

## Mission Statement

The Working Group on Phytophthoras in Native Plant Habitats, formed in March 2015, is a voluntary coalition of native plant nursery managers, land management agencies, researchers, and non-profit organizations. Our primary purpose is to coordinate a comprehensive, unified program of management, monitoring, research, education and policy to minimize the spread of *Phytophthora* pathogens in restoration sites and native plant nurseries.

## Goals

1. Minimize *Phytophthora* pathogen spread to native vegetation, especially sensitive, threatened and endangered species. Provide management strategies and information to prevent introduction of plant pathogens into California wildlands, restoration landscapes, and native plant nurseries.
2. Coordinate a collaborative response to manage and prevent *Phytophthora* spread into native plant habitats and serve as liaisons to industry, regulators and land managers.

The objectives of the Working Group are to:

- 1) Provide technical assistance and public education to individuals and communities affected and threatened by *Phytophthora* pathogens, to empower them to sustain plant health in nurseries and restoration areas.
- 2) Develop strategies and techniques to support adaptive integrated pest management programs for *Phytophthora* species in restoration areas and native plant nurseries. Collate and evaluate the efficacy of best management practices to minimize *Phytophthora* infestations in native plant nurseries and restoration areas.
- 3) Provide information and education relating to the treatments, biology and risks from *Phytophthora* pathogens.
- 4) Identify the needs for and potential sources of funding, staffing and other resources to address *Phytophthora* and other plant pathogens and pests in native plant habitats.

**Why now?** Since we are dedicated to sustaining plant vitality and diversity, we recognize the need to minimize inadvertent, human-caused plant pathogen spread via the production and planting of nursery stock into wildlands. *Phytophthora* detections in wildlands and nurseries are not unprecedented, but over the past several years, numerous *Phytophthora* plant pathogens have been detected in California native plant nurseries and habitat restoration sites. Of particular concern, a first-in-the-USA detection of *Phytophthora tentaculata* was recognized in 2012 and has been found in several California native plant nurseries and in restoration areas (in 7 CA counties), most commonly on sticky monkey flower (*Diplacus aurantiacus*) nursery stock. Preliminary follow-up investigations have identified more than 33 *Phytophthora* species in California native plant nurseries.

The risks to wildland plants from *Phytophthora* species are not fully known; we cannot predict which new pathogens may be introduced and the consequences of those introductions under widely variable environmental conditions, myriad ecosystems and thousands of plant species. Sudden oak death is a dramatic example of what can happen: Over the past 20 years, *Phytophthora ramorum*, introduced to California on ornamental nursery plants, has killed millions of oaks and tanoaks. Once established, Phytophthoras are impossible to control so prevention of new introductions is critical.

The endangered coyote ceanothus (*Ceanothus ferrisiae*) and other native species, such as manzanitas, have been recognized as dying from *Phytophthora* infestations that have been introduced into their habitats.

Ornamental nursery plants have the potential to inadvertently carry plant pathogens into landscaping, where they can then move to adjacent forests. Conservation nursery plants are often grown to increase populations of rare or endangered plants – so unintentional planting of infested plants can destroy endemic habitat that cannot be replaced.

**What is a “Phytophthora”?** *Phytophthora*, which means “plant destroyer”, is a genus of microscopic water molds, fungal-like organisms that are most closely related to diatoms and brown algae (Kingdom Stramenopila). The genus *Phytophthora* is large, with over 100 described species, including the Irish potato famine pathogen and other destructive pathogens of agricultural, ornamental, and forest plants.

**Participating organizations:** Acterra; California Department of Food and Agriculture; California Native Nursery Network; California Native Plant Society; Central Coast Wilds Nursery; Elkhorn Slough National Estuarine Research Reserve; Golden Gate National Parks Conservancy; Marin Municipal Water District; Monterey County Agriculture Department; Midpeninsula Regional Open Space District; National Ornamentals Research Site at Dominican University of California; National Park Service, Golden Gate National Recreation Area; Phytosphere Research; Presidio Trust; San Francisco Public Utilities Commission; Santa Clara County Water District; University of California- Berkeley Forest Pathology and Mycology laboratory; University of California – Davis, Department of Plant Pathology; University of California Cooperative Extension – Marin County; USDA Forest Service, Pacific Southwest Research Station, the Watershed Nursery and others.

**For more information** on the Working Group on Phytophthoras in Native Habitats, contact Janice Alexander ([jaxander@ucanr.edu](mailto:jaxander@ucanr.edu) or 415-473-3041). Information on *Phytophthora tentaculata* is posted at <http://www.suddenoakdeath.org/diagnosis-and-management/nursery-information/phytophthora-tentaculata/>.