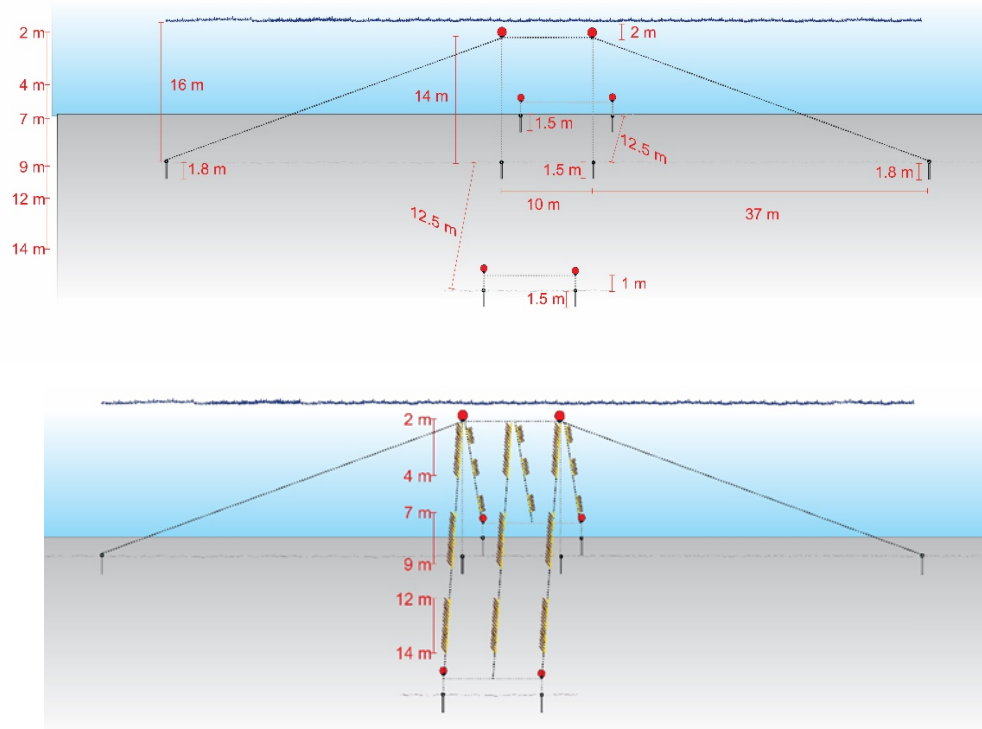


Supplementary material



Supplementary Figure 1. Geographic location of the experimental cultivation sites, in Todos Santos Bay ($31^{\circ} 51' 42.57''$ N, $116^{\circ} 39' 31.58''$ W), San Quintín Bay ($30^{\circ} 26' 35.20''$ N, $115^{\circ} 59' 52.43''$ W) and Santa María Bay ($30^{\circ} 21' 43.68''$ N, $115^{\circ} 55' 8.90''$ W). Images have been modified from Google Earth.



Supplementary Figure 2. Design for *Eisenia arborea* mariculture. Floating primary and secondary ropes were installed at the different experimental depth ranges (2-4, 7-9, 12-14 m). The structures were anchored to the sandy substratum by stainless-steel tubes.

Supplementary Table 1. One-way analysis of variance applied on biological descriptors measured in harvested and unharvested *E. arborea* sporophytes during *in situ* experimental culture (Fig. 2). Cultures were made in San Quintín Bay and Todos Santos Bay.

San Quintín Bay

Total weight

Source of Variation	DF	SS	MS	F	P
Between Groups	11	28625044.739	2602276.794	36.168	<0.001
Residual	348	25038472.594	71949.634		
Total	359	53663517.333			

Specific growth

Source of Variation	DF	SS	MS	F	P
Between Groups	11	583.293	53.027	20.206	<0.001
Residual	348	913.251	2.624		
Total	359	1496.544			

Todos Santos Bay

Total weight

Source of Variation	DF	SS	MS	F	P
Between Groups	11	10165716.352	924156.032	53.555	<0.001
Residual	348	6005138.532	17256.145		
Total	359	16170854.883			

Specific growth

Source of Variation	DF	SS	MS	F	P
Between Groups	10	454.935	45.494	50.474	<0.001
Residual	319	287.520	0.901		
Total	329	742.456			

Supplementary Table 2. One-way analysis of variance applied on biological descriptors measured in harvested and unharvested *E. arborea* sporophytes during *in situ* experimental culture (Fig. 3). Cultures were made in San Quintín Bay and Todos Santos Bay.

San Quintín Bay

Total weight (harvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	10018816	1001882	28.369	<0.001
Residual	154	5438664	35316		
Total	164	15457480			

Total weight (unharvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	11147447	1114745	19.816	<0.001
Residual	154	8663046	56253.55		
Total	164	19810494			

Specific growth (harvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	134.114	13.411	9.567	<0.001
Residual	154	215.879	1.402		
Total	164	349.994			

Specific growth (unharvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	59.568	5.957	3.985	<0.001
Residual	154	230.221	1.495		
Total	164	289.79			

Todos Santos Bay

Total weight (harvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	3744758	374475.8	178.777	<0.001
Residual	154	322576.2	2094.65		
Total	164	4067334			

Total weight (unharvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	7769054	776905.4	85.315	<0.001
Residual	154	1402368	9106.289		
Total	164	9171422			

Specific growth (harvested sporophytes)

Source of Variation	DF	SS	MS	F	P
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Between Groups	10	0.602	0.0602	0.527	0.869
Residual	154	17.568	0.114		
Total	164	18.17			

Specific growth (unharvested sporophytes)

Source of Variation	DF	SS	MS	F	P
Between Groups	10	93.193	9.319	23.222	<0.001
Residual	154	61.801	0.401		
Total	164	154.994			

Supplementary Table 3. One-way analysis of variance applied to test the effect of 'depth' in the biological descriptors of cultivated *E. arborea* (Fig. 5) in each destructive sampling time (July and November 2016).

Culture Biomass July

Source of Variation	DF	SS	MS	F	P
Between Groups	2	86.842	43.421	3.141	0.051
Residual	57	788.032	13.825		
Total	59	874.874			

Culture Biomass November

Source of Variation	DF	SS	MS	F	P
Between Groups	2	18.092	9.046	3.555	0.035
Residual	57	145.06	2.545		
Total	59	163.152			

Culture density July

Source of Variation	DF	SS	MS	F	P
Between Groups	2	15307.5	7653.75	5.352	0.007
Residual	57	81510.18	1430.003		
Total	59	96817.68			

Culture density November

Source of Variation	DF	SS	MS	F	P
Between Groups	2	1703.333	851.667	0.539	0.586
Residual	57	89988.75	1578.75		
Total	59	91692.08			

% of epibionts

Source of Variation	DF	SS	MS	F	P
Between Groups	2	7210.009	3605.004	12.283	<0.001
Residual	29	8511.501	293.5		
Total	31	15721.51			

Sporophyte weight July

Source of Variation	DF	SS	MS	F	P
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Between Groups	2	44242.08	22121.04	23.425	<0.001
Residual	172	162422.4	944.316		
Total	174	206664.5			
Sporophyte weight November					
Source of Variation	DF	SS	MS	F	P
Between Groups	2	8495.721	4247.86	6.688	0.002
Residual	106	67329.87	635.187		
Total	108	75825.59			
Blade lenght July					
Source of Variation	DF	SS	MS	F	P
Between Groups	2	3102.227	1551.113	10.57	<0.001
Residual	172	25241.18	146.751		
Total	174	28343.41			
Blade lenght November					
Source of Variation	DF	SS	MS	F	P
Between Groups	2	2985.834	1492.917	16.068	<0.001
Residual	71	6596.72	92.912		
Total	73	9582.554			
Stipe lenght July					
Source of Variation	DF	SS	MS	F	P
Between Groups	2	72.536	36.268	12.806	<0.001
Residual	172	487.117	2.832		
Total	174	559.653			
Stipe lenght November					
Source of Variation	DF	SS	MS	F	P
Between Groups	2	10.795	5.398	4.586	0.013
Residual	71	83.57	1.177		
Total	73	94.365			