

Figure S1. Map of sampling locations around Santa Catalina Island. Number of eels photographed from each location are included in parentheses.

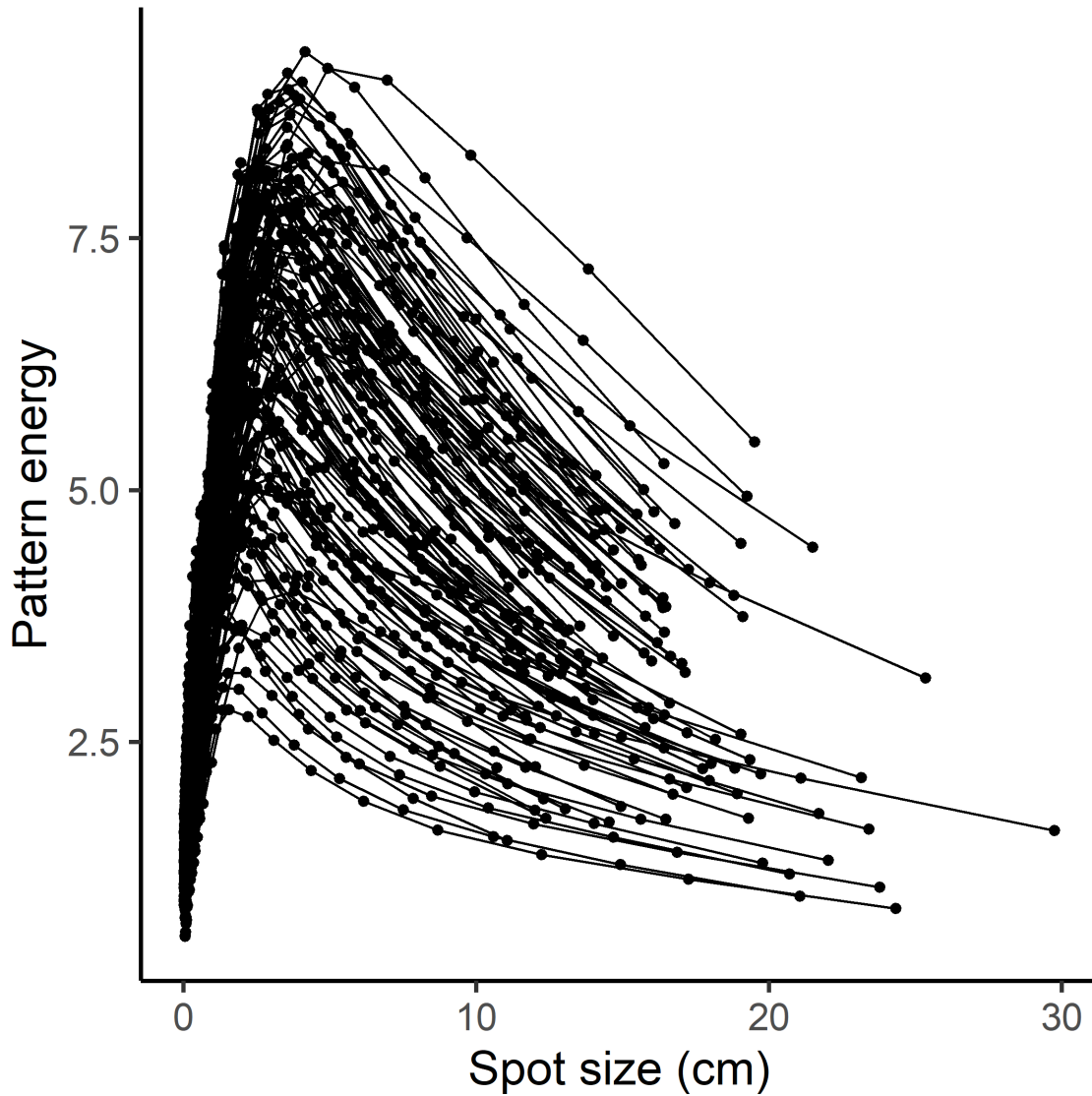


Figure S2. Relative proportion (i.e., “pattern energy”) of spot sizes for each individual. Pattern spot sizes were run through a bandpass filter of 2 to 688 px, progressing by a factor of $\sqrt{2}$. These pixel diameters were then converted to cm using the scale bar in each photo. Eels have a “mottled” patterning, versus disruptive (large blocks of alternating color) or uniform patterning.

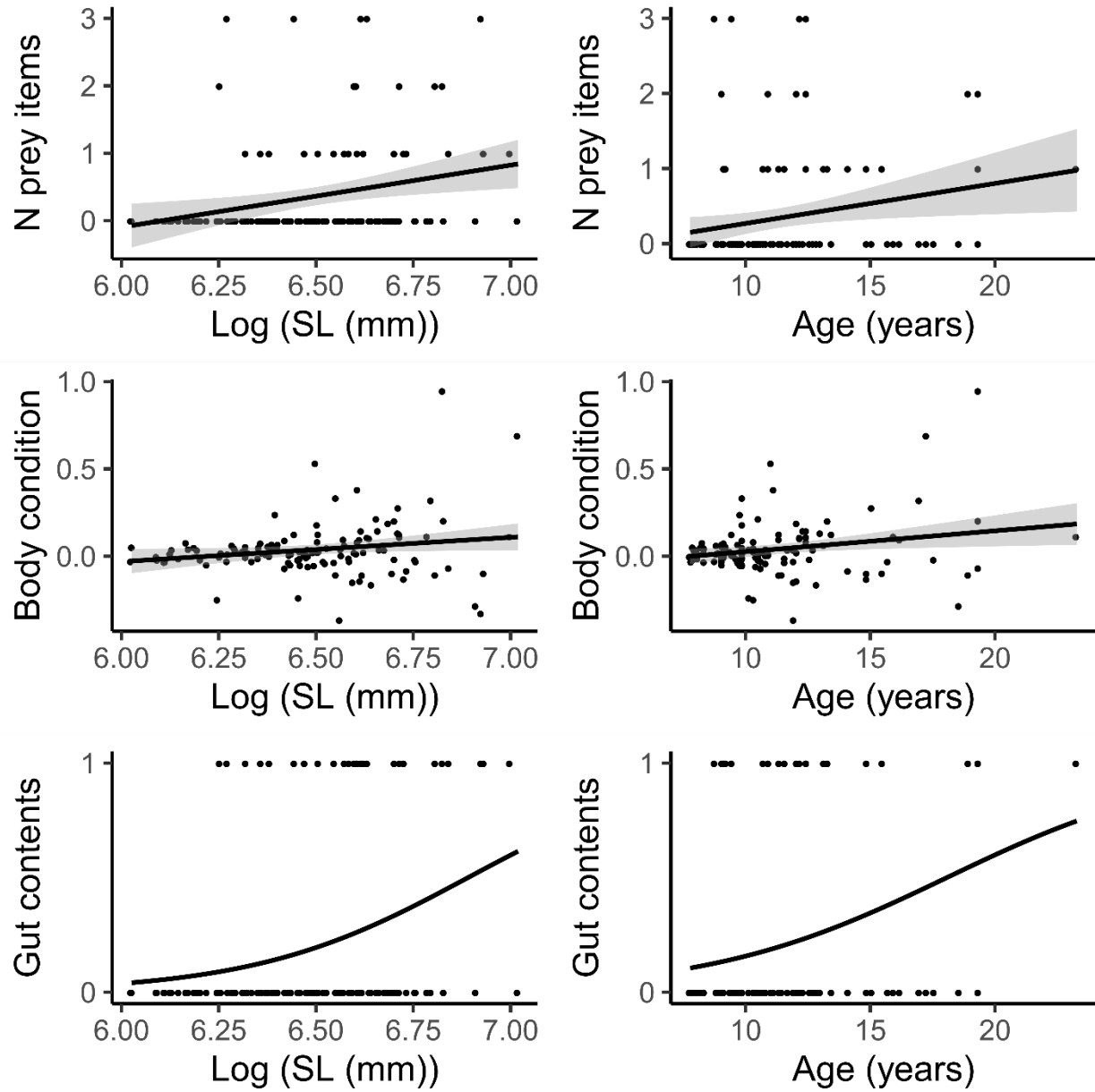


Figure S3. Plots of foraging regressions results, for log-transformed standard length (SL) and age (calculated based on head length). Gut contents are on a binary scale, where 0 indicates no prey items, and 1 indicates >1 prey item. All regressions are significant (see Table S4 for p values, slopes, and R^2 values).

Table S1. ANOVA results for one-way ANOVAs

Dependent variable	Independent variable	df (effect)	df (residuals)	SS (effect)	SS (residuals)	<i>F</i>	<i>p</i>
Standard length	Site	3	116	0.24	5.18	1.76	0.16
Age	Site	3	115	36.5	978.2	1.43	0.24
Countershading	Body section	2	245	2.78	5.63	59.9	<0.0001

Table S2. Loadings table for the environmental PCA. Contributions describe the amount of variance explained by each variable along an axis. Correlations describes the direction of the relationship between each variable and axis

Variables	Component 1		Component 2		Component 3	
	Contrib.	Corr.	Contrib.	Corr.	Contrib.	Corr.
% Articulated coralline	1.9	-0.39	10.6	0.66	12.3	0.59
% Boulder	10.4	0.92	0.6	-0.16	1.5	-0.21
% Brown algae	0.5	0.20	1.1	-0.21	5.0	0.38
% Cobble	0.2	-0.12	6.0	-0.50	14.8	0.65
% Crustose coralline	9.4	0.88	0.0	-0.01	6.5	0.43
% Encrusting red	3.2	0.51	12.3	0.71	7.8	0.47
% Green algae	1.8	-0.39	18.1	0.86	0.0	0.02
% None	10.8	-0.94	0.0	0.04	1.2	-0.18
% Other brown	4.7	0.62	2.7	-0.34	2.4	-0.26
% Red algae	3.9	0.57	14.2	0.77	2.5	-0.27
% Reef	7.6	0.79	3.8	0.40	0.7	-0.14
% Sand	10.7	-0.93	1.0	0.20	1.0	-0.16
% Seagrass	0.1	0.08	3.1	0.36	27.1	-0.87
Coverage diversity	0.5	0.20	21.8	0.95	1.5	0.20
Depth	5.3	0.66	0.0	0.03	5.7	0.40
Horizontal visibility	9.9	0.90	2.8	-0.34	1.8	0.22
Rugosity ratio	8.7	0.85	0.4	-0.14	7.5	-0.46
Substrate diversity	10.4	0.92	1.5	0.25	0.8	-0.15

Table S3. Significant regression results. *Conditional R². †Logistic regression

Response variable	Predictor variable	p	R ²	Slope
<i>a</i> *	<i>L</i> *	<0.0001	0.57	0.41
<i>a</i> *	<i>b</i> *	<0.0001	0.91	1.42
<i>b</i> *	<i>L</i> *	<0.0001	0.45	0.25
<i>L</i> *	Environmental PCA axis 1	0.002	0.13*	-2.6
<i>a</i> *	Environmental PCA axis 1	<0.001	0.16*	-1.86
<i>b</i> *	Environmental PCA axis 1	<0.001	0.12*	-0.95
Tail countershading	Log (standard length)	0.002	0.08*	-0.2
Pattern diversity	Log (standard length)	<0.001	0.20*	-0.85
Gut contents	Log (standard length)	0.002†	—	—
Body condition	Log (standard length)	0.04	0.03	0.14
N prey items	Log (standard length)	0.005	0.06	0.92
Gut contents	Age	0.004†	—	—
Body condition	Age	0.015	0.04	0.012
N prey items	Age	0.019	0.04	0.05

Table S4. MANOVA results

	df	All sites		Cat Harbor versus all others		Cat Harbor versus all others	
		SS	SS	<i>F</i>	<i>F</i>	p	p
<i>a</i>	1	4.59	2.83	17.51	3.71	<0.0001	0.06
<i>b</i>	1	3.23	0.08	0.52	2.61	0.47	0.11
<i>L</i>	1	0.81	0.53	3.27	0.66	0.07	0.42
Countershading ratio (head)	1	6.71	0.08	0.50	5.42	0.48	0.02
Countershading ratio (body)	1	0.36	0.01	0.06	0.30	0.81	0.59
Countershading ratio (tail)	1	0.32	0.01	0.08	0.26	0.78	0.61
Pattern spot size	1	1.26	1.41	8.74	1.02	<0.01	0.31
Pattern diversity	1	0.22	0.19	1.15	0.18	0.29	0.68
Residuals	110	136.2	17.78				