



Intermountain Forestry Cooperative

**A review of a successful  
seed orchard at Cherrylane**

**March 28, 2017**

**Moscow, Idaho**

**Abbie A. Acuff**

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[www.potlatchcorp.com](http://www.potlatchcorp.com)

# My Background:

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- Graduate of Washington State University, BS Forest Management
- Employed by USFS White River Ranger District during college
- Hired as Assistant Seedling Production Supervisor for Potlatch Greenhouse in 1990
- Promoted to Seedling Production Supervisor in 1993
- Potlatch Greenhouse closed January 2009
- Promoted to Silviculturist in 2010
- Current responsibilities include seed and seedling procurement and seed orchard management

# Outline:

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- Benefits
  - Location
  - Overview
  - Species
  - Management
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# Benefits of Cherrylane Seed Orchard

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- Improved seed with high genetic gain
- Steady supply of seed
- Families cover Potlatch Ownership
- One cone collection site
- Sale of surplus seed





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# Cherrylane Seed Orchard.....

## Why There??

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- Located close to Lewiston
- Easy access
- Flat
- Well drained soil
- Water
- Long growing season
- No off site pollen contamination (except for Ponderosa Pine)
- Minimal chance of conifer disease

# Overview of Cherrylane Seed Orchard

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- Approximately 40 acres, not all available for seed production
- Seven species present on site
  - Western White Pine
  - Douglas Fir
  - Western Larch
  - Western Red Cedar
  - Lodgepole Pine
  - Ponderosa Pine
  - Grand Fir







# Western White Pine

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- Orchard originally started as Western White Pine Seed Orchard
- Focused on different resistance than Bingham Seed Orchard
- WWP seed from CLSO was operationally sown and planted on Potlatch land from 1991 to 1995. CLSO plantings were only 10-20% of total WWP plantings during those years.
- Original WWP Orchard removed in 1999
- Current WWP Block represents 3 of 4 mechanisms for resistance to WWP Blister Rust:
  - Bark Reaction
  - Short Shoot
  - Needle Shed

# Douglas fir

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- A real life example of Tree Improvement in action
- 1979-1980, Parent tree selection
- 1980-1981, Seed collected from parents
- 1982-1984, Progeny tests planted
- 1989-1992, Grafted top 30% of parents into Cherrylane Seed Orchard
- 1997, First significant cone crop







# Douglas fir – Continued.....

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- Seven, overlapping elevation zones
- Elevation from 2,300 feet to 4,700 feet
- Cones collected and stored by Family
- Seed blended annually to cover sowing needs
- Seed production varies by year and zone, but ranges from 0 lbs to over 100 lbs
- Currently meeting all Potlatch needs for elevation zones







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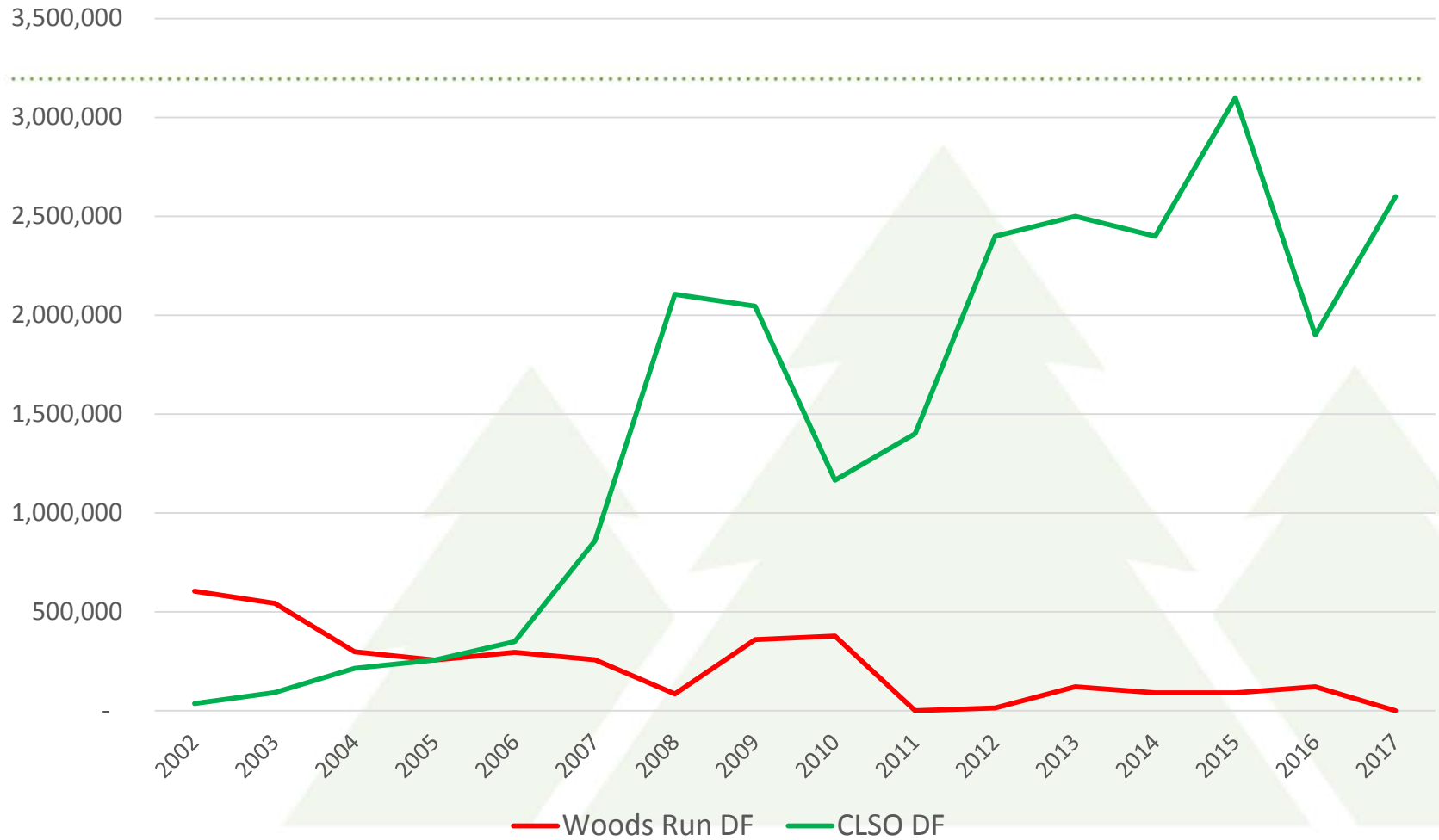




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## Woods Run vs Cherrylane Seed Orchard Douglas Fir Seedlings



# Western Larch

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- Four Western Larch blocks currently at CLSO
- Block 1, earliest block, was established in 1993
- Two elevation bands, Low and High
- All Families collected and stored as one collection per year
- Seed yield is variable. Have tried several methods to stimulate flower production, but no home run
- Not currently meeting Potlatch seed needs

















# Western Red Cedar

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- Block 1 established in 2000
- Block 2 established in 2013
- Represents all elevation zones to 5,000 feet
- Cones are picked and stored as one seed-lot each year
- Supplying all of Potlatch's WRC seed needs







# Lodgepole Pine

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- Established in 1996
- 4 elevation zones
- Small collections of seed have been blended and used for operational planting
- Not currently meeting Potlatch's annual seed needs










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# Ponderosa Pine

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- Established in 1997
  - Four elevation zones
  - No significant cone crop to date
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# Grand Fir

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- Established in 2014
- No grafts, all from seedlings





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# Seed Orchard Management

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- Potlatch practices intensive management of Cherrylane Seed Orchard for tree health and seed production. Including:
  - Irrigation
  - Fertilization
  - Control of cone and seed insects
  - Vegetation control



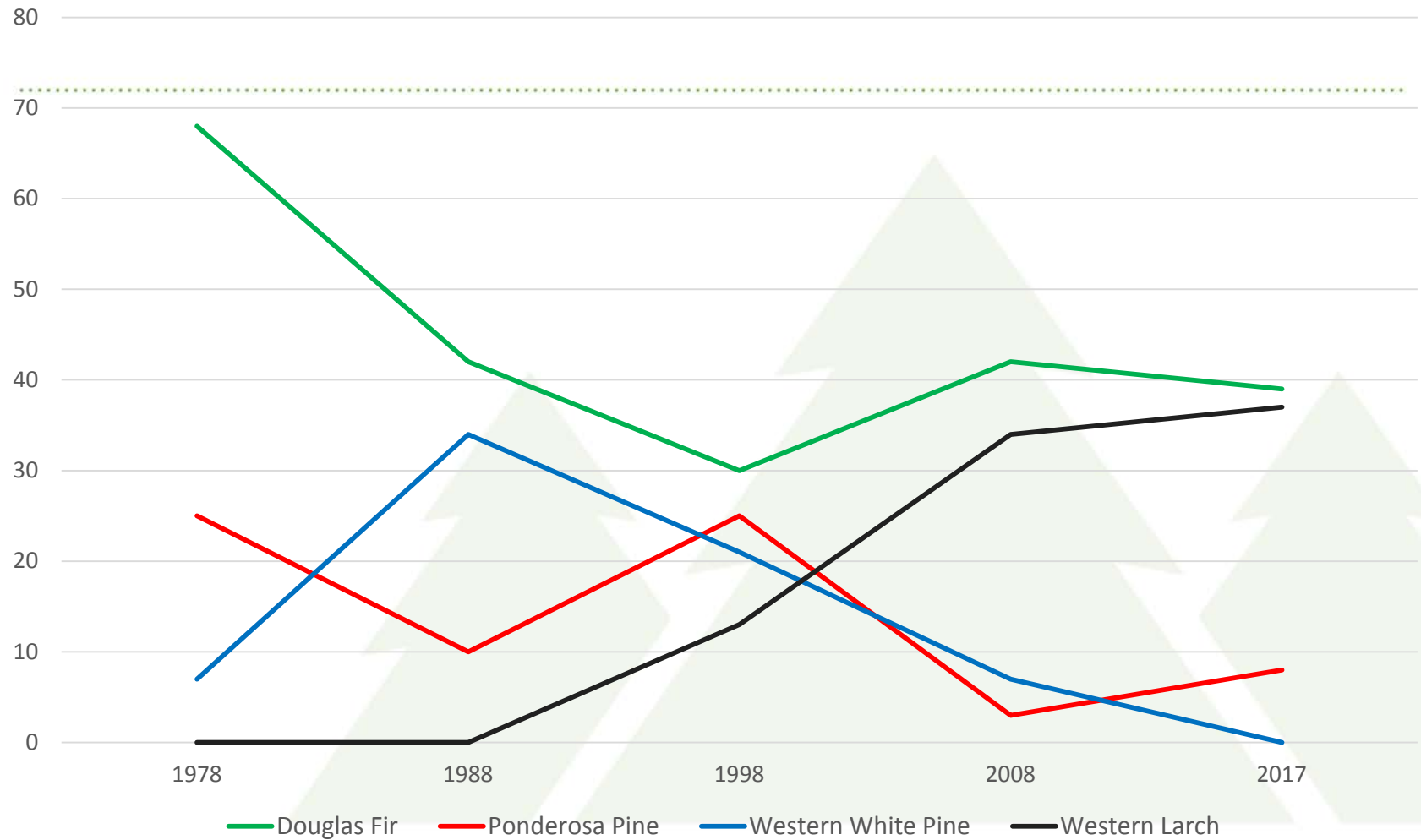
## Seed Orchard Management – continued...

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- Species composition of Orchard changes over time to meet management objectives
  - For example:



## % Seedlings Planted at 10 Year Intervals



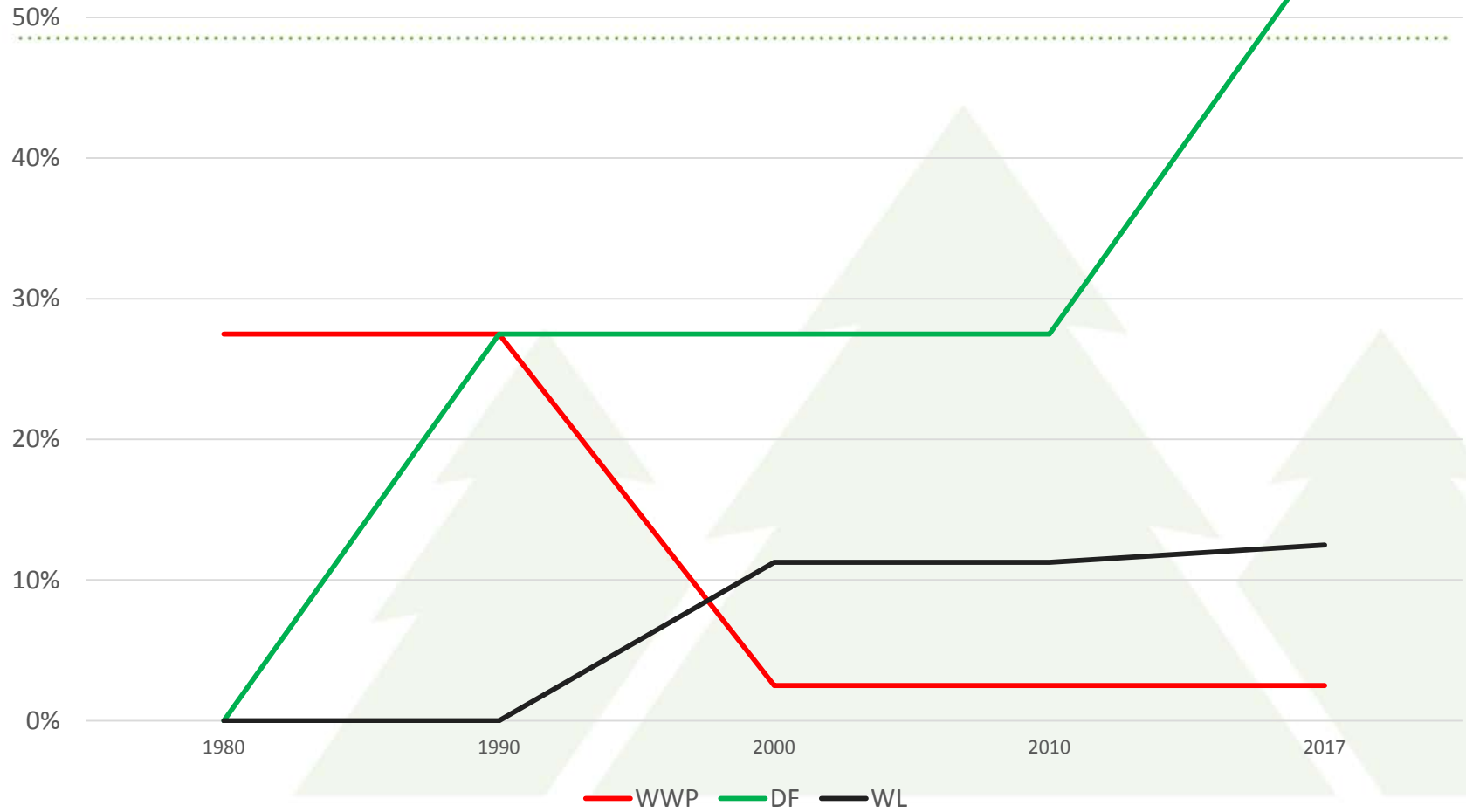
## Seed Orchard Management – continued...

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- Seed Orchard Managers have to predict species specific seed needs based on current and future management plans
- New Seed Orchard blocks take 5-10 years to develop and start producing seed (if genetic material is available)
- Space is limited, so Orchard composition, over time will change.



## % of Species Over Time



## Seed Orchard Management – continued...

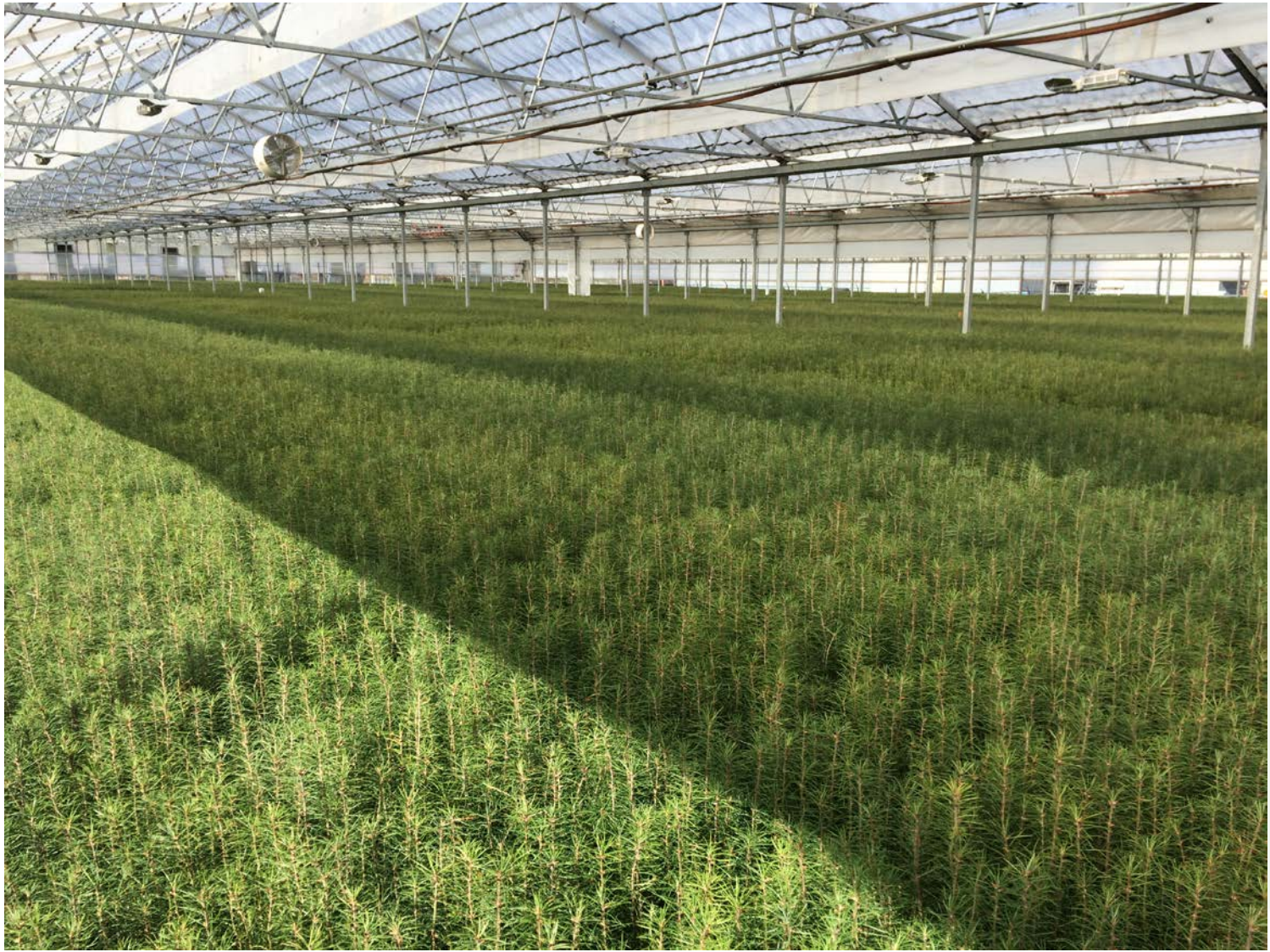
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- Future direction for Cherrylane Seed Orchard:
  - Continue management and seed production for:
    - Douglas Fir
    - Western Larch
    - Western Red Cedar
  - Monitor, evaluate and improve seed production in:
    - Lodgepole Pine
    - Ponderosa Pine
    - Grand Fir
  - Maintain Gene Bank and WWP Block



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# Contact Information:

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# “Whooooo” has questions?

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