

**PEER REVIEW PLAN—EVALUATING KEY UNCERTAINTIES ABOUT ROAD GROOMING AND BISON
MOVEMENTS**

prepared by

P.J. White, Center for Resources, Yellowstone National Park

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The National Park Service is preparing an Environmental Impact Statement for Winter Use Plans for Yellowstone and Grand Teton National Parks and the John D. Rockefeller, Jr., Memorial Parkway. This effort will result in a comprehensive management plan for winter recreational use of the parks prior to the 2007-2008 winter season. Several key uncertainties regarding bison demography, winter movements, and distribution patterns with respect to the groomed road system at Yellowstone National Park were identified during this evaluation process, including:

- What is the threshold depth and density of snow at which bison cannot move through corridors in search of better foraging conditions?
- How often, if at all, does the Madison to Norris road segment reach such snow thresholds?
- Will bison movement rates be proportional to snow conditions in the absence of road grooming?
- What terrain characteristics (e.g., slope, ruggedness) affect the snow depth/density threshold preventing bison movements?
- What is the relationship between winter forage availability and probability of bison movement?
- What is the relationship between winter forage availability, bison density, and bison over-winter mortality?
- If road grooming stopped on the Madison to Norris road in Yellowstone, would bison continue to use the snow-covered roadway, maintaining trails at their own energetic expense, or would they shift to alternate but parallel routes along the Gibbon River or the power line corridor?
- Would alternative forms of road grooming (e.g., grooming only one lane) or physical barriers to bison movement (e.g., fence, gate) alter bison use of the Madison to Norris road corridor?

We contracted Dr. Robert Garrott of Montana State University to prepare a report entitled “Evaluating Key Uncertainties about Road Grooming and Bison Movements” that: 1) identifies the types of research and analyses that could be conducted to address these uncertainties and the strength of inference that would likely be attained with each approach; 2) provides testable predictions that address these uncertainties; and 3) provides study designs that can be implemented to reduce these uncertainties. This plan outlines the peer review process for the report that will be developed as part of this project and likely contain influential scientific information. The plan was developed pursuant to guidelines issued by the Office of Management and Budget (M-05-03) and the committee selection policies used by the National Academy of Sciences.

Responsibility and Timing of the Review.—The Winter Use Planning Team (John Sacklin, Mike Yochim, Denice Swanke) of Yellowstone National Park is responsible for issuing the draft report from Dr. Robert Garrott, Montana State University, for expert peer review pursuant to the schedule provided in Enclosure 1. The draft report is due by June 15, 2007, and peer review should occur during July-August 2007. The Planning Team will ensure the peer review process is transparent by making available to the public on the park’s Internet website the instructions to peer reviewers, the peer reviewers’ names, the peer reviewers’ reports, and the responses of Dr. Garrott and park staff to the peer reviewers’ reports.

Instructions to Peer Reviewers.—Peer review will be conducted by individual experts rather than a committee panel. The Planning Team will develop instructions for reviewers (Enclosure 2) prior to selecting appropriate experts. The Planning Team will ask reviewers to prepare a written peer review report that describes the nature and scope of their review, as well as their findings and conclusions. The Planning Team will ask for specific comments regarding the reasonableness of judgments and predictions made from the scientific evidence in the report. Also, the Planning Team will ask reviewers to identify any scientific inconsistencies and provide a “value-of-information” assessment regarding whether the proposed research was likely to decrease key uncertainties. Reviewers will be asked not to give advice on policy or other issues that are the purview of the government and inappropriate for comment during this peer review process.

Selection of Expert Peer Reviewers.—During May 2007, the Planning Team will send electronic mail messages or letters to cooperators, stakeholders and, possibly, scientific and professional societies requesting nominations of potential reviewers based on considerations of expertise, conflicts of interest, and reputations for objectivity. The Planning Team will select 4-10 reviewers from a list of potential reviewers compiled by the Center for Resources (Tom Olliff, Glenn Plumb, P.J. White; Enclosure 3) and other nominees. While expertise in wildlife ecology and the effects of recreation on wildlife will be the primary consideration, reviewers will also be selected to represent a diversity of scientific perspectives (i.e., competing views) relevant to the subject to test the scientific strength and balance of the report. Some conflict of interest may be unavoidable to obtain the necessary expertise or divergent perspectives. If the Planning Team chooses to use reviewer(s) with a real or perceived conflict of interest, then they will publicly disclose those potential conflicts. Reviewers will not be selected from personnel involved in producing the draft report or the Environmental Impact Statement for Winter Use Plans. The technical feasibility of any proposed structures or equipment will need to be reviewed under a separate effort.

Solicitation of Peer Review.—During July 2007, the Planning Team will send the draft report and instructions to the selected expert reviewers. The names, affiliations, and credentials of the authors on the report will be disclosed to the reviewers. Reviewers will be asked to complete the “Background Information and Confidential Conflict of Interest Disclosure” form (Enclosure 4) and provide a biography and written peer review report to the Planning Team by August 1, 2007. Selected reviewers that cannot comment on the draft report in the allotted time will be asked to contact the Planning Team within three days so another reviewer can be solicited. Reviewers will be informed that the Planning Team will disclose their name, affiliation, credentials, and specific comments with attribution to the authors of the draft report, cooperators, stakeholders, and the public via the park’s Internet website. Reviewers will not be compensated for their efforts.

Disclaimer.—The following disclaimer will be provided in the instructions to peer reviewers and on each page of the draft report: “This information is distributed solely for the purpose of pre-dissemination peer review under applicable information quality guidelines. It has not been formally disseminated by the National Park Service and does not represent or should not be construed to represent any agency determination or policy.”

Public Comment.—Public review and comment will not be formally requested during peer review because the draft may change substantially as a result of peer reviewer suggestions. However, the Planning Team will post the draft report on the park’s Internet website to allow cooperators, stakeholders, and interested parties to review and comment.

Disclosure and Attribution.—The Planning Team will disclose the names, affiliations, and specific comments of expert reviewers, cooperators, stakeholders, or other interested parties, with attribution, to the authors of the draft report cooperators, stakeholders, and the public via the park’s Internet website.

Disposition of Reviewer Comments.—All comments received from expert peer reviewers and cooperators will be considered and addressed by Dr. Garrott or staff from Yellowstone National Park. Comments from stakeholders and other interested parties will be addressed on a case-by-case basis, as deemed necessary or desirable, by Dr. Garrott or staff from Yellowstone National Park. Concurrent with the release of the final report, the Planning Team will issue a web-accessible response that details how the authors of the report addressed specific concerns raised by the expert peer reviewers and cooperators. The response will explain the author’s agreement or disagreement, actions taken in response to comments,

and the reasons they believe those actions satisfy any key concerns or recommendations. Peer review will be considered complete when the reviewers' comments have been considered and addressed.

Administrative Record.—The Planning Team will compile an administrative record for the peer review process that explains how the National Park Service complied with the requirements of the Office of Management and Budget Bulletin M-05-03 and the Information Quality Act. The Center for Resources will compile an administrative record for the completion of RM-CESU Cooperative Agreement Number H1200040001 with Robert Garrott, Montana State University.

Enclosure 1: Anticipated Peer Review Schedule.

Early May, 2007 – The Winter Use Planning Team sends electronic mail messages and/or hard copy letters to cooperators, stakeholders, and other interested parties requesting nominations for expert peer reviewers (Enclosure 3).

Late May, 2007 – The Winter Use Planning Team selects 4-10 reviewers from a list of potential reviewers compiled by the Center for Resources (Enclosure 4) and nominees recommended by cooperators, stakeholders, and other interested parties.

Early June, 2007 – The Winter Use Planning Team contacts selected expert reviewers via electronic mail and/or phone to determine if they are willing to provide expert peer review in the allotted time frame (Enclosure 2).

Mid-June, 2007 – The Winter Use Planning Team discloses the expert peer review instructions and names, affiliations, credentials, and potential conflicts of interest on the park's Internet web site. The “Background Information and Confidential Conflict of Interest Disclosure” forms filled out by expert peer reviewers will not be disclosed.

July 1, 2007 – On or before this date, the Winter Use Planning Team sends the draft report and instructions (with the “Background Information and Confidential Conflict of Interest Disclosure” form) to the selected expert reviewers via electronic mail and/or letter (Enclosures 2 and 4). The Winter Use Planning Team discloses the draft report with the authors' names and affiliations on the park's Internet web site.

August 1, 2007 – Written reports are due from expert peer reviewers and cooperators. The Winter Use Planning Team provides comments to the authors of the draft report as they are received from expert peer reviewers and cooperators.

August 16, 2007 – The Winter Use Planning Team discloses comments from expert peer reviewers and cooperators, with attribution, on the park's Internet web site.

November 5, 2007 – The Winter Use Planning Team discloses the final report and responses to comments on the park's Internet web site.

Enclosure 2: Instructions to Expert Peer Reviewers.

We would appreciate your expert peer review of the enclosed draft report entitled “Evaluating Key Uncertainties about Road Grooming and Bison Movements” that was recently completed by Dr. Robert Garrott of Montana State University and staff from the Yellowstone Center for Resources. As you may be aware, the National Park Service is preparing an Environmental Impact Statement for Winter Use Plans for Yellowstone and Grand Teton National Parks and the John D. Rockefeller, Jr., Memorial Parkway. This effort will result in a comprehensive management plan for winter recreational use of the parks prior to the 2007-2008 winter season.

Several key uncertainties regarding bison demography, winter movements, and distribution patterns with respect to the groomed road system at Yellowstone National Park were identified during this evaluation process, including:

- What is the threshold depth and density of snow at which bison cannot move through corridors in search of better foraging conditions? How often, if at all, does the Madison to Norris road segment reach such snow thresholds?
- Will bison movement rates be proportional to snow conditions in the absence of road grooming?
- What terrain characteristics (e.g., slope, ruggedness) affect the snow depth/density threshold preventing bison movements?
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- What is the relationship between winter forage availability, bison density, and bison over-winter mortality?
- If road grooming stopped on the Madison to Norris road in Yellowstone, would bison continue to use the snow-covered roadway, maintaining trails at their own energetic expense, or would they shift to alternate but parallel routes along the Gibbon River or the power line corridor?
- Would alternative forms of road grooming (e.g., grooming only one lane) or physical barriers to bison movement (e.g., fence, gate) alter bison use of the Madison to Norris road corridor?

We contracted Dr. Robert Garrott of Montana State University to prepare a report that: 1) identifies the types of research and analyses that could be conducted to address these uncertainties and the strength of inference that would likely be attained with each approach; 2) provides testable predictions that address these uncertainties; and 3) provides study designs that can be implemented to reduce these uncertainties. This draft report is being distributed solely for the purpose of pre-dissemination peer review under applicable information quality guidelines. It has not been formally disseminated by the National Park Service and does not represent or should not be construed to represent any agency determination or policy.

Please complete the enclosed “Background Information and Confidential Conflict of Interest Disclosure” forms and prepare a brief biography and written peer review report that describes the nature and scope of your review, as well as your findings and conclusions. We would appreciate specific comments regarding the reasonableness of judgments and predictions made from the scientific evidence in the report. Also, please identify any scientific inconsistencies and provide a “value-of-information” assessment regarding whether the proposed research is likely to decrease key uncertainties. Please do not give advice on policy or other issues that are the purview of the government and inappropriate for comment during this review process.

We request that you forward your background information, biography, and peer review report to my office by August 1, 2007. If you cannot review and comment on the draft report in the allotted time, then please contact me within the next three days so we can ask another reviewer. The Winter Use Planning

Team will disclose your name, affiliation, credentials, and specific comments with attribution to the authors of the draft report and the public via the park's Internet website.

Dr. Garrott and staff from Yellowstone National Park will address or incorporate all peer-review comments by experts and cooperators into a final report that will be produced by October 30, 2007. The Planning Team will issue a web-accessible copy of this report to the public, along with responses to comments that detail how the authors addressed specific concerns raised by the expert peer reviewers and cooperators. The responses will explain the authors' agreement or disagreement, actions taken in response to comments, and the reasons they believe those actions satisfy any key concerns or recommendations.

If you have questions, then please contact me at (307) 344-2020. Thank you in advance for contributing to winter use planning by reviewing this report.

Sincerely,

John A. Sacklin
Management Assistant

Enclosures

Enclosure 3: Potential Expert Peer Reviewers.

The following people have the knowledge, experience, and skills necessary to perform the expert review because they have conducted research on wildlife responses to recreation.

Keith Aune, Montana Department of Fish, Wildlife, and Parks

Cormack Gates, Faculty of Environmental Design, University of Calgary

(Disclosure: Dr. Gates has taken positions regarding the effects of road grooming on bison movements that are closely associated with the National Park Service, as evidenced by his 2005 contract to provide an independent assessment of the state of knowledge of the ecology of bison movements and distribution, and recommendations for adaptive management of uncertainties and gaps in reliable knowledge).

Jennifer Gill, School of Biological Sciences, University of East Anglia

N. Thompson Hobbs, Natural Resource Ecology Laboratory, Colorado State University

Richard Knight, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University

Mary Meagher, retired National Park Service biologist

(Disclosure: Dr. Meagher has taken positions regarding the effects of road grooming on bison movements that are closely associated with the Fund for Animals, as evidenced by her declaration to the United States District Court for the District of Columbia [The Fund for Animals v. Norton, CA 02-2367(EGS), FFA Exhibit 11] on September 30, 2003).

Joshua Millspough, Department of Fisheries and Wildlife Sciences, University of Missouri

Michael Wisdom, USDA Forest Service, Pacific Northwest Research Station

Enclosure 4: Background Information and Confidential Conflict of Interest Disclosure for general scientific and technical studies and assistance (BI/COI Form 3, The National Academies, Washington, D.C.).

NAME: _____ TELEPHONE: _____

ADDRESS: _____

EMAIL ADDRESS: _____

CURRENT EMPLOYER: _____

There are two parts to this form, Part I Background Information, and Part II Confidential Conflict of Interest Disclosure. Complete both parts, **sign** and **date** this form on the last page, and return the form to the Management Assistant for Winter Use Planning at Yellowstone National Park. **Retain a copy for your records.**

PART I BACKGROUND INFORMATION

INSTRUCTIONS

Please provide the information requested below regarding **relevant** organizational affiliations, government service, public statements and positions, research support, and additional information (if any). Information is "relevant" if it is related to – and might reasonably be of interest to others concerning – your knowledge, experience, and personal perspectives regarding the subject matter and issues to be addressed by your expert peer review activity for which this form is being prepared. If some or all of the requested information is contained in your curriculum vitae, you may if you prefer simply attach your CV to this form, supplemented by additional responses or comments below as necessary.

I. ORGANIZATIONAL AFFILIATIONS. Report your relevant business relationships (as an employee, owner, officer, director, consultant, etc.) and your relevant remunerated or volunteer non-business relationships (e.g., professional organizations, trade associations, public interest or civic groups, etc.).

II. GOVERNMENT SERVICE. Report your relevant service (full- time or part-time) with federal, state, or local government in the United States (including elected or appointed positions, employment, advisory board memberships, military service, etc.).

III. RESEARCH SUPPORT. Report relevant information regarding both public and private sources of research support (other than your present employer), including sources of funding, equipment, facilities, etc.

IV. PUBLIC STATEMENTS AND POSITIONS. List your relevant articles, testimony, speeches, etc., by date, title, and publication (if any) in which they appeared, or provide relevant representative examples if numerous. Provide a brief description of relevant positions of any organizations or groups with which you are closely identified or associated.

V. ADDITIONAL INFORMATION. If there are relevant aspects of your background or present circumstances not addressed above that might reasonably be construed by others as affecting your judgment in matters within the assigned task which you have been invited to perform, and therefore might constitute an actual or potential source of bias, please describe them briefly.

PART II CONFIDENTIAL CONFLICT OF INTEREST DISCLOSURE

INSTRUCTIONS

It is essential that the work of expert peer reviewers for the institution (National Park Service) used in the development of reports not be compromised by any significant conflict of interest. For this purpose, **the term "conflict of interest" means any financial or other interest which conflicts with the service of the individual because it (1) could significantly impair the individual's objectivity or (2) could create an unfair competitive advantage for any person or organization.** Except for those situations in which the institution determines that a conflict of interest is unavoidable and promptly and publicly discloses the conflict of interest, no individual can be appointed to serve (or continue to serve) as an expert peer reviewer for the development of reports by the institution if the individual has a conflict of interest that is relevant to the functions to be performed.

The term "conflict of interest" means something more than individual bias. There must be an *interest*, ordinarily financial, that could be directly affected by the work of the expert peer reviewer.

Conflict of interest requirements are *objective* and *prophylactic*. They are not an assessment of one's actual behavior or character, one's ability to act objectively despite the conflicting interest, or one's relative insensitivity to particular dollar amounts of specific assets because of one's personal wealth. Conflict of interest requirements are objective standards designed to eliminate certain specific, potentially compromising situations from arising, and thereby to protect the individual, the institution, and the public interest. The individual and the institution should not be placed in a situation where others could reasonably question, and perhaps discount or dismiss, the work of the expert peer reviewer simply because of the existence of conflicting interests.

The term "conflict of interest" applies only to *current interests*. It does not apply to past interests that have expired, no longer exist, and cannot reasonably affect current behavior. Nor does it apply to possible interests that may arise in the future but do not currently exist, because such future interests are inherently speculative and uncertain. For example, a pending formal or informal application for a particular job is a current interest, but the mere possibility that one might apply for such a job in the future is not a current interest.

The term "conflict of interest" applies not only to the personal interests of the individual but also to the *interests of others* with whom the individual has substantial common financial interests if these interests are relevant to the functions to be performed. Thus, in assessing an individual's potential conflicts of interest, consideration must be given not only to the interests of the individual but also to the interests of the individual's spouse and minor children, the individual's employer, the individual's business partners, and others with whom the individual has substantial common financial interests. Consideration must also be given to the interests of those for whom one is acting in a fiduciary or similar capacity (e.g., being an officer or director of a corporation, whether profit or nonprofit, or serving as a trustee).

Some of the work of this institution involves scientific and technical studies and assistance for sponsors across a broad range of activities. Such activities may include, for example: defining research needs, priorities, opportunities and agendas; providing scientific and technical assistance for other agencies and institutions; and assessing the state of scientific or technical knowledge on particular subjects and in particular fields. Such activities frequently address scientific, technical, and policy issues that are sufficiently broad in scope that they do not implicate specific financial interests or conflict of interest concerns. Where such activities address more specific issues having significant financial implications, however, careful consideration must be given to possible conflict of interest issues with

respect to the appointment of expert peer reviewers that will be used by the institution in the development of reports to be provided by the institution to cooperators or other interested parties.

The overriding objective of the conflict of interest inquiry in each case is to identify whether there are interests – primarily financial in nature – that conflict with the service of the individual because they could impair the individual's objectivity or could create an unfair competitive advantage for any person or organization. The fundamental question in each case is does the individual, or others with whom the individual has substantial common financial interests, have identifiable interests that could be directly affected by the outcome of the project activities on which the individual has been invited to serve? For projects involving advice regarding awards of contracts, grants, fellowships, etc., this institution is also guided by the principle that an individual should not participate in any decision regarding the award of a contract or grant or any other substantial economic benefit to the individual or to others with whom the individual has substantial common financial interests or a substantial personal or professional relationship.

The application of these concepts to specific scientific and technical studies and assistance projects must necessarily be addressed in each case on the basis of the particular facts and circumstances involved. The questions set forth below are designed to elicit information from you concerning possible conflicts of interest that are relevant to the functions to be performed during your expert peer review.

1. FINANCIAL INTERESTS. (a) Taking into account stocks, bonds, and other financial instruments and investments including partnerships (but excluding broadly diversified mutual funds and any investment or financial interests valued at less than \$10,000), do you or, to the best of your knowledge others with whom you have substantial common financial interests, have financial investments that could be affected, either directly or by a direct effect on the business enterprise or activities underlying the investments, by the outcome of activities related to the issue for which you are providing expert peer review?
- (b) Taking into account real estate and other tangible property interests, as well as intellectual property (patents, copyrights, etc.) interests, do you or, to the best of your knowledge others with whom you have substantial common financial interests, have property interests that could be directly affected by the outcome of activities related to the issue for which you are providing expert peer review?
- (c) Could your employment or self-employment (or the employment or self-employment of your spouse), or the financial interests of your employer or clients (or the financial interests of your spouse's employer or clients) be directly affected by the outcome of activities related to the issue for which you are providing expert peer review?
- (d) Taking into account research funding and other research support (e.g., equipment, facilities, industry partnerships, research assistants and other research personnel, etc.), could your current research funding and support (or that of your close research colleagues and collaborators) be directly affected by the outcome of activities related to the issue for which you are providing expert peer review?
- (e) Could your service as an expert peer reviewer for this issue create a specific financial or commercial competitive advantage for you or others with whom you have substantial common financial interests?

If the answer to all of the above questions under FINANCIAL INTERESTS is either "no" or "not applicable," check here ____ (NO).

If the answer to any of the above questions under FINANCIAL INTERESTS is "yes," check here ____ (YES), and briefly describe the circumstances on the last page of this form.

2. OTHER INTERESTS. (a) Is the central purpose of the project for which this disclosure form is being prepared a critical review and evaluation of your own work or that of your employer?

(b) Do you have any existing professional obligations (e.g., as an officer of a scientific or engineering society) that effectively require you to publicly defend a previously established position on an issue that is relevant to the functions to be performed in this activity?

(c) To the best of your knowledge, will your participation as an expert peer reviewer enable you to obtain access to a competitor's or potential competitor's confidential proprietary information?

(d) If you are or have ever been a U.S. Government employee (either civilian or military), to the best of your knowledge are there any federal conflict of interest restrictions that may be applicable to your service as an expert peer reviewer?

(e) If you are a U.S. Government employee, are you currently employed by a federal agency that is sponsoring this project? If you are not a U.S. Government employee, are you an employee of any other sponsor (e.g., a private foundation) of this project?

(f) If the activity for which this form is being prepared involves reviews of specific applications and proposals for contract, grant, fellowship, etc. awards to be made by sponsors, do you or others with whom you have substantial common financial interests, or a familial or substantial professional relationship, have an interest in receiving or being considered for awards that are currently the subject of the review being conducted?

(g) If the activity for which this form is being prepared involves developing requests for proposals, work statements, and/or specifications, etc., are you interested in seeking an award under the program – or, are you employed in any capacity by, or do you have a financial interest in or other economic relationship with, any person or organization that to the best of your knowledge is interested in seeking an award under this program?

If the answer to all of the above questions under OTHER INTERESTS is either "no" or "not applicable," check here _____ (NO).

If the answer to any of the above questions under OTHER INTERESTS is "yes," check here _____ (YES), and briefly describe the circumstances on the last page of this form.

EXPLANATION OF "YES" RESPONSES:

During your period of service in connection with the activity for which this form is being completed, any changes in the information reported, or any new information, which needs to be reported, should be reported promptly by written or electronic communication to the responsible staff officer.

YOUR SIGNATURE

DATE

Reviewed by: _____
John Sacklin, Management Assistant

Date