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Re: Problems with the Peer Review Process of the U.S. Forest Service Northwest Forest Plan Science Synthesis – Prepared by Drs. Dominick A. DellaSala (Chief Scientist, Geos Institute) and Chris Frissell (Principal Scientist Frissell & Raven LLC) and Rowan Baker (retired fisheries biologist)

Under separate cover, the above groups have submitted detailed comments for the public record on the Northwest Forest Plan (NWFP) science synthesis chapters. Chapter authors designed the synthesis to inform managers of the underlying science on specific issues to be considered during the revision of management plans for 19 national forests within the range of the Northern Spotted Owl. The document is an impressive undertaking of over 1263 pages in 12 subject chapters.

The NFMA 2012 planning rule calls for use of best available science in agency forest planning[1]. The Forest Service also has decided that it will adhere to the Office of Management & Budget (OMB) guidelines on "highly influential scientific assessments." Unfortunately, the narrow selection of scientific information in most of the synthesis chapters and problems with the selection of peer reviewers does not comport with OMB's "final information quality bulletin for peer review[2]" or guidelines on avoiding conflicts of interest such as those of leading scientific societies like the American Association for the

[1]"§ 219.3 Role of science in planning. The responsible official shall use the best available scientific information to inform the planning process required by this subpart. In doing so, the responsible official shall determine what information is the most accurate reliable, and relevant to the issues being considered. The responsible official shall document how the best available scientific information was used to inform the assessment, the plan decision, and the monitoring program as required in §§ 219.6(a)(3) and 219.14(a)(4). Such documentation must: Identify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered."
[2]https://www.whitehouse.gov/sites/default/files/omb/assets/omb/memoranda/fy2005/m05-03.pdf).

Advancement of Science (AAAS)[3] and the Ecological Society of America (ESA)[4].

A transparent science synthesis and review process, coupled with selection of qualified and independent reviewers with a balance of perspectives, is necessary to improve the quality of government science while promoting public confidence (trust) in the integrity of the government's scientific products. However, many of the synthesis chapters present inherent biases associated with a narrow interpretation of the fire, conservation biology, and aquatics literature that resulted in management recommendations by chapter authors that could undermine the reserve network of the Northwest Forest Plan. Chapter authors did not allow authors of articles that they did not agree with (e.g., chapter 3) to respond or serve as authors of the chapter 3 section on "alternative views of disturbance dynamics…." Most problematic is that none of the chapter authors are published conservation scientists with expertise in reserve design for aquatic and terrestrial ecosystems, yet chapter authors repeatedly criticize the reserve design of the Northwest Forest Plan.

Several of the peer reviewers have financial ties to NWFP outcomes in fire-research funding or timber management. There is a pre-determined "active management" bias in the inclusion of federal managers who have themselves recommended certain management provisions in documents referenced in the science synthesis (e.g., Spotted Owl Recovery Plan overseen by Paul Henson of the US Fish & Wildlife Service is a reviewer, "ecoforestry" approaches widely cited in the synthesis in making recommendations that were developed by some of the reviewers). Moreover, there are too few scientists with expertise in conservation biology approaches involving fixed reserves, connectivity, conserving the "ecological stage," and climate refugia perspectives as documented in the literature. Selection of aquatics reviewers lacked disciplines related to hydrology, geomorphology, aquatic conservation (holistic and ecosystem perspective), habitat relationships and modeling, and water quality.

Overall, the approach for the NWFP science synthesis represents a significant departure from the process that was used to synthesize the science of the NWFP that has been held up as a global model of ecosystem management and biodiversity conservation[5]. In 1993, the Federal Ecosystem Management Assessment Team was tasked with developing the scientific framework of the NWFP. At the time, there was a clear demarcation of scientific independence that allowed scientists to work without involvement of agency managers. However, this line has been blurred by the current science synthesis process,

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[3]AAAS Ethical Guidelines for Reviewers: Reviews should be objective evaluations of the research. If you cannot judge a paper impartially, you should not accept it for review or you should notify the editor as soon as you appreciate the situation. If you have any professional or financial affiliations that may be perceived as a conflict of interest in reviewing the manuscript, or a history of personal differences with the author(s), you should describe them in your confidential comments. You should be aware of *Science*'s policies for authors regarding conflict of interest, data availability, and materials sharing. See the General Information for Authors Page.

[4]Based on the review standards of the Ecological Society of America, peer review is to have **no declared conflicts of interest** (http://esapubs.org/esapubs/reviewers.htm):

[5]DellaSala, D. A., and J. Williams. 2006. Northwest Forest Plan Ten Years Later – how far have we come and where are we going. Conservation Biology 20:274-276.

which includes managers who are authors and/or reviewers of chapters that include recommendations that they themselves have previously published. While we appreciate the need for science to inform management, the scientific process on a highly influential assessment like this one needs to be independent of any influences from the outset. To do otherwise, risks the scientific credibility and legal defensibility of the synthesis.

To address these problems and make the peer review consistent with OMB and a peer review process that better ensures use of best available science, we recommended that the Forest Service improve the review process as follows:

- **Strict attention to the independence of the reviewers**: agency staff and agency affiliated reviewers and especially those that might benefit financially from extraction of natural resources on national forests may not participate unless there is a discipline that cannot be represented otherwise (this must be documented in a conflicts of interest statement).
- The panel must be **interdisciplinary** and cover all core assessment topics sufficiently (especially fire science, aquatics, and reserves) by inviting authors with a more comprehensive and balanced view of the literature.
- The agency must address reviewers' **potential conflicts of interest** (including those stemming from ties to regulated businesses and other stakeholders with a vested interest in outcomes) and must have **independence from the agency**.
- Agencies are required to adopt the committee selection policies employed by the National Academy of Sciences[6] when selecting peer reviewers who are not government employees. Those that are government employees are subject to federal ethics requirements.
- More emphasis is given to ensure proper levels and **range of expertise** and ensuring "**balance**."
- None of the reviewers selected should have published with the chapter authors on topics that they are now being asked to evaluate or recommendations that they themselves also developed.

OMB's peer review process allows the public to nominate reviewers ("Agencies shall consider requesting that the public, including scientific and professional societies, nominate potential reviewers"). Additionally, OMB requires "While expertise is the primary consideration, reviewers should also be selected to *represent a diversity of scientific perspectives relevant to the subject*" (emphasis added).

To achieve balance and better representation of perspectives and disciplines, we nominate the following reviewers:

- **Aquatics**: NOAA-Fisheries scientists from the NW Fisheries Science Center in Seattle (Tim Beechie and Michael Pollock), Kurt Fausch (Colorado State U.),

[6]National Academy of Sciences, "Policy and Procedures on Committee Composition and Balance and Conflicts of Interest for Committees Used in the Development of Reports," May 2003: http://www.nationalacademies.org/coi/index.html.

James Karr (emeritus U. Washington), Dave Montgomery (U. Washington), Stan Gregory (emeritus, Oregon State U.), Janine Castro (USFWS/NOAA), Dale McCullough (Columbia River Intertribal Fish Commission), Colden Baxter (Idaho State U.), Jack Williams (Trout Unlimited).

- **Water quality**: EPA or DEQ with respect to implementation and interpretation of the Clean Water Act.
- **Reserve design**: Barry Noon (Colorado State University), Carlos Carroll (Klamath Center for Conservation Research), Jim Strittholt (Conservation Biology Institute), Dennis Murphy (U. Nevada), Gordon Orians (emeritus U. Washington), Brett Dickson (N. Arizona Univ.), Stuart Pimm (Duke U.), John Terborg (Duke U.), Norm Christensen (Duke U.), David Olson (Conservation Earth, former FEMAT member), Nicole Heller (Univ. California, Santa Cruz).
- **Fire ecology (not fuels management) and insects**: William Baker (emeritus U. Wyoming), Tom Fleischner (Prescott College), Dominik Kulakowski (Clark U.), Rosemary Sherriff (Humboldt State U.), Richard Hutto (U. Montana), Jon Keeley (USGS), Dennis Odion (U. California, Santa Barbara), Tania Schoennagel (U. Colorado), Max Moritz (U. California, Berkley), Sara Hart (U. Colorado), Scott Black (Xerces Society).
- **Wildlife (including survey and manage species)**: Dan Rosenberg (Oregon State U.), Robert Beschta (emeritus, Oregon State U.), Michael Parker (So. Oregon U.), Boone Kauffman (USGS), John Alexander (Klamath Bird Observatory), Joan Hagar (USGS), R.B. Bury (emeritus USGS), Andrew Blaustein (Oregon State U), Sarah Jovan (USFS).
- **Carbon and climate change**: Bev Law (Oregon State U.), Mark Harmon (Oregon State U.), Olga Krankina (emeritus, Oregon State U.), Lara Hansen (EcoAdapt), Josh Lawler (U. Washington), Phil Mote (U. Oregon).
- **Spotted owls**: Monica Bond (Wild Nature Institute), Katie Dugger (Oregon State U.), Barry Noon, Gayle Olson (Oregon State U.).
- **Socioeconomics** – Ray Rasker (Headwaters Economics), Tom Power (Univ. Montana, emeritus), John Talbert (Center for Sustainable Economy)

In closing, we believe the peer review process can be greatly improved by adding more balance of disciplines and perspectives on key topics such as fire ecology, aquatic ecosystems, and reserve design. Such improvements would allow the Forest Service to meet the intent of the 2012 forest planning rule with respect to best available science, better comport with OMB's process regarding highly influential scientific assessments, and avoid any potential conflicts of interest thereby ensuring that the science synthesis is scientifically credible and transparent for the public and scientists to better evaluate.