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JOINT INFORMATIONAL HEARING **Senate Select Committee on California's Wine Industry** **Assembly Select Committee on Wine**

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BACKGROUND PAPER

Northern California Wildfires

The Northern California Firestorm

On October 8th, 2017, Northern California experienced the deadliest and costliest wildfire in the nation's history, devastating many communities throughout multiple counties. Aided by fierce winds that reached 75 miles per hour, the Nuns, Tubbs, Pocket, Atlas, Redwood Valley, and Sulphur Fires blazed from Napa to Sonoma, and through Mendocino and Lake County. While final tallies are still being made, hundreds of thousands of acres burned, over 6,000 homes and structures were lost, and at least 43 lives were cut short. The fires are now under containment, but their historic size means that clean-up and recovery efforts will likely take years.

The Northern California Firestorm in Wine Country

Amongst the chaos of the fires, news outlets nation-wide reported that California's Wine Country was burning. The counties of Sonoma, Napa, Lake, and Mendocino combine to produce about 15 percent of California's winegrapes. While many in the wine industry lost homes or structures, many of the wineries within the four counties were spared. According an update released by the California Association of Winegrape Growers, the Wine Institute, and the Family Winemakers of California, fewer than ten of the 1,200 wineries in the four counties were reported as being heavily damaged or destroyed.

Losses range from structural damage—such as charred or destroyed buildings and water systems—to agricultural. Fortunately, approximately 80 to 85 percent of the grapes had already been harvested when the fires struck. While edges of vineyards that were closest to the fires may have received damage, vineyards served as a natural fire break, and prevented further damage in many cases. The green spans of vineyards, free of grasses and fuel, kept the fires from spreading to many more homes and acres.

In the coming months, California's Wine Country will be assessing damage and looking to rebuild. Grapevines are hardy; however, there is currently no official data on the impact of the fires. Counties are still collecting data, and preliminary reports are not expected until at least Thanksgiving. While the rebuilding begins across Northern California, many wineries and tasting rooms have already reopened to continue pouring the world's finest vintages.

Federal Disaster Assistance Programs

Two days after the start of the fire storms, the President issued a major disaster declaration for the counties of Butte, Lake, Mendocino, Napa, Nevada, Sonoma, and Yuba. The declaration allows the devastated communities access to federal assistance, including programs that help mitigate agricultural and structural losses. Under the United States Department of Agriculture (USDA), the Farm Service Agency (FSA) and the Natural Resources Conservation Service (NRCS) are offering a range of emergency assistance programs.

FSA's Emergency Conservation Program assists in repairing and rebuilding after a disaster. The program typically reimburses farmers and ranchers 50 to 75 percent of reconstruction costs for projects like the removal of debris, and the repair of fencing and irrigation systems. The agency also runs the Tree Assistance Program, which provides financial assistance to those whose trees, bushes, or vines have experienced at least 15 percent mortality during a disaster. Additionally, FSA offers emergency loans to qualifying borrowers.

NRCS has made the Catastrophic Fire Recovery Environmental Quality Initiative Program (EQIP) available as well, which will provide immediate resource protection to areas affected by fires in the past eighteen months. In late October, USDA announced \$4 million for farmers, ranchers, and forest land owners affected by the Northern California fires. The agency waived the thirty-day application ranking period and accepted applications through November 6, 2017.

Currently, NRCS, FSA, and the Risk Management Agency are coordinating public workshops and outreach events to assist those affected by the fires in the upcoming weeks. Those who wish to learn more about the programs described should visit their local FSA and NRCS offices to determine their eligibility.

Pest, Vector, and Disease Management in the California Wine Industry

California's largest wine regions, including the North Coast, Central Coast, Southern California, Sierra Foothills, and Inland Valleys, experience a variety of issues that inhibit the life and growth of winegrapes. For purposes of winegrapes, pests are organisms that inhibit and damage the plant. Pests may include weeds, animals, insects, and pathogens such as bacteria and fungus. Unique combinations of pests, vectors, and diseases throughout the state present growers with many scenarios to consider when planning for their crops. For example, insects, which are common vectors, thrive in warmer weather. As well, a diversity of diseases leaves a lot to consider when planning; while some may affect the quality, color, and taste of a wine, others are deadly to the vines.

While options to control these problems range from the biological to cultural, Integrated Pest Management (IPM) has emerged as an ecosystem-based approach to allow for safer pest control. With climate changes occurring throughout California, IPM provides holistic opportunities to consider the prevention and control of pests, vectors, and diseases. Described below are some common vectors and diseases that California's winegrape growers may consider for pest management.

Vectors

Vectors, often insects that transmit diseases and parasites, can be found throughout California's vineyards. Two of the major vectors in California's grapes are the mealybug, which spread Grapevine Leafroll, and sharpshooters, which spread Pierce's Disease.

The wingless, soft-bodied mealybug is a major pest amongst California grapes, feeding on the sap of plants. The mealybug is found worldwide, and at least five species of the bug commonly appear in the North Coast, Central Coast, and the San Joaquin Valley. The small, white bugs may look like cottony spots from afar, and can be hard to detect in certain instances. Some of the most difficult mealybugs to control move up from under the bark and the root of a plant, making it difficult to get sprays onto it before the plant is damaged. The bugs act as a vector for several plant diseases, including the Grapevine Leafroll. Infestations can be harder to control when they are found in a symbiotic relationship with ants, where the ants shelter and protect the mealybugs from predators.

The subject of much concern, the glassy-winged sharpshooter has mobilized both the wine and political worlds. Sharpshooters are insects that hop between leaves, spreading disease between plants when they feed on them. Sharpshooters are native to North America, like the blue-green sharpshooter—which is native to Sonoma County—and the glassy-winged sharpshooter—which is native to northern Mexico and the southeastern United States. The glassy-winged sharpshooter spread from Southern California up the state in the late 1980s, likely introduced by accident through nursery stock. The sharpshooter is a vector to many diseases, including Pierce's Disease.

Diseases

California's winegrapes are susceptible to a range of diseases, such as viral, bacterial, and fungal. Two of the more common viral diseases, Red Blotch and Grapevine Leafroll, cause similar visual symptoms in the plant, making identification difficult without laboratory testing. While Leafroll can be found worldwide, Red Blotch Disease was first identified in 2011 in Napa. In 2016, researchers at the University of California Davis confirmed the three-cornered alfalfa treehopper as a vector for the disease. Up until its identification, growers on the North Coast, who noticed an uptick in the reddening of their leaves and a delayed harvest, often mistook the Red Blotch for Grapevine Leafroll. The disease affects grape varieties differently, such as with flavoring and coloring.

Pierce's Disease, deadly to grapevines, has been present in Southern California's vineyards for a long time, but has been spread more over the past few decades by the glassy-winged sharpshooter. The disease has been identified in the United States, ranging from California to

Florida, as well as Central and South America. The disease is capable of killing vines as soon as a year or two. It can be identified by the irregular and patchy bark, and by the yellow or red discoloration of leaves it may cause. When the disease blocks the water system of the plant, the fruit will shrivel, and both the leaves and the fruit will die. To support research and efforts to control the spread, California created the Pierce's Disease Control Program within the California Department of Food and Agriculture in 2000.

Additionally, grapes are susceptible to a variety of fungal diseases. In 2015, the University of California Davis reported that growers use the most chemicals to control the fungal disease Powdery Mildew than to manage any other vineyard problem. This fungus, which appears as white, powdery, or dusty spots on the plant, damages both plants and berries. It flourishes in moisture and moderate temperatures between 70 and 85 degrees Fahrenheit, leaving winegrape growing regions with a marine layer, or even those regions that have experienced a wet winter, more susceptible.