

Supplementary material

Table S1. Parameters of the final regressions used to estimate individual dry mass (DM) from LC^2 (L= maximum length, C= maximum circumference). The y-intercept (a) and slope (b) of the predictive equation: $\ln DM = a + b \ln LC^2$ are shown for each location, sampling date and size category (C = or > 2 cm). Some regressions were calculated with pooled data from different locations and/or sampling dates. Ol = Oleiros, SP = SPedro, Pz = Peizas, Lo = Looe, Wm = Wembury

Area	Location	Sampling date	Size category	a	b	r ²	n
Marginal	Ol	summer	C = 2 cm	-8.699	2.004	0.86	175
Marginal	Ol	summer	C > 2 cm	-3.571	0.795	0.82	293
Marginal	Ol	winter	C = 2 cm	-8.378	1.802	0.90	208
Marginal	Ol	winter	C > 2 cm	-4.849	0.931	0.89	298
Central Spain	SP-Pz	winter–summer	C = 2 cm	-9.188	2.051	0.93	246
Central Spain	SP-Pz	winter	C > 2 cm	-3.918	0.836	0.81	215
Central Spain	SP	summer	C > 2 cm	-4.524	0.925	0.90	102
Central Spain	Pz	summer	C > 2 cm	-3.497	0.813	0.88	50
UK	Lo-Wm	winter	C = 2 cm	-10.446	2.456	0.95	212
UK	Lo-Wm	winter	C > 2 cm	-4.825	0.915	0.85	111

Table S2. Logistic regression analyses with pooled data for comparisons of the size-reproduction probability relationship among locations in central and marginal locations of N Spain. Central locations: SPedro (SP), Peizas (Pz); marginal locations: Oleiros (Ol), Novellana (Nv). Reference location for comparisons Pz. D= Deviance

	DF	summer 2005			summer 2006			summer 2007		
		D change	Wald test	p	D change	Wald test	p	D change	Wald test	p
Size (S)	1	440.578		<0.001	476.312		<0.001	60.655		<0.001
Location (L)	3	72.216		<0.001	41.096		<0.001	9.448		0.024
L1 (Ol)	1		20.904	<0.001		9.544	0.002		2.764	0.096
L2 (Nv)	1		9.992	0.002		13.407	<0.001		3.173	0.075
L3 (SP)	1		2.008	0.156		0.015	0.903		2.811	0.094
S × L	3	192.767		<0.001	39.331		<0.001	3.862		0.277
S × L1 (Ol)	1		47.450	<0.001		11.952	<0.001		1.698	0.193
S × L2 (Nv)	1		28.922	<0.001		10.897	0.001		0.306	0.580
S × L3 (SP)	1		0.187	0.666		0.1182	0.731		1.627	0.202

Table S3. Parameters of the regressions relating reproductive to vegetative dry mass (log transformed data) in N Spain. The slope (\pm SE) and intercept (\pm SE) values, percentage of variance explained (R^2) and significance (p) are shown. Slopes significantly different from 1 are indicated in boldface. Sample size in each case is indicated in the last column. Peizas (Pz) SPedro (SP), Oleiros (Ol).

Area	Loc	Date	Slope \pm SE	Intercept \pm SE	R^2	p	n
Central Spain	Pz	summer 05	1.412 \pm 0.092	-0.680 \pm 0.102	0.878	<0.001	35
		summer 06	0.942 \pm 0.110	-0.100 \pm 0.127	0.811	<0.001	19
	SP	summer 05/06	1.464 \pm 0.058	-1.073 \pm 0.073	0.852	<0.001	110
Marginal	Ol	summer 05/06	0.689 \pm 0.078	-0.874 \pm 0.073	0.420	<0.001	109



Figure S1. Damaged individuals of *Fucus serratus* at one marginal location (Oleiros), May 2007 (photo: J. Arrontes).