An experimental approach for understanding the process of wood fragmentation by marine wood borers in shallow temperate waters

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Fig. S1 Experimental design. The net with the logs was anchored beneath the pontoon shown in the inset photograph

In addition to Japanese cedar (*Cryptomeria japonica*), Japanese oak (*Quercus phillyraeoides*), coconut (*Cocos nucifera*), and limestone were also included in the experiment, but are not reported in the results.

Table S1 List of wood samples recovered at each sampling period

Numbers indicate the position of the logs on the polypropylene net (see Fig.S4 in this Supplement). Each sample consisted of a set of three cedar logs, plus an extra sample (+x) collected only between 20 and 40 months. These extra samples were used to identify the associated fauna and were not included in the analyses. Three logs (No. 10, No. 42, and No. 51) were fully degraded in the field during the experiment.

Immersion period	No. of cedar log to be recovered						
(months)	1	2	3	$+_{\rm X}$			
2	1	14	25				
4	5	17	36				
6	24	28	45				
8	49	50	52				
10	2	12	53				
12	20	32	40				
14	34	41	43				
16	35	48	54				
20	18	19	39	44			
24	13	16	33	37			
28	3	6	7	27			
32	4	11	21	31			
36	23	29	38	47			
40	8	15	26	30			
44	22	46	51				
48	9	10	42				

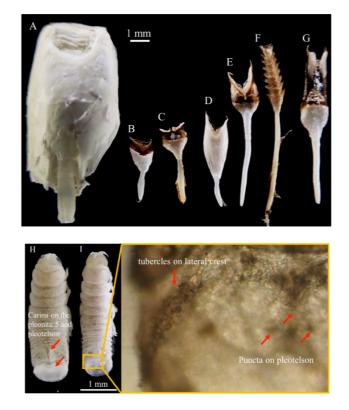


Fig. S2 Images of teredinid's pallet and limnoriids.

A; Psiloteredo megotara, B; Teredo clappi, C; Teredothyra matocotana, D; Teredo navalis, E; Teredo bartschi, F; Bankia carinata, G; Lyrodus pedicellatus, H; Limnoria saseboensis, I; Limnoria tuberculata

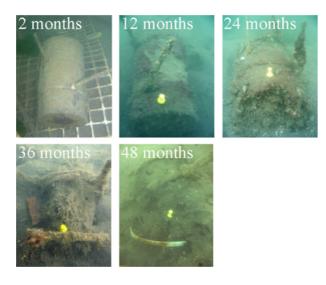


Fig. S3 State of fragmentation of some of the cedar logs after 2, 12, 24, 36 and 48 months.

Table S2 Raw species abundance data of wood-boring organisms collected from this study.

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Bankia carinata 0 0 0 0 0 0 0 0 0 0 0 0 - 0 -	Pholadidae Limnoridae	Teredo bartschi Lyrodus pediceilatus Teredo clappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesta striata Limnoria spp.	20-1 No.18 0 0 0 1 0 0 0 0 0 1 2700 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 0	No.19 11 36 8 17 0 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 1581	No.39 1 0 1 0 0 0 0 5 129 0 3999 36-3 No.38 2 1 1 2	24-1 No.13 0 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1	No.16 0 0 0 2 0 0 40-2 No.15 0 0	No.33 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 7 93 75 7014 40-3 No.30 5 0 0 1	28-1 No.3 0 1 0 0 0 0 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3	No.6 8 0 5 1 0 12 199 26 5725 44-2 No.46 6 1 0	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
Psiloteredo megotara 0 0 0 0 0 0 0 -	Pholadidae Limnoridae	Teredo bartschi Lyrodus pediceilatus Teredo clappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pediceilatus Teredo clappi	20-1 No.18 0 0 0 1 0 0 0 0 1 270 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 1 1 1 1 1 1 1 1 1 1 1 1 1	No.19 11 36 8 17 0 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0	No.39 1 0 1 0 0 0 0 0 5 129 0 3999 36-3 No.38 2 1 2 0	24-1 No.13 0 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0	No.16 0 0 0 2 0 0 4 134 144 3949 40-2 No.15 0 0 0 0 0 0 0	No.33 0 0 1 0 0 0 0 0 7 93 75 7014 40-3 No.30 5 0 1 1	28-1 No.3 0 1 0 0 0 0 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2	No.6 8 0 5 1 0 0 12 199 26 5725 5725 44-2 No.46 6 1 0 0	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 8 5866 8 5866 8 5866 5866 0 5866 0 5866 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
unidentified 4 1 7 3 1 7 0 1 - 0 - - a pair of empty shells 77 25 70 216 4 51 164 32 - 81 - - Pholadidae Martesia striata 3 1 4 0 0 0 0 - 0 - -	Pholadidae Limnoridae	Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredothyra matocotana	20-1 No.18 0 0 1 0 0 0 0 1 270 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 1 0 0 1 2568 3 0 0 1 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 0 1 2568 3 0 0 0 0 0 0 0 0 0 0 0 0 0	No.19 11 36 8 17 0 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0 0 0 0 0 0 0 0	No.39 1 0 1 0 0 0 0 0 5 129 0 3999 3999 36-3 No.38 2 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	24-1 No.13 0 0 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0	No.16 0 0 0 2 0 0 2 0 0 4 134 144 39499	No.33 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 75 7014 40-3 No.30 5 0 1 0	28-1 No.3 0 1 0 0 0 0 1 1 67 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0	No.6 8 0 5 1 0 0 12 199 26 5725 5	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 2 158 0 2 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 5 5 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
a pair of empty shells 77 25 70 216 4 51 164 32 - 81 - - Pholadidae Martesia striata 3 1 4 0 0 0 0 - 0 - - -	Pholadidae Limnoridae	Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredolyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredoclappi Teredoctappi	20-1 No.18 0 0 1 0 0 0 0 0 1 2700 8 2568 Sep. 2011 36-1 No.23 3 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	No.19 11 36 8 17 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0	No.39 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3699 3999 366-3 No.38 2 1 2 0 0 0 0 0	24-1 No.13 0 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0 0 0	No.16 0 0 0 2 0 0 40-2 No.15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	No.33 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 75 7014 40-3 No.30 5 0 1 1 0 0 0 0	28-1 No.3 0 1 0 0 0 0 1 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0 0 0	No.6 8 0 5 1 0 0 12 199 26 5725 5725	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
Pholadidae Martesia striata 3 1 4 0 0 0 - 0 - - -	Pholadidae Limnoridae	Teredo bartschi Lyrodus pediceilatus Teredo clappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesta striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pediceilatus Teredo tappi Teredothyra matocotana Bankia carinata Psiloteredo megotara	20-1 No.18 0 0 0 1 0 0 0 0 1 2700 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	No.19 11 36 17 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	No.39 1 0 1 0 0 0 0 5 129 0 0 3999 36-3 No.38 2 1 2 0 0 0 0	24-1 No.13 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0 0 0 0	No.16 0 0 0 2 0 0 40-2 No.15 0	No.33 0 0 0 0 0 0 0 0 0 0 0 75 7014 40-3 No.30 5 0 1 0 0 0	28-1 No.3 0 0 1 0 0 0 0 1 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0 0 0 0 0	No.6 8 0 5 1 0 0 12 199 26 5725 5725	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
	Pholadidae Limnoridae	Teredo bartschi Lyrodus pediceilatus Teredo clappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pediceilatus Teredo tappi Teredothyra matocotana Bankia carinata Psiloteredo megotara unidentified	20-1 No.18 0 0 0 1 0 0 0 1 270 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 1 0 0 4	No.19 11 36 8 17 0 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	No.39 1 0 1 0 0 0 0 0 5 129 0 3999 3999 36-3 No.38 2 1 2 0 0 0 0 0 7	24-1 No.13 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0 3	No.16 0 0 0 2 0 0 4 134 144 3949 40-2 No.15 0 1	No.33 0 0 0 1 0 0 0 7 93 75 7014 40-3 No.30 5 0 1 0 0 0 7 93 75 7014	28-1 No.3 0 0 1 0 0 0 0 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0 0 0 0 0 0 0 0	No.6 8 0 5 1 0 0 12 199 26 5725 5725	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
Linnorta spp. 3820 0049 /394 //3 13 23/3 1038 1393 - 89	Pholadidae Limnoridae Teredinidae	Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredolyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredo clappi Teredo clappi Teredo clapa Teredo clapa Teredo clapa Sankia carinata Psiloteredo megotara unidentified a pair of empty shells	20-1 No.18 0 0 0 1 0 0 0 1 270 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 1 0 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 1 2568 3 0 0 0 0 1 2568 3 0 0 0 0 1 2568 3 0 0 0 0 0 1 2568 3 0 0 0 0 1 2568 3 0 0 0 0 0 1 2568 3 0 0 0 0 0 1 2568 3 0 0 0 0 0 1 2568 3 0 0 0 0 0 0 0 1 2568 3 0 0 0 0 0 0 1 1 2568 3 0 0 0 0 0 0 0 0 0 0 0 1 2568 3 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	No.19 11 36 8 17 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 25	No.39 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 36-3 No.38 2 1 2 0 0 0 0 0 7 70	24-1 No.13 0 0 0 0 0 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0 0 0 3 216	No.16 0 0 0 2 0 0 4 134 144 3949 40-2 No.15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 4	No.33 0 0 0 1 0 0 0 7 93 75 7014 40-3 No.30 5 0 1 0 0 0 7 51	28-1 No.3 0 0 1 0 0 0 0 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0 0 0 0 0 0 0 0 0 164	No.6 8 0 5 1 0 0 12 199 26 5725 5 44-2 No.46 6 1 0 0 0 0 0 0 1 32	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 2 158 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3
	Pholadidae Limnoridae Teredinidae Pholadidae	Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredotyra matocotana Bankia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata Limnoria spp. Teredo navalis Teredo bartschi Lyrodus pedicellatus Teredo clappi Teredotappi Teredotappi Teredotappi Teredotappi Antia carinata Psiloteredo megotara unidentified a pair of empty shells Martesia striata	20-1 No.18 0 0 1 0 0 0 0 1 2700 8 2568 Sep. 2011 36-1 No.23 3 0 0 1 0 0 1 0 0 0 1 2708 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 1 0 0 0 0 1 2708 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 1 0 0 0 1 2778 8 2568 Sep. 2011 36 months 36-1 No.23 3 0 0 0 1 0 0 0 1 2778 8 2568 Sep. 2011 36 months 36 -1 No.23 3 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	No.19 11 36 8 17 0 0 6 47 2 1581 36-2 No.29 1 0 0 0 0 0 0 0 1 25 1	No.39 1 0 1 0 0 0 0 0 0 0 0 5 129 0 0 3999 39999 306-33 No.38 2 1 2 0 0 0 0 0 0 0 0 0 7 70 4	24-1 No.13 0 0 0 0 0 2 2 218 36 794 Jan. 2012 40 months 40-1 No.8 1 0 1 0 0 0 0 3 2 216 0	No.16 0 0 0 2 0 0 4 134 144 3949 40-2 No.15 0 0 0 0 0 0 0 1 4 0	No.33 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 75 7014 40-3 No.30 5 0 1 1 0 0 0 0 75 51 0 0	28-1 No.3 0 1 0 0 0 0 1 1 167 3 5909 May. 2012 44 months 44-1 No.22 15 0 3 2 0 0 0 0 0 0 0 0 0 0 0 1 1 167 3 5909	No.6 8 0 5 1 0 0 12 1999 26 5725 5 44-2 No.46 1 0 0 0 0 0 0 0 0 0 1 32 0 0	No.7 0 1 0 0 0 0 0 1 7 81 4 4901 44-3 No.51	32-1 No.4 12 0 2 5 0 0 0 2 158 0 5866 Sep. 2012 48 months 48-1 No.9 0 0 0 0 0 0 0 0 0 0 0 0 0	No.11 3 0 0 1 1 186 4 4148 48-2	No.21 9 0 8 0 0 1 7 300 6 3451 48-3

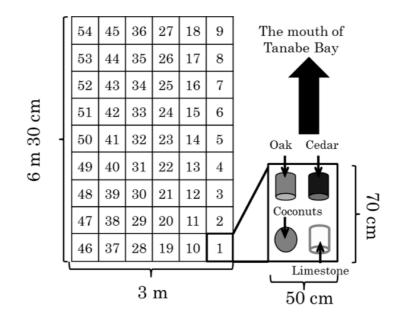


Fig. S4 Arrangement of the cedar logs on the polypropylene net.