



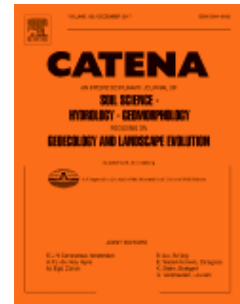
CATENA

An Interdisciplinary Journal of Soil Science - Hydrology - Geomorphology focusing on
Geocology and Landscape Evolution

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

●	Description	p.1
●	Audience	p.1
●	Impact Factor	p.1
●	Abstracting and Indexing	p.2
●	Editorial Board	p.2
●	Guide for Authors	p.5



ISSN: 0341-8162

DESCRIPTION

Catena publishes papers describing original field and laboratory investigations and reviews on **geocology** and **landscape evolution** with emphasis on interdisciplinary aspects of **soil science**, **hydrology** and **geomorphology**. It aims to disseminate new knowledge and foster better understanding of the physical environment, of evolutionary sequences that have resulted in past and current landscapes, and of the natural processes that are likely to determine the fate of our terrestrial environment.

Papers within any one of the above topics are welcome provided they are of sufficiently wide interest and relevance.

Benefits to authors

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our [author services](#).

Please see our [Guide for Authors](#) for information on article submission. If you require any further information or help, please visit our [Support Center](#)

AUDIENCE

Soil Scientists, Hydrologists, Geomorphologists.

IMPACT FACTOR

2016: 3.191 © Thomson Reuters Journal Citation Reports 2017

ABSTRACTING AND INDEXING

Elsevier BIOBASE
Chemical Abstracts
Current Contents/Agriculture, Biology & Environmental Sciences
Current Geographical Publications
Dokumentation Wasser
Focus On: Global Change
Engineering Village - GEOBASE
Research Alert Direct
SCISEARCH
Science Citation Index
Scopus
EMBiology

EDITORIAL BOARD

Chair of Editors

E.L.H. Cammeraat, Universiteit van Amsterdam, Amsterdam, Netherlands
Land degradation; Soil erosion, desertification, and use change; Land abandonment; Soil organic carbon, upscaling, connectivity; Interaction vegetation-geomorphological processes.

Editors

A.P.J. de Roo, European Commission Joint Research Centre (JRC), Ispra, Italy
Hydrology & water resources modelling; Soil erosion modelling; Policy relevant research.

M. Egli, Universität Zürich, Zürich, Switzerland

Soil formation and evolution (incl. soil organic matter); Soils in time and space; Weathering (mechanisms and rates); Clay mineralogy; Landscape evolution; Geomorphic processes, dating (radiocarbon, ^{10}Be)

M.E. Nadal Romero, Universidad de Zaragoza, Zaragoza, Spain

Hydrology; Erosion; Badlands; Land use changes; Sediment transport

K. Stahr, Universität Hohenheim, Stuttgart, Germany

Soil genesis; Soil mineralogy; Land evaluation; N-cycle; Recycling of organic waste.

G. Verstraeten, KU Leuven, Heverlee, Belgium

Sediment yield; Sediment budget; Human impact; Reservoir sedimentation; Palaeo-ecology; Geoarchaeology

Associate Editors

N. Kuhn, Universität Basel, Basel, Switzerland

B. Liu, Beijing Normal University, Beijing, China

J.F. Martinez-Murillo, Universidad de Málaga, Malaga, Spain

Soil erosion, soil degradation, impacts of land use changes, wildfire, eco-geomorphology, mapping.

A. Novara, Università degli Studi di Palermo, Palermo, Italy

SOIL ORGANIC CARBON sequestration, soil Organic matter dynamics, soil erosion, and degradation in agricultural soils.

F. Scarciglia, Università della Calabria, Arcavacata di Rende (CS), Italy

Weathering and soil formation processes, geomorphic processes and landscape evolution, soil micromorphology, soil mineralogy, volcanic soils, soil chronosequences, paleopedology.

C. Siebe, Universidad Nacional Autónoma de México (UNAM), Mexico

Soil pollution and degradation processes, anthropogenic impacts, technogenic soil genesis and characterization, soil organic matter dynamics, volcanic ash soils

D. Ward, University of Cincinnati, Cincinnati, Ohio, USA

Geomorphology; fluvial, glacial, and hillslope erosion processes; landscape evolution modeling; geochronology.

Editorial Board

T. Alekseeva, Russian Academy of Sciences, Pushchino, Russian Federation

Soil mineralogy, clay mineralogy, soil geochemistry, soil organic matter, palaeopedology - Holocene, Pleistocene, Palaeozoic

R.W. Arnold, U.S. Department of Agriculture (USDA), W. Lafayette, Indiana, USA

K. Auerswald, Technische Universität München, Freising-Weihenstephan, Germany

Soil erosion; Soil science; Grassland; Stable isotopes; Radio isotopes; Geostatistics; Water quality; Grazing; Hydrology

J. Baartman, Wageningen Universiteit, Wageningen, Netherlands
soil erosion modelling, geomorphology, landscape evolution modelling and land degradation

R. Bäumler, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany
Soil Geographie especially in high altitude Asia, Soil Genesis, Ecosystem Research, High Altitude Mountain Soils, Paleosoils, Archeological soil science

G. Benito, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain
palaeoflood hydrology; palaeohydrology; fluvial geomorphology

H.-P. Blume, Inst. für Pflanzenernährung und Bodenkunde, Kiel 1, Germany

C. Boix-Fayos, CEBAS CSIC, Murcia, Spain

G. Brierley, University of Auckland, Auckland, New Zealand
Geomorphology; River science; River management; Hillslope processes; River processes; Environmental management

A. Cendrero, Universidad de Cantabria, Santander, Spain
geomorphic hazards, interactions between human activity and geomorphic processes, global geomorphic change, land-use assessment and planning, environmental quality indicators.

S.M. de Jong, Utrecht University, Utrecht, Netherlands
Remote Sensing; Imaging Spectrometry; Land degradation & hydrology; Soil erosion; Natural vegetation; Spatial statistics

M. Della Seta, Sapienza Università di Roma, Rome, Italy
badlands, water erosion, geomorphological hazard, geomorphic markers, geostatistics, morpho-evolutionary models

B. Diekkrüger, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, Germany

E. Eckmeier, RWTH Aachen University, Aachen, Germany
soil formation, land-use change, geoarchaeology, paleosoils

L. Gaspar, University of Northern British Columbia, Prince George, British Columbia, Canada
Soil erosion; Soil redistribution processes; Fallout radionuclides (Cs137, Pb210, Be7); Sediment tracing; Fingerprinting techniques; Source of fine sediments; Soil degradation

J.B.J. Harrison, New Mexico Institute of Mining and Technology, Socorro, New Mexico, USA
soils; soil landscapes; soil geomorphology; geomorphic processes

A.E. Hartemink, University of Wisconsin at Madison, Madison, Wisconsin, USA
digital soil mapping; tropical soils; pedology; soil fertility

J. Hooke, University of Liverpool, Liverpool, UK
Geomorphology; Rivers; Coasts; Erosion: Coastal and fluvial management; Floods; Sediment

C. Kabala, Wrocław University of Environmental and Life Sciences, Wrocław, Poland
soil origin and transformation, mountain soils, soils of polar/subpolar regions, soils of boreal regions, soil contamination, human impact on soils, soil classification (including WRB and Soil Taxonomy)

P.I.A. Kinnell, University of Canberra, Canberra, Australian Capital Territory, Australia

J. Latron, IDAEA-CSIC, Barcelona, Spain
Hydrological response of small catchments (0-10 km²): Hydrological monitoring, rainfall-runoff relationships, runoff generation processes, Modeling. Sediment dynamics in small catchments (0-10km²): Erosion, Sediment transport, Sediment budgets.

T. Lei, China Agricultural University, Beijing, China
hydrology; instrumentation; sediment measurement; soil erosion; soil physics

A. Mirabella
Soil evolution and weathering processes; clay minerals characteristics and transformation; soil organic matter (humic and fulvic acids) characterization.

T. Oguchi, University of Tokyo, Kashiwa, Japan
Hillslope and fluvial geomorphology, GIS

Y. Onda, University of Tsukuba, Tsukuba, Ibaraki, Japan

Y.A. Pachepsky, Hydrology and Remote Sensing Lab., Beltsville, Maryland, USA
for geoderma: artificial intelligence, artificial neural networks, regression tree, genetic algorithm, pedotransfer function, soil hydraulic properties, soil water flow, solute transport, spatial variability, soil pore space, soil structure, fate and transport of microorganisms, crop simulation.

X. Peng, Chinese Academy of Sciences (CAS), Nanjing, China
soil structure; aggregation; carbon sequestration; soil hydrology; soil shrinkage

J. Poulénard, Université Savoie Mont Blanc, Le Bourget du Lac, France
Mountain soil and Volcanic soil Sediments sources and Erosion Paleopedology and paleoenvironments

K. Pustovoytov, Universität Hohenheim, Stuttgart, Germany
paleopedology, geoarchaeology, soil chronosequences, pedogenic carbonate, radiocarbon dating, stable isotopes

D.G. Rossiter, Cornell University, Ithaca, New York, USA

soil geography; soil survey; land suitability evaluation; geostatistics applied to soil and related sciences; urban soils; Caribbean and northern Latin America including Brazil, northeast and southeast USA, northeast Canada, central and north China, Philippines, Thailand, Indonesia, Cameroon, Mozambique, India

G. Stoops, Universiteit Gent, Gent, Belgium

soil micromorphology, soil mineralogy, weathering and laterites.

D. Torri, C.N.R., Firenze, Italy

soil erosion, raindrop detachment, raindrop transport, runoff detachment, runoff transport capacity, rill erosion, gully erosion; rill and gully channel geometry, soil erodibility, soil shear strength, soil cohesion, soil surface roughness hydraulics friction, vegetation-soil interaction, vegetation effects on soil erosion, biodiversity badlands

C. Valentin, IRD - Ambassade de France au Laos, Paris, France

Soil surface crust; Runoff production; Catchment hydrology; Soil erosion; Southeast Asia; West Africa: savannah and Sahelian zones

B. van Wesemael, Université Catholique de Louvain, Louvain-la-Neuve, Belgium

Vis NIR spectroscopy, soil organic matter and digital soil mapping

D.E. Walling, University of Exeter, Penryn, Cornwall, UK

R. Webster, IACR-Rothamsted Experimental Station, Harpenden, UK

Soil science; soil survey; environmental science more generally; geostatistics; statistics more generally.

X. Wei, Chinese Academy of Sciences (CAS), Yangling, Shaanxi, China

Land use change, organic carbon and nutrients turnover and transportation, soil aggregates, biogeochemical cycles, soil erosion, soil fertility.

X. P. Yang, Zhejiang University, Hangzhou, China

Geomorphology; quaternary geology; climate change; desertification; arid landscape, desert

GUIDE FOR AUTHORS

INTRODUCTION

CATENA publishes original contributions in the fields of:

Geocology, the geoscientific-hydro-climatological subset of process-oriented studies of the present ecosystem

- the total environment of landscapes and sites
- the flux of energy and matter (water, solutes, suspended matter, bed load) with special regard to space-time variability
- the changes in the present ecosystem, including the earth's surface and

Landscape Evolution, the genesis of the present ecosystem, in particular the genesis of its structure concerning soils, sediment, relief, their spatial organization and analysis in terms of paleoprocesses;

- soils: surface, relief and fossil soils, their spatial organization pertaining to relief development
- sediment with relevance to landscape evolution, the paleohydrologic environment with respect to surface runoff, competence, and capacity for transport of bed material and suspended matter, infiltration, groundwater and channel flow
- the earth's surface, relief elements and their spatial-hierarchical organization in relation to soils and sediment
- the paleoclimatological properties of the sequence of paleoenvironments.

Types of paper

CATENA publishes multidisciplinary studies as well as monodisciplinary papers that are of interest to other disciplines and are of relevance to landscape studies.

1. Original research papers (Regular Papers)
2. Review articles
3. Technical Notes

Original research papers should report the results of original research. The material should not have been previously published elsewhere, except in a preliminary form.

Review articles should cover subjects falling within the scope of the journal and which are of active current interest. They may be submitted or invited.

A Technical Note is a short article on new developments, significant advances and novel aspects of experimental and theoretical methods and techniques relevant to the scope of Catena. A technical note can also include novel software developments and computational methods. The Technical Note should be used for information that cannot be adequately incorporated into an Original Research Article, and that is of sufficient value to be brought to the attention of the readers of the Journal. The note should describe the nature of the new method, technique or procedure and clarify how it differs from those currently in use, citing relevant literature. Technical Notes should be no more than 5 Journal pages (~5000 words and 2 Figures or Tables). Technical notes are sent for full peer review. Electronic Supplements such as programming code, validation data or user manuals can be added to a Technical Note.

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address

All necessary files have been uploaded:

Manuscript:

- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)

- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print
Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations

- Manuscript has been 'spell checked' and 'grammar checked'
- All references mentioned in the Reference List are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our [Support Center](#).

BEFORE YOU BEGIN

Ethics in publishing

Please see our information pages on [Ethics in publishing](#) and [Ethical guidelines for journal publication](#).

Declaration of interest

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. If there are no conflicts of interest then please state this: 'Conflicts of interest: none'. [More information](#).

Submission declaration and verification

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see '[Multiple, redundant or concurrent publication](#)' section of our ethics policy for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service [CrossCheck](#).

Changes to authorship

Authors are expected to consider carefully the list and order of authors **before** submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only **before** the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the **corresponding author**: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors **after** the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

Article transfer service

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. [More information](#).

Article transfer service

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable for another journal, you may be asked to consider transferring your article to the alternative journal of your choice. If you agree, your article will be transferred automatically on your behalf with no need to reformat. More information about this can be found here: <http://www.elsevier.com/authors/article-transfer-service>.

Copyright

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see [more information](#) on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. [Permission](#) of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has [preprinted forms](#) for use by authors in these cases.

For open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' ([more information](#)). Permitted third party reuse of open access articles is determined by the author's choice of [user license](#).

Author rights

As an author you (or your employer or institution) have certain rights to reuse your work. [More information](#).

Elsevier supports responsible sharing

Find out how you can [share your research](#) published in Elsevier journals.

Role of the funding source

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the Open Access Publication Fee. Details of [existing agreements](#) are available online.

Open access

This journal offers authors a choice in publishing their research:

Subscription

- Articles are made available to subscribers as well as developing countries and patient groups through our [universal access programs](#).
- No open access publication fee payable by authors.

Open access

- Articles are freely available to both subscribers and the wider public with permitted reuse.
- An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For open access articles, permitted third party (re)use is defined by the following [Creative Commons user licenses](#):

Creative Commons Attribution (CC BY)

Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The open access publication fee for this journal is **USD 2500**, excluding taxes. Learn more about Elsevier's pricing policy: <http://www.elsevier.com/openaccesspricing>.

Green open access

Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our [green open access page](#) for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. [Find out more](#).

This journal has an embargo period of 24 months.

Elsevier Publishing Campus

The Elsevier Publishing Campus (www.publishingcampus.com) is an online platform offering free lectures, interactive training and professional advice to support you in publishing your research. The College of Skills training offers modules on how to prepare, write and structure your article and explains how editors will look at your paper when it is submitted for publication. Use these resources, and more, to ensure that your submission will be the best that you can make it.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the [English Language Editing service](#) available from Elsevier's WebShop.

Submission

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail. Authors are requested to review papers in a recent issue of the journal as they prepare their paper.

Submit your article

Please submit your article via <http://ees.elsevier.com/catena/>

Referees

Please submit, with the manuscript, the names, addresses and e-mail addresses of five potential referees. The referees must not have a conflict of interest with any of the authors or the content of the manuscript. For this reason, do not submit referees who are part of your or your co-authors' institutions, or referees you or your co-authors have collaborated with in the past three years. Ideally referees from several different countries are invited. Potential referees should be experts in the field of your research, having published peer-reviewed papers on the subject. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

PREPARATION

Peer review

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. [More information on types of peer review.](#)

Use of word processing software

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: <http://www.elsevier.com/guidepublication>). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Manuscripts should be prepared with numbered lines, with wide margins and double line spacing throughout, i.e. also for abstracts, footnotes and references. Every page of the manuscript, including the title page, references, tables, etc. should be numbered. However, in the text no reference should be made to page numbers; if necessary, one may refer to sections.

Article structure

Subdivision - numbered sections

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Results

Results should be clear and concise.

Discussion

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-

case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view [Example Graphical Abstracts](#) on our information site.

Authors can make use of Elsevier's [Illustration Services](#) to ensure the best presentation of their images and in accordance with all technical requirements.

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view [example Highlights](#) on our information site.

Keywords

Authors should provide 4 to 6 keywords. These must be taken from the most recent American Geological Institute GeoRef Thesaurus and should be placed beneath the abstract.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Nomenclature and units

Follow internationally accepted rules and conventions: use the international system of units (SI). If other quantities are mentioned, give their equivalent in SI. You are urged to consult [IUGS: Nomenclature for geological time scales/rock names](#) for further information.

Math formulae

Present simple formulae in the line of normal text where possible. In principle, variables are to be presented in italics.

Number consecutively any equations that have to be displayed separate from the text (if referred to explicitly in the text).

Subscripts and superscripts should be clear.

Greek letters and other non-Roman or handwritten symbols should be explained in the margin where they are first used. Take special care to show clearly the difference between zero (0) and the letter O, and between one (1) and the letter I.

Give the meaning of all symbols immediately after the equation in which they are first used. For simple fractions use the solidus (/) instead of a horizontal line.

Equations should be numbered serially at the right-hand side in parentheses. In general only equations explicitly referred to in the text need be numbered.

The use of fractional powers instead of root signs is recommended. Also powers of e are often more conveniently denoted by exp.

Levels of statistical significance which can be mentioned without further explanation are: *P <0.05, **P <0.01 and ***P <0.001.

In chemical formulae, valence of ions should be given as, e.g., Ca²⁺, not as Ca⁺⁺. Isotope numbers should precede the symbols, e.g., ¹⁸O.

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Electronic artwork

General points

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

A detailed [guide on electronic artwork](#) is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.

TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.

TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.

TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;

- Submit graphics that are disproportionately large for the content.

Color artwork

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. [Further information on the preparation of electronic artwork.](#)

Figure captions

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue

Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software

Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support [Citation Style Language styles](#), such as [Mendeley](#) and [Zotero](#), as well as [EndNote](#). Using the word processor plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

<http://open.mendeley.com/use-citation-style/catena>

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference style

Text: All citations in the text should refer to:

1. *Single author:* the author's name (without initials, unless there is ambiguity) and the year of publication;
2. *Two authors:* both authors' names and the year of publication;
3. *Three or more authors:* first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999). Kramer et al. (2010) have recently shown'

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. *J. Sci. Commun.* 163, 51–59.

Reference to a book:

Strunk Jr., W., White, E.B., 2000. *The Elements of Style*, fourth ed. Longman, New York.

Reference to a chapter in an edited book:

Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), *Introduction to the Electronic Age*. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 1975. Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> (accessed 13 March 2003).

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. *Mendeley Data*, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

Journal abbreviations source

Journal names should be abbreviated according to the [List of Title Word Abbreviations](#).

Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 150 MB in total. Any single file should not exceed 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including [ScienceDirect](#). Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our [video instruction pages](#). Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Supplementary material

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

RESEARCH DATA

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the [research data](#) page.

Data linking

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the [database linking page](#).

For [supported data repositories](#) a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. Before submitting your article, you can deposit the relevant datasets to *Mendeley Data*. Please include the DOI of the deposited dataset(s) in your main manuscript file. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the [Mendeley Data for journals page](#).

Data in Brief

You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for *Data in Brief* as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to *Data in Brief* where it will be editorially reviewed and published in the open access data journal, *Data in Brief*. Please note an open access fee of 500 USD is payable for publication in *Data in Brief*. Full details can be found on the [Data in Brief website](#). Please use [this template](#) to write your Data in Brief.

MethodsX

You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use [this template](#) to prepare your MethodsX article.

Data statement

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the [Data Statement page](#).

ARTICLE ENRICHMENTS

AudioSlides

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. [More information and examples are available](#). Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

Google Maps and KML files

KML (Keyhole Markup Language) files (optional): You can enrich your online articles by providing KML or KMZ files which will be visualized using Google maps. The KML or KMZ files can be uploaded in our online submission system. KML is an XML schema for expressing geographic annotation and visualization within Internet-based Earth browsers. Elsevier will generate Google Maps from the submitted KML files and include these in the article when published online. Submitted KML files will also be available for downloading from your online article on ScienceDirect. [More information](#).

Interactive plots

This journal enables you to show an Interactive Plot with your article by simply submitting a data file. [Full instructions](#).

AFTER ACCEPTANCE

Online proof correction

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints

The corresponding author will, at no cost, receive a customized [Share Link](#) providing 50 days free access to the final published version of the article on [ScienceDirect](#). The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's [Webshop](#). Corresponding authors who have published their article open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

AUTHOR INQUIRIES

Visit the [Elsevier Support Center](#) to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also [check the status of your submitted article](#) or find out [when your accepted article will be published](#).