Forest Pathology Services Scope of Work: January – April 2020

BACKGROUND: The State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW) seeks expertise in the area of forest pathology and assistance with managing a recent disease outbreak in the state. Rapid Ohia Death (ROD), caused by the two related fungal pathogens, *Ceratocystis lukuohia* and *C. huliohia*, is killing tens of thousands of acres of ‘ōhi’a forest across Hawaii Island and was recently detected on the islands of Kauai, Oahu, and Maui. DOFAW seeks high-level expertise in attempting to understand the disease and specifically how to best contain outbreaks and prevent the spread of this destructive disease in Hawaii.

OBJECTIVES:

1. Assist in the evaluation of the current distribution of the Ceratocystis wilt epidemic, using remote sensing, site visits and helicopter surveys on Hawaii island. New samples of the pathogen will be collected for genetic analyses, if possible. Recent outbreaks from the Hamakua Coast to Kohala would be the focus on Hawaii island.

2. Evaluate the two recent sites on Kauai where *C. lukuohia* has been detected and compare the symptoms, mortality, slope and aspect with the previously evaluated Anahola Stream mortality. New samples of the pathogen will be collected for genetic analyses, if necessary.

3. Coordinate with the University of Hawaii in Hilo, SDAV Laboratory in evaluating disease progress at Kohala, Waipunalei, Stainback Road and other sites located on Hawaii island and help determine if the recent uptick in mortality is associated with secondary spread of the pathogen. New samples of the pathogen will be collected for genetic analyses, if necessary.

4. Evaluate the sites where *C. huliohia* had been recently detected on Oahu and the potential threat of further mortality.

REQUIREMENTS The contractor should have educational credentials in forest pathology (including PhD in pathology from a credited university), extensive direct experience with and knowledge of forest diseases caused by *Ceratocystis spp.* demonstrated by multiple peer-reviewed publications on the topic; and a general familiarity with Hawaii geography and natural history and remote sensing data; ability to hike and work in forest settings under adverse weather conditions; comfort in and around helicopters. Site visits will be coordinated closely with DOFAW, University of Hawaii, US Forest Service, and USDA ARS and will require approximately 6 business days on site.

Please provide a brief summary of background and experience, as well as a detailed proposal to carry out the project.

For questions, please contact Rob Hauff at Robert.D.Hauff@hawaii.gov.