Mammalian Biology (formerly Zeitschrift für Säugetierkunde) is an international scientific journal edited by the Deutsche Gesellschaft für Säugetierkunde (German Society for Mammalian Biology). The journal is devoted to the publication of research on mammals. Its scope covers all aspects of mammalian biology, such as anatomy, morphology, palaeontology, taxonomy, systematics, molecular biology, physiology, neurobiology, ethology, genetics, reproduction, development, evolutionary biology, domestication, ecology, wildlife biology and diseases, conservation biology, and the biology of zoo mammals.

To qualify for publication, a manuscript must contribute to the understanding of mammalian biology by presenting either new and original research data (as a full article or in short communication format) or a thorough review of a particular topic of mammalogical research. Investigations using mammals merely as models or emphasizing experimental or veterinary aspects are of interest only if they are of substantial relevance to mammalogists. Studies testing explicitly formulated hypotheses are preferred to those presenting primarily descriptive results.

Due to its wide range of topics, Mammalian Biology is primarily of interest to scientists working in the listed various fields of mammalogy but also to biologists and zoologists in general as well as to veterinarians and medical scientists.

If you want to submit a paper dealing with phylogenetics and/or the splitting/description of (new) species, please follow the guidelines published in "Tree thinking and species delimitation: Guidelines for taxonomy and phylogenetic terminology" (Zachos, Frank E., 2016).

Authors of manuscripts introducing or describing new taxa and/or new taxon names are kindly asked to register them with ZooBank(http://zoobank.org/) upon acceptance of publication.

Submitting a manuscript previously rejected by another journal without notification and disclosure of previous reviews will lead to immediate rejection should it be uncovered. There is nothing wrong with being rejected and submitting to a different journal, but the referees’ efforts should be taken into account and given credit. Please attach previous reviews and responses/rebuttals with your submission, following your cover letter.

### Audience

Biologists, zoologists, veterinarians, zoo staff, and people involved in nature protection and animal care, who are interested in one or more of the aforementioned topics.
IMPACT FACTOR
2017: 1.443 © Clarivate Analytics Journal Citation Reports 2018

ABSTRACTING AND INDEXING
Animal Breeding Abstracts
Biological Abstracts
BIOSIS databases/Zoological Records
Current Advances in Ecological and Environmental Sciences
Current Contents/Agriculture, Biology & Environmental Sciences
Dairy Science Abstracts
Fisheries Review
Helminthological Abstracts
GEO
Index Veterinarius
Key Word Index of Wildlife Research
NISC - National Information Services Corporation
Science Citation Index
Science Citation Index Expanded
SciSearch
Scopus
Veterinary Bulletin
Wildlife Review
Zoological Record

EDITORIAL BOARD

Editors
German Society for Mammalian Biology (Deutsche Gesellschaft für Säugetierkunde), http://www.mammalianbiology.org/

Managing Editor
Frank E. Zachos, Zoological Department, Mammal Collection, Naturhistorisches Museum Wien, Burgring 7, A-1010, Vienna, Austria
category: evolutionary biology and genetics

Subject Editors
Marco Apollonio, Dept. of Zoology and Evolutionary Genetics, University of Sassari, Via Muroni, 25, I-07100, Sassari, Italy, Fax: +39 - 079 - 22 86 65
category: behavioural biology
Eva Bärmann, Zoologische Forschungsmuseum Alexander Koenig (ZFMK), Bonn, Germany
Sabine Begall, Abt. Allgemeine Zoologie, Universität Duisburg-Essen, Universitätsstraße 5, 45117, Essen, Germany
category: behaviour and ecology; subterranean mammals
Pamela Burger, Forschungsinstitut für Wildtierkunde un Ökologie, Veterinarmedizinische Universität Wien, Vienna, Austria, Fax: -7941
Jennifer M. Burns, Dept. of Biological Sciences, CPISB 202C, University of Alaska Anchorage, 3211 Providence Dr, Anchorage, Alaska, AK 99508, USA
category: marine mammals and ecophysiology
Juan Carranza, Dept. of Hunting Resources and fishing, Campus de Rabanales, Universidad de Cordoba, Colonia San José, Ctra Nacional IV-a, ES-14071, Córdoba, Spain
category: ecology and behaviour
Marcus Clauss, Clin. for Zoo Animals, Exotic, Pets and Wildlife, Universität Zürich, Winterthurerstr. 260, CH-8057, Zurich, Switzerland, Fax: +41 44 635 89 01 or 89 20
category: feeding ecology, digestive physiology and anatomy
Luca Corlatti, Inst. of Zoology - Dept. of Integrative Biology & Biodiversity Research, Universität für Bodenkultur Wien (BOKU), Gregor-Mendel-Strasse 33, A-1180, Vienna, Austria
category: ecology and behaviour
Francesco Ferretti, Dept. of Life Sciences, Università degli Studi di Siena, Via P.A. Mattiol 4, I-53100, Siena, Italy, Fax: +39-0577-233515
category: ecology and behaviour of large mammals
Carlos Fonseca, Department of Biology, Universidade de Aveiro, 3810-193, Aveiro, Portugal
category: ecology, conservation and management
J. Paul Grobler, Dept. of Genetics, University of the Free State, PO Box 339, 9300, Bloemfontein, South Africa
category: genetics and conservation
Nicole D.S. Grunstra, Department of Theoretical Biology, University of Vienna, Althanstrasse 14, 1090, Vienna, Austria
primates and morphometrics
Nelika Hughes, Evolutionary Ecology Group, Universiteit Antwerpen, Groenenborgerlaan 171, 2020, Antwerp, Belgium, Fax: +32 3265 3474
category: ecology of small mammals and predator-prey ecology
Laura Iacolina, Department of Chemistry and Bioscience, Aalborg University, Frederik Bajers Vej 7 H, DK-9220, Aalborg East, Denmark
category: population genetics and genomics
Thomas M. Kaiser, Biozentrum Grindel and Zoological Museum, Universität Hamburg, Martin-Luther-King-Platz 3, D-20146, Hamburg, Germany
category: ecomorphology, palaeoecology and ecology of ungulates
Leszek Karczmarski, The Swire Institute of Marine Science, School of Biological Sciences, The University of Hong Kong and Cetacea Institute, Hong Kong, Cape d’Aguilar, Shek O, Hong Kong
Cetacea, behavioural ecology and conservation
Daisuke Koyabu, University Museum, The University of Tokyo, Hongo 7-3-1, Bunkyo-ku, 113-8654, Tokyo, Japan
category: morphology and systematics
Mauro Lucherini, CONICET, Departamento de Biología Bioquímica y Farmacia, GECM, Cát. Fisiología Animal, Universidad Nacional del Sur, San Juan 670 - Primer Piso, Bahía Blanca, CP B8000, Pcia. de Buenos Aires, Argentina
category: behavioural ecology and conservation
Gabriel E. Machovský-Capuska, Sydney School of Veterinary Sciences, School of Life and Environmental Sciences, The University of Sydney, Charles Perkins Centre, Australia, Fax: +61 2 9351 3056
category: nutritional ecology, marine biology and urban ecology
Adriano Martinoli, Dept. of Environment, Health, Safety, Università degli Studi dell’ Insubria, Sicurezza Via J.H. Dunant 3, I-21100, Varese, Italy, Fax: 0332 421 446
category: behavioural ecology / biology of small mammals
Allan McDevitt, School of Environment & Life Sciences, University of Salford, Peel Building, Salford, M5 4WT, Manchester, UK
Genetics, genomics and conservation
Raquel Monclús, Dept. of Biology, Unidad zoology, Universidad Autónoma de Madrid, Ciudad Universitaria de Cantoblanco, 28049, Madrid, Spain, Fax: +34 91 497 8344
category: ecology and behaviour
Adam J. Munn, Sch. of Biological Sciences, University of Wollongong, Northfields Ave, Wollongong, NSW 2522, New South Wales, Australia
category: physiology
Jan Okrouhlik, Faculty of Science, University of South Bohemia, Branisovská 31, 370 05, Ceske Budejovice, Czech Republic
category: physiology
Svetlana Pavlova, Inst. of Ecology and Evolution, Laboratory of Population Ecology, Russian Academy of Sciences, Leninsky prospect, 33, 119071, Moscow, Russian Federation
Category: Chromosomes, Karyogenetics, Small mammals.
Rebecca Ray, Sektion Theriologie, Zoologische Forschungsmuseum Alexander Koenig (ZFMK), Adenaueralle 160, 53113, Bonn, Germany
category: ecology and conservation
Vera Rduch, Leibniz-Institut fur Biodiversitat der Tiere, Zoologische Forschungsmuseum Alexander Koenig (ZFMK), Adenauerallee 160, Bonn, Germany, Fax: +49 228 9122-212
category: ecology, conservation and ungulates
Heiko Rödel, Lab. of Experimental and Comparative Ethology LEEC, University of Paris, 13, 99 av. J.B. Clément, F-93430, Villetaneuse, France
category: ecophysiology, population ecology and behavior
Gertrud Rößner, Bayerische Staatsammlung für Paläontologie und Geologie, Staatliche Naturwissenschaftliche Sammlungen Bayerns, SNSB, Richard-Wagner-Str. 10, 80333, Munich, Germany, Fax: 0049 (0)89 2180 6601
Artiodactyla, palaeoecology and morphology
Danilo Russo, Lab. of Applied Ecology, Dept of. Agriculture, University of Naples Federico II, via Università 100, 80055, Portici, Naples, Italy
category: Chiroptera, conservation biology and ecology
Emmanuel Serrano, Dept. Medicina i Cirurgia Animals, Wildlife Ecology & Health Group, Universitat Autònoma de Barcelona (UAB), E-08193, Barcelona, Spain
Wildlife biology, ecophysiology and diseases

**Michael Somers**, Ctr. for Wildlife Management, University of Pretoria, Private bag X20 Hatfield, 0028, Pretoria, South Africa
category: ecology and management

**Vera Weisbecker**, Sch. of Biological Science, University of Queensland, Brisbane/St. Lucia, QLD 4072, Queensland, Australia
category: monotreme and marsupial evolution, morphology and development

**Laura Wilson**, School of Biological Earth and Environmental Sciences, Fac. of Science, UNSW Australia, Sydney, NSW 2052, New South Wales, Australia
evolutionary morphology; morphometrics
GUIDE FOR AUTHORS

INTRODUCTION

Mammalian Biology (formerly Zeitschrift für Säugetierkunde) is an international scientific journal edited by the Deutsche Gesellschaft für Säugetierkunde (German Society of Mammalogy). The journal is devoted to the publication of research on mammals (see aims and scope of the journal). We publish original research papers, short communications and occasionally review articles that generate a significant contribution to the field of mammalogy.

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 competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. 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 https://www.elsevier.com/sharingpolicy), 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 https://www.elsevier.com/editors/plagdetect.

Submitting a manuscript previously rejected by another journal without notification and disclosure of previous reviews will lead to immediate rejection should it be uncovered. There is nothing wrong with being rejected and submitting to a different journal, but the referees' efforts should be taken into account and given credit. Please attach previous reviews and responses/rebuttals with your submission, following your cover letter.

**Use of inclusive language**

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

**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.

**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.

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 gold 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.
• The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

Gold open access
• Articles are freely available to both subscribers and the wider public with permitted reuse.
• A gold 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 gold 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 gold open access publication fee for this journal is USD 1800, excluding taxes. Learn more about Elsevier's pricing policy: https://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 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 12 months.
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
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 http://ees.elsevier.com/mambio.

Review process
After submission, each paper enters the pre-review stage. The aim of this process is to identify papers which do not fit into the scope of Mammalian Biology, are too descriptive, or only have low relevance to a broader readership and thus have a low probability of being accepted. This policy saves authors' time and reduces effort of reviewers and editors. Manuscripts, which will pass this stage, then go into peer-review. Each manuscript submitted to Mammalian Biology will be reviewed independently by at least two experts covering the field of the article.

Authors may suggest up to five colleagues with expertise in the scientific field of the contribution, which do not and did not belong to the authors' institution. These might be considered as referees.

Content of the manuscript
Manuscripts can be published as original investigations, short communications or reviews. The total length should not exceed 7000 words including references, tables and figure legends. In the case of longer articles (in particular reviews) please contact the managing editor before submission.

Original investigations: In addition to the text, original investigations should include illustrations, tables and references. The text should be divided into: Abstract, Introduction, Material and methods (Please ensure to use Material and not Materials), Results, Discussion (or together as Results and Discussion), Acknowledgements, References.

Short communications: Please include Keywords and an Abstract. The only headings allowed for Short communication items are ‘Acknowledgements’ and ‘References’. Delete all others (e.g. Introduction, Results). Short communications should not exceed 4000 words in total and usually have a maximum of two items (tables or figures).

Reviews: Manuscripts that review and integrate the current state of knowledge in a special field of mammalian biology are also welcome. The text must provide an Abstract, special headings depending on the subject, Acknowledgements, References.

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). 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.

Line numbering should be applied throughout the text. Please use italics only for species names, not to mark subheadings or other important information. Italics should also always be used for "in vitro" and "in vivo".

The primary headings should be in bold followed by italic secondary headings. There should be no numbers.

**Article structure**

*Subdivision - unnumbered sections*

Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

**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 details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

**Theory/calculation**

A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

**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. 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.

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.

Keywords
Immediately after the abstract, provide a maximum of 5 keywords (1 minimum), avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Capitalize the first letter of your keywords; in the case of compound keywords, capitalize only the first word. Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

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.). Please use 'Acknowledgements' rather than 'Acknowledgments'.

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.

Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

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.

Artwork
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/halftone (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.

**Illustration services**
Elsevier's WebShop offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

**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.

**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. In table headlines, use italics only for species names.

**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.

**Reference links**

Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

**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. 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: http://open.mendeley.com/use-citation-style/mammalian-biology

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 can be listed either first alphabetically, then chronologically, or vice versa.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999).... Or, as demonstrated (Jones, 1999; Allan, 2000).... 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:

Reference to a journal publication with an article number:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

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 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.
**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).

**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.

**Taxon names**
We strongly discourage the use of non-phylogenetic taxon names such as Insectivora, Fissipedia or Artiodactyla. These names do not refer to monophyletic groups and are thus obsolete. If you want to refer to a para- or polyphyletic assemblage that shares a certain behavior or adaptation etc., please use other expressions, e. g. terrestrial carnivores (instead of Fissipedia) or terrestrial cetartiodactyls (instead of Artiodactyla). "Insectivorous mammals is acceptable if you refer to mammals that feed on insects irrespective of their phylogenetic relationships (i. e. anteaters as well as shrews) but not if you refer to the groups formerly falsely combined into "Insectivora".

**Revisions**
Papers may be returned for modification or revision. Revised manuscripts should be returned to the editorial office within 90 days after receipt of the reviews, otherwise they will be treated as new submissions

**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 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.