The following supplement accompanies the article

Growth potential and predation risk drive ontogenetic shifts among nursery habitats in a coral reef fish

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SUPPLEMENT. Sampling regime and results of statistical tests

Table S1. Number of fish (N) used for quantifying body weight to length ratio (N WL), liver lipid content (N Fat), gonadosomatic index (N GSI), maturation stage (N Mat), gut content (N gut), age (N age), and survival from predation (N surv) per habitat per location per island. MG = mangroves, SG = seagrass beds, RB = rubble habitat, BN = boulder/notch habitat, RF = coral reef

Island	Location	Habitat	N gut	N WL	N Fat	N age	N Mat	N GSI	N surv
CURAÇAO	**Spanish Water Bay**	**MG**	32	71	32	57	70	69	92
		SG	32	125	40	89	124	124	94
		RB	14	138	53	49	137	137	65
		BN	31	71	24	-	69	69	-
		RF	63	201	93	108	200	199	56
		Total	**172**	**606**	**242**	**303**	**600**	**598**	**307**

CURAÇAO	**Fuik Bay**	**MG**	23	56	32	-	53	53	-
		SG	12	164	21	-	91	91	-
		RB	-	-	-	-	-	-	-
		BN	29	75	68	-	73	73	-
		RF	34	40	40	-	42	38	-
		Total	**98**	**335**	**161**	**0**	**259**	**255**	**0**
ARUBA	**Lagoon**	**MG**	39	118	95	85	113	110	43
		SG	61	191	96	83	191	191	43
		RB	62	332	154	142	325	321	47
		BN	11	198	85	-	199	198	-
		RF	35	81	81	80	88	80	40
		Total	**208**	**920**	**511**	**390**	**916**	**900**	**173**
ALL		**Total**	**478**	**1861**	**914**	**693**	**1775**	**1753**	**480**

Table S2. p-values and associated *F* or χ^2-values of statistical tests comparing the abundance of preferred food of *Haemulon flavolineatum* among habitats in the sediment and water layer (plankton), separately per island. One-way ANOVAs (a) and non-parametric Kruskal-Wallis tests (b) were performed and data were log- or square root-transformed if needed. df = degrees of freedom, N = number of samples taken per island

			Copepoda				**Tanaidacea**				**Benthic worms**			
Island	**Variable**	**N**	**p**		**df**	***F*** / χ^2	**p**		**df**	***F*** / χ^2	**p**		**df**	***F*** / χ^2
CURAÇAO	**Plankton**	**60**	<0.001	a	3,56	16.55	<0.001	b	3,56	26.82				
	Sediment	**111**	<0.001	b	3,107	62.94	0.246	b	3,107	4.15	<0.001	b	3, 07	73.64
ARUBA	**Plankton**	**53**	<0.001	b	3,49	22.99	0.003	b	3,49	14.31				
	Sediment	**108**	<0.001	b	3,104	59.75	<0.001	b	3,104	19.98	<0.001	a	3,104	26.29

Table S3. *Haemulon flavolineatum.* p-values of the different statistical tests comparing differences among habitats for weight/length (WL) ratio, liver-lipid content (Fat), gonadosomatic index (GSI), and mean maturation stage (Maturation) of *H. flavolineatum* per size class (FL in cm) per location per island. One-way ANOVAs (a), non-parametric Kruskal-Wallis tests (b) and independent samples *t*-tests (c) were conducted, and data were log- or square root-transformed if needed. For fishes of 0.0 to 3.9 cm FL, no statistics could be computed for GSI and maturation stage (†) as GSI was always 0.0 and maturation stage for each fish was 1.0. Significant differences ($p \leq 0.05$) are highlighted in grey and degrees of freedom (df) and F or χ^2 values are presented

			Size-class																			
			0.0–3.9				**4.0–7.9**				**8.0–11.9**				**12.0–15.9**				**16.0–19.9**			
Island	**Location**	**Variable**	**p**		**df**	F / χ^2	**p**		**df**	F / χ^2	**p**		**df**	F / χ^2	**p**		**df**	F / χ^2	**p**		**df**	F / χ^2
CURAÇAO	**Spanish Water Bay**	**WL**	<0.001	[b]	3, 154	53.74	<0.001	[b]	4, 142	22.72	0.117	[b]	4, 168	7.37	<0.001	[a]	3, 115	13.78				
		Fat	no data				0.402	[a]	4, 44	1.03	0.261	[a]	4, 94	1.34	<0.001	[a]	3, 82	6.70				
		GSI	†				0.708	[a]	4, 141	0.54	0.734	[a]	4, 164	0.50	<0.001	[b]	3, 114	22.65				
		Maturation	†				0.021	[b]	4, 141	11.54	0.218	[a]	4, 164	1.46	0.001	[b]	3, 114	17.64				
CURAÇAO	**Fuik Bay**	**WL**	<0.001	[c]	1, 26	125.7	<0.001	[c]	1, 144	34.02	<0.001	[b]	3, 90	34.41	0.004	[c]	1, 56	8.81				
		Fat	no data				0.859	[c]	1, 19	0.03	0.224	[a]	3, 72	1.49	<0.001	[c]	1, 54	44.32				
		GSI	†				0.394	[c]	1, 81	0.74	0.468	[a]	3, 75	0.86	0.003	[c]	1, 54	15.82				
		Maturation	†				0.013	[c]	1, 81	9.69	0.129	[a]	3, 75	1.95	<0.001	[c]	1, 57	21.64				
ARUBA	**Lagoon**	**WL**	0.181	[b]	3, 318	4.87	<0.001	[b]	3, 285	18.35	<0.001	[a]	4, 200	12.75	<0.001	[a]	2, 65	12.37	0.001	[c]	1, 34	13.42
		Fat	no data				<0.001	[a]	3, 203	6.25	<0.001	[a]	4, 193	6.03	<0.001	[a]	2, 64	21.01	<0.001	[c]	1, 34	32.08
		GSI	†				<0.001	[b]	3, 276	18.32	0.055	[a]	4, 191	2.36	0.519	[a]	2, 63	0.66	0.017	[c]	1, 34	6.34
		Maturation	†				0.001	[b]	3, 280	17.50	<0.001	[a]	4, 195	6.52	0.009	[a]	2, 64	5.03	0.001	[c]	1, 34	12.47

Table S4. Log-linear somatic growth models of *Haemulon flavolineatum* by island, including Bonferroni comparisons of initial size (i.e. model intercepts) and growth rates (i.e. slopes) among habitats for each island. Superscript habitat abbreviations denote in which habitat initial size or growth rates were significantly higher (MG = mangroves, SG = seagrass beds, RB = rubble habitat, RF = coral reef). Graphical results can be viewed in Fig. 5 in the main manuscript

Growth Model	Model *F*	Model p	Model R^2	Bonferroni post-hoc comparison p	
				Mean length-at-age	Growth rate
Curaçao	339.5	<0.0001	0.89		
RF vs RB				$<0.0001^{RF}$	$<0.0001^{RF}$
RF vs MG				$<0.0001^{RF}$	$<0.0001^{RF}$
RF vs SG				$<0.0001^{RF}$	$<0.0001^{RF}$
SG vs RB				$<0.0001^{SG}$	0.02^{SG}
SG vs MG				$<0.0001^{SG}$	0.04^{SG}
MG vs RB				$<0.0001^{MG}$	0.66
Aruba	286.8	<0.0001	0.84		
RF vs RB				$<0.0001^{RF}$	0.96
RF vs MG				$<0.0001^{RF}$	0.002^{RF}
RF vs SG				$<0.0001^{RF}$	0.003^{RF}
SG vs RB				0.01^{RB}	0.001^{RB}
SG vs MG				0.02^{MG}	0.82
MG vs RB				0.92	0.001^{RB}

Table S5. Logistic regression results comparing survival probabilities of tethered *Haemulon flavolineatum* by size class and island. Superscript abbreviations denote the habitat in which survival was significantly higher (MG = mangroves, SG = seagrass beds, RB = rubble habitat, RF = coral reef)

Predation model	Log(Likelihood)	Model p	Habitat comparison p
Curaçao 3–4 cm FL	143.4	<0.0001	
RF vs RB			0.33
RF vs MG			0.11
RF vs SG			0.006^{SG}
SG vs RB			0.001^{SG}
SG vs MG			0.002^{SG}
MG vs RB			0.27
Aruba 3–4 cm FL	128.8	0.03	
RF vs RB			0.07
RF vs MG			0.01^{MG}
RF vs SG			0.10
SG vs RB			0.92
SG vs MG			0.28
MG vs RB			0.28
Curaçao 8–12 cm FL	158.4	<0.0001	
RF vs RB			0.12
RF vs MG			0.003^{MG}
RF vs SG			$<0.0001^{SG}$
SG vs RB			$<0.0001^{SG}$
SG vs MG			0.02^{SG}
MG vs RB			0.07
Aruba 8–12 cm FL	54.8	0.003	
RF vs RB			0.58
RF vs MG			0.02^{MG}
RF vs SG			0.008^{SG}
SG vs RB			0.02^{SG}
SG vs MG			0.37
MG vs RB			0.07
Curaçao >14 cm FL	81.8	0.20	
RF vs RB			0.58
RF vs MG			0.06
RF vs SG			0.69
SG vs RB			0.85
SG vs MG			0.11
MG vs RB			0.17