Palaeogeography, Palaeoclimatology, Palaeoecology is an international medium for the publication of high quality and multidisciplinary, original studies and comprehensive reviews in the field of palaeo-environmental geology including palaeoclimatology. Please note that palaeogeographical and plate tectonic papers are considered to be outside the scope of the journal, and as such we kindly request that papers of this nature are not submitted. The journal aims at bringing together data with global implications from research in the many different disciplines involved in palaeo-environmental investigations. By cutting across the boundaries of established sciences, it provides an interdisciplinary forum where issues of general interest can be discussed.

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
Palaeontologists, Sedimentologists, Marine Geologists, Quaternary Geologists.

IMPACT FACTOR
2019: 2.833 © Clarivate Analytics Journal Citation Reports 2020
ABSTRACTING AND INDEXING

AGI’s Bibliography and Index of Geology
BIOSIS Citation Index
Bulletin Signalétique
Current Contents
Engineering Village - GEOBASE
Pascal Francis
Meteorological and Geophysical Abstracts
Elsevier BIOBASE
Petroleum Abstracts
ESRISAT
AESIS
Scopus
Web of Science
GeoRef
British & Irish Archaeological Bibliography
CAB International
EBSCOhost
PubMed/Medline
OCLC Contents Alert
Personal Alert
ProQuest
Arts & Humanities Search
Biological Abstracts
BIOSIS Previews
Science Citation Index Expanded
Web of Science
Referativnyi Zhurnal VINTI-RAN (Russian Academy of Sciences)

EDITORIAL BOARD

Editors
Thomas J. Algeo, University of Cincinnati
Howard Falcon-Lang, Royal Holloway University of London, Egham, United Kingdom
Paul Hesse, Macquarie University, Sydney, New South Wales, Australia
Isabel Montanez, University of California Davis, Davis, California, United States
Shucheng Xie, China University of Geosciences, Wuhan, China

Editorial Office
Palaeogeography, Palaeoclimatology, Palaeoecology Editorial Office

Editorial Board
Hermann Behling, University of Göttingen, Göttingen, Germany
Michael I Bird, James Cook University - Cairns Campus, Cairns, Queensland, Australia
Stephane Bodin, Aarhus University, Aarhus, Denmark
David Bond, University of Hull, Hull, United Kingdom
Dave Bottjer, University of Southern California, Los Angeles, California, United States
Juan C. Braga, University of Granada, Granada, Spain
Carlton Brett, University of Cincinnati, Cincinnati, Ohio, United States
Renato Campello Cordeiro, Federal Fluminense University, Niterói, Brazil
Marcelo Carvalho, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil
Liu Chao, China University of Geosciences, Wuhan, China
Fahu Chen, Institute of Tibet Plateau Research, CAS Key Laboratory of Alpine Ecology, Beijing, China
Kristine DeLlong, Louisiana State University, Baton Rouge, Louisiana, United States
Chenglong Deng, Chinese Academy of Sciences, Beijing, China
William DiMichele, Smithsonian Institution, Washington, District of Columbia, United States
Steven Diezese, Baylor University, Waco, Texas, United States
Lawrence J. Flynn, Harvard University, Cambridge, Massachusetts, United States
Joost Frieling, Utrecht University, Utrecht, Netherlands
Sheri Fritz, University of Nebraska-Lincoln, Lincoln, Nebraska, United States
GUIDE FOR AUTHORS

**Types of article**

**Full length articles** that meet the Aims and Scope of the journal, with typical length of text in the 5000-7000 word range. Research articles may include specific case studies if these studies demonstrate theoretical significance and broad systemic relevance.

**Review articles** that assess the state of knowledge of a particular subfield or topic and point toward future research needs and directions. These review articles, with a typical length within 8000-10000 words, may include some new data or synthesis of existing data that produce new understanding. A Review Article should provide a balanced, integrated and critical summary of previous work and should evaluate potential controversial issues. Illustrations should where possible integrate existing data into new comprehensive figures rather than duplicating published work.

**Short Communications** are primarily intended to be compact versions of Full Length Articles, and must still report new and original research of high quality that meet the criteria of being of broad international interest, significant and novel. Other matters of general interest to the community will be considered for occasional publication as a Short Communication; an example could be a short contribution that addresses one very specific technical issue. Short Communications should be no more than 4000 words in length and contain no more than 3 figures.

Contributions that are simply cut-down versions of what should be longer articles, papers that are mainly of limited or localised interest, or which lack pronounced novelty or significance will not be considered for publication as a Short Communication. Authors wishing to comment on a recently published PPP paper should submit a **Comment** which must be brief and directed only towards the main issue(s) that are being questioned in the original paper. It is not a vehicle for extensive review or for publishing the (Comment) author's new findings. The original author(s) will be invited to write a **Reply** that must likewise be brief and directed only at the issues in question. Both parties are limited to one Comment and Reply each.

Information for prospective guest editors intending to submit a proposal for a special issue in the journal can be found here. Authors contributing to special issues should ensure that they select the appropriate special issue article type when submitting their manuscript.

**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.

Authors submitting manuscripts to PPP are requested to verify that their manuscripts conform to certain requirements. These requirements involve line numbering, figure numbering, manuscript length, placing large data tables as supplementary material, use of standardized form to report data, formatting, keywords, lists, systematic descriptions and quality of English full details can be found on this page.

BEFORE YOU BEGIN

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Declaration of competing 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. Authors should complete the declaration of competing interest statement using this template and upload to the submission system at the Attach/Upload Files step. Note: Please do not convert the .docx template to another file type. Author signatures are not required. If there are no interests to declare, please choose the first option in the template. This statement will be published within the article if accepted. 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, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' 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 Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

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.

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 gold 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 gold 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.

Open access
Please visit our Open Access page for more information.

Elsevier Researcher Academy
Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

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 Author Services.
Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Submit your article
Please submit your article via EVISE at https://www.evise.com/profile/api/navigate/PALAEO. For articles already submitted in EES, please refer to the following link: https://ees.elsevier.com/palaeo/default.asp. To track the status of your article in EES, please click the link: https://ees.elsevier.com/palaeo/default.asp

Referees
Authors are asked to provide the names and contact details for 5 possible reviewers; please provide specific disciplines of the suggested reviewers. These reviewers must not be colleagues with whom you have done research or published papers with during the last 5 years nor can they be working at your own institute. Only up to a maximum of two of these reviewers should be working in the same country as you. Palaeo3 relies on the honesty of our authors in the nomination of potential reviewers; any violation of the guidelines above could lead to rejection of your manuscript.

Please note that the journal may not use your suggestions, but your help is appreciated and may speed up the reviewing process.

Peer review assists the editors in making editorial decisions and through editorial communications with the author may also assist the author in improving the paper. Peer review is an essential component of formal scholarly communication, and lies at the heart of the scientific method. Elsevier shares the view that authorship and reviewing manuscripts are two inextricable aspects of scholarship.

PREPARATION
NEW SUBMISSIONS
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 your files to a single PDF file, which is used in the peer-review process. Please limit file size to no more than 30 MB for ease of transfer.

Data Submission
Note that authors must submit all quantitative primary data used in their study at the time of initial submission. Palaeo-3 is moving to conform to publication industry standards in this regard. Primary data should be submitted either as a Supplemental Information file or to Elsevier's Mendeley archive. Excel format is preferred although other commonly used file types are acceptable. Studies based on confidential datasets cannot be considered by Palaeo-3. For further details, see Research Data below.

References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements
There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables withCaptions.
If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.
Divide the article into clearly defined sections.
Please ensure the text of your paper is double-spaced and has consecutive line numbering - this is an essential peer review requirement.
Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

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.

REVISED SUBMISSIONS
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article and choose the category "Manuscript" so that the revised version reaches production once accepted and this will avoid incorrect source file being published online. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). 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.

LaTeX
You are recommended to use the Elsevier article class elsarticle.cls to prepare your manuscript and BibTeX to generate your bibliography.
Our LaTeX site has detailed submission instructions, templates and other information.

Article Structure
Authors are required to format their contributions per the following guidelines. The manuscript should be organized per the sequence given below. Authors are encouraged to download and peruse recent Palaeo-3 articles as a model for formatting their submissions.

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.

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. You can add your name between parentheses in your own script behind the English transliteration. 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. This responsibility includes answering any future queries about Methodology and Materials. 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.
Highlights
The Highlights provide a summary of key findings and novel methods of each study. Authors can provide up to 5 highlights, each consisting of up to 85 characters (including spaces). Highlights longer than 85 characters each must be shortened. The highlights section should have a header "Highlights" to identify them, and they should be listed in 'bullet-point' format. For examples go to: example Highlights. Highlights should be submitted in a separate editable file in the online submission system.

Abstract
A concise and factual abstract with a maximum limit of 300 words 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
A Graphical Abstract is optional, but its use is encouraged to draw 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. For examples go to: 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 to meet technical requirements.

Article Header
Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. Both the title of the manuscript and all headers within the manuscript should make use of 'sentence capitalization', i.e., the capitalization pattern used in a regular sentence. Do not capitalize the first letter of all words, and do not capitalize all words in full. Both patterns make it impossible to tell which words are to be capitalized (e.g., proper nouns), leading to errors in capitalization during the production stage. Author names and affiliations. For each author, provide a given name, middle initial (optional), and family name. Next, give authors' institutional affiliations as a list, including institution name, address (optional), city, postal code, and country. Link the affiliations to the authors' names using lowercase superscripted letters immediately after the author's name and in front of the appropriate address. At least one email address must be provided (for the corresponding author), but the journal encourages inclusion of an email address for each author. Corresponding author. Designate a corresponding author to handle correspondence at all stages of review and publication. Ensure that the e-mail address and contact details for the corresponding author are kept up to date. Present/permanent addresses. 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.

Keywords
The Keywords list is intended to provide additional searchable terms not already in the title of the manuscript (all terms in the title of a manuscript are automatically keywords). Authors can provide up to 6 keywords, which are separated by semi-colons (;). Use singular rather than plural forms of words, and use only standard abbreviations. Keywords are most effective when they are short yet specific (1 or 2 words). Long keywords and keywords that are overly generalized or overly specialized are less effective. For example, a term like ?trace metal (U, V, Ni, Mo) enrichment factors? is unlikely to be used in a search, whereas ?trace metal?, ?trace element?, ?uranium?, ?vanadium?, and ?enrichment factor? would all be good choices for keywords. Keep in mind that keywords are supposed to be searchable terms—something a researcher would type during a search for information.

Main text
Manuscript organization
There is no strict organizational requirement, but all manuscripts must contain essential elements to adequately convey the study to readers. A typical sequence of subsections would include an Abstract, Introduction, Geological Background (or other types of general review material), Materials and Methods, Results, Discussion, Conclusions, References, Acknowledgments, Tables, Figure Captions,
and Figures (although not every manuscript will include all of these subsections). Results and Discussion should generally be developed as separate sections and may be combined only in exceptional cases. If an article includes any Videos and/or other Supplementary material, they should be included in the initial submission for peer review purposes.

**Line numbers**

Manuscripts must contain line numbers. Line numbers should begin with the title page and be continuous throughout the text, reference list, and figure captions of the manuscript. Do not restart line numbers on each page of the manuscript. Supplementary materials should be separately line numbered. The purpose of line numbering is to facilitate references to specific items in the manuscript during review and editorial handling.

**Headers**

All subsections of the manuscript must have a header given on a separate line with a number. The first numbered section is typically "1. Introduction", and the last section is "X. Conclusions". The subsections and their headers must be organized in a logical hierarchy, using first-order (1, 2, etc.) and (optionally) second-order (1.1, etc.) and third-order (1.1.1, etc.) numbers. Use these numbers for internal citations, e.g., "see Section 3.2" rather than "see below". The Acknowledgments, References, and Figure captions are not numbered sections. Authors should refrain from use of fourth-level subheaders (e.g., 1.1.1.1. or 2.3.1.2.) because this leads to too complex an organizational scheme and too much subdivision of a manuscript into short sections (often with each consisting of just a single paragraph). Authors should also refrain from use of embedded headers, i.e., a header that is set at the beginning of a paragraph. Choosing header titles based on instrumental techniques (e.g., X-ray fluorescence) or data types (e.g., Major elements) is fine for the Methods section of a manuscript, but this should not be done in the Discussion section. The purpose of the Discussion section is not to parse the results of a study one method at a time but, rather, to integrate results around specific key themes or issues?Discussion section headers should be used to identify these key themes and issues. First-order headers should be shown in bold type, and 2nd- and 3rd-order headers in italics.

**Study site locations**

The exact locations of all study sites should be given using international latitude-longitude coordinates (give degrees, minutes and seconds; or degrees to at least 3 decimal places). Local coordinates can optionally be given in addition to international coordinates. If there are a limited number of study sites (<10), provide this information in the text; if a larger number, provide this information as a supplemental file or table. If any study site is protected for cultural, environmental, or scientific reasons, then a generalized site location will suffice but add the statement "Study site is protected but exact location information will be shared with qualified researchers upon request."

**Time units**

With regard to units of time, Palaeo-3 follows the "dual units" approach. Absolute ages are given in units of "Ga", "Ma", and "ka", which are read as "billions of years ago", "millions of years ago", and "thousands of years ago", respectively. For example, "The Permain-Triassic boundary has been dated to ~252 Ma." Durations of time, including for rates and fluxes, are given in units of "Gyr", "Myr", and "kyr", which are read as "billions of years", "millions of years", and "thousands of years", respectively. For example, "The Induan Stage of the Early Triassic lasted ~1 Myr" or "Sedimentation rates in the study units ranged from 12 to 16 m Myr-1". For Quaternary studies, note that "ka B.P." is redundant because "ka" is equivalent to "thousands of years ago", but "kyr B.P." is fine. Note that "cal B.P." alone is not acceptable, but "cal yr B.P." or "cal kyr B.P." are fine. By analogy, "a" stands for "years ago", so "a B.P." is also redundant. However, "B.C." and "A.D." (or "C.E." for "Christian Era") may be used for recent dates.

**Time versus rock-time terminology**

"Early" and "Late" are used in reference to geologic time, e.g., "basin subsidence during the Late Cretaceous" or "a negative 13C trend through the Late Cretaceous (time)". "Lower" and "Upper" are used in reference to rock units or constituents of rock units, e.g., "an Upper Cretaceous limestone (or formation or member)", an "Upper Cretaceous ammonite fossil", or "a negative 13C trend through the Upper Cretaceous (strata)". With regard to capitalization of these terms ("early/late" and "lower/upper"), they should be capitalized for formally defined units and not capitalized if used in an informal or general sense. "lowermost" and "uppermost" are always informal and are never capitalized.
Citations
Citations of published papers should follow the following format when used in the text of a manuscript: "Smith (2001)" for single authors, "Smith and Johnson (2002)" for pairs of authors, and "Smith et al. (2003)" for three or more authors in constructions such as "Smith (2001) showed that ". When the citation is parenthetical, the correct forms are "(Smith, 2001)"", "(Smith and Johnson, 2002)"", and "(Smith et al., 2003)". More than one reference by the same author(s) in the same year must be distinguished by the letters 'a', 'b', 'c', etc., placed after the year of publication in both the text citation and the reference list. Groups of references should be listed chronologically, e.g., "(Smith, 2001; Anderson et al., 2010; Jones and Johnson, 2014)", and separated by a comma for papers by the same author but separated by a semi-colon for papers by different authors, e.g., "(Smith, 2001a, 2001b, 2013; Anderson et al., 2010)". Papers by different authors with the same last name and same publication year need to be distinguished by adding the initials of the first author, e.g., "(Wang-C et al., 2010)" versus "(Wang-HY et al., 2010)"

Paragraph development: The most effective way to communicate with readers is to write your paper developing a single idea in each paragraph. In each paragraph, the key idea should be presented simply and without elaboration (i.e., without data or literature citations) in the first sentence, which is called the "topic sentence". The remainder of the paragraph should elaborate on this key idea, referring to your data and/or data/interpretations from other literature sources, with the goal of developing a logical argument in support of the key idea. Paragraphs consisting of one or two sentences, particularly when used in series, reflect poor writing style. These comments on writing style can apply to the entire manuscript, but they are most important for the Discussion section of your manuscript. This is because the Discussion section is the part of the manuscript in which you attempt to build a case for your ideas, so it is very important that your case be logically developed and clearly laid out for readers to understand. If you do not emphasize your main points by making them forcefully in your paragraph topic sentences, readers are unlikely to be able to follow your line of reasoning.

Quality of English: All manuscripts accepted for publication by Palaeo-3 must be written in fully idiomatic English. Manuscripts that do not comply may be returned for language improvements either before or after review. However, Palaeo-3 strongly encourages authors to improve the English of a manuscript prior to initial submission, because manuscripts that are easy to read and comprehend will generally be more favorably reviewed.

Data Availability
Authors are encouraged to include a 'Data Availability' section in their manuscript which is visible in ALL reading formats and may refer to data hosted in ANY repository. It should be placed before the references to provide readers with information about where they can obtain the research data required to reproduce the work reported in the manuscript, and typically consists of a simple sentence giving the URL(s) of and citation(s) to the dataset(s). Full information can be found here.

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.

Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.
Figures

**Organization and labeling.** Figures should be organized in a logical order within a manuscript. Figures that provide context to the study (e.g., location maps, general stratigraphic columns) should come first, followed by methods figures (if any), results figures (e.g., showing raw data), interpretative figures (e.g., modeling or data-based), and summary figures (e.g., linking study data to other published data, or showing general relationships summarizing the findings of a study). Each figure should be given a figure number based on the order of its first appearance in the text. Supplemental figures should have a number preceded by "S", e.g., "Figure S1", etc. Figures and figure captions must be grouped together at the end of the manuscript (after References and Tables)--these should be high-resolution (600 dpi), publication-ready versions; in addition, authors can also (optionally) include figures within the text near the place of first mention.

**File formats.** Regardless of the application used, 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):

- **PDF:** Vector drawings. Embed the font or save the text as 'graphics'.
- **TIFF or JPG:** Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- **TIFF or JPG:** Bitmapped line drawings: use a minimum of 1000 dpi.
- **TIFF or JPG:** Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

The previous version of the Guide for Authors indicated that EPS files are also acceptable, but in practice EPS files rarely merge successfully. Figure distortion and figures not being visible are common problems in the submission PDFs that the editors receive, and these problems are almost always due to file conversion problems. The only approach that is guaranteed to yield correct figure display with no problems is to convert each figure individually to PDF format and then merge the figure PDFs into the manuscript file.

Please do not:
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution. Submit graphics that are disproportionately large for the content.

**Guidelines for artwork**
The preferred fonts for text items are Arial (or Helvetica), Times New Roman (or Times), Symbol, and Courier. Make sure that all text items are large enough to be read clearly and are not obstructed by lines or shaded backgrounds; generally, the smallest text items should be at least 50% of the size of the largest text items. Use a logical naming convention for artwork files (e.g., "Smith-Figure 1"), and indicate for each figure if it is a single- or double-column image. A detailed guide on electronic artwork is available.

**Electronic artwork**

**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files.

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**

Regardless of the application used, 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 the font or save the text as 'graphics'.
- **TIFF (or JPG):** Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- **TIFF (or JPG):** Bitmapped line drawings: use a minimum of 1000 dpi.
- **TIFF (or JPG):** Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
• Supply files that are too low in resolution.
• Submit graphics that are disproportionately large for the content.

Color artwork
Color figures are preferred to black-and-white figures. Authors are encouraged to use color whenever it enhances the presentation of a figure or facilitates information display, as for different types of samples in crossplots or different fields in maps. Stratigraphic columns and their lithologic legends should make use of color. Note that all figures will be published in color for free in the online version of a paper (e.g., ScienceDirect and other sites), and that figures will be published in black-and-white in the print version of the journal as a default option. Authors will be given information about the cost for color figure reproduction in the print version (which is optional) at the time that a paper is accepted. See Further information on the preparation of electronic artwork.

Figure captions
Each figure must have a caption that is a concise description of the contents of the figure. Keep text to a minimum but explain all symbols and abbreviations used in the figure. Put citations of sources of reproduced information in the figure caption, not in the figure itself. As much as possible, avoid duplication of information between multiple figures (although there are clear exceptions such as use of the same stratigraphic column in multiple figures showing different geochemical profiles).

Panel labels
Subparts of figures should be labeled with capital letters (i.e., A, B, C, etc.). Panel labels should be positioned in the upper left or lower left corner of each panel; use a consistent pattern in each figure. Do not enclose the labels in parentheses, brackets, or boxes.

Plates
"Plates" are not permitted in Palaeo-3. Material that is sometimes assigned to plates (e.g., sets of fossil specimen images) should be submitted as a "figure".

Maps
Maps must not show politically disputed boundaries.

Tables
Each table should be given a table number and a short (one-line) descriptive title above the table. Number tables consecutively in accordance with the order of their first appearance in the text. All explanatory notes and sources that are not included in the table itself should be placed in footnotes at the bottom of the table. Tables included in the main text should be of small to moderate size and contain data essential to the study, but larger data tables should be put in a Supplementary Information file for online publication only. Supplemental tables should have a number preceded by "S", e.g., "Table S1", etc.

End matter
Conclusions
All papers must have a Conclusions section. The Conclusions section should be written as one or (at most) two paragraphs of no more than 30 lines total, providing a concise summary of the main findings of the study. The Conclusions section should not contain citations to published literature or figures. If such citations are needed, then this material belongs in the Discussion section.

Acknowledgements
Give acknowledgements in a separate section before the reference list. Also give funding sources by program name and grant number. It is not necessary to include detailed descriptions of grants. When funding is from a block grant or other resources available to a university, college, or other research institution, provide 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.

Data availability
If the study data are hosted in any external, publicly accessible repository, provide a statement to this effect and give the URL(s) where the data can be accessed.

Reference list
This section should be labeled "References" and include all published sources cited in the manuscript text, figures, and tables (cross-check citations versus the reference list carefully to make sure that both are complete). Do not cite abstracts (except for extended abstracts?) or papers in review or in preparation.
There are no strict requirements for the reference list—references can be in any style or format as long as the style is consistent. However, the "Harvard style" is recommended, wherein reference information is given in the following order: author name(s), year of publication, article title, journal title, volume number, and page range. Journal names should be abbreviated according to List of Title Word Abbreviations. Note that missing data will be highlighted at proof stage for the author to correct. The following examples show recommended reference formats.

Reference to a journal article:


References must be organized alphabetically. The correct procedure for ordering papers is:
1) Papers by different authors with the same last name are arranged by first name, so all papers by Shen, J. come before papers by Shen, S.Z., and those come before papers by Shen, Y.A.
2) The correct way to order references by the same first author is as follows (see example below):
   i) All single-author papers first, arranged by publication year (oldest first).
   ii) All two-author papers next, arranged alphabetically by the second author.
   iii) All multi-author papers last, arranged by publication year. The reason for this is that readers looking for a particular paper cited in the text will be searching by year, not by the second author's name (which is not given in the text citation).


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. Using citation 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. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software. Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
When preparing your manuscript, you will then be able to select this style using the Mendeley plugins for Microsoft Word or LibreOffice.

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.

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/palaeogeography-palaeoclimatology-palaeoecology
When preparing your manuscript, you will then be able to select this style using the Mendeley plugins for Microsoft Word or LibreOffice.

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 file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. 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.

Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

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 requires 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. When sharing data in one of these ways, you are expected 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. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

To maximise the visibility of your data, authors are invited to add a citation to their datasets by including a data reference in their Reference List as per the 'Data References' instructions elsewhere on this 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 600 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 require you to state the availability of your data in your submission if your data is unavailable to access or unsuitable to post. This may also be a requirement of your funding body or institution. You will have the opportunity to provide a data statement during the submission process. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

International Geo Sample Number (IGSN)
If you have registered your sample with the SESAR database and have received an IGSN for this sample, please tag your IGSNs in your manuscript. This will enable Elsevier to link the IGSN number to the sample in SESAR if your paper is published online. To tag an IGSN, please use the syntax "IGSN: IGSN number" (e.g., IGSN: HRV0035F0). For more information on SESAR and how to register your samples please visit http://www.geosamples.org/

Additional information
- Use double line-spacing
- Insert continuous line numbering
- Submit figures separate from the text, do not embed figures in the text
• Use EPS or TIFF figures, or PDF figures of less than 3 MB

AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. 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 Author Services. Corresponding authors who have published their article gold 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.

© Copyright 2018 Elsevier | https://www.elsevier.com