

**California Fish and Wildlife Strategic Vision Project**  
**Science Notes for January 17 Discussion Topic Meeting**  
*January 17, 2012*

On January 10, 2012 the California Fish and Wildlife Strategic Vision (CFWSV) Blue Ribbon Citizen Commission (BRCC) and Stakeholder Advisory Group (SAG) met for a science discussion topic meeting. Individual BRCC and SAG members, as well as participating California Department of Fish and Game (DFG) and California Fish and Game Commission (F&GC) employees, volunteered to develop text for potential recommendations to be considered by the BRCC/SAG. This document is a compilation of the work of those volunteers with notes generated during the discussion meeting on January 17, 2012.

**General Notes**

Initial homework recommendations and volunteers (from Jan. 10):

1. Capacity
  - Increase use of existing and available science (i.e., access to JSTOR)
  - Request a CBA of what is involved in internal v external development as well as barriers to improvement/making changes
  - Focus and direct scientific capacity around established priorities
  - Identify gaps and needs in scientific capacity i.e., IRM)
2. Transparency
  - Increase access to data and studies (i.e., proactive)
  - Increase access to scientists
3. Credibility
  - Create mechanism for scientific review, advice and appeals (i.e., science panel)
  - Develop mechanism for F&GC consumption of science
4. Communication: Better communicate existing partnerships and identify additional partnership needs (i.e., post info to website)

Homework Volunteers: Helen Birss, Karen Buhr, Jennifer Fearing, Dave Graber, Steve Juarez, Eric Loft, Tom Lupo, Skyli McAfee, Becky Ota, Terri Stewart

The first part of the meeting was spent discussing the topic of transparency, which during the homework phase had been combined with communication. However, there was no agreement on how best to capture the ideas of science and its relationship to transparency and/or how that related to overall transparency in decision-making.

***Discussion Points on “Transparency”***

Are transparency and credibility two sides of the same coin? Transparency is also about integrating all types of science (physical and social sciences) or is that more about credibility?

Have to “show your work” when publishing a scientific paper. Identifying the information used in making a decision helps achieve two outcomes? Increase transparency and improve credibility?

Revealing what science was used in decision-making, as well as other factors, is part of transparently informing the public. Transparency of what was used is different from the question of whether the science is credible. Common theme #4 (broadly informed decision-making) is also related to this topic.

Transparency has at least two parts – there is overlap of transparency. For example, how science-founded decisions are made is one part and relates to credibility with the public. The second part is how to make the science development itself more transparent – i.e. show your work!

Need to discuss the broader decision-making issue on Thursday afternoon in the common themes discussion.

Access to the scientists seems to be missing from this document. Potential actions seem to relate to access to the data, rather than some access to the scientists doing the work. Don’t want to lose the point that some level of access to scientists to answer questions is important.

### ***Discussion Points on “Credibility”***

Why not using “best available science” (in defining credibility)? Used at both state and federal levels in statute. Add a footnote as to the specific definition of “best-available” science to note that it is part of the definition of “credible” being used in the recommendation from the science discussion.

Ask participants in the governance discussion meeting to cover credibility - develop a mechanism for F&GC consumption of science (two-way communication between scientists and decision-makers).

### ***Discussion Points on “Capacity”***

Work more collaboratively? Do DFG scientists have access to what they need? Are the “right” questions being asked that help answer management questions/issues, otherwise known as “applied” science.

### **Potential Science Recommendations**

Make the transparency topic part of the common themes discussion on January 19, 2012. Next paragraph through top of page 4 should be transferred to the common themes worksheet for discussion.

Transparency in decision-making – does it mean identifying all those factors used in reaching a decision, including science? Also, do DFG and F&GC clearly identify the scientific factors/information used in making decisions?

Does the public have access to the science and data used in decision-making? This goes beyond whether the public understands what science was used and how, and instead asks whether the public can access the raw data or science.

The initial language on transparency/communication from the homework volunteers that was discussed:

***Potential Science Recommendation #1: Transparency (in science used in decision-making) and communication (combined)***

Implementation recommendations include:

Graber/McAfee Suggestions

- DFG provides reports, publications, and databases developed from its scientific work on a publicly-accessible web site (excluding sensitive information)
- Science developed and used by DFG is interpreted to students and the general public by education specialists
- Other factors incorporated in a decision (social, political, economic) are clearly distinguished from the [natural] science and referenced.

BRCC/SAG Potential Actions

- 8D: 18. Establish a standard procedure for data sharing (3-1)
- 8D: 23. Require that all data collected in sponsored scientific investigations be entered into BIOS or another appropriate accessible database (1-3)
- 8A: 4. Make information available in a regionally and culturally appropriate method, including written materials in geographic areas with limited Internet access (0-2)
- 8B: 19. Collaborate with the University of California and California State University systems to facilitate modification and development of university curricula to help with DFG research, monitoring and evaluation needs (1-2)

DFG Suggestions

- (Number 11, bullet 1) Develop a robust and interactive web presence that describes the extensive partnerships already underway and identifies areas where more effective partnership opportunities may exist.

Implementation Assessment

- Method: ?
- Timeline: ?
- Level of likely BRCC/SAG agreement: ?

#### Ties to Strategic Vision

- Goal 1: Strong Relationships with Other Agencies, Organizations and the Public: Objective 6: Share data, processes, tools, knowledge, expertise and information
- Goal 2: Highly Valued Programs and Quality Services Objective 7: Engage in broadly-informed and transparent decision-making (multiple sciences, public attitudes, traditional knowledge, etc.)

The participants in the science discussion meeting were not able to reach consensus on transparency and communication so the potential recommendation will be covered Thurs afternoon during the common themes discussion meeting.

There are two overall recommendations from the science discussion, in no particular order, with specific actions identified within each (also in no particular order).

#### ***Potential Science Recommendation #2: Credibility: Decisions made by managers and policy-makers are informed by credible science (now moved to #1 position)***

Implementation recommendations include:

- A. Managers and policy-makers use science that employs the standard protocols of the profession (peer review, publication, science review panel, etc.).
- B. Decision-making incorporates adaptive management to the extent possible (i.e., outcomes are tracked and new knowledge permits course corrections).
- C. Decision-makers articulate the expected outcome of decisions (*Note: Come back to this one at a later time; don't include in recommended language for Jan. 20*)
- D. Where the body of legitimate science informing the topic is in disagreement, those uncertainties or differences of opinion are identified. Likewise, where the body of science is incomplete to support a necessary decision, standard and transparent means, such as 'expert judgment' are used to advance management. (*Note: Add to transparency discussion as well*)
- E. Scientific professionals in DFG are held to and protected by a DFG Science Quality Assurance and Integrity Policy

#### Ties to Strategic Vision

- Goal 2: Highly Valued Programs and Quality Services, Objective 7: Engage in broadly-informed and transparent decision-making (multiple sciences, public attitudes, traditional knowledge, etc.)

The following BRCC/SAG potential actions and DFG suggestion were believed to be covered or incorporated in some way in the recommendation above, and are therefore being removed from the version being forwarded to the BRCC and SAG for review at their January 20, 2012 meeting.

#### BRCC/SAG Potential Actions

- 8D: 17. Establish methods, guidelines, and policies for collecting, analyzing, archiving, and serving data and other information generated by research, monitoring, and modeling efforts of DFG personnel (3-0)
- 8D: 19. Publish guidelines for ensuring the quality, objectivity, utility and integrity of information used or disseminated by DFG (2-2)
- 8C: 16. [D]Develop Science Quality Assurance Plan to guide scientific efforts to produce timely, credible and objective results (Quality Assurance is rigorous internal and external review of study proposals, while Quality Control is rigorous administrative and peer review of completed studies) (5-2)
- 8C: 9. [D] Ensure that any science advisory panel adopts multidisciplinary approaches that include contributions from appropriate disciplines of population biology, oceanography, ecology, economics, statistics, modeling, and social sciences (3-1)
- 8C: 10. [D]Integrate the scientific method into DFG research, monitoring and evaluation of management actions (can include rigorous design and testing of null hypotheses, as well as incorporating other sources of scientific information as appropriate, such as descriptive studies, traditional ecological knowledge, strong inference, social science) (2-1)

#### DFG Suggestions

- (6, bullet 2) Review existing monitoring and other scientific endeavors within DFG to affirm scientific rigor and applicability to decision recommendations.

#### ***Potential Science Recommendation #3: DFG has capacity to provide credible science for management and policy-makers (now moved to #2 position)***

#### Implementation recommendations include:

- A. Request a cost-benefit analysis of what is involved in internal versus external development of science as well as barriers to improvement/making changes and include an identification of gaps and needs in scientific capacity, such as integrated resource management
- B. DFG has in-house experts who are skilled at supporting, developing and cultivating scientific partnerships.
- C. DFG has in-house scientists who are skilled at interpreting science and data to be effectively utilized by DFG.
- D. Scientific professionals in DFG are held to and protected by a DFG Science Quality Assurance and Integrity Policy
- E. Increase use of existing and available science, such as access to JSTOR

#### Ties to Strategic Vision

- Goal 3: An Effective Organization Objective 7: Improve and maintain credibility (scientific, decision-making, fiscal, etc.)

There was not sufficient time at the end of the meeting to determine if any of the following BRCC/SAG and DFG recommendations should be included in this recommendation. Therefore, they remain in the notes for reference but are not included in the final recommendation for the January 20, 2012 meeting.

#### SAG/BRCC Potential Actions

- 8A: 21. [A] Partner with educational institutions (from elementary thru university levels) and existing environmental education programs (like the California Envirothon) (3 – 0)
- 8B: 15. [A,B] Pursue formal and informal partnership/collaboration opportunities with all levels of government agencies (federal, tribal, state, local), stakeholder groups, private landowners, etc. (10-0)
- 8B: 7. [A,B] Enhance and re-establish partnerships with organizations that have scientific capacity (such as academic institutions, other credible scientific organizations and stakeholders, in order to expand ability to make decisions based on best readily available science) (6-0)
- 8B: 8. [A] Develop mechanisms to facilitate collaborative partnerships between DFG personnel and scientists from other state and federal agencies, academic institutions, and other appropriate third-party scientific organizations (3 -1)
- 8B: 10. [A] Promote active involvement of DFG employees in the larger scientific community (3-1)
- 8B: 9. [B] Encourage and facilitate partnerships with stakeholders (e.g., consumptive and non-consumptive resource users and citizen scientists) to participate in data collection (2-0)
- 8B: 29. [A,B] For data/ information gaps, and filling monitoring needs, establish partnerships and determine who will gather scientific information (avoid duplication of efforts) (1-1)
- 8B: 30. [E?] Reach out to the scientific community for assistance in designing management plans and conducting environmental reviews (0-2)
- 8C: 4. [A,B] To the extent possible, coordinate/integrate methods, guidelines, and policies with other scientific data collection and archiving efforts (7-0)
- 8D: 28. Provide scientific advisers to DFG and F&GC who are independent experts in economics and other social sciences, ecology and population biology (3-2)
- 8E: 21. [A] Coordinate scientific determinations with other state and federal scientific bodies (i.e. PFMC Science and Statistical Committee) (2-0)
- 8E: 1. [A- the matrix here could be a tool in A above] Identify the potential to coordinate with other agencies by developing a matrix that describes the interactive hierarchical structure of California agencies and extant offices within DFG that use guidance from science in conserving and managing California's natural resources (3-2)

#### DFG Suggestions

- (Number 6, bullet 3) Develop and implement a mechanism to improve the Department's scientific capability, including developing practices that ensure a rigorous science program within the Department that informs management and policy.

#### Other Input and Comments from Homework Volunteers

The other input and comments in this section were not discussed during the Jan. 17 science discussion meeting.

Eric Loft

A) Enhance scientific collaborations with educational institutions, state/federal agencies, and tribes to identify research and scientific needs for fish and wildlife. Establish funding streams and implement research priorities through cooperative/interagency agreements, standard agreements, and grants. Reduce state administrative barriers to collaboration with other government entities and academic institutions that treat these entities simply as contractors to DFG rather than as scientific partners.

Mark Rentz

Ensure continued and improved Department and Commission interaction and coordination with the appropriate... (state and federal agencies, academia, etc.)... to share, coordinate and enhance scientific research and knowledge, and identify opportunities to leverage limited resources amongst the partnering entities.

Eric

Request DFG provide a problem analysis describing the limitations and administrative hurdles to conducting effective scientific work—(contracting issues in DFG/DGS, classification, data sharing, agreement boilerplate, DFG project leadership, hiring of field technicians, difficulty in conducting environmental research under existing bureaucracy, multi-year funding limitations, project completion, analyses/product, and dissemination of results, etc.)

Eric

Facilitate and improve partnerships with stakeholder groups, landowners, and other non-governmental entities. Improve capability (reduce obstacles) to more easily enable granting/contracting capabilities with these entities for the conduct of scientific work.