



Evaluating the status of cypress canker on young Port-Orford-cedars in Coos County, Oregon



Katy Mallams¹, Alan Kanaskie², Jon Laine², Kevin Nelson², Michael McWilliams², and Michael Thompson²

1. USDA Forest Service, Southwest Oregon Forest Insect and Disease Service Center

2. Oregon Department of Forestry

Background and Objectives

Cypress canker, caused by the fungus *Seiridium cardinale*, is an invasive disease that was first identified on Monterey cypress in California in 1928. The same fungus, or one closely related, causes serious disease on Port-Orford-cedar (*Chamaecyparis lawsoniana*) in New Zealand, and on other cedars and cypresses around the world. The disease has rarely been reported on older Port-Orford-cedar in North America.



Small canker on seedling stem with distinct margin and fresh resin flow



Large canker with sunken necrotic tissue and deep cracks in bark

In 2003, cypress canker was found on Port-Orford-cedar seedlings outplanted at a test site in a plantation in Coos County, Oregon. Infected seedlings were also found in four other plantations nearby. This was the first reported detection of cypress canker on Port-Orford-cedar seedlings in plantations.

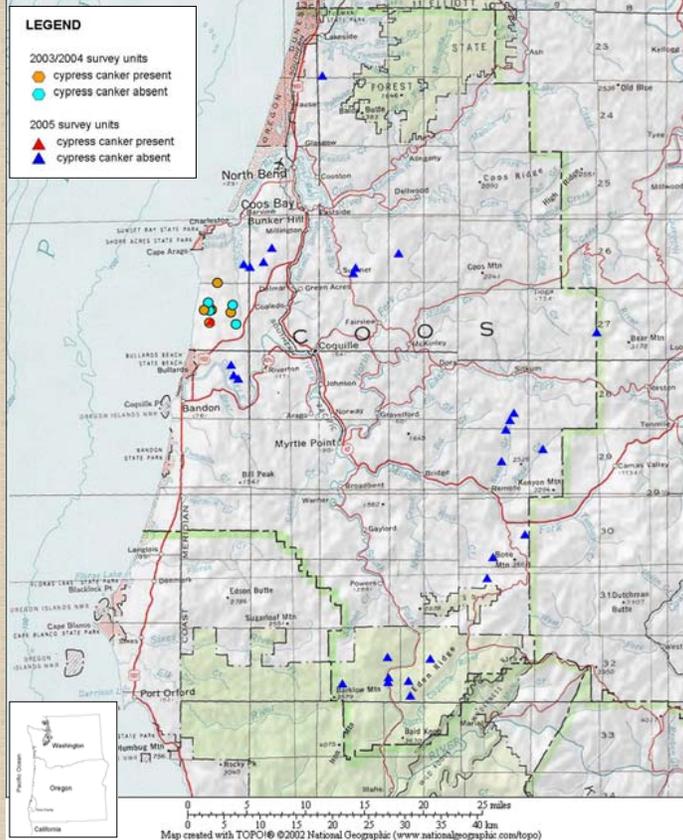
A program to breed Port-Orford-cedar resistant to root disease caused by *Phytophthora lateralis* has renewed interest in planting Port-Orford-cedar. Before high-value root disease resistant plant materials are moved from place to place it is important to understand the current distribution and impact of cypress canker on young Port-Orford-cedar. This was the objective of our survey.



Flagged branch on Port-Orford-cedar caused by cypress canker

Funding for this survey was provided by the USDA Forest Service, Forest Health Monitoring Program

Location of survey units in Coos County



Methods

- We surveyed 28 randomly selected, two-to-ten-year old plantations, four to 120 acres in size
- Installed hundredth-acre plots at 1.5 plots per acre.
- Examined all live planted and natural Port-Orford-cedar seedlings in plots
- Collected data on number of live Port-Orford-cedar, number infected, and symptoms
- Between plots examined seedlings in transects twelve feet wide to maximize the number of seedlings
- Cankers examined in the lab to confirm *S. cardinale* as the causal agent.

Results of 2005 Survey

- Cypress canker was detected on four Port-Orford-cedar seedlings in one plantation, near the original detection
- In combined data from this plantation plus the four plantations where disease was found in the original survey, a total of three percent (11 of 394) of seedlings we examined were infected
- No cypress canker was detected in any of the 27 other plantations surveyed in 2005
- All five plantations with infected trees were within four miles of the coast.
- Disease is not widespread on Port-Orford-cedar in plantations at this time.

Summary of 2005 Survey	Total	Average/unit
Units	28	
Acres	1129	40
Number of plots	1665	59
Miles of transects	33	1.2
Number of POC examined	1765	63
Number of infected POC	4	

Conclusions

- Cypress canker occurs sporadically, primarily near the coast
- Environmental conditions near the coast may be conducive to movement of spores and infection
- We don't know the origin of the fungus, source of infection, or relative susceptibility of trees in the root-disease resistance breeding program
- Cypress canker does not appear to be a major concern when considering whether to plant Port-Orford-cedar
- Forest managers should remove any infected trees during intermediate stand treatments
- Nurseries should ensure that they are shipping disease-free seedlings