

California Fish and Wildlife Strategic Vision Project
Science Working Group Issues Framework Consolidation
September 20, 2011

1. **Articulate a clear commitment by DFG that policies and programs for conservation and management of California's natural resources will be based on the best available scientific and other technical practices and information**
 - a. ***Establish a working definition of science and scientific information*** relative to conservation and management of California's natural resources, applying generally accepted standards
 - i. descriptive biological and geological studies
 - ii. hypothesis testing
 - iii. traditional ecological knowledge
 - iv. strong inference; social sciences).
 - b. ***Resolve tension*** created by past application of paradigms, including "best available information (BAI)" and "best available science" (BAS).
 - c. ***Simplify and clarify the paradigm*** with a commitment of DFG to conduct research, monitoring, and modeling using methods consistent with generally accepted best scientific practices
2. **Establish mechanism to establish and maintain an effective firewall between those who design and conduct scientific studies and those who develop policy and execute management or enforce policy and regulations**
3. **Restore the scientific capacity and credibility of the California Department of Fish and Game.**
 - a. ***Define the role(s) of DFG in applying scientific and other credible information to conservation and management of California's natural resources, by articulating rules and other guidance for choosing, interpreting, and applying when making decisions while,***
 - i. conducting scientific studies, monitoring programs, and ecological modelling
 - ii. evaluating the results of scientific studies conducted by entities other than DFG
 - iii. translating results of scientific studies and other activities that generate data to politicians, policy makers, resource managers and the public
 - b. ***Identify and assess the current scientific capacity and capability of DFG***
 - i. Create database of current employees with procedural (e.g., permit processing and issue; coordination of issues and needs among offices and external organizations) and substantive (e.g., assess needs for directed scientific studies; develop plans for scientific studies; conduct or collaborate in directed scientific studies) scientific roles.
 - ii. Establish a matrix that describes the interactive hierarchical structure of California agencies and extant offices within DFG with delegated oversight, obligations, and authorities for conservation and management of California's natural resources.
 1. Identify overlaps and potential gaps to allow streamlining of efficiency

- c. **Restore and enhance DFG scientific capacity.**
 - i. Establish appropriate scientific program offices and entities, including
 1. an Office of Resource and Population Assessment (for aquatic and terrestrial modeling efforts)
 2. a Research and Monitoring Branch
 3. an independent Science Advisory Panel (to facilitate independent review and guidance on high priority DFG issues)
 - ii. Recruit, hire, and retain personnel with expertise in designing scientific studies, conducting rigorous data collection, analyzing data obtained during research and monitoring, and reporting and interpreting scientific studies generated from scientists outside of DFG.
 1. Provide for the continuing education of technical staff (including attendance of appropriate scientific conferences).
 1. Establish basic requirements and appropriate incentives for personnel to publish in peer-reviewed scientific journals and deliver reports of similar quality.
 2. Establish mechanisms allowing personnel to be recruited from University of California and California State University campuses.
 3. Encourage DFG technical personnel to pursue advanced degrees.
 - iii. Establish mechanisms to facilitate rigorous, thorough, independent scientific review of DFG resource management, scientific studies and reports, and monitoring programs..
 - iv. Develop mechanisms to allow and facilitate collaborative partnerships between DFG personnel and scientists from other state and federal agencies, academic institutions, and other entities.
 - v. Establish methods, guidelines, and policies for collecting, analyzing, and archiving data and other information generated by research, monitoring, and modeling efforts by DFG personnel.
- 4. **Identify new tools technologies that can advance DFG effectiveness and articulate standards for their application to development of resource management policies and programs.**
 - a. **Fluid use of information**
 - b. **Links and coordination with other databases (i.e., extra-DFG)**
 - c. **User-friendly**
- 5. **Integrate science and policy derived from all available sources.**
 - a. **Modify decision making processes** to facilitate integration across disciplinary and administrative boundaries (i.e., balancing test for sufficient time versus efficiency; e.g. one-year status review under CES).

- b. **Consider a standing Science and Biostatistics Committee model** for DFG (providing peer review and an appropriate firewall between technical staff, managers, and regulators).
6. **Enhance and re-establish partnerships with academic institutions and other credible scientific organizations and stakeholders.**
- a. **Identify needed capacity of partners** (e.g., waterfowl endowment at UCD)
 - b. **Collaborate with University of California and California State University systems** to facilitate modification and development of University curricula to help with DFG scientific needs.
 - c. **Encourage and facilitate partnerships with stakeholders** (e.g., consumptive and non-consumptive resource users) to effect cost-saving efficiencies in scientific data collection.
 - d. **Incorporate science in DFG enforcement programs** to identify priorities and to assist in effective criminal prosecution of natural resource violations.
 - i. Provide a mechanism to recruit and retain natural resource enforcement officers with cross-disciplinary education and training.
 - ii. Account for increasing standards for collection and processing of evidence.