Center for Ecosystem Management and Restoration, Inc.
3450 Lakeshore Ave, #206
Oakland, CA 94610

Ms. Karen Rippey
U.S. Army Corps of Engineers
215 Main Street
San Francisco, CA 94105

VIA: Electronic Mail

Ms. Rippey:

I am sorry that I am going to be unavailable on September 9th to meet with you and the Russian River watershed group you described in your telephone message. Per your request, I have provided below a few principles for you to consider as you develop plans for a scientific advisory board. These principles are based upon my experience coordinating scientific review of monitoring and research programs, including the *Exxon Valdez* Oil Spill (EVOS) Restoration Program.

Strangers can help. I have frequently encountered an attitude among stakeholders that the particular issues in their basin or watershed are too complex to be understood by a scientist from another region. Therefore, by this logic, scientific advisors must be local scientists who understand the watershed, both technically and politically.

While there is no doubt that a scientific reviewer from outside the watershed will be ignorant of certain features of the geographic or political landscape, it has been my experience that this ignorance is often out-weighed by a fresh perspective and knowledge of similar watersheds elsewhere. We tend to think of our problems as unique, but often they are not, and outside reviewers can identify problems and pitfalls of relevance in the local watershed. In Alaska, the EVOS program has key scientific reviewers from New Foundland and North Carolina. If a long-term relationship is established with certain outside reviewers, they can quickly climb the local learning curve and integrate the local landscape into their recommendations.

Scientists don't have all the answers. Another problem that can surface in establishing a scientific advisory board is the expectation that this Board can resolve conflicts within the watershed. It is my experience that many stakeholder conflicts, although discussed in terms of technical uncertainties, are actually the result of alternate visions for the watershed based upon value judgements. While scientific review can help resolve questions regarding proper data interpretation or measurement techniques, the goals and objectives for watershed restoration or ecosystem management must be established through a political process. Similarly, one can establish a monitoring program to measure certain indicators (anadromous fish returns, sedimentation, physiological health of organisms), but the benchmarks by which one decides if these measurements

are satisfactory or unsatisfactory are not established by science alone. Once goals, objectives, and benchmarks are in place, scientists can help stakeholders design monitoring and research programs, and interpret results.

Conflict of interest must be avoided. Scientific reviewers must be seen as objective observers of the issues in a watershed by all stakeholders around the table. For this to occur, the scientists must be free from both real and perceived conflicts-of-interest. Normally, local governments (or other agencies at the table) have conflict-of-interest agreements that can be used to consider if a particular individual is conflict-free. This is another reason that reviewers from outside the watershed (or even the State) can be valuable to a restoration program.

Reviewers should be paid. Possibly because of the peer-review process that is part of publishing in the scientific literature, many people seem to feel that scientists should provide peer review to stakeholder groups for free. It is my opinion that this opinion confuses two very different tasks. Peer review for a scientific journal normally involves reviewing an article that covers a subject with which one is very familiar. In addition, supporting the peer review process (and the editor of the journal who is requesting your assistance) are to a certain degree self-serving for a professional scientist, who's own work will benefit from peer review by others and possibly publication in a journal than she has supported by being a reviewer.

A stakeholder organization often requires scientists to review lengthy reports, and there are no benefits that accrue to individual scientists. The reviewers must then prepare written recommendations that can be understood by all stakeholders, many of whom are nonscientists. These are tasks that require the disciplined application of professional knowledge and skills, and I find that in every walk of life professionals do better work when they are paid.

I hope these thoughts are helpful to you in your deliberations. Please don't hesitate to contact me if you have any questions.

Sincerely,

Andrew J. Gunther, Ph.D.
Executive Director