

Supplementary Table 1. Kurskal-Wallis test of Rugosity differences with respect to Habitat.

	Df	X ²	p.value
Habitat	4	66.857	<0.001

Supplementary Table 2. Rugosity value of rubble based on Habitat.

Habitat	Rugosity
Outer reef	0.58458
Channel	0.785993
Inner reef	0.813237
Mangrove	0.736262
Nikko	0.593885

Supplementary Table 3. Pairwise Wilcoxon of Rugosity between groups of Habitat.

	Outer reef	Channel	Inner reef	Mangrove
Channel	<0.001	-	-	-
Inner reef	<0.001	1.000	-	-
Mangrove	0.006	0.247	0.067	-
Nikko	1.000	0.001	<0.001	0.161

Supplementary Table 4. Permutative test on the beta dispersion (permutest.betadisper) of organism composition based on Habitat2 (Channel, Inner reef, Mangrove, Nikko, Outer reef) for phylum, family and Lowest Identifiable OTUs (LIO).

		PHYLUM	FAMILY	LIO
PERMUTEST				
df		4	4	4
F		4.285	8.184	5.995
p		0.004*	0.001*	0.001*
POST-HOC				
Habitat 1	Habitat 2			
Channel	Mangrove	0.667	0.313	0.360
Channel	Inner reef	0.264	0.913	0.955
Channel	Nikko	0.806	0.523	0.318
Channel	Outer reef	0.011*	0.001*	0.011*
Mangrove	Inner reef	0.056	0.197	0.259
Mangrove	Nikko	0.517	0.163	0.106
Mangrove	Outer reef	0.001*	0.001*	0.001*
Inner reef	Nikko	0.525	0.618	0.363
Inner reef	Outer reef	0.040*	0.001*	0.001*
Nikko	Outer reef	0.061	0.038	0.232

Supplementary Table 5. Summary table of distribution of LIO among different taxonomic levels, in number of specimens and percentages.

Taxon	LIO (number of specimens)	% of LIO
Phylum	273	5.5
Class	445	9.0
Subclass	667	13.5
Order	736	15.0
Family	1729	35.1
Genus	839	17.0
Species	234	4.8
Total	4923	

Supplementary Table 6. List of Specimens of Lowest Identifiable OTUs (LIO) which are the main driver of differences among the different Habitats (Channel, Inner reef, Outer reef). Underlined family and phyla were the important driver OTUs based on respective groupings. Ophiactidae (Phylum Echinodermata) was not listed in LIO but was one of the main drivers at family level.

PHYLUM	FAMILY	LIO	TAXONOMIC LEVEL
<u>Arthropoda</u>	<u>Alpheidae</u>	Alpheidae	Family
<u>Arthropoda</u>	<u>Amphipoda</u>	Amphipoda	Order
<u>Annelida</u>	<u>Annelida</u>	Annelida	Phylum
<u>Mollusca</u>	<u>Bivalvia</u>	Bivalvia	Class
<u>Mollusca</u>	<u>Caenogastropoda</u>	Caenogastropoda	Subclass
<u>Arthropoda</u>	Caprellidae	Caprellidae	Family
<u>Arthropoda</u>	<u>Decapoda</u>	Decapoda	Order
<u>Annelida</u>	<u>Errantia</u>	Errantia	Subclass
Echinodermata	<u>Cidaridae</u>	Eucidaris metularia	Species
<u>Annelida</u>	<u>Eunicidae</u>	Eunicidae	Family
<u>Arthropoda</u>	<u>Galatheidae</u>	Galathea	Genus
<u>Arthropoda</u>	<u>Galatheidae</u>	Galatheidae	Family
<u>Arthropoda</u>	<u>Isopoda</u>	Isopoda	Order
<u>Mollusca</u>	<u>Mollusca</u>	Mollusca	Phylum
Echinodermata	Myophiuroida	Myophiuroida	Subclass
<u>Annelida</u>	<u>Nereididae</u>	Nereididae	Family
Echinodermata	Ophiotrichidae	Ophiotrichidae	Family
Echinodermata	<u>Ophiuroidea</u>	Ophiuroidea	Class
<u>Annelida</u>	Phyllodocidae	Phyllodocidae	Family
<u>Annelida</u>	<u>Polychaeta</u>	Polychaeta	Class
<u>Annelida</u>	Polynoidae	Polynoidae	Family
<u>Arthropoda</u>	<u>Portunidae</u>	Portunidae	Family
<u>Annelida</u>	Sedentaria	Sedentaria	Subclass

<u>Arthropoda</u>	Sphaeromatidae	Sphaeromatidae	Family
<u>Arthropoda</u>	<u>Tanaochelidae</u>	Tanaocheles	Genus
<u>Arthropoda</u>	<u>Xanthidae</u>	Xanthidae	Family

<u>Echinodermata</u>	<u>Ophiactidae</u>		
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