



Emergency Response Management Committee (ERMaC) 2018 Accomplishments Report







*California Environmental Protection Agency
California Air Resource Board
California Department of Pesticide Regulations
Department of Resources Recycling & Recovery
State Water Resources Control Board
Department of Toxic Substances Control
Office of Environmental Health Hazard Assessment*

Cover: Aerial view of the Paradise Irrigation District Water Treatment Plant at the Magalia Reservoir from Camp Fire Incident.

Left: CARB's Incident Air Monitoring Section using air monitors for the planned burning of a home with explosives in Anderson, California.

Gavin Newsom
Governor

Jared Blumenfeld
Secretary for Environmental Protection

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Emergency Response Management Committee





The Emergency Response Management Committee (ERMaC) manages and reduces environmental health consequences of emergency events through effective, coordinated agency-wide preparedness, response, recovery, and mitigation efforts.

Preface

On behalf of all CalEPA's Emergency Response Management Committee members and participants, I am pleased to submit the Committee's Annual Accomplishments Report for 2018.

This 10th annual report highlights the year's emergency planning, preparedness, response, and recovery activities of the six CalEPA boards, departments and offices. Taken together it is the work we refer to as emergency management. The report describes incidents, large and small, such as hazardous chemical releases, fires, and oil spills. It also summarizes major training events, exercises, and projects in which ERMaC members participated over the year. It offers a great cross-sectional view of the important role environmental protection staff play in preparing for and responding to large-scale emergencies and disasters.

Successful emergency management relies on building working relationships among many subject matter experts. Throughout 2018, the ERMaC team continued to build on its already admirable collaborations with many supporting agencies to mitigate environmental incidents and disasters. This fact is clear in reviewing the report. The incidents and events presented here exemplify the high degree of cooperation and interaction we have achieved in the response and recovery actions undertaken by each BDO and by CalEPA collectively. This year, I wish to acknowledge in particular the Governor's Office of Emergency Services (CalOES), the Department of Public Health (CDPH), U.S. EPA Region 9, and the State Water Boards for their exceptional support of CalEPA's Emergency Management program.

I welcome the next decade of growing proficiency and collaboration in CalEPA's emergency management program!



Gregory Vlasek
ERMaC Chair,
Assistant Secretary for Local Programs & Emergency Response



Introduction

The California Environmental Protection Agency (CalEPA) ERMaC coordinates preparedness for responses to environmental emergencies in California under assigned statutory authorities. ERMaC is composed of appointed representatives and alternates from each CalEPA board, department and office (BDO), and chaired by the Assistant Secretary for Local Program Coordination and Emergency Response appointed by the Agency Secretary. ERMaC members can activate and direct resources and personnel to affect timely and appropriate response to disasters and large-scale emergencies.

ERMaC is responsible for emergency planning and training, and coordinating all CalEPA entities in emergency preparedness, response, and recovery actions. It serves as the forum for developing and maintaining the CalEPA collective Administrative Orders and Emergency Response Plans.

ERMaC is also responsible for maintaining and executing the California Hazardous Materials and Oil Emergency Support Function Annex 10 (ESF-10). The ESF-10 Annex is a planning-specific addendum to the California State Emergency Plan (SEP). The SEP establishes CalEPA as the State's lead agency for the organizational scope and coordination of statewide emergency management in an environmental disaster involving a large-scale oil or hazardous materials release. The ESF-10 Annex provides for a coordinated response from agencies and governmental entities with jurisdiction to perform all phases of emergency management in the response to and recovery from an oil or hazardous materials release.

CalEPA responses conform to the National Incident Management System (NIMS) for emergency response. CalEPA operates as a state agency with specific jurisdiction under the California Standardized Emergency Management System (SEMS), coordinated by the Governor's Office of Emergency Services (CalOES).

Incident Response & Recovery Actions

Throughout 2018, ERMaC coordinated with supporting agencies to mitigate environmental incidents and disasters. The incidents presented below highlight the response and recovery actions undertaken by each BDO during incidents and disasters, as well as the collective efforts of ERMaC and its member agencies.

Select Incident Response and Recovery Actions of 2018

Santa Barbara/Montecito Debris Flow/Mudslide (January)

Following the Thomas Fire in December of 2017, a deadly debris flow occurred in the community of Montecito, California in January of 2018.

The State Water Resources Control Board (SWRCB), and the Central Coast Regional Water Board (CCRWB) worked closely with the Santa Barbara County Public Works Department to permit community and creek debris cleanout and disposal, and facilitate emergency response and disposal activities that protected human health and water quality.

Field crews performed sediment sampling and analysis during the recovery phase of the operation.

CCRWB worked closely with the Montecito Sanitary District and other water and gas utilities to assess damages and to expedite permitting for emergency repairs. The Department of Resources Recycling and Recovery (CalRecycle) was mission tasked to assist with debris removal and cleared over 230 truckloads of mud and debris.



Debris flow damage.



Creek cleared of sediment and debris.

The Governor's Office of Emergency Services (CalOES) tasked the Office of Environment Health Hazard Assessment (OEHHA) and the California Department of Public Health (CDPH) to assist Santa Barbara County Public Health Department (SBCPHD) with assessing the safety of seafood due to the disposal of mudslide sediment at multiple beach sites. OEHHA and CDPH provided consultation regarding public health messaging and evaluated available sampling results.



Cleared debris basin.

Yolo County Hydrogen Sulfide Contamination (January)

OEHHA provided technical guidance and recommendations to Yolo County Environmental Health following an incident in Yolo County involving a contaminated hotel room where a chemical suicide by hydrogen sulfide occurred. OEHHA provided recommendations on sampling and analysis, the cleanup plan, and clearance values.

Shasta County Air Monitoring for Explosives (March)

California Air Resources Board (CARB) assisted the Shasta County Sheriff by providing three air monitors on a site where the County was burning a barn to neutralize 100 pounds of unstable explosives.

Hepatitis Outbreak in Homeless Camp (March)

California Department of Pesticide Regulation (CDPR) assisted with a special local needs project and provided recommendations for disinfectants that could be used at a homeless camp where an outbreak of Hepatitis A occurred.

Butane Honey Oil Operation in Los Angeles County (April)

Department of Toxic Substances Control's Emergency Response team (DTSC ER) provided consultation to Los Angeles County regarding a large-scale butane honey oil operation.

Burlington Northern Santa Fe (BNSF) Freight Train Derailment (August)

On August 21, 2018, BNSF Railway experienced a freight train derailment along the Cajon Subdivision in the City of San Bernardino, San Bernardino County. Sixteen rail cars, eleven of which were tank cars, derailed.

Two tank cars were damaged resulting in the release of hazardous materials to the ground. One tanker released approximately 500 gallons of dearomatized petroleum distillates,



Tanker derailed, resulting in a chemical release.

a colorless liquid with a gasoline-like odor. Another tanker released approximately 2,000 gallons of linear alkylbenzene, a biodegradable synthetic detergent that is a colorless and odorless liquid.

The Santa Ana Regional Water Board (SARWB) coordinated and collaborated with federal, state and local partners and stakeholders during the emergency phase of the incident. SARWB assisted during the incident by collecting samples of the spilled liquid and contaminated soil. Oversight by SARWB continued beyond the emergency phase of the incident as the discharger implemented voluntary cleanup of the spilled material.



CDPH employees investigating the mercury spill.

Mercury Spill in San Benito County (October)

DTSC ER collaborated with CDPH's Environmental and Occupational Emergency Preparedness Team on a mercury spill incident at a private residence in San Benito County.

The spill occurred in a barn where DTSC removed thirteen drums of contaminated soil and debris. Several children and a pregnant woman were living in the home where the spill occurred. CDPH and DTSC conducted environmental sampling, coordinated cleanup, and recommended family members be clinically assessed for potential toxicity.



Drums of contaminated soil and debris removed from the mercury spill.

Dunsmuir Historic Oil Incident (October)

On October 24, 2018, the Union Pacific Railyard in Dunsmuir, Siskiyou County reported that a tar-like substance was seeping from a concrete retaining wall on the property. A sheen was also observed on the upstream section of the footpath. After this discovery, the area was contained and sorbent pads were used to clean up visual product. OEHHA was notified by the California Department of Fish and Wildlife's (CDFW) Office of Spill Prevention and Response (OSPR) regarding the incident. At that time, OEHHA did not recommend a fisheries closure on the Sacramento River. OEHHA continues to monitor the potential for a public health threat.

Illegal Pesticides at Cannabis Grow Sites in Lake and Trinity Counties (October–November)

On October 2, 2018, the California Department of Fish and Wildlife (CDFW) found illegal pesticides at a cannabis operation on private property in Trinity County. CDPR participated in discussions with staff from multiple state and local agencies on whether shallow wells,

surface water, and soil were contaminated and directed seeking assistance to the appropriate agencies. In November 2018, CDPH was also contacted by the Lake County Environmental Health Department and DTSC regarding illegal cannabis cultivation operations. The illegal pesticide, Carbofuran was found and removed from six sites.

Illegal Drug Lab Cleanup Program (2018)

DTSC ER manages the Illegal Drug Lab Cleanup Program that is responsible for responding and mitigating illegal drug lab operations discovered by law enforcement agencies. In 2018, DTSC responded to 166 drug labs at a cost of \$660,000.

Off-Highway Removal Program (2018)

DTSC ER manages the Off-Highway Removal Program that is responsible for mitigating the release or threatened release of hazardous substances. In 2018, DTSC responded to 75 Off-Highway cleanups in support of local agencies at a cost of \$8,407,831.

Elevated Formaldehyde and VOCs from Melted Plastic Containers (2018)

A San Mateo moving company stored small plastic containers outdoors under high heat conditions. Upon receiving the containers, the owner noticed a bad odor and started experiencing health effects. The owner hired a private air monitoring company to analyze the indoor air of the apartment. After receiving the results, the owner contacted OEHHA to obtain health effects information regarding formaldehyde, volatile organic compounds (VOCs), and plastic compounds. OEHHA provided links to health effects information and referred the person to contact San Mateo County Environmental Health for further assistance.

Domoic Acid in Dungeness Crab, Rock Crab, and Spiny Lobster (2018)

In 2018, OEHHA, in consultation with CDPH, made nine recommendations (Table 1) to CDFW regarding delaying, closing or re-opening for Red Rock crab, Spiny lobster fisheries, and for both commercial and recreational Dungeness crab, based on the results of domoic acid testing in those species.

Table 1: Recommendations for Domoic Acid in Seafood Made in 2018

Dungeness Crab		Rock Crab	Spiny Lobster
Commercial	Recreational	Commercial	Commercial
Delay - 11/9/18	Delay - 10/25/18	Open (partial) - 1/16/18	Open - 1/25/18
Open (partial) - 12/3/18		Open (partial) - 3/29/18	Close (partial) - 10/16/18
		Open (partial) - 4/20/18	Open (partial) - 11/16/18

Oil Spill Response and Seafood Safety (January-December, 2018)

OEHHA and OSPR coordinate to assess seafood safety following oil spills, both marine and inland. CDFW must close access to fishing, unless OEHHA determines that there is not likely to be a public health threat from consumption of aquatic life impacted by the spill. Fisheries closed for more than 48 hours require expedited testing of seafood and a risk assessment conducted by OEHHA before the fishery can be re-opened.

In 2018, OEHHA was notified of fifteen oil spills or potential oil spills. OEHHA worked with CDFW to compile and evaluate information on the spills. No action was required for twelve spills reported to OEHHA. No action may have been taken due to the spilled product being contained, or if the spill took place in areas where fishing or aquaculture does not take place.

For the remaining three spills, OEHHA found that there was not likely to be a public health threat. Thus, CDFW did not close fisheries in those cases. OEHHA also participated with OSPR in eighteen oil spill drills. A recommendation for fisheries closure was issued in thirteen of the drill scenarios.

Harmful Algal Blooms (HABs)

The State and Regional Water Boards (collectively the Water Boards) worked with state and local entities to identify and respond to reported HABs in several waterbodies including Lake Elsinore in Riverside County. HABs can pose a health risk to people and animals, harm aquatic ecosystems, and limit the use of drinking and recreational waterbodies. HABs can affect multiple beneficial uses by reducing aesthetics, lowering dissolved oxygen concentration, causing taste and odor problems, and producing potential toxins. The Water boards conducted several water quality investigations throughout the year to determine if reported blooms posed a risk to public health. The Water Boards collaborated with state and local partners and stakeholders during the investigations where they assisted with and provided appropriate recommendations for public health advisories.

OEHHA collaborated with staff from the Water Boards, CDPH, and CDFW to create outreach materials related to potential human and animal health impacts and response to and tracking of potential HAB-related illnesses for humans and animals in California.

Fire Response & Recovery

ERMaC participated in a variety of technical workgroups to manage smoke impacts, air monitoring, ash, water systems, and debris from the Northern and Southern California fires. Some operations continued from the 2017 fires.

Fire Recovery Actions Continued from Late-2017 Fires

Tubbs Fire (Central LNU Fire: Napa and Sonoma Counties)

The Tubbs Fire, part of the Central LNU Complex, started on October 8th off Highway 128 and Bennett Lane, Hwy 128, Calistoga, Napa County and burned 36,807 acres. It was contained on October 31, 2017. There were 5,636 structures destroyed and 317 damaged.

The North Coast Regional Water Board (NCRWB) communicated with Sonoma and Napa Counties to address water quality issues and concerns including benzene contamination. NCRWB was also mission tasked to inspect schools, issue boil water notifications, and work with water utilities. Multiple restoration activities were conducted, and in the fall of 2018, the Board worked with local partners to assess instream and riparian conditions of specific streams affected by the wildfires to characterize response following post-fire restoration activities.

OEHHA received a high volume of public and media inquiries regarding human health and occupational exposure to ash and smoke. OEHHA worked with CDPH to address these concerns.

CARB worked with local air districts and was mission tasked to provide air monitors at a few schools in Sonoma and Napa Counties.

CDPH worked with Sonoma County on a Community Assessment for Public Health Emergency Response (CASPER) survey for the 2017 wildfires.



Cars burned from the Tubbs Fire.

Thomas Fire: (Ventura and Santa Barbara Counties)

The Thomas Fire started on December 4, 2017 off Hwy 150 and Hwy 126, north of Santa Paula in Ventura County. The fire burned 281,893 acres and destroyed 1,063 structures and 280 were damaged.

CalRecycle continued debris removal operations into 2018. CalRecycle responded to the Thomas Fire by completing debris removal operations at 672 Ventura County properties which were affected by the fire. CalRecycle cleaned up over 263,000 tons of debris, contaminated soil, and ash. The debris removal process was launched on January 19 and by June 6, 2018 CalRecycle had completed all debris removal. They also completed final soil testing and property inspections as well as installed erosion control measures. An overall budget of \$76,095,000 was dedicated to the cleanup of the Thomas Fire. A total of 264,273.70 tons of debris, ash, metals, concrete, and contaminated soil were removed.

Fire Recovery Actions 2018 Wildfires

Northern California: Summer 2018: Pawnee Fire (Lake County), Klamathon Fire (Siskiyou County), Carr Fire (Shasta County), Mendocino Complex Fire (Mendocino, Lake, and Glen Counties)

The Pawnee Fire started on June 23, 2018 off Pawnee Rd & New Long Valley Rd, northeast of Clearlake Oaks (Lake County) and burned 15,185 acres. It was contained on July 8, 2018. Twenty-two structures were reported as destroyed according to California Department of Forestry and Fire Protection (CalFire) data.

CalRecycle assisted in the debris removal and cleanup of the Pawnee Fire. A budget of \$1,700,000 was set aside for this project. Debris removal was completed on December 12, 2018. Erosion control was completed and sites were approved for redevelopment. A total of 2,600 tons of debris were removed, including 2097 tons of ash and debris, 308 tons of concrete, 114 tons of soil, 62 tons of metal and 18 tons of vehicle scrap.

The Klamathon Fire started on July 5, 2018 south of Hornbrook (Siskiyou County). The fire burned 38,008 acres, and was contained on July 21, 2018. According to CalFire, 82 structures were destroyed and 12 were damaged



DTSC crews removing household hazardous waste from a home destroyed by the Carr Fire.



DTSC crews assessing destroyed buildings after the Carr Fire.

CalRecycle assisted in the debris removal process of the Klamathon Fire by removing over 9,000 tons of ash and debris, 2,000 tons of contaminated soil, 1,000 tons of concrete and almost 400 tons of metal. Over 14,000 tons of debris were removed. Debris removal was completed on all 49 properties that registered for the debris removal program. CalRecycle devoted a budget of \$3,780,000 for the cleanup of the Klamathon fire.

The Carr Fire started on July 23, 2018 near Whiskeytown (Shasta County). It was contained on August 30, 2018. The total acres burned were 229,651 acres and the total structures destroyed included: 1,079 residences, 22 commercial structures, 503 outbuildings.

CARB deployed five air quality instruments to the Klamathon Fire in July to support the local air district. CARB deployed three instruments to the Carr Fire and existing instruments deployed to the Klamathon Fire supported monitoring efforts for the Carr Fire.

CalRecycle implemented the Consolidated Debris Removal Program for the Carr fire in Shasta and Trinity Counties. A budget of \$116,400,000 was set aside for debris removal of the Carr Fire. After hazardous debris was removed from the site of the Carr Fire, CalRecycle contractors worked to remove contaminated ash, metal, concrete, soil and other debris in order to reinstate properties affected by the fire. As of November 5, 2018, 1,046 homeowners in Shasta County registered for the debris removal program. CalRecycle completed debris removal at over 1,000 properties and removed over 500,000 tons of debris. As of January 24, 2019, only one site is left for cleanup.

The Central Valley Regional Water Board (CVRWB) began to plan landscape surveys, surface water monitoring efforts, and erosion control strategies to mitigate impacts to the ecologically sensitive watersheds impacted by the fire. The CVRWB used geographic information systems (GIS) to determine suitable areas for erosion control treatments. At-risk locations where resources were being directed included those considered to be critical spawning and rearing habitats for Chinook salmon, and those that were most sensitive to wildfire-related impacts.



DTSC HazMat crews assessing a home and outbuildings destroyed by the Carr Fire in Shasta County.

The Mendocino Lightning Fire Complex consisted of 129 fires that burned in Mendocino County. In June and July, the Mendocino Lightning Complex burned throughout Mendocino County destroying 410,203 acres, one residence and one outbuilding.

CARB provided emergency air monitoring equipment and a dozen air quality sensors to local air districts to measure the poor air quality caused by smoke produced from the large wildfire.

CalRecycle administered a budget of \$16.9 million for the debris removal of the Mendocino Complex incident. As of January 22, 2019, \$14 million of the total budget was used on cleanup. CalRecycle assessed and removed debris from properties affected by the fire as well as implemented erosion control and approved redevelopment for some properties. A total of 37,171 tons of debris were removed, including 25,100 tons of ash and debris, 4,284 tons of

concrete, 477 tons of contaminated soil, 5,946 tons of contaminated soil/residual ash, and 1,362 tons of metal.

The Water boards coordinated and collaborated with water systems, partners and stakeholders; obtained and reported status and needs information; issued and assisted in issuing unsafe water alerts; conducted inspections; assisted in water system recovery; collected water samples; commented on plans and procedures

DTSC ER responded to these four major wildfires during the summer of 2018. The Pawnee Fire (Lake County) and the Klamathon Fire (Siskiyou County) in July and the Carr Fire (Shasta County) and the Mendocino Complex Fire (Mendocino/Lake Counties) in August and September. DTSC ER crews assessed and removed household hazardous waste (HHW) and asbestos from over 1,400+ residential properties impacted by these four wildfires.



DTSC HazMat crews assessing a commercial building destroyed as a result of the Klamathon Fire in Siskiyou County.



DTSC Staff collecting data from damaged properties impacted by the Klamathon Fire (Siskiyou County).

Holy Fire: August 2018

The Holy Fire began on August 6, 2018 in the Santa Ana Mountains and burned 23,136 acres before it was fully contained. To address potential water quality impacts resulting from the fire, SARWB coordinated with the Riverside County Flood Control and Water Conservation District and the U.S. Army Corps of Engineers to assist with issuing emergency dredge and fill permits for work related to the fire.

Camp Fire and Woolsey Fires: Fall 2018

The Woolsey Fire started on November 8, 2018 near E Street and Alfa Road Rd, South of Simi Valley (Ventura County). It burned 96,949 acres, 1,500 structures destroyed, 341 structures damaged, and was contained on November 21, 2018.

The Camp Fire started on November 8, 2018 off Pulga Road at Camp Creek Road near Jarbo Gap (Butte County) and burned 153,336 acres with 13,972 residences, 528 commercial and 4,293 other buildings destroyed, and was contained November 25, 2018.

The Woolsey Fire affected four different watersheds and the Los Angeles Regional Water Board (LARWB) coordinated with multiple state, federal, local governmental and non-governmental agencies, to determine if debris basins were clear and ready for upcoming rains and potential debris flows. They worked with local resource conservation districts to provide financial assistance to offset erosion control project costs in critical watersheds affected by the fires. The Water Board participated on the Malibu Creek Technical Advisory Committee

to discuss the extent of burn areas and to coordinate post-fire monitoring.

CVRWB worked closely with CalOES on the Camp Fire to assist Paradise Irrigation District and other public water systems to recover from the impacts of the fire. Public water systems in the affected area continue to conduct extensive sampling as part of their recovery effort to restore, clean, and verify their distribution system can serve potable water.

DTSC ER was tasked by CalOES to assess and remove HHW and asbestos from residential, commercial, and public properties, including schools, destroyed by the Camp Fire (Butte County: North Fire) and the Woolsey/Hill Fires (Los Angeles & Ventura Counties: South fire).



DTSC HazMat crews assessing a residential structure destroyed by the Woolsey Fire in Los Angeles County.



House burned and damaged from Camp Fire.

ER crews began assessment activities for these fires on December 3rd and completed assessment activities on February 1st, 2019. ER staff were in the field for 9 weeks, assessed over 14,900 properties, and removed over 1,000,000 lbs. of HHW and asbestos. DTSC ER continues to provide support to Cal Recycle to pick-up additional HHW discovered during debris removal operations for both the Camp Fire and Woolsey/Hill Fires into 2019.

OEHHA responded to requests to assist in developing messages on public-health related issues and exposure to smoke and ash. OEHHA also provided existing resources including fact sheets to Butte County Environmental Health. Finally, OEHHA responded to a request for information on handling of asbestos after a disaster or fire.



Clean-up from Camp Fire.

CalEPA and CDPR provided ESF-10 representatives to the State Operations Center (SOC).

Hill Fire: November 2018

The Hill Fire occurred in Ventura County. It began on November 8, 2018, consuming 4,531 acres of primarily uninhabited lands within the Calleguas Creek Watershed, and was contained on November 16, 2018.

The LARWB coordinated and collaborated with water systems, partners and stakeholders; obtained and reported status and needs information; issued and assisted in issuing unsafe water alerts; conducted inspections; assisted in water system recovery; commented on plans and procedures.

Three wastewater treatment plants were near the fire’s perimeter: Hill Canyon Wastewater Treatment Plant, Camarillo Wastewater Treatment Plant, and the Camrosa Water Reclamation Facility. The LARWB maintained contact with all three facilities and none of the facilities sustained major damage and remained operational. LARWB continued to work with storm water permittees to determine if the fire affected them.



ERMaC team evaluating damage from Camp Fire.

Deployment of Air Monitors for the 2018 Wildfires

CARB Incident Air Monitoring Section (IAMS) deployed air monitors throughout California during the 2018 wildfire season.

Table 2: Overview of CARB IAMS Deployment of Air Monitoring Instruments for the 2018 Wildfires

Fire Name	County or Region	Number Deployed	Air Monitor Locations
Thomas	Ventura and Santa Barbara counties	2	Ventura and Santa Barbara counties
Lions	Fresno/Madera/Mono: Central	–	Monitors from the Donnell and Ferguson Fires monitored the Lions Fire
Klamathon	Siskiyou: North	2	MacDoel and Hornbrook

Fire Name	County or Region	Number Deployed	Air Monitor Locations
Ferguson and Donnell	Mariposa: Central or Northern, El Dorado, Tuolumne, Calaveras, Alpine, and Mono counties	6	Bootjack, Catheys Valley, Midpines, Wawona, Greeley Hill, and Ponderosa Basin for Mariposa County
		1	South Lake Tahoe for El Dorado County
		4	Yosemite National Park, Columbia, Mi Wuk Village, and Groveland Monitors for Tuolumne County
		1	Arnold for Calaveras County
		1	Markleeville for Alpine County
		1	Coleville for Mono County
Natchez	Siskiyou: North, and Del Norte counties	1	Smith River for Del Norte County
		8	Existing monitors in: MacDoel, Weed, Tulelake, Happy Camp, Hoopa, Bloody Camp (2 nd Hoopa Site), Orleans, and Hornbrook in Siskiyou County
Hendrix	Jackson (in southern Oregon): North	–	Units monitoring the Natchez Fire supported the Hendrix Fire
Carr	Shasta/Trinity: North	2	Redding and Lakehead in Shasta County
		7	Existing monitors in: MacDoel, Weed, Tulelake, Happy Camp, Hoopa, and Bloody Camp (2 nd Hoopa Site)
Mendocino Complex	Mendocino: north Mendocino, Lake, Colusa, Colusa, and Glen counties	3	Laytonville, Potter Valley, and Covelo for Mendocino County
		1	Stonyford for Colusa County
		1	Santa Rosa for Sonoma County
Whaleback	Lassen: North	2	Susanville and Spalding for Lassen County
Hirz	Shasta: North	–	Instruments deployed to the Carr Fire supported the Hirz Fire
Stone	Modoc: North	1	Modoc County
Mill Creek	Trinity: North	–	Units monitoring the Natchez Fire supported the Mill Creek Fire
Boot	Humboldt: Central	1	Harfork for Humboldt County
Delta	Shasta: North	–	Instruments deployed to the Carr Fire supported the Hirz Fire
Camp	Butte: North	8	3 in Northern Sonoma, 2 in Sacramento, and 3 in Butte County
Woolsey	Ventura: South	2	Ventura County
Hill	Ventura: South	–	Monitors deployed to the Woolsey Fire supported the Hill Fire

Projects, Presentations, Exercises

Projects

Wildfire Guidance for Local Health Officials

On January 10, 2018, a group of local, state, and federal convened for a 2017 Wildfire Smoke Air Response and After-Action Review at the United States Environmental Protection Agency (US EPA) Region IX headquarters in San Francisco. The agencies involved included: CARB, OEHHA, US EPA, SWRCB, CalEPA, and local air district representatives from California. As a result of this meeting, sub-workgroups were formed to assist in a CDPH effort to create a compendium of resources for local public health officials regarding specifically air monitoring, modeling, and messaging. Additional workgroup meetings took place in early 2018.

Wildfire Smoke Guide Fact Sheets

Representatives from OEHHA, CARB, CDPH, and US EPA continued to work with a multi-disciplinary team on the updates to the Wildfire Smoke Guide. The workgroup completed and published numerous new fact sheets that can be found on both the CalEPA ERMaC Fire page (calepa.ca.gov/disaster/fire) and the AirNow webpage (airnow.gov). The new fact sheets included: Prepare for Fire Season, Reduce Your Smoke Exposure, Respiratory Protection, Indoor Air Filtration, Protect Yourself from Ash, and Protecting Children from Wildfire Smoke or Ash.

Community Air Monitoring with PurpleAir® Sensors

In 2018, CARB used funds for Community Air Monitoring Projects to purchase 420 low-cost particulate sensors, which were distributed to air districts. These sensors can measure air pollutants on a real-time or near real-time basis, and require less field support infrastructure than traditional methods used in air monitoring. They complement existing monitoring networks, vastly expanding the network's coverage and value, and indicate when and where additional robust monitoring instrumentation should be applied.

Smoke and Ash Safety Webinar for School Districts

August 8th, 2018, CalEPA, CalRecycle, OEHHA, CARB, CDPH, and DTSC participated in Smoke and Ash Safety Webinar for School Districts webinar. The webinar attracted over one hundred local school district health officials to learn about air monitoring and health metrics for smoke and ash. The event was recorded at the CalOES State Operations Center.

CalEPA partnered with the California Department of Education (CDE) to reach out to superintendents and school administrators to provide information and best practices for school districts throughout the state regarding California wildfires, poor air quality, smoke and ash safety, and school or event closure decisions.

Emergency Animal Disease Disposal

CalEPA and OEHHA partnered with California Department of Food and Agriculture (CDFA) for the Emergency Animal Disposal Workgroup and Tactical Planning Meeting. This meeting was used to update CDFA's statewide response to emergency animal disease disposal and to prepare for a workshop in May on foreign animal disease.

Wildfire Disaster After Action Roundtable (August 27–28)

A multi-county, multi-agency two-day after action roundtable meeting to learn from experiences with past fires and to develop an action plan and a state wide approach to provide mutual aid assistance for Environmental Health and Certified Unified Program Agency (CUPA) resources needed to restore impacted communities.

Training Presentations at ERMaC Meetings

- April 18, 2018. Sarah Poss, CalOES. 2017–2020 California Homeland Security Strategy. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- June 6, 2018. Bill Robberson, Kay Lawrence, and Michelle Rogow. US EPA XI. GIS Presentation of 2017 Fire Response Activities. Presentation on the use of geospatial data tools and apps developed for use by US EPA IX during the wildfire response including ArcGIS and ESRI. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- June 6, 2018. Roger Cleaves and Billy Ferguson, DTSC and Hans Frederiksen, CalOES. The Northern and Southern California Fires Use of Dashboard. Topics included the use of the Regulated Site Portal and working dashboards to integrate data and expedite data sharing with partner agencies. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- June 6, 2018. Phil Beilin, City of Walnut Creek. California Earthquake Clearinghouse. Topics included: Establishing Essential Elements of Information, maintaining partnerships, developing workflows, and experiences with SpotOnResponse and XchangeCore. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- July 18, 2019. Wes Mindermann, CalRecycle. Disaster Debris Management Response Program. Topics included the history of CalRecycle's participation in debris removal activities and the increasing workload and fiscal impacts. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- October 17, 2018. Joe Crisologo, SWRCB. SWRCB DDW –What We Do. Topics included: the history of the DDW, emergency management efforts, the Statewide Emergency Water Quality Notification Plan, and the safety power shutoffs by SoCal Edison. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- November 7, 2018. Eric Lamoreaux, CalOES Recovery Support Functions Planning Guide and Meeting: The Recovery Support Functions (RSFs) are: Infrastructure systems, debris management, economic, national/cultural, health and social services. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.
- November 7, 2018. R. Rodriguez, Aaron Johnson, and R. Dye, Pacific Gas and Electric (PG&E). Public Safety Power Shutoffs. At ERMaC meeting, California Environmental Protection Agency, Sacramento, CA.

External Presentations by ERMaC Members

- February 6, 2018. Karen Riveles, OEHHA. Principles of Risk Communication. California Unified Program Agency Conference. Burlingame, CA.
- February 7, 2018. Joseph Crisologo. SWRCB. Drinking Water. Environmental Health Training for Emergency Response (EHTER). California Unified Program Agency Conference. Burlingame, CA.
- May 15, 2018. Joseph Crisologo. SWRCB. Emergency Water Quality Sampling Kit (EWQSK). Water and Wastewater Emergency Response of Orange County (WEROC) Training and Exercise. Fountain Valley, CA.
- July 25, 2018. Joseph Crisologo. SWRCB. Drinking Water. Environmental Health Training for Emergency Response (EHTER). Fresno, CA.
- August 22, 2018. Joseph Crisologo and Jeff Densmore. SWRCB. Wind, Fire, Water – Lessons Learned and a Way Forward – the Thomas Fire Incident; Are you Ready for the Next Emergency? Preparedness for Climate Change and Extreme Weather Events. CA-NV AWWA Water Education Seminar. Orange, CA.
- September 5th, 2018. Joseph Crisologo. SWRCB. Drinking Water Crisis and Lesson Learned. Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 5th, 2018. Karen Riveles. OEHHA. Industrial Facilities and Flood Hazards in California Environmental Justice Communities. Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 6th, 2018. Karen Riveles, OEHHA; Eric Stevenson, BAAQMD; and Lyz Hoffmann, Santa Barbara Public Health. Smoke in the Air, Fire in the Sky: CA Wildfires Air Monitoring, Messaging, and Health. Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 6th, 2018. Michael Pixton. DTSC. Incompatible Chemicals and What To Do With Them. Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 6th, 2018. Michael Pixton, DTSC; and Todd Thalhamer, CalRecycle. Wildfire Debris and How to Deal With It. Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 6, 2018 Paul Penn, CalEPA. Bill Robberson, Anna-Marie Cook, US EPA. ICS Command Liaison Officer – the Good, the Bad and the Ugly! Continuing Challenge Hazardous Materials Emergency Response Workshop. Sacramento, CA.
- September 13, 2018. Stefan Cajina and DDW Team. SWRCB. Harmful Algal Blooms (HABs). Workshop and Tabletop Exercise (TTX) on Harmful Algal Blooms (HABs) and CalWARN. Solano, CA.
- CalEPA, CARB, and OEHHA participated in public meetings on Refinery Community Air Monitoring throughout 2018. These workshops occurred on February 21st in Richmond, February 22nd in Martinez, March 1st in Rodeo, March 5th in Benicia, April 5th in Richmond, April 12th and 23rd in Torrance, CA.

Appendix A: Acronym Guide

AQMD	Air Quality Management District
AWWA	American Water Works Association
BAAQMD	Bay Area Air Quality Management District
BDO	Board, department and office
BNSF	Burlington Northern Santa Fe
CalEPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Protection
CalOES	California Governor's Office of Emergency Services
CalRecycle	Department of Resources, Recycling & Recovery
CARB	California Air Resources Board
CARPA	California Air Response Planning Alliance
CASPER	Community Assessment for Public Health Emergency Response
CCRWB	Central Coast Regional Water Board
CDE	California Department of Education
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CDPR	California Department of Pesticide Regulation
CEH	Center for Environmental Health
CESA	California Emergency Services Act of 2006
CHC	Center for Healthy Communities
CUPA	Certified Unified Program Agency
CVRWB	Central Valley Regional Water Board
DDW	Division of Drinking Water
DTSC	Department of Toxic Substances Control
EHTER	Environmental Health Training for Emergency Response
EMB	Environmental Management Branch

ER	Emergency Response
ERMaC	Emergency Response Management Committee
ESF-10	California Hazardous Materials and Oil Emergency Support Function Annex
ESRI	Environmental Systems Research Institute
EWQSK	Emergency Water Quality Sampling Kit
E&O EPT	Environmental & Occupational Emergency Preparedness Team
GIS	Geographic Information Systems
HABs	Harmful Algal Blooms
HazMat	Hazardous materials
HHW	Household hazardous waste
IAMS	Incident Air Monitoring Section
LARWB	Los Angeles Regional Water Board
LEA	Local Enforcement Agencies
NCRWB	North Coast Regional Water Board
NIMS	National Incident Management System
OEHHA	Office of Environmental Health Hazard Assessment
OER	Office of Emergency Response
OSC	On-Scene Coordinator
OSPR	Office of Spill Prevention and Response
PG&E	Pacific Gas and Electric
RAPID	Railroad Accident Prevention and Immediate Deployment
SARWB	Santa Ana Regional Water Board
SBCPHD	Santa Barbara County Public Health Department
SEMS	Standardized Emergency Management System
SEP	State Emergency Plan
SMC	San Mateo County
SOC	State Operations Center
SWRCB	California State Water Resources Control Board
US EPA	United States Environmental Protection Agency
Water Board	State and Regional Water Boards
WEROC	Wastewater Emergency Response of Orange County

Appendix B: ERMaC Member & Supporting Agencies

Member Agencies

California Environmental Protection Agency (CalEPA)

CalEPA's Office of the Secretary coordinates and administers ERMaC and oversees various tasks:

- Coordination between CalEPA's six BDOs,
- Emergency preparedness and response activities,
- Preparation of Agency and BDO emergency plans,
- Coordination between federal, state, and local agencies
- Environmental recovery from major disasters involving hazardous materials

The Office provides a Chairperson to ERMaC, and acts as the lead agency coordinator for oil and hazardous materials response and recovery actions under the ESF-10 Hazardous Materials and Oil Emergency Support Function Annex to the SEP. ERMaC was established to ensure that CalEPA's BDOs carry out emergency response planning, preparation, and incident response functions in a coordinated and effective manner.

California Air Resources Board (CARB)

CARB's Incident Air Monitoring Section (IAMS) focuses on protecting downwind communities in the event of unanticipated airborne releases affecting air quality. IAMS mission is to provide air monitoring support to help protect the public from acute exposure hazards and focuses its efforts on wildfire smoke monitoring. Since the passage of AB 617 and CARB's efforts to create more holistic community air monitoring capabilities, CARB is orienting its program to include air monitoring for other non-routine air emissions and incidents. CARB is also a founding member of the California Air Response Planning Alliance (CARPA), an ad hoc governmental alliance with the mission of increasing California's capacity to respond effectively to airborne releases.

California Department of Pesticide Regulation (CDPR)

The mission of CDPR is to protect human health and the environment by regulating pesticide sales and use, and by fostering reduced risk pest management. CDPR provides technical and investigative expertise for pesticide incidents and related events with the assistance of County Agricultural Commissioners. CDPR provides human and ecological toxicological data related to pesticide exposure, public and occupational health and safety information, and various California pesticide sales and usage.

Department of Resources, Recycling & Recovery (CalRecycle)

CalRecycle is responsible for the regulation of solid waste facilities in California, which include landfills, closed disposal sites, transfer stations and other solid waste processing facilities. Local Enforcement Agencies (LEA) enforce CalRecycle's regulations typically through City and County Environmental Health Programs. CalRecycle provides technical expertise to LEAs and other government agencies on the management of disaster debris including characterization, reduction/recycling processes, transportation and disposal. In certain cases, when authorized by a Governor's Executive order and funding is provided, CalRecycle has managed disaster debris removal operations by providing staff and contractor resources.

Department of Toxic Substances Control (DTSC)

DTSC's Emergency Response Program provides statewide response to actual and potential releases of hazardous substances that pose an acute threat to public health and/or the environment. DTSC Emergency Response interacts with a number of other federal, state and local agencies in carrying out these response activities. The Emergency Response Program responds to statewide calls requesting DTSC's assistance for removals from illegal/ clandestine drug labs and other hazardous materials (HazMat) emergencies. The DTSC's Emergency Response Duty Officers handle requests for assistance.

Office of Environmental Health Hazard Assessment (OEHHA)

OEHHA provides toxicological expertise and public health recommendations during all phases of emergency management. OEHHA aids in emergencies by providing emergency personnel with information on the adverse health effects of chemical agents and characterizing the risk to the public and environment from chemical releases. OEHHA identifies different exposure scenarios, their potential health effects, and exposure levels. OEHHA also provides information on re-entry, cleanup, and clearance levels after a hazardous material release. OEHHA also assesses seafood safety following marine and inland oil spills.

State Water Resources Control Board (SWRCB)

The California Water Boards are dedicated to a single vision: abundant clean water for human uses and environmental protection to sustain California's future. The State Water Resources Control Board develops policy and regulations for the protection of water quality protection, regulates drinking water, administers California's water rights system, provides financial assistance, and supports Regional Water Quality Control Board's efforts. The Regional Water Boards implement these policies and regulations, issue permits, evaluate compliance, and take enforcement.

Supporting Agencies

California Governor's Office of Emergency Services (CalOES)

CalOES promotes collaboration between CalEPA and other state agencies by offering insight to statewide emergency response and emergency management perspectives relating to planning, operations, training, reporting, and financial assistance.

California Department of Food and Agriculture (CDFA)

CDFA emergency preparedness and response functions address health-related incidents potentially effecting the state's food supply and commercial agricultural interests, including incidents effecting dairy, livestock, poultry, feed, and crop production. Agricultural emergencies involve disposal of livestock carcasses and food during natural disasters, livestock specific disasters, and other incidents involving disease or contamination. CDFA monitors these incidents, provides updated information to the involved agencies, and coordinates activities as necessary.

California Department of Fish and Wildlife (CDFW) Office of Spill Prevention and Response (OSPR)

Protecting and managing fisheries and wildlife habitats, CDFW wardens act as incident commanders and investigators on numerous oil spills and hazardous material incidents throughout California.

California Department of Public Health (CDPH)

Representatives of the CDPH Center for Healthy Communities (CHC) Environmental & Occupational Emergency Preparedness Team (E&O EPT) and the CDPH Center for Environmental Health (CEH) Environmental Management Branch (EMB) serve as liaisons between CalEPA and CDPH by providing insight into public health perspectives relative to oil and/or hazardous materials incidents.

US EPA Region IX

US EPA Region IX's Emergency Response Program—with federal On-Scene Coordinators (OSC) based in San Francisco, Signal Hill, and Carson City, NV—responds to environmental disasters, hazardous materials releases, time-critical removals, and inland oil spills that threaten human health and/or the environment. OSCs bring considerable federal authority and resources, as authorized under their governing statutes, to assist state and local agencies in emergency response, removal, and recovery efforts.

Appendix C: ERMaC History & Authorities

History

In its relatively brief history, CalEPA has risen to the challenge of major environmental emergencies. The beginnings of its interdisciplinary approach to emergency response are traced back to the year of the Agency's formation in 1991. That year, the Cantara Loop, five miles north of Dunsmuir was site of a tragic train derailment leading to a toxic chemical spill into the upper Sacramento River. Public outcry for improved response from emergency responders to such incidents gave rise to the Railroad Accident Prevention and Immediate Deployment (RAPID) program. ERMaC owes its origin to RAPID, though the program was eventually disbanded. ERMaC has evolved in its place as the interdisciplinary forum of choice for coordinating CalEPA's emergency response and recovery efforts.

In 1998, Gerald G. Johnston—CalEPA's then-Deputy Secretary for Law Enforcement and Counsel—called for Agency BDOs to designate representatives to the CalEPA Emergency Response Multi-Agency Coordinating Group. His memorandum provided the initial mission statement and objectives for ERMaC. Subsequent to Governor Davis's issuance of Executive Order D-3-99, the ERMaC focused on preparation for the Y2K calendar change.

With the Westley Tire Fire disaster in 1999, Undersecretary Brian Haddix refocused the working group on traditional disaster response scenarios. This iteration of ERMaC was known as the Emergency Response Management Advisory Committee. Later, under the leadership of Assistant Secretary Don Johnson, ERMaC focused on developing administrative orders and emergency plans for the BDOs with the assistance of CalOES. After several years of effective service and realizing a role that was far more than advisory, ERMaC was renamed as the Emergency Response Management Committee, adopting its first operating charter in 2004.

Statutory Authority

The California Emergency Services Act of 2006 (CESA) enacted a major update and consolidation of the State's emergency preparedness and response laws and executive orders. It required that all State agencies carry out activities assigned by the Governor and CalOES. State agencies must cooperate with one another, CalOES and other political subdivisions to prepare for, respond to, and mitigate the effects of regional and statewide emergencies, as declared by the Governor. The statutory duties of ERMaC members under CESA align with their routine functional responsibilities for environmental protection.

Appendix D: Administrative Orders

The primary tools for defining CESA responsibilities are BDO-specific Administrative Orders. Administrative Orders refer to documents approved by CalEPA and CalOES describing the roles, responsibilities, and authorities of the respective agencies during State emergencies. Administrative Orders, prepared under the authority of the Governor's Executive Order W-9-91 and subsequent law, expand upon and consolidate emergency assignments of State agencies. CalEPA and its BDOs first developed collective Administrative Orders in 2002.

Each agency and BDO also develops an Emergency Response Plan that must be consistent with the provisions of the applicable Administrative Orders and the statutory authorities of the individual agency. CalOES reviews and approves these plans, in accordance with California Standardized Emergency Management System and the National Response Framework, to accomplish assigned emergency management tasks. Agency plans may delegate authority and assign responsibilities to divisions, bureaus, field offices, or other elements of the agency. State agencies must ensure that all personnel assigned specific responsibilities in support of this plan receive adequate training and are prepared to assume those responsibilities.

CalEPA and the BDOs chartered ERMaC in 2004 as the forum for developing and maintaining the CalEPA collective Administrative Orders and Emergency Response Plans. ERMaC's mission is to manage effectively the public health and environmental consequences of emergency events through coordinated, agency-wide preparedness, response, recovery, and mitigation efforts. ERMaC is responsible for emergency planning and training, and coordinates all CalEPA entities preparing for, responding to, and recovering from emergencies.

The CalEPA and BDO Administrative Orders were most recently updated in 2014. Periodically, CalOES requires the Orders to be updated and recertified, notably when there is a significant change to the State's Emergency Plan, emergency policy or law.

Back Cover: Old Volkswagen bus destroyed from wildfires.

