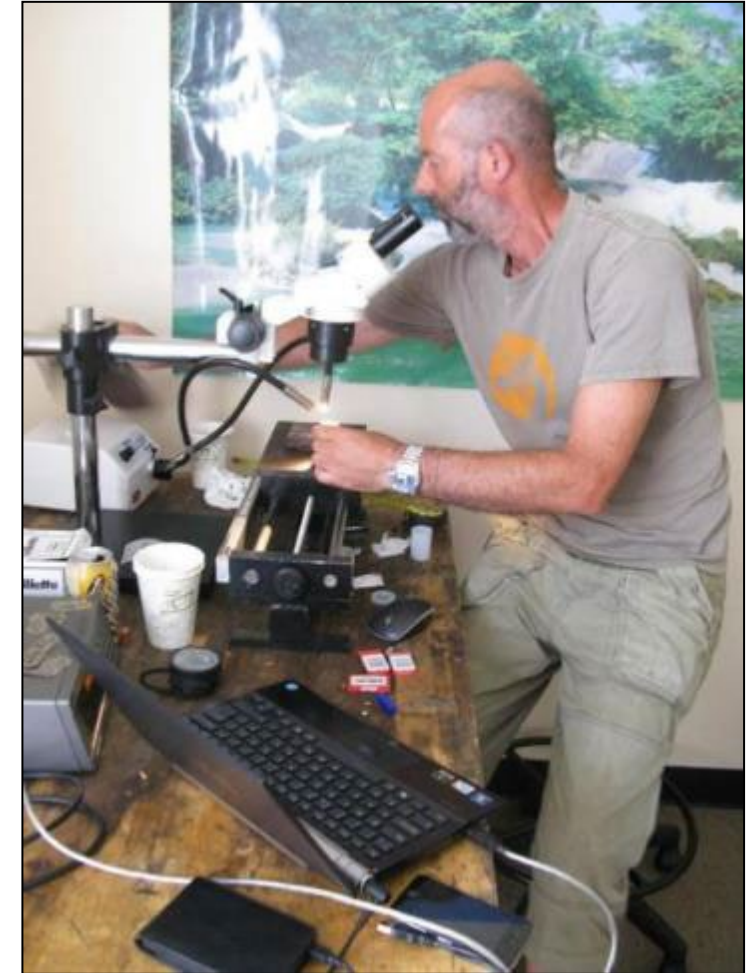


Chepstow's Roman River Crossing: Scientific Dating



Sample 3. Joint at the downstream end of the structure.



Professor Nigel Nayling, Dr Roderick Bale
University of Wales Trinity Saint David



Sample 1. The mortice in the timber is clearly seen.



Sample 2



There are three timbers in this image. The upper one has been displaced from its original location

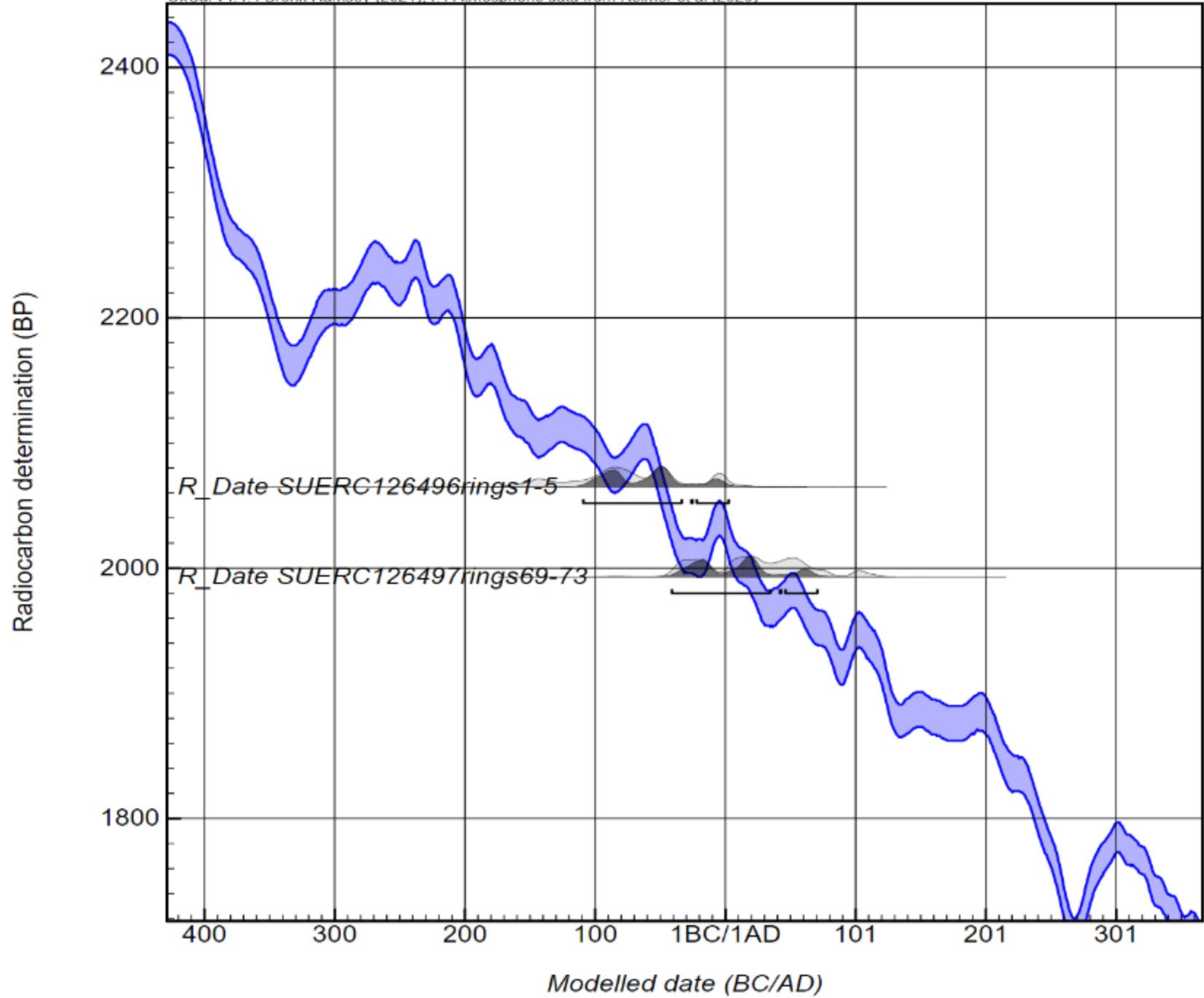


Sample 3. Joint at the downstream end of the structure.

Ring-width dendrochronology

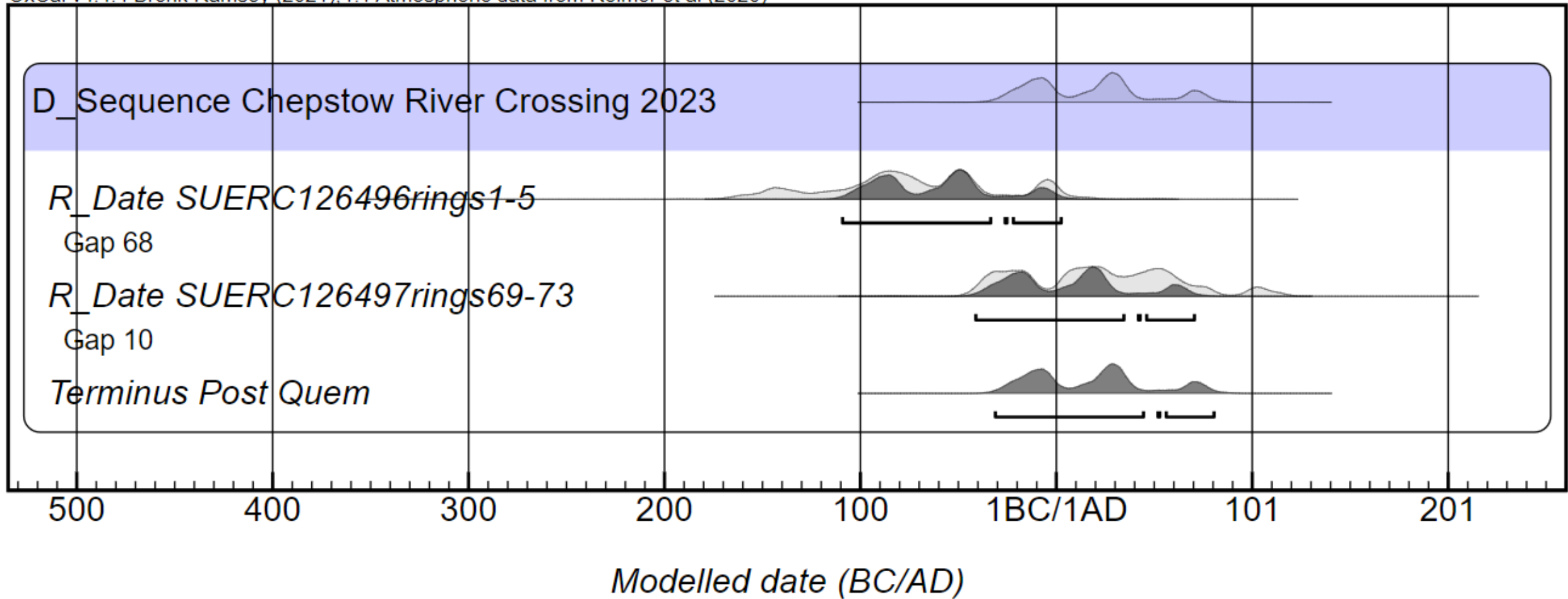
| Sample | Conversion | Dimensions (mm) | Species | Ring Count | Average Ring Width (mm) |
|----------|------------|-----------------|---------|------------|-------------------------|
| CRC23S01 | Whole | 255 x 225 | Oak | 97 | 1.92 |
| CRC23S02 | Whole | 225 x 190 | Oak | 78 | 2.06 |
| CRC23S03 | Whole | 300 x 255 | Oak | 82 | 2.31 |

Samples were all oak, converted from whole trees ('boxed heart'). Their ring-width sequences did not match against each other or against Roman ring-width chronologies from Britain. Two subsamples (CRC23S03, rings 1-5 and rings 69-73) were submitted for radiocarbon dating.



Wiggle match
radiocarbon
calibration:

Two samples taken:
annual rings 1-5 and
annual rings 69-73
and dated individually
- samples calibrated
against IntCal20
calibration curve



Wiggle match radiocarbon calibration: Chepstow River Crossing Sample 3:

95.4% probability oak tree felled after 32 cal BC – 81 cal AD

Where next for scientific dating – Oxygen Isotope Dendrochronology?



Cellulose has been extracted from each ring to undertake oxygen isotope dating as part of leading-edge research to develop a first millennium Oxygen isotope chronology – watch this space!