

BOARD OF FORESTRY AND FIRE PROTECTION

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Charter of the Effectiveness Monitoring Committee (EMC)

Necessity

The [Effectiveness Monitoring Committee](#) (EMC), formed in 2014, was established to provide the Board of Forestry and Fire Protection (Board) and the California Natural Resource Agency (CNRA) with a science-based committee whose charter is to better understand if the specific requirements of the California Forest Practice Rules (CA FPRs) and other laws and regulations related to forest resources are effective in achieving resource objectives. Effectiveness monitoring is a key component of adaptive management and is important towards developing a quantitative understanding of how management practices may impact resources, particularly as new regulations are developed. With dedicated funding from the Timber Fund ([AB 1492](#)), the EMC solicits robust scientific research that addresses specific forest practice rules and geographies to assess the effectiveness of regulations, regularly encouraging [new and diverse studies covering a broad range of biophysical categories](#)¹. Results may then be used to inform decision makers on options to incentivize or improve upon management to meet resource goals and objectives.

Insights from EMC-led research have the potential to link to a statewide monitoring effort being led by CNRA, also under AB 1492. The “ecological performance measures” initiative is [statewide, spatially explicit, consistent forest ecosystem monitoring and assessment](#)² and was developed to evaluate overall “ecological performance measures” (EPMs) of CA FPRs and related regulations at a watershed scale throughout the state’s forested ecosystems. The intent is that research findings originating from either the EMC or statewide forest ecosystem monitoring led by CNRA may mutually inform and direct further research on specific CA FPRs and other relevant regulations, all in support of adaptive management of the State’s natural resources (Figures 1 and 2).

¹ Refer to project listing at bottom of weblink provided, for more information

² [See also Ecological Performance Measures Charter](#)

Effectiveness Monitoring Committee



Short-term, discrete monitoring and assessment of specific Forest Practice Rules and related regulations in a focal study area to evaluate impact(s) on specific ecosystem indicators.

Statewide Ecological Performance Measures



Long-term, statewide, spatially explicit, consistent monitoring and assessment approach in forested ecosystems at the watershed scale. Ecological data across biophysical categories is aggregated to understand trends and isolate management impacts (e.g. Forest Practice Rules) on ecosystem services.



Assessment results from both approaches, will be used to inform **recommendations** to support **adaptive management**

Figure 1. Comparison between EMC (Board of Forestry) and EPM (CNRA) monitoring and assessment efforts under AB 1492.

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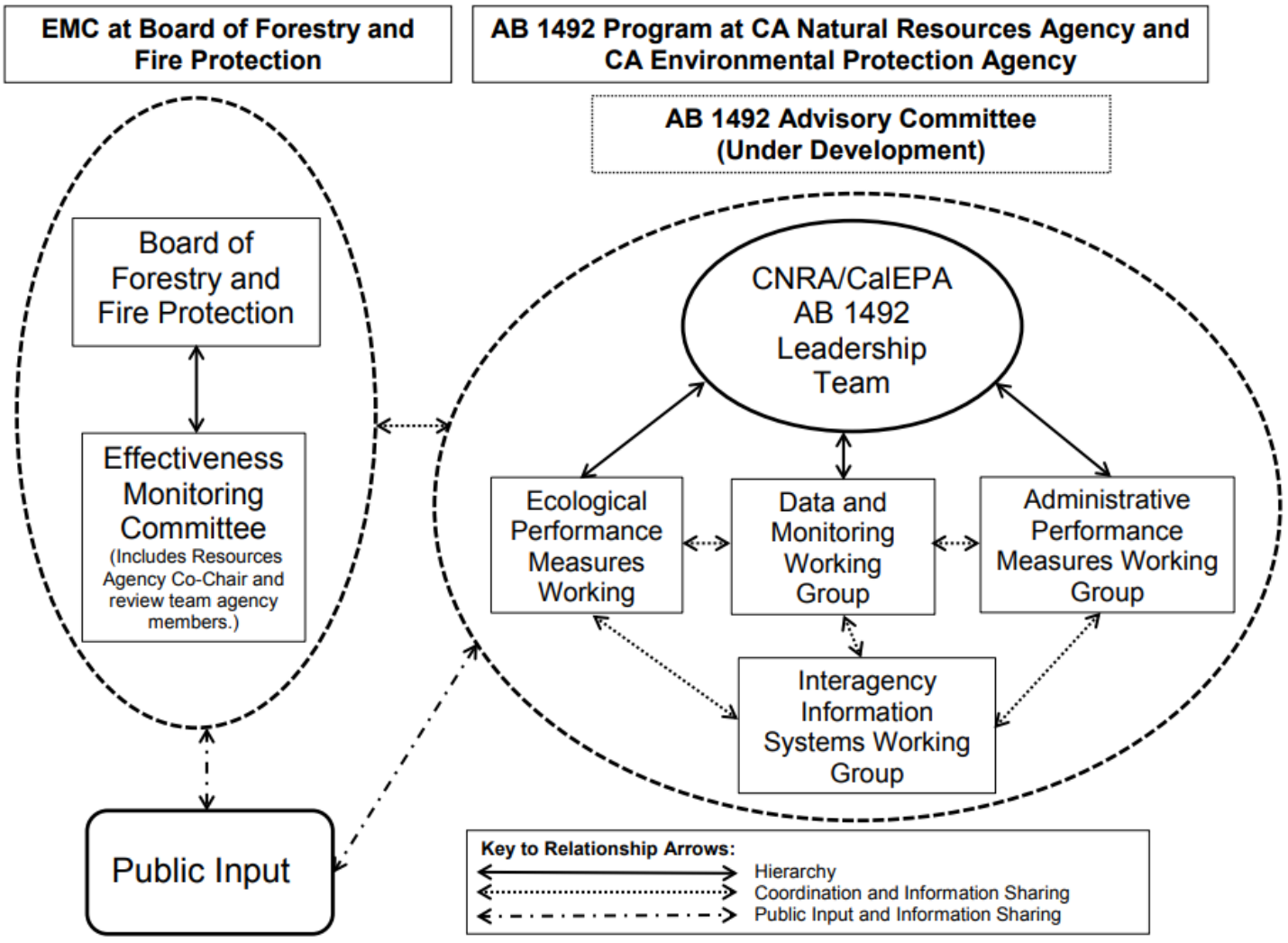


Figure 2. Relationship between EMC (Board of Forestry) and EPM (CNRA) monitoring and assessment efforts under AB 1492.

Purpose, Goals, and Objectives

The EMC acts as a technical advisory committee to, and receives oversight from, the Board to develop and implement an effectiveness monitoring program that can provide an active feedback loop to policymakers, managers, agencies, and the public. The EMC provides input to the Board to ensure a scientific-based monitoring effort is used to comply with the reporting requirements of AB 1492 and evaluates the effectiveness of the CA FPRs and other forestry-related laws and regulations related to water quality, aquatic habitat, and wildlife habitats. The EMC also provides input to the Board regarding a formal adaptive management approach to policy development and analysis.

Goals:

Establish a collaborative, transparent, and science-based monitoring effort and process-based understanding of the effectiveness of the CA FPRs and other forestry-related laws and regulations on maintaining or enhancing water quality, aquatic habitat, and wildlife habitats. The EMC will:

- a) Provide a framework and support to comply with the reporting requirements of AB 1492;
- b) Support an adaptive management process by providing feedback to the Board regarding CA FPR effectiveness;
- c) Facilitate and recommend monitoring practices to evaluate how well current practices restore and maintain riparian, aquatic, and terrestrial habitat on private and state forestlands for state and federally listed species and species of concern (aquatic and terrestrial);
- d) Ensure that the process is consistent with the goals of the Clean Water Act for water quality on private and state forestlands;
- e) Ensure that the process is consistent with the goals of the Federal and State Endangered Species Acts on private and state forestlands;
- f) Ensure that appropriate scientific methods and statistical evaluation, when necessary, are used to evaluate effectiveness of California Forest Practice Rules and other forestry-related laws and regulations;
- g) Encourage dissemination of information through general public and scientific outlets;
- h) An adaptive management program should ensure that the Board adjusts its regulations for protection of aquatic and terrestrial resources based on the most current and best available scientific knowledge and technical information; and
- i) Promote the use of the Demonstration State Forests for effectiveness monitoring of CA FPRs, water quality laws and Fish and Game codes, and other forestry-related laws and regulations.

Objectives:

- a) Involve representatives of key stakeholders that have demonstrated previous collaboration in resource monitoring or scientific studies;

- b) Develop an overall monitoring strategic plan or “road map” including:**
 - 1.** Catalog and review past and ongoing monitoring project results, encourage continuation of valuable projects/monitoring programs, help guide development of new approaches, and ensure that duplication is limited. The review should state in a hierarchical format the level of existing information for specific watershed and wildlife issues of concern.
 - 2.** Seek, accept and consider questions from stakeholders and the interested public (key areas of concern) about the effectiveness of specific aquatic or terrestrial-related forest practice rules (i.e., ecological performance).
 - 3.** EMC members, in conjunction with the Board, should identify critical monitoring questions that address various EMC goals and objectives.
- c) Develop guidance for appropriate scientific methods and statistical analyses to be used to evaluate the effectiveness of CA FPRs.**
 - 1.** Increase understanding of the linkage between forest practices and the resource(s) of concern.
 - 2.** Provide guidance for the acceptable level of scientific uncertainty across the broad spectrum of monitoring efforts from small-scale short-term monitoring to long-term replicated studies.
- d) Collaboratively develop methods to prioritize monitoring questions, and based on these methods, help select the highest priority projects to monitor.**
- e) Foster a collaborative scientific atmosphere to build partnerships and relationships. This may help defer or share the costs of monitoring and help build mutual trust and understanding of scientific results.**
- f) Promote collaborative fact-finding and understanding of scientific results at local, regional, and state levels.**
- g) Spread awareness of results to stakeholders, decision-makers, and the public through:**
 - 1.** Field tours.
 - 2.** Internet availability.
 - 3.** Workshops and conferences.
 - 4.** Scientific journals.
 - 5.** Other user-friendly formats.

Membership and Committee Structure

Appointment, Representation, and Compensation

The Board shall appoint EMC members and agency representatives³ that: (1) have scientific and natural resource professional backgrounds, (2) have demonstrated previous collaboration in resource monitoring or scientific studies, and (3) are willing to serve on the EMC. Members should be capable of working collaboratively and developing work products in a timely manner. Members shall be appointed by the Board, with appointees having expertise in hydrology, geology, fluvial geomorphology, aquatic ecology, fisheries, forestry, wildlife management, and/or resource monitoring and sampling. In addition, members shall also have a working knowledge of the CA FPRs and forest management operations on private and state forestlands.

Agency representatives will act as consultants rather than direct members. They will be expected to provide their respective agencies' policy perspectives and act as technical specialists.

A statement of qualifications shall be required to verify education and field/rule application experience. Members shall be appointed from academia, professional consulting firms, state and federal agencies, private and state forestland owners, and the public. Members should be applied scientists or natural resource professionals with demonstrated previous collaboration in resource monitoring that can also represent a stakeholder group.

There is no compensation for service on this advisory committee, but members shall be reimbursed for their expenses in attending meetings to the extent that the law allows.

Duration

The EMC shall be a permanent Advisory Committee of the Board. The duration for appointment to this committee is either two, three, or four years (i.e., mixed appointments).

Co-Chairs

The Board shall appoint Co Chairs for four year terms. One Co Chair will be a member of the Board of Forestry and Fire Protection and the other will be from CNRA.

³ Agency representatives include: Natural Resources Agency, Department of Fish and Wildlife, California Geological Survey, California Department of Forestry and Fire Protection, State and Regional Water Quality Control Boards, National Marine Fisheries Service, and US Fish and Wildlife Service. Review Team agencies will assign a lead representative and a back-up representative. Mr. Wade Crowfoot, Secretary for Natural Resources, will be consulted regarding agency representation.

Meetings

EMC meetings shall be publicly noticed and will be open to all interested parties, following the Bagley-Keene Open Meeting Act requirements. Meetings are anticipated to occur quarterly in noticed locations, and they will incorporate the use of web-based conferencing where possible. The EMC Co-Chairs shall invite public comment at specified times during a meeting. The EMC Co-Chairs and Board/CAL FIRE staff shall be responsible for determining meeting times, format, location, and duration. CAL FIRE and/or the Board shall provide staffing for the EMC. Meeting agendas shall be posted on the Board EMC website. Meeting minutes shall be posted on the Board EMC web site.

EMC members shall be required to follow meeting “ground rules” to foster a collaborative scientific-based approach to achieving the stated goals and objectives of the EMC.⁴ These include a commitment to:

- (1) Attempt to reach consensus,
- (2) Attend all scheduled meetings,
- (3) Listen carefully and ask questions to better understand unclear issues,
- (4) Have the EMC receive priority attention, staffing, and time,
- (5) Have all EMC members clearly define the purposes and goals of their organizations, and
- (6) Have all EMC members recognize the legitimacy of the goals and differing perspectives of other EMC member organizations.

EMC Actions

The goal will be to have all actions and recommendations made by consensus. Facilitation may be necessary. If failure to reach consensus occurs, the record (i.e., meeting minutes) shall specify the key differences and the reasons consensus could not be reached.

Implementation of Effectiveness Monitoring

Funding for the highest rated study proposals is expected to come from a combination of sources, including:

- AB 1492 (the lumber tax bill), requiring an evaluation of ecological performance [Sec. 4629.9 (a)(8)(F)], including monitoring the effectiveness of regulations promoting ecological benefits.
- State and private sources.
- Grants.

⁴ Note that these ground rules are based on those used by the Timber, Fish, Wildlife (TFW) Group in Washington, and have proven highly valuable (WFPB 1987).

Reports and Adaptive Management Process

Members of the EMC or principal investigators conducting monitoring will synthesize the results into final reports for the EMC. The reports shall include descriptions of the purpose and necessity, scientific methods, results and technical analysis, evaluation of implications for resources and forest management operations, and disclosure of any possible limitations of results and any scientific uncertainty. The reports shall not provide policy or regulatory recommendations, other than ideas for potential further refinement of study methods to address any significant limitations and remaining scientific uncertainty. All final reports will be made available to the public on the internet.

All reports shall discuss the statistical, physical and biological relevance of the monitoring and results. Due to relatively small sample sizes and lack of controls for both dependent and independent variables associated with “specific question” studies, statistically rigorous testing of water-quality, aquatic habitat and wildlife resource questions are often difficult. However, well developed resource monitoring questions can improve scientific monitoring designs to limit spurious results and enhance the range of inference. Both statistical and biological relevance of the monitoring and the resulting acceptable level of scientific uncertainty should be clearly stated in each monitoring proposal and final report.

Development of possible rule language options (i.e., adaptive management)⁵ based on results and findings of EMC reports, if necessary, shall be proposed by or brought before the Board’s Forest Practice Committee for review and comment prior to submittal to the full Board.

Assistance and Oversight

The EMC Co-Chairs may seek technical advice from, including but not limited to, other state agency or departments, federal agency representatives, and technical experts on developing effectiveness monitoring projects.

The Board’s Executive Officer and/or Board staff will act as the liaison between the Board and the EMC.

⁵ Gregory, R., D. Ohlson, and J. Arvai. 2006. Deconstructing adaptive management: criteria for applications to environmental management. *Ecological Applications* 16(6): 2411-2425.