

# Port-Orford-Cedar Mapping within the Biscuit Fire

Frank Betlejewski, USDA Forest Service, Forest Health Protection,  
Southwest Oregon Forest Insect and Disease Service Center,  
Central Point OR 97502

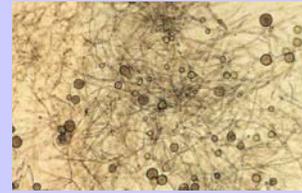
Port-Orford-cedar (POC)  
*Chamaecyparis lawsoniana*



POC is native to an area along the Pacific Coast from Coos Bay, Oregon, to the mouth of the Mad River near Arcata, California. Its range extends from the coast to about 50 miles inland. There is also a small disjunct population in the Scott Mountains of California.

## *Phytophthora lateralis* (PL)

PL is a virulent, non-native root pathogen. It was introduced into the native range of Port-Orford-cedar in the early 1950s and its place of origin is unknown. It readily kills POC of all ages that are growing on sites favorable for infection. PL is spread via water or soil. A typical spread scenario involves infested soil being transported into an un-infested area on a vehicle or piece of equipment or, potentially, in infested water being transported in the tanks of fire engines or helicopter buckets during fire suppression activities. The infested soil falls off of the vehicle or spores are delivered via water and the pathogen first infects POC near the site of introduction. New spores from that infection are then washed downhill in surface water infecting additional hosts. This is especially lethal along drainages and creeks where infested water is channeled and flows near concentrations of healthy POC.



*Phytophthora lateralis*  
Resting spores (chlamydospores)  
magnified 100 times



Characteristic crown discoloration as a result of PL. Less than 1% of all POC are considered to have complete resistance to the pathogen



After a crown fire, POC survivors adjacent to a spring.

## Upper North Fork of Silver Creek before and after the Biscuit fire.



1998



2004

Some streamside areas with POC experienced less severe fire intensities and had greater survival.

## Biscuit Fire Data Sheet

2002 Aerial Photo Mapping Of Port-Orford-cedar

### Polygon Attribute Table

- 1) 2002 Photo & Flight Line:
- 2) Polygon #
- 3) Root Disease?
- 4) Live POC % Canopy Closure
- 5) Survey Date
- 6) Est. # Live POC By Size Class
- 7) Est. # Dead POC By Size Class
- 8) Field Verification Level
- 9) Remarks



The Biscuit Fire burned with stand replacement intensity on about 46,000 acres occupied by healthy POC and 900 acres infested with PL. This is about 48 percent of the acres with POC that existed before the fire.

## Biscuit Fire

July 13 – November 9, 2002  
499, 965 acres  
Oregon: 471,130 acres  
California: 28,835 acres

## Project Costs (through 2004)

Positive air photo transparencies (1,207)	\$39,831
Photo transparencies scanned onto 607 CDs	\$24,175
Service contract (photo interpretation)	\$22,000
Service contract (create GIS layer)	\$17,851
Labor (Federal employees)	\$5,551
<b>Total</b>	<b>\$109,408</b>
Acres Inventoried	425,725
Cost per Acre	\$0.26

## POC and PL Pre-Biscuit

POC acres: 89,880

PL acres: 3,022

Represents 29% of all POC on Federal lands.



## POC and PL Post-Biscuit

POC acres: 21,273  
(23.7% of pre-fire acres)

PL acres: 829  
(27.4% of pre-fire acres)

Reduced acres are a function of the fire and more precise mapping.



## Things Left To Do

116 square miles not photographed in 2002 flown in 2004.

Photos currently being processed at the USDA Aerial Photography Field Office in Salt Lake City, Utah.

Contractor start work date for photo interpretation is February 28, 2005.

Final Biscuit POC/PL inventory and map expected by July, 2005.