

***The Role of Independent Science
Review in the Adaptive
Management Process for Large-
scale Restoration Program Success***

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Independent Science Review – Defined

- Scientific review conducted to ensure the “best available science” is applied to restoration implementation
- Performed by technical experts external (i.e., independent) to the organization/staff performing restoration
- Permanent/temporary component of AM program
- Different forms of application: advisory boards, peer review, independent science panels etc.
- Applicable to all phases of an AM program

Role of Independent Science

- Identify the best available science for a particular topic – assemblage of most prominent scientists
- Resolve differing interpretations of scientific information
- Determine if the best available science was used in preparation of specific restoration study, model, assessment process, etc.
- Review annual science plans and monitoring activities
- Transfer lessons learned from other restoration programs to specific applications

Role of Independent Science Con't

- Provide guidance in the application of adaptive management and/or structured decision making
- Maintain scientific integrity; build trust
- Provide guidance in the communication of science to decision-makers and the public
- Serve as communication vehicle with decision-makers
- Increase public involvement in the scientific element of a restoration program

Misuse of Independent Science

- Check-the-box
- Integration of policy and science
- Assignment of panel members with conflict-of-interest
- Vehicle for expressing personal bias
- Favorable public relations
- Publication of scientific reports for restoration program to gain credibility
- Appease stakeholders

Creation of Independent Science in the AM Process of Restoration Programs

- Mandated by enabling legislation
- Requirements built into governance structure
- Gov't agency protocol; e.g., endangered species recovery plans
- Resolution of scientific conflict among restoration staff
- Pressure from stakeholders to validate scientific information used in restoration

Maintain Integrity of Process

- Formal process - needs to be structured and well documented (e.g., administrative record)
- Well defined scope - address specific questions or issues
- Avoidance of policy discussions – panel lead/facilitator responsibility
- Recruitment of qualified and respected candidates (who selects candidates can be an issue)
- Avoidance of conflict-of-interest during recruitment
- Rules of engagement established and communicated

Timing of Independent Science Input

- Input from independent science needs to be scheduled to best inform restoration efforts
- Avoid “create/review/react” scenarios that may take months to complete
- Real-time input/feedback should be encouraged
- Contract mechanisms in place to accommodate independent science review

Communication between Science Panels and Restoration Staff

- Objective is to allow technical input to be timely/meaningful
- Maintain neutrality of science panels
- Communication should be structured and facilitated
- Panel members need to speak with a single voice
- Technical input needs to be regarded as recommendation/guidance rather than directive

Accountability of Scientific Input

- Results of science reviews should be presented to decision-makers and made public
- Technical input should be documented, tracked and progress reported to science panels and decision-makers
- Strategy needed for response to peer review comments (e.g., who responds; who referees comment response)
- Technical input from science panels should be regarded as learning opportunities by AM staff

Managing Conflict

- Need process for managing conflict
- Avoid inclusion of policy into the scientific debate
- Science panels need leadership to manage discussion and reach agreement
- What constitutes agreement defined
- Document majority/minority opinions

Recommendations

- Independent science review should be regarded as an essential element of an AM program
- Integrity of process should be maintained
- Avoid “create/review/react” situations - input from science reviews need to be timed to maximize usefulness
- Allow facilitated communication between science panels and restoration staff
- Have contractual mechanisms available for convening periodic science panels (e.g., peer reviews)
- Be accountable – provide mechanism for communicating and tracking of independent science recommendations
- Structure of independent science element should be reviewed periodically and modified if required