



THE WILDLIFE SOCIETY

Leaders in Wildlife Science, Management and Conservation

Issue Statement Scientific Peer Review of Agency Decision Processes

Peer review is an integral component of scientific research and publishing and an important means of assuring sound information. It allows the scientific community to maintain quality control of research through the review of research proposals, journal manuscripts, synthesis or summary reports, and other documents. Academic peer review is the best tool scientists have to ensure high standards for their professional work.

This idea has been translated into the policy arena through ‘scientific peer review’ – the review by scientific experts of in-house agency science, synthesis reports, or the body of science underlying management decisions. Such reviews are critically important tools for policy makers. They allow experts from both inside and outside the government to provide technical advice and analysis, increasing public confidence in government science, and ensuring that the best-quality information is used in decision-making and in court decisions. The role of science in policy and decision-making is to inform the decision process, rather than to prescribe a particular outcome. Scientific peer review provides an objective evaluation of the credibility and applicability of the science used to influence policy decisions.

Scientific peer review, properly carried out by competent scientists, can reassure managers, decision makers, policy makers, and the public that such difficult decisions are based on research that represents the current state of our scientific understanding.

Effective scientific peer review programs are designed to maintain objectivity, quality, and thoroughness. While unbiased and rigorous scientific peer review is an important tool for decision-makers, a poorly designed process can do more harm than good. Elements of an effective scientific peer review process might include:

- Conflict of interest requirements, which are objective standards designed to eliminate certain specific, potentially compromising situations from arising, and thereby to protect the reviewer, the other members of the review team, the agency, and the public interest.
- A competent moderator who can move forward the scientific debate of the merit of the evidence in question to achieve a reasoned decision without unduly influencing the decision. This process adds the assurance that composition of scientific review panels is representative of the scientists most competent to review and assess the topic, and that it is not being unduly influenced by politics.
- Certification of individual review team members, which can provide some assurance of integrity and professionalism in a reviewer.
- Other measures to ensure fair and effective review, such as making majority and minority opinions or a synopsis of them, available upon request, or instituting an appeals process.

Even the best scientific peer review cannot give policy makers the ‘right’ answer. Scientific peer review can provide assurances that rigorous, transparent, and respected methods were followed,

that the data were reasonably interpreted, and that the stated conclusions logically follow from the results. However, often more than one interpretation of a data set can be made, and there may be no way to determine which interpretation is ‘best’. Where data are limited, or other uncertainties abound, scientific peer review can point these problems out, but it cannot overcome them without further research. Science can inform but cannot supplant human value judgments when making management decisions; this distinction must remain clear.

The policy of The Wildlife Society regarding scientific peer review of agency decision processes is that:

1. Reviewers should be competent scientists who bring the necessary scientific knowledge and objectivity to the matter at hand, and should represent human diversity, and diversity of views and professional experiences.
2. Conflict-of-interest exclusions should be carefully designed to balance barring those with a direct conflict of interest and the reality of a finite pool of suitable reviewers.
3. Scientific peer review should be free of political interference and influence. Oversight of scientific peer review should be vested in scientists and managers within agencies making decisions based on the science. Agencies should realize that failure to insulate peer review from political considerations will destroy the credibility and value of current and subsequent peer reviews.
4. Agencies should employ adaptive management to address the uncertainty upon which management decisions are often based, especially where it is large and/or significant, and public resources are to be committed.
5. Scientific peer review must maintain programmatic flexibility. Guidelines can help to ensure that certain standards are met and maintained, but an overly rigid process, particularly for peer review of the body of science underlying policy decisions, will result in inefficient use of time and resources. Nonetheless, program or policy evaluation metrics must be objective and clearly defined so the standard of comparison is explicit.
6. All scientific peer review must be based upon an assumption of integrity. Fair reviews are the product of professional standards of conduct that are a fundamental component of training in scientific research and experimental management.
7. Efforts to revise or improve the process of peer review should acknowledge the differences in professional culture that often divide scientists, policy makers, and the public. Science deals with reducing, not eliminating, uncertainty, and there will always be unanswered questions and areas where more research is needed. However, acknowledging uncertainty should not be equated with an inability to draw conclusions; managers often must act without complete certainty.
8. Sound scientific and policy decisions often require using diverse types of information, but should always be based on the best available data. Scientific peer review should permit

using various data types, rather than requiring one specific type or setting up a hierarchy of acceptable data.

The Wildlife Society's [Standing Position on The Use of Science in Policy and Management Decisions](#) states that TWS promotes the highest standards in the use of science in setting wildlife policies and decisions and supports establishment of laws and guidelines that ensure the appropriate use of science by policy and decision-makers.

Approve by TWS Executive Committee July 2019