

California Fish and Wildlife Strategic Vision Project
Science Working Group Meeting Notes
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**

Notes: What does this look like? Legislative mandate? What does implementation look like? Employee comments include some specific suggestions (i.e., increased training, having access to scientific publications, being given time to publish or attend science meetings) for showing this commitment. Fish and Game Code has numerous references to best available science...perhaps some of those are relevant and question is more about how to implement those obligations. Are there barriers to implementing the existing codes? Independent reviews indicate that BAS is not consistently being applied in decision-making – how to ensure? Footnote other reports on website. Previous goals and commitments not being accomplished. Perhaps ask DFG and commission to be more explicit about how science is being used and incorporated into decision-making. Various methods can all be good and yet no single one is necessarily the “best.” No single definition or is it better defined as a process? Bottom line is that “science” needs to be central to managing California's natural resources.

Request: What references already exist in code related to best available science? Appears that there are over a dozen references, but may not be overarching statement about importance of BASI.

- 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.**

Notes: Need mechanisms to be sure those who are conducting science are not pressured by policy- and decision-makers to reach certain conclusions. Be sure science is not being “directed” by management and policy-makers. Perhaps establish a separate “research unit” within DFG. Science

should be directed independently of political pressure. Not use term “firewall”? Does DFG conduct and interpret science? Is this really more an issue of communicating how science is developed and used or ensuring peer review of department scientific studies? Does this rise to the level of high priority for recommendations? Is this a perception issue? Outside funding dictating science? Fishing community perspective is that fisheries management is influenced by funding. Mechanism such as a science committee or advisory body? Perhaps incorporate this recommendation into potential recommendation #3 or #5? Incorporate 5b under #3 as well? This was originally part of potential recommendation #1.

Request: Need working group members not in attendance today (9/20/11) to provide feedback on this item, since members in attendance are not sure this is a high priority item for recommendations.

3. Restore the scientific capacity and credibility of the California Department of Fish and Game.

Notes: What will be the role of DFG and the commission in conducting, evaluating, translating and applying science? Applying science “has to happen” and so little to discuss? Conducting could be either internally and/or through a third party. Translating refers to how to apply to management decisions. DFG should have capacity to conduct needed research, especially when there are not outside, third parties that can provide under contract. Budget and other policies may at times trump the ability to conduct research. USFWS moved scientists to an external group and now finding implementation problematic without close communication with the managing agencies. USFS has separate research branch, which can work well if the research priorities are established jointly with managers (does not always happen that way). NPS went through similar process in 1970s and now returning wildlife biologists to the parks to conduct research and engage in collaborations. Need budgetary structure to support science within DFG. See item Ci below...comments that those specifics would go a long way in addressing many of the “science” concerns.

- 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; and
 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 or technologies that can advance DFG effectiveness and articulate standards for their application to development of resource management policies and programs.

Notes: Natural Diversity Database could be improved as an example? Incorporate scientific collecting permit data into a database(s)? Calfish database does not support non-salmonids. Metadata and QA/QC process improvements. Scientific data archives...coordinate to the extent possible with a somewhat consistent format or ability to “talk” with one another. Perhaps move this under potential recommendation 3 as a specific action? New tools include things like MarineMap (geospatial planning).

- 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.

Notes: Need adequate time to conduct science, analyze and then incorporate into the decision-making process; Some regulatory requirements do not provide that necessary time (i.e., CESA). Greater integration of different disciplines (e.g., ecosystem-based management needs to include information being developed under fisheries science/management) rather than picking/choosing those disciplines that fit the desired paradigm. Perhaps recommendation should read, “Integrate science from all available, relevant disciplines into policy-making.” Essentially require a multi-disciplinary approach to policy- and decision-making. Ensure that policy-making includes both ecosystem-based science and fisheries science; protectionist versus conservationist argument.

- 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 CESA).
- 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.

Notes: Leveraging other organizations and their resources to help achieve the mission and goals of DFG and commission, to help address limited staffing and funding. Need to streamline the memorandum of understanding and scientific collection permitting processes (latter can take 6 months) to make it easier to establish partnerships. Some way to merge multiple scientific collecting permits – all asking for same information which makes it onerous for the

scientific community. Oregon fisheries has a merged process with NOAA. See also 3civ for similar recommendation.

- 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.

Volunteers for Next Round of Revisions

Diane – edit

Brent and Dennis – writing

Walt – review