

ITME Research Reports – Number 32A

Supplemental material to:

**THE INVASIVE SEAGRASS *HALOPHILA STIPULACEA*
(HYDROCHARITACEAE, ANGIOSPERMAE) AND ITS IMPACT
ON THE BENTHIC LANDSCAPE OF DOMINICA,
LESSER ANTILLES.**

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Table A. Comparison of conspicuous algae, invertebrates and vertebrates observed along the west coast transect surveys in 2008 and 2013. Occurrence of organisms is described as the number of transects along which they were observed and in what abundance; rare 1-3 individuals per transect (R), occasional 4-9 (O), or common >10 (C). The total number of sightings per group is given under T.

	Species	2008				2013			
		R	O	C	T	R	O	C	T
Chlorophyta									
1	<i>Ventricaria ventricosa</i>	2	-	-		-	-	-	
2	<i>Caulerpa seriatularoides</i>	4	1	-		-	2	-	
3	<i>Avrainvillea (asarifolia)</i>	4	3	-		-	-	-	
4	<i>Halimeda (gracilis)</i>	4	4	1	39	2	1	2	12
5	<i>Penicillus capitatus</i>	2	4	5		2	1	2	
6	<i>Udotea cyathiformis</i>	2	-	-		-	-	-	
7	Unidentified filamentous alga	1	1	1		-	-	-	
Phaeophyta									
8	<i>Dictyota pulchella</i>	2	1	1		3	-	-	
9	<i>Dictyota</i> sp.1	1	1	-		-	-	-	
10	<i>Dictyota</i> sp. 2	-	-	1	9	-	-	-	4
11	<i>Dictyota</i> sp. 3 epiphytic	-	-	-		1	-	-	
12	Unidentified sp	-	-	2		-	-	-	
Rhodophyta									
13	<i>Liagora</i> sp.	1	-	-	2	1	-	-	1
14	Unidentified sp. calcareous	-	-	1		-	-	-	
Cyanobacteria									
15	unidentified red variety	1	3	3	7	1	2	1	5
16	unidentified black variety	-	-	-		-	-	1	
Unclassified Algae									
17	white branching	1	-	2		-	-	-	
18	brown filamentous	1	-	-	6	-	-	-	0
19	red branching	-	-	1		-	-	-	
20	red filamentous	-	1	-		-	-	-	
Porifera									
21	<i>Holopsamma helwegi</i>	1	3	1		-	-	-	
22	unidentified spp	1	-	-	6	1	-	1	2
Cnidaria									
23	<i>Cassiopea frondosa</i>	1	-	-		-	-	-	
24	<i>Pseudopterogorgia caribaeorum</i>	1	1	-		1	-	-	
25	<i>Pterogorgia</i> sp.	1	-	-		-	-	-	
26	<i>Epicystis crucifer</i>	1	1	-	13	-	-	-	5
27	<i>Viatrix globulifera</i> (epiphytic)	-	-	-		1	-	-	
28	unidentified Hydrozoa sp 1	2	4	-		1	-	-	
29	unidentified Hydrozoa sp 2	-	-	-		2	-	-	
30	unidentified Hydrozoa sp 3	1	-	-		-	-	-	

cont. Tab. A

Polychaeta									
31	<i>Arenicola cristata</i>	-	2	-		3	3	3	
32	<i>Hermodice carunculata</i>	1	-	-		4	2	1	
33	<i>Chloeia</i> sp.	1	-	-	4	-	-	-	19
34	unidentified Amphinomidae	-	-	-		1	-	-	
35	unidentified Sabellidae	-	-	-		1	-	-	
36	unidentified Serpulidae	-	-	-		1	-	-	
Echiurida									
37	unidentified species	1	-	-	1	-	-	-	0
Mollusca									
38	<i>Strombus gigas</i> (including juveniles)	2	5	2		-	1	-	
39	<i>S. costatus</i>	2	2	1	21	1	-	-	11
40	<i>Pina carnea</i>	3	4	-		1	4	3	
41	unidentified gastropod	-	-	-		1	-	-	
Crustacea									
42	<i>Stenorhynchus seticornis</i>	-	1	-		-	-	-	
43	unidentified Anomura	-	-	-	1	-	1	-	3
44	unidentified Brachiura	-	-	-		1	-	-	
45	unidentified Nantantia	-	-	-		1	-	-	
Echinodermata									
46	<i>Oreaster reticulatus</i>	1	-	2		1	-	-	
	<i>O. reticulatus</i> juvenile	1	-	-		-	-	-	
47	<i>Ophiotrix</i> sp.	-	-	-		-	1	1	
48	<i>Tripneustes ventricosus</i>	1	-	-		2	2	1	
49	<i>T. ventricosus</i> juvenile	-	-	-		-	1	-	
50	<i>Lutechinus variegatus</i>	1	-	-		-	-	-	
51	<i>Eucidaris tribuloides</i>	-	-	-	22	-	1	-	16
52	<i>Diadema antillarum</i> juvenile	1	-	-		1	-	-	
53	<i>Astropyga magnifica</i>	-	-	-		-	2	-	
54	<i>Meoma ventricosa</i>	1	3	3		3	-	-	
55	<i>M. ventricosa</i> juvenile	1	-	-		-	-	-	
56	<i>Astichopus multifidus</i>	5	1	-		-	-	-	
57	<i>Holothuria mexicana</i>	1	-	-		-	-	-	

cont. Tab. A

Ascidia									
58	unidentified solitary sessile sp	1	1	-	2	4	2	-	6
Osteichthyes									
59	<i>Caranx ruber</i>	-	2	-		-	-	-	
60	<i>Echeneis</i> sp.	1	-	-		-	2	-	
61	<i>Xyrichtys martinicensis</i>	2	1	-		-	3	-	
62	<i>Pseudupeneus maculatus</i>	-	1	-		-	-	-	
63	<i>Acanthurus bahianus</i>	-	1	-		1	-	-	
64	<i>Lutjanus mahagoni</i> (juvenile)	1	-	-		-	-	-	
65	<i>Epinephelus morio</i>	1	-	-		-	-	-	
66	<i>Bothus</i> sp. (<i>lunatus</i>)	1	-	-		-	-	-	
67	<i>Diodon holocanthus</i>	1	-	-		2	-	-	
68	<i>Didon hystrix</i>	-	-	-		1	-	-	
69	<i>Canthigaster rostra</i>	-	-	-	19	3	2	-	23
	<i>C. rostra</i> juv.	-	-	-		1	-	-	
70	<i>Scorpena plumieri</i>	1	-	-		1	-	-	
71	<i>Dactylopterus volitans</i>	-	2	-		-	-	-	
72	<i>Sphyaena barracuda</i>	1	-	-		-	-	-	
73	<i>Myrichthys ocellatus</i>	1	-	-		-	-	-	
74	<i>Hereoconger longisimus</i>	-	2	-		-	1	-	
75	<i>Malacanthus plumeri</i> juv.	-	-	-		1	-	-	
76	<i>Pterois</i> sp. alien	-	-	-		1	-	-	
77	unidentified Sygnathidae	-	-	-		2	-	-	
75	unidentified Gobiidae	-	-	-		1	-	-	
76	unidentified juv. Labridae	-	-	-		-	1	-	
Chondreychteis									
77	<i>Narcine brasiliensis</i>	1	-	-	1	-	-	-	1
78	<i>Dasyatis americana</i>	-	-	-		1	-	-	
Reptilia									
79	<i>Eretmochelys imbricata</i>	1	-	-	1	-	-	-	0

Willette et al. in review, listed in the September 2013 version of Table B now refers to:

Willette DA, Chaifour J, Debrot AO, Engel S, Miller J, Oxenford HA, Short FT, Steiner SCC, and Védie F (2014) Continued expansion of the trans-Atlantic invasive marine angiosperm *Halophila stipulacea* in the Eastern Caribbean. *Aquatic Botany*, 112: 98-102

Information on *H. stipulacea* from Simpsons Bay in St. Martin (cited as Debrot et al. in review in Table B) is also confirmed in Willette et al. (2014)

Table B. Morphology of areas from which *Halophila stipulacea* has been reported in the Caribbean 2002-2013. Where extensive stretches of coastlines were surveyed and five or more locations with *H. stipulacea* were documented per observation team, the northernmost and southernmost coordinates are given.

Island Location	Coordinates	Coastal Morphology	Orientation	Observation time frame	Sources for <i>H. stipulacea</i> presence
Bonaire					
Lac Bay	12°06'10"N 68°13'59"W	lagoon behind fringing reefs	windward SE	2011, 9-11	Debrot et al. 2012
Curaçao					
St. Joris Baai	12°07'16"N 68°48'59"W	lagoon with narrow sea access	windward NE	2012	Willette et al. 2014
Grenada					
Flamingo Bay	12°05'31"N 61°45'27"W	bay	leeward W	2002	Ruiz & Ballentine 2004
Guadeloupe					
Islets Pigeons	16°10'03"N 61°47'11"W	bay, sheltered by islets	leeward W	2010	Mège 2013
A. p. Malendure	16°07'47"N 61°46'15"W	unsheltered sandy slope	leeward W	2011	Kerninon 2012
Les Saintes	15°51'56"N 61°35'31"W	bays sheltered by islets, fringing reefs	leeward N, W	2011	DEAL Guadeloupe, Martinique 2011
Dominica					
Lamothe Bay	15°37'80"N 61°27'60"W	unsheltered sandy slope	leeward W		
P. Rupert's Bay	15°34'59"N 61°28'20"W	bay	leeward W		
Ti Bay	15°32'50"N 61°28'22"W	bay	leeward W	2007, 9-11	Willette and Ambrose 2009 Steiner and Willette 2010
Canefield	15°19'36"N 61°23'48"W	unsheltered sandy slope	leeward W		
West Coast	15°36'32"N 61°27'50"W	unsheltered sandy slope	leeward, W	2008, 9-11	Steiner et al. 2010
West Coast	15°15'34"N 61°22'39"W 15°36'32"N 61°27'50"W 15°12'47"N 61°22'07"W	unsheltered sandy slope	leeward W	2013, 3	this report
Martinique					
West Coast	15°51'21"N 61°12'45"W 14°31'35"N 61°05'33"W	bays, lagoons, unsheltered sandy slopes	leeward W	2008 - 2011	DEAL Guadeloupe, Martinique 2011 Vedie 2013
Anse Figuier,	14°27'33"N 61°54'35"W	bay	leeward W	2012, 12	Steiner personal observation
Fort de France	14°27'33"N 61°04'04"W	bay	leeward W	2012, 12	Steiner personal observation
East Coast	14°45'49"N 60°53'03"W 14°25'02"N 60°50'11"W	bays sheltered by fringing reefs, islets, and peninsulas	windward W,S	2012, 3	Kerninon 2012

Cont. Tab. B

St. Eustasius						
Jenkins Bay	17°30'42"N	63°00'12"W	unsheltered sandy slope	leeward W	2012	Willette et al. 2014
St. John						
Leinster Bay	18°22'04"N	64°43'48"W	bay	leeward N	2012	
Mennebeck Rf.	18°21'14"N	64°41'03"W	unsheltered, islands upwind	windward E	2012	
Haulover Reef	18°21'00"N	64°40'34"W	unsheltered, islands upwind	windward E	2012	Willette et al. 2014
Otter Creek	18°20'20"N	64°47'49"W	bay	leeward SW	2012	
Lind Point	18°20'48"N	64°41'33"W	unsheltered sandy slope	leeward W	2012	
St. Lucia						
Labrelotte Bay	14°03'30"N	60°58'30"W	bay	leeward W	2008	
Marigot Bay	13°57'53"N	61°01'23"W	bay	leeward W	2008	Willette & Ambrose, 2009
Anse La Raye	13°56'28"N	61°02'43"W	bay	leeward W	2008	
St. Maarten						
Simpson's B.	18°02'16"N	63°05'34"W	lagoon with narrow sea access	leeward	2012	Debrot et al. in review
St. Martin						
Anse Marcel	18°07'01"N	63°02'30"W	bay	leeward W	2012	
B. Cul-de-Sac	18°06'22"N	63°01'21"W	bay protected by islets, fringing reefs	windward E	2012	Willette et al. 2014
I. Tintamarre	18°07'20"N	63°59'00"W	unsheltered sandy slope	leeward W	2012	
St. Vincent						
Indian Bay	13°08'08"N	61°12'27"W	bay	leeward W	2011	Willette et al. 2014
Grenadines						
Bequia	13°00'06"N	61°14'74"W	bay	leeward W	2013	
Mayreau	12°38'01"N	61°23'51"W	bay	leeward W	2013	
Tobago Cays	12°38'18"N	61°21'39"W	back reef platform	windward E	2013	Willette et al. 2014
P. St. Vincent	12°32'04"N	62°13'13"W	sheltered by islets and reefs	leeward W	2013	