

California Department of Fish and Game

Strategic Initiative to Expand Scientific Capacity:

**Policy for Quality in Science
And
Key Elements of Scientific Work**

January 2008

POLICY ON SCIENTIFIC QUALITY

Policy Statement

Given the vital role of science in the management of natural resources, the Department of Fish and Game is dedicated to ensuring that scientific information is developed and used in a responsible and rigorous manner.

The Department of Fish and Game is committed to supporting a quality scientific program that:

..... is readily demonstrable to all stakeholders, including the scientific community and the public.

Ensuring that DFG's science program is of the highest quality enhances the performance and credibility of its actions. The quality of scientific work is based on the collective view of experts with respect to the veracity and merit of the methodology applied and results achieved. Quality also depends on having adequate resources to carry out the work required.

..... is relevant from an immediate and a longer-term perspective.

Scientific efforts must be directed at issues that are important to DFG's mission and to stakeholder groups today. Additionally, DFG's science program must extend beyond the immediate concerns of today. It must be able to identify and assess emerging public policy issues that have yet to become public priorities.

.....requires the organization's scientific staff share a responsibility for adhering to the highest ethical standards.

Integrity in science is essential to maintain the respect and confidence of California's citizens and members of the legislature, and to enhance the reputation of DFG's research programs and scientific professionals. DFG staff scientists are expected at all times to uphold the public trust. They are expected to observe the ethical standards established by their own professional organization, and those set by the professional bodies with which they are affiliated.

.....embraces innovation by encouraging creativity and continuous learning.

DFG must embrace the notion of continuous learning and create a climate that values innovative thinking.

..... is possible only if the organization recognizes that people are fundamental to the ability to deliver on its scientific responsibilities.

DFG values its outstanding scientists, engineers, technicians, and support personnel, and will invest in the resources needed to attract, develop and support them in the performance of excellent work. The ability of the DFG to effectively recruit, develop, recognize and support talented scientific staff will determine its level of success in fulfilling its unique role in managing California's natural resources.

..... requires leadership and commitment at all levels.

Leadership is needed to build bridges between mandates, to develop and apply consistent processes, and to ensure project quality and completion.

Leadership also ensures strong linkages through partnerships, collaboration and integration which will expand the value and reach of DFG's scientific programs.

..... must function within a clear management accountability framework.

The effective management of any activity requires information about strategic priorities, objectives, inputs, flow of resources, outputs and outcomes. Monitoring of these factors provides the basis for the ongoing evaluation of progress, as well as input into subsequent decision making.

.....requires modern facilities, equipment and networks.

DFG recognizes that state-of-the-art facilities, equipment and networks are required to carry out its responsibilities and will strive to provide them within the means made available to the Department. A modern scientific infrastructure forms the basis of the Department's ability to uphold the integrity of current science programs and to study emerging challenges.

Acknowledgments and Disclaimer

This DFG Policy Document contains information that has been reproduced with permission from the ©Government of Canada's Innovation in Canada website titled "In the Service of Canadians: A Framework for Federal Science and Technology". This information is not represented as an official version of the materials reproduced and it has not been used in affiliation with or with the endorsement of the ©Government of Canada.

Key Elements of Scientific Work Within the Department of Fish and Game

Science Proposals

- Scientific work conducted by or on behalf of DFG will be based on a formal written proposal that receives appropriate supervisory and peer review (see Scientific Peer Review below).
- Proposals for DFG scientific work (Proposals) will provide rationale for the work and linkage to the Strategic Plan, considering both resource management data needs and available scientific information.
- Proposals will state the research and/or natural resource management objectives of the work, linking objectives to the research questions and hypotheses, as well as expected result(s) and utility of the completed work.
- Proposals will include a description of study methods, including: 1) sample sizes and locations; 2) field and laboratory methods, including Quality Assurance/Quality Control procedures; 3) data analysis, including statistical test(s); 4) modeling algorithms, assumptions and parameters and 5) applicable literature references.
- Proposals must address project feasibility, including staffing level, duration, funding, schedule of program assessments and progress reports, permits and other regulatory considerations, health and safety, and staff qualifications. If appropriate, collaborators or technical consultants with additional expertise will be identified.

Results

- Scientific data generated within DFG will be maintained and archived using appropriate media/storage technology, and supported by the appropriate meta-data.
- Scientific work and findings conducted within DFG will at minimum result in written reports and, as feasible, scientific publications. Written reports will be made available to all DFG staff via whatever methods or media considered most appropriate by the researchers and program managers responsible for the work.

Scientific Peer Review

- Written proposals, reports, data sets, and manuscripts (for submittal to a scientific journal) will be peer reviewed by DFG scientists or DFG-selected professionals having education and experience commensurate with the proposal or work under review. High profile proposals or work that has a substantial management impact or large expenditure of funds will be subject to formal independent peer review.

Research Partnerships

- Staff proposing scientific work will seek opportunities for collaboration within DFG as well as with other sectors of the scientific community, natural resource agencies, non-profit institutes, and universities.