

Instructions for Authors - Specific Requirements (Version April 2018)

When preparing your manuscript, it is important that you consider the points listed here, in addition to the general 'Instructions for Authors' provided at the web site.

Please note that some specific requirements listed here differ from the requirements given in the general 'Instructions for Authors' on the web site. This concerns e.g. the declaration for 'Compliance with Ethical Standards' which is mandatory. Here we request a more elaborated declaration.

We also recommend using a copy of a recent article as an additional guide. For questions please contact the Editors at marinebiology@geomar.de. Manuscripts that do not fit our standard cannot be considered for publication.

For manuscripts on ocean acidification please see also the 'Guidelines for reporting ocean acidification data' at the end of this document.

Only articles of interest to readers of *Marine Biology*, presenting novel and useful information for the scientific community, and contributing to scientific progress in a particular field can be considered for publication. The potential impact and importance of the work should be described in the manuscript to ensure that the article will be read and cited.

Submitted manuscripts are first checked for English language, ethical issues, and plagiarism. Manuscripts exhibiting problems cannot be considered for publication and may be irrevocably rejected.

The submission template contains questions about the specific contribution of the manuscript to the field. The replies to these questions are of utmost importance, because the initial decision as to whether a manuscript will be sent out for review or will be rejected without review mainly depends upon the title, the abstract, and the replies to these questions. Replies that are vague will be taken as an indication that the authors are unable to condense information on these points, or that they have not considered the relationship of their work to progress in the field.

Language

Manuscripts should conform to standard rules of English grammar and style. Either British or American spelling and punctuation may be used, but must be consistent throughout the article. Submitted manuscripts will first be checked for language, presentation and style. Manuscripts which are substandard in these respects will be returned without review. Scientists for whom English is a foreign language are strongly recommended to have their manuscript read by a native English-speaking colleague or edited by a professional editing service. Information about editing services is available on the journal web page. It is the collective responsibility of the authors to submit a linguistically correct manuscript.

Cover letter

When submitting a manuscript, a cover letter addressed to the Editor in Chief should be uploaded under the item 'Cover Letter'. It will be visible for the editors, but it is not included into the manuscript file (PDF) which is made for the reviewers. The cover letter should contain a statement, that all authors

have agreed to the submitted version of the manuscript, that the manuscript or parts of it have not been published elsewhere, and that the paper is not under consideration elsewhere. If the research was done in a country where none of the authors is resident, evidence that official permission to conduct the research has been given must be provided.

General structure

The manuscript should be submitted as a word file or in LaTeX. The manuscript should be organized into Abstract, Introduction, Materials and Methods, Results, Discussion/Conclusion, Compliance with Ethical Standards, Acknowledgments, References, Figures (with captions) and Tables. *Marine Biology* does not publish footnotes or supplements, but additional data or videos may be submitted as electronic supplementary material which will be available online.

No full justification for the text should be used. Line numbers should run consecutively throughout the text, from the title page through the figure legends. Lines in tables or figures should not be numbered. Abbreviations and acronyms must be defined at first mention in the Abstract, again in the main body of the text, and also in the Figure Legends. A list of abbreviations may be included as a table, but should not appear at the beginning of the manuscript.

The **Title** should be meaningful and signal the importance of the study for the field. It should be descriptive and tell the reader what the paper is about. It should be general rather than restrictive to species and geographic areas. If scientific names of species are used, they must be accompanied by a higher taxonomic classification term and/or by a common name.

The **Abstract** should summarize the manuscript and attract the reader. It should be short and clear (150-250 words). The abstract should reflect what was done, why it was done, and what major results were obtained. It should not be written in the first person. The abstract should include the date(s) of the study and the latitude and longitude where the samples or experimental organisms were collected. It should not contain descriptions of the state of the art; such information should be limited to the introduction. No undefined abbreviations or unspecified references should be used. The abstract may decide whether a manuscript will be sent out for review; papers may be rejected due to poor or confusing abstracts.

The **Introduction** should describe why the study was done and end with some testable hypotheses or clear objectives. Manuscripts which do not present a clear hypothesis are likely to be rejected without review.

Methods: All details required to repeat the work must be provided. Usage of publicly accessible data from repositories must be indicated. The respective accession information must be provided in the References.

Results: Where specific results are being presented or discussed the past tense should be used. The present tense should only be used for generalizations arising from the study results.

The **Discussion** should highlight the importance or significance of the study for the field and the resulting new insights.

Compliance with Ethical Standards must be included as a separate section. The authors should give information about funding and explicitly declare that they have no conflict of interest.

They should also declare that all applicable international, national and/or institutional guidelines for sampling, care and experimental use of organisms for the study have been followed and all necessary approvals have been obtained. Details about permissions should be provided; documentary evidence must be available on request.

Please note that the wording of the ethical declaration requested for 'Marine Biology' differs from the wording in the general instructions for authors at the web site.

Please do not write "Informed consent was obtained from all individual participants included in the study" if (as usual) no human participants were involved in the study.

In the **Acknowledgement** grants, funds, and contributing people should be mentioned. The reviewers should be acknowledged, but please consider that *Marine Biology* now allows reviewers to have their names disclosed on the manuscript. You might include the name of a reviewer who has agreed to disclose her/his name into the acknowledgements when you receive the proofs (names are printed at the first page of the paper), but this is not mandatory. Write e.g. "We thank the reviewers" or "We thank X.Y. and an anonymous reviewer"

The **References** must be formatted in MABI style (see more details under "Citations"). Data taken/used from public Databases (e.g. PANGAEA) must be cited by accession numbers.

Figures: For ease of reviewing the figures with their captions should be included into the running text. More details are given under 'Illustrations' and 'Figure Captions' (see below). In addition the figure source files without captions must be submitted.

Tables: Tables should be numbered using Arabic numerals and have a table caption (title) on top, explaining the components of the table. All abbreviations in the table should be explained in the caption. Tables must not contain vertical lines.

Specific Requirements

Text Formatting

Use 1.5 or double-space formatting and enable line numbering. No full justification for the text should be used. Superscript must be used to denote the denominator in units, e.g. kg y^{-1} , 24 hr time for time of day, e.g. 0700 hr.

Use of a recent article as a guideline is recommended. Correct formatting is a prerequisite for acceptance of a manuscript. This concerns especially statistics, units, and citations/references.

Statistics

Describe statistical methods in sufficient detail to allow a knowledgeable reader with access to the original data to verify the reported results. Use the same font for the same mathematical symbol regardless where it appears in the manuscript (text, equations, tables, figures, figure legends).

Give means and standard errors/standard deviations with their associated sample size in the format: $X \pm SE = 35.09 \pm 0.07 \text{ km}$, $n = 15$. When standard deviation/error is shown in an illustration, n should be given as well.

Statistical tests use the following formats:

(ANOVA, $F(1,25) = 8.56$, $P = 0.035$)

(Kruskal-Wallis test, $H_{25} = 123.7$, $P = 0.001$)

(Chi-square test, $\chi^2 = 0.23$, $P = 0.57$)

(Paired t test, $t_{24} = 2.33$, $P = 0.09$)

(Linear regression, $r^2 = 0.94$, $F_{1,66} = 306.87$, $P < 0.001$)

(Spearman rank correlation, $r_s = 0.60$, $N = 33$, $P < 0.01$)

(Wilcoxon signed-ranks test, $T = 7$, $N = 33$, $P < 0.05$)

(Mann-Whitney U test, $U = 44$, $N_1 = 7$, $N_2 = 24$, $P < 0.02$)

Please either give the exact P-value of a statistical test, or state $P < 0.0xxx$, if this is not possible. $P = 0$ is not valid.

Units

Use of SI and SI-derived units is preferred. Internationally accepted units can be also be used, e.g. "min" for "minute". The capital letter "L" must be used for liter.

Please use superscripts instead of "/" or "per ..." for ratios. Exponents should also be written as superscripts.

When using a number and a unit of measure to make a qualifying adjective, put a hyphen between them, e.g. 300- μm sieve.

Please refer to the following examples.

Length, Area, Volume: pm, nm, μm , mm, cm, m, km, mm^2 , cm^2 , m^2 , L, mL, μL , mm^3 , cm^3 , m^3

Mass: pg, ng, μg , mg, g, kg, t, Da, kDa

Time: s, min, h, d, y

Temperature: $^{\circ}\text{C}$,

Absolute quantity: pmol, nmol, μmol , mmol, mol

Concentration: pM, nM, μM , mM, M, N, %, $\mu\text{g L}^{-1}$,

Work, Energy, Heat quantity: J, erg, cal, kcal

Force: dyn, N, gw, kgw

Pressure: Pa, mmHg, atm, bar

Electricity: V, W, mA, A, Hz

Photometry: if possible, avoid cd, lx, lm, cd m^{-2} , energy or photon flux density would be preferable

Sound: Hz, kHz, mHz, Abar, dB Speed: cm s^{-1} , m s^{-1} , kn, rad s^{-1} (some speeds, e.g. sedimentation rates are better expressed per day or even year)

Radioactivity: dpm, cps, cpm, mBq, Bq, kBq, Gy, kGy, mSv, Sv, R, kR Rotation: \times g, cycle

Use the symbols < and > to stand for less than and more than.

Also note that salinity has no units and should be presented as: salinity of X or salinity X.

Archiving of Data

Data storage in a publicly accessible data library is highly recommended, for DNA sequence information it is obligatory. Please declare in your manuscript whether (and where) your data are publicly accessible or not.

DNA sequence information must be deposited in GenBank (<http://www.ncbi.nlm.nih.gov/genbank/>) and accession numbers must be included in the manuscript such that the raw data can be accessed and compared against the presented data. For frequency-based data (microsatellites predominantly) a table of allele frequencies by population should be included (suitable for electronic supplementary material).

Phylogenetic information might be stored in TreeBASE, this repository accepts all kinds of phylogenetic data (e.g., trees of species, trees of populations, trees of genes).

Other data can be deposited in the data library PANGAEA (<http://www.pangaea.de/>). Data are archived by an editor in standard formats, in machine readable form, and are available with Open Access. After processing, the author receives an identifier (DOI) link to the supplement for proof-reading. Data can be referenced in the publication to facilitate linking between the journal article and the data. Send raw data with a description to info@pangaea.de. PANGAEA can be used free of charge.

For Tracking data (telemetry devices on animals) specific databases exist, such as Movebank or Seaturtle.org. Data can be stored with the option to apply different levels of access to internal and external users.

The Dryad Digital Repository DRYAD (<http://datadryad.org/>) provides a general-purpose home for a wide diversity of data types. Data storage is charged, but researchers from economically developing countries may submit data at no charge.

Other publicly accessible data libraries are welcome as well. A special archive for isotope data (IsoBank) is currently under construction.

If unpublished data sources are cited in the text or if a manuscript contains only highly derived data without basal data (e.g. diversity indices without species abundances) archiving of basal data might be requested by the Editor. In the latter case, electronic supplements might be used as an alternative to data archives.

Citations

When citing references in the text, put them in parentheses in chronological order with the earliest first. Separate them with semicolons. Do not put a comma between the author(s) and date.

Examples:

- (Thompson 1990; Abbott et al. 2005; Elliott and Green 2009)
- Same author, multiple years. E.g. (Brown 1997, 2000, 2005)
- Same author, same year. E.g. (Brown 2005a, b)
- Two authors (Brown and Smith 2007; Abbott and Green 2009)
- Multiple authors (Zar et al. 1998; Brown et al. 2008)
- As part of a sentence, e.g. This result was later contradicted by Becker and Seligman (1996)
- Abbreviate Personal Communications to (pers comm)
- Abbreviate Unpublished data to (unpubl data)

References

References should be alphabetized by the last names of the first author of each work.

When there are more than two references with the same first author, the references should be arranged so that the single-authored papers come first in chronological order with the earliest first, then the two-authored papers in alphabetical order by second author, then the multi-authored papers in chronological order with the earliest first.

Journal articles

Journal names must be abbreviated without punctuation. For abbreviations see <http://www.issn.org/2-22661-LTWA-online.php>. Ideally, authors are to provide DOI information for all journal articles. DOIs should be checked with the [doi system website](#), to make sure that the cite is correct.

Dissertations

Trent JW (1975) Experimental acute renal failure. Dissertation, University of California, Los Angeles

Trent JW (1975) Experimental acute renal failure. Master thesis, University of California, Los Angeles

Online documents (Websites should only be cited if absolutely essential because they will change with time).

Cartwright J (2007) Big stars have weather too. IOP Publishing Physics Web.
<http://physicsweb.org/articles/news/11/6/16/1>. Accessed 26 June 2007

Data from a database must be cited in the references by using a Digital Object Identifier ([DOI](#)).

Conference Proceedings should not be cited. Every cited printed work should be publicly accessible by ISBN or ISSN number.

When revising your manuscript please examine the validity of your journal references with the '**Automatic Reference Checking**' module of the Editorial Manager.

The results of the reference checking are provided by clicking the corresponding link provided in your "Main Menu" in the Editorial Manager, as well as in the PDF file containing your manuscript. If "not validated" is displayed for a reference, it should be checked carefully and corrected where appropriate, as in most cases typos, wrong journals, issues or pages preclude its validation.

Illustrations

The illustrations are a very important part of the article. They must be prepared very carefully and be of good quality. Note that EXCEL is not a drawing program and figures generated in this program frequently require editing prior to inclusion in manuscripts. Legend material should be included on the panels, not hanging off to the side or as titles or labels at the top or bottom of the figures. Legend material can also be included in the figure legend if it does not fit on the panel(s). Manuscripts containing poor quality figures will not be considered for publication. The figures should be as simple as possible and all details must be clearly visible when the figures are reduced in size. Data should be provided in figures OR in tables. Data must not appear twice (Fig and Table).

Any information that is not absolutely necessary for understanding the article should be provided as numbered appendices in the electronic supplementary material (ESM).

For ease of reviewing the figures with their captions (each caption placed below the respective figure) should be included into the running text at an appropriate place. The source files (e.g. EPS, TIFF; JPG, each figure in its own file) required for later production (if), must be submitted as separate files without captions.

To avoid confusion, no extra list of figure captions should be submitted.

Figures must be numbered consecutively and referred to in the text. The illustrations should be self-explanatory, i.e. with their captions they should be able to stand on their own without requiring further information from the main body of the text.

If a figure contains multiple panels, all panels should be on one page. They should be of the same size and arranged properly. Axes titles must only be repeated on each panel when they are different. The same style should be used for all similar illustrations so that their appearance is consistent.

The same non serif font (e.g. ARIAL) must be used for lettering in all figures. All lines must be sufficiently thick to reproduce well and all lines, lettering, symbols and markings must be sufficiently large to be easily legible when reduced in size and must be in proportion to the rest of the drawing. If various degrees of grey shading are used, ensure that they are varied enough to differentiate among them or use patterns. Grid lines and boxes around symbol definitions should be avoided. Colors could be used if necessary. Marine Biology does not charge for color figures in the online or printed version of the journal; however, the Editors may refuse color prints if the use of color is not justified.

The source must be given for maps, photographs, and other materials. Scale bars should be placed on photographs and maps. Maps must have an arrow indicating due north or a compass rose and a border with the latitude/longitude marked on it. Please see also the chapter “Artwork and Illustration Guidelines” in the “Instructions for Authors” for examples and further details.

Figure Captions

The Figure captions should be brief (“telegraphic style”), but contain all details necessary for understanding the figure without reading the text. They should not contain methodical details or results. All terms, abbreviations, and symbols must be explained in the caption and correspond with those in the text.

It is not mandatory anymore for captions to be provided on a separate page. The manuscript file can comprise the figures with the captions (each caption placed below the respective figure). This makes it easier for reviewers. All figures (with captions) should be placed at an appropriate place within the running text. Source files of figures which need to be submitted in addition must not contain captions. The manuscript should not contain a separate list of figure captions.

The source files of the figures (JPG, EPS, TIFF, etc) without captions should be provided separately as single files. They are needed for later production (provided acceptance).

Organisms

Genus and species name must be in italics. It is recommended that the species names appear in full at the beginning of each section of the manuscript and when they appear at the beginning of a sentence. In other places use the contraction e.g. *A. islandica* for *Arctica islandica*. Do not abbreviate genus names if several genera with the same initials can lead to confusion, or when only the genus name is used. *Genus* sp. and *Genus* spp. should only be used when speciation to species level was generally sought, but not completely reached and several species should be treated together, respectively.

The species author may follow the first use of the study species name in either the Abstract or the Materials and Methods. If it is included, the reference to the original description must appear in the References section.

Common names can be used in addition to the scientific names, they are useful especially in the title. Common names such as “water fleas” for cladocerans, or common names that might be misleading must be avoided. E.g.: **Sandfish** is a common name of: *Gonorynchus*, a genus of fish, *Scincus scincus*, a skink, and *Holothuria scabra*, a sea cucumber. It should only be used for the fish.

Only use the words ‘animal’ and ‘plant’ in the most general sense. When referring to the individual organisms used in a study, use the most specific term possible such as the species name (in full or contracted), the common name such as ‘mud shrimp’ for *Upogebia pugettensis*, or ‘individuals’ where appropriate.

When describing the general attributes of a species use a singular verb. When referring to the multiple organisms belonging to the species used in a study, use a plural verb.

Seasons

When describing the seasonal timing of events, be aware that fall and winter occur at different times of the year in the northern and southern hemispheres. It is best to specify the months rather than just the seasons.

Study Locations

When writing the names of states in the USA do not use the postal abbreviation but write them in full—thus Virginia not VA.

If a map is used to show study locations, it must have a scale, an arrow indicating due north or a compass rose and a border with the latitude/longitude marked on it. It should show all geographical locations mentioned in the study. The source of the map must be given in the caption of the figure.

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Guidelines for reporting ocean acidification data in scientific journals

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ICC; www.iaea.org/ocean-acidification). Please contact the first author (gattuso@obs-vlfr.fr) in case of any error or omission. It is primarily based on Dickson *et al.* (2007), Dickson (2010), Nisumaa *et al.* (2010), Pesant *et al.* (2010), Pörtner *et al.* (2010) and Orr *et al.* (2015).

To ensure reproducibility, it is critical to report at least two variables of the carbonate system of seawater as well as salinity, temperature, and the hydrostatic pressure (if the measurements were not performed at atmospheric pressure). In addition, authors should report concentrations of total dissolved inorganic phosphorus as well as total dissolved inorganic silicon (in $\mu\text{mol kg}^{-1}$) whenever possible. Furthermore,

- Authors should carefully report how the parameters were measured and, if applicable, which protocol they followed.
- The use of Certified Reference Materials, source, and batch numbers must be mentioned
- At least two of the following carbonate system parameters should be measured and reported (note the preferred acronyms and units):
 - Dissolved inorganic carbon (C_T ; $\mu\text{mol kg}^{-1}$)
 - Total alkalinity (A_T ; $\mu\text{mol kg}^{-1}$)
 - pH (it is critical to mention its scale; see below)
 - Partial pressure of carbon dioxide ($p\text{CO}_2$; μatm)
 - Fugacity of carbon dioxide ($f\text{CO}_2$; μatm)
 - Carbonate ion concentration (CO_3^{2-} ; $\mu\text{mol kg}^{-1}$)
- The pH scale (NBS, free, total, or seawater) must be mentioned prominently in the manuscript.
- If more than one pH scale is used in a given manuscript, the pH should always be given with the associated scale as a subscript:
 - on the National Bureau of Standards scale (pH_{NBS})
 - on the seawater scale (pH_{SWS})
 - on the free scale (pH_{F})
 - on the total scale (pH_{T})
- The temperature at the time of sampling and at the time of measurement should both be mentioned, if they differ.
- Salinity is needed (note that it is unitless)
- The formulations used to calculate the following variables should be mentioned:
 - Concentrations of total boron
 - CO_2 solubility (K_0)
 - Dissociation constants of carbonic acid (K_1 and K_2), boric acid (K_b), water (K_w), phosphoric acid (K_{p1} , K_{p2} , K_{p3}), silicic acid (K_{si}), hydrogen fluoride (K_f), and bisulfate (K_s)
 - Solubility products of calcite (K_{spc}) and aragonite (K_{spa})
- The software package used to calculate the carbonate chemistry, along with its version number, and any associated options must all be mentioned.
- Average reproducibility of the performed measurements (with number of measurements) should be mentioned.
- Finally, it is strongly recommended that the chemistry and biological data are either archived in an on-line database (preferred) or provided along with the paper as supplementary information.

References cited

Dickson A. G., Sabine C. L. & Christian J. R., 2007. *Guide to best practices for ocean CO₂ measurements*. PICES Special Publication 3:1-191.

Dickson A., 2010. The carbon dioxide system in seawater: equilibrium chemistry and measurements. In: Riebesell U., Fabry V. J., Hansson L. & Gattuso J.-P. (Eds.), *Guide to best practices for ocean acidification research and data reporting*, pp. 17-40. Luxembourg: Publications Office of the European Union.

Nisumaa A.-M., Pesant S., Bellerby R. G. J., Middelburg J. J., Orr J. C., Riebesell U., Tyrrell T., Wolf-Gladrow D. & Gattuso J.-P., 2010. EPOCA/EUR-OCEANS data compilation on the biological and biogeochemical responses to ocean acidification. *Earth System Science Data* 2:167-175.

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Pesant S., Hook L. A., Lowry R., Nisumaa A.-M. & Pfeil B., 2010. Safeguarding and sharing ocean acidification knowledge. In: Riebesell U., Fabry V. J., Hansson L. & Gattuso J.-P. (Eds.), *Guide to best practices for ocean acidification research and data reporting*, pp. 243-258. Luxembourg: Publications Office of the European Union.

Pörtner H.-O., Dickson A. & Gattuso J.-P., 2010. Terminology and units for parameters relevant to the carbonate system. In: Riebesell U., Fabry V. J., Hansson L. & Gattuso J.-P. (Eds.), *Guide to best practices for ocean acidification research and data reporting*, pp. 18-19. Luxembourg: Publications Office of the European Union.

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