Journal of open archaeology data

NeoNet Atlantic. Radiocarbon Dates for the Late Mesolithic/Early Neolithic Transition in the Southern European Atlantic Coast

DATA PAPER

THOMAS HUET
ANA CATARINA BASÍLIO
ANTÓNIO FAUSTINO CARVALHO
MIRIAM CUBAS
JUAN F. GIBAJA
ELÍAS LÓPEZ-ROMERO
F. XAVIER OMS
NICCOLÒ MAZZUCCO

*Author affiliations can be found in the back matter of this article

ubiquity press

ABSTRACT

NeoNet Atlantic dataset complements the NeoNet Mediterranean dataset by providing new curated radiocarbon dates for the study of the pioneer farming front (i.e. Neolithisation, ca. 7500 to 3500 cal BC) in the Southern European Atlantic Coast river basin (Portugal, Western Spain, Southwestern France). The complete dataset is formed by the id00164_doc_elencoc14.tsv file, a data frame with tab-separated values, and a related dataframe: id00164_doc_thesaurus.tsv. The dataset contains 1,143 radiocarbon dates from 254 archaeological sites and 817 different archaeological contexts (stratigraphic units, structures, negative features, hearths, etc.) informed by 233 bibliographical references. As for the NeoNet Mediterranean dataset, particular attention has been paid to homogenisation of the laboratory code, the archaeological context, and the references, in order to facilitate further data extractions. Indeed, the dataset is linked to an open source R Shiny interactive web app (NeoNet app), a series of functions hosted on GitHub, and a getter function (R package c14bazAAr, R function get_c14data("neonetatl").

CORRESPONDING AUTHOR:
Niccolò Mazzucco
University of Pisa, Department of Civilizations and Forms of Knowledge, IT
niccolo.mazzucco@unipi.it

KEYWORDS:
Radiocarbon dates; Neolithic; Mesolithic; Atlantic Europe

TO CITE THIS ARTICLE:
Huet T, Basílio AC, Carvalho AF, Cubas M, Gibaja JF, López-Romero E, Oms FX, Mazzucco N 2024 NeoNet Atlantic. Radiocarbon Dates for the Late Mesolithic/Early Neolithic Transition in the Southern European Atlantic Coast. *Journal of Open Archaeology Data*, 12: 2, pp. 1–9. DOI: https://doi.org/10.5334/joad.120

(1) OVERVIEW

Throughout history, Europe has experienced a pronounced division between the Atlantic and Mediterranean regions, marked by substantial climatic and environmental differences. These disparities have played a pivotal role in shaping distinct demographic, historical, and cultural dynamics since prehistoric times [1, 2]. The Neolithisation process, which happened in Europe between the seventh and fourth millennia cal BC, is no exception to this regional dichotomy. It is widely recognized that the transition from a nomadic or semi-nomadic, hunter-gatherer-fishing lifestyle to a settled, agricultural one did not unfold uniformly across Europe, resulting in unique trajectories for the Atlantic and Mediterranean regions [3, 4]. On the Atlantic coasts, hunter-gatherer-fishermen persisted until later periods, maintaining a mixed economy of marine and terrestrial resources, while the onset of farming was delayed in this area [5, 6]. The role of local forager communities in the diffusion and adoption of domesticated plants and animals has been a subject of extensive discussion [7, 8].Today, most scholars agree that on the Southern European Atlantic coast a mosaic of Neolithisation scenarios occurred, with a certain cultural and genetic integration between Mesolithic and Neolithic populations after the initial arrival of exogenous farming groups from the western Mediterranean basin [9, 10, 11, 12, 13]. The slower pace of the Neolithisation process, the adaptability and resilience of local hunter-gatherer communities, and the different climatic and environmental conditions made the Meso-Neolithic transition more apparent, archaeologically speaking, in this area compared to the Mediterranean shores [14]. Despite the noteworthy implications of these regional disparities, instances of direct comparisons between the Mediterranean and Atlantic domains have been infrequent, albeit with a few exceptions [15, 16]. Notably, both regions have conventionally been explored through divergent lenses, with one emphasizing cultural diffusion while the other emphasizing demic expansion through migration [17, 18, 19, 20].

With this paper, we aim to provide the first integrated dataset of both Atlantic and Mediterranean radiocarbon data. The integration of Atlantic (NeoNet Atl) and Mediterranean (NeoNet, or NeoNet Med) ^{14}C datasets represents a crucial step towards a more comprehensive and unified understanding of the Neolithisation process in Southern Europe, encompassing its environmental and cultural diversity. The contrasting Neolithisation timelines and dynamics between the Atlantic and Mediterranean regions not only hold profound implications for comprehending the spread and adoption of farming in that area, but also serve as a foundational basis for understanding the successive socio-cultural developments in their respective areas.

The NeoNet Atl dataset complements and expands upon the NeoNet Med dataset [21], developed as part of a thematic research network. The project follows a collaborative approach, bringing together scholars from different institutions across the Mediterranean and Atlantic areas to share data and common practices in the publication, selection, and interpretation of radiocarbon dates. Our chosen approach involves compiling all published radiocarbon dates, avoiding biases and data filtering, and integrating all collected information into a user-friendly, open-access tool for exploring radiocarbon dates, the NeoNet app.

The expansion of the initial Neonet dataset (NeoNet Med) into the Atlantic area (NeoNet Atl) not only introduces new dates but also standardizes prior radiocarbon compilations such as Pardo-Gordó et al. (2018) [22] and Perrin (2019) [14]. This standardization involves homogenizing information from archaeological layers, dated materials, etc. Additionally, the dataset undergoes language localization from Spanish and French to English, and its format transforms from XLSX to TSV with proper encoding. These changes aim to enhance data reusability, facilitated through geographic mapping using the interactive NeoNet application, R functions for data management and analysis, and a GitHub repository for public access. Furthermore, the modularity of the NeoNet dataset, organized into river basins, ensures its incremental growth. These comprehensive steps, implemented across various NeoNet datasets, play a crucial role for those engaged in prehistoric research in the region.

CONTEXT

Spatial coverage

River basins are widely acknowledged as significant units in physical geography, encompassing key notions such as catchment areas, thalwegs and shorter paths, natural boundaries and ridgelines.

The area covered by the dataset is the Atlantic River basins of southern Europe (Figure 1). It comprises the southern, central and northern regions of Portugal, northwestern and northern Spain (including Galicia, Asturias, Cantabria, Southern Basque Country, and some portions of Castile and León), and the southwestern, western and northwestern portion of France (Northern Basque Country, Nouvelle-Aquitaine, Pays de la Loire, Centre-Val de Loire, Brittany, and portions of Languedoc-Roussillon-Midi-Pyrénées, Auvergne-Rhône-Alpes).

The NeoNet Atl minimum bounding box of the region of interest is:

Northern boundary: +48.7°N
Southern boundary: +36.3°N
Eastern boundary: +4.2°E
Western boundary: –9.4°E

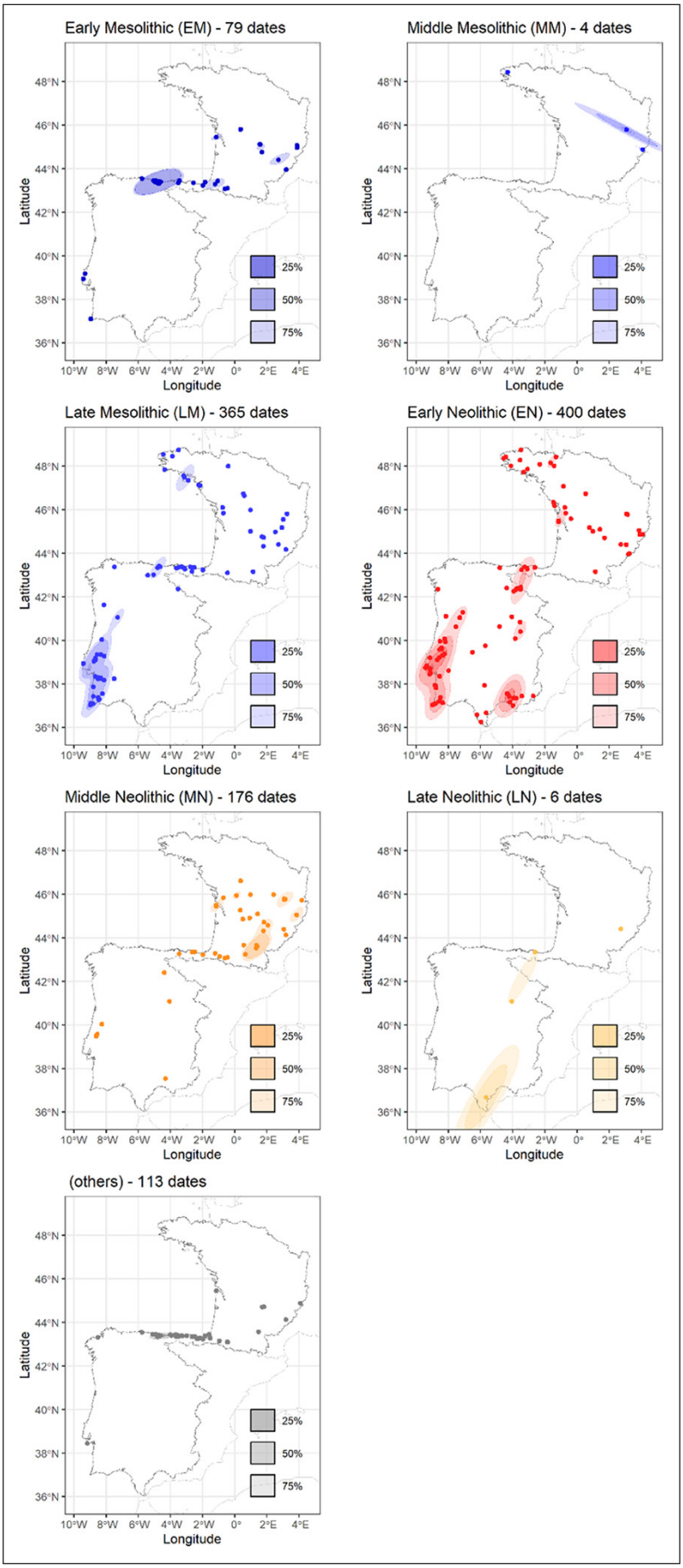


Figure 1 Region of interest of NeoNet Atl: river basins in the Southern European Atlantic Coast with number of dates filtered by periods (1,143 studied radiocarbon dates). The period 'others' gathers radiocarbon dates attributed to uncertain periods: UM (Undefined Mesolithic), LMEN (Late Mesolithic/Early Neolithic), EMN (Early Neolithic/Middle Neolithic), UN (Undefined Neolithic), N/A (not available).

Temporal coverage

The temporal coverage starts at 10,000 BP and stops at 5000 BP (ca. 7500–3500 cal BC, Figure 2).

(2) METHODS

The creation of the NeoNet dataset was enabled by a collaborative synthesis of published radiocarbon dates between Western Spain, Portugal and Southwestern France. Each author has taken charge of a part of the whole dataset: Portugal (ACB, AC), Western Spain (MC, JFG, FXO), and South-Western France (ELR). The dataset has focused on information with a high reuse potential (conventional naming, URLs, etc.). The data structure has been devised to be reused in NoSQL databases where columns "SiteName" and "LabCode" could be used as unique keys. Additional data on cultural traits and/or other contextual information can therefore be added in a second step.

STEPS

The desk-based research work followed several steps: search for data resources, data gathering, data enhancement, and dataset publishing. The search for radiocarbon data resources relied on the authors' personal archives and their scientific monitoring. Data integration consisted of gathering radiocarbon information from various publications (site monographs, radiocarbon inventories, online databases, etc.). These data were collected automatically (R computer scripts) or manually, and stored in a single dataset (data frame). This dataset was cleaned up (quality control), and the verified records were recast to form the current public NeoNet Atl dataset.

QUALITY CONTROL

The quality control consisted of collecting and aligning the various radiocarbon publications. These sources were matched against each other using scripting routines to enhance relevant information, modify and summarize the sources' datasets. In particular, this method has succeeded in filling in gaps in particular fields (e.g., Source A provides good information on the stratigraphic context, but Source B provides good information on the type of material sampled) and to clarify information where it may be missing (e.g., the URL of a bibliographic reference). Other scripting routines have been used for the standardization of column names and values according to current standards, and duplicate suppression. In the case of duplicates with conflicting information, the source publication has been taken as reference.

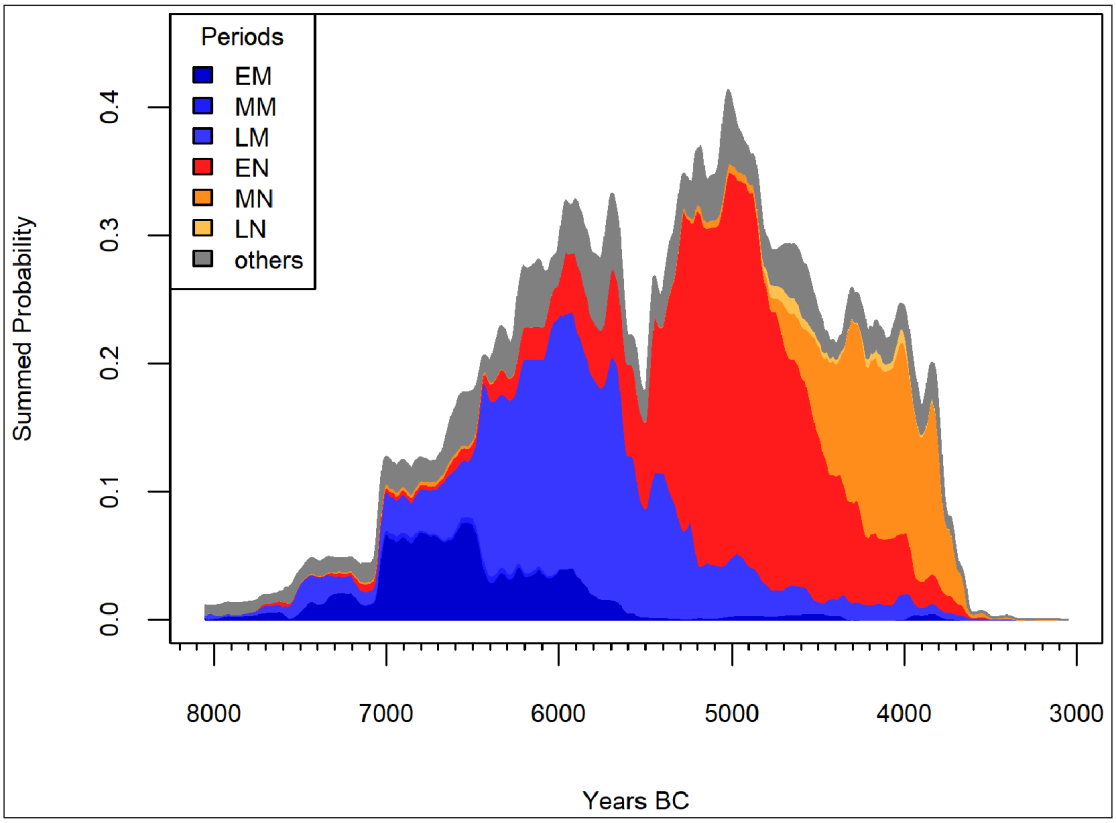


Figure 2 Summed probability densities of the NeoNet Atl dataset with 1,143 studied radiocarbon dates attributed to different periods: EM (Early Mesolithic, 79 dates), MM (Middle Mesolithic, 4 dates), LM (Late Mesolithic, 365 dates), EN (Early Neolithic, 400 dates), MN (Middle Neolithic, 176 dates), LN (Late Neolithic, 6 dates). The period 'others' gathers 113 radiocarbon dates attributed to uncertain periods: UM (Undefined Mesolithic), LMEN (Late Mesolithic/Early Neolithic), EMN (Early Neolithic/Middle Neolithic), UN (Undefined Neolithic), N/A (not available).

CONSTRAINTS

The dataset structure has been voluntarily reduced to radiocarbon core fields in order to reduce non available (n/a) data. All fields and all cells have been checked. When no values were available (n/a), we fill the cells with this value. When there is an archaeological observation with a negative result (e.g. undetermined), we add not determined (n/d). Currently, the n/a and n/d values represent 1% of the whole dataset and are largely concentrated in the "PhaseCode" (8%), and the "Material Species" (7%) fields.

(3) DATASET DESCRIPTION

The NeoNet Atl dataset is available on the University of Pisa repository. Files are listed with the code: id00164_doc.

OBJECT NAME

The dataset consists of the elencoc14.tsv file listing all the radiocarbon dates; the file thesaurus.tsv for equivalences between material ("Material" and "MaterialSpecies") and material life duration; the file reference.bib for bibliographical references.

RADIOCARBON DATASET (elencoc14.tsv)

The NeoNet Atl dataset reuses entirely the NeoNet Med layout to register the main information about radiocarbon dates [2]. The file is a dataframe with tab-separated values (.tsv).

Each radiocarbon date has a:

- unique site name ("SiteName");
- cultural period associated with the radiocarbon date ("Period"). Periods abbreviations are defined as following: EM (Early Mesolithic), MM (Middle Mesolithic), LM (Late Mesolithic), UM (Undefined Mesolithic), LMEN (Late Mesolithic/Early Neolithic), EN (Early Neolithic), MN (Middle Neolithic), EMN (Early/Middle Neolithic), LN (Late Neolithic), UN (Undefined Neolithic).
- stratigraphical or structural context of sample provenience ("PhaseCode");
- unique identifier based on the standard laboratory identifiers ("LabCode") in respect to the conventional naming of laboratory codes and sample notation;
- conventional radiocarbon age ("C14Age");
- standard deviation associated error ("C14SD");
- type of material on which the date has been measured ("Material");
- specification of this material ("MaterialSpecies");
- calculated time rank in cal BC *terminus post quem* ("tpq") and *terminus ante quem* ("taq");
- bibliographical references with a short title ("bib");
- DOI or a BibTeX key referring to an entry in *reference.bib* ("bib_url");
- site coordinates in decimal degrees ("Longitude", "Latitude");
- country where site is located ("Country")

MATERIAL LIFE (thesaurus.tsv)

Material life durations are stored in the *thesaurus.tsv* file. This file is the same as the one used for the NeoNet Med [15]. The two fields show the material type ("material.type") and the material life duration ("life.duration"). This thesaurus is used to differentiate short- from long-life samples. In our dataset, to described dated samples, we have used the largest and most inclusive grouping: wood charcoal, plant seed, animal bone, human bone, shell, organic.

BIBLIOGRAPHICAL REFERENCES (reference.bib)

Bibliographical references (n = 233) of each radiocarbon date are stored in the *reference.bib* file. It is a BibTeX file format. If only a BibTeX key is given, and no DOI, this file results from the join between the "bib_url" field of the C14 spreadsheet and the *reference.bib*. If the DOI exists, the full bibliographical reference is given.

DATATYPE

Secondary data

FORMAT NAMES AND VERSIONS

TSV UTF-8, BibTex

CREATION DATES

Records created from March 2022 to September 2023 as part of the NeoNet work group.

DATASET CREATORS

NM and TH designed the research; ACB, AFC, MC, JFG, FXO and ELR collected raw data: Portugal (ACB, AFC), Western Spain (MC, JFG), and South-Western France (ELR). NM was primarily responsible for the data collation. TH created the web app and analysed data; TH and NM wrote the paper. TH, ACB, AC, MC, JFG, FXO, ELR and NM reviewed the paper.

LANGUAGE

English

LICENSE

REPOSITORY LOCATION

Data is available at the Digital Library of Unipi: www.doi.org/10.13131/unipi/z332-ye56

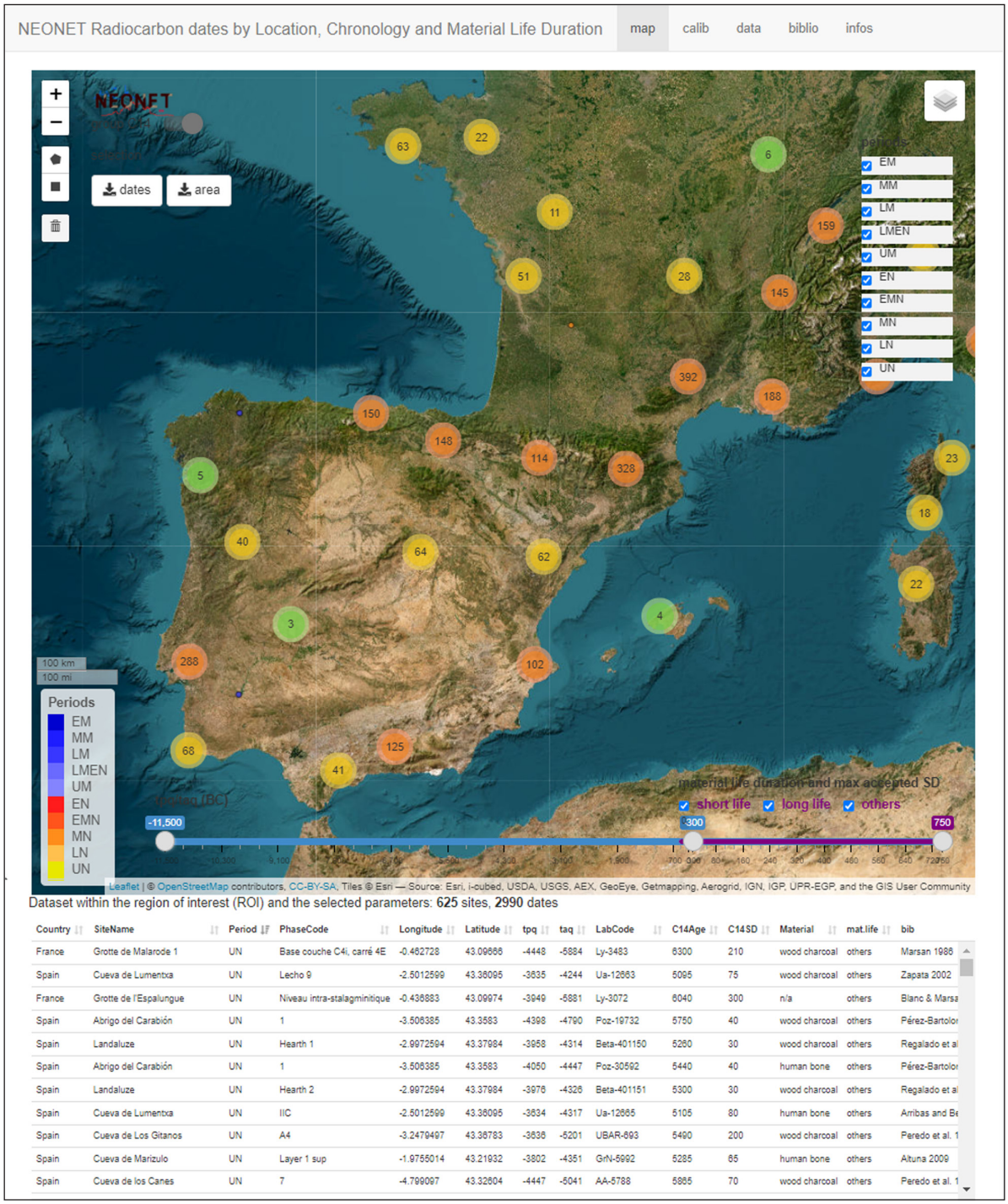
PUBLICATION DATE
October 2023

(4) REUSE POTENTIAL

Dividing the area of interest into river basins enables a nested multiscalar analysis, with hierarchical decomposition, and a potential reuse of data at different levels: from river drainage to ocean basins.

Regarding the spread of farming in the Southern European Atlantic Coast region, the NeoNet dataset completes radiocarbon datasets such as BDA [23], Euroevol [24], Piberia [22] and IDEArq [25]. Neonet Atl and Med dataset have been linked to the C14bazAAR repository through the get_c14data("neonet") and get_c14data("neonetatl") R function [26]. The NeoNet dataset is also embedded in the NeoNet app (http://shinyserver.cfs.unipi.it:3838/C14/) hosted by the University of Pisa (Figure 3).

This interactive web app facilitates the selection of dates by providing selection tools for spatial information, chronology, and date accuracy. The map interface facilitates the multi-scalar study of the mobile border between the last hunter-gatherers and early farmers. Two buttons enable downloading selected dates and



Country	SiteName	Period	PhaseCode	Longitude	Latitude	tpq	taq	LabCode	C14Age	C14SD	Material	mat.life	bib
France	Grotte de Malarode 1	UN	Base couche C4i, carré 4E	-0.462728	43.09666	-4448	-5884	Ly-3483	6300	210	wood charcoal	others	Marsan 1986
Spain	Cueva de Lumentxa	UN	Lecho 9	-2.5012599	43.36095	-3635	-4244	Ua-12663	5095	75	wood charcoal	others	Zapata 2002
France	Grotte de l'Espalungue	UN	Niveau intra-stalagminitique	-0.436883	43.09974	-3949	-5881	Ly-3072	6040	300	n/a	others	Blanc & Marsa
Spain	Abrigo del Carabión	UN	1	-3.506385	43.3583	-4398	-4790	Poz-19732	5750	40	wood charcoal	others	Pérez-Bartolo
Spain	Landaluze	UN	Hearth 1	-2.9972594	43.37984	-3958	-4314	Beta-401150	5280	30	wood charcoal	others	Regalado et al
Spain	Abrigo del Carabión	UN	1	-3.506385	43.3583	-4050	-4447	Poz-30592	5440	40	human bone	others	Pérez-Bartolo
Spain	Landaluze	UN	Hearth 2	-2.9972594	43.37984	-3978	-4326	Beta-401151	5300	30	wood charcoal	others	Regalado et al
Spain	Cueva de Lumentxa	UN	IIC	-2.5012599	43.36095	-3634	-4317	Ua-12665	5105	80	human bone	others	Arribas and Be
Spain	Cueva de Los Gitanos	UN	A4	-3.2479497	43.38783	-3638	-5201	UBAR-693	5490	200	wood charcoal	others	Peredo et al. 1
Spain	Cueva de Marizulo	UN	Layer 1 sup	-1.9755014	43.21932	-3802	-4351	GrN-5992	5285	65	human bone	others	Altuna 2009
Spain	Cueva de los Canes	UN	7	-4.799097	43.32604	-4447	-5041	AA-5788	5885	70	wood charcoal	others	Peredo et al. 1

Figure 3 Screen capture of the NeoNet application (R Shiny) showing the NeoNeonet Atl dataset and part of NeoNet Med. When the spatial window is extended to the entire dataset, it shows 3849 radiocarbon dates from 803 sites.

selection area (rectangle, polygon) as GeoJSON files. The development version of the app, and connected functions, is stored on GitHub (https://github.com/zoometh/neonet) and enable contributions (https://github.com/zoometh/neonet/blob/master/.github/CONTRIBUTING.md). Finally, a web tutorial has also been created for the app and the dataset (https://zoometh.github.io/neonet/).

ACKNOWLEDGEMENTS

The authors wish to honor the memory of Grégor Marchand (UMR6566 CReAAH), who dedicated his career to studying the Mesolithic/Neolithic transition period in Western France and initially accepted to contribute to the NeoNet Atl before circumstances necessitated his withdrawal from the project. We are still especially grateful to Federico Bianchi and everyone in the MAPPALab at the University of Pisa for their technical support.

FUNDING INFORMATION

This paper forms part of three research projects: *Tools, Techniques and Specialists: the keys to understand the Mesolithic-Neolithic transition in Mediterranean Europe* (PID2020–112513RB-I00) and *MESApennines: The Mesolithic-Neolithic transition in the Northern Apennines* (PIAR-2023–06) funded by the Spanish Ministry of Science and Innovation and the State Research Agency Spanish National Research Council– via the ArchaeologyHub network (https://archaeologyhub.csic.es/english/). It is also part of the '*AGER. Crescita agricola nell'Europa preistorica. Un approccio al cambio tecnologico, economico e sociale*' project funded by the Italian Ministry of Education, University and Research in the framework of the Rita Levi Montalcini program.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR AFFILIATIONS

Thomas Huet orcid.org/0000-0002-1112-6122
University of Oxford, School of Archaeology, GB

Ana Catarina Basílio orcid.org/0000-0001-7999-3831
Interdisciplinary Center for Archaeology and Evolution of Human Behaviour (ICArEHB) FCHS, University of Algarve, PT

António Faustino Carvalho orcid.org/0000-0002-0912-2325
Universidade do Algarve, Faculdade de Ciências Humanas e Sociais/Centro de Estudos em Arqueologia, Artes e Ciências do Património, PT

Miriam Cubas orcid.org/0000-0002-2386-8473
Universidad de Alcalá, Departamento de Historia y Filosofía, ES

Juan F. Gibaja orcid.org/0000-0002-0830-3570
Institución Milá y Fontanals de Investigación en Humanidades (IMF), CSIC, ES

Elías López-Romero orcid.org/0000-0002-7177-632X
Instituto de Arqueología de Mérida (IAM), CSIC, ES

F. Xavier Oms orcid.org/0000-0002-1642-548X
Secció de Prehistòria i Arqueologia, Universitat de Barcelona, ES

Niccolò Mazzucco orcid.org/0000-0002-9315-3625
University of Pisa, Department of Civilizations and Forms of Knowledge, IT

REFERENCES

1. **Naudinot N, Tomasso A, Messager E, Finsinger W, Ruffaldi P, Langlais M.** Between Atlantic and Mediterranean: Changes in technology during the Late Glacial in Western Europe and the climate hypothesis. *Quaternary International*. 2017; 428: 33–49. DOI: https://doi.org/10.1016/j.quaint.2016.01.056
2. **Schirrmacher J, Kneisel J, Knitter D, Hamer W, Hinz M, Schneider RR, Weinelt M.** Spatial patterns of temperature, precipitation, and settlement dynamics on the Iberian Peninsula during the Chalcolithic and the Bronze Age. *Quaternary Science Reviews*. 2020; 233: 106220. DOI: https://doi.org/10.1016/j.quascirev.2020.106220
3. **Hamon C, Manen C.** The mechanisms of neolithisation of western Europe: a south/north approach. *Open Archaeology* 2021. 2019; 7: 718–735. DOI: https://doi.org/10.1515/opar-2020-0164
4. **Cubas M, Peyroteo-Stjerna R, Fontanals-Coll M, Llorente-Rodríguez L, Lucquin A, Craig OE, Colonese AC.** Long-term dietary change in Atlantic and Mediterranean Iberia with the introduction of agriculture: a stable isotope perspective. *Archaeological and Anthropological Sciences*. 2019; 11: 3825–3836. DOI: https://doi.org/10.1007/s12520-018-0752-1
5. **Arias P.** The origins of the Neolithic along the Atlantic coast of continental Europe: a survey. *Journal of World Prehistory*. 1999; 13: 403–464. DOI: https://doi.org/10.1023/A:1022370513087
6. **Bicho N, Cascalheira J, Gonçalves C, Umbelino C, Rivero DG, André L.** Resilience, replacement and acculturation in the Mesolithic/Neolithic transition: the case of Muge, central Portugal. *Quaternary International*. 2017; 446: 31–42. DOI: https://doi.org/10.1016/j.quaint.2014.09.026
7. **Ammerman AJ, Cavalli-Sforza LL.** *Neolithic transition and the genetics of populations in Europe*. Princeton University Press 1984. ISBN: 9780691640068. DOI: https://doi.org/10.1515/9781400853113
8. **Vicent García JM.** El Neolítico, transformaciones sociales y económicas. *Boletín de Antropología Americana*. 1991; 24: 3–62. https://www.jstor.org/stable/40977992
9. **Fano MÁ, Cubas M, Wood R.** The first farmers in Cantabrian Spain: Contribution of numerical chronology to

understand an historical process. *Quaternary International*. 2015; 364: 153–161. DOI: https://doi.org/10.1016/j.quaint.2014.09.026

10. **Hervella M, Izagirre N, Alonso S, Fregel R, Alonso A, Cabrera VM, de la Rua C.** Ancient DNA from hunter-gatherer and farmer groups from Northern Spain supports a random dispersion model for the Neolithic expansion into Europe. *PloS one*. 2012; 7(4): e34417. DOI: https://doi.org/10.1371/journal.pone.0034417
11. **Carvalho AF.** When the Mediterranean met the Atlantic. A socio-economic view on Early Neolithic communities in central-southern Portugal. *Quaternary International*. 2018; 470: 472–484. DOI: https://doi.org/10.1016/j.quaint.2016.12.045
12. **Taylor R, Garcia-Rivero D, Gonçalves C, Cascalheira J, Bicho N.** The Early Neolithic at the Muge Shellmiddens (Portugal): Analysis and Review of the Ceramic Evidence from Cabeço da Amoreira. *European Journal of Archaeology*. 2021; 24(2): 156–179. DOI: https://doi.org/10.1017/eaa.2020.40
13. **Carvalho AF, Fernández-Domínguez E, Arroyo-Pardo E, Robinson C, Cardoso JL, Zilhão J, Gomes MV.** Hunter-gatherer genetic persistence at the onset of megalithism in western Iberia: New mitochondrial evidence from Mesolithic and Neolithic necropolises in central-southern Portugal. *Quaternary International*; 2023. DOI: https://doi.org/10.1016/j.quaint.2023.03.015
14. **Perrin T, Manen C.** Potential interactions between Mesolithic hunter-gatherers and Neolithic farmers in the Western Mediterranean: The geochronological data revisited. *PloS one*. 2021; 16(3): e0246964. DOI: https://doi.org/10.1371/journal.pone.0246964
15. **Marchand G, Manen C.** Le rôle du Néolithique ancien méditerranéen dans la néolithisation de l'Europe atlantique. In *Le rôle du Néolithique ancien méditerranéen dans la néolithisation de l'Europe atlantique*; (pp. 213–232). Coédition ADRAHP-PSO; 2004. https://hal.science/hal-00721067/.
16. **Manen C, Carozza J-M, Marchand G, Perrin T.** Prolongements continentaux et atlantiques de la néolithisation méditerranéenne. In *Entre deux mers, Actes des 12e Rencontres Méridionales de Préhistoire Récente*, Bayonne, 27 septembre – 1er octobre 2016; (pp. 41–51). Toulouse: Archives d'Écologie Préhistorique. https://hal.science/hal-01934257
17. **Zilhao J.** The spread of agro-pastoral economies across Mediterranean Europe: a view from the far west. *Journal of mediterranean archaeology*. 1993; 6(1): 5–63. DOI: https://doi.org/10.1558/jmea.v6i1.5
18. **Cruz Berrocal M.** The Early Neolithic in the Iberian Peninsula and the Western Mediterranean: a review of the evidence on migration. *Journal of World Prehistory*. 2012; 25(3–4): 123–156. DOI: https://doi.org/10.1007/s10963-012-9059-9
19. **Alday A, Carretero Díaz JM, Anderung C, Götherström A.** Uros, genética, indígenas y colonos. A propósito de la neolitización de Europa. *Veleia*. 2012; 29: 335–358. DOI: https://doi.org/10.1387/veleia.8937
20. **Soares J, Mazzucco N, Clemente-Conte I.** The first farming communities in the Southwest European Coast: A traceological approach to the lithic assemblage of Vale Pincel I. *Journal of Anthropological Archaeology*. 2016; 41: 246–262. DOI: https://doi.org/10.1016/j.jaa.2016.01.007
21. **Huet T, Cubas M, Gibaja JF, Oms FX, Mazzucco N.** NeoNet Dataset. Radiocarbon Dates for the Late Mesolithic/Early Neolithic Transition in the North Central-Western Mediterranean Basin. *Journal of Open Archaeology Data*. 2022; 10: 3. DOI: https://doi.org/10.5334/joad.87
22. **Pardo-Gordó S, García Puchol O, Bernabeu Aubán J, Diez Castillo A.** Timing the Mesolithic-Neolithic Transition in the Iberian Peninsula: The Radiocarbon Dataset. *Journal of Open Archaeology Data*. 2019; 7: 4. DOI: https://doi.org/10.5334/joad.49
23. **Martínez-Grau H, Jagher R, Oms FX, Barceló JA, Pardo-Gordó S, Antolín F.** Global Processes, Regional Dynamics? Radiocarbon Data as a Proxy for Social Dynamics at the End of the Mesolithic and During the Early Neolithic in the NW of the Mediterranean and Switzerland (c. 6200–4600 cal BC). *Documenta Praehistorica*. 2020; 47: 170–191. DOI: https://doi.org/10.4312/dp.47.10
24. **Manning K, Colledge S, Crema E, Shennan S, Timpson A.** The Cultural Evolution of Neolithic Europe. EUROEVOL Dataset 1: Sites, Phases and Radiocarbon Data. *Journal of Open Archaeology Data*. 2016; 5: e2. DOI: https://doi.org/10.5334/joad.40
25. **González U, Antonio, Freire CF, Bravo AF, Castañeda N, Capdevila E, Tovar ES, Gilman A, del Bosque González I, García JMV.** "IDEArq-C14: Una Infraestructura de Datos Espaciales para la cronología radiocarbónica de la Prehistoria Reciente Ibérica." *CEUR Workshop Proceedings*; 2017.
26. **Schmid C, Seidensticker D, Hinz M.** c14bazAAR: An R package for downloading and preparing C14 dates from different source databases. *Journal of Open Source Software*, 2019; 4(43): 1914, DOI: https://doi.org/10.21105/joss.01914

TO CITE THIS ARTICLE:
Huet T, Basílio AC, Carvalho AF, Cubas M, Gibaja JF, López-Romero E, Oms FX, Mazzucco N 2024 NeoNet Atlantic. Radiocarbon Dates for the Late Mesolithic/Early Neolithic Transition in the Southern European Atlantic Coast. *Journal of Open Archaeology Data,* 12: 2, pp. 1–9. DOI: https://doi.org/10.5334/joad.120

Submitted: 06 October 2023 **Accepted:** 08 January 2024 **Published:** 25 January 2024

Journal of Open Archaeology Data is a peer-reviewed open access journal published by Ubiquity Press.