



HEALTHY NURSERIES AND HABITATS COMMITTEE
Advising CNPS on Pathogen Threats to California Flora
October 26, 2022

We need your help – Join the CNPS Healthy Nurseries and Habitats (HNH) Committee!

Our objectives are to develop and maintain:

- a California Native Plant Society (CNPS) policy on *Phytophthora* with guidelines to prevent and manage infections in nurseries and landscapes;
- actions to minimize pathogens in native plant stock used in habitat restoration projects; and
- ways to improve the health of CNPS chapter plant sale stock.

Why be concerned about *Phytophthora* species in restoration plantings and habitat preserves?

A wide variety of *Phytophthora* species cause root rot on a broad range of plant species. These pathogens can cause serious diseases that may result in slow or weak growth, decline, or plant death. If these pathogens are present on nursery stock used in restoration plantings, the infected plant material is unlikely to perform well and may show high rates of mortality. Beyond that, infected nursery stock can infest the planting site itself, affecting both replacement plantings and existing vegetation at the site. This can lead to perpetual degradation of the site's ability to support a wide variety of native vegetation.

Simply put, diseased nursery stock is defective, and this defect can propagate itself through the site. In designing and constructing a piece of infrastructure with a long service life, it is generally unwise to use defective materials that will prematurely result in failure. Trying to establish and manage vegetation over the long term is likely to be unsuccessful if destructive diseases, such as *Phytophthora* root rots, are introduced to the site.

Are root-rotting *Phytophthora* species everywhere?

Recent research on habitat restoration projects infested with *Phytophthora* concludes that these pathogens were not commonly present in the restored habitats. Rather, they were introduced through plants or soil contaminated in the facilities producing the restoration plant stock. Furthermore, this research found that these pathogens are spreading outside the borders of restorations through movement of infested soil and water. The restoration projects, rather than restoring the integrity of the ecosystem, may further deteriorate its health by introducing invasive plant pathogens.¹

Clean nursery practices make a difference

In 2018 an allied organization, the Phytophthoras in Native Habitats Work Group, launched “Accreditation to Improve Restoration and Native Plant Nursery Stock Cleanliness (AIR)”. This voluntary, audit-based accreditation program supports the use of comprehensive Best Management Practices (BMPs) by nurseries to prevent *Phytophthora* introduction and spread on the plants they grow. The program's BMPs are based on the **CNPS Best Management Practices for Producing Clean Nursery Stock**.

¹ Sims, L.L., & Garbelotto, M. 2021. *Phytophthora* species repeatedly introduced in Northern California through restoration projects can spread into adjacent sites. *Biological Invasions*, 23(7): 2173-2190.
<https://link.springer.com/article/10.1007/s10530-021-02496-6>

At the HNH Committee’s request, CNPS is contributing critical funds to support continuation of the AIR Program and will advocate for state support.

As of 2022, 30+ California nurseries have participated in the program, and about 10 have met all the program requirements, including one CNPS chapter nursery (Milo Baker). As part of the program, 564 *Phytophthora* leachate baiting tests have been conducted over four years with **no *Phytophthora* detected** from over 20,000 nursery plants produced in compliance with the BMPs. In comparison *Phytophthora* was detected in 25% of tests conducted on partially compliant stock and in 71% of tests from nurseries following few or no BMPs.²

HNH Committee Accomplishments

- Prepared CNPS Policy on *Phytophthora*, Adopted by Chapter Council on Dec. 5, 2015.
Policy Statement: *“The California Native Plant Society strongly encourages native plant nursery and propagation practices that help prevent plant diseases and that discourage the spread of Phytophthora and other harmful plant pathogens. CNPS gives special attention to stock propagated and/or sold by CNPS chapters and offers support to chapters for purchasing clean stock and maintaining clean operations.”*
- Provided support to CNPS chapters to implement this new policy:
 - Guidance documents to minimize pathogens in plant sale stock;
 - Workshops and other continuing education on clean nursery practices; and
 - Grants to implement BMPs at their nurseries.

Current HNH Committee Priorities

- Garner support for a statewide voluntary nursery accreditation program for California that excludes *Phytophthora* from plant materials used for habitat restoration;
- Re-establish a website to provide information on healthy plants and habitats;
- Fund additional grants for CNPS chapter nursery infrastructure improvements;
- Support implementation of sustainable management plans for habitat preserves; and
- Promote BMPs for protecting habitats from contamination by soil movement during construction, management or recreational activities.

Current HNH Committee Membership

Cathy Capone, Alta Peak Chapter	Kari Olsen, Santa Cruz Chapter
Susan Frankel, East Bay Chapter	Cris Sarabia, South Coast Chapter
Steven Goetz, Willis Linn Jepson Chapter	Bill Waycott, San Luis Obispo Chapter
Janell Hillman, Santa Cruz Chapter	Betty Young, Milo Baker Chapter
Larry Levine, Chapter Council liaison	Andrea Williams, CNPS staff liaison
Vivian Neou, Santa Clara Valley Chapter	

Interested in Further Information on the Committee? Membership is open to interested CNPS members. Contact Steven Goetz, Willis Linn Jepson Chapter, [sgoet\(at\)sbcglobal.net](mailto:sgoet(at)sbcglobal.net)

² Swiecki T., Benhardt E., Frankel S., Benner D., Hillman J., 2021, An Accreditation Program to Produce Native Plant Nursery Stock Free of *Phytophthora* for use in Habitat Restoration, Plant Health Progress, 22(3): 348-354