

## Evaluation Monitoring Proposal for FY 2007

**Title:** Willamette Valley Ponderosa Pine Insect and Disease Survey

**Duration:** 2007-2009

**Funding Source:** Base

**Project Leader:** David Shaw

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**FHP Sponsor:** Iral Ragenovich

### Cooperators:

USDA Forest Service, Pacific Northwest Research Station; Robert Progar  
Oregon Department of Forestry; Jim Cathcart, Alan Kanaskie, Rob Flowers  
Willamette Valley Ponderosa Pine Conservation Association; Bob McNitt  
Oregon State University Extension Service, Willamette Valley Extension Agents; Rick  
Fletcher (Benton, Linn), Mike Bondi (Clackamas), Steve Bowers (Lane), Brad  
Withrow-Robinson (Polk, Marion, Yamhill), Chal Landgren (Washington).

**Project Objectives:** Determine the major insect and disease problems of Willamette Valley Ponderosa pine (WVPP), a newly emerging plantation species in the Willamette Valley of Oregon. Develop ground based survey methodology to support insect and disease detection in WVPP. Determine the variation in flight period of *Ips paraconfusus* along the north – south gradient of the Willamette Valley.

**Justification:** The increasing acreage of Willamette Valley Ponderosa Pine being planted in the Willamette Valley (estimated at ~3,000 acres/year) means that a resource which was previously rare is now becoming much more abundant. It is highly likely that insect and disease issues will arise when host, environment, and pest are together. Small private landowners are the principle people using WVPP. This project is justified due to the biological and social issues surrounding cultivation and preservation of WVPP, and to support rural economies.

## DESCRIPTION

### a. Background

Willamette Valley Ponderosa Pine is a regional ecotype of Ponderosa Pine that is adapted to the local environment of the Willamette Valley in Oregon. The ecotype was very common in mixed groves a century ago, but with the early tree harvesting, agricultural conversions and urbanization of the Willamette Valley, there are now only remnant groves. Foresters and small private landowners have discovered that the WVPP is a fast growing alternative to other conifer species and it grows well in poorly drained clay soil sites where other conifers such as Douglas fir fail. Through a major effort, cooperatively funded by USFS, State and Private Forestry, Cooperative Programs, the ecotype has been preserved in a genetic conservancy and seed orchard established at the Oregon Department of Forestry J.E. Schroeder Orchard at St. Paul, Oregon in 1996. The seed orchard is set to come on line soon, and seed availability currently prevents more planting. There are over 1 million seedling being planted each year (~3,000 acres) and

this will increase when the seed orchard comes on line. Even-aged and mixed species plantations will begin maturing over the next several decades – in locations where there have only been scattered groves over the past 150 years. As a result of this renewed and expanded distribution of WVPP, previously inconspicuous pests may emerge to impact WVPP.

#### **b. Methods**

1. Randomized survey of a subset of all known locations of native stands and plantations of Willamette Valley Ponderosa Pine.

The Willamette Valley Ponderosa Pine Conservation Association has a GPS database of the locations of all known native stands of WVPP (~900 locations). Plantation locations would be determined by requesting information from the WVPP Conservation Association members, discussions with local county extension agents, and communication with state, federal, and industry landowners. At each site, we will delineate the plantation or grove on an air photo and using a transect-based survey, do a 5% cruise of the stand. Alternatively, if the stand/plantation is too small or not organized in a survey-able manner, we will assess a minimum of 100 trees. Each tree that falls in the transect will be assessed for occurrence of insects and diseases, also including tree dbh, height, stand age, and foliage retention. We will also survey mortality and note causal agents of mortality outside the transect.

2. Semio-chemical trapping of *Ips paraconfusus* along the North-South gradient of the Willamette Valley.

We will set up semio-chemical trap stations for *Ips paraconfusus* at 12 sites along the north-south gradient of the Willamette Valley. Over a 3-year period, this will provide an understanding of the variation in flight period.

3. Determine the occurrence root diseases.

The Pine type of black stain root disease and the P type of Annosus root disease are not known to occur in the Willamette Valley. At locations where root disease is suspected, we will sample wood and bring the samples back to the laboratory for analysis and isolation of causal agents. We will determine the species of the fungi.

#### **c. Products**

1. Scientific papers on results of the survey (at least 2).
2. Attend Evaluation Monitoring meeting, and other scientific meetings to present results.
3. Summary of on-going work in Annual Forest Health Highlights.
4. Ground based survey methodology to support disease and insect detection.
5. Extension outreach publications.

#### **d. Schedule of Activities**

**2006.** Using existing monies:

ODF Field crews will take 2 weeks (3 people) to:

1. Go through all FHP, Cooperative Aerial Surveys and determine whether tree damage is reported through the survey for the past 20 years.
2. Collate all field calls that ODF foresters, USFS West Side Service Center FHP personnel, and OSU extension service has responded to over the past decade.

3. Get the database from WVPPCA and begin accumulation of and map the locations, assessment of data, and randomize locations. Determine 12 locations for bark beetle sampling.

**2007.**

March. Set up bark beetle sampling.

March – October. Field crews will be sampling stands throughout this period. We will attempt to locate and sample 50 locations per year. March – October. Process bark beetle specimens and culture fungi. Get identifications.

**2008.** Same field and lab season.

**2009.** Same field and lab season.

Progress reports will be submitted annually. A final report will come at the end of three years.

**e. Progress/Accomplishments.**

1. Identify the most important threats to WVPP.
2. Ground-based survey methods for support of insect and disease detection.
3. Identify if invasive species are present and effecting WVPP.
4. Use information to build an integrated protection program for WVPP.

**COSTS**

	<b>Item</b>	<b>Requested FHM EM Funding</b>	<b>Other-Source Funding</b>	<b>Source</b>
<b>YEAR: 2007</b>				
<b>Administration</b>	<b>Salary</b>	<b>11,000</b>	<b>11,417</b>	<b>Oregon State General Fund</b>
	<b>Overhead</b>	<b>6,500</b>	<b>4,721</b>	<b>Oregon State General Fund</b>
	<b>Travel</b>	<b>3,000</b>		
<b>Procurements</b>				
	<b>Contracting</b>	<b>6,000</b>		
	<b>Equipment</b>			
	<b>Supplies</b>	<b>1,000</b>		
<b>Total</b>		<b>27,500</b>	<b>16,138</b>	

**Salary and Overhead =2.5 months of a 2 person ODF crew**

**Other source funding includes salary for Shaw, 1 month, Kanaskie 2.5 weeks, Flowers, 2.5 weeks. Source is the State of Oregon General Fund (Shaw is OSU Forestry Extension, Kanaskie and Flowers are ODF.**

**Travel includes field crew and cooperators.**

**Supplies: \$1,000**

**Contracting includes:**

Beetle counting and identification: \$3,000  
 Culture and identification of fungi: \$3,000

	Item	Requested FHM EM Funding	Other-Source Funding	Source
<b>YEAR: 2008</b>				
<b>Administration</b>	Salary	11,250	11,417	OSU, ODF
	Overhead	6,600	4,721	OSU, ODF
	Travel	3,000		
<b>Procurements</b>	Contracting	6,000		
	Equipment			
	Supplies	1,000		
	<b>Total</b>		27,850	16,138

Salary and Overhead =2.5 months of a 2 person ODF crew  
 Other source funding includes salary for Shaw, 1 month, Kanaskie 2.5 weeks, Flowers, 2.5 weeks. Source is the State of Oregon General Fund (Shaw is OSU Forestry Extension, Kanaskie and Flowers are ODF.

Travel includes field crew and cooperators.  
 Supplies: \$1,000  
 Contracting includes:  
 Beetle counting and identification: \$3,000  
 Culture and identification of fungi: \$3,000

	Item	Requested FHM EM Funding	Other-Source Funding	Source
<b>YEAR: 2009</b>				
<b>Administration</b>	Salary	11,500	11,417	OSU, ODF
	Overhead	6,700	4,721	OSU, ODF
	Travel	4,500		
<b>Procurements</b>	Contracting	6,000		
	Equipment			
	Supplies	1,000		
	<b>Total</b>		29,700	16,138

Salary and Overhead =2.5 months of a 2 person ODF crew  
 Other source funding includes salary for Shaw, 1 month, Kanaskie 2.5 weeks, Flowers, 2.5 weeks. Source is the State of Oregon General Fund (Shaw is OSU Forestry Extension, Kanaskie and Flowers are ODF.

**Travel includes field crew and cooperators. AND:  
Travel to FHM 2010 Annual Workshop: \$1,500**

**Supplies: \$1,000**

**Contracting includes:**

**Beetle counting and identification: \$3,000**

**Culture and identification of fungi: \$3,000**