

Oak Decline Investigations in Mexico—A Cooperative Effort

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In June of 2003, Forest Health Protection received a request from the Director of Sanidad Forestal in Mexico for assistance in surveying oak woodland forests to determine the causes of oak decline in 5 Mexican states (Colima, Jalisco, Nayarit, Aguascalientes and Guanajuato). Subsequently, A USDA Forest Service team of forest pathologists was assigned to work with Mexican counterparts to identify possible causal agents, to provide support and training in techniques for isolation of *Phytophthora* species from oaks and soil, and to assist with the establishment of monitoring plots to record progression of oak decline over time. Two plots were established in each of the five states. *Phytophthora cinnamomi* was isolated from oaks and/or soil, and identified as the primary cause of decline and mortality, at four of the 10 locations; two in Colima near an area where the pathogen had been previously reported, and two in Jalisco. *Phytophthora* species were not isolated from the remaining six locations. Oak decline in those locations was likely due to stress factors (drought and disturbance due to cattle grazing and wood cutting) and associated secondary organisms (defoliators, including chafer beetles; wood borers; *Armillaria*; *Ganoderma*; *Hypoxylon*; and anthracnose fungi). The relative contribution of stress factors and associated organisms varied by site. Management options to deal with the decline, including practices to reduce the spread of the soil borne *P. cinnamomi*, are being implemented. The plots have been re-visited for observations on progression of the decline and for additional attempts at isolation of causal organisms.