

EFFECTIVENESS MONITORING COMMITTEE

P.O. Box 944246
SACRAMENTO, CA 94244-2460
Website: www.bof.fire.ca.gov
(916) 653-8007



Effectiveness Monitoring Committee (EMC) Meeting Notes

Meeting Date and Time: September 28, 2022 9:30 AM

Hybrid Meeting (physical and virtual options)

Physical Meeting Location: California Natural Resources Agency Headquarters, 715 P Street, Sacramento, 95814, 2nd floor Conference Room 2-309

1) Participants (29)

Members Present – Dr. Elizabeth Forsburg-Pardi (Co-Chair), Bill Short, Jim Burke, Ben Waitman, Jessica Leonard, Drew Coe, Justin LaNier, Matt House, Sal Chinnici, Dr. Stacy Drury, Peter Freer-Smith, Dr. Michael Jones, and Dr. Leander Love-Anderegg

Members Absent – Loretta Moreno, Clarence Hostler, and Dr. Matt O'Conner

Staff – Dr. Kristina Wolf, Jane Van Susteren, and Curtis Yee

Audience Participants – Anna Castro, David Fowler, Elicia Goldsworthy, J. Lopez, James Orlando, Matthew De Parsia, Nadia Hamey, Rich Wade, Robert Douglas, and Roberta Lim.

2) Report by the Co-Chair – Dr. Forsburg-Pardi

A. Membership Updates

i. Introduction of Dr. Michael Jones

Dr. Jones is the Forest Advisor for Mendocino, Lake, and Sonoma Counties, U.C. Cooperative Extension. Dr. Jones' appointment to a seat on the EMC as part of the Monitoring Community was approved by the Board at the November 2nd meeting; their term starts 11/2/2022 and expires 11/2/2026.

ii. Open Seats

There are up to 5 seats that could be filled on the EMC (4 mandated, one additional with US Forest Service; of those, only 2 seats are currently vacant at this time, and the other 3 are filled by current members will vacate them, and they would be replaced once an appropriate candidate can be found. The seats include the following:

1. Monitoring Community

2 open/pending open seats

- 1 seat open, previously filled by forest ecology/forestry expertise from UNR.
- 1 seat to be vacated by Matt House, from Green Diamond, who has Hydrology and Fisheries expertise; we have an applicant from Green Diamond to fill that seat, and that will be reviewed and voted on today if there is a quorum.

2. Agency Representatives

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Up to 3 open/pending open seats

- Department of Forestry and Fire Protection (CAL FIRE) – seat not currently open but will be vacated by Member Coe once qualified candidate can be appointed; background is hydrology and forestry, and current member is an RFP.
- US Fish and Wildlife Service – mandated agency representation; Lilian (Lorena) Vincent-Solorzano has been recommended by the USFWS to represent their agency on the EMC. An interest letter and Curriculum Vitae should be received by end of the month.
- US Forest Service (USFS) – seat not currently open but will be vacated by Member Dr. Drury; not a mandatory seat but the USFS has had agency representation on the EMC for some time, and there is strong EMC support for keeping this representation on the committee. Member Drury reported that he has not found a suitable candidate at this time, but there are several new employees that could be good fits.

B. Grant Solicitation Update

Dr. Forsburg-Pardi reported that the grant application was open through September 14th, and 5 project proposals were received. These will be discussed today later in the agenda.

We received some good feedback from applicants on improvements for next year, but these did not seem to prevent anyone from applying or providing the requested information. Dr. Wolf has already begun revising this document for next year's Request for Proposals (RFP), assuming one is released next year (note: if all available funding is allocated for the next three years to the EMC-support projects selected in this year, then no RFP would be released for the following two years).

C. Wildfire & Forest Resilience Task Force Update

The Task Force met yesterday in Grass Valley, Loretta attended and is currently out so no update at this time.

3) Project Updates

- Member Coe reported that the monitoring of EM/EX notices as a legislative mandate is a parallel process to the EMC's adaptive management framework utilized for informing policy development. A fourth internal report draft on the forest fire prevention exemption is coming close to submission, and he wishes to draw this to the attention of the EMC to this as part of the adaptive management cycle and the direct relationship to the effectiveness of the Forest Practice Rules (FPRs). Member Coe also reported that there is a second round of emergency harvest monitoring and a draft report will likely be ready by winter of 2023. Other drafts have made it to the legislature but stalled out; he hopes that the addition of new elements to the protocol in this upcoming draft will move it forward.

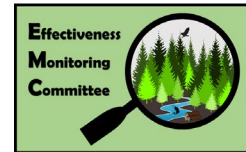
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- **EMC 2017-001: Caspar Creek Experimental Watershed Nutrient Flow** – Member Coe reported that the final report is in hand with the goal of turning this into a publishable manuscript. Member Coe will talk to Principal Investigator (PI) Dr. Helen Dahlke about how to move forward.
 - **EMC-2018-006: Effect of FPRS on Restoring Canopy Closure, Water Temperature, & Primary Productivity** – Member House reported that data collection for the summer is complete, and equipment is ready for winter data collection. Master's student Jonah Nicolas will be finishing his thesis and defending in November. The PI will be working with post-doctoral scholar Dr. Lorryne Miralha on the data, and they will hopefully have a report on this project next year.
 - **EMC-2016-003: Road Rule Effectiveness at Reducing Mass Wasting with LiDAR assessment** - Member Short stated that since the last meeting work is proceeding at a good clip now that LiDAR deliverable problems have been resolved. This also relates to agenda item 7, the update on the Strategic Plan; he will talk about that when we come to that item.
 - **EMC-2021-003: Evaluating Response of Native Pollinators** – Dr. Wolf asked for a volunteer to act as the project liaison for this new project; Member Dr. Jones volunteered to take on this role.
 - **EMC-2019-002: Evaluating Fuel Treatment Longevity and Maintenance Needs for Fuel Reduction Projects Implemented in the Wildland Urban Interface in Plumas County, California** – Member Dr. Drury is the project liaison. Dr. Wolf asked for a volunteer to pair with Member Dr. Drury to complete the Completed Research Assessment. Member Coe volunteered because of the topic overlap with his fuel hazard reduction activities.
 - **EMC-2019-005: Large Woody Debris Impact on Salmonid Habitat** – Dr. Wolf reported that the project was unable to be completed as originally planned, and that \$9000 was distributed to the PI but the pandemic and fires halted the project. Member Short reported that the area was covered by the CZU fire, and there was uncertainty if the Timber Harvest Plan (THP) would go forward, which was a critical part of the research plan. Therefore, California Geological Survey (CGS) is continuing with a slightly modified study of their own. This will not longer be counted as a formal EMC project, but they will be able to provide results to the EMC at some point on this new research endeavor. The THP has been approved and is being operated on now. Therefore, the equipment costs haven't gone to waste.
- 4) Project Update: EMC-2017-012 – Assessment of Night-Flying Forest Pest Predator Communities on Demonstration State Forests – with Monitoring across Seral Stages and Silvicultural Prescriptions – Dr. Michael Baker, CAL FIRE**
- Dr. Baker provided an update on the first season of field data collection on EMC-2017-012, which was jointly funded by Cal FIRE, the Demonstration State Forest, and the EMC. Dr. Baker will provide slides on request (email kristina.wolf@bof.ca.gov to request slides). Slides can also be found online: https://bof.fire.ca.gov/media/ytzh1tsb/4-emc-2017-012-m-baker-2022-09-28_ada.pdf

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Background. Bats are cryptic, nocturnal, small, and easy to overlook, and they make up to 25% of mammal species. There are 23 species of bat in California, and about 17 species of bat in California forests, and most are listed as some “level of concern”, although none are listed under the Endangered Species Act (ESA) or California ESA (CESA), and none are currently candidates for listing. Bats provide billions of dollars of value in pest control for agriculture so it is likely they do the same for forests. Insect damage is a leading cause of tree mortality in our forests. Bat populations in are California decreasing, and throughout North America they are dying due to white-nose syndrome, and some call this “The most severe wildlife disease in recorded history.” It has reached California in recent years.

Research Question. This study focuses on forest stands where bats would be foraging for insects (avoiding travel routes or watering sites). The researchers wanted to explore bat communities in 50+ year old stands and in old growth at Jackson Demonstration State Forest (JDSF). The main monitoring question asked is, “Are the FPRs effective in promoting habitats suitable for bat survival?” Related FPRs and associated regulations include: 14 California Code of Regulations (CCR) § 897, 14 CCR § 912.9 (932.9, 952.9), 14 CCR § 913.4 (939.4, 959.4), and 14 CCR § 919 (939, 959), with relations to EMC Research Themes 7 (Wildlife Habitat: Species and Nest Sites), 8 (Wildlife Habitat: Seral Stages), and 10 (Wildlife Habitat: Structures).

Methods. Acoustic sampling sites were located in mature stands (> 50 year old stands, and old growth redwood) about 15 miles from the coast to avoid coastal fog influence and were positioned in two drainages (James Creek and Chamberlain Creek) on the eastern edge of JDSF. Included five full nights of sampling from dusk to dawn. Monitoring consisted of using both insect traps and bat detectors. Insect trapping included only availability data. Detectors were placed mid-canopy using extendable poles where there was less foliage to improve quality of recordings. Also included were ancillary bat capture efforts, which may be the least important but most fun aspect of this research, with a primary goal to find reliable capture sites for demonstration. It takes intense, recurrent sampling over many nights to determine best sampling areas. Sampling occurred over 166 nights, creating over 72,000 sound files, and occurred in 8 acoustic sampling sites over the two creek drainages.

Results. Of the 72,000 sound files collected, 66.5% contained likely “bat tonal information”. Bats that call at frequencies (smaller, shorter, broader winged) of about 30kHz (i.e., “Hi-F species”) were detected over four times more often than “Lo-F species” (generally larger, more narrow wings), which makes sense since they sampled within forest canopies. Hi-F species are better adapted at foraging in more “cluttered” airspace than Lo-F bats as they can maneuver more effectively. Bat calls for both types were detected from an hour after sunset to an hour before sunrise. Most activity occurred in August, followed by June, July, September, and October.

Bat calls were conservatively classified almost 13,000 recordings to species levels for 7 species. Another 439 calls were likely other species, but required more manual vetting; less than 4% of calls were not classified. The most common species (10x more common than other species) was California myotis (*Myotis californicus*), a Hi-F species, which was heard on 98.8% of nights, and on average was detected over 60 times (i.e., calls) per night per site. The second most commonly

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detected bat was the silver-haired bat (*Lasionycteris noctivagans*), a Lo-F species, which was detected 5.8 times per site per night. Even the least frequently detected species—the big brown bat (*Eptesicus fuscus*) was detected more than 50% of the time and was detected at all sites. All but one species was detected at all of the sites; the fringed myotis, *Myotis thsanodes*, was absent at only one of the the 8 sample sites. Manual vetting on less-confident classifications had less certain IDs, but they were likely from 6 additional species. Of these, two were confidently identified as the Yuma myotis (*Myotis yumanensis*) and the little brown myotis (*Myotis lucifugus*), so they were added to the list of bats at JDSF, bringing the “confirmed” total to 9 species.

Mist netting was relatively unsuccessful, with captures attempted at 3 sits over 4 nights from May to July, with only 2 bats captured on 1 night, both of which were non-reproductive males. Capture success was low, but effort was low as well. There are plans to conduct more capture efforts in the future in reliable sites on Demonstration State Forests, including JDSF.

Insect Data: Twelve families of moth were captured. Insect families with the majority of forest tree pests were found at all 8 sites. Quite a few beetles that are tree pests were also collected. The majority of forest tree pests belonged to the Orders Lepidoptera and Coleoptera.

Discussion and Conclusions. Data pertained only to low canopy mature coastal redwood-dominated mixed conifer stands on the eastern portion of the JDSF, and results should not be extrapolated beyond this context. Other habitat types and canopy strata would likely reveal different species compositions and potentially more or different species. Unlike in birds, bats call for navigation and prey-finding, and species identification based on bat calls should be conducted conservatively. Bats can adjust their calls to the situation, and uncommon or quiet species may remain undetected.

Major findings included enormous amounts of bat activity between May and November, at minimum. There are at least 9 bat species at minimum on JDSF foraging in the canopy of mature stands at JDSF. There are also at least 6 insect orders and 13 moth families on JDSF, with at least 66 known insect tree pest species from California. Time limits (soon after sunset until just before sunrise) indicate that roosting is occurring in or near the stands that were sampled.

Are the FPRs effective in promoting habitats suitable to forest bat communities that prey on forest insects? – Yes. Feeding and roosting sites are present at JDSF under the FPRs.

- Regarding Theme 7, Wildlife Habitat: Species and Nest (Roost) Sites: A minimum of 9 species are documented, due to timing of calls roost sites are inferred.
- Regarding Theme 8, Wildlife Habitat: Seral Stages: Will be covered in final report for all DSFs sampled.
- Regarding Theme 10: Wildlife Habitat: Structures: Bat activity within 1 hour of sunset through 1 hour of sunrise indicates nearby roost structures.

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Next steps. Moved project to sample at the Mountain Home Demonstration State Forest, and data collection is underway. Insect trapping and bat capture have not yet occurred due to delays with renewal of the collection permit.

Future projects will mirror the current format for data reporting for each demonstration state DSF and will incorporate background information. The final report will ultimately aggregate results from all four DSFs and analyze habitat measures, silvicultural history, and local and landscape measurements.

Question & Answer Session.

- Member Wolf: What is the timeframe for sampling at additional DSFs, and when do you anticipate wrapping up this project? Dr. Baker reported that sampling was interrupted by Covid-19 and fires, but they have a full season of data collection wrapping up at Mountain Home currently. The plan is to move to Soquel DSF in summer 2023 and then Latour DSF in summer 2024, with the hope of having a final report ready in 2025.
- Member Chinnici: Do any study sites in the future include areas that have undergone fire or fuel reduction treatments? Dr. Baker responded that they have not planned for this at any of the sites. However, fire at Mountain Home in the recent past might reveal some interesting results, but the fire was not catastrophic, so it may not have detectable differences due to the fire. This may be a focus of sampling at Soquel or Latour, depending on site availability and forest manager interest, but this was not part of original plan. It would be nice to compare Mountain Home and Jackson, but there is likely too big of a difference to allow for direct statistical comparisons. They would like in the future to build a larger data set to look at all four forests together. Boggs DSF might be a good place to look at recent catastrophic fire, but in this initial research, the idea was to give the forest a chance to regenerate before sampling. There are some studies occurring on post-fire treatments, and there is a possibility of adding bat listening stations on those sites, but it seemed wise to wait until there were definite impacts from regeneration.
- Member Coe: Knows Member Jones is working at JDSF on pre- and post-fire treatments. This research is the goal standard for implementing bat studies on other projects with a pre- and post-treatment emphasis. Dr. Baker has heard about bird and bat monitoring on that project and hopes to be involved.

5) Review of Initial Concept Proposals – Dr. Wolf, Board staff, and Co-Chair Dr. Forsburg-Pardi

Dr Wolf provided an overview of the EMC budget. The EM is allocated \$425,000 a year in research funding. If all projects were fully funded at the requested level, the EMC would be short by about a half-million dollars, so decisions about funding would be necessary, or clarifications about funding requested could also change this. The EMC considered each project in turn, and after a discussion and roll call with each EMC member's decision on whether or not to request a Full Project Proposal from the PI. After discussion the EMC would vote on whether or not to request a Full Project Proposal from the PI for consideration at the next EMC meeting. See budget

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description online: <https://bof.fire.ca.gov/media/c5pg5ytu/5f-emc-budget-projections-2022-23-research-proposals.pdf>

Member Chinnici reminded the EMC that full funding does not need to be granted/recommended for a project; partial funding could be offered if more funding than could be provided was requested. Member House asked, "If we fund everything as it is requested, the implication is that there would be no additional projects for funding in the next two fiscal years for 2023/24 and 2024/25. Dr. Wolf confirmed this, and provided examples for how funding could be allocated over the next three years to better distribute funding among projects within the EMC's available funding budget. Chair Dr. Forsburg-Pardi wanted to clarify when the EMC would be determining funding allocations. Dr. Wolf stated that at this meeting the Initial Concept Proposals (ICPs) are reviewed to decide if a Full Project Proposal (FPP) would be requested from the PIs. The FPP would include a line-by-line budget by year, and these would be reviewed at the next EMC meeting. Member House asked if EMC-2022-001 had a change to the ICP for the budget. Dr. Wolf confirmed this, and will share those changes when the EMC comes to that point. All EMC members received copies of the ICPs on September 16th to review prior to this meeting. Discussions for each project follow, along with member comments and each member's position on requesting a FPP. At the end of that, a vote would be taken for which projects FPPs should be requested.

EMC-2022-001: Aquatic Toxicity and Cumulative Watershed Effects of Pesticide Discharge Related to Post-Fire Reforestation

The ICP can be found online: https://bof.fire.ca.gov/media/yicsjz55m/5a-emc-2022-001-emc-icp_redacted.pdf

- Member Drury: Everyone is doing post fire rehabilitation and restoration projects and he'd be interested in seeing what the impacts of herbicides to allow seedling survival would be interesting. Saw that they said there were no limitations to pesticide use in the FPRs. Would like to hear comments on that. Interested in seeing the FPP.
- Member Burke: Likes this project, as he works a lot on fire salvage projects, but it is a pretty expensive project. Interested in seeing the FPP.
- Member LaNier: This is a water quality project that the Central Valley Water Quality Control Board (CVWQCB) support. Member LaNier pointed out the strong collaboration between the US Geological Survey (USGS) and the pesticide regulatory group and highlighted this novel technique to quantify chronic toxicity levels from herbicide. Interested in seeing the FPP.
- Member Short: Echoes previous EMC members. This is an interesting project and he would like to see more information on total funding. Interested in seeing the FPP.
- Member Coe: Interested in seeing the FPP.

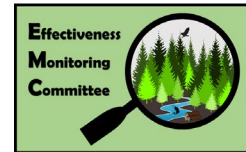
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- Member Love-Anderegg: Critical Monitoring Question (CMQ) 5b is an interesting area to target, and this project has a good chance to yield interesting information. Interested in seeing the FPP.
- Member Freer-Smith: Interested in the point previously mentioned that there is a lack of specific pesticide regulation in the FPRs. Interested in seeing the FPP.
- Member Chinnici: When this study was proposed last year, there were comments that there were other regulations and rules that are covered outside the FPRs but does not recall the specifics of that. Interested in seeing the FPP.
- Member House: Interesting proposal to look at sampling methodology. Pesticide regulation is under the jurisdiction of the Department of Pesticide Regulation, and therefore questions whether the EMC is the right venue. Would not support requesting a FPP. However, he did note that there have been many fires and we want to see if there are effective Best Management Practices (BMPs) for herbicide use in place.
- Member Jones: Felt there were some glaring omissions in the methodology and would like to see a much more robust description of methods; is also concerned about the high budget. Would like to see the budget breakdown. Felt that although pesticides might fall under DPR, this could still fall under the purview of the EMC. Interested in seeing the FPP.
- Member Leonard: Project has important implications for water quality. Interested in seeing the FPP.
- Member Waitman: He remembers funding a similar proposal in the last round; does anyone know how those two proposals are related? Dr. Wolf clarified that there was a proposal recommended for funding but it was withdrawn because of the inability to meet indirect cost limits. Interested in seeing the FPP.
- Chair Dr. Forsburg-Pardi: Interested in seeing the FPP.
- At the end of the discussion, there were no changes in individual members' initial comments in terms of their desire to request a FPP or not.

EMC 2022-005 The efficacy of automated recording units for determining the presence of marbled murrelets (*Brachyramphus marmoratus*) compared to audio-visual surveys at a range of historically occupied sites

The ICP can be found online: https://bof.fire.ca.gov/media/v4jfyv3o/5b-i-emc-2022-002-emc-icp_redacted.pdf; https://bof.fire.ca.gov/media/jetfm55z/5b-ii-emc-2022-002-budget-breakdown_ada.pdf

- Member House: Interesting study with benefits to several parties. Is a methodological study hat doesn't result in impacts to the Forest Practice Rules. Would require path through the US Fish & Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW). Good study but not necessarily a good match for the EMC. Would not support requesting a FPP.

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- Member Chinnici: Is a collaborator. Recused himself.
- Member Freer-Smith: Uncertain on this one because of the focus on methodology rather than impacts. The answer to that uncertainty is to request a full proposal and ask the applicants to explain how the results would be used to answer questions about the effectiveness of the FPRs. Interested in seeing the FPP.
- Member Jones: Would like to see more emphasis on how this proposal is related to the FPRs. Interested in seeing the FPP.
- Member Short: Concurrs with other members. Interested in seeing the FPP.
- Member Leonard: Supports the proposal with the same questions previously mentioned. Interested in seeing the FPP.
- Member Drury: Would like more explanation of how this research is related to the FPRs and is on the fence on whether to look for a full proposal, but ultimately is interested in seeing the FPP.
- Member Waitman: Echoed Member House's thoughts on the protocol being under the purview of the USFWS. However, the FPRs require the use of the best available science and this could be part of that best available science. Thinks the proposal addresses the cumulative impacts, and it is unclear how the results would inform that and the FPRs. Interested in seeing the FPP.
- Member LaNier: Agrees with previous statements, but likes the methodology, and the EMC has funded methodology studies in the past. Interested in seeing the FPP.
- Member Coe: Would like a more complete explanation of linkages to the FPRs. Interested in seeing the FPP.
- Member Love-Anderegg: Concurrs; is skeptical about linkage with FPRs. Interested in seeing the FPP.
- Member Burke: Far outside his area of expertise, but no harm in seeing more information on the proposal. Interested in seeing the FPP.
- Chair Dr. Forsburg-Pardi: Would like to see additional information on connections to FPRs and CMQs. Interested in seeing the FPP.
- At the end of the discussion, there were no changes in individual members' initial comments in terms of their desire to request a FPP or not.

EMC-2022-003 San Vicente Redwoods Post-Fire Redwood Defect Study

The ICP can be found online: https://bof.fire.ca.gov/media/pyjloqtz/5c-i-emc-2022-003-emc-icp_redacted.pdf; <https://bof.fire.ca.gov/media/jazdctxs/5c-iii-emc-2022-003-emc-icp-attachment.pdf>

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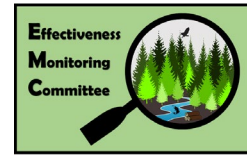
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- Member Chinnici: Interesting study. Interested in seeing the FPP.
- Member Short: Does not see an academic as a collaborator or PI and would suggest adding an academic or other entity from a forest service research station. Interested in seeing the FPP.
- Member Freer-Smith: Uncertain on this one, and the next three all related to wildfire theme. This is the least likely to be focused on the FPRs of those three. This is of primary interest to the industry (i.e., the amount of damage in subsequent years resulting from a fire). At this stage, would not request a FPP.
- Member Love-Anderegg: Is having trouble seeing how this relates to the effects on the FPRs, but would lean towards like to see a FPP.
- Member Jones: This is a project that he's been thinking about, and he would like to see a full proposal. Thinks the authors could refine the proposal to look at impacts to ecology/ecological services to expand the implications and investigate how that ties into forest practice rules and post-fire management. Interested in seeing the FPP.
- Member Drury: Concurs with what has been said thus far. As a research fire ecologist he loves the topic. There is a lack of information on redwoods and there is a lack of consistency in the literature about fire return/fire scarring/tree survival and sees how this might be linked back to the FPRs. Interested in seeing a more developed FPP.
- Member Leonard: Unsure and would like to see a better connection between the project goals and impacts of the FPRs and CMQs, as well as stronger connections to minimal stocking and wildlife habitat. Interested in seeing the FPP.
- Member Coe: Echoing previous comments, as he had a hard time linking this to the FPRs. Having worked on post-fire emergencies, he understands the practitioner has a lot of leeway to select the trees that they think will die and this could to better or more explicit rules instead of impacts to current rules for emergencies. Of the three so far, this has the weakest link to the rules. Interested in seeing the FPP with more detail on the linkage to the FPRs.
- Member House: Limited geographic scope of the project to redwood region, an area with relatively low fire impact, so it may have limited scope. However, this has value from a management perspective to assist land managers in deciding which logs to harvest post-fire. Interested in seeing the FPP wants to see a better linkage to the FPRs.
- Member LaNier: Agrees with Member House, especially on geographic ability. Can assess when we have the full proposals. Not sure, looking backwards, that the FPRs really affect severity. Interested in seeing the FPP.
- Member Burke: Thinks that this can help inform potentially important questions. A question that you'll hear from us is "do 20th century rules still make sense for a 21st century reality". Interested in seeing the FPP.

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- Member Waitman: For reasons that have already been stated (i.e., tenuous or lacking link to the FPRs and CMQs). Would not request a FPP.
- Chair Dr. Forsburg-Pardi: Interested in seeing a FPP with stronger explanation of link to the FPRs.
- At the end of the discussion, there were no changes in individual members' initial comments in terms of their desire to request a FPP or not.

EMC-2022-004 A critical evaluation of Forest Practice Regulation's capacity to accommodate forest restoration and resilience targets as defined by historical reconstruction studies

The ICP can be found online: https://bof.fire.ca.gov/media/1qahcfec/5d-emc-2022-004-emc-icp_redacted.pdf

- Member House: Really relevant project proposal given current fire risk. This proposal investigates important questions that need to be resolved if they want to meet the state's fuel targets on private land. Would like to hear about riparian habitats and different standards for those as well. Interested in seeing the FPP.
- Member Short: Interested in seeing the FPP.
- Member Coe: This is the strongest proposal out of the five. He is dealing with this in fuels management exemptions. The FPRs have many metrics that we have to meet and to some extent his results show that they might conflict. This study investigates those. Interested in seeing the FPP.
- Member Waitman: Interested in seeing the FPP.
- Member Leonard: Interested in seeing the FPP.
- Member Jones: Interested in seeing the FPP.
- Member Chinnici: Interested in seeing the FPP.
- Member Freer-Smith: Interested in seeing the FPP.
- Member Love-Anderegg: Interested in seeing the FPP.
- Member LaNier: High benefit to cost ratio. Strong yes. Interested in seeing the FPP.
- Member Burke: Interested in seeing the FPP.
- Member Drury: This proposal gets at addressing the FPRs from the beginning. The PI already has an ongoing EMC project, are we at all concerned about repeat funding for people who haven't finished their current projects? Dr. Wolf said that no, there are no issues with having more than one in-progress project with the EMC, particularly because there are no issues with progress or deliverables on that other project, and they are within their timeline and budget. Per Member Coe, more than one project funded by the EMC running concurrently has

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happened in the past, so there is precedent for this. Member Drury concurs with Member Coe: This proposal gets at what we manage for in the future. Interested in seeing the FPP.

- Chair Forsburg-Pardi: Pleased to see the connection in this proposal to the conversations happening in the Board of Forestry & Fire Protection's Management Committee. Interested in seeing the FPP.
- At the end of the discussion, there were no changes in individual members' initial comments in terms of their desire to request a FPP or not.

EMC-2022-005 Decay rate and fire behavior of post-harvest slash in coastal redwood forests

The ICP can be found online: https://bof.fire.ca.gov/media/30cjaek3/5e-emc-2022-005-emc-icp_redacted.pdf

- Member Short: Question the amount of money requested, as it was put in for all of the month that would be allocated to the EMC over the next three years. Could this be accomplished at a lower dollar amount? Does not support requesting a FPP.
- Member House: Thinks the project has a clear connection to the FPRs and is germane to fire issues. Geographic scope limiting. Good concept, but has similar concerns about the amount requested for the project. Interested in seeing the FPP.
- Member Chinnici: Relevant proposal, and agrees with comments about amount being requested. The EMC could offer some portion of the budget and allow them to find other funding sources. Interested in seeing the FPP.
- Member Burke: Agrees with previous comments. Worth pursuing, but the cost is high. Interested in seeing the FPP.
- Member Love-Anderegg: Interested in seeing the FPP.
- Member Waitman: Interested in seeing the FPP.
- Member Coe: Absent at time of discussion.
- Member LaNier: Share concerns about funding. Interested in seeing the FPP.
- Member Leonard: Share concerns about funding. Interested in seeing the FPP.
- Member Jones: Recused himself.
- Member Freer-Smith: Would like to see budget concerns addressed. Interested in seeing the FPP.
- Member Drury: Would like to see an extensive discussion of the areas that will be impacted. Agrees with the concern that a lot of the research done outside of the coastal area and then brought to the redwoods is done in systems very different from the redwoods. The PIs need to address wind-driven vs. fuel-driven fires, as they seem to conflate them. They also need to

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address methodologies as well when they're looking at FIREMON procedures. Interested in seeing the FPP.

- Chair Dr. Forsburg-Pardi: Relevant. Interested in seeing the FPP.
- At the end of the discussion, there were no changes in individual members' initial comments in terms of their desire to request a FPP or not.

Summary of Results

Dr. Wolf summarized the results:

EMC-2022-001: 12 members support requesting a FPP, 1 member no.

EMC-2022-002: 11 members support requesting a FPP, 1 member no, 1 member abstained.

EMC-2022-003: 11 members support requesting a FPP, 2 members no.

EMC-2022-004: 13 members support requesting a FPP

EMC-2022-005: 10 members support requesting a FPP, 1 member no, 1 member abstained.

Voting Record

Member Chinnici moved to request a Full Project Proposal from all five of the ICPs received; this was seconded by Member Drury. Dr. Wolf called the question.

Drury	Aye
Leonard	Aye
Coe	Absent at time of vote
LaNier	Aye
Short	Aye
Burke	Aye
House	Aye
Chinnici	Aye
Jones	Aye
Waitman	Aye
Anderegg	Aye
Freer-Smith	Aye
Forsburg-Pardi	Aye

Motion passes unanimously. Full Project Proposals will be requested from all five of the PIs from which ICPs were received. Dr. Wolf will compile comments from the members for the applicants to address in their FPPs.

Skipped to Item 7, and will return to Item 6.

7) Update on Strategic Plan Final Draft – Dr. Wolf, Board staff (15 min) (switched in order with 6)

Dr. Wolf reviewed the Effectiveness Monitoring Committee Strategic Plan for voting by the EMC. Related documents can be found online: <https://bof.fire.ca.gov/media/gqikpc5o/7a-2018-emc->

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[strategic-plan.pdf](#); <https://bof.fire.ca.gov/media/w2pjecsf/7b-2022-emc-strategic-plan-draft-2022-08-05.pdf>; <https://bof.fire.ca.gov/media/1zdge23l/7c-2022-emc-strategic-plan-draft-tracked-changes-2022-09-20.docx>; https://bof.fire.ca.gov/media/ydweojtn/7d-2022-emc-strategic-plan-draft-clean-2022-09-23_ada.pdf

Member Short noted that in this draft version Section 3.2.2 was struck out with a comment that it is no longer relevant. He disagrees, as stochastic events have a strong impact (e.g., road crossings in rainfall extents). Dr. Wolf responded that this section is included in the current draft, and was not struck from the final draft. Member Short was satisfied with the inclusion.

Member Chinnici asked for a quick review of the final changes in the document before a final vote.

Dr. Wolf stated that this draft contains changes made by Co-Chair Moreno, who is not present. Chair Moreno made numerous non-substantiative changes since the last draft, and that draft with her changes shown is available online for review, if anyone is interested. There were no substantiative changes to the comments besides formatting changes. The one major change was that the Research Themes and CMQs were removed and is now a stand-alone document, as is the Strategic Plan which now only references the CMQs and the process used to develop them, but most the detail will be in the Research Themes and CMQs. The two documents are reviewed and revised on different timescales as well.

Member House stated that the separation of the two documents makes sense because the items were brought up separately and will be addressed separately. He also acknowledged the work that Dr. Wolf and others did to revise this – it's a more streamlined document.

Member Chinnici stated that there is an Annual Report and Work Plan. Some time ago the EMC decided that since we're revising the Strategic Plan every three years, the EMC would use the annual report to respond to things on a shorter-term basis, like changes to monitoring questions.

Dr. Wolf: Is there a motion to approve this draft to go to the Board for review?

Voting Record

Member Chinnici moved to approve the current version of the Strategic Plan 2022 to send to the Board of Forestry; this was seconded by Member House. Dr. Wolf called the question.

Drury	Aye
LaNier	Aye
Jones	Aye
Chinnici	Aye
Love-Anderegg	Aye
Leonard	Aye
Short	Aye
Burke	Aye
House	Aye
Freer-Smith	Aye

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Waitman Aye
Forsburg-Pardi Aye

The motion passes unanimously. The Strategic Plan will go to the Board in November for its review.

6) Presentation of comments received on Research Themes and Critical Monitoring Questions, and Revised Draft – Co-Chair Dr. Forsburg-Pardi (45 min) (switched with item 7)

Chair Dr. Forsburg-Pardi recommended that in the absence of Chair Moreno, they review and discuss comments and then table the issue until November. Dr. Forsburg-Pardi stated that the public comment period on the Themes and CMQs closed on September 2nd, and all comments are included in the meeting materials. Dr. Forsburg-Pardi briefly reviewed the comments received from CAL FIRE, the Central Valley Water Quality Control Board, and the public.

See related documents online: <https://bof.fire.ca.gov/media/u5qkr14p/6a-2017-18-research-themes-and-critical-monitoring-questions.pdf>; <https://bof.fire.ca.gov/media/wvbblesc/6b-2022-23-research-themes-and-critical-monitoring-questions-draft-for-revision.pdf>; <https://bof.fire.ca.gov/media/zwyl4emv/6c-public-comment-on-themes-and-critical-monitoring-questions-for-review.pdf>; <https://bof.fire.ca.gov/media/0jpp2ayw/6d-i-1-czu-fire-redwood-damage-assessment.pdf>; <https://bof.fire.ca.gov/media/flxjchqh/6d-ii-1-redwood-defect-study-at-svr.pdf>; <https://bof.fire.ca.gov/media/ub0pjj01/6e-3-public-comment-2022-07-29.pdf>

The floor was opened for comments, but no additional comments were received from the committee.

Dr. Wolf: Co-chairs will continue to work on revising the CMQs in response to comments that were received. The effort will be tabled for discussion until the next meeting when we will hopefully have both co-chairs. There was consensus among the co-chairs that there was a lot more work to do on revising the questions than had originally been anticipated, so this will be an ongoing effort.

Member LaNier asked if the co-chairs and board staff are going to develop the CMQs that will be addressed at the next meeting? Dr Wolf: Yes. The co-chairs would present the changes at the next meeting, and the committee would respond to the revised questions and then vote on those questions at that time.

8) Completed Research Assessment: EMC-2017-008 – Do Forest Practice Rules Minimize Fir Mortality from Root Disease and Bark Beetle Interactions – Member Ben Waitman, California Department of Fish & Wildlife and Member Jessica Leonard, State Water Resources Control Board (60 min w/Q&A)

The draft document can be found online: https://bof.fire.ca.gov/media/c1qlu5uw/8-emc-2017-008-cobb-cra-sept-2022-draft_ada.pdf

Members Waitman and Leonard are working with PI Dr. Richard Cobb to develop the Completed Research Assessment (CRA). This study is looking at how *Heterobasidion* expands from treated areas over time, and Dr. Cobb did give a final presentation to the EMC at a previous meeting. Member Waitman walked the EMC through each of the questions on the CRA:

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- 1) Fulfills and addresses scientific question(s) posed in proposed research? Does not necessarily answer any of the FPRs, although the results do further the intent of forest management outlined in the FPRs.

The three studies were largely successful with one hiccup: they were able to complete treatments on stumps after operations in true fir stands. They were able to look at whether treatments were able to prevent *Heterobasidion* spread but they were not able to determine whether wounding resulted in increased colonization. They did not get colonization on their target trees with *Heterobasidion* using established methods.

- 2) Scientifically sound? Yes, analyses were appropriate to the data for each of the three studies conducted. One of the studies has an accepted and published article, and two additional manuscripts are in preparation for journal submission.
- 3) Scalable? Yes. In the first study, only one treatment had a significant difference in *Heterobasidion* present but all treatments resulted in lower area colonized by the fungus. Introduction of *Phlebiopsis* cannot prevent colonization, but was effective at slowing/stopping the spread of *Heterobasidion* to hopefully prevent colonization of additional trees via root contact, and it could be a potentially cheaper treatment than others.

Next study is the use of long-term monitoring plots developed in the 1970s in mixed conifers on the East Side infected with two *Heterobasidion* species, one for fir and one for pine. (The same is present in El Dorado county and Yosemite.) Looks at basal area reduction as compared to compare sites. Gap expansion rate in the first ten years indicates gap expansion size over ten years. Best predictor of mortality is gap size.

In the final study, infection by *Heterobasidion* decreased basal area in all forest types. Only in white fir stands did it decrease the dominance of the host tree species (i.e., the fir) as compared to the other non-host tree species.

- 4) New EMC study recommended to advance research on this topic (e.g., to expand findings and/or temporal or spatial relevance of this study)? No identified gaps in literature review. The studies are largely closed out, and additional funding is not necessary. No EMC support is requested for further study, but there are additional studies planned: Dr. Cobb is will investigate the portion of sites burned in the Dixie Fire to look at the relationship between *Heterobasidion* presence and fuel conditions/fire severity.
- 5) Scientific Applications – was not discussed.

Dr. Wolf noted that this draft has not been distributed to the EMC for review yet. Member House requests time to review.

Member Waitman requests that Dr. Cobb be allowed to provide clearance for papers that may be in the manuscript stage.

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Dr. Wolf set October 19th as the deadline for the EMC to provide comment on the document. Dr. Wolf will compile those statements and send them to Members Leonard and Waitman to address in the revised CRA.

9) Review of Member Application.

Applicant Mathew Nannizzi from the Green Diamond Resource Company submitted a curriculum vitae and letter of interest (see documents online: https://bof.fire.ca.gov/media/hi0ddsya/9-nannizzi-emc-member-applicant_redacted.pdf) to replace Member House on the EMC's Monitoring Community. The EMC members were invited to share feedback or concerns:

- Member LaNier: No questions or comments
- Member Short: No questions or comments
- Member House: No comments, can answer questions about the applicant.
- Member Burke: Sorry to see Member House go, his replacement has big shoes to feel.
- Member Waitman: No comments
- Member Drury: No questions or comments
- Member Love-Anderegg: No questions or comments
- Member Freer-Smith: Not present at this time
- Member Chinnici: Thanks to Member House, sorry to see him go. Knows Mr. Nannizzi personally and know his qualifications, support having him on the committee unreservedly.
- Chair Dr. Forsburg-Pardi: Thanks to Member House, look forward to bringing the newest member to the board.

Voting Record

Member Chinnici moved to recommend Mathew Nannizzi to fill a seat in the Monitoring Committee on the EMC to the Board of Forestry and Fire Protection for their review and approval; this was seconded by Member Waitman. Dr. Wolf called the question.

Waitman	Aye
LaNier	Aye
Jones	Aye
Leonard	Aye
Drury	Aye
Love-Anderegg	Aye
Chinnici	Aye
Freer-Smith	Absent at time of vote
Burke	Aye
House	Abstain

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Short Aye
Forsburg-Pardi Aye

Motion passes with one abstention. The recommendation will be sent to the Board for their review and approval at the November meeting.

10) Public Forum

No comments.

11) Future Meeting Locations, Dates, and Agenda Items

Dr. Wolf notes that this meeting has historically been held in Redding, Ukiah, and Sacramento, but given the new standards for remote call-in, meetings will be held in Sacramento for now with a virtual option.

Future meeting date was discussed, with possibilities for the second, third, and fourth weeks of November. Dr. Wolf reviewed timelines for having items reviewed by the EMC and the Board, and it was determined that the week of November 14th would be the ideal time for the next EMC meeting. All days of that week were discussed, and Friday November 18th was the only day that week that all members present at this time could commit to meet.

12) Announcements: Scientific Conferences, Symposiums, and Workshops

- October 31–November 3: Oak Symposium in San Luis Obispo
- Dr. Jones reported that with UCCE there are some forest workshops for planning stewardship with private landowners that will be happening. There will also be some post-fire workshops being hosted as well. UCANR Forest Stewardship Workshop Series (https://ucanr.edu/sites/forestry/Forest_Stewardship/ForestStewardshipWorkshops/):
 - Butte - Yuba Counties, October 18, 2022 - December 13, 2022: Online and Nov. 5th in-person field day. Registration now open!
 - Napa County, January 2023 - March 2023. Registration coming soon!
- November 16–17: California Forest Pest Council in Davis, <https://www.caforestpestcouncil.org/events>
- September 9, 2022: Forest Health Research Grantee Webinar with Dr. Susan Prichard and Dr. Keala Hagmann presentation was given, "Climate change and wildfires in western North American forests: a review of ecological departures and adaptation strategies". Webinar recording: <https://youtu.be/rG0M8-iThr0>.

13) Adjourn