

The five stages of the investigation

1

Divers take a sample from the 15-metre-long wreck that was found at a depth of only three metres off the coast of the Mönchgut peninsula.



WHERE DOES THAT WOOD COME FROM?

WUR researchers have succeeded in extracting and amplifying DNA from centuries-old wood. That genetic material can be used to determine the origin of the wood, adding a potentially powerful instrument to the toolkit of archaeologists and historians. An example is the wreck that was discovered in 2014 in the Baltic Sea off the coast of the small German town of Lubmin in Mecklenburg-Vorpommern. Studies of annual growth rings dated the timber used to the period 1292-1307. The likeliest source: southern Sweden. But is that right?

Infographic Pixels&inkt

AMSTERDAM

HAMBURG



3

The analysis focuses on DNA from the chloroplasts. Characteristic fragments of the DNA are given a marker and are replicated using the PCR technique. These fragments function as a kind of fingerprint of the wood.

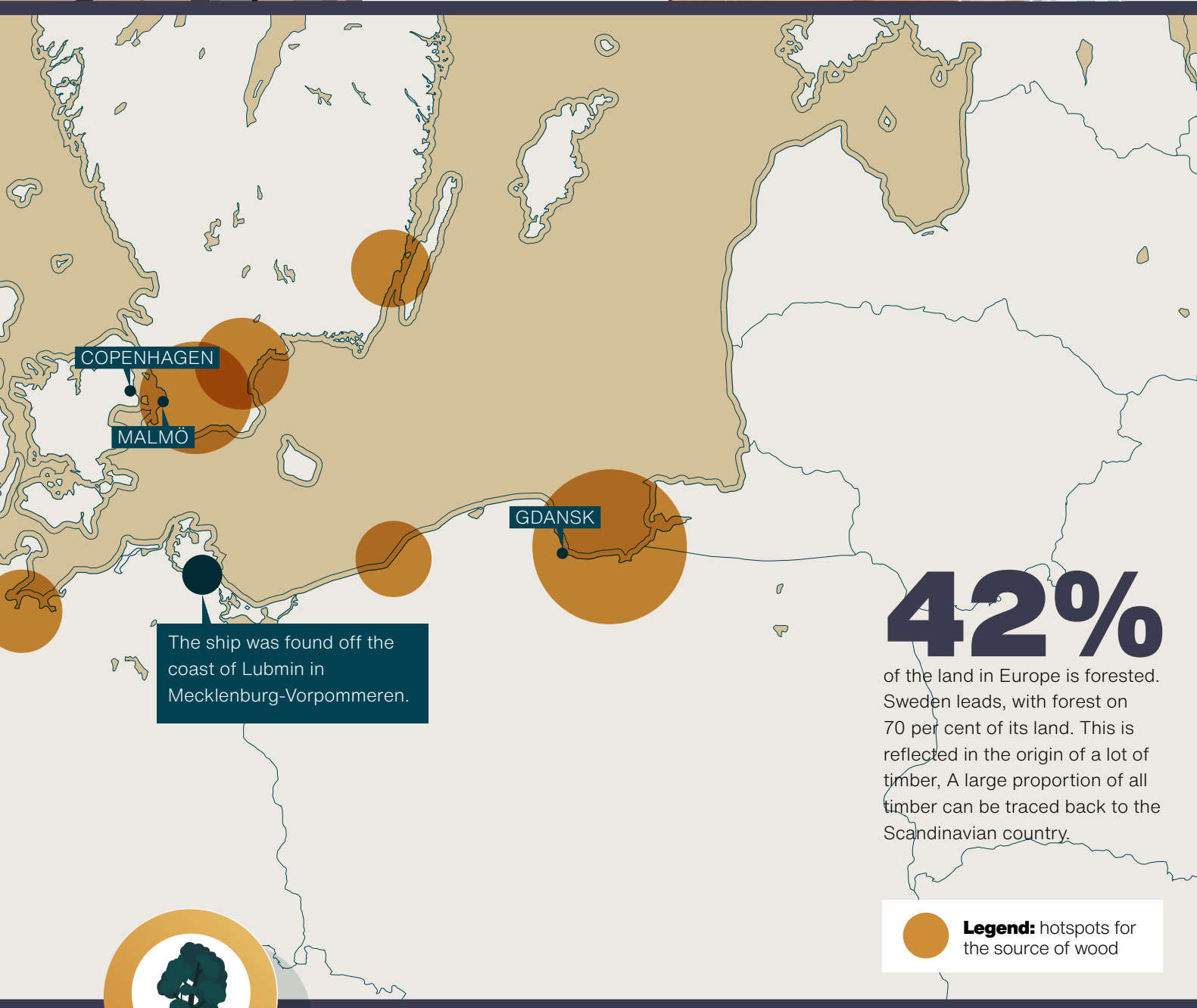
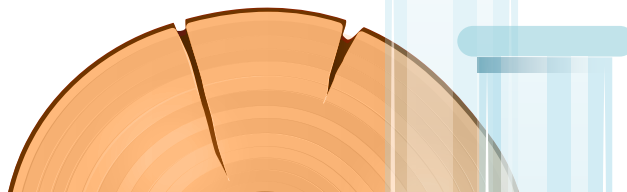
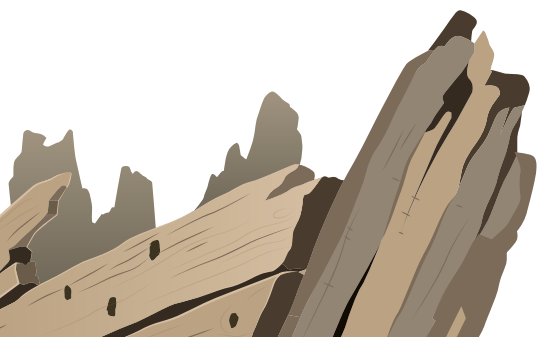
4

The fingerprint, a unique combination of six markers, is compared with those in an existing database containing 32 fingerprints of oaks from different parts of Europe.



2

Chemical processes are used to extract the DNA from the wood.



5

A match with one of the fingerprints in the database gives the source of the wood. In the case of this ship's timbers, a potentially large area. The combination of the DNA and the annual growth rings points to the region around the port of Gdansk in Poland (not southern Sweden as was originally thought).

