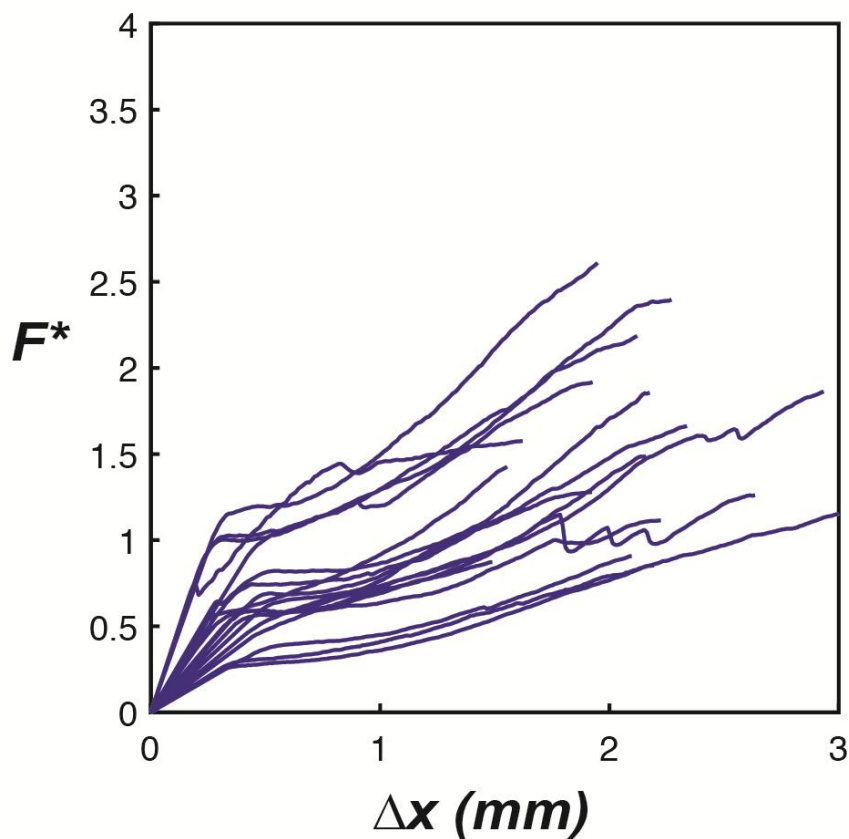


## Influence of multi-cycle loading on the structure and mechanics of marine mussel plaques

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### Supplementary Data



**Figure S1: Force required to extend the plaque-thread sample under monotonic loading.** The force,  $F(\Delta x)$ , of each individual plaque-thread loading has been scaled by the geometric mean of the plaque's diameters,  $D_p$ , to produce the scaled quantity  $F^*(\Delta x)$ .

<b>Adhesive Failures</b>			
	Number of Samples	Average of $F^*_{MAX}/F^*_{PL}$	StdDev of $F^*_{max}/F^*_{PL}$
Monotonic Loading	6	2.304	0.424
Scheme #1	2	2.528	0.016
Scheme#2	3	3.467	1.206
Scheme#3	1	2.613	
Scheme #4	2	3.829	1.250
Total	14	2.825	0.898

<b>Cohesive Failures</b>			
	Number of Samples	Average of $F^*_{MAX}/F^*_{PL}$	StdDev of $F^*_{max}/F^*_{PL}$
Monotonic Loading	1	2.547	-
Scheme #1	1	0.837	-
Scheme#2	1	3.734	-
Scheme#3	1	4.034	-
Scheme #4	0	-	-
Total	4	2.788	1.451

<b>Thread Failures</b>			
	Number of Samples	Average of $F^*_{MAX}/F^*_{PL}$	StdDev of $F^*_{max}/F^*_{PL}$
Monotonic Loading	11	3.236	1.263
Scheme #1	3	1.970	2.003
Scheme#2	2	2.509	0.432
Scheme#3	4	3.048	0.890
Scheme #4	4	3.046	0.598
Total	24	2.954	1.177

**Tables S1: Maximum scaled force,  $F^*_{MAX}$ , normalized by the proportional limit of the scaled force,  $F^*_{PL}$ .** Three failure modes are shown: adhesive failures due to delamination between plaque and glass, cohesive failures within plaque bulk, and thread failures. StdDev is standard deviation. The various loading schemes are described in Table 2.