Forest Pathology Services Scope of Work: 2019

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 island of Kauai. 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. Assess current status of the epidemic on Hawaii Island to identify sources of inoculum and patterns of dispersal by site visits and helicopter surveys.
2. Consult on sampling of aerially suspended spores of *Ceratocystis* spp. to better understand disease spread and monitoring disease presence in the environment.
3. Visit Kauai to assess situation with *Ceratocystis huliohia* working with DOFAW and Kauai Invasive Species Committee.
5. Collect additional isolates of *C. lukuohia* for genetic analysis in order to update the genetic database of fingerprinted strains, which will allow tracing the origin of inoculum at new outbreak sites. A list of sites in order of priority will be provided to DOFAW by vendor in advance.
6. Assess different vectors of disease spread as well as wounding agents including ambrosia beetles, ungulates, and wind.

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 15 business days on site.

AWARD: Initial Award will be issued for services in 2019. Contract may be extended. Upon mutual agreement, additional Awards may be issued for services in subsequent years.

**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.**