



United States Department of the Interior



NATIONAL PARK SERVICE NATURAL RESOURCE STEWARDSHIP AND SCIENCE INVENTORY & MONITORING DIVISION

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Thursday, June 25, 2015

MEMORANDUM

TO: All Staff, Inventory and Monitoring Program

FROM: Kirsten Gallo, Chief, Inventory and Monitoring Division

SUBJECT: Guidelines for Determining Authorship on Scientific and Scholarly Products
Developed by the Inventory and Monitoring Program

Director's Order #79 instructs NPS employees to "adhere to appropriate professional standards for authoring and responsibly publishing the results of scientific and scholarly activities [and to] respect the intellectual property rights of others." The baseline of "appropriate professional standards," is necessarily broad to accommodate both the broad range of disciplines and the inherently interdisciplinary nature of the work undertaken by the Service. This document provides guidance on determining authorship and authorship order on scholarly and scientific documents produced by the Inventory & Monitoring (I&M) Program within the NPS in a manner consistent with the standards outlined in DO #79 and Departmental Manual 305 that address Integrity of Scientific and Scholarly Activities.

Scientific and scholarly activity is essential to the NPS mission. Results of I&M science are used to inform NPS policy and management decisions. Such activity must therefore be robust, of the highest quality, and the result of rigorous scientific processes. The NPS must, in accordance with Departmental policy, maintain the highest integrity of its science and scholarly activity.

The overall purpose of the NPS Inventory and Monitoring Program is to develop scientifically sound information on the current status and long term trends in the composition, structure, and function of park ecosystems, and to determine how well current management practices are sustaining those ecosystems (Fancy et al. 2009). A primary responsibility of this program is for the many scientists, data managers, park staff, and collaborators to develop integrated science information products from the data sets and reports produced for individual vital signs. In many cases the development of these tools and products are done in partnership and collaboration among I&M Program staff, park staff, and partner organizations.

This guidance is based largely on procedures in place in sister DOI agencies (e.g. USFWS 2007, USGS 2004) and professional standards published by both the Ecological Society of America (2007) and the Proceedings of the National Academy of Sciences (2007). It is not intended to address all situations; because I&M Program scientists collaborate with partners from a wide variety of disciplines and agencies, staff should be prepared to modify or clarify the principles and procedures below based on the publication and authorship standards in place with their partners.

1. For discrete science projects, the expected reports, journal papers, and other products must be outlined in a statement of work or project study plan. Moreover, the role of each team member, including who is responsible for design, data collection, data analysis, and lead authorship should be clearly documented at the first project meeting, which will be facilitated by the project lead. These guidelines are to be followed for all scientific endeavors including inventories, ongoing monitoring efforts, or other projects funded or supported by the I&M Program. Regular communication about authorship and other roles will ensure all staff involved in data collection, analysis, and reporting are appropriately acknowledged.
2. The first (lead) author is the person who is fully accountable for the entire paper or product as an accurate, verifiable report of the research presented. In most cases the lead author writes significant portions of the report or manuscript, provides substantive review of contributions from coauthors, and has overall responsibility for all or nearly all of the functions below as well as other responsibilities as outlined in Appendix A.
 - a. Conceived of and/or designed the study;
 - b. Actively participated in collecting the field or laboratory data;
 - c. Contributed novel analytical or laboratory tools or reagents;
 - d. Analyzed the data, and;
 - e. Provided scientific interpretations of the results;
3. The lead author is responsible for complying with the peer review guidelines of his/her own agency. Co-authors are responsible for negotiating a peer review process that also meets the requirements of their own respective agencies or institutions.
4. Co-authorship should be based on the level of effort, innovation, and expertise that contribute to a successful published product. Often the first and second authors take the major workload and others contribute rather evenly to the products. In such cases, junior authors can be listed alphabetically. All co-authors should contribute substantially to one or more of the above functions and must accept responsibility for the scientific integrity, quality, and satisfactory completion of a significant subset of the project. For example, acting in a leadership or coordination role among participants that produces a high quality data set, data analysis that appears in the final product, writing a portion of the final product, or making a substantial contribution to the interpretation of results. In addition, co-authors must meet the other requirements described in Appendix A (e.g. review and agree to the final content of the paper). Author lists should be as short as practicable while still ensuring appropriate recognition and communicating appropriate accountability for the product's scientific integrity.
5. Persons who contribute the following may warrant greater recognition than acknowledgment:
 - a. Identification of study questions, study design, and protocols;
 - b. Responsibility for the quality data collection at individual study sites; and
 - c. Significant input and interpretation of analyses.

These individuals, their study site, location, and contributions may be listed in an appendix to the publications. Alternatively, these individuals may be coauthors, if their involvement meets the criteria in #4 above.

6. Persons who contribute access to property, funding, assisted with field work, or otherwise supported completion of the report (but are not accountable for the paper as an accurate, verifiable

report of the research) are generally listed in the acknowledgements, but *courtesy authorship* in special cases can be negotiated.

7. *Guest authorship* or *honorary authorship* for persons who fiscally support or serve in a project management / coordination role is generally *not* appropriate. For example, authorship is not warranted based on serving as an Agreements Technical Representative (ATR) or contributing substantial involvement to cooperative agreements that result in publications, unless those contributions meet the criteria outlined in #4 above. In cases where individuals contribute to the product, but not to a “substantial” level, or in cases where authors have an elevated level of accountability for the product, guest or honorary authorship may be warranted. In such cases these persons should be listed as the *last* author.
8. To ensure transparent and appropriate attribution and accountability, *ghost authorship* (removing oneself from the author list) on scholarly or scientific products is not permitted.
9. Reviewers are usually acknowledged; they have a responsibility to review the paper for clarity, errors of fact, interpretation, or misuse of statistical tools, but they are not held accountable for the content of the final published paper.
10. For some science products, it may be appropriate for institutional authorship (i.e., “National Park Service”) to be used in lieu of authorship by one or more individuals. Refer to guidance from the publication series/outlet for appropriate examples.

Negotiating issues of authorship on reports, journal papers, and other products is as much art as science; mutual respect, open communication, and a desire to be fair to all parties are key elements to employ. In the event that conflicting opinions cannot be resolved by the collaborators, the NPS peer review manager will arbitrate the decision prior to publication.

Recommended Practices for Establishing Authorship on Cooperative Projects

1. At the first kickoff meeting the participants will discuss what effort or contribution they consider qualifying as co-authorship versus those contributions that should be acknowledged, but do not merit authorship. The above guidelines will be used as a starting point, but additional factors unique to the particular project may also be discussed.
2. Any collaborators in the project can request clarification or discussion about authorship as the project progresses.
3. When the first draft of a planned technical report, journal paper or other product is outlined, key collaborators should discuss and decide upon possible publication outlets, authorship responsibilities for writing, analysis, editing, and interpretation of findings, and order of authorship. A draft list of acknowledgements will also be discussed.
4. Authorship and acknowledgment decisions should be recorded and circulated to all collaborators, and should be revised as appropriate as the product is finalized. In some cases, key collaborators may be initially involved with a project, but then drop out or fade away as the project progresses (or new ones may be added). These guidelines and appendices should be used ensure appropriate authorship and acknowledgment of the final product prior to publication.
5. If appropriate, the final draft of the paper or product will indicate authors’ specific contributions to the published work in a byline (Weltzin et al. 2006) (Appendix A) or footnote.

Literature Cited

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Appendix A. Professional Standards for Authorship from Relevant Scientific Organizations

Ecological Society of America Code of Ethics (ESA 2007)

The following principles of ethical professional conduct apply to members reviewing, editing, or publishing grant proposals and papers in the professional literature in general, and particularly to all ecologists seeking publication in the Society's journals.

1. Researchers will claim authorship of a paper only if they have made a substantial contribution. Authorship may legitimately be claimed if researchers
 - a. conceived the ideas or experimental design;
 - b. participated actively in execution of the study;
 - c. analyzed and interpreted the data; or
 - d. wrote the manuscript.
2. Researchers will not add or delete authors from a manuscript submitted for publication without consent of those authors.
3. Researchers will not include as coauthor(s) any individual who has not agreed to the content of the final version of the manuscript.
4. Researchers will not submit for publication any manuscript containing data they are not authorized to use. ESA assumes the principal investigator(s) of a research project retain the right to control use of resulting unpublished data unless otherwise specified by contract or explicit agreement.
5. Researchers will not represent research results as new if they have been published or submitted elsewhere, or submit a manuscript for publication while it is under review for possible publication elsewhere.
6. Editors or reviewers will treat manuscripts under review as confidential, recognizing them as intellectual property of the author(s).
7. When using ideas or results of others in manuscripts submitted for publication, researchers will give full attribution of sources. If the ideas or results have not been published, they may not be used without permission of the original researcher. Illustrations or tables from other publications or manuscripts may be used only with permission of the copyright owner.
8. Ecologists will not serve as editors or reviewers of a manuscript if present or past connections with the author or the author's institution may prevent objective evaluation of the work.
9. Ecologists will not purposefully delay publication of another person's manuscript to gain advantage over that person.
10. Ecologists submitting manuscripts for publication will promptly report to editors any errors in research results or interpretations discovered after submission or publication.

Proceedings of the National Academy of Sciences of the United States of America (PNAS 2007)

Authorship should be limited to those who have contributed substantially to the work. The corresponding author must have obtained permission from all authors for the submission of each version of the paper and for any changes in authorship.

All collaborators share some degree of responsibility for any paper they co-author. Some co-authors have responsibility for the entire paper as an accurate, verifiable report of the research. These include co-authors who are accountable for the integrity of the data reported in the paper, carry out the analysis, write the manuscript, present major findings at conferences, or provide scientific leadership to junior colleagues. Co-authors who make specific, limited contributions to a paper are responsible for their contributions, but may have only limited responsibility for other results.

While not all co-authors may be familiar with all aspects of the research presented in their paper, all collaborators should have in place an appropriate process for reviewing the accuracy of the reported results.

Authors must indicate their specific contributions to the published work. This information will be posted online as a footnote to the paper. Examples of designations include:

- Designed research
- Performed research
- Contributed new reagents or analytic tools
- Analyzed data
- Wrote the paper

An author may list more than one contribution, and more than one author may have contributed to the same aspect of the work.