

## FWMSRev\_Main-Database\_v02.csv

This spreadsheet provides an overview of all of the freshwater mollusc sclerochronology publications reviewed in this article and relevant data used in the analysis of the publications.

### Recording fields

**PUBLICATION:** In-text publication reference.

**PUBLICATION YEAR:** Year of publication.

**DOI/REFERENCE:** DOI link or reference. For full reference list see “FWMSRev\_Main-Database\_Reference-List\_v02.pdf” (<https://doi.org/10.26188/22724726>).

**FIRST AUTHOR COUNTRY/COUNTRIES:** Country of the institution/s of the first author of each publication.

**PUBLICATION TYPE:** Denotes if a publication is a review paper (‘Review’) that includes no/minimal original research, or a research paper (‘Research’).

**STUDY SITES INCLUDED IN MAP/SUPPLEMENTARY\_TABLE\_2?:** If ‘Y’ (Yes), further information about study sites can be found in Supplementary\_Table\_2\_Geography.xlsx and Freshwater-Mollusc-Sclerochronology-Review\_Map.qgz; If ‘N’ (No), publication did not include study sites outside of the lab. If N/A, review publication where there were no study sites.

**HABITAT INVESTIGATED:** Habitat-type investigated or discussed, e.g. Lake, River, Stream, Estuarine, Wetland, Spring, River Delta. If ‘N/A’, habitat of individuals under investigation was unclear or a review article that did not focus on specimens from a specific habitat.

**THEME (PRIMARY) & THEME (SECONDARY):** Themes present in publications. Description of four themes (‘Advancing methodologies’, ‘Conservation’, ‘Paleoenvironmental Reconstruction’, and ‘Archaeology’) found in publication along with method used to assign themes. For those papers where a ‘THEME (SECONDARY)’ could not be determined, the cell is left ‘blank’.

**GROWTH/MICROSTRUCTURE ANALYSIS:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**OXYGEN STABLE ISOTOPES:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**CARBON STABLE ISOTOPES:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**OTHER ISOTOPE SYSTEM (OTHER THAN CARBON AND OXYGEN):** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**STRONTIUM:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**BARIUM:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**MAGNESIUM:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**MANGANESE:** If ‘X’, proxy investigated in shell/a focus of discussion in the publication; if ‘blank’, proxy not investigated.

**MINOR AND TRACE ELEMENTS/METALS (OTHER THAN Sr, Ba, Mg, and Mn):** If ‘X’, proxy investigated in shell/a focus of discussion in the publication. May also be used to indicate a general discussion about minor and trace elements/metals. If ‘blank’, proxy not investigated.

**INSTRUMENT USED IN MINOR AND TRACE ELEMENT ANALYSES:** Only where ‘STRONTIUM’, BARIUM’, ‘MAGNESIUM’, ‘MANGANESE’, and/or ‘MINOR AND TRACE ELEMENTS/METALS (OTHER THAN Sr, Ba, Mg, and Mn)’ are checked. Description of instrument used in minor and trace element analyses. Abbreviations explained below. If ‘N/A’, minor and trace elements/metals only discussed, not analysed in publication.

Abbreviation	Description
μ-XRF	Micro X-ray fluorescence
ED-XRF	Energy-dispersive X-ray fluorescence

ICP-AES	Inductively coupled plasma atomic emission spectroscopy
ICP-OMS	Inductively coupled plasma optic mass spectrometry
ICP-MS	Inductively coupled plasma mass spectrometry
LA-ICP-MS	Laser ablation inductively coupled plasma mass spectrometry; spot, line or fly scanning/analysis indicated
SIMS	Secondary ion mass spectrometry
SEM-EDX	Scanning electron microscopy-energy dispersive X-ray
XRF	X-ray fluorescence

**MODERN MATERIAL USED:** If ‘X’, true; if ‘blank’, false.

**ARCHAEOLOGICAL/SUB-FOSSIL/FOSSIL MATERIAL USED:** If ‘Archaeological’, ‘Fossil’, or ‘Sub-fossil’, the relevant material was used or discussed in the study. If ‘blank’, false.

**DIAGENESIS ANALYSIS COMPLETED?:** Only where archaeological, fossil or sub-fossil material was used. Abbreviations described below.

Abbreviation	Description
Y	Yes, analysis was completed to identify diagenesis
M	Analysis may have been completed to identify diagenesis, however it is unclear.
N	No, analysis was not completed to identify diagenesis
N/A	Material type discussed, not analysed.

**DIAGENESIS ANALYSIS METHOD USED:** Only where ‘DIAGENESIS ANALYSIS COMPLETED?’ is ‘Y’. Methods used in identification of diagenesis. Multiple methods possible and separated by semicolons. Abbreviations described below.

Abbreviation	Description
CL	Cathodoluminescence
N/A	Information not available
Raman	Raman spectroscopy
SEM	Scanning Electron microscopy
XRD	X-Ray Diffraction

**MODERN CALIBRATION STUDY CONDUCTED?** If ‘X’, true; if ‘blank’, false.

**TANK EXPERIMENT:** If ‘X’, tank experiment conducted; if ‘blank’, tank experiment not conducted.

**OXYGEN STABLE ISOTOPES MEASURED IN WATER:** If ‘Y’, oxygen stable isotopes measured in shell and proxy measured in water; if ‘N’, oxygen stable isotopes measured in shell but proxy not measured in water; if ‘blank’, proxy not measured.

**DEUTERIUM MEASURED IN WATER:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**CARBON STABLE ISOTOPES MEASURED IN WATER:** If ‘Y’, carbon stable isotopes measured in shell and proxy measured in water; if ‘N’, carbon stable isotopes measured in shell but proxy not measured in water; if ‘blank’, proxy not measured.

**MINOR/TRACE ELEMENTS MEASURED IN WATER:** If ‘Y’, minor/trace elements measured in shell and proxy measured in water; if ‘N’, minor/trace elements measured in shell but proxy not measured in water; if ‘blank’, proxy not measured.

**TEMPERATURE MEASURED IN WATER AND/OR AIR:** If ‘Y’, proxy measured in water and/or air; if ‘blank’, proxy not measured.

**pH MEASURED IN WATER:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**ELECTRICAL CONDUCTIVITY/SALINITY MEASURED IN WATER:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**CHLOROPHYLL-A MEASURED IN WATER:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**WATER DISCHARGE MEASURED:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**DISSOLVED OXYGEN MEASURED IN WATER:** If ‘Y’, proxy measured in water; if ‘blank’, proxy not measured.

**FREQUENCY OF WATER MEASUREMENTS:** Describes how frequently water measurements were collected/recorded. Values described below. One entry can have multiple values (seperated by a semi-colon) due to the use of multiple data sets.

Value	Description
Short-term	Collected/recorded once, or sporadically, often alongside mussel collection.
Long-term	Collected/recorded repeatedly over an extended period of time (a week to several years).
N/A	Information unavailable.

**SOURCE OF WATER MONITORING:** Describes whether the water monitoring data was collected by the researchers themselves (‘Researcher’), or by an alternative institute (e.g., government agency, university) (‘Other’). If ‘N/A’, information was unavailable. One entry can have multiple values (seperated by a semi-colon) due to the use of multiple data sets.