



U.S. Geological Survey Manual

502.3 - Fundamental Science Practices: Peer Review

05/24/06

OPR: Geospatial Information Office

Instructions: This is a new Survey Manual (SM) chapter. It is an accompanying chapter to SM 502.1 - Fundamental Science Practices: Foundation Policy.

1. Purpose and Scope. Peer review, as a cornerstone of scientific practice, **validates and ensures the quality of published USGS science.** This policy establishes the requirements for peer review of USGS information products and applies to all USGS scientific and technical information, whether it is published by the USGS or an outside entity.

2. Authority. Office of Management and Budget (OMB) and Department of the Interior (DOI) guidelines address means to **safeguard both excellence and objectivity of science through peer review.**

- A. OMB, [Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies](#) (February 22, 2002)
- B. OMB, [Final Information Quality Bulletin for Peer Review](#) (December 16, 2004)
- C. DOI, [Information Quality Guidelines Pursuant to Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001](#) (October 2, 2002)

3. References.

- A. [SM 502.1](#) - Fundamental Science Practices: Foundation Policy
- B. [SM 502.2](#) - Fundamental Science Practices: Planning and Conducting Data Collection and Research
- C. [SM 502.4](#) - Fundamental Science Practices: Review, Approval, and Release of Information Products
- D. [SM 205.18](#) - Authority to Approve Information Products
- E. [SM 1100.6](#) - Use of Copyrighted Material in USGS Information Products
- F. [432-1.S1](#) - USGS General Records Disposition Schedule
- G. USGS, [Guidelines for Ensuring the Quality of Information Disseminated to the Public](#)

4. Definitions.

A. *Information Product.* An information product is the compilation of scientific communication or knowledge such as facts, data, or interpretations in any medium (for example, print, digital, or audiovisual) or form (including textual, numerical, graphical, and cartographic) to be disseminated to a defined audience or customer, scientific or nonscientific, internal or external (see [SM 1100.1](#) and [SM 1100.3](#)).

B. *Peer Review.* Also referred to as refereeing, technical peer review, or scientific peer review, peer review is scrutiny of work or ideas by one or more others (peers) who are sufficiently well qualified, who are without conflict of interest, and who are not associated with the work being performed. A peer is defined as one who is of equal standing with another; in science, the implication is that education and/or experience qualify one to comment on the work of others in a particular field of expertise. These persons may be internal or external to the organizational entity in which the review is conducted.

5. Policy. Peer review is required for all information products, whether published and disseminated by the USGS or by an outside entity, and regardless of media (print, digital, audiovisual, or Web), if the work was funded, whole or in part, by the USGS or if USGS affiliation is identified with the authorship. In keeping with practices in the broader scientific community, directives from Government authorities, and USGS Fundamental Science Practices, the following is policy:

A. Peer reviews must include at least two qualified scientists who have no stake in the outcome of the review, who are not associated with the work being performed, and who are without conflict of interest.

B. Only peer-reviewed information products may be forwarded to an Approving Official for Bureau Approval for official release (see [SM 502.4](#) and [SM 205.18](#)). Information products sent to an Approving Official must include a reconciliation document indicating how review comments were addressed.

C. Articles for publication in a scientific journal must have first gone through the USGS peer review process, as outlined in this policy, and receive Bureau Approval for release prior to being submitted to the journal.

D. Involvement of non-USGS authors does not allow USGS authors to bypass the USGS review and approval process. Conversely, USGS scientists who are authors in publications by outside entities, or where a non-USGS author is the lead, must comply with USGS review and approval processes first or the USGS scientist may not be listed as an author.

E. Office of Management and Budget (OMB) requirements for peer review must be met ([Final Information Quality Bulletin for Peer Review](#)).

6. Responsibilities. Adherence to and accountability for this policy are the responsibility of employees at various organizational levels. The USGS recognizes the primary responsibility of scientists and their supervisors in developing information products that adhere to this policy. Specific responsibilities are as follows:

A. *Associate Directors.* Associate Directors set policy for USGS peer review practices. They collaborate with Regional Directors regarding the content and application of consistent USGS peer review practices.

B. *Regional Directors.* Regional Directors execute the policies and practices governing peer review and are accountable for compliance by those in their lines of authority. They collaborate with Associate Directors regarding the content and application of consistent USGS peer review practices.

C. *Science Center Managers.* Science Center (Cost Center) Managers or their equivalent ensure that an accepted and consistent peer review process is in place within their unit. They appoint qualified peer reviewers for the work conducted by scientists they supervise. They ensure that only properly peer reviewed products are forwarded to delegated Approving Officials for approval and release (see [SM 502.4](#) and [SM 205.18](#)). Managers ensure that archival records related to peer review are maintained in their center.

D. *Approving Officials.* Approving Officials, as delegated (see [SM 205.18](#)), ensure that USGS standards for scientific quality are met by confirming that peer review requirements are met in accordance with this policy and its guidelines and by conducting a policy review (see [SM 502.4](#)) of information products before approving them for release. They also ensure that authors have adequately addressed review comments (that is, a reconciliation document is part of the approval package).

E. *Authors.* Authors support the peer review process by suggesting or nominating qualified peer reviewers to science center managers for their own work and the work of other USGS scientists and by participating in peer review of the work of others (see "Guidelines" below).

F. *Geospatial Information Office.* The Geospatial Information Office maintains the policy documents and procedures that pertain to USGS Fundamental Science Practices.

7. Guidelines for Peer Review. The following information provides additional guidance to ensure that peer review requirements are met:

A. *Reviewer Selection.* Qualified reviewers must be true peers, must not be associated with the work being performed, and should be selected for their relevant scientific and technical expertise, including those who may apply different methods of study to related scientific questions. Peer reviewers should be sought

outside a scientist's own discipline where appropriate. Reviewers should be able to ensure that the science is effectively presented with the intended audience in mind and **be cognizant of controversial or high-visibility issues that may be relevant to public policy**. Guidance on peer review selection for "highly influential scientific assessments," as defined by the Office of Management and Budget, is found in [OMB, Final Information Quality Bulletin for Peer Review](#).

B. Number of Reviewers. Two peer reviews by qualified scientists are mandatory for all information products. One reviewer must be from outside the originating office; the other may be from the originating office of the information product. Additional peer review may be necessary, depending on the scientific complexity of the product and the [intended audience](#).

C. Reviewer Ethics and Conduct. USGS pursues vigorous and open peer review of its science and its information products. Issues related to scientific excellence, objectivity, integrity, and conflict of interest are dealt with in accord with established DOI and USGS codes of scientific conduct.

D. Nondisclosure prior to publication. In agreeing to be a peer reviewer for a USGS information product, reviewers must agree to be bound by the strictest scientific ethics in ensuring confidentiality of the science that is being reviewed and to not disclose or divulge any results or conclusions, or to make any public statements regarding the science before it is published and released.

E. Documentation and Records. Review and approval records for published USGS information products and for information products and articles published by outside sources include information such as author, title, purpose, publishing media, and signatures for peer review, editorial review, delegated Bureau Approval, and other appropriate USGS and outside source review and approval concurrences. Included as well is the consent or permission of the copyright owner for using copyrighted materials in USGS information products and articles (see [SM 1100.6](#)). These records are part of the official record and are archived in accordance with USGS Records Disposition Schedule requirements (see [SM 432-1.S1](#), Chapter 1300) at the originating office.

[Return to Survey Manual Table of Contents](#)

[Return to Survey Manual Index](#)

[Return to Survey Manual Home Page](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

URL: <http://www.usgs.gov/usgs-manual/500/502-3.html>

Page Contact Information: [APS, Office of Policy and Analysis](#)

Last modification: 14-Jun-2010@11:51