

Supporting information.

Appendix S1. Hovel et al. “Joint effects of patch edges and habitat degradation on faunal predation risk in a widespread marine foundation species” *Ecology*

Figure S1. (A) Aerial photo of an eelgrass (*Zostera marina*) meadow (Ryssholmen, northern Baltic Sea, Finland) showing distinct, abrupt edge between eelgrass and unvegetated sediment (arrow). (B) Close-up of an eelgrass edge in Mission Bay, California, USA. Small holes in sand are burrows of ghost shrimp *Neotrypaea californiensis*, which contributes to eelgrass patchiness via bioturbation. (C) 50% shoot loss plot photographed at our Quebec (QU) site in the St. Lawrence River (Pointe-Lebel, Canada). (D) Tethered juvenile crab in eelgrass. Photo credits: Lentokuvva Vallas & Åbo Akademi University (A), K. Hovel (B), M. Cusson (C), S. Ziegler (D).

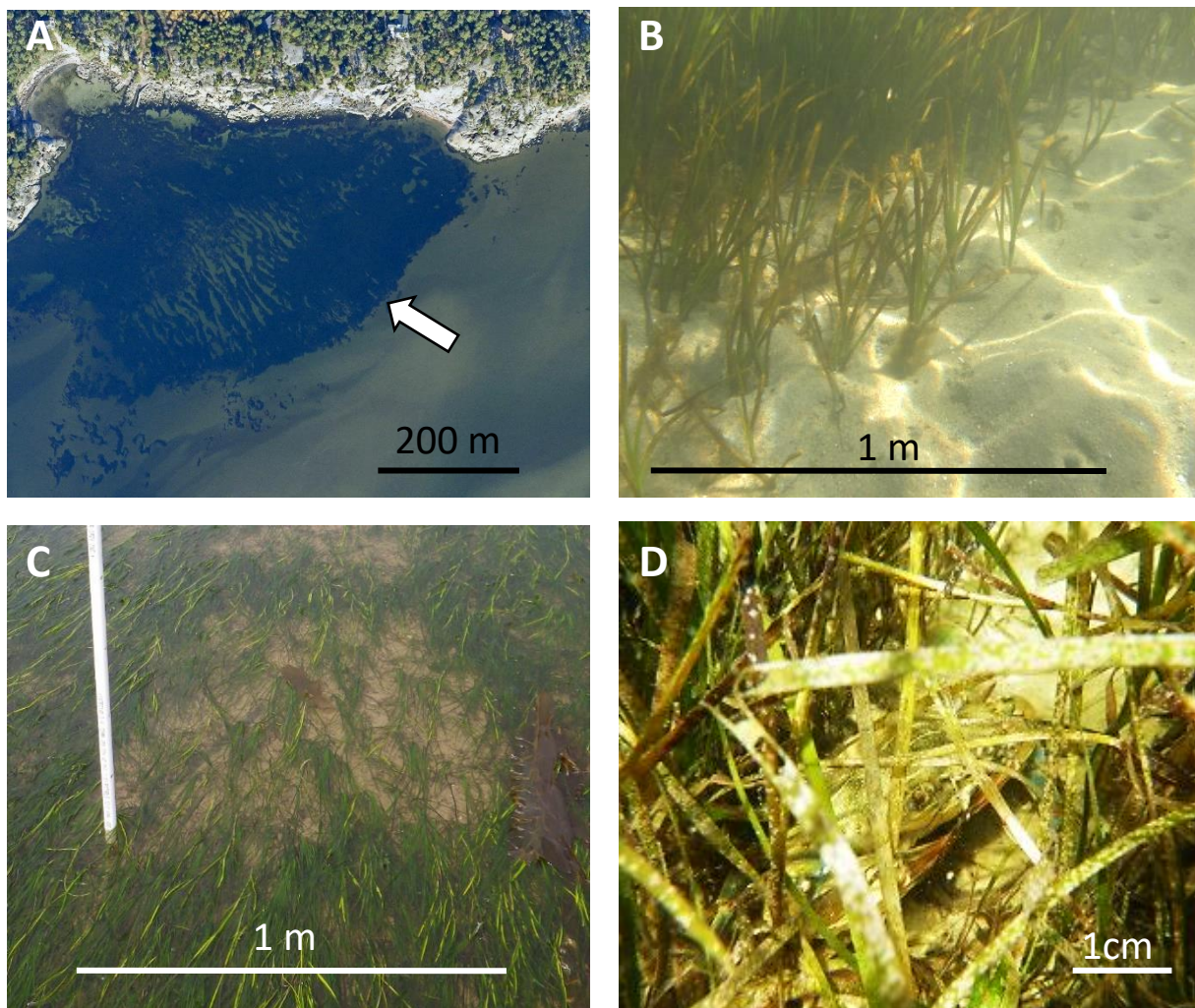


Table S1. (A) Study sites and principle investigators responsible for overseeing data collection at each site. (B) Organisms used in the experiments at each site. SD = standard deviation.

A

Code	Site	Principle Investigator
BB	Bodega Bay, California, USA	J. Stachowicz
CR	Posejarje, Adriatic Sea, Croatia	C. Kruschel
FI	Ängsö, Baltic Sea, Finland	C. Boström
FR	Bouzigues, Mediterranean Sea, France	F. Rossi
JN	Shinryu, Hokkaido, Japan	M. Nakaoka
JS	Akiwan Bay, Hiroshima, Japan	M. Hori
KOA	Dong-dae Bay, Korea	K-S Lee
KOB	Koje Bay, Korea	K-S Lee
MX	Punta Banda Estuary, Baja, Mexico	C. Hereu, P. Jorgensen
NC	Back Sound, North Carolina, USA	J. Fodrie
NI	Greyabbey, Irish Sea, Northern Ireland	N. O'Connor
OR	Sally's Bend, Oregon, USA	F. Nash
QU	Point-Lebel, Quebec, Canada	M. Cusson
SD	San Diego Bay, California, USA	K. Hovel
SF	San Francisco Bay, California, USA	K. Boyer
VA	Chesapeake Bay, Virginia, USA	E. Duffy
WA	Willapa Bay, Washington, USA	J. Ruesink

B

Code	Taxon used in experiment	Mean size	SD size	Dimension
BB	<i>Hemigrapsus crassipes</i> (crab)	19.22	3.30	width
CR	<i>Pomatoschistus marmoratus</i> (fish)	40.49	5.04	length
FI	<i>Palaemon adspersus</i> (shrimp)	32.08	4.83	length
FR	<i>Palaemon elegans</i> (shrimp)	38.56	5.85	length
JN	<i>Heptacarpus grebnitzkii</i> (shrimp)	36.67	5.54	length
JS	<i>Heptacarpus geniculatus</i> (shrimp)	30.94	6.08	length
KOA	<i>Palaemon</i> spp. (shrimp)	37.53	5.90	length
KOB	<i>Palaemon</i> spp. (shrimp)	41.83	9.32	length
MX	<i>Portunus xantusii</i> (crab)	27.76	5.89	width
NC	<i>Palaemonetes pugio</i> (shrimp)	26.86	4.07	length
NI	<i>Carcinus maenas</i> (crab)	26.76	3.79	width
OR	<i>Heptacarpus sitchensis</i> (shrimp)	28.60	6.06	length
QU	<i>Cancer irroratus</i> (crab)	52.96	8.00	width
SD	<i>Portunus xantusii</i> (crab)	24.04	7.62	width
SF	<i>Crangon franciscorum</i> (shrimp)	54.30	8.76	length
VA	<i>Palaemonetes pugio</i> (shrimp)	32.65	3.72	length
WA	<i>Metacarcinus magister</i> (crab)	32.12	5.77	width

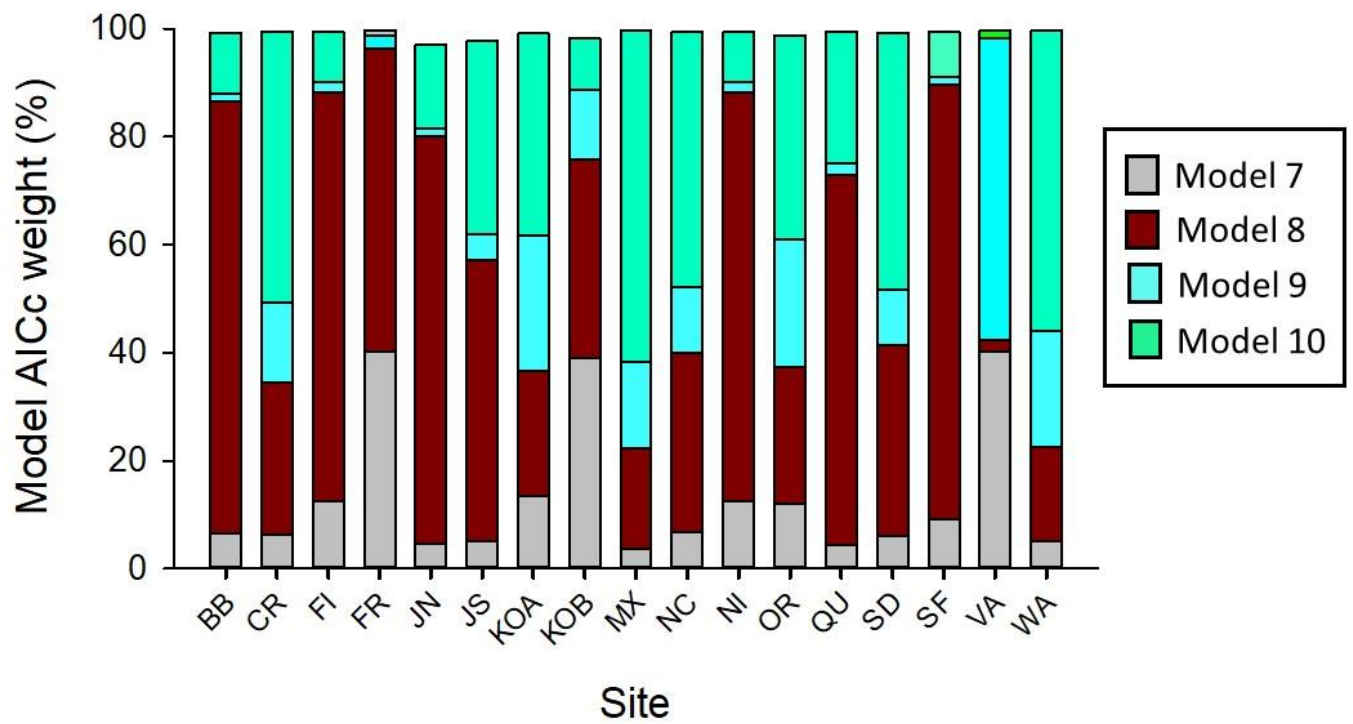


Figure S2. AICc weights (= probability of being the best fit model) for models 7 – 10 at each site. Models 1 – 6 are not shown because all had AICc weights of < 3%. Model 10 is the null model with no predictors.

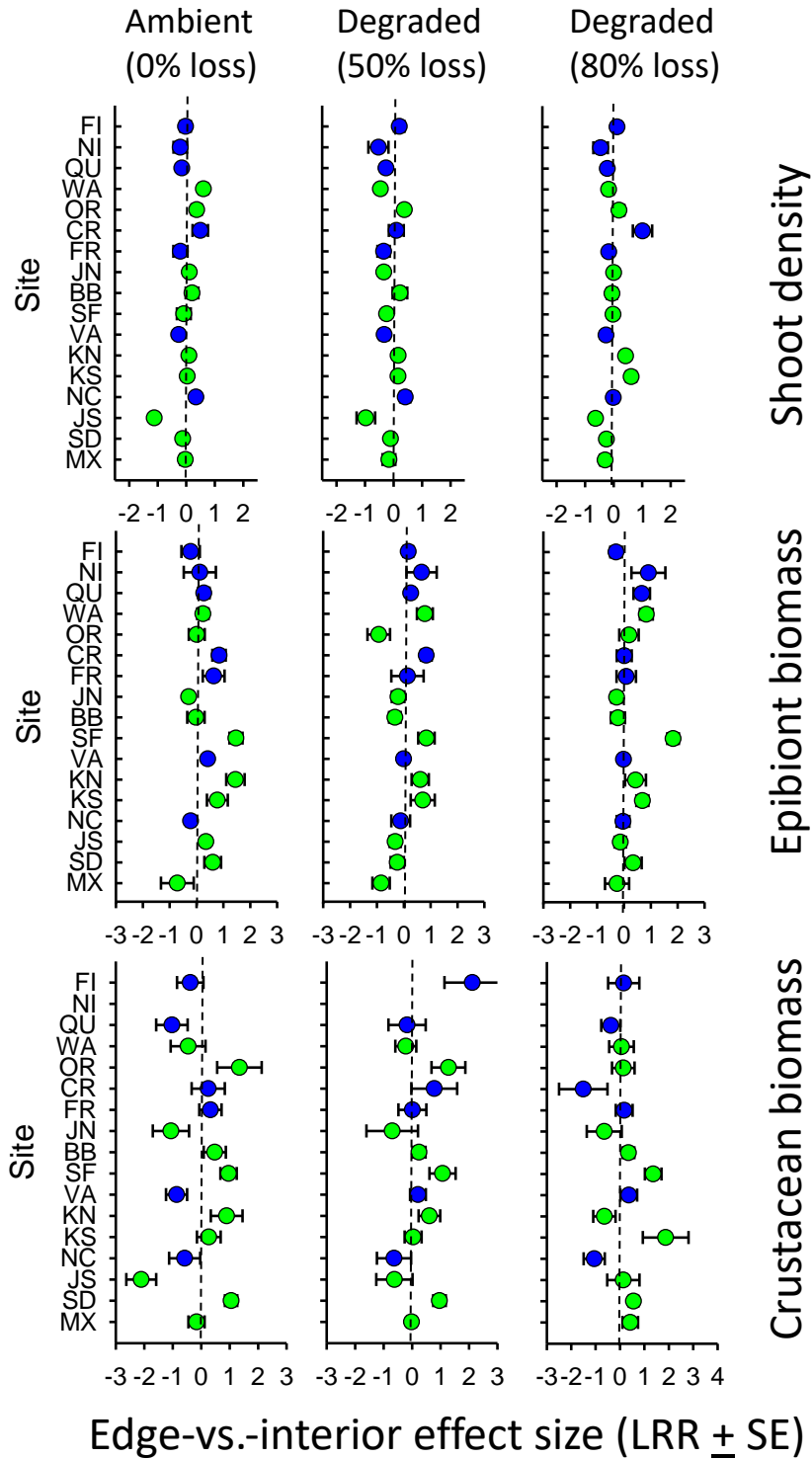


Figure S3. Mean edge-vs.-interior effect sizes at each of the 17 sites for shoot density, epibiont biomass, and crustacean biomass. Edge effect sizes are mean (\pm SE) log response ratios (LRRs) for the difference between patch edges and patch interiors. Positive numbers reflect greater values along the edge compared to the patch interior. Site codes as in Table S1.

Table S2. Results of linear models testing for effects of habitat degradation and edge-to-interior effect sizes (EES) for shoot density (EES SD), epibiont biomass (EES EPI), and crustacean biomass (EES CB) on edge effect strength for predation risk. Top table: results of model comparisons using AICc; model receiving the most support, M1, is shown in bold. Bottom table: results for model M1. Beta = standardized coefficient.

Model	Predictors	Δ AIC	AIC weight (%)
1	Habitat degradation (HD) * EES CB + EES SD + EES EPI	0	54.0
2	HD + EES CB + EES EPI + EES SD	2.18	18.2
3	HD * EES EPI + EES CB + EES SD	5.04	4.3
4	HD * EES SD + EES CB + EES EPI	5.21	3.9
5	HD * EES CB + EES EPI	8.05	0.9
6	HD * EES CB + EES SD	2.3	17.1
7	HD * EES CB	9.44	0.5
8	Null model	8.25	0.8

Source	df	MS	F	P	Beta
Habitat degradation (HD)	2	0.14	2.7	0.06	0.15
EES SD	1	0.42	8.0	<0.001	-0.48
EES EPI	1	0.17	3.3	0.06	-0.2
EES CB	1	0.07	1.4	0.21	-0.15
HD * EES CB	2	0.14	2.7	0.05	0.34
Residual	40	0.05			

Table S3. Results of model comparisons using AICc for effects of habitat degradation effect sizes for crustacean biomass (HD CB) and epibiont biomass (HD EPI), and mean ambient shoot density per site on habitat degradation effect strength for predation risk. A = analyses for 50% shoot loss, B = analyses for 80% shoot loss.

A. 50% shoot loss

Model	Predictors	ΔAIC	AIC weight (%)
1	HD50 CB + HD50 EPI + Mean ambient shoot density	5.36	6.8
2	HD50 CB + HD50 EPI	3.56	16.8
3	HD50 CB	1.79	13.7
4	HD50 EPI	1.83	13.4
5	Mean ambient shoot density	1.71	14.2
6	Null model	0	33.5

B. 80% shoot loss

Model	Predictors	ΔAIC	AIC weight (%)
1	HD80 CB + HD80 EPI + Mean ambient shoot density	4.33	3.2
2	HD80 CB + HD80 EPI	3.23	19.8
3	HD80 CB	1.71	11.8
4	HD80 EPI	1.66	12.1
5	Mean ambient shoot density	0.45	22.1
6	Null model	0	27.7