



## INFORMATION ITEM

### Wildfire Panel Presentation

#### Summary

Forest wildfires are increasing in severity and frequency in California, with six of the twenty largest wildfires in state history occurring in 2020 alone. The destructive 2020 Sonoma-Lake Napa Unit lightning wildfire complex overlapped with the boundary of the legal Sacramento-San Joaquin Delta (Delta)<sup>1</sup>, illustrating how although historically, wildfires have occurred outside the Delta, there is an increasing threat to the Delta both directly through property damage and indirectly by impacting air and water quality. This information item will feature a panel of experts working in California wildfires and their direct and indirect threats to the Delta from various perspectives.

#### Background

In recent years, the **severity and frequency of forest wildfires** in California have increased due to a combination of many factors, including prolonged drought, historic fire management practices, and a massive tree die-off following a bark beetle infestation. Since 2017, the San Francisco Bay-Delta region has seen more fires, damaging 907,550 acres (including Sacramento) in 2020 alone. Climate change models predict that the risk of large, destructive wildfires in California will continue to increase.

Forest wildfires often occur beyond the boundaries of the Delta, only recently encroaching toward the Delta with the Sonoma-Lake Napa Unit Lightning Complex fire (LNU Lightning Complex Fire) occurring in the vicinity of aquatic ecosystems. However, wildfires occurring outside the Delta also have indirect effects on the Delta ecosystem through runoff of wildfire retardants and debris (“first flush” events), and on Delta residents by impacting air quality (in an area that already

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<sup>1</sup> A map of the legal Sacramento-San Joaquin Delta can be found here: [https://www.ppic.org/wp-content/uploads/content/pubs/report/R\\_207JLMap1\\_1.pdf](https://www.ppic.org/wp-content/uploads/content/pubs/report/R_207JLMap1_1.pdf)

receives a failing grade for air quality (<https://www.lung.org/research/sota/city-rankings/states/california/san-joaquin>) by the American Lung Association), and by suppressing industries that rely on outdoor activities, such as sport fishing and wind surfing.

Federal and state authorities historically disallowed tribal cultural burning, through policies such as California's 1850 Act for the Government and Protection of Indians (<https://www.courts.ca.gov/documents/IB.pdf>), formerly one of the most prevalent fire suppression tools. In recent years tribal cultural burning has begun to occur again in the state of California, however decades of fire suppression have worsened wildfire risk. Modern fire management techniques include using commonly applied wildfire retardants, such as ammonium phosphate, that can enter waterways through accidental direct discharge or run-off after rain. These retardants spur water quality concerns through the promotion of harmful algal growth and have been shown to be toxic to fish at the concentrations relevant for the application. Such retardants that run off into waterways or may fall directly into surface waters are of greatest concern immediately following a fire, especially considering that aerial volumes of retardants applied in California have increased from 3.3 million gallons (2012) to 15.3 million (2017).

In the 2021 Delta Adapts Climate Change Vulnerability Assessment (CCVA), (<https://deltacouncil.ca.gov/pdf/council-meeting/meeting-materials/2021-06-26-June-2021-Delta-Adapts-Vulnerability-Assessment.pdf>), the Delta Stewardship Council recognizes the threat that wildfires pose to the Delta as an Evolving Place and for the Delta Ecosystem by reducing local air quality and impacting water quality and ecosystems from potential sediment loads. The CCVA informs the Council to be able to develop an adaptation strategy that can address vulnerabilities and risks, including wildfire threats. Additionally, the Delta Science Program is funding research by ecotoxicologists on the effects of novel wildfire retardants on juvenile salmon and rainbow trout.

## About the Panel

Today's panel covers a wide range of expertise on wildfire impacts on the state of California and implications for the Delta, including water quality and air quality impacts from wildfires and wildfire retardants.

Today's panelists are:

- **Dr. Cliff Dahm**, Professor emeritus, University of New Mexico and former Delta Lead Scientist
- **Phil Crader**, Assistant Deputy Director for Division of Water Quality, State Water Resources Control Board
- **Dr. Teresa Feo**, Senior Science Officer at the California Council on Science and Technology
- **Dr. Amelie Segarra**, Assistant Project Scientist at UC Davis and principal investigator for Delta Science Program funded project on wildfire retardant effects on juvenile salmon and rainbow trout

## Fiscal Information

Not applicable.

## Contact

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