

METADATA

Underwater georeferenced photo-transect survey was conducted on September 16-21, 2009 at different sections of the reef flat, reef crest and reef slope in Kubulau, Fiji. For this survey a snorkeler or diver swam over the bottom while taking photos of the benthos at a set height using a standard digital camera and towing a surface float GPS which was logging its track every five seconds. A standard digital compact camera was placed in an underwater housing and fitted with a 16 mm lens which provided a 1.0 m x 1.0 m footprint, at 0.5 m height above the benthos. Horizontal distance between photos was estimated by three fin kicks of the survey diver/snorkeler, which corresponded to a surface distance of approximately 2.0 – 4.0 m. The GPS was placed in a dry-bag and logged its position as it floated at the surface while being towed by the photographer. A total of 9,646 benthic photos were taken. A floating GPS setup connected to the swimmer/diver by a line enabled recording of coordinates of each benthic.

(http://ww2.gpem.uq.edu.au/CRSSIS/publications/GPS_Photo_Transects_for_Benthic_Cover_Manual.pdf).

The 2009 Kubulau, Fiji coral reef benthic and substrate cover data is given in an ArcMap shapefile format and consists of six associated files:

1. fj2009_Kubulau_BenthicData.shp
2. fj2009_Kubulau_BenthicData.dbf
3. fj2009_Kubulau_BenthicData.prj
4. fj2009_Kubulau_BenthicData.sbn
5. fj2009_Kubulau_BenthicData.shx
6. fj2009_Kubulau_BenthicData.sbx

Data in the *.dbf file are in a tabular format where each line corresponds to a one point measurement. The columns for each line give all the associated information for the particular point.

A description of the column header titles is given by Table 1.

Heading	Heading Info
Long	Longitude (decimal degrees)
Lat	Latitude (decimal degrees)
Photo_Name	Filename of photo used in the point classification and cover estimation

MajCat	<p>Major category for substrate type classes</p> <ol style="list-style-type: none"><li>1. Coral (C)<li>2. Soft Coral (SC)<li>3. Macroalgae (MA)<li>4. Seagrass (SG)<li>5. Non-Living Substrate (SU)<li>6. Tape, Wand, Shadow(TWS)<li>7. Overview (OV)
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SubCat	Subcategory for each major category substrate type classes			
	Major category code	CPCE Short description	Sub category code	Description
	C	Coral Dominant	CO	>70 % Coral
	C	Coral and Macro Algae	COMA	>10% Macro Algae
	C	Coral and Seagrass	COSG	>10% Seagrass
	C	Coral and Sand	COSD	>10% Sand
	C	Coral and Rubble	CORU	>10% Rubble
	C	Coral and Reef Matrix	CORM	>10%Reef Matrix
	C	Coral and less Soft Coral	COSC	>10% Soft Coral
	C	Coral live and dead	CODC	>10% dead coral
	SC	Soft Coral Dominant	SC	>70 % Soft Coral
	SC	Soft Coral and Macro Algae	SCMA	>10% Macro Algae
	SC	Soft Coral and Seagrass	SCSG	>10% Seagrass
	SC	Soft Coral and Sand	SCSD	>10% Sand
	SC	Soft Coral and Rubble	SCRU	>10% Rubble
	SC	Soft Coral and Reef Matrix	SCRM	>10%Reef Matrix
	SC	Soft Coral and less Hard Coral	SCHC	>10% Hard Coral
	MA	Macro Algae Dominant	MA	>70 % Macro Algae
	MA	Macro Algae and Seagrass	MASG	>10% Seagrass
	MA	Macro Algae and Sand	MASD	>10% Sand
	MA	Macro Algae and Rubble	MARU	>10% Rubble
	MA	Macro Algae and Reef Matrix	MARM	>10%Reef Matrix
	MA	Macro Algae and dead coral	MADC	>10% dead Coral
	SG	Seagrass Dominant	SG	>70 % Seagrass
	SG	Seagrass and Sand	SGSD	>10% Sand
	SG	Seagrass and Rubble	SGRU	>10% Rubble
	SU	Sand Dominant	SUSD	>70 % Sand
	SU	Rubble Dominant	SURU	>70 % Rubble
	SU	Reef Matrix Dominant	SURM	>70 % Reef Matrix
	SU	Mud/Silt Dominant	SUMS	>70 % Mud/Silt
	SU	Sand/Rubble Dominant	SUSR	> 70% Sand/Rubble
SU	Dead Coral Dominant	SUDC	>70 % Dead Coral	
OV	Overview Coral Dominant	OVCO	>70% cover	
OV	Overview Macro Algae Dominant	OVMA	>70% cover	
OV	Overview Seagrass Dominant	OVSG	>70% cover	
OV	Overview Non Living Substrate	OVSU	>70% cover	
TWS	Tape/Slate/Out of focus/GPS	Tape	Tape/Slate/Out of focus/GPS	
Rugosity	Category used for rugosity measurements: <ol style="list-style-type: none"> 1. Rugosity 1 (R1) – Small fish cannot hide 2. Rugosity 2 (R2) – Small fish could hide 3. Rugosity 3 (R3) – Small fish can hide easily 			