

**Supplementary information**

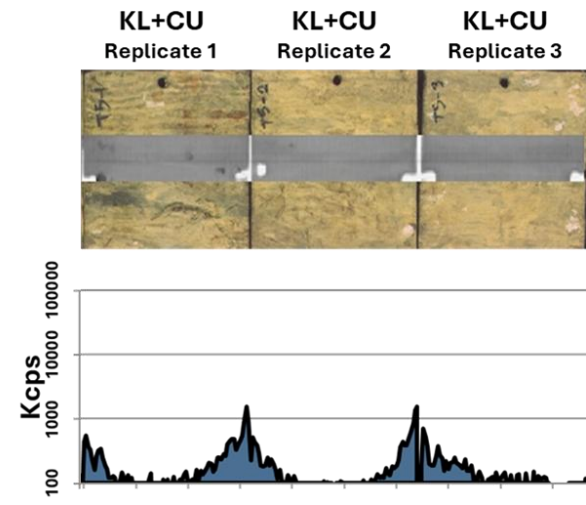
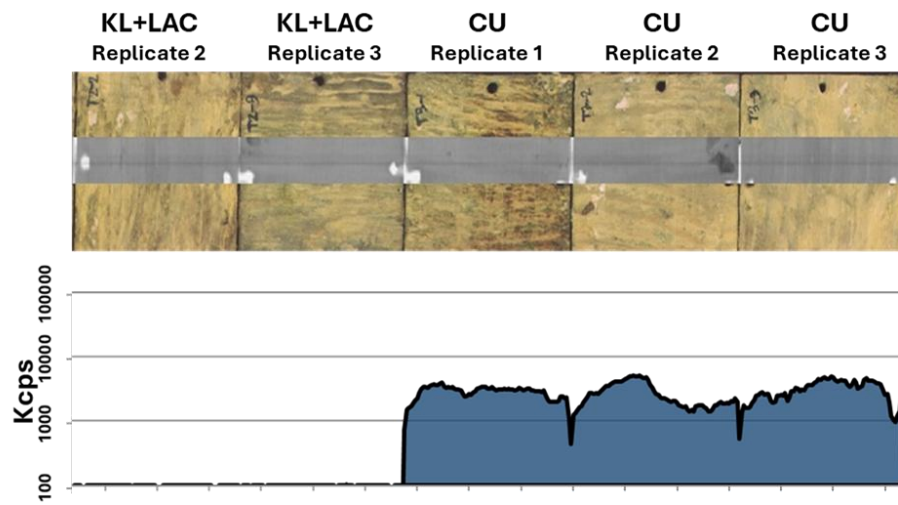
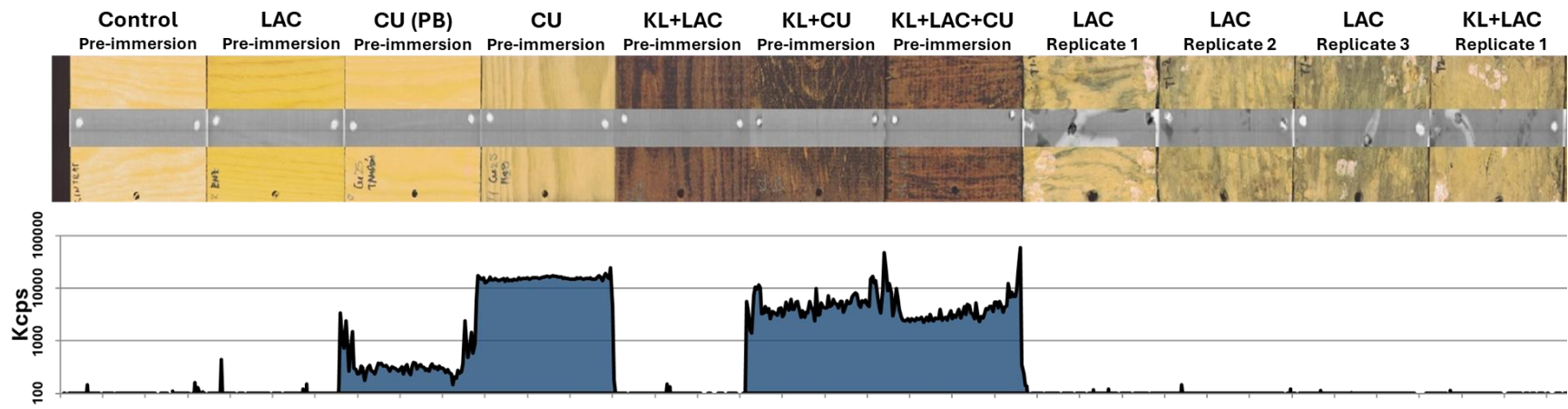
**Additional file 2**

## **Copper-lignin with laccase-mediated polymerization fixation for wood preservation: determination of durability in marine environment using novel technologies**

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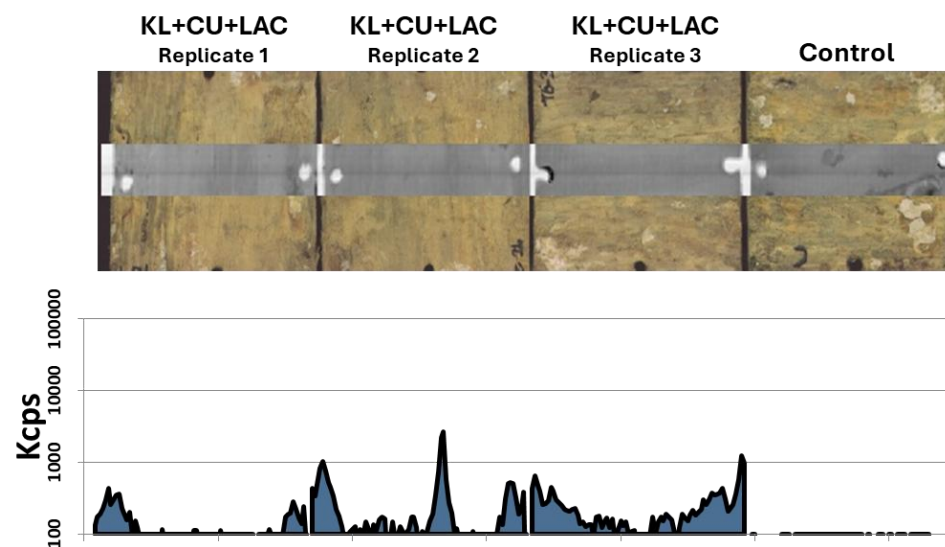
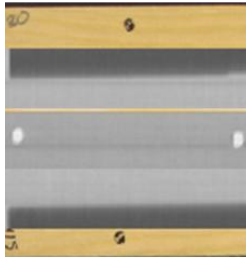
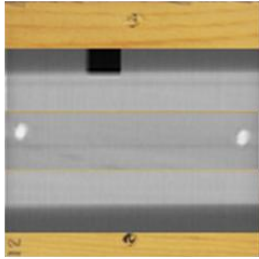


Figure S1. Itrax Core Scanner analysis of the pre-immersed and post immersed samples. On top, RGB image of the samples with the overlaid X-ray radiography; on the bottom, the corresponding ED-XRF copper values in kilo counts per second (Kcps) units. Note axis Y is in logarithmic scale in base 10.

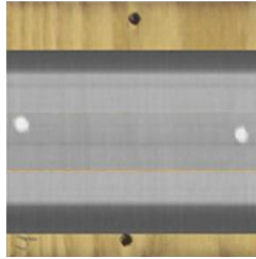
**Control**  
Pre-immersion



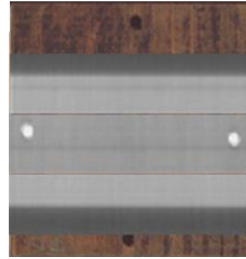
**LAC**  
Pre-immersion



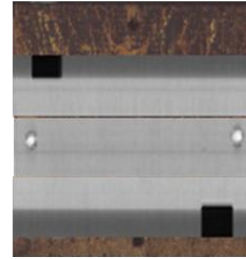
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Pre-immersion



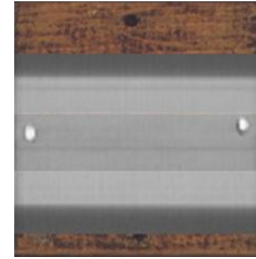
**KL+LAC**  
Pre-immersion



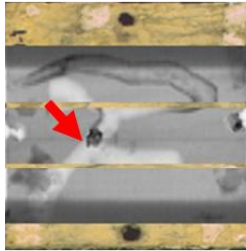
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Pre-immersion



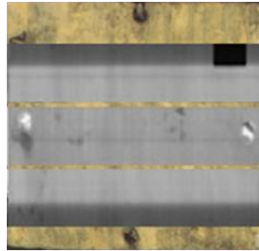
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Pre-immersion



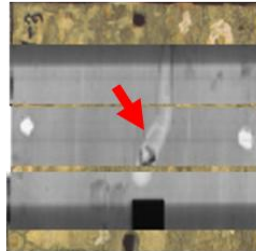
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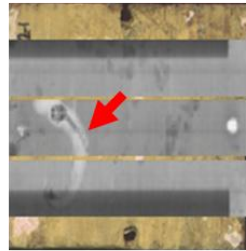
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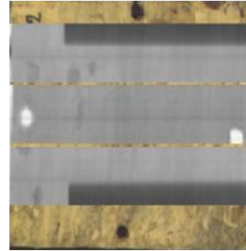
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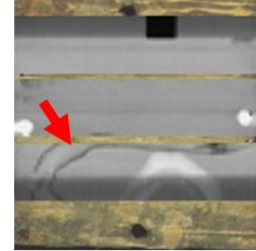
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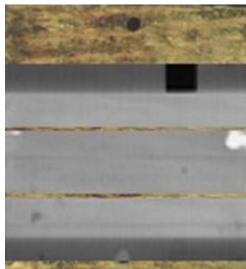
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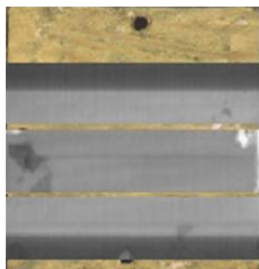
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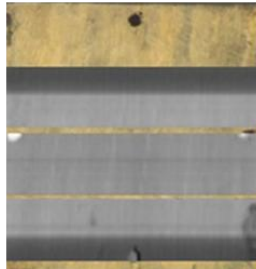
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Replicate 1



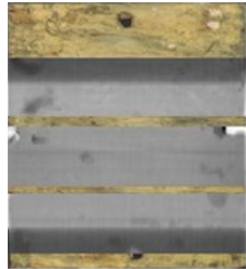
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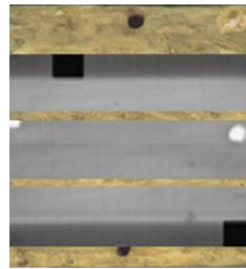
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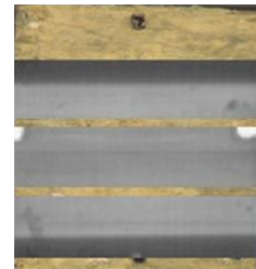
**KL+CU**  
Replicate 1



**KL+CU**  
Replicate 2



**KL+CU**  
Replicate 3



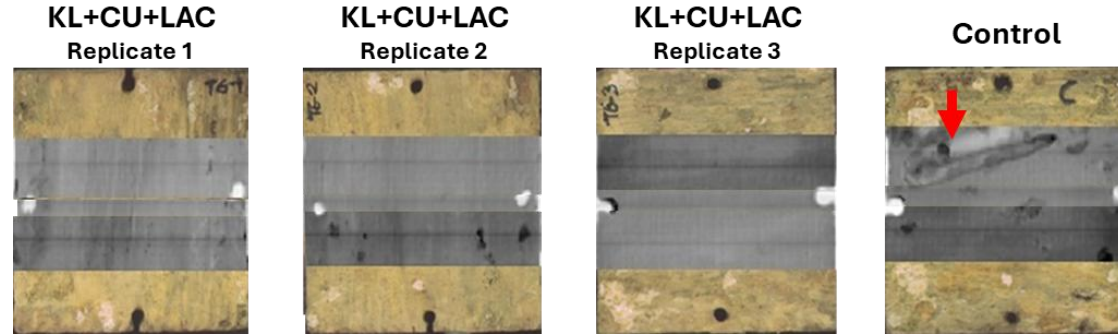


Figure S2. X-ray radiographies of all the wood treated samples acquired by Itrax Core Scanner. The RGB images were overlaid by three different X-ray scans acquired by separation of 1 cm from the central position and overlapped accordingly. Red arrows indicate the presence of boring organisms (teredo).

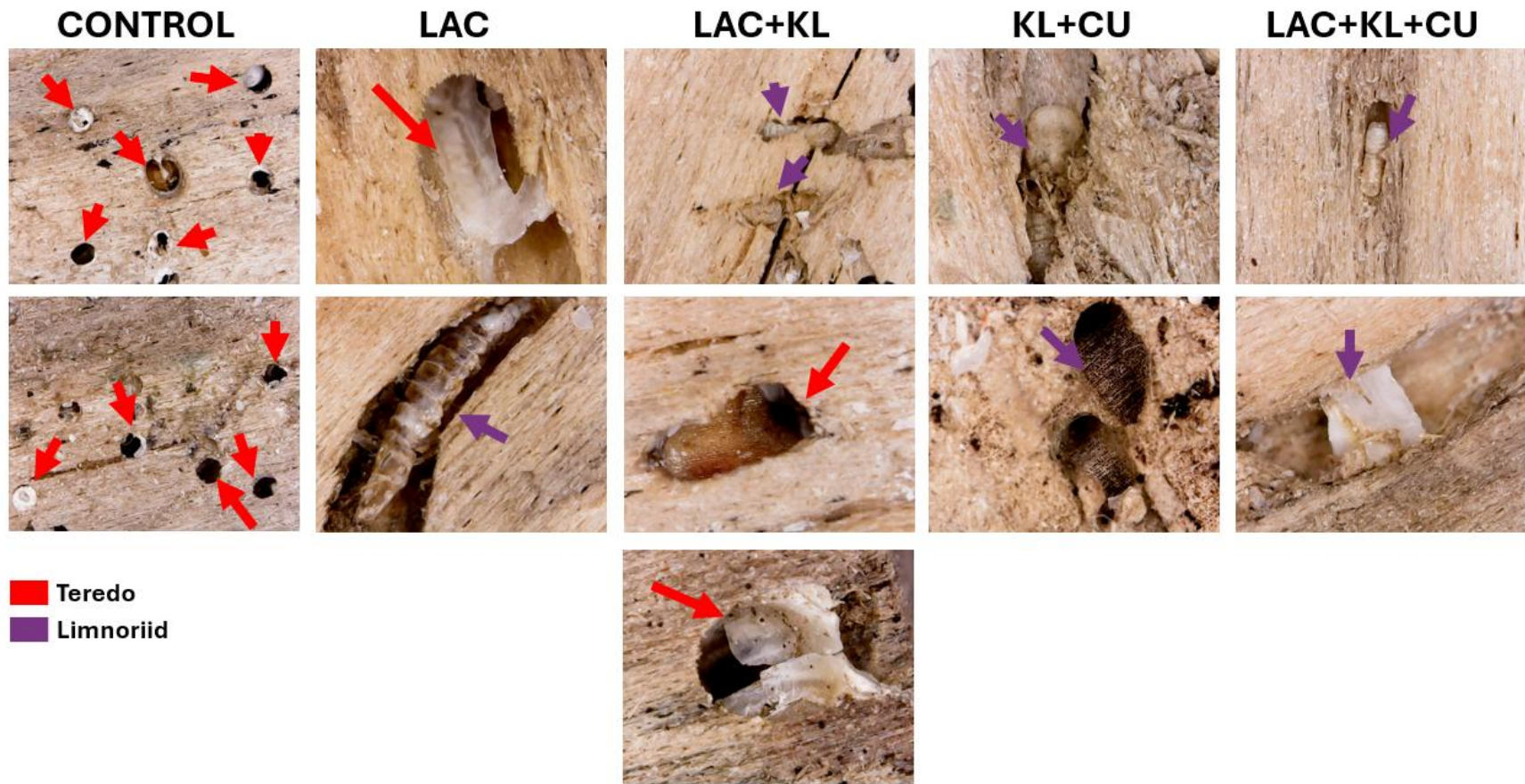


Figure S3. Pictures acquired by a USB digital lens camera on the samples' surface. Red arrows indicate presence of teredos and violet arrows indicate presence of limnoriids.