



Aoife Daly

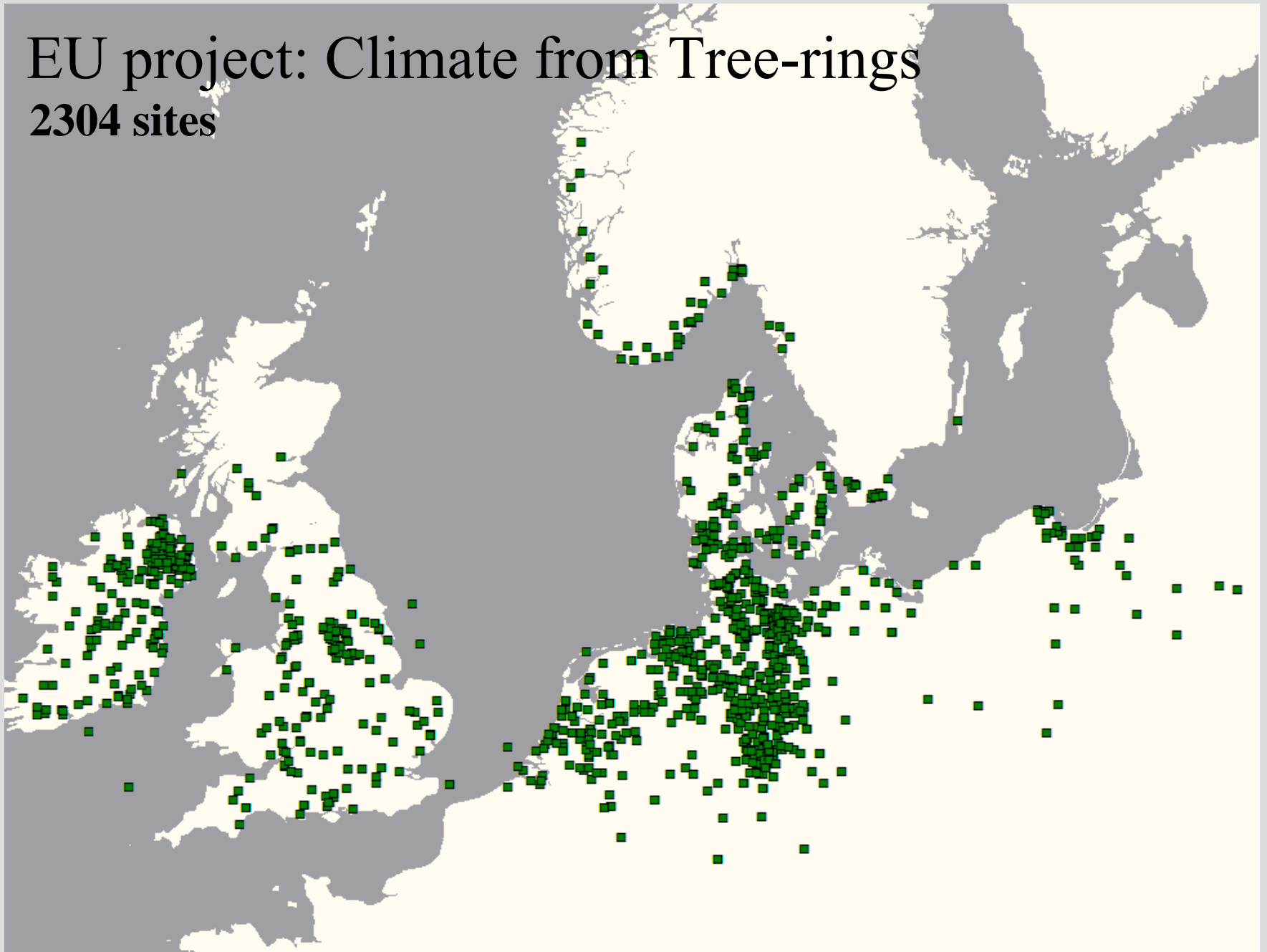
Freelance: [dendro.dk](http://dendro.dk)

Research Fellow: National Gallery of Denmark (SMK)



# EU project: Climate from Tree-rings

2304 sites



# Provenance determination on three levels

**Blue dots**

**Master chronologies**

**first level test**

**Green dots**

**Site chronologies**

**second level test**

**Red dots**

**Single trees**

**third level test**

# Cross-sections of nordic vs cogs

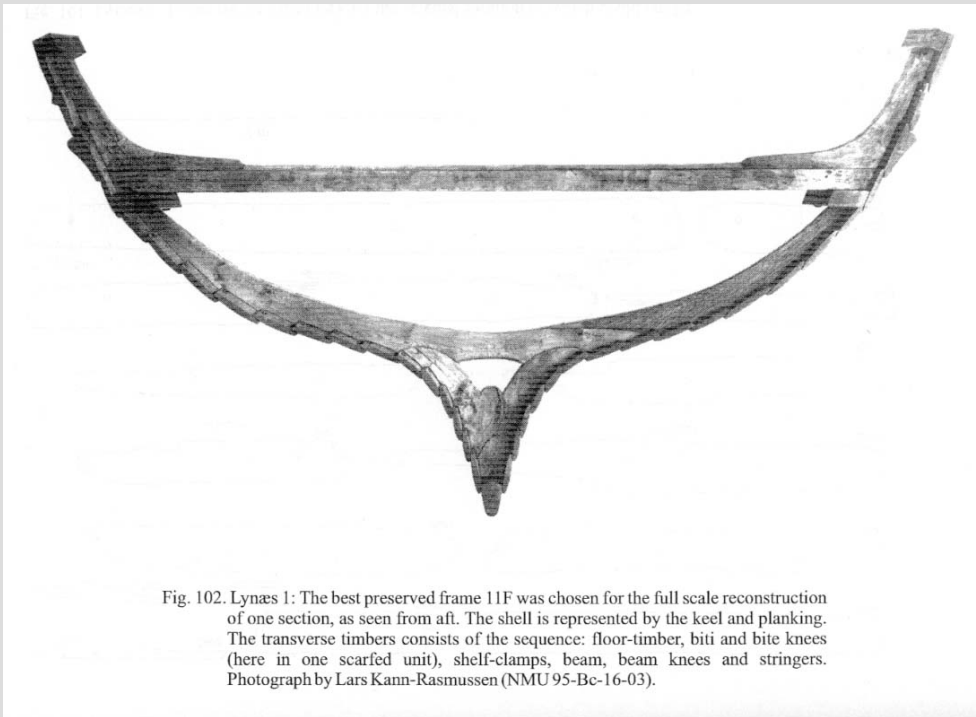


Fig. 102. Lynæs 1: The best preserved frame 11F was chosen for the full scale reconstruction of one section, as seen from aft. The shell is represented by the keel and planking. The transverse timbers consists of the sequence: floor-timber, biti and bite knees (here in one scarfed unit), shelf-clamps, beam, beam knees and stringers. Photograph by Lars Kann-Rasmussen (NMU 95-Be-16-03).

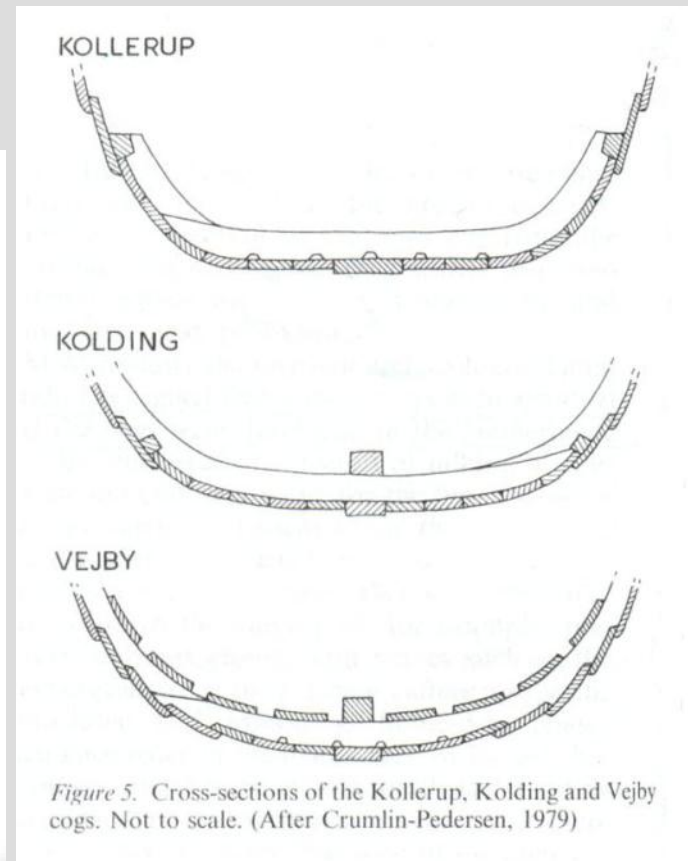
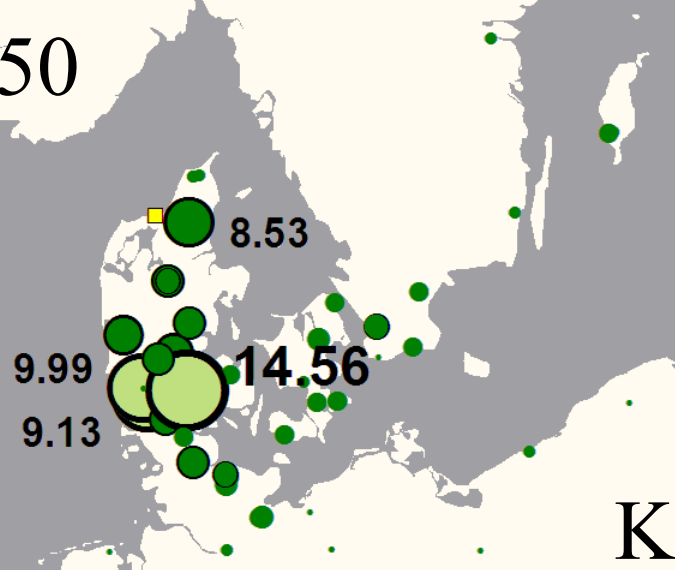
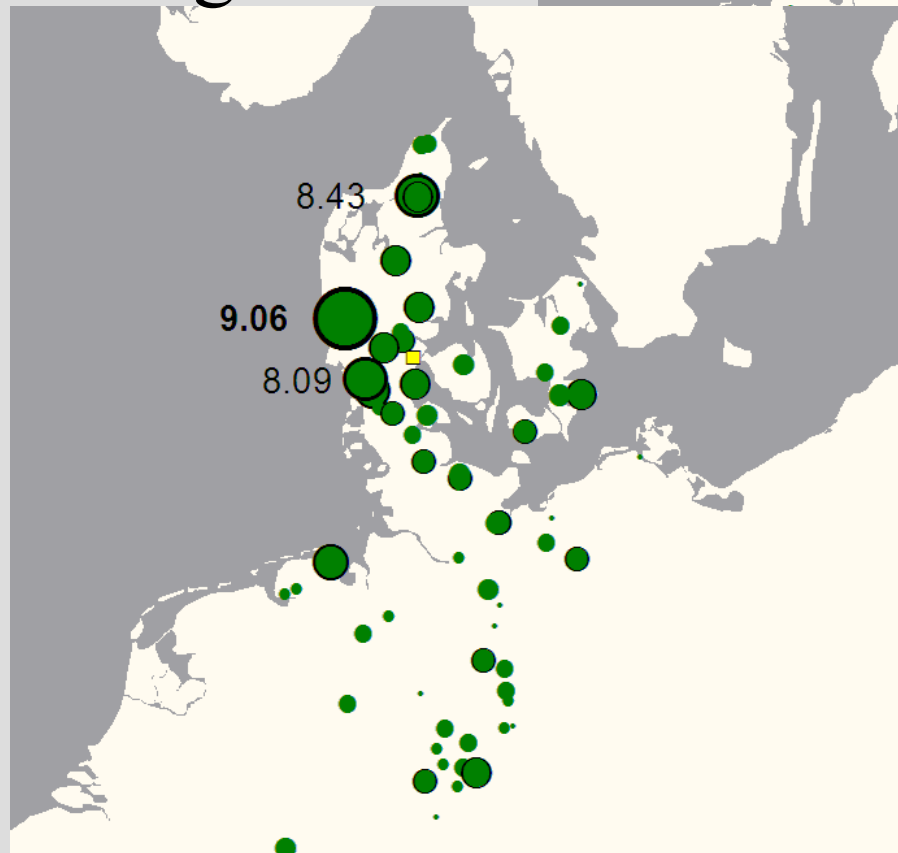


Figure 5. Cross-sections of the Kollerup, Kolding and Vejby cogs. Not to scale. (After Crumlin-Pedersen, 1979)

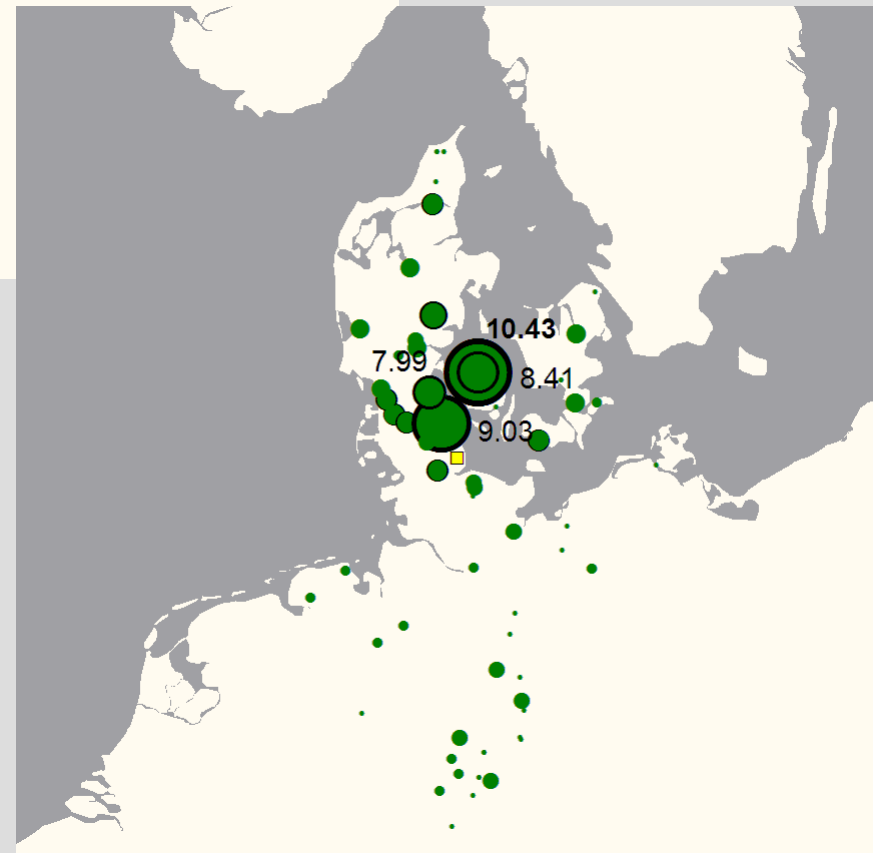
Kollerup c. 1150



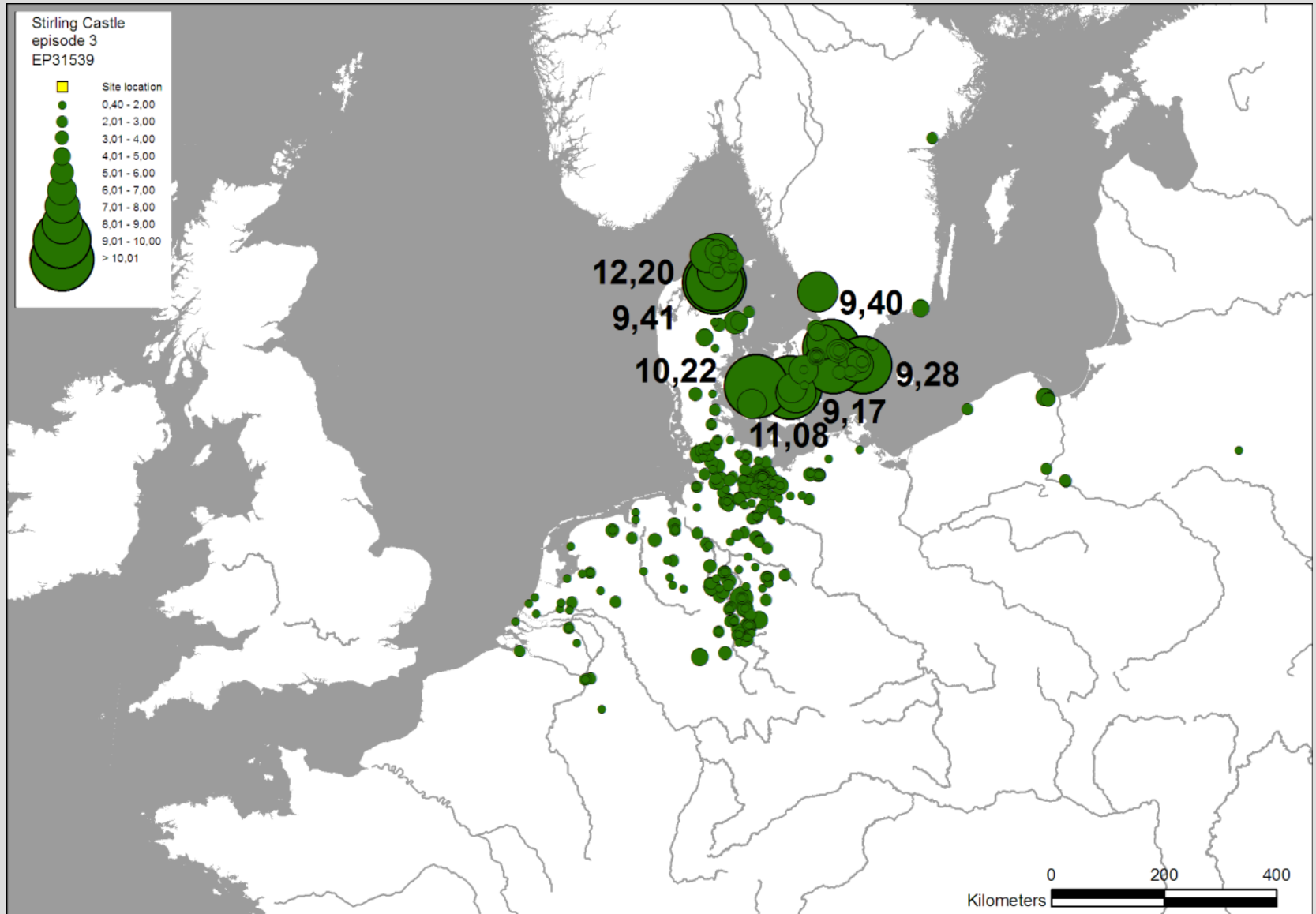
Eltang 1140s



Karschau 1140s



# Stirling Castle episode 3, 1539



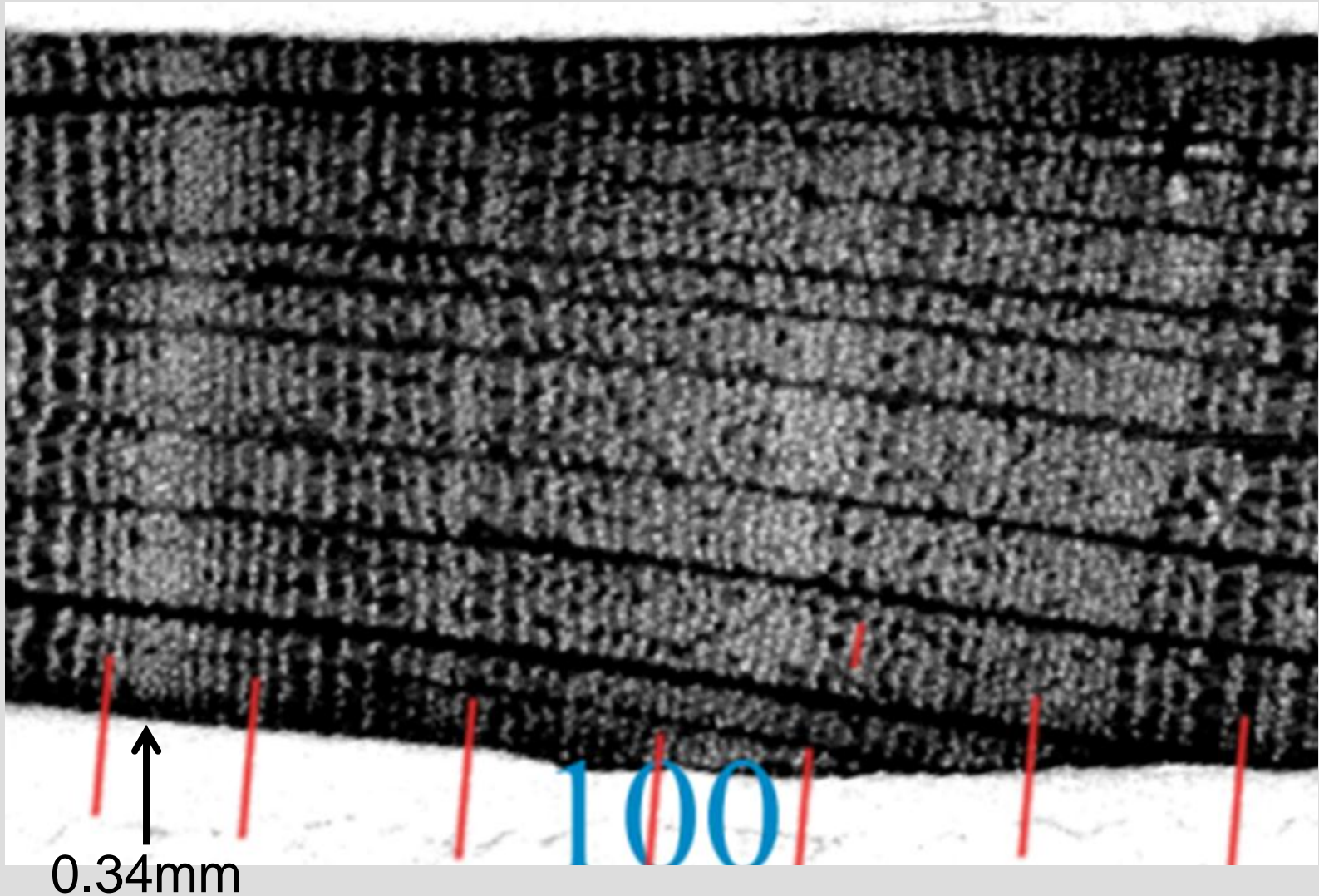
# Spades from Oseberg, Gokstad and Tune (Bill & Daly 2012)

(Photo Bill et al 2012)



**Fig. 1.** Photograph of a spade from Oseberg ready to be scanned. The spade is mounted on an upright by means of cotton tapes.

# DendroCT: Norwegian Viking ship burials





# Colla Wreck, Co Cork, Ireland



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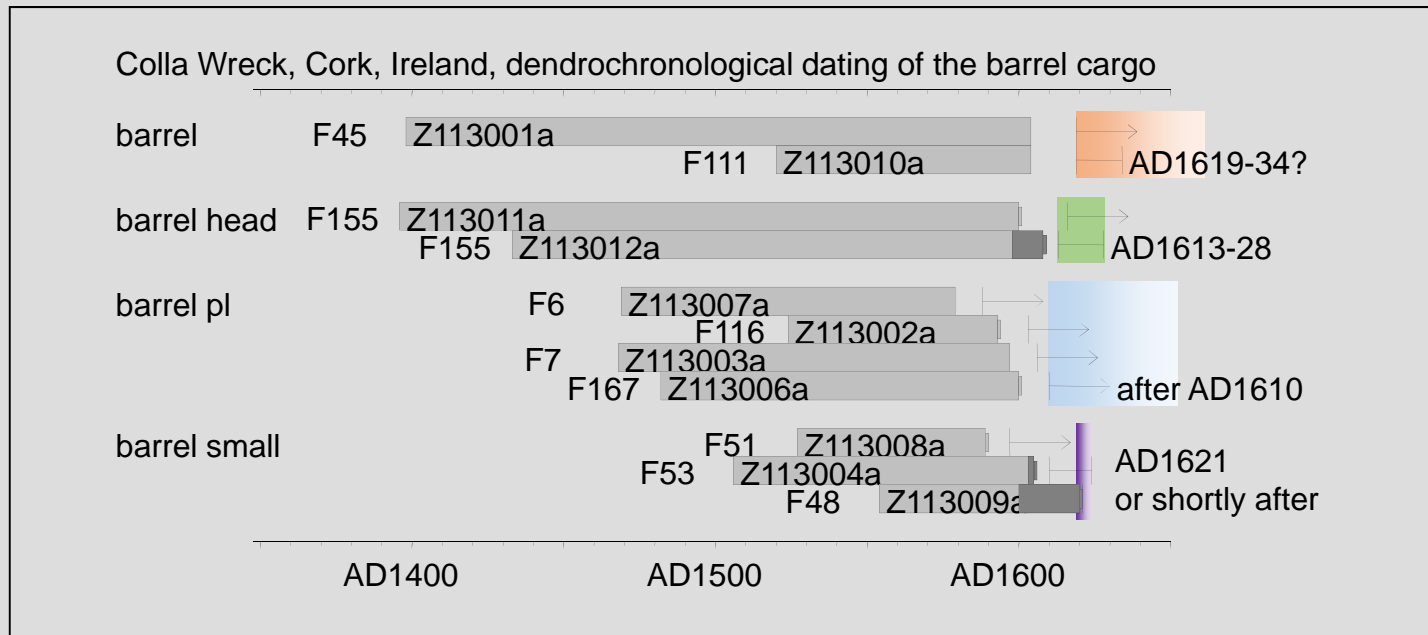


Figure 1. Dating diagram, Colla Wreck, barrel cargo

# Sapwood estimates, Northern Europe

Sapwood estimates for oak in Northern Europe

**32 ± 9 yrs.**  
Ireland

**10-55 yrs.**  
England

**19 ± 15 yrs.**  
Northern France

**15-43 yrs.**

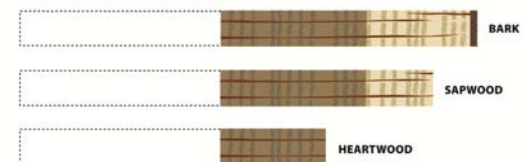
**15 (-8 +6) yrs.**  
Norway

**20 (-5+10) yrs.**  
Northern Germany

**15 (-6 +9) yrs.**  
Northern Poland

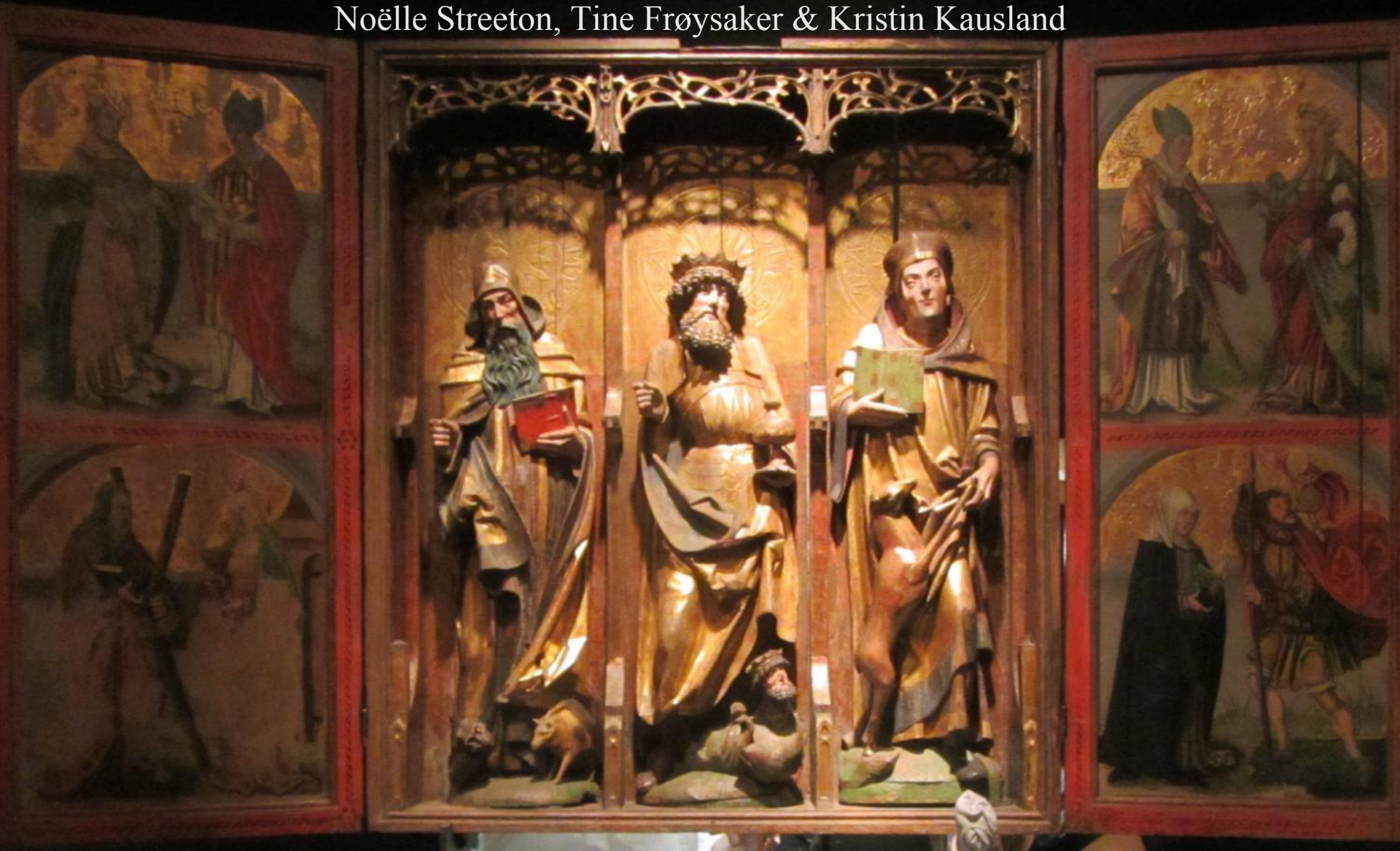
**12 (-6+7) yrs.**  
Eastern Baltic

Estimating the felling date



# Kvæfjord 1, Norway

‘After the Black Death: Painting and Polychrome Sculpture in Norway, 1350–1550’  
Noëlle Streeton, Tine Frøysaker & Kristin Kausland







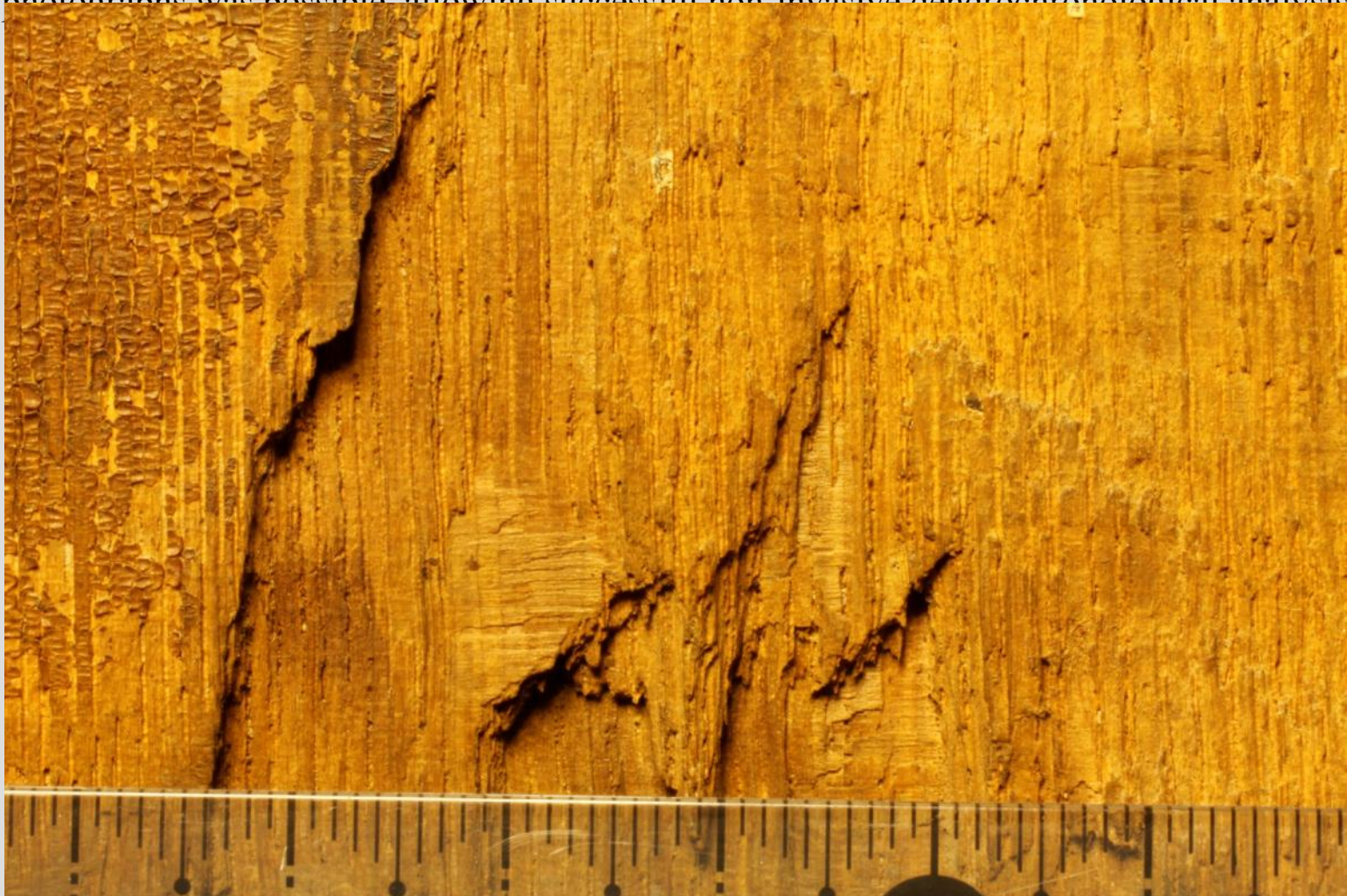
# Kvæfjord 1 altarpiece



Kvæfjord 1 altarpiece. Tool marks on the backing planks, probably made with a broad side axe.

# Kvæfjord 1 altarpiece

In spite of the rough condition of the plank surface tree-ring measurement from the macro photographs was possible, allowing successful non-invasive dendrochronological analysis



Filenames	-	-	Z101M001	
-	start	dates	AD1317	
-	dates	end	AD1493	
Art-historical tree-ring data, Southern Baltic region				
OM040004	AD1156	AD1597	9.56	<b>Baltic 1</b> (Hillam & Tyers 1995)
SUTYPE14	AD1259	AD1516	8.30	London Sutton House panels (Tyers pers comm.)
BOWHILLB	AD1161	AD1483	8.24	Exeter Bowhill ceiling boards (Tyers pers comm.)
H11EOM01	AD1260	AD1495	8.05	Bordesholmer Altar (Hamburg uni., revised Daly 2007)
Ship and barrel chronologies				
0075M001	AD1113	AD1463	7.10	Vejdyb ship 16 timber (Daly 1997)

Kvæfjord 1 altarpiece backing planks – correlation with a selection of tree-ring data (Daly 2014)



# credits

Julianna O'Donoghue Archaeological Services, Cork,  
Ireland.

DendroCT – Jan Bill, University of Oslo, Nordic  
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Foundation.

'After the Black Death: Painting and Polychrome  
Sculpture in Norway, 1350–1550' – Noëlle  
Streeton, Tine Frøysaker & Kristin Kausland,  
Department of Archaeology, Conservation and  
History (IAKH) and the Faculty of Humanities,  
University of Oslo.

