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Supplementary Material

Biodiversity patterns of macrofauna associated with *Halodule wrightii* (Ascherson) in meadows of north-eastern Brazil

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Table S1. The average and standard deviation (s.d.) of environmental variables measured for each meadow.

	Mean	%gravel	%sand	%mud	Sorting	Kurtosis	%mo	%CaCO ₃	MeanShoot	NLeaves	MLength	MBiomass	DO	S
Suape	0.161	0.428	89.639 ^a	9.932 ^a	1.275 ^a	0.957	0.890	1.812	22.933	1.162	9.836 ^{ab}	1.598 ^a	7.067 ^a	26.805 ^a
s.d.	0.035	0.711	4.555	3.890	0.059	0.210	0.203	0.187	6.275	0.099	0.806	0.860	0.592	0.528
Catuama	0.187	9.067	58.481 ^b	32.452 ^b	1.956 ^b	0.770	10.565	46.589	12.067	1.267	16.192 ^a	4.194 ^b	9.317 ^b	29.843 ^b
s.d.	0.044	4.150	7.420	6.685	0.252	0.109	3.849	9.592	8.075	0.301	5.251	1.804	1.116	0.385
Tamandare	0.136	0.605	81.231 ^a	18.164 ^a	1.201 ^a	0.974	6.825	45.875	25.2	1.401	6.948 ^b	1.788 ^a	7.453 ^{ab}	26.889 ^{ab}
s.d.	0.029	0.224	4.445	4.264	0.191	0.098	1.545	1.868	0.872	0.239	0.495	0.981	0.899	1.942

Mean, mean grain size (mm); %gravel, percentage of gravel; %sand, percentage of sand; %mud, percentage of mud; Sorting, sorting of sediment; Kurtosis, kurtosis of sediment; %mo, percentage of organic matter; %CaCO₃, percentage of carbonates; MeanShoot, mean number of shoots; NLeaves, mean number of leaves; MLength, mean length of leaves; DO, dissolved O₂; S, salinity. Means that with different superscript and lower-case letter within columns are significant at $P < 0.05$.

Table S2. Abundance total of macrofauna from the three *Halodule wrightii* meadows.

Species	S	C	T	Ab. total	Species	S	C	T	Ab. total
<i>Abra aequalis</i> ^A	0	1	0	1	<i>Ceratonereis singularis</i> ^A	0	1	0	1
<i>Abra lioica</i> ^A	1	0	1	2	<i>Cerithium atratum</i> ^A	2	56	0	58
<i>Acteocina bullata</i> ^A	0	0	2	2	<i>Chaetocantus magnificus</i> ^A	0	1	0	1
<i>Afrolucina lens</i> ^A	0	1	0	1	<i>Chaetozonesp.</i> ^A	0	23	0	23
<i>Alpheus carlae</i> ^A	0	2	0	2	<i>Cheiriphotis sp.</i> ^A	0	24	0	24
<i>Alpheus sp.</i> ^A	0	1	0	1	<i>Chionecancellata</i> ^A	0	10	0	10
<i>Amaena sp.</i> ^A	0	29	0	29	<i>Chiridotea rotifera</i> ^A	0	1	0	1
<i>Ameira sp.</i> ^A	0	1	0	1	<i>Chondrochelia sp.</i> ^A	0	1	0	1
Ameiridae ^A	0	2	0	2	<i>Cirolana parva</i> ^A	0	1	0	1
<i>Amphiascus</i> sp.	0	1	0	1	<i>Cirratulus sp.</i> ^A	0	52	4	56
<i>Amphicorina sp.</i> ^A	0	10	0	10	<i>Cirriformia sp.</i> ^A	0	7	0	7
<i>Amphicteis sp.</i> ^A	0	1	0	1	<i>Cletoipsyllus sp.</i>	0	2	0	2
<i>Amphiodia atra</i> ^A	0	8	0	8	<i>Codakia orbicularis</i> ^A	0	4	0	4
<i>Amphiodia riisei</i> ^A	0	0	1	1	<i>Coullana canadensis</i>	0	1	0	1
<i>Amphipholis squamata</i> ^A	0	95	0	95	<i>Crassostrea rhizophorae</i> ^A	0	2	28	30
Amphiuridae ^A	0	1	0	1	<i>Crenella divaricata</i> ^A	0	1	0	1
<i>Ampithoe ramondi</i> ^A	0	3	0	3	<i>Ctena orbiculata</i> ^A	0	4	0	4
<i>Ampithoe sp.</i> ^A	0	5	0	5	<i>Cuapetes americanus</i> ^A	0	1	1	2
<i>Anomalocardia flexuosa</i> ^A	1	0	3	4	Cumacea	0	12	5	17
<i>Anoplosyllis cf. edentula</i> ^A	0	3	0	3	<i>Cumella sp.</i> ^A	0	3	0	3
<i>Anuropodione sp.</i>	0	0	1	1	<i>Cumingia lamellosa</i> ^A	1	0	0	1
<i>Aonides sp.</i> ^A	0	0	1	1	<i>Cyclaspis dentifrons</i>	0	4	0	4
Aoridae ^A	0	1	0	1	<i>Cylichnella bidentata</i> ^A	3	7	0	10
<i>Arabella sp.</i> ^A	0	1	0	1	<i>Cymadusa ledoyeri</i> ^A	0	1	0	1
<i>Arca imbricata</i> ^A	0	1	0	1	<i>Cymodoce brasiliensis</i> ^A	0	14	0	14
<i>Arcopsis ardance</i> ^A	0	1	0	1	<i>Dasybranchus sp.</i> ^A	1	0	0	1
Arcturidae	2	7	1	10	<i>Decamastus sp.</i> ^A	2	0	1	3
<i>Armandia sp.</i> ^A	18	0	0	18	<i>Diodora cayenensis</i> ^A	0	7	0	7
<i>Astacilla sp.</i> ^A	2	6	1	9	<i>Diopatra sp.</i> ^A	0	1	0	1
<i>Axiothella sp.</i> ^A	0	1	0	1	<i>Diplodonta nucleiformis</i> ^A	1	1	2	4
<i>Bemlos sp.</i> ^A	7	29	0	36	<i>Divalunga quadrisulcata</i> ^A	1	0	0	1
<i>Brada sp.</i> ^A	0	9	0	9	Donacidae_juvenile ^A	0	2	0	2
<i>Branchioma sp.</i> ^A	4	3	2	9	<i>Dorvillea sp.</i> ^A	0	1	0	1
<i>Bulbamphiascus minutus</i>	0	3	0	3	<i>Dulichella ankeri</i> ^A	0	4	0	4
<i>Bulbamphiascus sp.</i>	0	3	0	3	<i>Dulichellasp.</i> ^A	0	6	0	6
<i>Calozodion bacescui</i>	0	2	0	2	<i>Edwardsia sp1</i> ^A	0	0	19	19
<i>Calozodion sp.</i>	0	40	0	40	<i>Edwardsia sp2</i> ^A	6	0	0	6
<i>Canuellasp.</i>	0	4	0	4	<i>Edwardsia sp3</i> ^A	1	0	1	2
Canuellidae	0	4	0	4	<i>Elysia sp.</i> ^A	0	1	0	1
<i>Capitella sp.</i> ^A	0	8	0	8	<i>Epitaltus bituberculatus</i> ^A	0	4	0	4
<i>Capitomastus sp.</i> ^A	1	0	9	10	<i>Erichsonella filiformis</i> ^A	0	4	0	4
<i>Carpas sp.</i> ^A	0	2	0	2	<i>Ericthonius brasiliensis</i> ^A	14	67	1	82
<i>Caryocorbula cymella</i> ^A	0	0	1	1	<i>Ericthonius sp.</i> ^A	0	23	7	30
<i>Caryocorbula semile</i> ^A	0	1	0	1	<i>Ervilia nitens</i> ^A	3	10	20	33
<i>Cathrolucina costata</i> ^A	1	23	10	34	<i>Eteone californica</i> ^A	0	4	0	4
<i>Caulleriella sp.</i> ^A	2	42	4	48	<i>Eteone sp.</i> ^A	0	2	0	2
<i>Cavalinga blanda</i> ^A	0	1	3	4	<i>Euclymene sp.</i> ^A	1	0	0	1
<i>Cerapus sp.</i> ^A	0	4	1	5	<i>Eudactylopusp.</i>	0	1	0	1

Species	S	C	T	Ab. total
<i>Eudevenopus capuciatus</i>	0	9	2	11
<i>Eulithidium bellum</i> ^A	0	2	0	2
<i>Eulithidium pterocladicum</i> ^A	0	2	0	2
<i>Eunice</i> sp. ^A	3	0	12	15
<i>Eurytellina angulosa</i> ^A	1	0	0	1
<i>Eurytellina lineata</i> ^A	0	1	8	9
<i>Eurytellina punicea</i> ^A	0	92	0	92
<i>Eurythoe</i> sp. ^A	0	2	0	2
<i>Exogone</i> sp. ^A	0	13	1	14
<i>Gammaropsis</i> sp. ^A	1	0	0	1
<i>Gibberosus</i> sp. ^A	2	4	4	10
<i>Glycinde</i> sp. ^A	9	0	0	9
<i>Goniadasp.</i> ^A	1	0	0	1
<i>Goniadides</i> sp. ^A	0	0	4	4
<i>Gouldia cerina</i> ^A	0	4	0	4
<i>Hansenium</i> sp.	0	1	0	1
<i>Harmothoe</i> sp. ^A	0	5	0	5
<i>Hartmanodes</i> sp. ^A	0	5	1	6
<i>Hemipodia</i> sp. ^A	0	1	0	1
<i>Hesione picta</i> ^A	0	1	0	1
<i>Hesionides</i> sp. ^A	0	3	0	3
Heterobranchia ^A	0	21	0	21
<i>Heterodonax bimaculatus</i> ^A	0	0	2	2
<i>Heteromastus</i> sp. ^A	0	14	0	14
<i>Hipponoe</i> sp. ^A	0	25	0	25
<i>Hyale niger</i> ^A	0	5	0	5
<i>Hyale</i> sp. ^A	2	0	0	2
<i>Idunella</i> sp.	0	2	0	2
<i>Inermosyllis</i> sp. ^A	0	20	0	20
<i>Intercanuella</i> sp.	0	2	0	2
<i>Ischnochiton striolatus</i> ^A	0	17	2	19
Juvenile_bivalve	0	173	0	173
<i>Lanice</i> sp. ^A	1	6	0	7
Laophontidae	0	1	0	1
<i>Laticorophium baconi</i> *	6	20	9	35
<i>Leitoscoloplos</i> sp.*	0	3	0	3
<i>Lembos</i> sp.*	7	12	0	19
<i>Leoadamas</i> sp.*	0	0	1	1
<i>Leptochelia</i> sp.*	0	1	0	1

Species	S	C	T	Ab. total
<i>Leucothoe</i> sp. ^A	0	23	0	23
<i>Lirophora paphia</i> ^A	0	7	0	7
<i>Loimia</i> sp. ^A	0	1	0	1
Longipedia	0	11	0	11
<i>Lumbrineris</i> sp. ^A	0	2	0	2
<i>Lyonsia alvarezii</i> ^A	0	3	0	3
<i>Lysianopsis</i> sp. ^A	0	28	0	28
<i>Lysidice ninetta</i> ^A	0	1	0	1
<i>Magelona</i> sp. ^A	1	4	2	7
<i>Marphysa</i> sp. ^A	3	0	0	3
<i>Mediomastus</i> sp. ^A	2	9	2	13
<i>Melita</i> sp. ^A	5	0	9	14
<i>Mesanthura paucidens</i> ^A	0	1	0	1
<i>Micropodarke</i> sp. ^A	0	1	0	1
Miraciidae	0	25	0	25
<i>Monocorophium acherusicum</i> ^A	0	1	0	1
<i>Monticellina</i> sp. ^A	0	34	0	34
<i>Musculus lateralis</i> ^A	0	0	3	3
<i>Mysella planulata</i> ^A	0	6	1	7
<i>Mytella</i> sp. ^A	1	0	0	1
<i>Naineris</i> cf. <i>dendritica</i> ^A	2	0	0	2
<i>Naineris</i> cf. <i>setosa</i> ^A	0	29	0	29
<i>Naineris</i> sp. ^A	0	0	1	1
Nematoda ^A	0	63	86	149
<i>Nerilla</i> sp.	0	4	0	4
<i>Neritina virginea</i> ^A	171	69	112	352
<i>Nicolea</i> sp. ^A	0	6	5	11
<i>Nitodetellina unifasciata</i> ^A	0	0	5	5
<i>Notomastus</i> sp.*	0	0	1	1
<i>Nototropis</i> sp.*	1	0	0	1
Oligochaeta*	59	36	125	220
<i>Olivella petiolita</i> *	0	5	0	5
<i>Ophiactis lymani</i> *	0	7	0	7
<i>Ophiactis savignyi</i> ^A	1	112	0	113
<i>Ophioderma appressa</i> ^A	0	1	0	1
<i>Ophiostigma isocanthum</i> ^A	0	3	0	3
<i>Ophiothrix</i> sp. ^A	0	1	0	1
<i>Opisthosyllis</i> sp. ^A	0	18	0	18
<i>Orbinia</i> sp. ^A	0	1	0	1

Species	S	C	T	Ab. total
Ostracoda ^A	0	287	2	289
<i>Ostrea</i> sp. ^A	0	1	6	7
<i>Owenia</i> sp. ^A	3	2	25	30
<i>Oxydromus</i> sp. ^A	0	8	0	8
<i>Pagurus</i> sp. ^A	3	7	24	34
<i>Palposyllis</i> sp. ^A	0	1	0	1
<i>Parapseudes</i> sp. ^A	0	16	0	16
Parapseudidae ^A	0	1	0	1
<i>Pareurythoe</i> sp. ^A	0	93	0	93
<i>Parexogone</i> sp. ^A	0	92	0	92
<i>Parhyale hawaiiensis</i> ^A	1	0	3	4
<i>Parhyale</i> sp. ^A	0	0	2	2
<i>Parviturbo rehderi</i> ^A	0	7	0	7
<i>Perinereis</i> sp. ^A	0	2	0	2
<i>Periploma</i> sp. ^A	6	0	7	13
<i>Pholoe</i> sp. ^A	0	2	0	2
<i>Photis</i> sp. ^A	1	30	0	31
<i>Phyllodoce</i> sp. ^A	0	0	8	8
<i>Pinctada imbricata</i> ^A	0	3	0	3
Pinnotheridae ^A	0	15	0	15
<i>Pionosyllis</i> sp. ^A	0	9	0	9
<i>Pista</i> sp. ^A	0	1	0	1
<i>Plakosyllis</i> sp. ^A	0	1	0	1
Platelmintes	0	1	0	1
<i>Podocerus</i> sp. ^A	0	0	1	1
Polychaeta	0	15	0	15
<i>Polycirrus</i> sp. ^A	0	38	1	39
<i>Polydora</i> sp. ^A	0	0	1	1
Priapulida ^A	0	49	23	72
<i>Prionospio</i> sp. ^A	0	27	11	38
<i>Proameiras</i> sp.	0	1	0	1
<i>Progoniada</i> sp. ^A	0	2	0	2
<i>Protoaricia</i> sp. ^A	3	2	0	5
<i>Protohyalle macrodactylla</i> ^A	0	4	0	4
<i>Protula</i> sp. ^A	0	2	0	2
<i>Prunum bellulum</i> ^A	0	10	0	10
Pycnogonida ^A	0	52	1	53

Species	S	C	T	Ab. total
<i>Salvatoria</i> sp. ^A	5	3	0	8
<i>Schistomeringos rudolphi</i> ^A	0	14	0	14
<i>Schistomeringos</i> sp. ^A	1	0	0	1
<i>Scolanthus</i> sp. ^A	0	2	0	2
<i>Scolecopsis</i> sp. ^A	2	0	0	2
<i>Scoloplos armiger</i> ^A	0	7	1	8
Scottolana	0	2	0	2
Scutellidium sp.	0	4	0	4
<i>Scyphoproctus</i> sp. ^A	0	444	4	448
<i>Sicyonia parr</i> ^A	0	0	1	1
<i>Sigambra grube</i> ^A	1	1	0	2
<i>Sigambra</i> sp. ^A	0	8	0	8
<i>Sipuncula</i> ^A	0	6	12	18
<i>Sphaeromopsis mourei</i> ^A	0	0	1	1
<i>Sphaerosyllis</i> sp. ^A	0	171	0	171
<i>Sphenia fragillilis</i> ^A	1	5	0	6
<i>Sternaspis</i> sp. ^A	0	4	13	17
<i>Sthenelais</i> sp. ^A	0	1	0	1
<i>Sthenolepis</i> sp. ^A	0	1	0	1
<i>Streblosoma</i> sp. ^A	0	106	2	108
<i>Streblospio</i> sp. ^A	0	0	1	1
<i>Syllides</i> sp. ^A	0	115	0	115
<i>Syllis</i> cf. <i>variegata</i> ^A	0	1	0	1
<i>Syllis</i> sp. ^A	2	18	10	30
<i>Synaptula hydriformis</i> ^A	0	3	0	3
<i>Tagelus divisus</i> ^A	3	0	0	3
<i>Tellina sandix</i> ^A	1	1	9	11
<i>Terebellides</i> sp. ^A	0	4	0	4
<i>Tharyx</i> sp. ^A	11	122	0	133
<i>Timarete</i> sp. ^A	0	35	4	39
Tisbidae	0	5	0	5
<i>Transenella cubaniana</i> ^A	1	1	4	6
<i>Typhlamphiscus</i> sp.	0	2	0	2
<i>Upogebia</i> sp. ^A	0	1	1	2

S, Suape; C, Catuama; T, Tamandaré.

^ASpecies selected for functional diversity analysis.

Table S3. Beta diversity.

		Turnover	Nestedness	Total
Suape	Mean	0.590	0.162	0.752
	s.d.	0.121	0.053	0.076
Catuama	Mean	0.662	0.100	0.763
	s.d.	0.093	0.025	0.070
Tamandaré	Mean	0.628	0.116	0.744
	s.d.	0.077	0.038	0.051
Total	Mean	0.627	0.126	0.753
	s.d.	0.091	0.044	0.058

The contribution of turnover and nestedness based on Bray–Curtis dissimilarity for macrofauna communities in Suape, Catuama and Tamandaré.

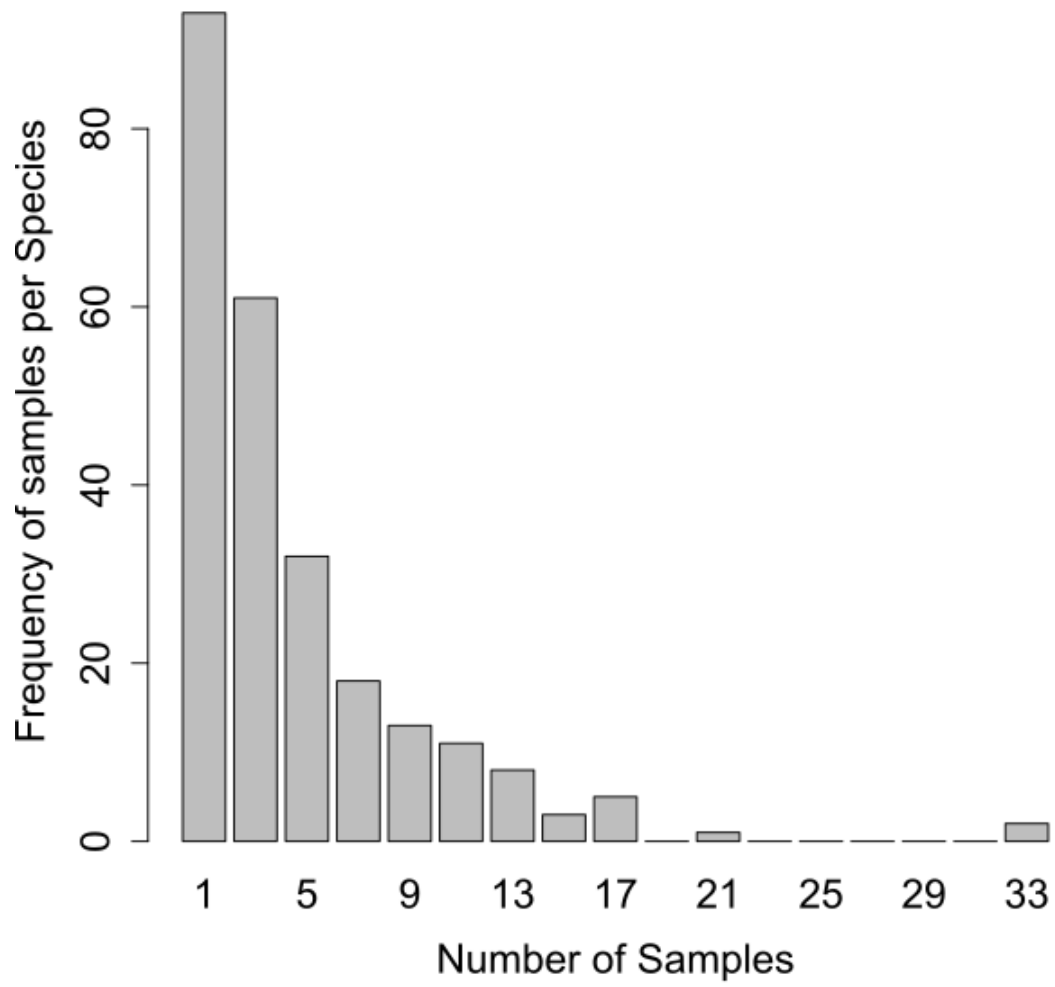


Fig. S1. Number of species relative to the total number of the 45 samples from 3 meadows of *Halodule wrightii*.

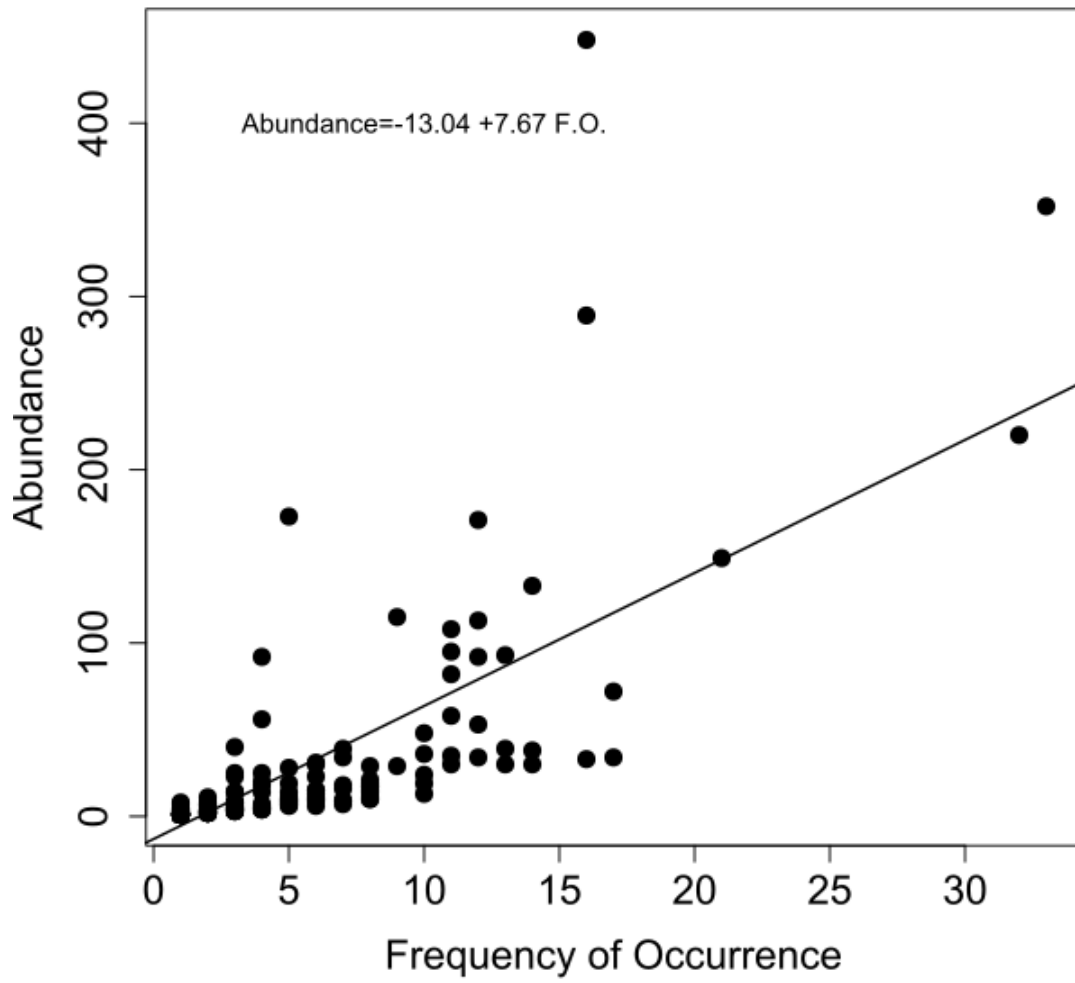


Fig. S2. Scatterplot of frequency of occurrence as a function of abundance of the 45 samples from 3 meadows of *Halodule wrightii*.