Max Sediment Depth (cm) Sessile Benthos Sediment-	<u>% Cove</u>	c	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud Macroalgae-	<u>% Cover</u>	r		Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae-	<u>% Cove</u>	c	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	<u>% Cove</u>	2 2 2 2	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (Circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand sheli mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% Cove</u>	3	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fieshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Turkcate	<u>% Cove</u>		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydrold Octocoral Stony Coral	<u>% Cover</u>			Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% Cove</u>		2

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopeis, Bryothamnion, Caul, Codi, Dasva, Dasvoladus, Grac, Hali, Hvon, Sara... Octocoral: Genus of each colony = Genu: Gora, Lept, Plex... except Pseudopterogonal=Pspt, Plexaurella=Plia, Pseudoptexeura=Pspl Stony Coral: Genus apecies of each colony = G spe: A cer, A aga, C nat. M ann, M cav. P ame, O dif, S rad, S sid, S bou, S hva, S int... Coral condition: W=white disease(s), 0=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes: Anemone, Annetid-sessile, Barnacle, Bivatve, Bryozoan, Millepore, sp., Seegrass, Zoanthid,

Date 8-	30.	06	Data Col	lec	tor CAB			Data Entry	. A State of the s
Quad Label: Sample Name or #	1,5	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	6 % cover or max size (cm)		Quad Label:	5	ի	ist every coral colony	% cover or max siz (cm)
Max Relief (cm)	5				Max Relief (cm)	\underline{O}	_		عل
Max Sediment Depth (cm)	19				Max Sediment Depth (cm)	Į1	2		
Sessile Benthos	<u>% Cover</u>	· .				<u>% Ce</u>	<u>reve</u>	·····	•
Sediment- (circle all: send_shell_mud)	ĮDĐ				Sediment- (circle all: sand shell mud)	10	\bigotimes		
Macroalgae- Fleshy+Calcareous	Ì				Macroalgae- Fleshy+Calcareous				
Turf-algae+cyanobacteria (circle all: g r b)	1				Turf-algae+cyanobacteria (circle all: g r b)				
Encrusting Red Algae	-			1	Encrusting Red Algae				
Sponge				M	Sponge				
Hydroid	~	·			Hydroid				
Octocoral		· · · · · · · · · · · · · · · · · · ·			Octocoral			· · · · · · · · · · · · · · · · · · ·	
Stony Coral					Stony Coral			·····	
Tunicate					Tunicate				
Bare Hard Substrate					Bare Hard Substrate				
other					other	<u> </u>	ĺ		ļ
· · · ·					<u> </u>				
Total Must	= 100%			-	Total Mus	it = 10	0%		1 84 -
Quad Label: Sample Name or #	2,5	List macroalgae Genus List every coral colony ~and coral condition(s)	or max size		Quad Label: Sample Name or #			List macroalgae Genus 9 List every coral colony -and coral condition(s)	or maxin (cm)
Max Relief (cm)	0			_	Max Relief (cm)	╞		·	
Mex Sediment Depth (cm)	12				Max Sediment Depth (cm)	<u>_</u>			
Sessile Benthos	% Cove	<u>r</u>			Sessile Benthos	%	Cover	· · ·	
Sediment- (circle all sand shell mud)	100)			Sediment- (circle all: sand shell mud				
Macroalgae- Fleshy+Calcareous	1				Macroalgae- Fleshy+Calcareous				
		•			Turi- algae+cyanobacteria	T			
Turi- algae+cyanobacteria (circle all: g r b)					(circle all: g r b)	_			•
Turl- algae+cyanobacteria			<u>م</u>		(circle all: g r b) Encrusting Red Algae	1			
Turi-algae+cyanobacteria (circle all: g r b)									·
Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae		/	nual q		Encrusting Red Algae			 	
Turf-algae+cyanobacleria (circle all: g r b) Encrusting Red Algae Sponge		/	D I CKT		Encrusting Red Algae				ε
Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorai		E-Z /1	1XDICKI		Encrusting Red Algae				τ. τ.
Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorai		E-Z /11			Encrusting Red Algae Sponge Hydroid Octocoral				Σ
Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorai Stony Coral		E-Z /1	1 XIIICO		Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral				τ. τ.

. .

. , ,

(

(otal Must = 100% <u>Macroalnae: Pool to Genus = Genu or Genus: Avra, Bryopeis. Bryothamnion, Caul. Codi, Dasva, Dasvciadus, Grac, Hali, Hyon, Serg.,</u> <u>Octocoral: Genus of each colony = Genu: Goro, Lept, Plex... except Pseudorterosorgia=Pspt, Plexaurella=Plla, Pseudortexaura=Psp</u> <u>Story Coral: Genus apecies of each colony = G spe; A cer, A age, C nat. M ann. M cav, P ame, O dif, S rad, S sid, S bou, S hya: S int <u>Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3</u> <u>Other-includes: Anemone, Annelid-sessile, Barnacle, Bivelye, Bryozoan, Milepore, sp., Seegrass, Zoanthid.</u></u>

Date				Data Co	llec	tor	Data Entry			
Quad Label:)),	(L)		% cover or max size (cm)		Quad Label:	5	List macroalgae Genus % List every coral colony ~and coral condilion(s)	% cover or max siz (cm)	
Max Relief (cm)	Ø					Max Relief (cm)	\bigcirc		,	
Max Sediment Depth (cm)						Max Sediment Depth (cm)	14			
Sessile Benthos	% Cov	er		}		Sessile Benthos	% Cover			
Sediment-	10	7			1	Sediment	100		1	
(circle all: sand shell mud) Macroalgae-	$\frac{1}{2}$	Ч			-	(circle all: sand shell mud) Macroalgae-	100			
Fleshy+Calcareous					-	Fleshy+Calcareous				
Turf-algae+cyanobacteria (circle all: g_r b)			-	<u> </u>		Turf-algae+cyanobacteria (circle ali: <u>g_r_b</u>)	<u> </u>	·	<u> </u>	
Encrusting Red Algae					- - h -	Encrusting Red Algae				
Sponge					_~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Sponge				
Hydroid				ļ		Hydroid				
Octocoral						Octocoral				
Stony Coral						Stony Coral	_/	-		
Tunicate						Tunicate			<u> </u>	
Bare Hard Substrate						Bare Hard Substrate				
other						other				
		\int							-	
Total Musi	t = 100	%	· · · · · ·	<u> </u>		Total Mus	it = 100%			
Quad Label: Sample Name or #	, D	S	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	% cover or max siz (cm)	e	Quad Label: Sample Name or #	20	List macroalgae Genus List every coral colony ~and coral condition(s)	% % co ^r or ma. (cm)	
Max Relief (cm)	C)				Max Relief (cm)	()			
Max Sediment Depth (cm)						Max Sediment Depth (cm)	13			
Sessile Benthos	<u>% Co</u>	over				Sessile Benthos	% Cov	er		
Sediment (circle all sand shell mud)	10	νÙ				Sediment- (circle all: sand shell mud)			
Macroalgae-	1	,				Macroalgae- Fleshy+Calcareous	1			
Fleshy+Calcareous Turf- algae+cyanobacteria		$\frac{1}{1}$				Turf- algae+cyanobacteria				
(circle all: <u>g</u> r b)	1	Ľ				(circle all: g r b)				
Encrusting Red Algae		-				Encrusting Red Algae				
Sponge		-				Sponge	+			
Hydroid		1			(Hydroid	11			
Octocoral						Octocoral	++-			
Stony Corel		-				Stony Coral				
		\downarrow				Tunicate				
Tunicate						Bare Hard Substrate				
Tunicate Bare Hard Substrate		-+		- · ·					1	
						other				

. --

J____

Stony Coral: Genus species of each colony = G spe: A cor. A cor. A cor. C nat. M ann. M cav. P ame. O dif. S rad. S sid. S bou. S hva. S int. Coral condition: W=white disease(s). O=other disease(s). B=bleaching. Coral Stress Index # 0, 1, 2, 3 Other-includes: Anemore. Annelid-sessile. Barnacle. Bivatve, Bryozoan. Millepore. sp., Seagrass. Zoanthid.

Project Name Date	56.2	DODIO	Data Col		Transect Name	Pi	2	Data Entry	
						3	Ŷ		
Quad Label: Sample Name or #	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	15		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	0				Max Relief (cm)	Ò			
Max Sediment Depth (cm)	N				Max Sediment Depth (cm)	1	Collection of the second		
Sessile Benthos	% Cover	-			Sessile Benthos	<u>% C</u>	D <u>ver</u>		
Sediment- (circle all: sand shell mud)	100			1 1	Sediment- (circle/all: sand shell mud)	;(Σ		
Macroalgae- Fleshy+Calcareous					Macroalgae Fleshy+Calcareous				<u> </u>
Turf-algae+cyanobacteria (circle all: g r b)					Turf-algae+cyanobacteria (circle all: g_r_b)				
Encrusting Red Algae					Encrusting Red Algae				
Sponge				508	Sponge				
Hydroid					Hydroid	(-	
Octocoral					Octocoral				
Stony Coral					Stony Coral				
Tunicate					Tunicate				
Bare Hard Substrate					Bare Hard Substrate				
other					other				
····.					<u> </u>				
Total Mus	t = 100%				Total Mus	st = 1(00%		
Quad Label: Sample Name or #	2.5	List macroalgae Genus List every coral colony ~and coral condition(s)	% % cover or max size (cm)		Quad Label:	+(List macroalgae Genus List every coral colony ~and coral condition(s)	% % & or max siz (cm)
Max Relief (cm)	\bigcirc				Max Relief (cm)	\langle	\mathcal{D}		
Max Sediment Depth (cm)	9				Max Sediment Depth (cm)	1			
Sessile Benthos	% Cove				Sessile Benthos	%	Cove	er .	
Sediment- (circle all sand shell mud	100)			Sediment (circle all: sand shell mud	01	X)	
Macroalgae- Fleshy+Calcareous					Macroalgae- Fleshy+Calcareous				
Turf-algae+cyanobacteria (circle all: g_r b)					Turf-algae+cyanobacteria (circle all: g r b)				
Encrusting Red Algae					Encrusting Red Algae				1
Sponge					Sponge	1_			
Hydroid				<) Hydroid				
Octocoral		·		n	Octocoral				
Stony Coral					Stony Coral				
Tunicate					Tunicate				
Bare Hard Substrate					Bare Hard Substrate				
other					other				

í,

Coral condition: W=white disease(s). O=other disease(s). B=bleachino. Coral Stress Index # 0 1 2 3 Other- includes: Anemone. Annelid-sessile. Bamacle, Bivaive, Bryozoan. Millenora. sp., Seagrass. Zoanthid.

Dete					Fransect Name		Dete Entre	
Date			Data Col	ect	ог		Data Entry	. for the second
Quad Label:	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		Quad Label:	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz (cm)
Max Relief (cm)	\bigcirc				fax Relief (cm)	0		
Max Sediment Depth (cm)				M	Aax Sediment Depth (cm)	5		
Sessile Benthos	% Cover			5	Sessile Benthos	% Cover		
Sediment (circle all sand shell mud) Macroalgee- Fleshy+Calcareous	100				Sediment- circle all: sand shell mud) Macroalgae- Teshy+Calcareous	100		
Turi-algas+cyanobacteria (circle all: g r b)		· · · · · · · · · · · · · · · · · · ·			Furf-algae+cyanobacteria circle all: g r b)			
Encrusting Red Algae			1	0	Encrusting Red Algae			
Sponge					Sponge	-/		
Hydroid Octocoral				1 [Hydroid Octocoral	 (,	<u> </u>
Stony Coral				1 T	Stony Coral			1
Tunicate				1 [Tunicate			1
Bare Hard Substrate					Bare Hard Substrate			
other					other	<u> </u>		
					-	<u>†</u> \		·.
Total Mus	t = 100%	100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 				it = 100%		
Quad Label: 2 Sample Name or #	<u>2.5</u>	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	6 % cover or max size (cm)		Quad Label:	30	List macroalgae Genus % List every coral colony ~and coral condition(s)	6 % cc or max (cm)
Max Relief (cm)	()				Max Relief (cm)	0		
Max Sediment Depth (cm)	11				Max Sediment Depth (cm)	12		
Sessile Benthos	<u>% Cover</u>		_		Sessile Benthos	<u>% Cove</u>		
(circle all: sand shell mud) Macroalgae-	101				(circle all: sand shell mud) Macroalgae-	<u>(OD</u>		
Fleshy+Calcareous Turf- algas+cyanobacteria	<u> </u>				Fleshy+Calcareous Turf- algae+cyanobacleria			
(circle ali: g r b)					(circle all: g r b)			
Encrusting Red Algae				-	Encrusting Red Algae			
Sponge		······································		- M	Sponge	+		
		-		1	Hydroid Octocoral		· ·	
Stony Coral			• •		Stony Coral			
Tunicate					Tunicate		· · ·	
Bare Hard Substrate					Bare Hard Substrate			
			1		1	1 \		
other	+			-	other	<u> </u>	\	

Stony Coral: Genus precies of each colony - Genu. Gond Mept. Frex... except Pseudopterodororia=Pspt. Piexauretta=Pspt. Stony Coral: Genus species of each colony - Gene: A cer. A age. C nat. M ann. M cay. P ame. O dif. S rad. S sid. S bou. S hve. S int.. Coral condition: W=white disease(s). O=other disease(s). B=bleeching. Coral Stress Index # 0 1.2.3 Other-includes: Anemore. Annelid-sessile. Barnacle. Bivalve. Bryozoan. Millepore ap... Seagrass. Zoanthid.

List macroalgae Genus 7	Data Coll	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell (mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	2.5 D X Cover 100	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
List every coral colonyand coral condition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	S S S S Cover	List every coral colony	or max size
		Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	X Cover		
		Sessile Benthos Sediment- (circle all: sand shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		Sediment- (circle all: sand shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		(circle all: sand_shell (mud)) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		(circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral Tunicate Bare Hard Substrate other			
		Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		Octocoral Stony Coral Tunicate Bare Hard Substrate other			
		Stony Coral Tunicate Bare Hard Substrate other			
		Tunicate Bare Hard Substrate other Total*Mus			
		Bare Hard Substrate			
		other			
		TotafMus			
		Total'Mus			1
		TUGR WUS	t = 100%		
List macroalyac Conds .	% % onver	:D:12.	4 - 10070	List macroalgae Genus %	% course
List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label:	1,5	List macroaigae Genus % List every coral colony ~and coral condition(s)	or max size (cm)
		Max Relief (cm)	15		
		Max Sediment Depth (cm)	0		
er		Sessile Benthos	% Cover		
		Sediment- (circle all: sand shell mud)	0		
		Macroalgae- Fleshy+Calcareous	0		
		Turl- algae+cyanobacteria (circle all: (g) (r) (g))	1		
		Encrusting Red Algae	0		
		Sponge	6		
		Hydraid	1		
		Octocoral	Ö		
		Stony Coral		Ocumia ras	LIX8
		Tunicate	Ó		
		Bare Hard Substrate	85		
		other BY O	12		
		t t			
	//	A A A A A A A A A A A A A A	Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment. (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turl- algae + cyanobacteria (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turl- algae + cyanobacteria (circle all: 9 r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Bare Hard Substrate other other Macroalgae. Fool to Genus = Genu or Genus: Avra, Bryopsis, Bryothammion, Caul oral: Genus of each colony = Genu: Corg, Lept, Plex except Pseudopterox Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, A condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Strees includes: Anemid_sessile. Barnacle, Bryozoan, Millepora, sp., Mo	Max Relief (cm) 15 Max Sediment Depth (cm) 0 Sessile Benthos % Cover Sediment. 0 (circle all: sand shell mud) 0 Macroalgae: 0 Flessity Calcareous 0 Turf- algae * cyacobacteria 0 (circle all: 9 C b 1 1 Encrusting Red Algae 0 Sponge 6 Hydroid 0 Cotooral 0 Stony Coral 1 Iunicate 0 Bare Hard Substrate 8K other 1 K Total Must = 100% algae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamniou, Coral AL, Cold, Dassoral, Coral Codo, Dassoral K Total Must = 100% algae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamniou, Coral, Codo, Dassoral Coral: Genus of each colony = Genu. Corg, Lept, Piex except Paendopterogongia-Pspt Coral: Genus species of each colony = Genu disease(s), B=theaching, Coral Stress Index # 0 includes: Anemid scessile, Barnacle, Bryozoan, Millepora so, Molusca sessil	Max Reief (cm) 15 Max Sediment Depth (cm) 0 Sessile Benthos % Cover Sediment- (circle alt: sand shell mud) 0 Macroalgae- Flesty Catareous 0 Turi- algae regraphacteria (arcle alt: g) (b) 1 1 Encrusting Red Algae 0 Sponge 6 Hydroid 0 Story Coral 0 Story Coral 0 Iunicate 0 Bare Hard Substrate 85 order: Corus of each colony = Genu: Gorg, Lept, Plex except Pseudopterogorgia-Psol, Ptexarella=Ptla, Pseudopterogorgia-Psol, Ptexarella

.

į

Project Name

Site Name / Transect Name

	roject Name			Site Name	e / Transect Name			
To Da	ate			Data Coll	ector			
$\int \frac{1}{\sqrt{2}}$	D: 13							
	uad Label:	C		% cover or max size (cm)	Quad Label: Sample Name or #	2.5	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Ма	ax Relief (cm)	13	Dichy ofe		Max Relief (cm)	0		
Ма	ax Sediment Depth (cm)	0)		Max Sediment Depth (cm)	9		
	ssile Benthos	% Cover			Sessile Benthos	% Cover		-
(cir	diment- role all: sand shell mud)	0			Sediment- (circle all: sand (she)t (mud) Macroalgee	100		
Fle	acroalgae- eshy+Calcareous				Fleshy+Calcareous			
Tu (cit	$ \begin{array}{c} \text{inf-algaetcyanobacteria} \\ \text{incle all: } () () () \\ \end{array} $.			Turf-algae+cyanobacteria (circle alt: g r b_)			· · · · · · · · · · · · · · · · · · ·
En	crusting Red Algae	0			Encrusting Red Algae			·
Sp	onge				Sponge			
ну	/droid	0.	Outerto	01X3	Hydroid		· · · · · · · · · · · · · · · · · · ·	
<u>oc</u>	ctocoral	Ō	l		Octocoral			· · · · · · · · · · · · · · · · · · ·
Sta	ony Coral	1			Stony Corat			[
Tư	micate	7.011			Tunicate			
	are Hard Substrate				Bare Hard Substrate			
ot	her(3110	<u> </u>			other			
	mall Falls							
	Ses upp	4						
	Total Must	= 100%			Total Must	= 100%		
)	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Total Must Quad Label: Sample Name or #	= 100%	List macroalgae Genus % List every coral cotony ~and coral condition(s)	% cover or max size (cm)
Sa	Total Must	57	List every coral colony	or max size	Quad Label:	17.5 Q	List every coral colony	or max size
Sa Ma	Total Must)	List every coral colony	or max size	Quad Label: Sample Name or #	17.5	List every coral colony	or max size
Sa Ma Ma	Total Must	57	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm)	17.5 Q	List every coral colony	or max size
Sa Ma Se (ci	Total Must Cuad Label: ample Name or # ax Refief (cm) ax Sediment Depth (cm) essile Benthos ediment- ircke all: sand shell mud)	7 0 % Cover	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	9 9 9 % Cover	List every coral colony	or max size
Sa Ma Se (d) Fk	Total Must	7 7 0 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae Fleshy+Calcareous	9 9 9 % Cover	List every coral colony	or max size
Sa Má Se Se G Hi Fr	Total Must Cuad Label: ample Name or # ax Relief (cm) ax Sediment Depth (cm) essile Benthos ediment- arcole all: sand_shell_mud) acroalgae-	7 0 % Cover	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae	9 9 9 % Cover	List every coral colony	or max size
Sa Mi Se Se Q Mi Ft U	Total Must	7 0 % Cover	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	9 9 9 % Cover	List every coral colony	or max size
Sa Ma Se QU FF T Q EF	Total Must	7 0 % Cover 0 0	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	9 9 9 % Cover	List every coral colony	or max size
Sa Ma Ma Se QH: Fr Fr Q Fr S	Total Must	7 0 % Cover 0 0	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	9 9 9 % Cover	List every coral colony	or max size
Sa Mi Si	Total Must	7 0 % Cover 0 0 0	List every coral colony -and coral condition(s)	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	9 9 9 % Cover	List every coral colony	or max size
Sa Ma Se Gida FF TJ Gi FF O	Total Must		List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	9 9 9 % Cover	List every coral colony -and coral condition(s)	or max size (cm)
Sa <u>Ma</u> 또 양 양 동 두 두 양 · 파 · · · · · · · · · · · · · · · · ·	Total Must	7 0 % Cover 0 0 0 0	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	9 4 % Cover 85 1	List every coral colony	or max size (cm)
Sa Ma Ma Se Se QUA 두 구 QU 관 ST 두 이 ST 두 81	Total Must		List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelf mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	9 9 9 % Cover	List every coral colony -and coral condition(s)	or max size (cm)

Total Must = 100%

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex ... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0_1 2_3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid,

Totat Must = 100%

Project Name

Date

(

Site Name / Transect Name

Data Collector

		List macroalgae Genus %	% cover			List macroalgae Genus %	% cover
Quad Label: /	20	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label:	22,5	List every coral colony ~and coral condition(s)	or max size (cm)
Max Relief (cm))			Max Relief (cm)	3	· · · · · · · · · · · · · · · · · · ·	(
Max Sediment Depth (cm)	8			Max Sediment Depth (cm)	3		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)	80			Sediment- (circle all: sand shell (mult)	73		
Macroalgae- Fleshy+Calcareous	()		****	Macroalgae- Fleshy+Calcareous	D		
Turf-algaetcyanobacteria (circle all: (g) (b))				Turf-algae+cyanobacteria (circle alt: (g) (T(b))		·	
Encrusting Red Algae	0			Encrusting Red Algae	-0		· · · · · · · · · · · · · · · · · · ·
Sponge	0			Sponge	0		
Hydroid	0	•		Hydroid	Ô		-
Octocoral	Õ			Octocoral	0		
Stony Coral	Q			Stony Coral	0		
Tunicate	$\left \begin{array}{c} 0 \\ \end{array} \right $			Tunicate	0	· <u> </u>	·
Bare Hard Substrate	19			Bare Hard Substrate	25		
other				other VEMITId	2	·	
Total Mus	t = 100%	••		Total Must	= 100%		
Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	6 % cover or max size (cm)	Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Sample Name Of #							
Max Relief (cm)				Max Relief (cm)			
Max Sediment Depth (cm)				Max Sediment Depth (cm)			
Sessile Benthos	<u>% Cover</u>			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)			<u> </u>	Sediment- (circle all: sand shell mud)			
Macroalgae- Fleshy+Calcareous							:
			· •	Macroalgae- Fleshy+Calcareous			
Turf-aigae+cyanobacteria			· · · · · · · · · · · · · · · · · · ·	Fleshy+Calcareous Turf- algae+cyanobacteria			
Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae				Fleshy+Calcareous			
(cincle all: g r b)				Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)			· · · · · · · · · · · · · · · · · · ·
(circle all: g r b) Encrusting Red Algae				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae .			
(circle all: g r b) Encrusting Red Algae Sponge				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge			
(circle all: g r b) Encrusting Red Algae Sponge Hydroid				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid			
(circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid Octocoral			
(circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Corał			
(circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate				Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Coral Tunicate			

tandard Abbreviations: and abbreviation formats

ĺ

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex., except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, Q dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Date

Site Name / Transect Name

Data Collector

Quad Label: 24	25	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:	Ę.	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	10	: 		Max Relief (cm)	19	$(\underline{\mathbb{C}})$	
ax Sediment Depth (cm)	le '			Max Sediment Depth (cm)	0	Dictvota	1
essile Benthos	% Cover			Sessile Benthos	% Cover		
ediment-	95	1		Sediment- (circle all; sand shell mud)	\bigcirc		
acroalgae-				Macroalgae- Fleshy+Calcareous)	· <u> </u>	
eshy+Calcareous uf-algae+cyanobacteria rcle all: g / r b /)				Turf-algae+cyanobacteria (circle all: (g (r)b))	20		
crusting Red Algae				Encrusting Red Algae			
oonge	Q	:		Sponge)		
droid	(Hydroid	O		
ctocoral	$\left(\begin{array}{c} \\ \end{array} \right)$			Octocoral	0		
iony Corat				Stony Coral)	Oruingrobusto	
unicate	Ô			Tunicate	2		
are Hard Substrate				Bare Hard Substrate	48		
her	3			otherNOVTM	25		
				bn/070m			
Total Mus	t = 100%	· · · · · · · · · · · · · · · · · · ·		Total Musi	= 100%	•	:
Quad Label: Sample Name or #		List macroalgae Genus 9 List every coral colony ~and coral condition(s)	6 % cover or max size (cm)	Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz (cm)
Max Relief (cm)	[Max Relief (cm)			
fax Sediment Depth (cm)				Max Sediment Depth (cm)			
essile Benthos	% Cover			Sessile Benthos	% Cover		
ediment- circle all: sand shell mud)		- gl		Sediment- (circle all: sand shell mud)			
lacroalgae- leshy+Calcareous				Macroalgae- Fleshy+Calcareous			
urf-algae+cyanobacteria birde all: g r b)				Turf-algae+cyanobacteria (circle all: g r b)			
Encrusting Red Algae		· · · · · · · · · · · · · · · · · · ·		Encrusting Red Algae	;	· · · · · · · · · · · · · · · · · · ·	
Sponge				Sponge			
tydroid				Hydroid			
Detocorat				Octocoral			
Stony Coral				Stony Coral			
Tunicate				Tunicate	2		-
Bare Hard Substrate				Bare Hard Substrate			
other				other DFYO			
	1				1		
			1				

Total Must = tandard Abbreviations: <u>Ma</u>

and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudoplerogorgia=Pspt, Plexaurelia=Pila, Pseudoplexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition; W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1, 2, 3

Other-includes; Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name North Topsail Beach

Date 10/21/05

Data Collector AD

Site Name / Transect Name TS 5

Quad Label:	7:5	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)	Quad Label:		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
lax Relief (cm)	6			Max Relief (cm)	4		
lax Sediment Depth (cm)	5	-	4	Max Sediment Depth (cm)	3		
essile Benthos	% Cover	1		Sessile Benthos	% Cover	1	
edimentary sincle all, sand shell mud)	75			Sediment- (circle all: sand) shell mud)	95		
lacroalgae- leshy+Calcareous	0			Macroalgae Fleshy+Calcareous	$\overline{()}$	······································	
urf-algaetcyanobacteria birde all: (g/r(b))	.2:			Turt-algae+cyanobacteria (circle all: /g)r (b))	Ĭ		<u> </u>
ncrusting Red Algae	Ō			Encrusting Red Algae	$\overline{\bigcirc}$		
ponge	0			Sponge	$\overline{()}$		
lydroid	0			Hydroid	Õ		
Octocoral	0			Octocoral	\bigcirc		
itony Coral	O			Stony Coral	0	×	
unicate	0		,	Tunicate	0	·,	
are Hard Substrate	3			Bare Hard Substrate	2		
therWOITN	20	1	,	otherWOrm	2		
Total Musi	(= 100%			Total Mus	t = 100%·		
Quad Label: 🔽	1= 100% 75	List macroalgae Genus List every coral colony -and coral condition(s)	or max size	Quad Label: 📿		List macroalgae Genus 9 List every coral colony +and coral condition(s)	or max size
Quad Label: 7	1=100%		. .	Quad Label:			the state of the s
Quad Label: 7	1= 100% 25 12 3	List every coral colony	or max size	Quad Label:	30	List every coral colony	or max siz (cm)
Quad Label: 7	75 75 72 72 72 72 72 72 72 72 74 72	List every coral colony	or max size	Quad Label:	50 10	List every coral colony	or max size (cm)
Quad Label: 7	75 12 3 <u>x cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment	0 2 <u>% Cover</u>	List every coral colony	or max siz
Quad Label: 7	75 12 3 <u>x cover</u>	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae	0 2 <u>% Cover</u>	List every coral colony	or max siz
Quad Label: 7	75 12 3 <u>x cover</u>	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macrualgae Fleshy+Calcareous	0 2 <u>% Cover</u>	List every coral colony +and coral condition(s)	or max size
Quad Label: Z Sample Name or # Aax Retief (cm) Aax Sediment Depth (cm) Sediment- circle all sand shell mud) Aacroalgae Veshy+Calcareous (urf- algae+cyandbacteria circle all g) (r b)	25 12 3 x cover 45	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae	4 2 <u>7, Cover</u> 855	List every coral colony +and coral condition(s)	or max size
Total Must Quad Label: 7 Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all sand shell mud) Macroalgae. Fieshy+Calcareous Furf-algae.cyandbacteria circle all g) (r b) Encrusting Red Algae Sponge	25 12 3 x cover 45	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessife Benthos Sediment (circle all: sand shell mud) Macrualgae Fleshy+Calcareous Turt- algae+cranobacteria (circle all: Gold De)	4 2 <u>7, Cover</u> 855	List every coral colony	or max size
Quad Label: 7 Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all (sand) shell mud) Macroalgae. Teshy+Calcareous furf- algae:cyandbacteria circle all (g) (r b) Encrusting Red Algae Sponge	25 12 3 x cover 45	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: GS (C, b)) Encrusting Red Algae .	4 2 <u>7, Cover</u> 855	List every coral colony +and coral condition(s)	or max siz
Quad Label: Sample Name or #	25 12 3 x cover 45	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macrualgae Fleshy+Calcareous Turf- algae+cranobacteria (circle all: Generations) Encrusting Red Algae Sporige	4 2 <u>7, Cover</u> 855	List every coral colony +and coral condition(s)	or max siz
Quad Label: Z Sample Name or # Z Max Relief (cm) Z Max Sediment Depth (cm) Z Sediment- circle all sand shell mud) Z Accostgae Z Neshy+Calcareous Z Circle all gae Z Sediment- circle all gae Z Incrusting Red Algae Z Sponge Z Hydroid Z Detocoral Z	25 12 3 x cover 45	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macrualgae. Fleshy+Calcareous Turf. algae+cranobacteria (circle all: Gent Delt) Encrusting Red Algae Sportge Hydroid	4 2 <u>7, Cover</u> 855	List every coral colony +and coral condition(s)	or max siz
Quad Label: 7	25 12 3 x cover 45	List every coral colony	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: GB (D)) Encrusting Red Algae Sponge Hydroid Octocoral	9 2 % Cover 855 0 2 2 0 0 0 0	List every coral colony +and coral condition(s)	or max siz
Quad Label: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all sand shell mud) Macroalgae. Fleshy+Calcareous Furf- algae:cyandbacteria circle all (g) (r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	25 12 3 x cover 45	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label:	9 9 7 85 0 2 7 0 0 1 0 1 0	List every coral colony +and coral condition(s)	or max siz
Quad Label: 7	25 12 3 x cover 45 0 2 0 0 0 0 0	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Sediment (circle all: sand shell mud) Macrualgae Fleshy + Calcareous Turf- algae + cyanobacteria (circle all: Get (cm) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	9 2 % Cover 855 0 2 2 0 0 0 0	List every coral colony +and coral condition(s)	or max size

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pilla, Pseudoptexaura=Pspt Story Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O difl, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other- includes: Anemone, Annelid sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name North Topail Beach	Site Name / Transect Name TS 5	
Date 10/21/05	Data Collector AD	

1

Quad Label: 4	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
nax Relief (cm)	0			Max Relief (cm)	M		
lax Sediment Depth (cm)	5			Max Sediment Depth (cm)			
essile Benthos	% Cover			Sessile Benthos	% Cover		<u> </u>
circle all: sand)shell mud)	100			Sediment- (circle all, sand, shell mud)	20		
lacroalgae-				Macroalgae	$\left(\right)$		
leshy+Calcareous urf-algae+cyanobacteria				Fleshy+Calcareous Turf- algae+cyagobjacteria	00	· · · · · · · · · · · · · · · · · · ·	<u> </u>
incleatig r b }			·	(circle all: $g(r)(b)$)	<u> </u>	·	ļ
ncrusting Red Algae			_	Encrusting Red Algae	O		
ponge				Sponge	2		
lydroid				Hydroid	()	Lepto, sp	8 dá
Actor		1.5		Ortomrat	Ô	Applintes **	
otocoral		·		Octocoral			
itony Coral				Stony Coral			
unicate			, , ,	Tunicate			ļ
are Hard Substrate				Bare Hard Substrate	-74		
ther				other			
	1						
Total Mus	= 100%	• •	:	Total-Musi	= 100%		1
Quad Label: /	12.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	6 % cover or max size (cm)	Quad Label: 4	4	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz (cm)
Max Retief (cm)				Max Relief (cm)	16		
Nax Sediment Depth (cm)	15		1	Max Sediment Depth (cm)	4		
iessile Benthos	% Cover	· · · · · · · · · · · · · · · · · · ·		Sessile Benthos	% Cover		
Sediment circle all sand shell mud)	0,8			Sediment (circle all; sand shell mud)	35		
Macroalgae-				Macroalgae	\hat{O}		
Teshy+Calcareous Turf- algae,±eyanobacteria		1		Fleshy+Calcareous Turf- algae+cyanobacteria	2	· · · · · · · · · · · · · · · · · · ·	1
circle all: g r b }	$\left \begin{array}{c} 1 \\ \end{array} \right $			(oircle all: $G(r)$ (b))	1		
Encrusting Red Algae			<u> </u>	Encrusting Red Algae .			
200000	(\cdot)			Sponge	0		
house					-		:
	Õ			Hydroid	0		
łydroid	\hat{O}				0		
tydroid Dotocorat	000			Hydroid			
tydroid Octocoral Stony Corat				Hydroid Octocorat Stony Coral	0		
Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate				Hydroid Octocorat Stony Coral Tunicate	0000		
Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate				Hydroid Octocorat Stony Coral Tunicate Bare Hard Substrate	000022		
tydroid Octocoral Stony Coral Funicate				Hydroid Octocorat Stony Coral Tunicate	0000		

tandard Abbreviations: .nd abbreviation formats Macroałgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Piex... except Pseudopterogorgia=Pspt, Piexaurella=Pilla, Pseudopteraura=Pspl Stony Coral: Genus species of each colony = G spe; A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), Q=other disease(s), 8=bleaching, Coral Stress Index # 0 1 2 3 Other- includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Date 1021	05	·/	Data Coll	ector D			
Quad Label:	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% nover or max size (cm)	Quad Label:	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz (cm)
Max Relief (cm)	H			Max Relief (cm)		Diction	
Max Sediment Depth (cm)	1		· · · ·	Max Sediment Depth (cm)	2		<u> </u>
Sessile Benthos	% Cover			Sessile Benthos	% Cover		·
Sediment (circle all sand shell mud)	35			Sediment- (circle all sand) shell mud)	10		
Macroalgae- Fleshy+Calcareous	()			Macroalgae Fleshy+Calcareous	3		
Turl-algae+cyanobacteria (circle all: g (r b))	ľ			Turl-algae+cyanobacteria (circle all: g (r (b))	2	-	<u> </u>
Encrusting Red Algae	Ô.			Encrusting Red Algae	0		
Sponge				Sponge	1		4
Hydroid	C			Hydroid	0	O, vobustax	(
Octocoral	\bigcirc			Octocoral	O		
Stony Coral	\bigcirc			Stony Coral	s		
Tunicate	0			Tunicate	O		
Bare Hard Substrate	15			Bare Hard Substrate	83		
other				other NOr M	2		
			······································		2		
other Total Must	= 100%			other NOT M	1 = 100%		
	25	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		1 = 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	
Total Must	75	List macroalgae Genus 9 List every coral colony	or max size	Total Mus Quad Label: 7	50	List every coral colony	or max si
Total Must Quad Label: Sample Name or #	25	List macroalgae Genus 9 List every coral colony	or max size	Total Mus Quad Label: 7 Sample Name or #	50	List every coral colony	or max siz
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	2.5 8 5 <u>* Cover</u>	List macroalgae Genus 9 List every coral colony	or max size	Total Mus Quad Label: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	50 2 3 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud)	2.5 8 5	List macroalgae Genus 9 List every coral colony	or max size	Total Mus Quad Label: (Sample Name or # Max Refiel (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud)	50 2 3 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgãe- Fleshy+Calcareous	2.5 8 5 <u>% Cover</u> 3	List macroalgae Genus 9 List every coral colony	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Reviet (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae Fileshy+Calcareous	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae-	2.5 8 5 <u>* Cover</u>	List macroalgae Genus 9 List every coral colony	or max size	Total Mus Quad Label: 7 Sample Name or # Max Refiel (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae	2 2 3 <u>% Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgãe- Fleshy+Calcareous	2.5 5 <u>* cover</u> 3 0 10	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Reviet (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae Fileshy+Calcareous	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sedimenta (circle all: said shelt mud) Macroalgae Fleshy+Calcareous Tur1-algae+cyanobacteria (circle all: (g) (r (b)) Encrusting Red Algae Spoñge	2.5 8 5 x cover 3 0	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all; sand shelt mud) Macroalgab Fleshy+Calcareous Turf- algae+cyanobacteria (circle all; g r b)	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sedimenta (circle all: said shelt mud) Macroalgae Fleshy+Calcareous Tur1-algae+cyanobacteria (circle all: (g) (r (b)) Encrusting Red Algae Spoñge	2.5 8 5 % cover 3 0 10 0 2 0	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all; sand shelt mud) Macroalgae (leshy+Calcareous Turf-algae+cyanobacteria (circle all; g + b) Encrusting Red Algae	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand sheft mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g) (r (b)) Encrusting Red Algae Spoñge	2.5 5 <u>* cover</u> 3 0 10	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Resief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g T b) Encrusting Red Algae Sponge	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz (cm)
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sedimenta (circle all: said shelt mud) Macroalgae Fleshy+Calcareous Tur1-algae+cyanobacteria (circle all: (g) (r (b)) Encrusting Red Algae Spoñge	2.5 8 5 % cover 3 0 10 0 2 0	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: (Sample Name or # Max Refiel (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g b) Encrusting Red Algae Sponge Hydroid	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz (cm)
Total Must Quad Label: Sample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessife Benthos Sediment (circle all: said shelt mud) Macroalgae- Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: (g) (r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	25 5 5 5 5 7 0 0 0 0 0 0 0 0 0 0 0 0 0	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Refiel (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shelt mud) Macroalgae Fleshy+Calcareous Turf-algae+cyshobacteria (circle all: g T b) Encrusting Red Algae Sponge Hydroid Octocoral	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz
Total Must Quad Label: Sample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgãe- Fleshy+Calcareous Turf-algaescyanobacteria (circle all: (g) (r (b)) Encrusting Red Algae Spoñge Hydroid Octocoral Story Coral	2.5 8 5 % cover 3 0 10 0 2 0	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Mus Quad Label: 7 Sample Name or # Max Reviet (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand) shell mud) Macroalgae Fileshy+Calcareous Turt-algae+cyahobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	50 2 3 <u>7, Cover</u> 91	List every coral colony -and coral condition(s)	or max siz (cm)

Standard Abbreviations: Standard Abbreviations:

1 1 Bo

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C.nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int. Stony Coral Genus species of each colony = S spec. A car, A aga, C.nar, M ann, M cav, P ame, U on, S rad, S ski, S Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid, Julop 1

In

tery

ç J

The AL SUPERIOR

WIN

15

00

Project Name N	Topsal	Beach	Site Name	e / Transect Name		TS6	
Date	15/0	_05	Data Coll	ector		RB	
Quad Label:)	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:	Ś		% cover or max size (cm)
Max Relief (cm)				Max Relief (cm)	0		
Max Sediment Depth (cm)			21	Max Sediment Depth (cm)	10		
<u>Sessile Benthos</u>	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud) Macroalgae-	160			Sediment (circle all sand shell mud) Macroalgae-	1N		
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)				Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)		· · · · · · · · · · · · · · · · · · ·	
Encrusting Red Algae				Encrusting Red Algae			
Sponge			· · · · · · · - · · · · - ·	Sponge			
Hydroid				Hydroid			, .
Octocoral			**************************************	Octocorat			
Stony Coral				Stony Corat		·····	
Tunicate				Tunicate	1		
Bare Hard Substrate			······	Bare Hard Substrate	U		
other				other			
Total Musi	1 = .100%	List macroalgae Genus %	% cover	Total Must	= 100%	List macroalgae Genus %	% cover
Quad Label:	5	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: 7	5	List every coral colony ~and coral condition(s)	or max size (cm)
Max Relief (cm)	27			Max Relief (cm)	6		
Max Sediment Depth (cm)	5	· ····································		Max Sediment Depth (cm)	- D		
<u>Sessile Benthos</u>	<u>% Cover</u>			Sessile Benthos	% Cover		
Sediment (circle all sand) shell mud)	80			Sediment- (circle all: sand shell mud)	90		
Macroalgae- Fleshy+Calcareous	U			Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (cirible all: g r b)	0			-			
Chore and g t U y				Turl-algae+cyanobacteria (circle all: g r (b))	5	·	
Encrusting Red Algae	Ũ			Turf-algae+cyanobáčteria (circle all: g r (b)) Encrusting Red Algae	5	· · · · · · · · · · · · · · · · · · ·	
	D D			(circle all: g r (b))	5		
Encrusting Red Algae	0 0			(circle all: g_r(b)) Encrusting Red Algae	5		· .
Enonusting Red Algae	D D			(circle all: g r (b)) Encrusting Red Algae Sponge	5		
Enorusting Red Algae	0 0			(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	5		
Encrusting Red Algae Sponge Hydroid Octocorat				(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral			
Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral				(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	5		
Encrusting Red Algae Sponge Hydroid Octocorat Stony Corat Tunicate				(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate			
Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			(circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other			

tandard Abbreviations: und abbreviation formats Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Ptexauretta=Ptta, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1, 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid,

Project Name N Tops	all Beac	h
---------------------	----------	---

Site Name / Transect Name

Project Name N		Deurs		e / Transect Name			-A-A
Date /0/21/05	5		Data Col	lector			125
		List macroalgae Genus %	1 Manuar	· · · · · · · · · · · · · · · · · · ·		List macroalgae Genus %	
Quad Label: Sample Name or #		List macroalgae Gentis A List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	d.5	List macroaligae Genus % List every coral colony ~and coral condition(s)	or max size (cm)
Max Relief (cm))			Max Relief (cm)	20		
Max Sediment Depth (cm)				Max Sediment Depth (cm)	5		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- circle all: sand shell mud) Macroalgae	97			Sediment- (circle all sand shell mud) Macroalgae-	8		
Fleshy+Calcareous				Fleshy+Calcareous			<u> </u>
Turf-algae+cyanobacteria (circle all: g_r_b_)				Turl-algae+cyanobacteria (circle all: g r b)	10		
Encrusting Red Algae		·		Encrusting Red Algae			
Sponge				Sponge			
Hydroid		·		Hydroid			
Octocoral				Octocorat		Transfer of	
Stony Coral				Stony Coral		ne vilige	
Tunicate				Tunicale		:	
Bare Hard Substrate	3			Bare Hard Substrate	84		
other				other			
Total Must	= 100%	** **		Total Musi	t = 100%		Livesy. Lt.
Quad Label:)	List macroalgae Genus % List every coral colony ~and coral condition(\$)	6 % cover or max size (cm)	Quad Label:	7.5	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	6 % cover or max size (cm)
Max Relief (cm)	25	i da ji manana na sa		Max Relief (cm)	20		
Max Sediment Depth (cm)	2			Max Sediment Depth (cm)	2		- vort
Sessile Benthos	% Cover	1		Sessile Benthos	% Cover		Luipa
Sediment- (circle all: sand (she) mud)	З			Sediment- (circle all sand (shell mud)	30		· · ·
Macroalgae- Fleshy+Calcareous				Macroalgae Fleshy (Calcareous			
Turf-algae+cyanobacteria (circle all: g r (b))	5	*		Turt-algae+cyanobacteria (circle all: g r (b)	IV		
Encrusting Red Algae				Encrusting Red Algae		-	
Sponge				Sponge			
Hydroid				Hydroid			
Octocoral				Octocoral		-	
Stony Coral				Stony Coral		· · · · · · · · · · · · · · · · · · ·	
Tunicate				Tunicate			
Bare Hard Substrate	42			Bare Hard Substrate	59		
other	1			5/11/2			

Total Must = 100%

Total Must = 100%

Standard Abbreviations: and abbreviation formats

other-

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothammion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex ... except Pseudopterogorgia=Pspt, Plexaurella=Plta, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dil, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

other-

o ha je

Project Name			Data Coll	e / Transect Name			
Bate N 10psall	Bell		Data COI			RB	
		List macroalgae Genus 🤊	4 0000r				
Quad Label:	\cap	List every coral colony	or max size	Quad Label:		List macroalgae Genus % List every coral colony	% cover
Sample Name or # 👘 🖗	N	~and coral condition(s)	(cm)		2.5	~and coral condition(s)	or max size
	5			,			
Max Relief (cm)	N.			Max Relief (cm)	Ő		
	C.				-6		<u> </u>
Max Sediment Depth (cm)	6	····-		Max Sediment Depth (cm)	\sim		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment-	1			Cationant	-	······	ļ
circle all: sand shell mud)	45			Sediment- (circle all: (sand shell' mud)	100	-	
Aacroalgae-				Macroalgae-			
leshy+Calcareous				Fleshy+Calcareous			1
furf-algae+cyanobacteria	1.			Turf-algae+cyanobacteria			†
oirclealt: g r (b))				(circle all: g r b)			· ·
							3
Encruisting Red Algae				Encrusting Red Algae		· · · · · · · · · · · · · · · · · · ·	
Sponge		÷.					
400.90		·		Sponge			· · · · · ·
lydroid				Hydroid		i .	
						· · · · · · · · · · · · · · · · · · ·	<u> </u>
Octocoral				Octooral			
Stony Coral				Stony Corat			
				and a second sec			1
unicate		···-		Tunicate			<u> </u>
		÷					
lang Uard Substrate							
Bare Hard Substrate				Bare Hard Substrate			·
Hare Hard Substrate	3						
SPSMA	3	·····		other			
ther. Ses wan	3						
SPSMA	3	······			= 100%		
ther	= 100%		6 % cover	other Total-Must	= 100%	List macroaloae Genus %	
ther. Seswon Total Must	3	List macroalgae Genus % List every coral colony	or max size	other Total Must	= 100%	List macroalgae Genus % List every coral colony	% cover
ther	3	List macroalgae Genus 9		other Total-Must	= 100%		% cover
ther. Seswon Total Must Ruad Label: ample Name or #	5	List macroalgae Genus % List every coral colony	or max size	other Total Must	= 100%	List every coral colony	% cover or max size
ther. Seswon Total Must	3	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must	= 100% 7.5	List every coral colony	% cover or max size
AtherSeswon Total Must Quad Label: ample Name or W Max Retief (cm)	5	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total-Must Quad Label: Sample Name or # Max Relief (cm)	75	List every coral colony	% cover or max size
ther. Seswon Total Must Ruad Label: ample Name or W Max Relief (cm) Max Sediment Depth (cm)	5 15 4	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	= 100% 75 14	List every coral colony	% cover or max size
AtherSeswon Total Must Quad Label: ample Name or W Max Retief (cm)	5	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total-Must Quad Label: Sample Name or # Max Relief (cm)	75	List every coral colony	% cover or max size
Total Must Total Must Ruad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment-	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total-Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	25 14 2 <u>% Cover</u>	List every coral colony	% cover or max size
Ather Ses work Total Must Total Must Auge Label: Ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	5 15 4	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment	25 14 2	List every coral colony	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle #I. sent0 shell mud) Macroalgae-	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total-Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	25 14 2 <u>% Cover</u>	List every coral colony	% cover or max siz
Total Must Total Must Total Must Ruad Label: ample Name or W Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle #I. sent0 shell mud) Macroalgae- testy-Calcareous	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy +Calcareous	25 14 2 <u>% Cover</u>	List every coral colony	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sediment- circle #1: self() shell mud) Macroalgae- Macroalgae- Macroalgae- Mashyl-Calcareous Tuf-algae cyanobacteria	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	25 14 2 % Cover 25	List every coral colony	% cover or max size
Total Must Total Must Total Must Ruad Label: ample Name or W Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle #I. sent0 shell mud) Macroalgae- testy-Calcareous	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy +Calcareous	25 14 2 <u>% Cover</u>	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Total Must Total Must Aux Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- circle all: period shell mud) Aacroalgae- testyl-Calcareous [urf-algae+cyanobacteria circle all: g r (b)	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turt: algae+cyanobacteria (circle all: g r (b))	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sediment- circle #1: self() shell mud) Macroalgae- Macroalgae- Macroalgae- Mashyl-Calcareous Tuf-algae cyanobacteria	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle #1: senid shell mud) Aacroalgae- testyl-Calcareous furf- algae cyanobacteria circle #1: g r (b) Encrusting Red Algae	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Tuf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Total Must Total Must Aux Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- circle all: period shell mud) Aacroalgae- testyl-Calcareous [urf-algae+cyanobacteria circle all: g r (b)	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turt: algae+cyanobacteria (circle all: g r (b))	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle #1: senid shell mud) Aacroalgae- testyl-Calcareous furf- algae cyanobacteria circle #1: g r (b) Encrusting Red Algae	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Secondgae. Fileshy +Calcareous Turl - algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: gend shell mud) Macroalgae- leshyt-Calcareous lurf-algae+cyanobacteria circle all: g r (b) Encrusting Red Algae Sponge	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Tuf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Puad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: gend shell mud) Macroalgae- leshyt-Calcareous lurf-algae+cyanobacteria circle all: g r (b) Encrusting Red Algae Sponge	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Secondgae. Fileshy +Calcareous Turl - algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Puad Label: ample Name or If Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: saint shell mud) Macroalgae- testy-Calcareous Furf-algae+cyanobacteria circle all: g r (b) Encrusting Red Algae Sponge Hydroid Detocoral	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Muss Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessife Benthos Sediment Sediment (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max size
Total Must Total Must Total Must Total Must Total Must Aux Relief (cm) Aax Sediment Depth (cm) Sessile Benthos Sediment- circle all: pend shell mud) Aacroalgae- circle all: pend shell mud) Aacroalgae- circle all: pend shell mud) Total Must Max Relief (cm) Aax Sediment Depth (cm) Sessile Benthos Sediment- circle all: pend shell mud) Aacroalgae- circle all: pend shell mud) Total Must Max Relief (cm) Aacroalgae- Sessile Benthos	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sapid_shell inud) Macroalgae. Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r (b) } Encrusting Red Algae . Sponge Hydroid	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Aax Relief (cm) Aax Sediment Depth (cm) Sessile Benthos Sediment- circle ##: senit shell mud) Aacroalgae- teshy+Calcareous Tuf-algae+cyanobacteria circle ##: g r b) Encrusting Red Algae Sponge tydroid Detocoral Story Coral	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment. (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or If Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: saint shell mud) Macroalgae- testy-Calcareous Furf-algae+cyanobacteria circle all: g r (b) Encrusting Red Algae Sponge Hydroid Detocoral	15 15 4 * Cover	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Muss Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessife Benthos Sediment Sediment (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral	25 14 26 30	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Total Must Puad Label: ample Name or # Aax Relief (cm) Aax Sediment Depth (cm) Sediment- circle all: senii shell mud) Aaroalgae- Sediment- circle all: senii shell mud) Cotocoral Stony Coral Funicate	5 15 4 15 5 7	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment. (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turf: algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae. Sponge Hydroid Octocoral Stony Coral Tunicale	25 14 2 % Cover 25	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
Total Must Total Must Puad Label: ample Name or # Aax Relief (cm) Aax Sediment Depth (cm) iessile Benthos Sediment- circle all: senit Shell mud) Aacroalgae- teshyt Calcareous Tuf- algae tcyanobacteria circle all: g r b) incrusting Red Algae Sponge tydroid Dotocoral Story Coral Funicate Bare Hard Substrate	15 4 5 5 5	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	Total Must Total Must Quad Label: Sample Name or # Max Relief (cm) Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment. (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turt-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	25 14 26 30	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz
ther	5 15 4 15 5 7	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment. (circle all: sand shell mud) Macroalgae. Fleshy+Calcareous Turf: algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae. Sponge Hydroid Octocoral Stony Coral Tunicale	25 14 26 30	List every coral colony -and coral condition(s) DLM MG SA rob ⁰⁵¹	% cover or max siz

tandard Abbreviations: and abbreviation formats

 $\gamma = p \to p \in \mathbb{R}$

.

ł,

2

. 1

. >

a support of the support

Total Musi 100%

Macroalque: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudopteroura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cay, P ame, O dif, S rad, S sid, S bou, S hya, S int ... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name <i>M</i> . Date 10 21 /01	Tops	Sail Beach	Site Nam	e / Transect Name	754)	
Date 10 21 0	5		Data Col	ector RB			
Quad Label:	6	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:	9,9	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	12			Max Relief (cm)	20		
Max Sediment Depth (cm)	Ч.			Max Sediment Depth (cm)	3		
<u>Sessile Benthos</u>	% Cover			<u>Sessile Benthos</u>	% Cover		
Sediment- (circle all: sand) shell mud) Macroalgae-	35			Sediment (circle all: sand shelt mud) Macroalgae	75		
Fleshy+Calcareous				Fleshy+Calcareous		·	<u> </u>
Turl-algae+cyanobacteria (circle all: g r b))	20			Turl-algae+cyanobacteria (circle alt: g r (b)	5	·	
Encrusting Red Algae				Encrusting Red Algae	~ >		ļ
Sponge				Sponge	3		
Hydroid	2			Hydroid			
Octocoral		No		Octocoral			
Stony Coral				Stony Coral			
Tunicate			14	Tunicate			· · · · ·
Bare Hard Substrate	30	·		Bare Hard Substrate	14		
other Ses wh	ID			other. Sesrusm	2		
Talathin				Total Mus	1 100%		
Total Mus	· · · · · ·	List macroalgae Genus ?	6 % cover		- 100%	List macroalgae Genus %	% cover
Quad Label: 2 Sample Name or #	55	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: 5		List every coral colony ~and coral condition(s)	or max size (cm)
Max Relief (cm)	10			Max Relief (cm)		te lesto	
Max Sediment Depth (cm)	5	· · · · · · · · · · · · · · · · · · ·	1 2	Max Sediment Depth (cm)	0,		
Sessile Benthos	% Cover			Sessile Benthos Sediment-	% Cover		
(circle all: sand shell/mud) Macroalgae-	95	· · ·		(circle all: sand shelt mud) Macroalgae-		· · · ·	
Fleshy+Calcareous Turf- algae+cyanobacteria	2			Fleshy+Calcareous Turl- algae+cyanobacteria	85	P	
(circle all: g ((b)) Encrusting Red Algae				(circle all: g r (b)) Encrusting Red Algae			
Enclushing Red Algae				Sponge	4		
Hydroid				Hydroid	1	2	
Octocoral				Octocoral)		
Stony Coral		÷		Stony Coral			
Tunicate				Tunicate			
Bare Hard Substrate	30	2		Bare Hard Substrate	10		
other				other			
	1		1	· · ·			1
· · · · · · · · · · · · · · · · · · ·	st = 100%				ist = 100%	n.	

Total Must = 100%

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Gaut, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg, J Octocoral: Genus of each colony = Genu: Gorg, Lept. Plex ... except Pseudopterogorgia=Pspt, Plexaurella=Plta, Pseudoptexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=while disease(s), O=other disease(s), B=bleaching, Corat Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name N Topsail Beach

Date High hos

Site Name / Transect Name

Data Collector

1	5	6
	R	B

Quad Label:	$\lambda \cup$	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)		5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)				Max Relief (cm)	5	Ocifina sub	5
Max Sediment Depth (cm)	3			Max Sediment Depth (cm)	\mathcal{D}	leptu vivy	4
Sessile Benthos	% Cover			Sessile Benthos	% Cover	Jeptu hebes	7
Sediment- (circle all: sand shell mud)	15			Sediment- (circle all: sand shell mud)	\mathcal{O}_{\perp}	······	·····
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous		· · · · · · · · · · · · · · · · · · ·	
Turf-algae+cyanobacteria (circle all: g r /b))	27	. /	<u> </u>	Turf-algae+cyanobacteria (circle all: g r (b))	30		[
Encrusting Red Algae				Encrusting Red Algae			
Sponge	1			Sponge	10		
Hydroid				Hydroid			
Octocoral				Octocorat			
Stony Coral			* 11	Stony Corał]		
Tunicate				Tunicate			
Bare Hard Substrate	45			Bare Hard Substrate	58		
other Rs win	10		- Mal	other			
Broz	1		f af fringen i	e Marine Mari			
Total Mus	t = 100%	States Cl		Total Mus	1 = 100%		
Quad Label:	45	List macroalgae Gerlus % List every coral colony -and coral condition(s)	% cover or max size (cm)	Quad Label:	475	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
	351	Savigok MIN 2		Max Relief (cm)	30	Grac	
May Doliof (cm)	1321						
	0	1 ept toter	10		\mathcal{D}		<u> </u>
	5) ()' % Cover	1 epto toter	10	Max Sediment Depth (cm) Sessile Benthos			
Max Sediment Depth (cm) Sessile Benthos Sediment-	D' % Cover	1 epto toter	1 Dennie de Service de	Max Sediment Depth (cm) Sessile Benthos Sediment-	P		
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	D' % Cover	1 epto toter	10	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	P	1	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria	D' % Cover	1 epto toter	10	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	P. % Cover	1	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	D' % Cover	1 epto toter	10	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	P	1	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b))	D' % Cover	1 epto toter	10 years and and	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	P. % Cover () 15 3 3	1	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	0' % Cover 0 5 15	1 epto toter	12 years of general second sec	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelt mud) Macroalgae- Fleshy+Calcareous Turk-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae .	P. % Cover () 15 3	1	
Max Sediment Depth (cm) <u>Sessite Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge	0' % Cover 0 5 15	1 epto toter	10 general contraction of the second	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r 6) Encrusting Red Algae . Sponge	P. % Cover () 15 3 3	1	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid	0' % Cover 0 5 15	1 epto toter	12 years of general second sec	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r ()) <u>Encrusting Red Algae</u> . Sponge <u>Hydroid</u>	P. % Cover () 15 3 3	1	
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r (b)) Encrusting Red Algae Sponge Hydroid Octocorat	0 * Cover 5 15 3 1 1		12 martine discontraction of the second seco	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turt-algae+cyanobacteria (circle all: g r 6) Encrusting Red Algae . Sponge Hydroid Octocoral	P. % Cover () 15 3 10	1	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	0' % Cover 0 5 15		112 years and and a second sec	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	P. % Cover () 15 3 3	1	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocorat <u>Stony Coral</u> <u>Tunicate</u>	0 * Cover 5 15 3 1 1		112 - Contraction of the contrac	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turicale Sponge Hydroid Octocoral Story Coral Tunicale	P. % Cover 0 15 3 10 10 1 5 7	1	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral Tunicate Bare Hard Substrate other	0' ** ** Cover 0 5 15 15 3		1 D and a second	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid Octocoral Story Coral Tunicate Bare Hard Substrate Warm	P. % Cover 0 15 3 10 1 5 7 1 10 10 1 10 10 10 10 10 10	1	

itandard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name N. Topsail Beach

Date 10/21/05 Site Name / Transect Name

Data Collector

Quad Label: Sample Name or #	50	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	3		
Max Sediment Depth (cm	, 3		
Sessile Benthos	<u>% Cover</u>		
Sediment- (circle all: sand shell mu	the P		
Macroalgae- Fleshy+Calcareous		-	
Sediment- (circle all: (and shell mu Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteri (circle all: g r b) Encrusting Red Algae	a		
Encrusting Red Algae			
Sponge			
Hydroid			
Octocoral		·	·
Stony Coral			<u> </u>
Tunicate			
Bare Hard Substrate			
other			
Total M	lust = 100%		
		List macroalgae Genus %	% cover

List every coral colony

Quad Label: Sample Name or # 5	25	List every coral colony	% cover or max size (cm)	
Max Relief (cm)	8	Derling r.		
Max Sediment Depth (cm)	3	puliver		
Sessile Benthos	% Cover	Felesto	4cm+	9
Sediment (circle all: sand (shell mud)	40	Dicky	1	
Macroalgae- Fleshy+Calcareous	r I	Diviva r.	.	
Turl-algae+cyanobacteria (circle all:gr_(b_))	52	· · · · · · · · · · · · · · · · · · ·		
Encrusting Red Algae	-	;		
Sponge				
Hydroid				
Octocoral				
Stony Coral	A		<u> </u>	
Tunicate				
Bare Hard Substrate				
other. Ses men	5			
	Station 2 1			
- Total Mus	1 = 100%	-		

56

ist macroalgae Genus % ist every coral colony and coral condition(s)	% cover or max size (cm)	Quad Label: 5	7.5	List macroatgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
		Max Relief (cm) Max Sediment Depth (cm)	m	· · · · · · · · · · · · · · · · · · ·	
		Sessile Benthos	% Cover	·	
		Sediment- (circle all:(sand)shell mud) Macroakgae-	3		
		Fleshy+Calcareous			
		Turl- algae+cyanobacteria (circle all; g_r_b_)			
4		Encrusting Red Algae			
		Sponge		· · · · · · · · · · · · · · · · · · ·	
		Hydroid		··. ·	
		Octocoral		·	
		Stony Coral			
		Funicale	00		
	1	Bare Hard Substrate	7)		
		other		· · · · · · · · · · · · · · · · · · ·	
		Total Mus			

Total Must = 100% Standard Abbreviations: and abbreviation formats

ath chain

Bare Hard Substrate

Quad Label:

Max Sediment Depth (cm)

(circle all sand shell mud

Sample Name or #

Sessile Benthos...

Sediment-

Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae

Sponge Hydroid Octocoral Stony Coral Tunicate

other

4 Ą. Ę

0

: 233

Max Relief (cm)

 \leq

4

% Cover

8

X

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Ptexaurella=Ptla, Pseudoptexaura=Pspt (C) + 10 st at at at (D) Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Ŧ

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid. 5185 41

04

21777

 ≤ 4

(C)

port

Ρ	roject	<u>Name</u>	N.	Topsall	Beach
_			-		

Date 10/21/05

Site Name / Transect Name **Data Collector** EA

Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	75	List macroalgae Genus % List every coral colony ~and coral condition(s)	% c or m (cm)
Max Relief (cm)				Max Relief (cm)	<u></u>		
Max Sediment Depth (cm)	S			Max Sediment Depth (cm)	1		
Sessile Benthos	% Cover			Sessile Benthos	X Cover		
Sediment- (circle all: sand shell mud)	(Sediment- (circle all; sand shell mud))	5		
Macroalgae- Fleshy+Calcareous	<u> </u>			Macroalgae- Fleshy+Calcareous	Õ		1
Turl-algae+cyanobacteria (circle all: g t b)	10	· · · · · · · · · · · · · · · · · · ·		Turl-algae+cyanobacteria (circle all: g r (b))	5		
	6			· · · · · · · · ·	- Ŏ	· · · · · · · · · · · · · · · · · · ·	<u> </u>
Encrusting Red Algae	0			Encrusting Red Algae	0		-
Sponge	0			Sponge	0		
Hydroid				Hydroid	0		
Octocoral	() 			Octocoral	0		<u> </u>
Stony Coral				Stony Coral	0		<u> </u>
Tunicate	(j .			Tunicate	0		ļ
Bare Hard Substraté	- U			Bare Hard Substrate	80		
$\sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i$				other VC(MILI)	d D		
other	68				<i>r</i> V		
other	- 80				· · ·		
other \P())	2	·····		Total Must		•	_
	2	List macroalgae Genus 9 List every coral colony ~and coral condition(s)	% cover or max size (cm)			List macroalgae Genus % List every coral colony and coral condition(s)	or
Total Muss	2	List every coral colony	or max size	Total Must		List every coral colony	or
Total Must Quad Label: Sample Name or #	1 = 100%	List every coral colony	or max size	Total Must Quad Label: 1 Sample Name or #		List every coral colony	or
Total Must Quad Label: Sample Name or # Max Retief (cm)	1 = 100% [5] 3	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relie! (cm)	2,5	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm)	1= 100% 15 3 2	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment-	2,5	List every coral colony -and coral condition(s)	or
Total Musi Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand, shell (mud) Macroalgae-	1 = 100% 15 2 <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (must) Macroalgae	1 = 100% 2/5 5 <u>% Cover</u> 10	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand, shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	1 = 100% 15 2 2 2 2 2 2 2 2 2 2 2 2 2	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobasteria	2.15 2.15 <u>% Cover</u> 10	List every coral colony -and coral condition(s)	o % or (cr
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1 = 100% 5 2 <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u></u>	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	1= 100% 15 2 <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>10</u> <u>10</u> <u>0</u>	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	2.15 2.15 <u>% Cover</u> 10	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1= 100% 15 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	1= 100% 15 2 <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>10</u> <u>10</u> <u>0</u>	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Must Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	1= 100% 15 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mush) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobasteria (circle all: g r b)) Encrusting Red Algae Sponge	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Musi Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	1 = 100% 15 3 2 3 2 3 2 15 3 2 15 10 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobasteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Musi Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	1 = 100% 15 2 2 2 2 2 2 2 2 2 2 2 2 2	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobácteria (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or
Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	1 = 100% 15 3 2 3 2 3 2 15 3 2 15 10 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	1 = 100% 2/5 5 <u>% Cover</u> 10 0 5	List every coral colony -and coral condition(s)	or

Standard Abbreviations: and abbreviation formats Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis; Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg. Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspl Stony Coral: Genus species of each colony = G spe. A cer, A aga, C nat, M ann, M cay, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name N. Date 10/21/05			Data Coll	ector			
	$\hat{\mathbf{A}}$						
Quad Label:	A.	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)	Quad Label: Sample Name or#	2.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max s (cm)
lax Relief (cm)	0			Max Relief (cm)	0		ļ
Max Sediment Depth (cm)	0		***	Max Sediment Depth (cm)	2		ļ
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)	81			Sediment- (circle all: sand shell (mud)	94		
Macroalgae- Fleshy+Calcareous	ß			Macroalgae Fleshy+Calcareous	_0_		
Turf-algae+cyanobacteria (circle all: g r /b))				Turf-algae+cyanobacteria (circle all: g r (b))]		
Encrusting Red Algae	0			Encrusting Red Algae	$\left(\right)$		
Sponge	0			Sponge	\hat{O}		
Hydroid	\mathcal{O}			Hydroid	0		1
Octocoral	0			Octocoral	ð		
Stony Coral	0			Stony Corat	δ		<u> </u>
	\overrightarrow{O}			Tunicate	λ		
Tunicate Bare Hard Substrate	iD			Bare Hard Substrate	5		
	- 1/0						
other				other			
other							
other Totał Must	=_100%	List macroalgae Genus %		olher Total Muşi		List macroalgae Genus 9	1
other	=_100%		6 % cover or max size (cm)	olher		List macroalgae Genus 9 List every coral colony -and coral condition(s)	6 % cover or max s (cm)
other Totał Must	=_100%	List macroalgae Genus % List every coral colony	or max size	other Total-Muşt Quad Label:	= 100%	List every coral colony	or max s
other Total Must Quad Label: tample Name or #	=_100%	List macroalgae Genus % List every coral colony	or max size	olher Total-Muşi Quad Label: (Sample Name or #	= 100%	List every coral colony	or max s
other Total Must Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos	= 100%	List macroalgae Genus % List every coral colony	or max size	Other Total-Must Quad Label: Sample Name or # Max Relief (cm)	i = 100%	List every coral colony -and coral condition(s)	or max s
other Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sediment- (circle all: sand) shell (mud)	= 100%	List macroalgae Genus % List every coral colony	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae-	= 100%	List macroalgae Genus % List every coral colony	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand (shelt (mkd) Macroalyde	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: tample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	= 100%	List macroalgae Genus % List every coral colony	or max size	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelt (mud) Macroalyde Fleshy+Calcareous Turf- algae+cyanobacteria	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: Jample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	= 100%	List macroalgae Genus % List every coral colony	or max size (cm)	other Total-Muşt Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment - (circle all: sand (shelt (mud) Macroalgae Flessil+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: Jample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	= 100%	List macroalgae Genus % List every coral colony	or max size (cm)	other Total-Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand (shelt (mid)) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: ample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (muc) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge	= 100%	List macroalgae Genus % List every coral colony	or max size (cm)	other Total-Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand (shell (mid)) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	= 100%	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Sediment (circle all: sand shelt (mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encruisting Red Algae Sponge Hydroid Octocoral	= 100%	List macroalgae Genus % List every coral colony	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand (shelt (mid)) Macroalyde Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell (nuc) Macroalgae- Fleshyl-Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encruisting Red Algae Sponge Hydroid Octocoral Stony Coral	= 100%	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (cicle all: sand shell (mid) Macroalyae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Total Must Quad Label: tample Name or # Max Refief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand) shell (mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	= 100%	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Muşt Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shelt (mud) Macroalyde Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Story Coral Funicate	1 = 100%	List every coral colony -and coral condition(s)	or max s
other Quad Label: ample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell (nuc) Macroalgae- Fleshyl-Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encruisting Red Algae Sponge Hydroid Octocoral Stony Coral	= 100%	List macroalgae Genus 9 List every coral colony -and coral condition(s)	or max size (cm)	other Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (cicle all: sand shell (mid) Macroalyae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	1 = 100%	List every coral colony -and coral condition(s)	or max s

Standard Abbreviations: nd abbreviation formats Macroakgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Cod, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Piex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes; Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name 🛛 🕅	Tops	Beach	Site Nam	e / Transect Name	<u>TS7</u>		
Date 10/21/	05		Data Col	lector EH			
D: 213				1D:214			
Quad Label:	30	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: Sample Name or #	32,5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)			·	Max Relief (cm)	7	·	
Max Sediment Depth (cm)	0	:		Max Sediment Depth (cm)	6		
Sessile Benthos	% Cover	2		Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)	0			Sediment- (circle all: sand shell mud)	0		
Macroalgae- Fleshy+Calcareous	0			Macroalgae- Fleshy+Calcareous	0		
Curl-algae+cyanobacteria (circle all: (g(1) +)	30			Turl-algae+cyanobacteria (circle all:(g (b)	350		
Encrusting Red Algae				Encrusting Red Algae	0		
Sponge	\bigcirc			Sponge	()		
Hydroid	0			Hydroid	0		
Octocoral	Č			Octocorat	Ď		
Stony Coral				Stony Coral	1	<	
Tunicate	6	Oculina rob	Acta 15	Tunicate	O	Gallink an	Llanix
Bare Hard Substrate	48		9.001	Bare Hard Substrate	44		50
other VPMI-112	20			other VEWATIC	25		
Total Musi	l = 100%			Total Mus	at = 100%	1 (e	-
10:215		List macroalgae Genus %	% cover		1 Contraction of the	List macroalgae Genus %	% cover
Quad Label: Sample Name or #	35	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	37,5	List every coral colony ~and coral condition(s)	or max siz((cm)
Max Relief (cm)	4			Max Relief (cm)	12		
Max Sediment Depth (cm)	0			Max Sediment Depth (cm)	1	· .	
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)	$\left \right\rangle$			Sediment- (circle all: sand shell mud	3		
Macroalgae- Fleshy+Calcareous	\bigcirc			Macroalgae- Fleshy+Calcareous	0		
Turf-algaetcyanobacteria (circle all: g (r b))	30			Turf-algae+cyanobacteria (circle all: 9, 7, 0)	0		
Encrusting Red Algae				Encrusting Red Algae .			
Sponge	0			Sponge	3		
Hydroid _	0			Hydroid	0		
Octocoral	Q.	Calleria 8012	llim		Ô		
Stony Corat				Stony Coral	\bigcirc		
Tunicate	Ò			Tunicate	(
Bare Hard Substrate	57	-		Bare Hard Substrate	75		
other Bryb)			other BND	١		
vemitik	iD			- nlomitia	10		

Standard Abbreviations: and abbreviation formats Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg. Octocoral: Genus of each colony = Genu: Gorq, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudopteroura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C, nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes: Anemone, Annelid-sessile, Bamade, Bryozoan, Millepora, sp., Moltusca-sessile, Seagrass, Zoanthid.

Project Name		<u>) </u>		e / Transect Name	10	<u> </u>	
Date 10/2/10	245		Data Coll	ector AD			
Quad Label:	13	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: /	$\frac{15}{15}$	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	C			Max Relief (cm)	3		
Max Sediment Depth (cm)				Max Sediment Depth (cm)			
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
circle all sand shell mud)	$\sum_{i=1}^{n}$			Sediment- (circle all sand shell mud)	5	·	
Aacroalgae- Teshy+Calcareous	\bigcirc		·	Macroalgae Fleshy+Calcareous	0		
Furf-algae+cyanobacteria circle alt: g r b)	20			Turl-algae+cyanobacteria (circle all: g (r (b))	<u>20</u>		<u> </u>
norusting Red Algae	4			Encrusting Red Algae	4		ļ
Sponge	1			Sponge	l		
lydroid	0	Duinast		Hydroid	0	·	
Octocoral	\mathbb{C}^{2}			Octocoral	0		
Stony Coraf)	•		Stony Coral	0		
[unicate	\mathcal{O}			Tunicale	0		
Bare Hard Substrate	10			Bare Hard Substrate	(Q)		
ther NO1 177	10			other-NOM	10		
T	4000	,					
Total Mus	~ 100%			Totàl Must	= 100%	1	
Quad Label: //	2,6	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	1	List macroalgae Genus % List every coral colony -and coral condition(s)	6 % cover or max siz (cm)
Max Relief (cm)	10			Max Relief (cm)			
Max Sediment Depth (cm)	1		·	Max Sediment Depth (cm)			
Sessile Benthos	% Cover			<u>Sessile Benthos</u>	% Cover		
Sediment- (circle all:sand shell mud)	10			Sediment- (circle all; sand_shell_mud)			
Macroalgae- Fleshy+Calcareous	Ó			Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r b)	10			Turf- algae+cyanobacteria (circle all: g r b)			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2			Encrusting Red Algae .			
Encrusting Red Algae	4-			Citchusting red Algae			
				Sponge			
Sponge							
Sponge	- - 0 0			Sponge			
Sponge				Sponge		· · · · · · · · · · · · · · · · · · ·	
Sponge				Sponge Hydroid Octocoral			
Stony Coral				Sponge Hydroid Octocoral Stony Coral			

Total Must = 100%

itandard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudoplerogorgia=Pspt, Plexaurella=Plta, Pseudoplexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnade, Bryozoan, Millepora, sp., Molfusca-sessile, Seagrass, Zoanthid.

Total Must = 100%

Project Name	NorthTopsau	Beach
-		

Date 10/21/05

D,

Site Name / Transect Name

Data Collector AD

Quad Label: 🚝		List macroalgae Genus %	% cover	Quad Label: 5	5	List macroalgae Genus %	% cover
Sample Name or #	1.5	List every coral colony ~and coral condition(s)	or max size (cm)	Sample Name or #	$) \bigcirc $	List every coral colony -and coral condition(s)	or max size (cm)
Max Relief (cm)	S			Max Relief (cm)	9		
Max Sediment Depth (cm)	Ĩ.	·· · · · ·		Max Sediment Depth (cm)]		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment-	10			Sediment	4		
(circle all: sand shell mud) Macroalgae-				(circle all: sand)shell mud) Macroalgae	6		
Fleshy+Calcareous Turf-algae+cyanobacteria	4			Fleshy+Calcareous Turl- algae+cyanobacteria	25		
(circle all: g (r) b)	TE.			$\frac{(\text{circle all}; g(r), b)}{(circle all; g(r), b)}$	$\frac{2}{1}$	Outino tala	2_
Encrusting Red Algae	Þ.	A	1	Encrusting Red Algae	A	Cxulinatan	
Sponge	$\bigcup_{i=1}^{n}$	Quino .Spx4		Sponge	$\overline{\bigcirc}$		<u> </u>
Hydroid	0		**************************************	Hydroid	<u> </u>		.
Octocoral	0		-	Octocoral	\mathcal{O}		
Stony Coral)			Stony Coral			
Tunicate	()			Tunicate	O		
Bare Hard Substrate	104			Bare Hard Substrate	61		
other. WOrm	5			other-WOVM1	5		
Total Mus	t = 100%	• • •	·	Total Must	= 100%		· ·
Quad Label: 🗁	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	List macroatgae Genus %		Quad Label:		List macroalgae Genus %	:
Sample Name or #)7:2	 List every coral colony and coral condition(s) 	or max size (cm)	Sample Name or #	∞	List every corat colony ~and corat condition(s)	or max size (cm)
Max Retief (cm)	5			Max Relief (cm)	7		
Max Sediment Depth (cm)	1			Max Sediment Depth (cm)	2		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		-
Sediment-	10			Sediment	50		
(circle all sand shell mud) Macroalgae	$\overline{0}$			(circle all; sand shelt mud) Macroalgae-	0		
Fleshy+Calcareous Turf-algae+cyanobacteria	5			Fleshy+Calcareous Turf- algae+cyanobacteria	15		<u> </u>
Turf-algae+cyanobacteria (circle all: $g(r) \phi$)	(ر)			(circle all: g T b)	100		<u> </u>
Encrusting Red Algae	30			Encrusting Red Algae	2	nosta	7
Spolige	$\left \begin{array}{c} 0 \\ \end{array} \right $	O. Jobush		Sponge	\bigcirc	UCU miser	
Hydroid	0			Hydroid	Q		ļ
Octocorat	0			Octocoral	\bigcirc		
Stony Coral	1	•		Stony Coral			
Tunicate	\bigcirc			Tunicate	Q		
Bare Hard Substrate	13			Bare Hard Substrate	24		
1.VAYIDA	40	· · · · · · · · · · · · · · · · · · ·		La construction	2		
other	40	· · · · · · · · · · · · · · · · · · ·		other WUTM			

Standard Abbreviations: and abbreviation formats

ŝ

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pilla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dit, S rad, S sid, S bou, S hya, S int... Coral condition: W=while disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes; Anemone, Amelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name N Date 10/21/05	i opsa:	(DPOLAT		e / Transect Name			
Date 10/21/05			Data Col				R
Quad Label: Sample Name or #	Ø	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)	Quad Label:	15	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max si (cm)
Max Relief (cm)	S			Max Relief (cm)	3		
Max Sediment Depth (cm)	d.			Max Sediment Depth (cm)	0		
<u>Sessile Benthos</u>	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell/mud) Macroalgae	3			Sediment- (circle all: sand_shell_mud) Macroalgae-	0		
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b))	5	· · · · · · · · · · · · · · · · · · ·		Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (o))	30		
Encrusting Red Algae		·		Encrusting Red Algae			
Sponge				Sponge			·
Hydroid				Hydroid			
Octocoral				Octocoral			<u></u>
Stony Coral				Stony Coral			<u> </u>
Tunicate				Funicate			l
Bare Hard Substrate	73			Bare Hard Substrate	65		
other				other Ses with	5		
T 4 444. 4							1
Iotal Músi	= 100%			Tòtàl Musi	i = 100%	· · · · · · · · · · · · · · · · · · ·	1
Quad Label:	·= 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Tòtài Musi Quad Labei: 7 Sample Name or #	, 5	List macroalgae Genus % List every coral colony ~and coral condition(s)	
Quad Label: Sample Name or #	5	List macroalgae Genus % List every coral colony	or max size	Quad Labei: 7	, S	List every coral colony	or max s
Quad Label: Sample Name or #	5	List macroalgae Genus % List every coral colony	or max size	Quad Labei: 7	, 5 , 5	List every coral colony	or max s
Quad Label: Sample Name or # Max Relief (cm)	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labei: 7 Sample Name or #	,5	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labei: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labei: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment-	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy-Calcareous Turf- algae+cyanobacteria	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labe: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae-	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	S S S S Cover	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labei: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r 5))	S S S S Cover	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labei: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy-Calcareous Turf- algae+cyanobacteria (circle all: g r 5)) Encrusting Red Algae	S S S S Cover	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labe: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	S S S S Cover	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labes: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (5)) Encrusting Red Algae Sponge Hydroid	S S S S Cover	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labes: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	5 8 2 <u>% Cover</u> 35	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labes: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	, 5 D % Cover 0 5 1	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r S)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	5 8 2 % Cover 7 3 5 7 3 5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labes: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	, 5 D <u>% Cover</u>	List every coral colony ~and coral condition(s)	or max s
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	5 8 2 <u>% Cover</u> 35	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Labes: 7 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	, 5 D % Cover 0 5 1	List every coral colony ~and coral condition(s)	or max s

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg. Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project N	ame	<u>N</u> .	Topsail	Beach
Date 10	121	05		

Site Name / Transect Name Data Collector RB

T58

Quad Label:	4	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label:).67	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cc or ma (cm)
Max Relief (cm)		Q(v), mr.		Max Relief (cm)	\mathcal{O}	Der men) (
Nax Relier (cni) Nax Sediment Depth (cm)	V			Max Sediment Depth (cm)	41		'
Sessile Benthos	% Cover	·····		Sessile Benthos	% Cover		
Sediment- circle all: sand_shell_mud)	0			Sediment- (circle all: sand)shell mud)).		
Nacroalgae- Fleshy+Calcareous_				Macroalgae- Fleshy+Calcareous			
$\frac{1}{1} \frac{1}{1} \frac{1}$	10			Turl-algae+cyanobacteria (circle att: g r (b)	10	· · · · · · · · · · · · · · · · · · ·	
Encrusting Red Algae	1			Encrusting Red Algae	A.		
Sponge				Sponge			
lydroid				Hydroid		·	<u> </u>
Octocoral				Octocoral			
Stony Coral	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Stony Corat	1		
Funicate				Tunicate			
Bare Hard Substrate	>(/88			Bare Hard Substrate	SIN)	68)	
other				other	<i>v</i>		
Total Mus	= 100%		······································	Total Must	= 100%		
Quad Label: Sample Name or #	15	List macroalgae Genus % List every coral colony ~and corat condition(s)	% cover or max size (cm)	Quad Label: Sample Name or #	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% со ог па (слт)
Max Relief (cm)	2	OUM	1043	Max Relief (cm)	Y	OZVIM	10
Max Sediment Depth (cm)	\mathcal{O}		-	Max Sediment Depth (cm)	$\dot{\mathcal{O}}$		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shelt mud)	Ò			Sediment- (circle all: sand shell mud)	0		-
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r (b))	Ň R				1		
(GIGE all. y I/U/)	4D			Turl-algae+cyanobacteria (circle <u>all: g r (b)</u>)	81/		
Encrusting Red Algae	40				81/		
	12			(circle all: $g r (b)$)	/		
Encrusting Red Algae				(circle all: g r (b)) Encrusting Red Algae	/		
Encrusting Red Algae		· · · · · · · · · · · · · · · · · · ·		(circle all: g r (b)) Encrusting Red Algae Sponge	/		
Encrusting Red Algae		· · · · · · · · · · · · · · · · · · ·		(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	/		
Encrusting Red Algae	2	· · · · · · · · · · · · · · · · · · ·		(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocorat	/		
Encrusting Red Algae	2	· · · · · · · · · · · · · · · · · · ·		(circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocorat Stony Coral	3		
Encrusting Red Algae	1 1 5	· · · · · · · · · · · · · · · · · · ·		(circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	/		
Encrusting Red Algae	1 1 5			(circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocorat Stony Coral Tunicate Bare Hard Substrate other SAS www	3		

Total Must = 100%

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caut, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq, Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

34.0

Project Name N Date 10/21/05			Data Colle	2 / Transect Name			
Date 10/2/109	>		Data Con				
Quad Label:	\mathcal{I}	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)	Quad Label:	5		% cov or max (cm)
Max Relief (cm)		Der Frank	1 cmy	Max Relief (cm)	2	OLVIN V.	121
Max Sediment Depth (cm)		,		Max Sediment Depth (cm)	ý		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all; sand shell mud)	50			Sediment- (orcle all: sand) shell mud)	63		
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r (b))	31			Turf-algae+cyanobacteria (oircle all: g r (b))	26		
Encrusting Red Algae	\mathcal{W}			Encrusting Red Algae	2		
Sponge				Sponge	2		
Hydroid				Hydroid			
Octocoral				Octocoral			
Stony Coral)			Stony Coral)		
Tunicate				Tunicate			
Bare Hard Substrate	3			Bare Hard Substrate	1		• <u> </u>
other HSrun	- 5.			other Sl 3 rom	3.		
Total Mus	= 100%		!	Total Must	≈ 100%		
Total Must	.= 100%	List macroalgae Genus %	% cover	Total Musi	= 100%	List macroalgae Genus %	8 001
Total Must	= 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Total Must Quad Label:	= 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	1
Quad Label:	x 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	List every coral colony	or max size	Quad Label:	= 100% 7,5 3	List every coral colony -and coral condition(s)	or mai (cm)
Quad Label:	x 100%	List every coral colony -and coral condition(s)	or max size	Quad Label:	7.5	List every coral colony	or max (cm)
Quad Label:	= 100%	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label:	7.5	List every coral colony -and coral condition(s)	or max (cm)
Quad Label:	X 1 X Cover	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment-	7,5 5 1 % Cover	List every coral colony -and coral condition(s)	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment	X Cover	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	7,5 5 1 % Cover	List every coral colony -and coral condition(s)	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	X 1 X Cover	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessife Benthos Sediment- (circle all:(sand-shell_mud) Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacteria	7,5 5 1 % Cover	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all (sand) shell mud) Macroalgae- Fleshy+Calcareous	X 1 X Cover	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all (sand shell mud) Macroalgae- Fleshy+Calcareous	7.5 5 <u>% Cover</u> 5	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroakgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	36 1 2 Cover 6 9	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: (sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b))	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	36 1 2 Cover 6 9	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand-shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	36 1 2 Cover 6 9	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand-shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	36 1 2 Cover 6 9	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand Shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	5 % Cover 6 9 10 10	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all:Sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	36 1 2 Cover 6 9	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	7.5 5 <u>% Cover</u> 5 82	List every coral colony -and coral condition(s) Cultzr	or max (cm)
Quad Label: Sample Name or # Max Retief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all sand shelt mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Turicate	5 % Cover 6 9 10 10	List every coral colony, -and coral condition(s) $0 l \nu h h c r$	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (sand-shell mud) Macroalgae- Fleshy+Calcareous Turt-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	7.5 5 7 8 7 8 7 8 7	List every coral colony -and coral condition(s) Cultzr	or max (cm)

.....

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg Octocoral: <u>Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral; Stress Index # 0 1 2 3</u>

Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name NTB Date 10/21/05

Site Name / Transect Name Data Collector RB 58

		(i	1.44				
Quad Label:	~	List macroalgae Genus % List every coral colony	% cover or max size	Quad Label: 30	\mathcal{L}	List macroalgae Genus % List every coral colony	% cover or max size
Sample Name or #	30	-and coral condition(s)	(cm)	Sample Name or # 20		~and coral condition(s)	(cm)
Max Relief (cm)	5	Oculine	101/3	Max Relief (cm)	3	DENNY	Icm/9
Max Sediment Depth (cm)	_ 3_			Max Sediment Depth (cm)			
Sessile Benthos	% Cover		, ,	Sessile Benthos	% Cover		
Sediment- (circle all: sand) shell mud)	25			Sediment- (circle all, sand' shell mud)	10	······································	
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous		, <u>_</u>	
Turf-algae+cyanobacteria (circle all: g r b)	59				Gy	· · · · · · · · · · · · · · · · · · ·	
Encrusting Red Algae	3			Encrusting Red Algae	10		
Sponge	Q			Sponge			
Hydroid				tlydroid			·
Octocoral				Octocoral			
Stony Coral	1			Stony Coral)		
Tunicate	~			Tunicate;			
Bare Hard Substrate	IV			Bare Hard Substrate	Tù_		ļ
other Ses non)			otherSPS Norm	<u> </u>		
Total Mus	t = 100%			Total Must	= 100%		
Quad Label: 3	5	List macroalgae Genus % List every coral colony	% cover or max size	Quad Label: 3	25	List macroalgae Genus % List every coral colony	% cover or max size
Sample Name or #			(cm)				(cm)
Sample Name or #		~and coral condition(s)	(cm)	Sample Name or #		~and coral condition(s)	(cm)
Sample Name or #	£		(cm) .lon;3.		2		(cm)] ch, x)
Sample Name or #	E 1	-and coral condition(s)	+	Sample Name or #	70	-and corat condition(s)	
Sample Name or #		-and coral condition(s)	+	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	2	-and corat condition(s)	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: (cand_shell_mud)	E 1	-and coral condition(s)	+	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud)	7 D <u>% Cover</u>	-and corat condition(s)	
Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment-	K \ <u>% Cover</u>	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment-	7 D % Cover	-and corat condition(s)	
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand_shell_mud) Macroalgae-	K \ <u>% Cover</u>	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all; sand shell mud) Macroalgae-	7 D % Cover	-and corat condition(s)	
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: (Sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> <u>Sediment-</u> <u>(circle all: sand shell mud)</u> <u>Macroalgae-</u> <u>Fleshy+Calcareous</u> Turf- algae+cyanobacteria	7 D <u>% Cover</u> 0 75	-and corat condition(s)	
Sample Name or # Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: <u>Sand_shell_mud)</u> Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: <u>g_r(b_</u>)	<u>&</u> <u>% Cover</u> 25	-and coral condition(s)		Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r(b_))	7 D % Cover	-and corat condition(s)	
Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: Sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r(b_)) Encrusting Red Algae	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae	7 D <u>% Cover</u> 0 75	-and corat condition(s)	
Sample Name or # Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: Gand_shell_mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g_r(b_)) Encrusting Red Algae Sponge	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g_r(b_)) Encrusting Red Algae Sponge	7 D <u>% Cover</u> 0 75	-and corat condition(s)	
Sample Name or #	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r (b_)) Encrusting Red Algae Sponge Hydroid	7 D <u>% Cover</u> 0 75	-and corat condition(s)	
Sample Name or # Max Relief (crit) Max Sediment Depth (crit) Sediment- (circle all: Sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r_(b_)) Encrusting Red Algae Sponge Hydroid Octocoral	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral	7 D % Cover 0 75 1 V 2 0 1 V	-and corat condition(s)	
Sample Name or #	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g_r (b_)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	7 D % Cover C 0 75 1 V 2 0 1 V 0 1 V 1 V 1 V	-and corat condition(s)	
Sample Name or #	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	7 D % Cover 0 75 1 V 2 0 1 V	-and corat condition(s)	
Sample Name or #	<u>%</u> Cover 25 68	-and coral condition(s)		Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other- 25 WHM	7 D % Cover C 0 75 1 V 2 0 1 V 0 1 V 1 V 1 V	-and corat condition(s)	

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe; A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Proje	ct Name	NT	B
Date	10/21/05		_

., `

Site Name / Transect Name

758

B

Data Collector

Quad Label:		List macroalgae Genus % List every coral colony	£	Quad Label:	7.5	List macroalgae Genus %	:
Sample Name or #	10	~and coral condition(s)	or max size (cm)	Sample Name or #	$a_{1} \leq 1$	List every coral colony -and coral condition(s)	or max size (cm)
ax Relief (cm)	6	Durnh	1cm+3	Max Relief (cm)	5.	Outra	la 12
Max Sediment Depth (cm)	D	<i></i>		Max Sediment Depth (cm)	3		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud) Macroalgae-	Ċ		· · · · · · · · · · · · · · · · · · ·	Sediment- (circle all sand)shell mud) Macroalgae	15		
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: <u>g_r_(b)</u>)	6)		· · · · · · · · · · · · · · · · · · ·	Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b/)	17		
Encrusting Red Algae	$\frac{\partial}{\partial t}$			Encrusting Red Algae	5		
Sponge	Ľļ			Sponge			
Hydroid				Hydroid			
Octocoral				Octocoral			
Stony Coral)			Stony Coral			
Tunicate				Tunicate			
Bare Hard Substrate				Bare Hard Substrate			
otherSas nen)			other)	4 5 :	
Total Muşi	= 100%	· · ·		Total Muşt	l = 100%	1	
Ruad Label: 4	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: (/ Sample Name or #	7.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Max Relief (cm)	y	Oluling	1 En 12 1	Max Relief (cm)	6	Oldm	Icm #
Max Sediment Depth (cm)	D			Max Sediment Depth (cm)	D	· ·	
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all sand shell mud)	D			Sediment- (oircle all: sand shell mud)	D	1	
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r b)	78			Turf- algae+cyanobacteria (circle all: g r (b))	85		
Encrusting Red Algae	8	· · · · · · · · · · · · · · · · · · ·		Encrusting Red Algae	ĮÙ	1	
Sponge			ļ	Sponge	1		
Hydroid		·		Hydroid		· ·	
Octocoral				Octocoral			
Stony Coral	1			Stony Coral)		
Tunicate				Tunicate			
Bare Hard Substrate				Bare Hard Substrate	3		
other SPS WD				other			
Total Mus	4 - 4008/		·	Totol Mu	st = 100%		

tandard Abbreviations: nd abbreviation formats Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Ptex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index #0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name NTB

Site Name / Transect Name TS 8

Date	10 - 21	-05

Data Collector RB

0		List macroalgae Genus %	% oover		_	List macroalgae Genus %	1%
Quad Label:	VA	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label:	25	List every coral colony ~and coral condition(s)	or m (cm)
Max Relief (cm)	6	Darlink r.	10mx 18	Max Relief (cm)	5	Oluline r.	162
Max Sediment Depth (cm)	\mathcal{D}		1	Max Sediment Depth (cm)	0		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all: sand shell mud)	\mathcal{U}			Sediment- (circle all: sand shelf mud)	\overline{D}		
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous			Ī
Turl-algae+cyanobacleria (circle all: g r b))	69			Turl-algae+cyanobacteria (circle all: g r (b))	84		
Encrusting Red Algae	10			Encrusting Red Algae	3	· · · · · · · · · · · · · · · · · · ·	
Sponge	10			Sponge	5		
Hydroid				Hydroid			
Octocoral	ľ			Octocoral			
Stony Coral				Stony Corat			
Tunicate				Tunicate			
Bare Hard Substrate	\mathcal{D}			Bare Hard Substrate	3		
other. Ses when	10			otherSeswin	4		
Total Mus	1 = 100%			Total Mus	t = 100%		
Quad Label:	5	List macroalgae Genus ? List every coral colony ~and coral condition(s)	6 % cover or max size (cm)	Quad Label: 5	7,5	List macroalgae Genus % List every coral colony ~and coral condition(s)	07 1 (C11
	3				13	telesto	1
Max Relief (cm)	\overline{D}	Owlive v.	2	Max Relief (cm)	\overline{D}		-
Max Sediment Depth (cm) Sessile Benthos	% Cover			Max Sediment Depth (cm) Sessile Benthos	% Cover		+
Sediment-	$\overline{\mathcal{D}}$			Sediment-			
(circle all: sand shell_mud) Macroalgae-				(circle all; sand shell mud) Macroalgae			
Fleshy+Calcareous				Fleshy+Calcareous			<u> .</u>
Turf-algae+cyanobacteria (circle all: g r (b))	35			Turf-algae+cyanobacteria (circle all: g r /b)	83		<u> </u>
Encrusting Red Algae	20			Encrusting Red Algae .	5		_
Sponge	\leq			Sponge	5		_
· ·				ht advected	1		
Hydroid				Hydroid			
Octocorat				Octocoral			_
	2	· · · · · · · · · · · · · · · · · · ·					
Octocoral				Octocorat			
Octocorat	2			Octocorat	3		
Octocoral Stony Coral Tunicate				Octocorat Stony Corat Tunicate			
Octocoral Stony Coral Tunicate Bare Hard Substrate				Octocoral			

Total Must = 100% Standard Abbreviations: <u>Macroal</u> and abbreviation formats <u>Octocom</u>

1

Total Must = 100%

Macroakgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq., Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudopteroaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name	157	B	Site Nam	e / Transect Name		BAI Tra	Nect
	20-	-05	Data Col				
1D' 49				ID:50			
Quad Label:	2	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	6.15	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
nax Relief (cm)	$-\frac{i}{2}D$	1 Cotty	X	Max Relief (cm)	<u>JD</u>		
Max Sediment Depth (cm)		Idetermined bryozoan		Max Sediment Depth (cm)	5		
Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- circle all: sand shell mud)	3\$Q			Sediment- (circle all: sand shell mud) Macroalgae-	72ª	» 	
Macroalgae-U	2			Fleshy+Calcareous	1		
Furf-algae+cyanobacteria (circle all: (g)(r)(b))	1.			Turl-algae+cyanobacteria (circle all: g r b))	3		
Encrusting Red Algae	1		Hoak	Encrusting Red Algae	Í		
Sponge	1	Patine in	1.1cm	Sponge	0	cepto hebes	(ecm
Hydroid	1	JE BYO		Hydroid	0	Branching PHAD	
Octocoral	5	14ph -	34.	Octocoral	4	PUPPle action	10
Stony Coral	١	lepto	20	Stony Coral		Civiline rch.	
Tunicate	0	Lopto,	150m	Tunicate	0	lepto	50
Bare Hard Substrate	E	Lipto.	Ligin	Bare Hard Substrate	A	Lepto	30
other	3	Lephs	38	other Vemine	3	Upto	19-
T 4 144	14	16210	38	By 0	2		
D:51 Total Must	= 100%	List macroatgae Genus		10-52 Totat Mus	1 = 100%	List macroalgae Genus %	% cover
Quad Label: Imple Name or #	5	List macroalgae Genus List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label:	1.5	List every coral colony ~and coral condition(s)	or max size (cm)
Max Relief (cm)	9	glhdie		Max Relief (cm)	13		
Max Sediment Depth (cm)	2			Max Sediment Depth (cm)	8		
Sessile Benthos	% Cover		· ·	Sessile Benthos	% Cover		
Sediment- (circle all: sand) shell (mud)	30			Sediment- (circle all: sand shell mud)			
Macroalgae- Fleshy+Calcareous				Macroalgae- Fleshy+Calcareous	(\mathcal{O})		
Turf-algaetoyanobacteria (circle all: (g) r (b)	2			Turl-algae (cranobacteria (circle all: g r b)	1		
Encrusting Red Algae	1			Encrusting Red Algae			
Sponge	0			Sponge	0		
Hydroid	Ô		·	Hydroid	0		
Octocoral	3	Dalling 25	1	Octocoral	10		
Stony Coral	4	lepto	35	Stony Coral	R		
Tunicate	<u>(</u>)	liph		Tunicate	0	Ountinh S	p cicm
Bare Hard Substrate	51	Upto	40	Bare Hard Substrate			<u>(1 bba</u>
otherVCMIFIU	7	ofgel	25	other $\mathcal{V}(\mathcal{M})(\mathcal{H})$			
BNO				By U	-		
Total Mus	st = 100%			Total Mu a Revention Cavil	sl = 100%		then Som

andard Abbreviations:

.

~

<u>Macroalgae: Pool to Genus = Genu or Genus:</u> Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu; Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plta, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other- includes: Anemone, Annelid-sessile, Bamade, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

.

Project Name NTB	Site Nan	ne / Transect Name	BA	1	
Date /0-20-05	Data Col	llector EH			
10:53		10:54			
Quad Label:	List macroalgae Genus % % cover List every coral colony or max size ~and coral condition(s) (cm)	Quad Label: Sample Name or #	12.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max s (cm)
Max Relief (cm)		Max Relief (cm)	2	r toily	X

Sample Mattle Of #			louit	Sample Name Or #	1L	and conal condition(s)	(CIII)	
Max Relief (cm)	L			Max Relief (cm)	2	F COILY		
Max Sediment Depth (cm)	(0	\		Max Sediment Depth (cm)	C	be bryazoan		
Sessile Benthos	% Cover			Sessile Benthos	% Cover			
Sediment- (circle all:sand shell mud)	GH 33			Sediment- (circle all: sand) shell (mud)	895			
Macroalgae Fleshy+Calcareous	\bigcirc			Macroalgae- Fleshy+Calcareous				
Turf-algae+cyanobacteria (circle all: g) (b))				Turf-algae+cyanobacteria (circle all: $(\hat{g})(\hat{r}, \hat{b})$)	i i i i i i i i i i i i i i i i i i i	· · · · · · · · · · · · · · · · · · ·		
Encrusting Red Algae	<u>}</u> .			Encrusting Red Algae	Ô			
Sponge	0			Sponge	0			
Hydroid	0			Hydroid	0			
Octocoral	1	Carlina r.	LKm XI	Octocoral	0			
Stony Coral		Clarke bibr	1 1	Stony Coral	4	Cautinar.	LCIN	
Tunicale	0	0		Tunicate	0	Canunter.	1 × 3	
Bare Hard Substrate				Bare Hard Substrate			2 por ha	
other VCMHA		l		other				ŀ
Bryo				bryozoan		<u>_</u>		
Total Mus	st = 100%			Total Mus	l = 100% 🕔			

Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz((cm)
Max Relief (cm)			ļ
Max Sediment Depth (cm)			ļ
Sessile Benthos	% Cover		4
Sediment- (circle all: sand shell mud)			
Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r b)			<u>.</u>
Encrusting Red Algae .			
Sponge			
Hydroid			<u> </u>
Octocoral			
Stony Coral			
Tunicate			
Bare Hard Substrate			
other			
Total Mus			

or max size

Total Must = 100% Standard Abbreviations: and abbreviation formats

Bare Hard Substrate

Quad Label:

Max Sediment Depth (cm) Sessile Benthos...

(circle all: sand shell mud)

Sample Name or #

Max Relief (cm)

Sediment-

Macroalgae-Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae

Sponge Hydroid Octocoral Stony Coral Tunicate

other-..

% Cover

List macroalgae Genus % % cover

or max size

(cm)

List every coral colony

-and coral condition(s)

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg. Octocoral; Genus of each colony = Genu; Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cay, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name 1				e / Transect Name	_		
Date 10/20/0	5		Data Col	ector			8B
Quad Label:	1.5		% cover or max size (cm)	Quad Label: Sample Name or #	5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cov or max (cm)
Max Relief (cm)	Ø) eptu	Y	Max Relief (cm)	7)-	10000	50
Max Sediment Depth (cm)		$\langle \varrho \rangle \chi_i^2$	95	Max Sediment Depth (cm)	5	lpotu	50
Sessile Benthos	<u>% Cover</u>	1		Sessile Benthos	% Cover	lept.	300
Sediment (circle all sand shell mud)	d)	Dicky		Sediment- (circle ally same shell mud)	Ch 6	63	
Macroalgae- Fleshy+Calcareous)			Macroalgae Fleshy+Calcareous	5	Oid V	3
Turf-algae+cyanobacteria (circle all: g r b)	Û			Turf-algae+cyanobacteria (circle all: g r (b))	1		
Encrusting Red Algae	Ĵ			Encrusting Red Algae	M	Oculina r.	Ian
Sponge	Q			Sponge	2		
Hydroid				Hydroid	BI		
Octocoral				Octocoral	Y		
Stony Coral	0			Stony Coral	11		
Tunicate	0			Tunicate	0		
Bare Hard Substrate	D			Bare Hard Substrate	Ο		
).			other YVZ_)		l
other				omer / 🛥	·		
		······		ses work	1		
Total Mus	t = 100%		•	Ses werth Totàl Must	= 100%		
	l = 100%	List macroalgae Genus % List every corat colony ~and coral condition(s)	% cover or max size (cm)	ses work	1 = 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	or ma
Total Mus Quad Label:	l = 100%	List macroalgae Genus % List every coral colony	or max size	Ses wern Total Must Quad Label:	1 = 100%	List every corat colony	or ma
Total Mus Quad Label: Sample Name or #	t = 100%	List macroalgae Genus % List every coral colony	or max size	Sts w ^{D/} h Totàl Must Quad Label: Sample Name or #	1 = 100%	List every corat colony	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	t = 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts which Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	= 100%	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts which Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	% Cover	List every corat colony ~and coral condition(s)	% co or ma (cm)
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts which Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts WM Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts why Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle alt: sand shell mud) Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacteria	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts why Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle alt: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r b)	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts W/h Totàl Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle alt: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r b) Encrusting Red Algae	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts why Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sectiment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts why Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r b) Encrusting Red Algae Sponge Hydroid	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts why Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	% Cover	List every corat colony ~and coral condition(s)	or ma
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% Cover</u>	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sts WM Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle alt: sand shell mud) Macroalgae- Fleshy+Catcareous Turf- algae+cyanobacteria (circle alt: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Corat	% Cover	List every corat colony ~and coral condition(s)	or ma

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Story Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, Q dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Pigfish

Project Name

Site Name / Transect Name

B	2		
		7)

Date

D-4-	^ -II	4
Data	LOII	ector

Quad Label: 3	1.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Lab Sample Name or
Max Relief (cm)	D			Max Relief (cm)
Max Sediment Depth (cm)	13			Max Sediment De
Sessile Benthos	<u>% Cover</u>			Sessile Benthos
Sediment- (circle all: pand shell mud)	(V)	,		Sediment. (circle all: sand s
Macroalgae Fleshy+Calcareous				Macroalgae- Fleshy+Calcareou
Turf-algae+cyanobacteria (circle all: g r b)				Turf-algae+cyand (circle all: g r
Encrusting Red Algae				Encrusting Red A
Sponge				Sponge
Hydroid				Hydroid
Octocoral				Octocoral
Stony Coral				Stony Coral
Tunicate				Tunicate
Bare Hard Substrate				Bare Hard Substr
other				other
Total Must	= 100%			
Quad Label: ୍ର	2.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Lab Sample Name o
Quad Label:	2.5 0	List macroalgae Genus % List every corat colony	or max size	Sample Name o
Quad Label: Sample Name or #	2.5	List macroalgae Genus % List every corat colony	or max size	Sample Name o
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	2.5 0 5	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D
Quad Label: Sample Name or #	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos Sediment-
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shell mud)	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; Sand shell mud) Macroalgae- Fleshy+Calcareous	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos Sediment- (circle all: fand): Macroalgae- Fleshy+Calcareo
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; Sand shell mud) Macroalgae-	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthor Sediment- (circle all: rand): Macroalgae- Fleshy+Calcarec Turf- algae+cyar
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circke all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthon Sediment- (circle all: fand): Macroalgae- Fleshy+Calcareo Turf-algae+cyar (circle all: g
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthon Sediment- (circle all: fand): Macroalgae- Fleshy+Calcareo Turf-algae+cyar (circle all: g
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthon Sediment- (circle all: fand): Macroalgae- Fleshy+Calcareo Turf- algae+cyar (circle all: g
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos Sediment- (circle all: and): Macroalgae Fleshy+Calcareo Turf- algae+cyan (circle all: g r Encrusting Red / Sponge
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthon Sediment- (circle all: pand): Macroalgae Fleshy+Calcared Turf- algae+cyar (circle all: g m Encrusting Red / Sponge
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: Sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos Sediment- (circle all: pand): Macroalgae Fleshy+Calcarec Turf- algae+cyar (circle all: g m Encrusting Red / Sponge Hydroid Octocoral
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; Sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthor Sediment- (circle all: and): Macroalgae- Fleshy+Calcareo Turf-algae+cyan (circle all: g r Encrusting Red / Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Subs
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all Sand shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	2.5 0 <u>% Cover</u> 1/77	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Sample Name o Max Relief (cm) Max Sediment D Sessile Benthos Sediment- (circle all: and): Macroalgae- Fleshy+Calcareo Turf-algae+cyan (circle all: g r Encrusting Red / Sponge Hydroid Octocoral Stony Coral Tunicate

ist macroalgae Genus % | % cover el: List every coral colony or max size C # -and coral condition(s) (cm) epth (cm) % Cover TW hell mud) obacteria b) lgae ate

Total Must = 100%

List macroalgae Genus % % cover el: List every coral colony or max siz -and coral condition(s) (cm) e # ROTO 99 Д POTU 24 epth (cm) % Cover s... shell mud) NIS obacteria V b) C Algae (6 Ο \mathcal{O} trate when Total Must = 100%

Total Must = 100% Standard Abbreviations: <u>Macroal</u> and abbreviation formats <u>Octocor</u>

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caut, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sard, Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pita, Pseudoptexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int...

Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes; Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Moltusca-sessile, Seagrass, Zoanthid.

Date			Data Co	ne / Transect Name	_		
Quad Label: Sample Name or # 3		List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # 37			% cover or max size (cm)
nax Relief (cm)	0 1 a ·			Max Relief (cm)	0		
Max Sediment Depth (cm)	17			Max Sediment Depth (cm)	15		
<u>Sessile Benthos</u>	% Cover			Sessile Benthos	% Cover		
Sediment- (circle all; sand shell mud) Macroalgae-	11D			Sediment (circle all: sand) shell mud) Macroaldae	TW		
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)				Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r b)			
Encrusting Red Algae				Encrusting Red Algae			
Sponge				Sponge		······	
Hydroid				Hydroid			
Octocoral				Octocoral			
Stony Coral				Stony Coral			
Tunicate				Tunicate			
Bare Hard Substrate				Bare Hard Substrate			·
other				other			
Total Musi	<u> </u>			Total Must	= 100%		
Total Muss Quad Label: imple Name or #	<u> </u>	List macroalgae Genus % List every coral colony -and coral condition(s)	6 % cover or max size (cm)	Total Must Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
Quad Label:	2.5	List every coral colony	or max size		V O	List every coral colony	or max size
Quad Label: 3	2.5	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: 3	V.	List every coral colony	or max size
Quad Label: Imple Name or # Max Relief (cm)	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: 3 Sample Name or # 3	V O	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm)	17 17 17	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # 3 Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae	0	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell mud) Macroalgae- Fleshy+Calcareous	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: Imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy +Calcareous Turl- algae+cyanobacteria (circle all: g r b)	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: Imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae		List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turl-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Retief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, sand, shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	2.5 17 17 % Cover	List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, fand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid		List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle ally sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral		List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle ally sand shell mud) Macroalgae Fleshy +Calcareous Turl- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size
Quad Label: Imple Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral		List every coral colony -and coral condition(s) ICP70 IQP70	or max size (cm) 33	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy +Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Story Coral	0 19 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size

'andard Abbreviations: .id abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothammion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other- includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid,

Project Name

NL

Site Name / Transect Name

Date

Data Collector

Sample Name or # Y and coral condition(s) (cm) Atax Relief (cm) 0 (cm) (cm) Atax Relief (cm) 0 (cm) (cm) Atax Relief (cm) 0 (cm) (cm) (cm) Atax Relief (cm) 0 (cm) (cm) (cm) (cm) Atax Relief (cm) 0 (cm) (cm) (cm) (cm) (cm) Sessite Benthos % Cover Scale attagn date mud) (m) (cm)	Quad Label:		List macroalgae Genus %		Quad Labali		List macroalgae Genus %	% cover
min. Notice (bit) min. Notice (bit) search Sectioned Depth (on) Sectioned Depth (on) search Sectioned Depth (on) Min. Sectioned Depth (on) Sectioned Lepth (on) Min. Sectioned Depth (on) Min. Sectioned Depth (on) Min. Sectioned Depth (on) <	Sample Name or # 4	15	List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: Sample Name or #	5	List every coral colony ~and coral condition(s)	or max s (cm)
Base Section Deprint (c) Subscription Section Deprint (c) Y. Covert Section Deprint (c) IV Section Deprint (c) <td>Max Relief (cm)</td> <td>Ő</td> <td></td> <td></td> <td>Max Relief (cm)</td> <td>0</td> <td>ippto</td> <td>23</td>	Max Relief (cm)	Ő			Max Relief (cm)	0	ippto	23
Sediment- Cade all family chall much Sediment- Torial gave randoctaris Sediment - Torial gave randoctaris Sediment - Torial gave randoctaris Sediment - Torial Must = 100% Sediment - Torial Must = 100% Sediment - Torial Must = 100% Cuad Label: Torial gave randoctaris Sediment - Torial Must = 100% List macroalgae Genus % Sediment Cepth (cm) Sediment Cepth (cm) Sedi	Max Sediment Depth (cm)	S			Max Sediment Depth (cm)	13		
circle attigned pitel much 110 circle attigned pitel much 110 Bared Macroaligne 110 Fieldy Catareous 111 Fieldy Catareous 111 Carle att g r b) 111 Encursting Red Algae 111 Sponge 111 Lydroid 111 Decoording 111 Story Coral 111 Total Must = 100% 111 Colad Must = 100% 111 Colad Must = 100% 111 Mac Relef (cm) 211 Mac Sediment Depth (cm) 211 </td <td>Sessile Benthos</td> <td>% Cover</td> <td></td> <td></td> <td>Sessile Benthos</td> <td>% Cover</td> <td></td> <td></td>	Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Macroalgae Macroalgae Fuely Cataroous Inf. algae spanobacteria Grede all. g (b) Inf. algae spanobacteria Sponge Inf. algae spanobacteria Stary Catal Inf. algae spanobacteria Detocoral Inf. algae spanobacteria Stary Catal Inf. algae Stary Catal Inf. algae spanobacteria Stary Catal Inf. algae spanobacteria Inf. algae spanobacteria Inf. algae spanobacteria Stary Catal Inf. algae spanobacteria Inf. algae spanobacteria Inf. algae spanobacteria Stary Catal Inf. algae spanobacteria Inf. algae spanobacteria Inf. algae spanobacteria Stary Catal Inf. algae spanobacteria Stary Catal moord Inf. algae spanobacteria	Sediment- (circle all: sand shell mud)	TID			Sediment (circle all:(sand shell mud)	79		
Turf-algae <grandbacteria< td=""> </grandbacteria<>	Macroalgae-				Macroalgae-			1
Encusting Red Algae	Turf-algae+cyanobacteria				Turf- algae+cyanobacteria			
Sponge	(circle all: g r b)			<u></u>	(Circle all: g r b)			
Hydroid Image: space s	Encrusting Red Algae				Encrusting Red Algae			
Decocoral	Sponge				Sponge			ļ
Story Coral	Hydroid				Hydroid			
Tunicale	Octocoral				Octocoral]		
Bare Hard Substrate	Stony Coral				Stony Coral			
ather addresses other addresses	Tunicate				Tunicate			
Total Must = 100% Total Must = 100% Total Must = 100% Total Must = 100% Cola Must = 100% Max Relief (cm) D Max Sediment Depth (cm) Quad Label: 400 Max Sediment Depth (cm) A Sediment Depth (cm) Quad Sediment Sediment Depth (cm) A Sessile Benthos % Cover Sediment Colspan="2">Colspan="2">Sediment Colspan="2">Colspan="2">Sediment Colspan="2">Colspan="2">Sediment Colspan="2">Colspan="2">Sediment Colspan="2">Sediment Colspan="2"Sediment Colspan="2"Sediment Colspan="2"Sediment Colspan="2"Sedime	Bare Hard Substrate				Bare Hard Substrate			
Quad Label: Ist macroalgae Genus % or max size vant codary or max size and coral condition(s) Quad Label: Ust macroalgae Genus % or max size or max size (cm) Max Relief (cm) 0 0 0 0 Max Relief (cm) 0 0 0 0 Max Relief (cm) 0 0 0 0 Sessile Benthos % cover 0 0 0 Sessile Benthos % cover 0 0 0 Sessile Benthos % cover % cover % cover 0 Sediment- 1000 0	other				other			
Quad Label: Ist macroalgae Genus % or max size vant codary or max size and coral condition(s) Quad Label: Ust macroalgae Genus % or max size or max size (cm) Max Relief (cm) 0 0 0 0 Max Relief (cm) 0 0 0 0 Max Relief (cm) 0 0 0 0 Sessile Benthos % cover 0 0 0 Sessile Benthos % cover 0 0 0 Sessile Benthos % cover % cover % cover 0 Sediment- 1000 0								
Quad Label: It every corat colony and corat condition(s) or max size (cm) Quad Label: Ut every corat colony and corat condition(s) or max (cm) Max Relief (cm) It It Max Relief (cm) It Max Sediment Depth (cm) It	Total Must	= 100%			Total Must	= 100%		-i
Max Relief (cm) Image: Constraint of the second	Quad Label: U	5.5	List every coral colony	or max size	Quad Label: 4	Ď	List every coral colony	or max
Max Sediment Depth (cm) Q1 Max Sediment Depth (cm) 19 Sessile Benthos X Cover Sessile Benthos X Cover Sediment- (circle all: sand shell much Macroalgae- Flesty+Calcareous 1/W Sediment- (circle all: sand shell much Macroalgae- Flesty+Calcareous 1/W Turf-algae+Voatcharia (circle all: g r b) 1 1/W 1/W Encrusting Red Algae 1 1/W Sponge Sponge 1/W Hydroid 1/W 1/W Octocoral 1/W 1/W Story Coral 1/W 1/W Turicate 1/W 1/W Bare Hard Substrate 1/W 1/W	Max Relief (cm)	Э				$\hat{)}$		
Sessile Benthos % Cover Sediment- (circle all: Sand shell mud) ////////////////////////////////////		20				19		
Sediment- (circle all: sand shell mud) I UU Sediment- (circle all: sand shell mud) IUU Macroalgae- Fleshy+Calcareous Macroalgae- Fleshy+Calcareous IUU Macroalgae- Fleshy+Calcareous IUU Turf- algae+cyanobacteria (circle all: g r b) IUU Macroalgae- Fleshy+Calcareous IUU Encrusting Red Algae IUU IUU IUU IUU Sponge IUU IUU IUU IUU Hydroid IUU IUU IUU IUU Stony Coral IUU IUU IUU IUU Bare Hard Substrate IUU IUU IUU IUU other IUU IUU IUU IUU IUU		% Cover				% Cover		
Carlos and stream mody Index and stream mody Index and stream mody Macroalgae Fleshy+Calcareous Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Index and stream mody Encrusting Red Algae Encrusting Red Algae Sponge Sponge Hydroid Hydroid Octocoral Octocoral Stony Coral Stony Coral Tunicate Index and Substrate other Index and Substrate		/ /n>	·		Sediment-			
Fleshy+Calcareous Fleshy+Calcareous Fleshy+Calcareous Turf- algae+cyanobacteria Fleshy+Calcareous Fleshy+Calcareous (circle all: g r b) Fleshy+Calcareous Fleshy+Calcareous Encrusting Red Algae Fleshy+Calcareous Fleshy+Calcareous Sponge Fleshy+Calcareous Fleshy+Calcareous Hydroid Fleshy+Calcareous Fleshy+Calcareous Octocoral Sponge Fleshy+Calcareous Stony Coral Stony Coral Fleshy+Calcareous Tunicate Fleshy+Calcareous Fleshy+Calcareous other Fleshy+Calcareous Fleshy+Calcareous	Macroalgae-	100		<u> </u>	(circle all; sand shell mud) Macroalgae	10		<u> </u>
(circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other Image: Stony Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: Story Coral Image: S	Fleshy+Calcareous			<u> </u>	Fleshy+Calcareous			
Sponge Sponge Hydroid Hydroid Octocoral Mydroid Stony Coral Octocoral Stony Coral Stony Coral Tunicate Mydroid Bare Hard Substrate Mare Hard Substrate other Mare Hard Substrate	(circle all: g r b)					_		<u> </u>
Hydroid Image: Hydroid Octocoral Image: Mydroid Stony Coral Image: Mydroid Stony Coral Image: Mydroid Tunicate Image: Mydroid Bare Hard Substrate Image: Mydroid Image: Mydroid Image: Mydroid <td>Encrusting Red Algae</td> <td></td> <td></td> <td></td> <td>Encrusting Red Algae .</td> <td></td> <td></td> <td>_</td>	Encrusting Red Algae				Encrusting Red Algae .			_
Octocoral Octocoral Image: Coral descent of the correct of the co	Sponge				Sponge		·	
Stony Coral Stony Coral Tunicate Tunicate Bare Hard Substrate Bare Hard Substrate other other	Hydroid				Hydroid			
Tunicate Tunicate Bare Hard Substrate Bare Hard Substrate other Other	Octocoral				Octocorat			
Bare Hard Substrate Bare Hard Substrate other Other	Stony Coral				Stony Coral			
other	Tunicate				Tunicate			
	Bare Hard Substrate				Bare Hard Substrate			
	other				other			
	,							

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genus r Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg., Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex ... except Pseudopterogorgia=Pspt, Plexaurella=Plta, Pseudoplexaura=Pspl Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int ... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Coral condition: W=white disease(s), O=other disease(s), B=DREACHING, Coral SUESS INDEX # 0 1 2 0 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

ong Spine

Project Name		•	<u> </u>	e / Transect Name			11
Date 10	123	105	Data Col				
		/		······			
Quad Label: () Sample Name or #	15	List macroalgae Genu List every occal colom ~and coral condition(s	(or max size (cm)		15	List macroalgae Gen List every coral color -and coral condition	ly Gr max size
Max Relief (cm)	35/6	pick Val		Max Relief (cm)	00		
Max Sediment Depth (cm)	33	Ozví-nr. lej	KIP OC	Max Sediment Depth (cm)	13 13		
Sessile Benthos	% Cover			Sessile Benthos	%'Cover		
Sediment- (circle all: sand)shell mud)	12 45			Sediment- (circle all sand shell mud)	עטן שו	· · · · · · · · · · · · · · · · · · ·	
Macroalgae- Fleshy+Calcareous	710			Macroalgae- Fleshy+Calcareous			
Turf-algae+cyanobacteria (circle all: g r_(b))	69145	-		Turf-algae+cyanobacteria (circle all: g r b)		·	
Encrusting Red Algae	50			Encrusting Red Algae			
Sponge	<u> </u>			Sponge		· · · · · · · · · · · · · · · · · · ·	
Hydroid	40	<u>-</u>		Hydroid			· .
Octocoral	21			Octocoral	1 - -		
Stony Coral				Stony Coral	1		
Tunicate	20	· · · · · · · · · · · · · · · · · · ·		Tunicate			
Bare Hard Substrate	IVIV			Bare Hard Substrate			
other				other			
Sconern			1				1 1
Total Must	= 100%			Total Musi	- 100%		
Total Must	1	List macroalgae Genu		Total Musi	t = 100%	List macroalgae Ger	
Quad Label: 2	= 100%) 25	List macroalgae Genu List every coral colony ~and coral condition(s	or max size	Total Must Quad Label: Sample Name or #	i = 100%	List macroalgae Gen List every coral color -and coral condition	ny or max siz
Quad Label:) 25 1) 0	List every coral colony	or max size	Quad Label: 2/) 33 0 0	List every coral color -and coral condition	ny or max siz (s) (om) 50
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)) 25 D 0 23 30	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)) 33 0 0 8 17	List every coral color -and coral condition	ny or max siz (s) (cm)
Quad Label: 2 Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos) 33 0 0	List every coral color -and coral condition	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud)) 25 D 0 23 30	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud)) 33 0 0 8 11 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous) 33 0 0 8 17 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae) 33 0 0 8 17 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria) 33 0 0 8 17 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)) 33 0 0 8 17 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae) 33 0 0 8 17 % Cover 96 10	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud) Macroatgae: Fleshy+Calcareous Turt-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge) 33 0 0 8 17 % Cover	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle att, sand shell mud) Macroatgae Fleshy+Calcareous Turf- atgae+cyanobacteria (circle att: g r b) Encrusting Red Algae Sponge Hydroid) 33 0 0 8 17 % Cover 96 10	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all/sand)shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all; sand shell mud) Macroatgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral) 33 0 0 8 17 % Cover 96 10	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand) shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral) 33 0 0 8 17 % Cover 96 10	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macoadgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral Tunicate) 25 () 0 23 30 <u>% Cover</u>	List every coral colony	or max size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turt-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate) 33 0 0 8 17 % Cover 96 10	List every coral color -and coral condition IPDJU IPDJU	ry or max siz (s) (om) 50 5

Standard Abbreviations: and abbreviation formats

Pool to <u>Genus</u> Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg coaldae Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer. A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int...

Project Name

Date

Site Name / Transect Name

Data Collector

ample Name or #	10	(45	List macroalg List every co -and coral co	al colony	6 % co or ma (cm)		Quad Label: Sample Name or #	17-		List macroalg List every con ~and coral co	al colony	6 % cc or ma (cm)	
lax Relief (cm)	D	0	•		7600000444		Max Relief (cm)	υÌ					-
fax Sediment Depth (cm)	23	14					Max Sediment Depth (cm)	æ					
iessile Benthos	%	Cover					Sessile Benthos	<u>% Co</u>	ver				
Sediment- circle all: sand)shell mud)	J)/0	ku				-	Sediment (circle all (sand shell mud)	a					
Nacroalgae- Fleshy+Calcareous) 1			Macroalgae- Fleshy+Calcareous						
Furf-algae+cyanobacteria circle all: g r b)							Turf-algae+cyanobacteria (circle all: g r b)						
Encrusting Red Algae	┢						Encrusting Red Algae						
Sponge	[Í					Sponge						_
fydroid							Hydroid						
Octocoral							Octocoral						
Stony Coral							Stony Coral						
Funicate					_		Tunicate						
Bare Hard Substrate		_			_		Bare Hard Substrate					_	
other	ļ						olher						
		1			1							1	
		_				1						1	
Total Mus	1 :t = 1	00%				2	Total Mus	= 100	%			<u> </u>	
Total Mus Quad Label: Sample Name or #	it = 1	00%	List macroal List every co ~and coral c	ral colony		iver ix size	Total Muss Quad Label: Sample Name or #	= 100	%	List macroalg List every cor ~and coral co	al colony		over ax size
Quad Label: Sample Name or #		00%	List macroal	ral colony	or ma	•	Quad Label:	= 100	%	List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm)	it = 1	00%	List macroal	ral colony	or ma	•	Quad Label: Sample Name or #	= 100	%	List every cor	al colony	or m	
Quad Label:		00%	List macroal List every co ~and coral c	ral colony	or ma	•	Quad Label: Sample Name or # Max Relief (cm)	= 100'		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	%		List macroal List every co ~and coral c	ral colony	or ma	•	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae-	%		List macroal List every co ~and coral c	ral colony	or ma	•	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae-	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	•	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous , Turf- algae+cyanobacteria (circle all: g r b)	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous , Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r_b_) Encrusting Red Algae	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous , Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell_mud) Macroalgae- Fleshy+Calcareous , Tuf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Cakareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous 、 Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b_) Encrusting Red Algae Sponge Hydroid Octocoral	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous , Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b_) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell_mud) Macroalgae- Fleshy+Calcareous 、 Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	%		List macroal List every co ~and coral c	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	ra		List every cor	al colony	or m	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous 、 Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	%		List macroal List every co ~and coral o	ral colony	or ma (cm)	x size	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g_r b_) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	ra		List every cor	al colony	or m	

Total Must = 100%

Total Must = 100%

.

Standard Abbreviations: Jand abbreviation formats Macroalgae: Pool to Genus = Genu or Genus; Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pfla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P'ame, Q dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacte, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

roject Name Date

•-

Site Name / Transect Name

Data Collector AD

Reach

Quad Label: 2	5		List macroalyses Genus % List every coral colony ~and coral condition(s)	or max size (cm)	Quad Label: 12. Sample Name or # 12.	5		List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max siz (cm)
ax Relief (cm)	5	[]			Max Relief (cm)	Ũ	Ò	1	-
ax Sediment Depth (cm)	6	2			Max Sediment Depth (cm)	18	5		
ssile Benthos	<u>% Ca</u>	ver			Sessile Benthos	% Co	<u>over</u>		
diment-> rcle all: sand shell mud)	94	20			Sediment- (circle all; sand)shell mud)	$ \emptyset $	(00)	:	
acroalgae- eshy+Calcareous	\cap	Ò			Macroalgae- Fleshy+Calcareous				1
rf-algae+cyanobacteria role all: g (r) p)	}	5			Turl-algae+cyanobacteria (circle all: _g_r_b_)				
crusting Red Algae	1	l			Encrusting Red Algae			1	
oonge	l				Sponge				
varoid	0	0			Hydroid				
ctocoral	Q	Ó	O.R DRXZ		Octocorat				<u> </u>
tony Coral	1	1			Stony Coral				(
unicate	\bigcirc	0			Tunicate				
are Hard Substrate	1	X	2		Bare Hard Substrate			, 	
	1	10	8		- #				
ther [N (1 177)	/	10			other	1			
Total Mus		0%	List macroalgae Genus %	6 % cover	Total Must	= 10	3%	List macroalgae Genus %	% cover
Total Mus		0%	List macroalgae Genus % List every coral colony -and coral condition(s)	6 % cover or max size (cm)		$\overline{\mathcal{O}}$		List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max s (cm)
Total Mus Quad Label: ample Name or # 27		0%	List every coral colony	or max size	Total Must	$\overline{\mathcal{O}}$	25	List every coral colony	or max s
Total Muis Quad Label: ample Name or # 2 lax Refief (cm)		0%	List every coral colony	or max size	Total Must Quad Label: Sample Name or #	0	37.5	List every coral colony	or max s
Total Mus Quad Label: ample Name or # Tax Refief (cm) Tax Sediment Depth (cm)	2.5 0 14	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # 3	0 15	10375	List every coral colony	or max s
Total Mus 2003 Label: 2013 Anne or # 1ax Refief (cm) 1ax Sediment Depth (cm) essile Benthos	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sama shell mud)	0 15 %C	10333	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: sample Name or # 2 fax Retief (cm) fax Sediment Depth (cm) iessile Benthos iediment- circle all, sand shell mud) facroalgae	2.5 0 24 ×C	242 7 23	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # Tax Retief (cm) Tax Sediment Depth (cm) iessile Benthos iediment- circle all sand shell mud) tacroalgae. teshy+Calcareous iuf- algae+cyanobacteria	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sama shell mud)	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: Sample Name or # 1ax Retief (cm) 1ax Sediment Depth (cm) Sessile Benthos Sediment- circle all sand shell mud)	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Całcareous Turf- algae+cyanobacteria	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # 2 lax Relief (cm) lax Sediment Depth (cm) essile Benthos ediment- sincle all (sand shell mud) lacroalgèe lacroalge lacroalge lacroalge lacroalge la	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # Tax Relief (cm) lax Sediment Depth (cm) essile Benthos rediment- sincle all sand shell mud) lacroalgae lacroalgae lacroalgae teshy+Calcareous urf- algae+cyanobacteria circle all: g r b) incrusting Red Algae	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand, shelt mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g f b) Encrusting Red Algae	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # lax Refief (cm) lax Sediment Depth (cm) essile Benthos ediment- sincle all sand shell mud) lacroalgae. leshy+Calcareous urf- algae+cyanobacteria sincle all: g r b) incrusting Red Algae sponge lydroid	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	0 15 %C	5/20 11	List every coral colony -and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # Tax Relief (cm) lax Sediment Depth (cm) essile Benthos rediment- sincle all sand shell mud) lacroalgae- leshy+Calcareous unf- algae+cyanobacteria sincle all: g r b) incrusting Red Algae Sponge	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment: (circle all Sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	0 15 %C	5/20 11	List every coral colony ~and coral condition(s)	or max s
Total Mus Quad Label: ample Name or # 2 ¹ lax Relief (cm) lax Sediment Depth (cm) essile Benthos ediment- since all sand shell mud) lacroalgae. leshy+Calcareous turf-algae+cyanobacteria since all: g r b) incrusting Red Algae sponge lydroid Delocoral Stony Coral	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Ouad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	0 15 %C	5/20 11	List every coral colony -and coral condition(s)	or max si (cm)
Total Mus Quad Label: ample Name or # 2 lax Relief (cm) lax Sediment Depth (cm) essile Benthos rediment incle all sand shell mud) lacroalgae leshy+Calcareous furf-algae+cyanobacteria cincle all: g r b) incrusting Red Algae Sponge lydroid Detocoral	2.5 0 24 ×C	% 542 23 over	List every coral colony ~and coral condition(s)	or max size	Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Corat	0 15 %C	5/20 11	List every coral colony -and coral condition(s)	or max si (cm)

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caut, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora sp., Moltusca-sessile, Seagrass, Zoanthid.

Project Name North Topsail Beach Site Name / Transect Name BA 2

Date 10/23/05

25

Data Collector AD

Quad Label:			List macroalgae List every coral ~and coral core	% cov or max (cm)		Quad Label: Sample Name or #		List macroalg List every con ~and corat co	% cover or max size (cm)				
Max Relief (cm)	Ø	0	,			Ì	Max Relief (cm)						
Max Sediment Depth (cm)	18:	330					Max Sediment Depth (cm)						
Sessile Benthos	<u>% Ca</u>	over					Sessile Benthos	% Cov	<u>er</u>				
Sediment- (circle all, sand) shell mud)	100	ND					Sediment- (circle all: sand shell mud)						_
Macroalgae-	·						Macroalgae-						
Fleshy+Calcareous Turf- algae+cyanobacteria					1		Fleshy+Calcareous Turf- algae+cyanobacteria		_				
(circle att: g r b)					<u> </u>	ļ	(circle all: g r b)			. <u></u>			
Encrusting Red Algae							Encrusting Red Algae						
Sponge							Sponge						
Hydroid							Hydroid						
Octocorat							Octocoral						
Stony Coral							Stony Coral						
Tunicate							Tunicate						
Bare Hard Substrate							Bare Hard Substrate						
other							other						
													-
Total Must	1 = 100	0%			•		Total Must	= 1009	6		·		
Quad Label: Sample Name or #			List macroalga List every cora ~and coral cor	colony	% cov or max (cm)		Quad Label: Sample Name or #			List macroal List every co ~and coral o	ral colony	6 % co or ma (cm)	
Max Relief (cm)							Max Relief (cm)						
Max Sediment Depth (cm)							Max Sediment Depth (cm)	anna (Mala					
Sessile Benthos	<u>% c</u>	<u>aver</u>			1		Sessile Benthos	% Co	ver				
Sediment- (circle all: sand shell mud)							Sediment- (circle all; sand shell mud)						
Macroalgae-	1					<u> </u>	Macroalgae-						
Fleshy+Calcareous Turf- algae+cyanobacteria		+				1	Fleshy+Calcareous Turf- algae+cyanobacteria						
(circle all: g r b)					ļ		(circle all: g r b)						
Encrusting Red Algae	ļ	-				ļ	Encrusting Red Algae					_	
Sponge							Sponge						
Hydroid							Hydroid						
Octocorat							Octocorat					_	
Stony Coral							Stony Coral						
Tunicate							Tunicate						
Bare Hard Substrate		dama as i i i					Bare Hard Substrate						
other		1					other						
Total Mus		-				·	Total Mu		0/	<u> </u>			1

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspl Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamade, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name	<u> </u>)		Data C	olle	ctor				
Quad Label: 7.6	9	List macroalg List every cor ~and coral co	at colony	% cover or max size (cm)		Quad Label: Sample Name or #	5	List every co ~and coral o	ondition(s)	% cove or max (cm)
Max Relief (cm)	B	16020		2		Max Relief (cm)	V	Rul	Nrs r.	4
Max Sediment Depth (cm)	9	1-924:)	6		Max Sediment Depth (cm)	4	Dev	·\-~ r.	4
<u>Sessile Benthos</u>	% Cover					Sessile Benthos	% Cover	NU	Wer.	6
	878	sqv-1x318		6	P	Sediment- (circle all: sand shell mud)	199	l t	<u>He V</u>	2
Macroalgae Fleshy+Calcareous		1 Dev	VCK-	3_	1	Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	d	V.	211	4
Turf-algae+cyanobacteria (circle alt: g r (b))	3	<u>\</u>			_	(circle all: g r b_)				
Encrusting Red Algae	$\overline{\mathbf{V}}$					Encrusting Red Algae				
Sponge	<u> </u>				-	Sponge				
Hydroid	$ \rightarrow $				-	Hydroid			ŧ	
Octocoral))		rmined		-	Octocoral				
Stony Coral	1		bryoza		-	Stony Coral			<u> </u>	
Tunicate						Tunicate	+ +		<u>.</u>	
Bare Hard Substrate					-	Bare Hard Substrate				-
bryozoan	2	2				other				*
Total Must	= 100%	· · ·		<u>. </u>		Total Mu	st = 100%			
Quad Label:	\$	List macroak List every co ~and corat o	rat colony	or max size (cm)	e	Quad Label: Sample Name or #	Ò	List every o	Igae Genus % oral colony condition(s)	% COV or mai (cm)
Max Relief (cm)	5	Da	ist	×		Max Relief (cm)	1-7	ULV	Ivar.	30
Max Sediment Depth (cm)	-/	01	1 Non			Max Sediment Depth (cm)	5	Our	Wir.	lex
Sessile Benthos	% Cove			15)		Sessile Benthos	% Cove	<u>e 191</u>	VV	9
Sediment- (circle all_sand_shell_mud) Macroalgae-	\$ 5	1140	V			(circle all:(sand shell muc Macroalgae-		<u> </u>	<u>41 y</u>	- 7
Fleshy+Calcareous Turf-algae+cyanobacteria	11	190	riv Totol			Fleshy+Calcareous Turf- algae+cyanobacteria	V			
(circle all: g r (b))	0	(1 mar	15		(circle all: g r (b)	55			-
Encrusting Red Algae					-	Encrusting Red Algae	14			
Sponge	$\frac{\partial}{\partial}$			_		Sponge	15			
Hydroid	$\overrightarrow{1}$					Hydroid				
Octocoral	1					Octocoral Stony Corat	4			
	15					Funicate	3			
Stony Coral							1			
Stony Coral Tunicate Bare Hard Substrate	$\frac{\nu}{\nu}$					Bare Hard Substrate	$ \psi$			

Standard Abbreviations: and abbreviation formats Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... <u>Macroalqae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq...</u> <u>Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt</u> <u>Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int...</u> Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name Date

1-1:24

Site Name / Transect Name

Data Collector

BA 2a

ax Sodiment Depth (on)	Quad Label:	K		% cover or max size (cm)		2,5	144	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
saile Benthos S Cores addread Sessite Benthos S Cores addread Sessite Benthos S Cores addread Sessite Benthos S Cores accodab Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab Sessite Benthos S Cores Sessite Benthos S Cores accodab S Cores Sessite Benthos S Cores Sessite Benthos S Cores sacsteil aconobage: Sessite Benthos <th>fax Relief (cm)</th> <th> 0 </th> <th></th> <th></th> <th>Max Relief (om)</th> <th>(3)</th> <th> </th> <th></th> <th></th>	fax Relief (cm)	0			Max Relief (om)	(3)			
sdmont consisting Red Algae celly calculated red age construction red age constructi	ax Sediment Depth (cm)	15			Max Sediment Depth (cm)	いし	18		
icide att and ithell fully [10] (1) icide att sind indication (1) (1) icide att sind indica	essile Benthos % C	over			Sessile Benthos	<u>%c</u>	over		
arodopa- servigad	ediment-	I I (N				11	10		
arf algaerspanobactoria include all: g r b) consisting Red Algae consisting Red Alg	lacroalgae-				Macroalgae				
nonusting Red Algae	urf-algae+cyanobacteria				Turf-algae+cyanobacteria		1		
póroige image: sporoge image: sporoge image: sporoge image: sporoge póroid image: sporoge image: sporoge image: sporoge image: sporoge póroid image: sporoge image: sporoge image: sporoge image: sporoge póroid image: sporoge image: sporoge image: sporoge image: sporoge póroid image: sporoge image: sporoge image: sporoge image: sporoge póroid image: sporoge image: sporoge image: sporoge image: sporoge poroge: image: sporoge image: sporoge image: sporoge image: sporoge poroge: image: sporoge image: sporoge image: sporoge image: sporoge poroge: image: sporoge image: sporoge image: sporoge image: sporoge poroge: image: sporoge image: sporoge image: sporoge image: sporoge image: sporoge poroge: image: sporoge image: sporoge <td></td> <td>ì</td> <td>and in the second s</td> <td></td> <td>(circle all: grb)</td> <td></td> <td>1</td> <td>·</td> <td></td>		ì	and in the second s		(circle all: grb)		1	·	
ydroid Hydroid clocoral Odocoral iony Coral Imicate amicate Imicate are Hard Substrate Imicate her Imicate Total Must = 100% Imicate Utad Label: Imicate Imicate Imicate Inter Imicate Inter <t< td=""><td>consting Red Algae</td><td>1</td><td></td><td></td><td>Encrusting Red Algae</td><td>-</td><td>+</td><td></td><td></td></t<>	consting Red Algae	1			Encrusting Red Algae	-	+		
docoral	ponge				Sponge		-		
iony Coral Imicate micate Imicate are Hard Substrate Imicate her Imicate Total Must = 100% Imicate Imicate Imicate Imicate <tdimicate< td=""> <td>ydroid</td><td><u> </u></td><td>f</td><td></td><td>Hydroid</td><td> </td><td>-</td><td></td><td></td></tdimicate<>	ydroid	<u> </u>	f		Hydroid		-		
unicate	ctocoral	1			Octocoral				
are Hard Substrate her Total Must = 100% Quad Label: J. J. S. B. List macroalgae Genus %, % cover ist every coral colony angle Name or # J. J. S. B. List macroalgae Genus %, % cover ist every coral colony Jare Relief (cm) J. J. S. B. List macroalgae Genus %, % cover Ist every coral colony Jare Relief (cm) J. J. D. J. D. J. D. J. D. J. D. J. D. J.	tony Coral		Ę.		Stony Coral				
Inter	unicate	-			Tunicate		ļ		
Image: Second State Image: Second State<	are Hard Substrate	1 N M			Bare Hard Substrate		ţ		
Total Must = 100% International part of the server or all objects of the							ť		
Quad Label: Itist macroalgae Genus %, % cover or max size ample Name or # Itist macroalgae Genus %, % cover or max size ample Name or # Quad Label: Itist macroalgae Genus %, % cover or max size sample Name or # Jax Relief (cm) 0 Itist every coral condition(s) (cm) Jax Relief (cm) 0 Itist every coral condition(s) (cm) Jax Relief (cm) 0 Itist every coral condition(s) (cm) Jax Relief (cm) 0 Itist every coral condition(s) (cm) Jax Relief (cm) 0 Itist every coral condition(s) (cm) Jax Relief (cm) 1 0 Itist every coral condition(s) (cm) Jax Relief (cm) 1 0 Itist every coral condition(s) (cm) Itist every coral condition(s) (cm) Jax Relief (cm) 1 0 Itist every coral condition(s) (cm) Itist every coral condition(s) (cm) Jax Relief (cm) 1 0 0 Itist every coral condition(s) (cm) Itist every coral condition(s) (cm) Jacobage 1 1 0 Itist every coral condition(s) Itist every coral condition(s) Itist every coral condition(s) Itist every coral		1	E .	1					
Quad Label: Ist macoalgae Genus % % cover or max size or max size ample Name or # ample Name or # Ist every coral colony and coral opindition(s) (m) lax Relief (cm) Imax Sediment Depth (cm) Imax Relief (cm) lax Relief (cm) Imax Sediment Depth (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) lax Relief (cm) Imax Relief (cm) Imax Relief (cm) incrusting Red Algae Imax Relief (cm) Imax Relief (cm) iponge Imax Relief (cm) Imax Relief (cm) Imax Relief (cm)	Total Must = 10	0%	· · · · ·	<u> </u>	D: 101 Total Must	t = 10	0%		*
ample Name or # ////////////////////////////////////	Quad Label: 93.	126				. <	1	List macroalgae Genus %	
Iax Sediment Depth (cm) 1 <td></td> <td>10</td> <td></td> <td></td> <td>Sample Name or # 0</td> <td>1.1.1</td> <td>: 31</td> <td></td> <td></td>		10			Sample Name or # 0	1.1.1	: 31		
lax Sediment Depth (cm) ////////////////////////////////////	lax Relief (cm)	10	det h jerner		Max Relief (cm)	N	10		
essile Benthos % Cover ediment- incle all: sind shell mudth ////////////////////////////////////	ax Sediment Depth (cm)	9	1	-	Max Sediment Depth (cm)	7	14)	
zircle all: sand shell muld) ////////////////////////////////////	1.0	Cover				%0	over	[1
lacroalgae:	ediment-	110				76	, 'q	4	
increase (vanobacteria increasting Red Algae Image: (vanobacteria increasting Red Algae Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) incrusting Red Algae Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) incrusting Red Algae Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) ipponge Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b) Image: (vanobacteria (crcle alt: g r b)	lacioalgae-		1		Macroalgae			H	
incrusting Red Algae iponge iydroid Detocoral iunicate Bare Hard Substrate incrusting Red Algae incrusti	urf-algae+cyanobacteria	-			Furf- algae+cyanobacteria	1 I	1		1
iponge Image Image Image lydroid Image Image Image Image lydroid Image Image Image Image Detocoral Image Image Image Image Story Coral Image Image Image Image <td>xincle all: g r b)</td> <td></td> <td></td> <td></td> <td>(circle all: g r b)</td> <td>0</td> <td>1</td> <td></td> <td></td>	xincle all: g r b)				(circle all: g r b)	0	1		
sponge Sponge Sponge Sponge Sponge lydroid I D D D Detocorat D D D D Stony Coral Stony Coral D D D funicate Image: Story Coral Image: Story Coral D D Bare Hard Substrate Story Coral D D	norusting Red Algae	1			Encrusting Red Algae				1 . 4
Detocoral) Octocoral) 0 </td <td>iponge</td> <td></td> <td></td> <td></td> <td>Sponge</td> <td>()</td> <td>0</td> <td>0.0b</td> <td>1,27</td>	iponge				Sponge	()	0	0.0b	1,27
Stony Coral Octooral O I I I I Stony Coral Stony Coral 20 Funicate Image: Stony Coral Image: Stony Coral Bare Hard Substrate Image: Stony Coral Image: Stony Coral	lydroid		· · · · · · · · · · · · · · · · · · ·		Hydroid	1		Drob	
Funicate Inicate Bare Hard Substrate Image: Substrate	Octocoral)	Octocorat	() (000	128
Funicate Image: Constraint of the second s	Stony Coral			- Friday, 1974	Stony Coral		20		
Bare Hard Substrate						0	0:		
						T	1:0		
ther		1				+	1		
		\uparrow			other	+	+-		

Total Must = 100%

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq, Octocoral; Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

did you starlas

1010			_		e / Transect Nan	/					
Date	_			ata Coll		·	79 1	<u> </u>			
		List macroalgae Ger		cover	D. 105/100		120	ist macroalga	Comercia		
Quad Label: 2	75 %	List every coral colo ~and coral condition	ny orn	nax size	Quad Label: Sample Name or #	225	1. 1	ist every cora- and coral cor	al colony	% cover or max siz (cm)	ze
Max Relief (cm)	00				Max Relief (cm)	0	2	Cotty	Colure	33	
Max Sediment Depth (cm)	54				Max Sediment Depth	(cm) 3	1P	D.Chy	Dich	25	<u>)</u>
Sessile Benthos	% Cover	a summer		i	Sessile Benthos	A * Ca	over		abua	5	
Sediments (circle all sand shell mud)	99 100				Sediment- (circle all: sand shell	KS com	25		••••• F		
Macroalgae. V					Macroalgae- Fleshy+Calcareous	_ 5	N				
Turf-algae+cyanobacteria (circle all: g r b))					Turf-algae+cyanob@c (circle all: g r) b	teria	5	· · · · ·			
Encruisting Red Algae					Encrusting Red Algae		2	10			
Sponge					Sponge	22	0	LK-		N.	
Hydroid		·		; .	Hydroid	1	10	X	0.0	A	1.
Octocoral					Octocoral	U	Y	-OK-	SR.		ŀ,×
Stony Coral				, , ,	Stony Coral		<u>.</u>	5 102 1	11	<u> </u>	C
Tunicate		, ,			Tunicate Bare Hard Substrate	- 13	X	50	\underline{v}		
Bare Hard Substrate					other Dry AZOA	n 3	5		012	(0
Total Must	= 100%				3	al Must = 100)%				
D: 10710 Total Must	= 100%	List macroalgae Ge List every coral colo		cover max size	, Tota Quad Label:	al Must = 100		List macroalg	al colony	% cover	
	4 15	List every coral cok ~and coral condition	ony or	max size	J Tota	al Must = 100			al colony		
Quad Label:	6 15	List every coral cok ~and coral condition	ony or	max size	, Tota Quad Label:	al Must = 100	NI NI	List every cor	al colony	or max si	
Quad Label:	4 15	List every coral cok ~and coral condition	ony or	max size	Tota Quad Label: Sample Name or #	al Must = 100	NI NI	List every cor -and coral co	al colony ndition(s)	or max si (cm) 2 c	ize S
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	(0) 12 18 21 <mark>% Cover</mark>	List every coral condition	ony or	max size	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos	al Must = 100 : (7, 5 . (2, 5) (cm) 0	NI NI	List every cor	al colony ndition(s)	or max si (cm) 7) < 7 2 (12e
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell (mud)	(0)2 18 21	List every coral condition	ony or	max size	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: sand shell	al Must = 10(List every cor -and coral co D (h C	al colony ndition(s) Dth (i.C.) Oil ()	or max si (cm) 7, < 7, < 7, < 7, < 7, (,	
Quad Label: Sample Name or # Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand_shell (mud) Macroalgae. Fleshy+Calcareous	(1) 12 18 4 26 Cover 90 12 0.2	List every coral condition	ony or	max size	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: \$and shell Macroakgae- Fleshy+Calcareous	al Must = 10((cm) ((cm) () (cm) () (cm) () (cm) () (cm) ()	N CA PA	List every cor -and coral co D (h C	al colony ndition(s)	or max si (cm) 7, < 7, < 7, < 7, < 7, < 7, < 7, < 7, <	5 5 7 7
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell (mud) Macroalgae.	(1) 12 18 4 26 Cover 90 12 0.2 8 3	List every coral condition	ony or n(s) (cr 244 ¹ 2467/04	max size n) : 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: sand shell Macroakgae-	al Must = 10((cm) ((cm) () (cm) () (List every cor -and coral co D (H) CHH	al colony ndition(s) Dth (i.C.) Oil ()	or max si (cm) 7, < 7, < 7, < 7, < 7, < 7, < 7, < 7, <	
Quad Label: Sample Name or # Max Relief (cm) <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand_shell (mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria	(1) 12 18 4 26 Cover 90 12 0 12 8 3 0 5	List every coral condition	ony or n(s) (cr 244 ¹ 2467/01	max size n) : 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: sand shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanoba	al Must = 10((cm) () (cm) ()	N CA PA		al colony ndition(s) Dth (int) (int) (int) (int) (int) LV LV	or max si (cm) 7, e 7, e 7, e 7, e 7, e 7, e 7, e 7, e	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sang shell (nud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	(0) 12 18: 21 26 Cover 90 12 0.2 8 3 0.5 0.5	List every coral condition	ony or n(s) (cr) 24 24 24 24 24 24 24 24 24 24 24 24 24	max size n) 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: sand shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanobe (circle all: g r b Encrusting Red Algae Sponge	al Must = 10((cm) () (cm) ()	N CA PA	List every cor -and coral co D (h) C h) C h) C h) C h) C h) C h) C h) C	al colony ndition(s) Dth (if C) Oil V) (if C D LV LV LX	or max si (cm) 7, e 7, e 7, e 7, e 7, e 7, e 7, e 7, e	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell (nud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	(1) 12 18 4 26 Cover 28 3 0 5 0 5 0 0 0 0	List every coral condition -and coral condition		max size n) : 1 . 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: sand shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanoba (circle all: g r (b) Encrusting Red Algae Sponge Hydroid	al Must = 10((cm) () (cm) ()	N CA PA		al colony ndition(s) Dth (int)(int)(int)(int)(int)(int)(int)(int)	or max si (cm) 7, e 7, e 7, e 7, e 7, e 7, e 7, e 7, e	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell (mud) Macroalgae. Fleshy+Cakcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	(1) 18 2 26 Cover 26 Cover 28 3 0 2 3 3 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	List every coral condition -and coral condition 	ony or n(s) (cr 244 ¹ 244 ¹ 24 ¹	max size n) 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: şand shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanobe (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral	al Must = 10((cm) () (cm) ()	N CA PA	List every cor -and coral co D (h) C h) C h) C h) C h) C h) C h) C h) C	al colony ndition(s) Deh (in C) Oil V) (in C) LV LV LV LV LV LV	or max si (cm) 2 2 2 4 2 3 5 4 4 4	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	(1) 18 4 20 12 22 Cover 23 Cover 24 Cover 24 Cover 24 Cover 20 12 20 12 20 20 12 20 12	List every coral condition -and coral condition 		max size n) : 1 . 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: \$and shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanobe (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	al Must = 10((cm) () (cm) ()	N CA PA	List every cor -and coral co D (h) C h) C h) C h) C h) C h) C h) C h) C	al colony ndition(s) Deh (ne) Oil V (ne) UV LV LV LV LV LV Ch Oil Oil Oil	or max si (cm) 7, e 7, e 7, e 7, e 7, e 7, e 7, e 7, e	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	(1) 18 2 26 Cover 26 Cover 28 3 0 2 3 3 0 5 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	List every coral condition -and coral condition 	ony or n(s) (cr 244 ¹ 244 ¹ 24 ¹	max size n) : 1 . 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: \$and shelt Macroalgae- Fleshy+Calcareous Turt- algae+cyanoba (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	al Must = 10((cm) 0 (cm) 0	N CA PA	List every cor -and coral co D (h) C h) C h) C h) C h) C h) C h) C h) C	al colony ndition(s) Deh (in C) Oil V) (in C) LV LV LV LV LV LV	or max si (cm) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand_shell_mud) Macroalgae. Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	(1) 18 4 20 12 22 Cover 23 Cover 24 Cover 24 Cover 24 Cover 20 12 20 12 20 20 12 20 12	List every coral condition - and coral condi	ony or n(s) (cr 244 ¹ 244 ¹ 24 ¹	max size n) : 1 . 1 .	Tota Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth Sessile Benthos Sediment- (circle all: \$and shell Macroalgae- Fleshy+Calcareous Turf- algae+cyanobe (circle all: g r (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	al Must = 10((cm) 0 (cm) 0	OH Z Q C C C C Z Z Z Z Z Z Z Z Z Z Z Z Z Z	List every cor -and coral co D (h) C h) C h) C h) C h) C h) C h) C h) C	al colony ndition(s) Deh (ne) Orl V (ne) UV LV LV LV LV LV Ch Orl Orl Orl DF	or max si (cm) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

Standard Abbreviations: and abbreviation formats

2 or har

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe; A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes; Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Date

Site Name / Transect Name

Data Collector

1	Quad Label: Sample Name or # A	5355	List macroalgae List every coral ~and coral cond	colony	% cover or max size (cm)	Quad Label: Sample Name or #			% cover or max size (cm)
12 1	Max Relief (cm)	00				Max Relief (cm)			(
0	Max Sediment Depth (cm)	10 23				Max Sediment Depth (cm)			
-	Sessile Benthos	% Cover	8			Sessile Benthos	% Cover		
No VIS.	Sediment (circle all: sand) shell mud)	30				Sediment- (circle all: sand shell mud)			
	Macroalgae- Fleshy+Calcareous					Macroalgae- Fleshy+Calcareous			
	:Turf-algae+cyanobacteria (circle all: g r b)					Turf-algae+cyanobacteria (circle all: g r b)			
1	Encrusting Red Algae		\			Encrusting Red Algae			
,	Sponge					Sponge			
	Hydroid					Hydroid		·····	
	Octocoral					Octocoral			
	Stony Coral				·····	Stony Coral			
	Tunicate					Tunicate			
	Bare Hard Substrate					Bare Hard Substrate	İ		
	other					other			••••
		100%					- 40.08%		
	Total Mus	i = 100%	·· J	- C	% cover	Tetal Mus	(= 100%		
	Quad Label: Sample Name or #		List macroalgae List every corat ~and corat cond	colony	or max size (cm)	Quad Label: Sample Name or #		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max siz((cm)
		*****	List every corat	colony	or max size			List every coral colony	or max size
	Sample Name or #	•••* •	List every corat	colony dition(s)	or max size	Sample Name or #		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	<u>% Cove</u>	List every corat ~and corat cond	colony	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	% Cover	List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae-		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # <u>Max Relief (cm)</u> <u>Max Sediment Depth (cm)</u> <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turi- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid Octocorat Stony Coral Tunicate		List every coral colony	or max size
	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other	<u>% Cover</u>	List every corat ~and corat cond	colony dition(s)	or max size	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate other		List every coral colony	or max size

Standard Abbreviations: [/] and abbreviation formats Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Gra

Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Date	<u> </u>	<u> </u>			- () d	12.5		~ 3[]	4	to -	revi	2.0	
		1.1-1			- (JY				/				
Quad Label:	51	🗧 List e	every cora	e Genus al colony ndition(s)	74	Not	-taken Visibilit	1.)	5	v)	List every o	algae Genu: coral colony condition(s)	or ma	over ax size
lax Relief (cm)	120	>	je.			No	Visibilit	Ϋ]	0	\bigcirc				
Tax Sediment Depth (cm)	11/2	ł			- I		Max Sedimen		.5	15				
Sessile Benthos	% Cov	er					Sessile Bent	hos	×ç	over				
circle all: sand shell mud)	901	Ъ					Sediment- (circle all: san	d shell mud)	ig)	l_{0}				
Nacroalgae- Teshy+Calcareous	O						Macroalgae- Fleshy+Calca	reous						
Furf-algae+cyanobacteria circle all: g (r (b))	1						Turf-algae+c (circle all: g	-						
Encrusting Red Algae	0					\downarrow	Encrusting Re	ed Algae						1
Sponge	01					1	Sponge							
lydroid	1						Hydroid					ļ		1
Octocoral	0						Octocoral							
Stony Coral	11	6:	Spido	1	1		Stony Coral							
Funicate	0		Sprob		3		Tunicate					+		
Bare Hard Substrate	5						Bare Hard Su	Ibstrate						1
other WOR M	2			[(
					_		other							
	ļ					}	other							1
Total Mus	t = 100%			<u> </u>			other	Total Mus	l = 100	0%				
Total Mus	t = 1009 5		every cor	ae Genus al colony indition(s)	or ma	ver x size	other Quad L Sample Nam	abel:	a 17	34	List every	algae Genu coral colony condition(s	or m	ax size
	t = 1009 5		every cor	at colony	or ma		Quad L	abel:	a 17	»%	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm)	t = 1009	List List ~and	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c	abel:	a 17	34	List every	coral colony	or m	ax size
Total Mus Quad Label: \} Sample Name or #	50		every cor	at colony	or ma		Quad L Sample Nam Max Relief (c	abel:	257	34	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	50		every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimer Sessile Ben	abel:	2 5 0 15 xc	Dver	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all, sand shell mud Macroalgae-	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimer Sessile Ben	abel: me or # 2 m) nl Depth (cm) thos nd shell mud)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimen Sessile Bent Sediment (circle all: san Macroalgae Fleshy+Calca Turf- algae+c	abel: me or # 2	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud Macroaligae- Fleshy+Calcareous	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimen Sessile Bent Sediment (circle all: san Macroalgae Fleshy+Calca	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimer Sessile Bern Sediment (circle all: san Macroalgae- Fleshy+Calca Turf- algae+c (circle all: c	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sediment Sediment Sediment (circle all: sam Macroalet Fleshy+Calc Fleshy+Calc Circle all: c (circle all: c	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sediment Sessile Bent Sediment (circle all: san Macroalgae- Fleshy+Calca Turf- algae+c (circle all:) Encrusting R Sponge	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sediment Sessile Bent Sediment (circle all: san Macroalgae Fleshy+Calca Turf- algae+c (circle all: Encrusting R Sponge Hydroid	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroaligae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimen Sessile Bent Sedimont (circle all: san Macroalgae Fleshy+Calca Turf- algae+c (circle all: g Encrusting R Sponge Hydroid Octocoral	abel: ne or # 2 m) nt Depth (cm) thos nd shell mud) areous cyanobacteria g (b)	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shell mud) Macroalgae- Fleshy-Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimen Sessile Bent Sediment (circle all: sar Macroalgae Fleshy+Calca Turf- algae+c (circle all: Encrusting R Sponge Hydroid Octocoral Stony Coral	abel: ne or # 2 m) nl Depth (cm) thos nd shell mud) areous cyanobacteria g (b) ted Algae	2 5 0 15 xc	over	List every	coral colony	or m	ax size
Total Mus Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Funicate	50	List List ~and)) ver	every cor	at colony	or ma		Quad L Sample Nam Max Relief (c Max Sedimen Sediment Sediment Circle all: sar Macroalgae Fleshy+Calc Turf- algae +c (circle all: _c Encrusting R Sponge Hydroid Octocoral Stony Coral Funicate	abel: ne or # 2 m) nl Depth (cm) thos nd shell mud) areous cyanobacteria g (b) ted Algae	2 5 0 15 xc	over	List every	coral colony	or m	ax size

and abbreviation formats

A Start

202000

Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... (5) Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Car O

Project Name Date			Data Coll	e / Transect Name ector						.11
	_									-11
Quad Label:	5 40	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: Sample Name or # 35		50	List macroalga List every corat ~and coral con	colony	% 00 or ma (cm)	
Max Relief (cm)	00			Max Relief (cm)	0	0				
Max Sediment Depth (cm)	13 16			Max Sediment Depth (cm)	19	VB				
Sessile Benthos	% Cover			Sessile Benthos	<u>% C</u>	over				
Sediment- (circle all/sand shell mud) Macroalgae-	100-100			Sediment- (circle all: sand/shell mud) Macroalgae-	p.	μ				
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)				Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)				No. 1		
Encrusting Red Algae		·		Encrusting Red Algae						
Sponge			· · · · · · · · · · · · · · · · · · ·	Sponge						
Hydroid			·	Hydroid						
Octocoral			· · · ·	Octocoral					<u> </u>	-
Stony Coral				Stony Coral						
Tunicate Bare Hard Substrate				Tunicate Bare Hard Substrate			, ' }			-
other			1	other						
Total Must	= 100%			Total Must	= 100	0%~	<u> </u>			
	-	List macroalgae Genus %	% cover	97	5	η	List macroalga	e Genus %	% oc	lver
Quad Label: 2	52	List every-coral colony -and coral condition(s)	or max size (cm)	Quad Label:		XX	List every cora ~and coral cor	t colony	or ma (cm)	ax s
Max Relief (cm)	DO	• • • · · · · · · · · · · · · · · · · ·		Max Relief (cm)	2	0				
Max Sediment Depth (cm)	14 13			Max Sediment Depth (cm)	17	12				1
Sessile Benthos	% Cover			Sessile Benthos		over			_	1
Sediment (circle all:sand shell mud) Macroalgae	100 10			Sediment- (circle all (sand shell mud) Macroalgae-	ΙW	14	,, <u></u>			-
Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)				Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)					-	t
Encrusting Red Algae				Encrusting Red Algae .					_	
Sponge		. /		Sponge				Ran har form (Fr. 1944) - Ray (Fr. 1944)		-
Hydroid				Hydroid						+-
Octocoral	!		<u> </u>	Octocorat					-	
Stony Coral	1	·····		Stony Coral					-	-
Tunicate		VN U.Y		Tunicate			· · · · · · · · · · · · · · · · · · ·		-	+
Bare Hard Substrate				Bare Hard Substrate	+-					+
other		1	1	other						

,

Standard Abbreviations: and abbreviation formats

 International condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

 International condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3
 Other-includes: Anemone, Annelid-sessile, Bamacte, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

į

Date					a Col		Transect Name						_
1D: 1317 32	2							4	_				
	Î		List macroalgae Genus %	% 001	ver			7		List macroal	gae Genus %	% cov	/er
Quad Label: /).	5.5	List every coral colony ~and coral condition(s)	or ma (cm)	x size		Quad Label: Sample Name or #	51-		List every or -and coral o	nal colony	or max	
Sample Name OF #		En.TD.					Sampe Name Of #	$\frac{5}{7}$	$\frac{1}{2}$		1.	(cm)	
Max Relief (cm)	0	1	() voh	<u> </u>	771		Max Relief (cm)	3	K	COLAY	121ch	8	
Max Sediment Depth (cm)	3	3	10 ND		l		Max Sediment Depth (cm)	3	3		TOHAV		`?
Sessile Benthos	80	over	(VÛT)	\square	·L		Sessile Benthos	× C					-
Sodiment:	0		04	+	7.	_	Sediment				1		_
(circle all: sand shell mud)	Gφ		84 D + + + >		<u> </u>	2	(circle all: sand shell mud)	- × × -	EP 87	012		22	
Macroalgae VV Fleshy+Calcareous	0	2	o pla		4		Macroalgae_ Fleshy+Calcareous	2	3	07		11	
Turf-algae+cyanobacteria		3	devo	[·	5		Turf-algae+cyanobacteria	1		(γ)	<u> </u>	31	-
(circle all: (9) (1) (0))	┢	$\overrightarrow{}$	- Aria	1 1	N I		(circle all: (g) r (b))		1	<u> </u>		-7/2	-
Encrusting Red Algae	\downarrow		0102	<u> </u>	· · ·		Encrusting Red Algae			<u></u>			_
Sponge	0	3	(vib)		3		Sponge	P	0	0 V	BR.		
	0		: Orde.		5			0	0	Daul no.	1)2	2	
Hydroid	Ť	10	1 coto	1			Hydroid			bev.r	<u> </u>		;
Octocoral		b	Lapto,	<u>[1]</u>			Octocoral	3			L.R.	6	
Stony Coral	Û	2	Ocultural Lepton	alen	n		Stony Coral	3	1	1 Plo H	Lephon	지니는	
Turíante	υ	0	Leptoh		7		Tunianta		1	in all	KANON		l
Tunicate	\mathbf{T}	1 Ň	(lytol)		8		Tunicate	'	0	Alatar	11.21011	· · · ·	
Bare Hard Substrate		∇					Bare Hard Substrate		10	14 Spring	- up	_	(
other	Ų			<u> </u>	11 U 1		other		J	aptar	UPPR	\$ (A)	
bryozoan		1	Cotty.		-	*	BAYD	2	13			in	
0: 135/ 30	a = 10	30%	··· VIDITA	-9	(1D 137/13 Total Mus	st = 100	1%	·		<u> </u>	
Quad Label:		1	List macroalgae Genus %	:			Quad Label:		145		lgae Genus %	2 1	
Sample Name or #	D	125	List every coral colony ~and coral condition(s)	or ma (cm)	x size		Sample Name or #	\sum	: 16.	List every o -and coral	condition(s)	or ma: (cm)	×
<i>(</i>	11	716	Avrain Dich	1	3			Ĺ	1.	Gailty	2 441		
Max Relief (cm)	╉╇	14		<u> </u>			Max Relief (cm)	$+\frac{9}{1}$		Dist		- <u> -</u>	-
Max Sediment Depth (om)		1.5	<u>a</u> lla	1	,		Max Sediment Depth (cm)	1.1	11	MONY		2.	
Sessile Benthos	% (Cover	07 033,	19			Sessile Benthos	<u>% C</u>	over				
Sediment- (circle all: sand shell mud].]!	110	(re	-11			Sediment- (circle all: sand (shell mud	1 38	100		OA.		
Macroalgae	n.	10	N2 1				Macroalgae	12	ΪΛ		ON B	-	-
Fleshy+Calcareous Turf-algae+cyanobacteria		19					Fleshy+Calcareous Turf-algae+cyanobacteria	12	<u> </u>		: ,	2	
(circle all: g (r) b)		V	11	<u> </u>			(circle all: $(g)(r)(b)$)			OR	LV_	L :	
Encrusting Red Algae	1		DR THEIRS	IX	37		Encrusting Red Algae .	15	11		Un		
614	5	1.	VITE UP OR	K	LIK	Ą	<u> </u>	N	10	1 NR	())2	· I.	
Sponge	X K	th	1.000			1	Sponge		<u> </u>	1.R		- HE	-
Hydroid	14	$\frac{10}{10}$	1. 1. byl.	X			Hydroid		-,0	L	0.	- P	
Octocoral	11	. 5	U, is V	ЦS			Octocorat	12	5	UF	OR	1	_
	1	21	LA Staller	Ľ,			Stony Coral		ß	LP	V-r	115	
Stony Cornt		1				1			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		11-1	X	
Stony Corat	+ i	NI		20									
Stony Coral	(ΝÖ) (, , , , , , , , , , , , , , , , , , ,	30	-		Tunicate	-1-0	() OR	<u> </u>	L	
		<u>) 0</u>) 0		41	-		Tunicate Bare Hard Substrate	15) <u>((</u> [.	ÚK.	6	
Funicate Bare Hard Substrate	11:2) 10) 10 3.6) (, , , , , , , , , , , , , , , , , , ,	_			Bare Hard Substrate	-			ÓK.		
Tunicate Bare Hard Substrate	11:2) 10) 10 315) (, , , , , , , , , , , , , , , , , , ,	41		-		0 1/2			ÖK.		

and the second of the second

meering

Site Name / Transect Name

Data	Col	lect	lor
------	-----	------	-----

Quad Label:	!		List macroalga	Gomes #	14	101	·		- 1	List macroalga	Genue		-
Quad Label: Sample Name or #	0		List macroalga List every cora ~and coral cor	al colony	7 00 or ma (cm)		Quad Label: Sample Name or #		- [List macroalga List every cora ~and coral con	colony	% co or ma (cm)	
Max Relief (cm)	3		NCM				Max Relief (cm)						
Max Sediment Depth (cm)					<u> </u>		Max Sediment Depth (cm)						
Sessile Benthos	<u>% C</u>	over					Sessile Benthos	<u>% Co</u>	ver				
Sediment- (circle all: sand shell mud)	Ø,	Ks.					Sediment- (circle all: sand shell mud)						
Macroalgae- Fleshy+Calcareous	Ž.						Macroalgae- Fleshy+Calcareous						
Turf-algae+cyanobacteria	1		m		2		Turf-algae+cyanobacteria (circle all: g r b)						_
	0		(Nr.		3,12		· · · ·	;					
Encrusting Red Algae	_ <u></u>		IN		14		Encrusting Red Algae	<i>i</i>					
Sponge	<u>P</u>	-			10	· · · ·	Sponge						
Hydroid	3		UK		N N		Hydroid						
Octocoral	$\frac{c}{\lambda}$		1.7		1 ·	<u>t</u>	Octocoral						
Stony Coral	5		ane		214	?	Stony Coral						
Tunicate	1		12-10		3		Tunicate						
Bare Hard Substrate	25		·OK		45	1	Bare Hard Substrate						
				!	5								
	5		nk	\	17		other		<u> </u>			1	
otherSellan	5				<u> </u>		other					1	
	1	9%	6R		U		other Total Musi	= 100	%				
Quad Label:	1	9%	List macroalg	al colony	6 % 00	ver tx size	Total Must	= 100	*	List macroalga List every cora	l colony	or ma	
otherSchlam ConterSchlam Total Must	1	9%	UR List macroalg	al colony	6 % 00		Total Musi	= 100	%		l colony		
Quad Label:	1	3%	List macroalg	al colony	6 % co or ma		Total Must	1 = 100	80	List every cora	l colony	or ma	
Quad Label: Sample Name or #	1	9%	List macroalg	al colony	6 % co or ma		Total Must Quad Label: Sample Name or #	1 = 100	80	List every cora	l colony	or ma	
Other	 = 100	over	List macroalg	al colony	6 % co or ma		Total Must Quad Label: Sample Name or # Max Relief (cm)	= 100		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm)	<u>% C</u>		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae-	<u>% C</u>		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% C</u>		List every cora	l colony	or ma	
otherXIVAN Total Must Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)	 = 100		List macroalg	al colony	6 % co or ma		Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% C</u>		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	<u>% C</u>		List every cora	l colony	or ma	
otherXIVAN Total Must Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)	<u>% C</u>		List every cora	l colony	or ma	x si.
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Music Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae	<u>% C</u>		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge	<u>% C</u>		List every cora	l colony	or ma	
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid	<u>% C</u>		List every cora	l colony	or ma	x siz
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral	<u>% C</u>		List every cora	l colony	or ma	x siz
other	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Musi Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% C</u>		List every cora	l colony	or ma	
otherXIVAN Total Must Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral Tunicate	 = 100		List macroalg	al colony ndition(s)	6 % co or ma		Total Music Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>% C</u>		List every cora	l colony	or ma	x siz

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorq. Lept. Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila; Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cay, P ame, O dir, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index #0.1.2.3 Other induction: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index #0.1.2.3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Project Name	- L ·				_	Transect Name		k VV	\underline{D}
Date 10	12-10	93		Data Coll	lec	tor			
							<u>`</u>		
Quad Label:	5		List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)				List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max siz (cm)
Max Relief (cm)	R	<u>[0]</u>	Dicty Teoto Ving	3 63		Max Relief (cm)	46	leatur leatur	03 5
Max Sediment Depth (cm)	{ }	7	hoto heptilati			Max Sediment Depth (cm)	32	RATUR Devloy	
Sessile Benthos	<u>% ¢</u>	over		8,316			% Cover	Leoko h Deulon	Exig Dr
Sediment. Jawi (circle all sand (shell mud)	- 1	J5	Oculian 19072 V	(cut 2) (m)	7	Toward and Anite and A	60 30	100 V Role V	ag 16
Macroalgae- Fleshy+Calcareous	3	5	1607 V	a)		Macroalgae- Fleshy+Calcareous	23	Hor V LEPTIVY	
	30	G	Derline	3		Turf-algae+cyanobacteria (circle all: g r (b))	32 5,7	ad leptich	
Encrusting Red Algae		U	outin	kay .	7	Encrusting Red Algae	24	Outra Dich la	123
Sponge	t	1	0.47	5		Sponge	$\mathcal{O} \mid [$	Dicty	6
Hydroid	0	$\left(\right)$				Hydroid	011		
Octocoral	١	3	net in			Octocoral	32		
Stony Coral						Stony Coral	1		
Tunicale	D	V				Tunicate	$\hat{\mathcal{U}}$		
Bare Hard Substrate	1	3				Bare Hard Substrate	01		
other	١					other	O		
-							-	**************************************	
Total Must	•			1.01		Total Must	1.1		
Quad Label: 37, Sample Name or #	5	35	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size (cm)		Quad Label: 30	5 30	List macroalgae Genus % List every coral colony -and coral condition(s)	or max si (cm)
Max Relief (cm)	7	3	UNIN	1cm+10:5		Max Relief (cm)	1	Ollining	4
	1 .					Wax rementany			11/1
Max Sediment Depth (cm)			auton antin			Max Sediment Depth (cm)	9	Derlinas	4
Sessile Benthos			reptoh outing	107		Max Sediment Depth (cm) Sessile Benthos	P <u>% Cover</u>	our numps	5
Sessile Benthos Sediment- (circle all (sand (shell mud)	20		reptor or line	107 74		Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud)	C	1	5.
Sessile Benthos Sediment- (circle all/sand (shelt mud) Macroalgae- Fleshy+Calcareous	30 D	15 J	LEPTON OLITY LEPTON OLITY LEPTON OLITY	10 7 7 4 16 5		Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	C 3;	our numps	9 5 9
Sessile Benthos Sediment- (circle all (sand (shelt mud) Macroalgae-	30	15 J	100 outra 100 outra 100 outra 100 outra	10 7 7 4 16 5 (mt) km7	7	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	C	Our Inn Mo auton Ob Dertan lib Dertan lib	9-1-
Sessile Benthos Sediment- (circle all/sand (shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	30 D	15 J	LEPTON OUT	10 7 7 4 16 5 101 km7	7	Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	C 3;	Ourtin pb autin pb Dutin tib Duting Outing	
Sessile Benthos Sediment- (circle all/sand (shelt mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b))	30 D	15 3 7 2 -	LEPTON OUT	10 7 7 4 16 5 101 km7	7	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shelt mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)	C 3;	Ourtings Ourtings Durtings Durting Ourting Ourting Teget	1 1 7-7
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	30 35 5 1 1 1	1537 - U	LEPTON OUT	10 7 7 4 16 5 (mill ku) 2 13 1 m		Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae .	C 3 37 1 2 1	Ourtings Ourtings Durtings Durting Ourting Ourting Teget	1 1 27
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge	30 D	20-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	Lepton Contra Lepton Contra Lepton Contra Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton	10 7 7 4 10 5 10 5 10 12 2010 7 2010 7 10 70	ð	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge	C 3: 37:	Our in ps, and in ps, Dertin	1 1 2 7 7
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	30 35 5 1 1 1	12 2 2 1 0 0	IEDION OLINZ IEDION OLINZ IEDION OLINZ IEDION OLINZ IEDION IEDION IEDION IEDION IEDION IEDION	10 7 7 4 16 5 (mill ku) 2 13 1 m	ð	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacteria (circle all: g r b) Encrusting Red Algae . Sponge Hydroid	C 3 37 1 2 1	Ourtings Ourtings Durtings Durting Ourting Ourting Teget	1 1 27
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	30 35 5 1 1 1	20-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	Lepton outra Lepton outra Lepton Outra Lepton Lepton Daty Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton	10 7 7 4 10 5 10 5 10 12 2010 7 2010 7 10 70	ð	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shelt mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	C 37 37 2 1 2 1 2 1	Our in ps, and in ps, Dertin	1 1 2 7 7
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	30 35 5 1 1 1	257 2 2 2 2 2 2 2	IEDion Ocidina IEDion Ocidina IEDion Ocidina IEDion Upin IEDion Upin IEDion Upin IEDion Upin IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDion IEDION	10 7 7 4 10 5 10 5 10 12 2010 7 2010 7 10 70	ð	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate Bare Hard Substrate	C 3 37 1 2 1	Our in ps, and in ps, Dertin	1 1 2 7 7
Sessile Benthos Sediment- (circle all/sand (shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	30 35 5 1 1 1	1532 A D D D D D D D D D D D D D D D D D D	Lepton outra Lepton outra Lepton Outra Lepton Lepton Daty Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton Lepton	10 7 7 4 10 5 10 5 10 12 2010 7 2010 7 10 70	ð	Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Furf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Funicate	C 37 37 2 1 2 1 2 1	Our in ps, and in ps, Dertin	1 1 2 7 7 1

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarqi Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s). O=other disease(s). B=bleaching. Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Amelid sessile, Bamacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid. Do you what to start here, stretch the hat at and see how it looks?

Project Name			Site Nan	e / Transect Name		ND	
Date			Data Col	lector	<u>0,6</u>	- pv	
<i>(</i> ?)					1		
Quad Label:	AP.	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: A	Y JOK	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
fax Relief (cm)	2			Max Relief (cm)	7		
lax Sediment Depth (cm)	2			Max Sediment Depth (cm)	5	By and rellepto	4
essile Benthos	% Cover	:		Sessile Benthos	% Cover	Puple, Interely	9
ediment- circle all; sand shell mud) facroalgae-	77			Sediment- (circle all: sand) shell mud) Macroalgae-		Purply ality will	6
leshy+Calcareous	0			Fleshy+Calcareous	O_{\perp}	<u>lipto</u>	12
urf-algae+cyanobacteria circle all: g (r)(b))		·		Turf-algae+cyanobacteria (circle all: g (r) (b))	2	unto	31
incrusting Red Algae	2	Depto	7	Encrusting Red Algae		lepto	39
iponge	4	Lepto	16	Sponge	2	, rolaista ×3	
lydroid	\mathcal{O}_{i}	O. robusta	5	Hydroid	\mathcal{O}	Ortobusk	Ľ[
Octocoral	1	O, robusta	2	Octocoral	2	6-10basto X2	5
Stony Coral]	O, ribesta	14	Stony Coral		O. Holdersta	2
Funicate		0. robustax	Б	Tunicate		O tobusta	5
Bare Hard Substrate	2	O.robustax	13	Bare Hard Substrate	2	C. robush	4
otherWOVM	1	O.robusla	4	other WOVM		O. vobush	7
					•		173
						O. robusta	10
Total Musi	= 100%			Total Mus	it = 100%	O. robesta	10
Quad Label: -)	I = 100%	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Total Mus Quad Label:	it = 100%	List macroalgae Genus % List every coral colony -and coral condition(s)	% cover or max size (cm)
Quad Label:	5	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label:	it = 100%	List macroalgae Genus % List every coral colony	or max size
Quad Label:	5 5 7	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label:	9:5	List macroalgae Genus % List every coral colony	or max size (cm)
Quad Label:	5	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm)	3	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label:	5 3 <u>% Cover</u>	List every coral colony -and coral condition(s)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud	3:5 (6 <u>% Cover</u>	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label:	5 3 <u>% Cover</u>	List every coral colony -and coral condition(s) () .1 Ubus(2) () .1 Ubus(2) () .1 Ubus(2)	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment	3:5 (6 <u>% Cover</u>	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all sand shelt mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	5 3 <u>% Cover</u>	List every coral colony -and coral condition(s) () . 1 Ubus (2) () . 1 Ubus (2	or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle al: sand shelt mud Macroalgae	3 (6 % Cover 88	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r, b))	5 3 <u>% Cover</u> 88 0 1 2	List every coral colony -and coral condition(s) () .1 Ubus(d) () .1 Ubus(d) (or max size (cm)	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	3 (0 % Cover (0 () ()	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Total Must Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment Cricke all sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g (r, b)) Encrusting Red Algae Sponge	5 3 <u>% Cover</u> 8% 0 1 2	List every coral colony -and coral condition(s) O. 1 Ubus (2) K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU LUAIK NU	or max size (cm) 12 12 12 12 12 12 12 12 12 12 12 12 12	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud Macroatgae Fleshy+Calcareous Turf: algae+cyanobacteria (circle all: g (c, b))	3 (6 % Cover 88	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all, sand, shell, mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g(r, b)) Encrusting Red Algae	5 3 <u>x Cover</u> 88 0 1 2 2	List every coral colony -and coral condition(s) O. 1 Ubus (2) K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU K LUAIK NU LUAIK NU	or max size (cm) 12 12 12 14 11 14 11 12 14 11 14 11 14 11 14 11 14 11 14 14 11 14 14	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroatgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (b)) Encrusting Red Algae	3 (0 % Cover (0 () ()	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g (r, b)) Encrusting Red Algae Sponge	5 3 <u>% Cover</u> 8% 0 1 2	List every coral colony -and coral condition(s) () .1 Ubus(d) () .1 Ubus(d) (or max size (cm) 12 12 12 12 12 12 12 12 12 12 12 12 12	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g (b) Encrusting Red Algae Sponge	3 (0 % Cover (0 () ()	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label:	5 3 <u>x Cover</u> 88 0 1 2 2	List every coral colony -and coral condition(s) O. 1 Ubus (a ¹⁵) K 12/61 Md K 12/61 M	or max size (cm) 12 12 11 4 11 4 11 4 11 4 11 4 4 11 4 4 11 4 4 4 2 7 4 4	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediments (circle all: sand shell mud) Macroatgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (Lb)) Encrusting Red Algae Sponge Hydroid	3 (0 % Cover (0 () ()	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all (sand shell mud) Macroalgae Fleshy+Calcareous Tuf- algae+cyanobacteria (circle all: g (c, b)) Encrusting Red Algae Sponge Hydroid Octocoral	5 3 <u>x Cover</u> 88 0 1 2 2	List every coral colony -and coral condition(s) O. 1 Ubus (a ¹⁵) K 100005 (a ¹⁵) K 10005 (a ¹⁵) K 1	or max size (cm) 12 12 12 14 11 4 11 4 11 4 4 11 4 4 4 4	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroatgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (b) Encrusting Red Algae Sponge Hydroid Octocoral	3 (0 <u>% Cover</u> 0 (1 1 1	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label:	5 3 <u>x Cover</u> 88 0 1 2 2	List every coral colony and coral condition(s) O. 1 Ubus (d) K lepto V. day pto V. day p	or max size (cm) 12 12 12 12 14 11 4 11 4 11 4 4 4 4 7 4 4 7 4 4 7 4 4 7 4 8	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroatgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	3 (0 % Cover (0 () ()	List macroalgae Genus % List every coral colony -and coral condition(s)	or max size (cm)
Quad Label:	5 3 <u>x Cover</u> 88 0 1 2 2	List every coral colony -and coral condition(s) O. 1 Ubusta C. 1 Ubusta M. 1 Lepto - M. 1 - M. 1	or max size (cm) 12 12 12 11 4 11 4 11 4 11 4 11 4 11 4	Quad Label: Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all: sand shelt mud) Macroatgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g (_b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	3 6 % Cover % Cover % 0 1 1 1 1 1 1 1 1	List macroalgae Genus % List every coral colony -and coral condition(s) Por pla unit Por pla un	or max size (cm)

Total Must = 100%

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarq... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int...

Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Moltusca-sessile, Seagrass, Zoanthid.

DIVC Elas

Project Name	4	<u> </u>			Name / Transect Name	<u> </u>	10	
<u>Date(d∕⊇</u>	<u>Z</u>	\mathcal{O}^{c}	>	Data	Collector RA			120
	$\frac{1}{1}$			and lar				
Quad Label:		5	List macroalgae Gen List every coral color ~and coral condition	iy or max s (s) (cm)	size Quad Label: Sample Name or #	1) 15	List macroalgae Gen List every coral colon ~and coral condition(y or max size
fax Relief (cm)			18/11/ 10/v	<u> </u>	Max Relief (cm)	<u>'5</u> D	HOD HI COTI	V 35 3
lax Sediment Depth (cm)	1	ل ا	Man Rota	HQ 7	Max Sediment Depth (cr	m) 2 4	401074	63
essile Benthos		over	Replay Lipz	121	Sessile Benthos	% Cover	1 Rota V	1/1) 2.0
Sediment- circle all sand shell mud) Aacroalgae-	<u>74</u> "	86	LEDTUV 1997		Sediment- (circle all: sand) shell m Macroalgae	ud) 7D.94	+e/e5/0	1 12
leshy+Calcareous		3	1907	010	Fleshy+Calcareous	D	(10) V	V: 3
urf-algae+cyanobaoteria circle all: g r (b,)		25		11 3	6 Turf-algae+cyanobacter <u>y</u> (circle all: g r (b/)	^{ria} JS	12ptz	V 2
ncrusting Red Algae				1 V 1	Encrusting Red Algae	0	·	·
ponge	-				Sponge	V		
lydroid			₩.J	<u> </u>	3 Hydroid			·
Octocorat	0	Ø			Octocorat	32		
Stony Coral					Stony Coral		·	
unicate					Tunicate			
are Hard Substrate					Bare Hard Substrate			
ther			·		other	0		
							·	
Total Mus	= 10	0%				Must = 100%		
Quad Label: A		K	List macroalgae Gen List every coral color ~and coral condition	y ocynax's		30 3	List macroalgae Gen List every coral colon ~and coral condition(y or max siz
Max Relief (cm)	ن ان		4010 110	<u>v 35</u>	Max Relief (cm)	00	1911 6/11	
		2/ 1	1.1012 ° i i		Max Sediment Depth (c	$(f \cdot f)$	1207,7	3 3
Aax Sediment Depth (cm)	Ş	14	ADTANI			m) 3:2		<u>_</u>
Sessile Benthos		over	Horn V Horn V Horp V	3	35 Sessile Benthos	<u>% Cover</u>	1497	6V 3
Sessile Benthos Sediment- circle all (sand shell mud)		over	$\frac{1}{1} \frac{1}{2} \frac{1}$	30	Sessile Benthos Sediment- (circle all:(san)) (shell-m	<u>% Cover</u>		5V 3
Max Sediment Depth (cm) Sessile Benthos Sediment- circle all sand shell mud) Macroalgæ- Fleshy+Calcareous		9	HOTEN HOTEN HOTEN HOTEN HOTEN HOTEN	30 30 30 30 30 30 30 10 	Sessile Benthos Sediment- (circle all:(san)d (shell-m Macroalgae- Fleshy+Calcareous	<u>* Cover</u> iud) 87.97	[4]	ьV <u>3</u>
Sessile Benthos Sediment- circle all sand shell mud) Macroalgæ- Teshy+Calcareous furf- algæe+cyanobacteria		۹.	$\frac{1}{1} \frac{1}{2} \frac{1}$	30 30 30 30 30 30 30 10 	Sessile Benthos Sediment- (circle all:(san)t (shell-m Macroalgae-	<u>* Cover</u> iud) 87.97	[ii]	ыV <u>3</u>
Sessile Benthos Sediment- circle all/sand shell mud) Aacroalgae- leshy+Calcareous urf-algae+cyanobacteria circle all: g r (b/)		9	HOTEN HOTEN HOTEN HOTEN HOTEN HOTEN	30 30 30 30 30 30 30 10 	Sessile Benthos Sediment- (circle all:(san)d (shell-n Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacte	<u>% Cover</u> iūd) &7:197		
Sessile Benthos Sediment- circle all/sand shell mud) Macroalgæe- Teshy+Calcareous furf- algae+cyanobacteria circle all: g r (b/) Encrusting Red Algae		9	HOTEN HOTEN HOTEN HOTEN HOTEN HOTEN	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all:(san) (shell-m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b	<u>% Cover</u> iūd) &7:197	1.ÿ}	
Sediment- Sediment- Circle all (sand shell mud) Aacroalgae- Teshy+Calcareous Turf-algae+cyanobacteria Circle all: g r (b/) Encrusting Red Algae Sponge	91	S 3	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all:(san)t (shell-n Macroalgae- Fleshy+Calcareous Turt- algae+cyanobacte (circle all: g r b) Encrusting Red Algae	<u>* Cover</u> <u>iud</u>) 87:197 sria	1.ÿ}	
iessile Benthos iediment- circle all (sand shell mud) facroalgae- iteshy+Calcareous urf-algae+cyanobacteria circle all: g r (b)) incrusting Red Algae sponge		9	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all: (san) (shell-in Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) Encrusting Red Algae Sponge	<u>% Cover</u> iūd) &7:197		
Section of the sectio	91	S 3	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all: San)t Shell-m Macroalgae- Fleshy+Calcareous Turf- algae + cyanobacte (circle all: g r b Encrusting Red Algae Sponge Hydroid	<u>* Cover</u> <u>iud</u>) 87:197 sria		
iediment- circle all (sand shell mud) Acroalgae- leshy+Calcareous urf- algae+cyanobacteria circle all: g r (b/) incrusting Red Algae Sponge lydroid Octocoral Stony Coral	91	S 3	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all: (san)) (shell-m Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b Encrusting Red Algae Sponge Hydroid Octocoral	<u>* Cover</u> <u>iud</u>) 87.197	1.j	
Sessile Benthos Sediment- circle all (sand shell mud) Aacroalgae- teshy+Calcareous furf-algae+cyanobacteria circle all: g r (b) Encrusting Red Algae Sponge tydroid Dctocoral Stony Coral Funicate	91	S 3	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all:(san)) (shell-m Macroalgae- Fleshy+Calcareous Turl- algae+cyanobacte (circle all: g r b Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	<u>* Cover</u> <u>iud</u>) 87:197 sria 1 3		
Sessile Benthos Sediment- circle all:(sand shell mud) Macroalgae-	91	S 3	1407 10 V 1407 10 V	3 30 30 30 30 30 30 30 30 30	Sessile Benthos Sediment- (circle all: (san)d (shell-in Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacte (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	<u>* Cover</u> <u>iud</u>) 87.197		

Standard Abbreviations: and abbreviation formats

.

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Ptexaurella=Plla, Pseudoptexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bteaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

• '

Site Name / Transect Name

Data Collector

Quad Label:	12	List macroalgae Genus %		٦	Quad Labol: ()	Quad Label: 45	Quad Labol: () [List macroalgae Genus %
Sample Name or #	11	List every coral colony ~and corat condition(s)	or max size (cm)		Sample Name or #		
Max Relief (cm)	83	leptu	15		Max Relief (cm)	Max Relief (cm) 5	Max Relief (cm) 5 100V
Max Sediment Depth (cm)	3		8		Max Sediment Depth (cm)	Max Sediment Depth (cm)	Max Sediment Depth (cm)
Sessile Benthos	% Cover		24		Sessile Benthos	Sessile Benthos % Cover	Sessile Benthos % Cover
Sediment- (circle all: sand shell mud)	94		10		Sediment- (circle all: sand)(shell) mud)		
Macroalgae- Fleshy+Calcareous	· · · ·		U U		Macroalgae- Fleshy+Calcareous	Macroalgae-	Macroalgae-
Turf-algae+cyanobacteria	:		115	1	Turf-algae+cyanobacteria (circle all: g r b))	Turl-algae+cyanobacteria	Turf-algae+cyanobacteria
(circle all: g r b) Encrusting Red Algae			3		Encrusting Red Algae		100001
	1	-					Delty
Sponge	1			1	Sponge		
Hydroid	61			-	<u>Hydroid</u>	5	5
Octocoral		·			Octocoral	Octocorat	Octocorat
Stony Coral					Stony Coral	Stony Coral	Stony Corat
Tunicate					Tunicate	Tunicate	Tunicate
Bare Hard Substrate	1				Bare Hard Substrate	Bare Hard Substrate	Bare Hard Substrate
other		·			other	other	other
Total Must	= 100%					Total Must = 100%	List macroalgae Genus
Quad Label: Sample Name or #		List macroalgae Genus 9 List every coral colony ~and coral condition(s)	or max size (cm)		Quad Label: Sample Name or #		Quad Label: List every corat colony
Max Relief (cm)	Ē		10 C		Max Relief (cm)	Max Relief (cm)	Max Relief (cm)
Max Sediment Depth (cm)					Max Sediment Depth (cm)	Max Sediment Depth (cm)	Max Sediment Depth (cm)
Sessile Benthos	% Cover		a thu Santa a	•	Sessile Benthos	Sessile Benthos % Cover	Sessile Benthos <u>% Cover</u>
Sediment- (circle all: sand shell mud)				•	Sediment- (circle all; sand_shell_mud)		
Macroalgae- Fleshy+Calcareous	1				Macroalgae- Fleshy+Calcareous	Macroalgae-	Macroalgae-
Turf- algae+cyanobacteria	,				Turf-algae+cyanobacteria (circle all: g r b)	Turt- algae+cyanobacteria	Turf- algae+cyanobacteria
(circle all: g r b)				-			
Encrusting Red Algae	i	3		•	Encrusting Red Algae		
Sponge	<u>-</u>		_		Sponge		1
Hydroid	<u> </u>					Hydroid	Hydroid
Octocoral	-				Octocoral	Octocoral	Octocoral
Stony Coral				-	Stony Coral	Stony Coral	Stony Corat
Tunicate				-	Tunicate	Funicate	
Bare Hard Substrate	1				Bare Hard Substrate		
other				-	other	other	other
						i	i i
Total Mar	st = 100%				Total Mus	Total Must = 100%	Total Must = 100%

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sard Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Psp! Stony Coral; Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition; W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

Date

Project Na Date Quad Lat Sample Name of Max Relief (cm) Max Sediment D Sessile Bentho Sediment (circle all sand Macroalgae- Fleshy+Calcarex Turf-algae+cyar (circle all: g of Encrusting Red.	10/2 bel: 7: 1 bepth (cm) <u>s</u> <u>shell mud)</u>		List macroalgae Genus % List every coral colony -and coral condition(s)	Data Coll % cover or max size (cm)	Quad Label:	A	51.717	ist macroalgae ist every coral and coral conc	colony	or max	ж ж
Quad Lak Sample Name of Max Relief (cm) Max Sediment D Sessile Bentho Sediment (circle all sand Macroalgae- Flesty+Calcaree Turf- algae+cyar (circle all: g	bel: 2: Depth (cm) shell mud)	2 2 2 2 2 1	List every coral colony -and coral condition(s)	% cover or max size (cm)	Quad Label:	, Ę	51.717	ist every coral	colony	or max	эт 1917 с
Sample Name of Max Relief (cm) Max Sediment D Sediment (circle all sand Macroalgae- Flesty+Calcarex Turf-algae+cyan (circle all: g of	Depth (cm)	404 84 80 80 80 80 80 80 80 80 80 80 80 80 80	List every coral colony -and coral condition(s)	or max size (cm)	Sample Name or #		51.717	ist every coral	colony	or max	শ size
Max Relief (cm) Max Sediment D Sessile Bentho Sediment (circle all sand Macroalgae- Fleshy+Calcarec Turf- algae+cyar (circle all: g	Depth (cm)	0 D	GTON A Part Lupt								54.C
Sessile Bentho Sediment (circle all sand Macroalgae- Fleshy+Calcared Turf-algae+cyar (circle all: g	shell mud)	0 D	a TTUTN I	18 8	Max Relief (cm)	C	0			(cm)	-
Sediment (circle all sand Macroalgae- Fleshy+Calcared Turf-algae+cyan (circle all: g	shell mud)	0 D	Rondalinghhat	···· ···	Max Sediment Depth (cm)	8	3				
(circle all sang/ Macroalgae- Fleshy+Calcared Turf-algae+cyar (circle all: g		9396		78	Sessile Benthos	_	<u>over</u>	up 1	esto	32 3	30
Fleshy+Calcarec Turf-algae+cyar (circle all: g (ous		Frankleum	5	Sediment (circle all: sand shell mud)		199	Lepil	epto.	372	261
(circle all: g	nahadaria	00	THANKLUM		Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria	()	0	Lept T	Hanidu	10	3
Encrusting Red			Lepto -	38	(oircle alt: g r b)	۱) .,	16	·			
	Algae	$\frac{1}{2}$	partitionideum	16	Encrusting Red Algae	.) Т.	$\left \begin{array}{c} 0 \\ \end{array} \right $				
		10	King I	50	Sponge	\bigcirc	10			, 	
Hydroid			Thanidum	17	Hydroid	() 19	- <u>)</u> [·	
Octocoral		50	Titanidum		Octocoral	. inc. M					(
Stony Coral			Titaniduum	6	Stony Coral	$\frac{0}{6}$	0		·		
Tunicate Bare Hard Subs	trate	2.2.	Tanduim	4	Tunicate Bare Hard Substrate	v ')	0				
other		5 (1	Tranidium	10	other	_)	Ć	h		·	
							- 1			1	
	Total Must	-= 100%			Tötat Mus	t = 1(
Quad La		577	List macroalgae Genus % List every coral colony zand coral condition(s)	6 % cover or max size (cm)	Quad Label: 3	20		List macroalga List every coral ~and coral con	l colony	% cov or max (cm)	
Max Relief (cm))	00	Giora	22	Max Relief (cm)	Ċ			Dichy		1
Max Sediment (55	Lepte	34	Max Sediment Depth (cm)	4					
Sessile Bentho	<u> </u>	<u>% Cover</u>	lépte	36	Sessile Benthos		<u>Cover</u>			ļ	{ }
Sediment ² (circle all; sand Macroalgae-	shell mud)	129	Leptor	20	Sediment- (circle all: sand, shell mud) Macroalgae	73	44			ļ	
Fleshy+Calcare Turf- algae+cya		$\frac{9}{5}$	Titérridenm	11	Fleshy+Calcareous Turf- algae+cyanobacteria	Ŵ			<u> </u>		
(circle all: g		0.0	Lepic Data		(circle all: g r (b))	N N	10		1	<u>.</u>	
Encrusting Red	l Algae	100	THANH	aeun 🕖	Encrusting Red Algae	N N	$\frac{0}{10}$	k	<u> </u>	-)
Sponge		010	¥*.	· · · · ·	Sponge	V D	0		(AV		3
Hydroid Octocorat			1		Hydroid Octocoral	2	2		Len V	1	
Stony Coral		00			Stony Coral)	()	lephi	1.5	35	1
Tunicate		O O	\mathbf{X}		Tunicate	Ø	6	R		2	
Bare Hard Sub	ostrate	CQ			Bare Hard Substrate	Ø	U				
other					other				1		
	Total Me	st = 100%			Total Mu	st =	100%			{	
Standard Abbn	eviations:	Macroald	ae: Pool to Genus = Genu	or Genus: Avra	Bryopsis, Bryothamnion, Caul	. Cod	ti, Dasy	a, Dasycladus,	Grac, Hali,	Hypn.	Sarg
and abbreviation	on ronnats	Stony Co	ral: Genus species of each	h colony = G spe	pt, Plex except Pseudopterog A cer, A aga, C nat, M ann, N	l cav	, P ame	, O dif, S rad, S	<u>ia, eseudor</u> Sisid <u>, S</u> ibou	<u>S hya</u>	Si
5	Poly	Corollog	dition M-white diseasofs	1 Orothor diego	solst Bableaching Coral Store	e Ind		1 2 3	- 11 m	(Y) (r.
5	al F	DOJ M	CUICY MOD	g top	e. Bryozoan, Millopora sp. Mol manuficture port (U.)	<u></u>		rix re	1100	11	Ŀ.Ą

	2	· .		
۰.		2		
-	1	4	,	
~	1	13		

Site Name / Transect Name

Date

Data Collector

over ax size Quad Label: / List macroalgae Genus % /% cover List every coral colony / or max size
Sample Name or # -and coral condition(s) (cm)
Max Relief (cm)
Max Sediment Depts (cm)
Sessile Benthos % Cover
(circle all: sand (shell)mud)
Macroalgae Fleshy+Calcareous
Turf-algae+cyanobacteria (circle all: g r b)
Encrusting Red Algae
Sponge
Hydroid
Octocoral
Stony Corat
Bare Hard Substrate5
other
Total Must = 100%
bover dax size Quad Label: Sample Name or # List macroalgae Genus % % cover List every obral colony comparison control (control) Cover Cover List macroalgae Genus % % cover List every obral colony comparison control (control) Cover C
Description Description Max Relief (cm) Max Relief (cm)
Description Description Max Relief (cm) Max Sediment Depth (cm)
Description Description Max Relief (cm) Max Relief (cm) Max Sediment Depth (cm) % Cover
Display Quad Label: Sample Name or # List every coral colony -and coral condition(s) or max siz (cm) Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos % Cover Sediment- (circle all: sand shell mud)
Max size Quad Label: List every obral colony -and coral condition(s) or max size 1 Max Relief (cm) Max Sediment Depth (cm) Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous
Distribution Quad Label: Sample Name or # List every obral colony -and coral condition(s) or max siz (cm) Max Relief (cm) Max Sediment Depth (cm) Image: Colored state
Max size Quad Label: List every obral colony or max size 1 Sample Name or # -and coral condition(s) (cm) 1 Max Relief (cm) -and coral condition(s) (cm) Max Sediment Depth (cm)
Description Description Max size Sample Name or # Max Relief (cm) -and coral condition(s) Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r b)
Description Descrip Descrip Descrip De
Max size Quad Label: List every obral colony or max size Sample Name or # -and coral condition(s) (cm) Max Relief (cm) -and coral condition(s) (cm) Max Sediment Depth (cm)
Max size Quad Label: List every obral colony or max size Sample Name or # -and coral condition(s) or max size Max Relief (cm) -and coral condition(s) (cm) Max Sediment Depth (cm)
Data size Quad Label: List every obral colony or max size Sample Name or # -and coral condition(s) or max size Max Relief (cm) -and coral condition(s) (cm) Max Sediment Depth (cm)
hax size QUAC LADEI: List every obral colony -and coral condition(s) or max size Max Relief (cm) Max Sediment Depth (cm) Max Sediment Depth (cm) Image: Color of the second seco
Max size Quad Label: List every obral colony or max size 1 Sample Name or # -and coral condition(s) or max size Max Relief (cm) Max Sediment Depth (cm) -and coral condition(s) or max size Sessile Benthos % Cover

Standard Abbreviations: and abbreviation formats Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sargi Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes; Anemone, Annelid-sessile, Barnade, Bryozoan, Millepora, sp., Molfusca-sessile, Seagrass, Zoanthid.

7

Project Name	1		Site Name / 1	Transect Name		Ņ	
Date 10 20	103		Data Collect				UNKI
							4
Quad Label:	Ð	List macroalgae Genus % List every coral colony ~and coral condition(s)	or max size	Quad Label:	•)	Lis	st macroalgae Genus 9 st every coral colony and coral condition(s)
Max Relief (cm)	11			Max Relief (cm)	15_	_	POTAL
Aax Sediment Depth (cm)	7		ħ	Max Sediment Depth (cm)	5		Cato
essile Benthos	% Cover		S	Sessile Benthos	% Cover	F.	and Orlang
ediment- incle all:(sand (shell mud)	95			Sediment- (circle all: sand/shell mud)	(-D		1) O W AND
tacroalgae- Teshy+Calcareous	2		A	Macroaigae- Fleshy+Calcareous	0		" Ouring
furf-algae+cyanobacteria circle all: g r b)	0			Turl-algae+cyanobacteria (circle all: g r (b))	5		
norusting Red Algae	U			Encrusting Red Algae	Ŭ.		
<u> </u>					3		
Sponge	$\langle \rangle$			Sponge	Õ		
lydroid	 			Hydroid	1		<u></u>
Octocoral	<u> </u>			Octocoral	1		
Stony Coral	())			Stony Coral	$\frac{1}{0}$		
Tunicate	1		1	Tunicate	27		
Bare Hard Substrate	<i>F</i>		<u> </u>	Bare Hard Substrate	- 1		
other	1			other <u>585 mines</u>	<u></u>	·····-	
Total Must	= 100%			Total Must	= 100%	(?)	
	T	List macroalgae Genus %			10	List macroal	gae Genus
Quad Label: Sample Name or #	J	List every coral colony ~and coral condition(s)		Quad Label:	120	List every o ~and coral	oral colony condition(s)
Max Relief (cm)	- المتضبع 			Max Relief (cm)	15	Sweets	OW
Max Sediment Depth (cm)	15			Max Sediment Depth (cm)	6		*
Sessile Benthos			,				
	% Cover			<u>Sessile Benthos</u>	% Cover	Sain	
Sediment- (circle all: sand shell mud)	<u>% Cover</u> 9			Sediment- (circle all; sand shell mud)	60	Sarg	
Sediment- (circle all; sand_shell_mud) Macroalgae- Fleshy+Calcareous				Sediment- (circle all: send shell mud) Macroalgae Fleshy+Calcareous	<u> </u>	Sary	
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria	97			Sediment- (circle all: send shell)mud) Macroalgae	60 A 3		
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b))	97)			Sediment- (circle all: send, shell)nud) Macroalgae Fleshy+Cakareous Turf- algae+cyanobacteria	60 D	59.9	
Sediment- (circle all: Sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae	97			Sediment- (circle all: sand shell)mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (6)) Encrusting Red Algae	60 A 3	5019	
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge	97) 12 12 12			Sediment- (circle all: send shell)mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (6)) Encrusting Red Algae . Sponge	60 A 3	<u>Saig</u>	
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid	97			Sediment- (circle all: sand shell)mud) Macroalgae Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (6)) Encrusting Red Algae	60 72 3 3 1	<u>Sary</u>	
Sediment- (circle all; sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	9 1 1 1 2 2 0			Sediment- (circle all: send shell)mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (6)) Encrusting Red Algae Sponge Hydroid Octocoral	60 72 3 3 1	Sary	
Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral	9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Sediment- (circle all: send, shell)mud) Macroalgae Fleshy+Calcareous Turf- algae+cryanobacteria (circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Coral	60 7233712010		
Sediment- (circle all: Sand shell mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Sediment- (circle all: sand_shell)mud) Macroalgae- Fleshy+Calcareous Turf-algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Coral Funicate	60 12331-20-026		
Sediment- (circle all_sand_shell_mud) Macroalgaë- Fleshy+Calcareous Tuf-algae+cyanobacteria (circle all: g r b) Encrusting Red Algae Sponge Hydroid Octocorat	9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Sediment- (circle all: send, shell)mud) Macroalgae Fleshy+Calcareous Turf- algae+cryanobacteria (circle all: g r (b)) Encrusting Red Algae . Sponge Hydroid Octocoral Stony Coral	60 72 3 3 1		

tandard Abbreviations: and abbreviation formats

.

Macroalqae; Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octooorad: Genus of each colony = Genu; Gorg, Lept, Plex... except Pseudoplerogorgia=Pspt, Plexaurella=Plla, Pseudoplexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition; W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes; Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

1.7

Date

Site Name / Transect Name

JSACE

5

Data Collector

uad Label:)	List macroalgae Genus 7 List every coral colony	or max size	Quad Label:	75	List macroalgae Genus % List every coral colony	% cover or max size
ample Name or #	$\overline{\mathbf{v}}$	~and coral condition(s)	(cm)	Sample Name or #	v.)	~and coral condition(s)	(cm)
ax Relief (cm)	5	LEPTU	60	Max Relief (cm)	15	OR	1 1
ax Sediment Depth (cm)	3	Sain	5	Max Sediment Depth (cm)	10		
ssile Benthos	% Cover			Sessile Benthos	% Cover		
diment- incle all sand shell mud)	5			Sediment- (circle all; sand shell mud)	96		
acroalgae- eshy+Calcareous	5			Macroalgae Fleshy+Calcareous	0		1
rf-algae+cyanobacteria rcle all: g r (b))	3.			Turf-algae+cyanobacteria (circle all: g r (b))	ð		
crusting Red Algae	2			Encrusting Red Algae	()		
	1				D		<u> </u>
ponge	$\overline{(1)}$			Sponge	\overline{O}	2	
ydroid				Hydroid	\overline{D}		
ctocoral	\overline{O}			Octocoral	$\frac{1}{1}$		
lony Coral	15			Stony Coral	$\frac{1}{O}$	·	
unicate 511	XT			Tunicate			
are Hard Substrate 54	64			Bare Hard Substrate	\mathcal{O}		
her Br. /2_	2			other SPS where			
Total Mus	- 100%				- 100%		
	- 100%	List macroalgae Genus	K % cower			List macroalgae Genus %	
ample Name or #	5	List every coral colony ~and coral condition(s)	or max size	Quad Label:	1.7	List every corat colony ~and coral condition(s)	or max siz (cm)
	O,	1-207	32		0	1002	60
lax Refief (cm)	6	Sach	γ	Max Relief (cm)	5	5a.4	(\dot{v})
lax Sediment Depth (cm) essile Benthos	% Cover	"12724"	<i>t</i>	Max Sediment Depth (cm) Sessile Benthos	% Cover	<i>f======_</i>	
ediment-	5	1000,10	<u> </u>	Sediment-			
sircle all:(sand_shell) mud) lacroalgae-	2			(circle all: sand shell mud) Macroalgae-	10		
leshy+Calcareous urf-algae+cyanobacteria		······		Fleshy+Calcareous Turf- algae+cyanobacteria	1		
circle all: g r b)	5			(circle all: g r (b))	54	<u> </u>	
ncrusting Red Algae	<u> </u>			Encrusting Red Algae .	15		_
ponge	0			Sponge	O		
lydroid				Hydroid	6		
Octocoral				Oclocoral	2	· · · · · · · · · · · · · · · · · · ·	
Stony Coral	\mathcal{O}			Stony Coral	\mathcal{O}		
unicate	0			Tunicate	3		
are Hard Substrate	.7			Bare Hard Substrate	15		
			<u> </u>				
ses men	2			olber-	$ \mathcal{O} $		
her Ses men. Bigor	2			other			

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral; Genus of each colony = Genu: Gorg, Lept, Plex ... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Corat: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3 Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.

Date Infa	Anc		Data Colle	/ Transect Name		USACE SH	
	05		Data Cull			ADE	
Quad Label:	7,5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)	Quad Label: 2		List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)
ax Relief (cm)	0		·····	Max Relief (cm)	8		
fax Sediment Depth (cm)	4			Max Sediment Depth (cm)	5		
iessile Benthos	% Cover			Sessile Benthos	% Cover		
Sediment- circle all: sand shell mud)	90			Sediment- (circle all: sand shell mud)	94		
Aacroalgae- Teshy+Calcareous	0			Macroalgae- Fleshy+Calcareous	\bigcirc	O. robustax	7
urf-algae+cyanobacteria circle all: g r b)	\bigcirc			Turl-algae+cyanobacteria (circle all: g (r)b)	2	·	
Encrusting Red Algae	0	() robusta	2	Encrusting Red Algae	0		
Sponge	\bigcirc			Sponge	0		
lydroid	0			Hydroid	\mathcal{O}		
Octocoral	0			Octocoral	\bigcirc		
Stony Coral	l			Stony Coral			
Funicate	0			Tunicate	O		
Bare Hard Substrate	0			Bare Hard Substrate	L		
other				otherWOTM	2		
Total Must	· · ·	List macroalgae Genus	6 % cover	Total Muşt	= 100%	List macroalgae Genus %	% cover
Quad Label: 2	25	List every coral colony	or max size	Quad Label: ~	\sim	List every coral colony	or max size
		~and corat condition(s)	(cm)	Sample Name or # 4	$\underline{\mathcal{O}}$	-and coral condition(s)	(cm)
Max Relief (cm)	21	~and coral condition(s)			10		
		-and coral condition(s)		Sample Name or #	10		
Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	21 3 <u>% Cover</u>			Sample Name or # 4 Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos	5 <u>% Cover</u>	-and coral condition(s)	
Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shett mud)	21 3 <u>% Cover</u> 89			Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shelf mud)	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous	21 3 <u>% Cover</u> 89			Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Calcareous	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyagobacteria	21 3 <u>% Cover</u> 89		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm)	21 3 <u>% Cover</u> 89		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy + Calcareous Turf- algae + cyanobacteria	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Cakcareous Turf-algae+cyanobacteria (circle all: g (g (b)	21 3 <u>% Cover</u> 89		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos, Sediment (circle all sand shell mud) Macroalgae- Fleshy+Catcareous Turf- algae+cyanobacteria (circle alt: g r (b))	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) <u>Sessile Benthos</u> Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (b) Encrusting Red Algae Sponge	21 3 % cover 89 0 2 1 0		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanotacteria (circle alt: g r (b)) Encrusting Red Algae	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: sand shell mud) Macroalgæe- Fleshy+Calcareous Turf- algæe+cyanobacteria (circle all: g () (b) Encrusting Red Algae Sponge Hydroid	21 3 % Cover 89 0 2 1 0		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r (b)) Encrusting Red Algae Sponge	5 <u>% Cover</u> 92	-and coral condition(s)	
Max Sediment Depth (cm) Sessile Benthos Sediment- circle all: sand shell mud) Macroalgæe- Fleshy+Calcareous Turf- algæe+cyanobacteria circle all: g (b) Encrusting Red Algæe Sponge Hydroid Octocorat	21 3 % cover 89 0 2 1 0		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobracteria (circle alt: g r (b)) Encrusting Red Algae Sponge Hydroid	5 <u>% Cover</u> 92	-and coral condition(s)	
Aax Sediment Depth (cm) Sessile Benthos Sediment- circle all: sand shell mud) Aacroalgae- Teshy+Calcareous (urf- algae+cyanobacteria circle all: g (g (b) Encrusting Red Algae Sponge Hydroid Octocoral	21 3 % Cover 89 0 2 1 0		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment (circle all sand shell mud) Macroalgae Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral	5 % Cover 92 0 1 0 0 0 0	-and coral condition(s)	
Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all: sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (g (b) Encrusting Red Algae	21 3 % cover 89 0 2 1 0 1 0 1 0 0 0 1 4		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos, Sediment (circle all sand shell mud) Macroalgae Fleshy + Calcareous Turf- algae + cyanobacteria (circle all: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral	5 % Cover 92 0 1 0 0 0 0	-and coral condition(s)	
Max Sediment Depth (cm) Sessite Benthos Sediment- (circle all: sand shelt mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle all: g (f (b)) Encrusting Red Algae Sponge Hydroid Octocorat Stony Coral Tunicate	21 3 % Cover 89 0 2 1 0 1 0		(cm)	Sample Name or # Max Relief (cm) Max Sediment Depth (cm) Sessile Benthos Sediment- (circle all sand shell mud) Macroalgae- Fleshy+Calcareous Turf- algae+cyanobacteria (circle alt: g r (b)) Encrusting Red Algae Sponge Hydroid Octocoral Stony Coral Tunicate	5 % Cover 92 0 1 0 0 0 0 0 0	-and coral condition(s)	

tandard Abbreviations: nd abbreviation formats

ť

C

0

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... (Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspt Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0 1 2 3

Other-includes: Anemone, Annelid-sessile, Barnacle, Bryozoan, Millepora sp., Mollusca-sessile, Seagrass, Zoanthid.

- Long spine porgy - Sand diver - Echino. - Black gea bass - Toad fish - iraciri

Date Description Date Collector Quad Label: List macroalgae Genus %, % cover or max size and coral condition(s) Quad Label: List macroalgae Genus %, % cover or max size and coral condition(s) Max Relief (cm) 1	Project Name	A/ T	<u> </u>	Site Nam	e / Transect Name	USA	63	2
Club all LaDPI: Y 7. List every condition(s) Club all LaDPI: List every condition(s) List every condition(s) Club all LaDPI: List every condition(s) <thlist conditaladpi:<="" every="" th=""></thlist>	Date a	0-c	264-35	Data Coll				
Max Reliaf (cm) 1 Max Sediment Depth (cm) 8 Settine Benthos	Quad Label:	7,5	List every coral colony	or max size	•	4	List every coral colony	or max size
Sessile Benthos X. Cover Sediment Scover Scover Scover	Max Relief (cm)				Max Relief (cm)	0		
Sediment Sediment Sediment Sediment Sediment Circle att spin (head) V Sediment Sediment Sediment Sponge I Sediment Sediment Sediment Sediment Story Coral O Story Coral Story Coral Sediment Sediment Sediment Story Coral I Ist microaligne Corus % % corver Story Coral Sediment	Max Sediment Depth (cm)	-8		****	Max Sediment Depth (cm)	13		
Circle at spin [heal]madl Y- Macroalspin IDU Macroalspin U Macroalspin IDU Macroalspin U IDU Macroalspin IDU Macroalspin U IDU Macroalspin IDU Macroalspin IDU Macroalspin IDU Macroalspin IDU Circle att (B)(A D) I IDU Macroalspin IDU IDU<	Sessile Benthos	% Cover			Sessile Benthos	% Cover		
Pleaty-Calcancous U Pleaty-Calcancous U Pleaty-Calcancous U Crice all: (B(D, B)) I Frouviling Red Algae O Sponge I Pydroid O Octoocral I Image: Calcancous V Stery Coral O Octoocral I Image: Calcancous V Stery Coral O Other V (Incate V Sample Name or # V Steinert Corpl. U Max Relief (cm) U Max Relief (cm) U Max Sediment Corpl. O Steinert Corpl. O Steinert Corpl. O Max Sediment Corpl. O Circle all: g r b) O Circle all: g r b) O Sponge O Max Relief (cm) U Max Relief (cm) U Max Relief (cm) U Max Relief (cm) U Max Relief (cm) V	Sediment- (circle all: sand shell) mud	85			(circle all: sand)shell)niud)	CO1 (
Carde alt (B(D, B)) I Frozusting Red Algae 0 Sponge 1 Image: Sponge Image: Sponge 1 Image: Sponge Image: Sponge 1 Image: Sponge Image: Start Coral 1 Image: Sponge Image: Sponge 1 Image: Sponge 1 Image: Sponge 1 1 Image: Sponge 1 Image: Sponge 1 1 Image: Sponge: Sponge 1 1 Image: Sponge 1 1 Image: Sponge: Sponge 1 1 1 Image: Sponge 1	Fleshy+Calcareous	D			Fleshy+Calcareous		······	
Sponge 1 Sponge 1 Hydroid 0 1 1 Octocoral 1 1 1 Story Coral 0 1 1 Octocoral 0 1 1 Story Coral 0 1 1 Outcocral 0 1 1 Story Coral 0 1 1 Story Coral 1 1 1 Max Relief (cm) 1 1 1 Max Relief (cm) 1 1 1 Max Sediment Depth (cm) 1 1 1 Sediment 2 1 1 1 1 Sediment 2 1 1 1 1 Sediment 2 1	Turf-algae+cyanobacteria (circle all: (g)(1) (b))							
tydroid 0 Decocoral 1 Decocoral 0 Story Coral 0 Tunicate 0 Bare Hard Substrate 1 Other 1 Other 1 Wich 1 Total Must = 100% Decocoral Outer Bare Hard Substrate O Other Other Other Other Other Total Must = 100% Decocoral Outer Other Other <td>Encrusting Red Algae</td> <td>0</td> <td></td> <td><u> </u></td> <td>Encrusting Red Algae</td> <td></td> <td></td> <td></td>	Encrusting Red Algae	0		<u> </u>	Encrusting Red Algae			
Octocoral I Ipplipting Plan Octocoral I Ipplipting Plan Story Coral O Story Coral O Tunicate O Total Must Plan Bare Hard Substrate Plan O O Other Plan O O Max Relief (cm) Plan Max Sediment Depth (cm) Plan Max Relief (cm) Plan Max Sediment Depth (cm) Plan Max Relief (cm) Plan Max Sediment Depth (cm) Plan Max Relief (cm) Plan Max Sediment Depth (cm) Plan Max Relief (cm) Plan Max Sediment Depth (cm) Plan Max Relief (cm) Plan Plan Plan	Sponge				Sponge			·
Odecoording Image: Constraint of the second sec	Hydroid	0			Hydroid			ļ
Tunicate O Bare Hard Substrate H Bare Hard Substrate H Other	Octocoral		Leptoptero !!!!!	24cm	Octocoral			
Uniticate Uniticate Uniticate Bare Hard Substrate Uniticate Other Uniticate Sample Name or # Other Sessile Benthos Scoveer Sed	Stony Coral	0			Stony Coral			<u> </u>
Gate raid Substrate Image: Substrate Other	Tunicate	0		·	Tunicate			
Image: Section of the time of the t	Bare Hard Substrate	·			Bare Hard Substrate			
Total Must = 100% Total Must = 100% Quad Label: V.S List macroalgae Genus % % cover Sample Name or # V.S Max Relief (cm) H Max Sediment Depth (cm) H Max Sediment Depth (cm) H Sessile Benthos % Cover Sediment (cm) H Macroalgae O Fieshy+Calcareous Y Outcoral O Sponge O Hydroid O Story Coral O Tunicate O Bare Hard Substrate I	other Ve Mitild	7			other			
Total Must = 100% Total Must = 100% Quad Label: V.S List macroalgae Genus % % cover Sample Name or # V.S Max Relief (cm) H Max Sediment Depth (cm) H Max Sediment Depth (cm) H Sessile Benthos % Cover Sediment (cm) H Macroalgae O Fieshy+Calcareous Y Outcoral O Sponge O Hydroid O Story Coral O Tunicate O Bare Hard Substrate I	(on p	-1						
Quad Label: 115 List every coral colony and coral condition(s) or max size (cm) Sample Name or # 14 and coral condition(s) its every coral colony and coral condition(s) or max size (cm) Max Relief (cm) 14 Max Relief (cm) 14 Max Sediment Depth (cm) 14 Max Sediment Depth (cm) 10 Sessile Benthos % Cover Sediment- (circle all: sand shelt much % Cover Sediment- (circle all: sand shelt much 17 Sediment- (circle all: sand shelt much 18 Turf- algae+cyanobacteria (circle all: g r b) 0 Image Coral Coral 18 Sponge 0 Image Coral 14 Image Coral Hydroid 0 Image Coral 18 Image Coral Story Coral 0 Image Coral 1 Image Coral Story Coral 0 Image Coral 1 Image Coral 1 Story Coral 0 Image Coral 1 Image Coral 1 Image Coral 1 Bare Hard Substrate 1 Image Coral 1 Image Coral 1 Image Coral 1 <	Total Mus	t ≑ 100% 			Total Must	= 100%	h:	1.01
Max Sediment Depth (cm) Image: Cover Sessile Benthos % Cover Sessile Benthos % Cover Sessile Benthos % Cover Sediment- (circle all: sand shell much Image: Cover Sediment- (circle all: sand shell much Image: Cover Sediment- (circle all: sand shell much Image: Cover Sediment- (circle all: g r b) Image: Cover Turf- algae+cyanobacteria (circle all: g r b) Image: Cover Sponge Image: Cover Hydroid Image: Cover Stony Coral Image: Cover Turicate Image: Cover Bare Hard Substrate Image: Cover	Quad Label:	12,5	List every coral colony	or max size		10	List every coral colony	or max size
Max Sediment Depth (cm) 1 Sessile Benthos % Cover Sediment % Cover Macroalgae % Fleshy+Calcareous % Turf- algaetcyanobacteria % Q % Sponge % Max Sediment Depth (cm) % Sponge % Max Sediment % Sponge % Max Sediment % Sponge % Max Sediment % Sponge %	Max Relief (cm)				Max Relief (cm)	14		
Sediment- (circle all: sand shell fruch 9 1 Macroalgab Fleshy+Calcareous 0 Sediment- (circle all: sand shell fruch 9 2 Macroalgab Fleshy+Calcareous 0 Turf-algae+cyanobacteria (circle all: g r b) 0 Encrusting Red Algae 0 Sponge 0 Hydroid 0 Octocoral 0 Stony Coral 0 Turicate 0 Bare Hard Substrate 0	Max Sediment Depth (cm)	14			Max Sediment Depth (cm)	10		
Macroalgae 0 Macroalgae 1 Fleshy+Calcareous 0 Fleshy+Calcareous 1 Turf-algae+cyanobacteria 0 1 1 circle all: g r b) 0 1 1 Encrusting Red Algae 0 1 1 1 Sponge 0 1 1 1 1 Hydroid 0 1 1 1 1 Octocorat 0 1 1 1 1 Stony Coral 1 1 1 1 1 1 Bare Hard Substrate 1 1 1 1 1 1		<u>% Cover</u>						
Turf- algae+cyanobacteria (circle all: g r b) 0 1 1 Encrusting Red Algae 0 1 1 1 Sponge 0 1 1 1 1 Hydroid 0 1 1 1 1 1 Octocorat 0 1 1 1 1 1 Stony Coral 1 1 1 1 1 1 1 Bare Hard Substrate 1 <td>(circle all:(sand) shell (mud) Macroalgae</td> <td>97</td> <td></td> <td></td> <td>Macroalgae</td> <td>ga?</td> <td></td> <td></td>	(circle all:(sand) shell (mud) Macroalgae	97			Macroalgae	ga?		
Encrusting Red Algae O Sponge O Hydroid O Octocoral O Stony Coral O Tunicate O Bare Hard Substrate I	Turf-algae+cyanobacteria	\int_{0}^{1}			Turf- algae+cyanobacteria	2	S. CALLAR DIN	NU.
Sponge 0 Sponge 1 Hydroid 0		<u> </u>			000	٩.	100 W 20	or Und
Hydroid O Octocorat O Action A Sp Stony Coral O Tunicate O Bare Hard Substrate I		0				2		
Stony Coral Image: Constraint of the store of the sto	Hydroid	0				6		
Tunicate Tunicate Bare Hard Substrate Bare Hard Substrate	Octocorat	0	Acenaria St	Hem	Octocorat	0		
Tunicate Tunicate Bare Hard Substrate Image: Comparison of the second s	Stony Coral		·····		Stony Coral	<u> </u>	·	
	Tunicate	Ó.			Tunicate	6?		
other	Bare Hard Substrate	ľ			Bare Hard Substrate	L		
	other YErm to Id	1/	· · · · ·		other By O,	PV-		

tandard Abbreviations: and abbreviation formats

1

1

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothammion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Pila, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe: A cer, A aga, C nat, M ann, M cav, P ame, O dif, S rad, S sid, S bou, S hya, S int...

Site Name / Transect Name

Date			Data Col	ied	tor				•
D; 188					10:189				
Quad Label: Sample Name or #	37.5	List macroalgae Genus % List every coral colony ~and coral condition(s)	% oover or max size (cm)		Qued Lebel:	35		% cover or max size (cm)	
Max Relief (cm)	13	fruit roll-op			Max Relief (cm)	10			
Max Sediment Depth (cm)	L	Dicty.			Max Sediment Depth (cm)	3			
Sessile Benthos	% Cover				Sessile Benthos	% Cover			
Sediment-	83				Sediment- (circle all: sand shell (muld)	455			
Macroalgae- Fleshy+Calcareous	ň				Macroalgae- Fleshy+Calcareous				
Turf-algaetcyanobacteria (circle all: (9)(r)(b))	6				Turf-algae+cyanobacteria (circle all: (g, (r) (b))	3			
Encrusting Red Algae	C2				Encrusting Red Algae	5	-		
Sponge	1				Sponge				
Hydroid	<u> </u>				Hydroid	0	- le le sto		
Octocoral	14	Leptoptero	34		Octocoral		Orfain tota In	PHET D	
Stony Coral	1	Ociliia sp	2.cm		Stony Coral	[W. Mr.		
Tunicale	<u>Ò</u>	Oally R. 3 100	KEL	n	Tunicate		<u> </u>		
Bare Hard Substrate		astate birs .	41	A	Bare Hard Substrate	Pr 2 S	6 whini rob.	2 em	504
other by D		ρχ.ψη	pleasu	μı.	otherVCMiHId	3	· 11 regruits	LICVE	X: 3
Slifting 1					BND	3D			+ 2
10 190 Total Mus	t = 100%				Total Mus	t = 100% .			-
Quad Label: Sample Name or #	32,5	List macroalgae Genus % List every coral colony : ~and coral condition(s)	or max size (cm)		Quad Label: Sample Name or #	30	List macroalgae Genus % List every coral colony ~and coral condition(s)	% cover or max size (cm)]
Max Relief (cm)					Max Relief (cm)	12	Diction		
Max Sediment Depth (cm)	Ц				Max Sediment Depth (cm)	.3	L'		
Sessile Benthos	% Cover				<u>Sessile Benthos</u>	% Cover			
Sediment- (circle all: sand shell mud)	80		<u></u>		Sediment: (circle all: sand shell mud)	86			
Fleshy+Calcareous					Macroalgae Fleshy+Calcareous	1	Ortobusta	1	
Turf-algae+cyanob2steria (circle all: g) (circle all: g)	2				Turf-algae+cyanobacteria (circle all:_g(r_b))	5	doad Orobush		
Encrusting Red Algae					Encrusting Red Algae	1	Lepto	25	
Sponge	0				Sponge	1	·		-
Hydroid	0				Hydroid				-
Octocorat	<u>(</u>)	Darma Sp.	11cm	-	Octocoral				
Stony Coral	0	×	22		Stony Coral				-
Tunicate	$\frac{0}{\alpha}$				Tunicate	$\frac{1}{2}$			
Bare Hard Substrate					Bare Hard Substrate	.2			
other	Q			-	other-DVY0702.11			<u> </u>	

Total Must = 100%

Total Must = 100%

Standard Abbreviations: and abbreviation formats

Macroalgae: Pool to Genus = Genu or Genus: Avra, Bryopsis, Bryothamnion, Caul, Codi, Dasya, Dasycladus, Grac, Hali, Hypn, Sarg... Octocoral: Genus of each colony = Genu: Gorg, Lept, Plex... except Pseudopterogorgia=Pspt, Plexaurella=Plla, Pseudoptexaura=Pspl Stony Coral: Genus species of each colony = G spe; A cer, A aga, C nat, M ann, M cav, P ame, O difl, S rad, S sid, S bou, S hya, S int... Coral condition: W=white disease(s), O=other disease(s), B=bleaching, Coral Stress Index # 0, 1, 2, 3 Other-includes: Anemone, Annelid-sessile, Bamacle, Bryozoan, Millepora, sp., Mollusca-sessile, Seagrass, Zoanthid.