



# Tree Seed Summit 2023

**NEWSLETTER VOLUME 1**

Cultivating and strengthening a community dedicated to the art and science of native tree seed procurement.





**NEWSLETTER VOLUME 1**

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# Background

The Tree Seed Summit is a gathering of stakeholders to work through the challenges in native tree seed procurement. The summit's current geographic focus is on the western US; however, we are joined by stakeholders from Canada and other temperate forested regions of the world, and we aspire to serve a broader region in future meetings and corresponding events. Through collaborative learning, we aim to scale up efforts for seed collection, raise awareness about the various stages of the seed supply chain, and promote sustainable practices for regenerating biodiverse ecosystems. Together, we strive to create a resilient future for our region and beyond.

While the Summit is currently designed to be an annual event, the learning should be continuous. Tree Seed Summit Newsletters will be released periodically throughout the year to summarize outcomes from the event and share additional resources. They will be emailed to all attendees, and posted on the Tree Seed Summit website.

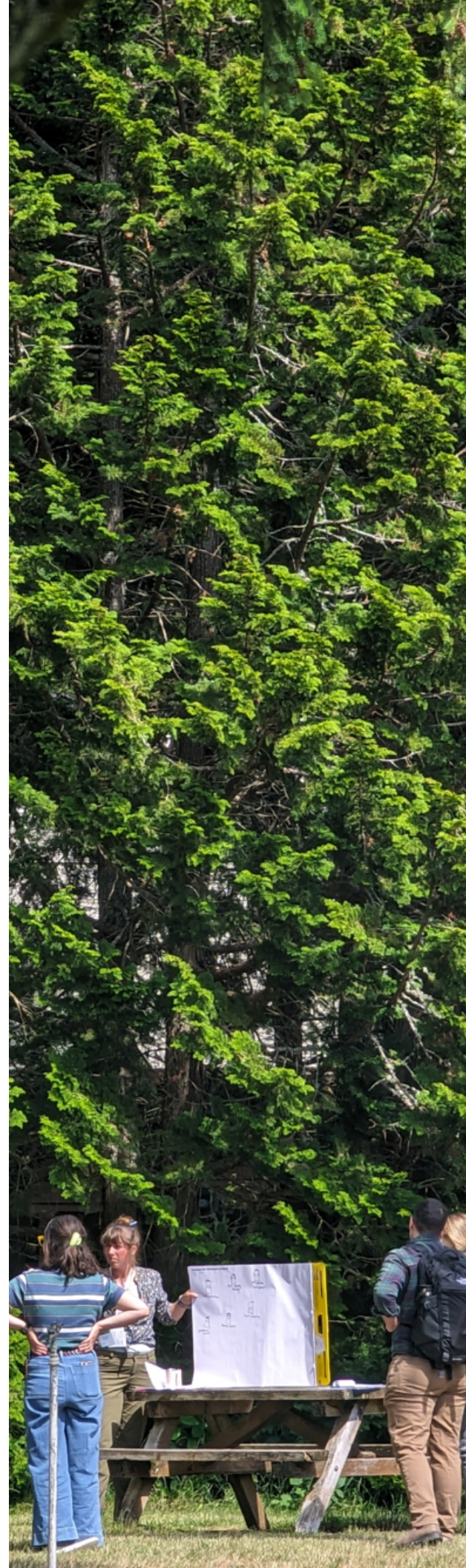
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## About 2023 TSS

In 2023, Mast Reforestation partnered with the Society for Ecological Conservation (SER) Northwest Chapter. The program centered around the science and procurement of native tree seeds. Topics included assisted migration, seed and cone pests, inventory management, collection strategies, and engaging with communities. Smaller group breakout sessions were held to dive deeper into the seed supply chain, learn about the different stakeholders and their perspectives and needs, and address some of the toughest challenges.

To see presentation slides and photos of the event, visit the Materials page on [www.treeseedsummit.com](http://www.treeseedsummit.com) and view the [VOA TEK Video](#) to watch a short clip on one example of the extraction process from Silvaseed, a historic stakeholder in the global tree seed supply chain (11-23 min).





# Breakout Session 1: Planting the Seed Summary & Outcomes

## Takeaway Summary

Partnerships present the most opportunities for increasing seed supplies, while labor, training, funding, and policy present the most challenges

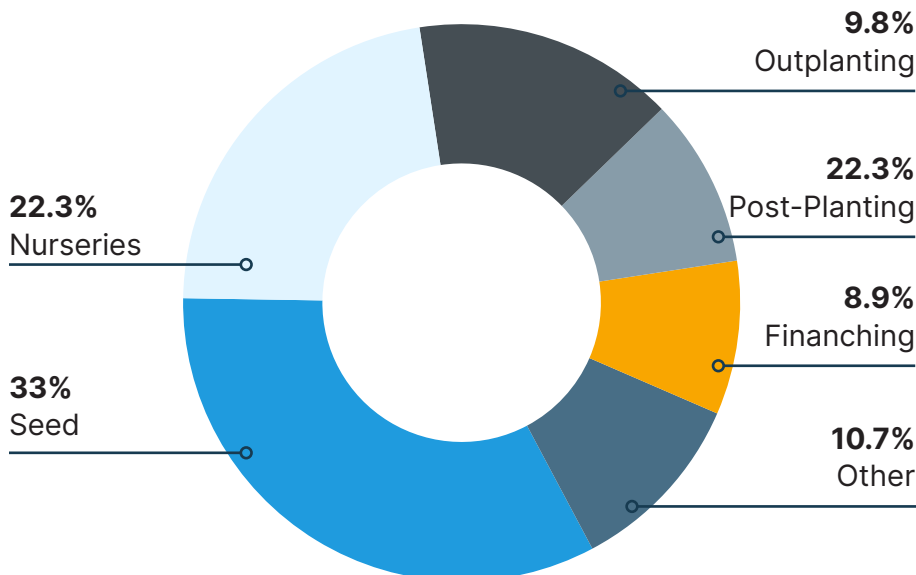
Bringing financiers and policymakers into the conversation could raise awareness about the barriers with collections, and work toward diminishing the challenges

Future training and workforce development should promote longevity, but will need to consider the unpredictability and seasonality of the work

We kicked things off with an activity to get to know each other. We identified our roles related to seed and the restoration pipeline, and discussed the highlights, lowlights, and opportunities within each stage.

We provided each group five categories and asked “Which part of the reforestation pipeline are you directly involved with?” – Below is a breakdown of the answers from the different groups (Seed, Nurseries, Outplanting, Post-Planting, Financing, and Other). Please remember, some people put multiple answers for a group and this was designed to encourage participation and not designed as a scientifically rigorous process. The information gleaned provides a glimpse into who TSS participants were and where they sat across the seed supply chain.

Which part of the reforestation pipeline are you directly involved with?

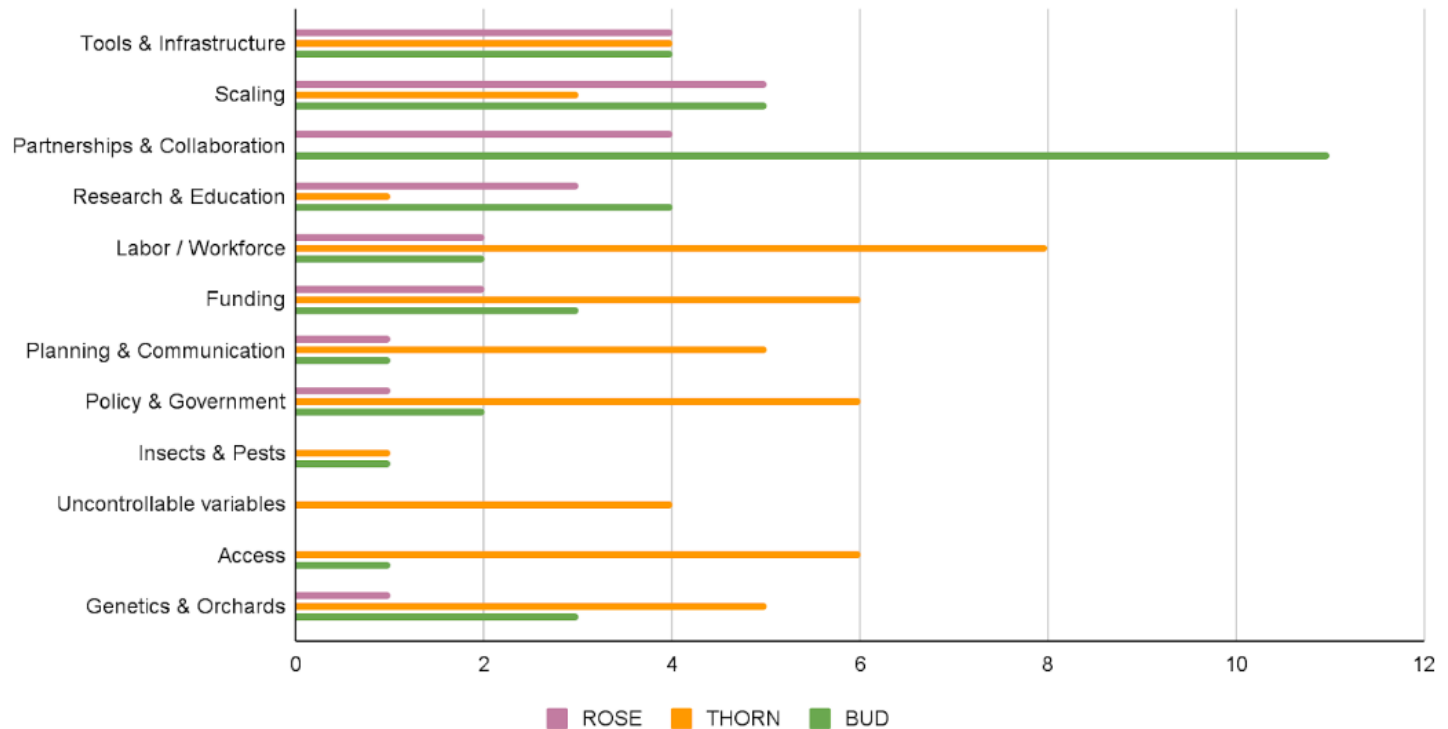


**There was an “Other” category, in which the following were identified:**

- Mentor / Trainer / Workforce development
- Research
- Education
- Carbon
- Outreach
- Landowner
- Planning (carbon adaptation, contracts)
- Timber harvesting
- Consulting



## Seed: Roses, Thorns, and Buds



We asked participants to identify **roses (highlights or successes)**, **thorns (challenges)**, and **buds (opportunities)** of each part of the pipeline.

Above is a graph representing the outcomes for **seed** for this exercise. Specific answers have been grouped into generalized categories, with the number of responses for those categories. **See the Appendix at the end of this newsletter for additional details on specifics for seed-related roses, buds, and thorns, as well as outcomes for the other stages (nursery, out-planting, post-planting, and financier).**

It's important to note that just because a category had fewer results, it could be due to fewer participants with specific knowledge and expertise in that given topic. (Example: "Insects & Pests"). The intent with sharing these outcomes is to provide new insights and encourage further learning and discussion.

## Interpretation

There are noticeable outliers from the seed "rose, thorn, and bud" exercise. This includes numerous opportunities for partnerships and collaborations for seed supplies, while the majority of challenges remain in labor and workforce, funding, policy and government, and land access. This suggests there is benefit in bringing in more financiers and policymakers into the conversation. These groups lack awareness about the costs, challenges, logistics, and biological constraints involved in native tree seed procurement. Incorporating more policymakers and financiers into future conversations could lead to meaningful changes.



There should also be a focus on training from both the public and private sectors, as many more knowledgeable climbers, scouts, extractory staff, and other support will be critical to achieve the scale required to meet the growing reforestation need. Among the speakers at the 2023 TSS was Oak Rankin from the Glacier Peak Institute. Oak presented on his community in Darrington, WA, including the opportunity to support rural communities. Future training will need to be balanced with the seasonality and unpredictability of the work, to ensure knowledge is not lost, but also longevity is maintained. In other words, ramping up a workforce without acknowledging that wild tree seed availability is dependent on unpredictable annual conditions across populations and ecosystems is a risky venture. We should be prepared to build flexibility and the ability to scale up and down without creating turbulence in this (re)emerging sector.



## Additional Outcomes

We also provided an opportunity to identify roses, thorns and buds into other facets of the reforestation pipeline. Answers that fell outside the provided categories include:

<b>ROSES</b> <i>highlights or successes</i>	<b>THORNS</b> <i>challenges</i>	<b>BUDS</b> <i>opportunities</i>
<ul style="list-style-type: none"> <li>• <b>Understanding forest habitat, landowner need, future of the forest</b></li> <li>• <b>Greater focus on providing funding long term</b></li> <li>• <b>Having more funding in general</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Balance for additional research with the need for urgent action</b></li> <li>• <b>Academic silo and limitation of research applications</b></li> <li>• <b>Climate change and silos limit our ability to make fast progress</b></li> <li>• <b>Lack of cooperation / territorialism</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Interested recognition and funding on a macro-scale</b></li> <li>• <b>Possibility of AI / predictive modeling</b></li> <li>• <b>Authorizations for private enterprise operating on public land; government-private collaboration</b></li> <li>• <b>More people from diverse backgrounds coming together</b></li> <li>• <b>Jobs for indigenous people in regen instead of just extractive industry</b></li> <li>• <b>Greater acceptance that plants matter</b></li> </ul>



## Reading & Resources

To read further on topics presented at Tree Seed Summit, below are links to referenced material. This list is not exhaustive, and if you have material that should be shared in the next newsletter, please send to: [treeseedsummit@mastreforest.com](mailto:treeseedsummit@mastreforest.com)

You can also view and download the full presentations on the [Tree Seed Summit website in the “Materials” section](#).

### Seed Needs & Collection

[An Assessment of Native Seed Needs and the Capacity for Their Supply](#)

[Silvaseed Cone Scouting Guide](#)

[Got Seeds? Strengthening the Reforestation Pipeline in the Western United States](#)

[Reforestation is Great! But We're Running Out of Seeds](#) (Wired)

[Reduced fire severity offers near-term buffer to climate-driven declines in conifer resilience across the western United States](#) (Davis et al, 2023)

[To regrow forests, the U.S. needs billions of seed - and many more 'seed hunters'](#) (National Geographic)

### Insects & Pests

[Northern Region Cone & Seed Insect Handbook \(USDA\)](#)

[Climate change and its possible influence on the occurrence and importance of insect pests](#)

### Policy

[Bipartisan Infrastructure Law](#)

[REPLANT Act of 2021](#)

[State and Trends of Carbon Pricing 2020](#)

[National Forest System Reforestation Strategy](#)

### Assisted Migration & Genetics

[USFS Climate Change Resource Center - Assisted Migration](#)

[Climate-based Seed Transfer](#) (British Columbia)

[Climate BC/NA](#) - University of British Columbia, Centre for Forest Conservation Genetics

### Reforestation & Nurseries

[Forest Services Nurseries: 100 Years of Ecosystem Restoration](#)

[Challenges to the Reforestation Pipeline in the United States](#)

### Additional Resources

[Tree Seed Working Group - Through the Canadian Forest Genetics Association, publishes biannual bulletin](#)

[Reforestation, Nurseries, and Genetic Resources \(RNGR\)](#)

[The Woody Plant Seed Manual](#)

### Tools to aid with seed transfer

[Seedlot Selection Tool](#)

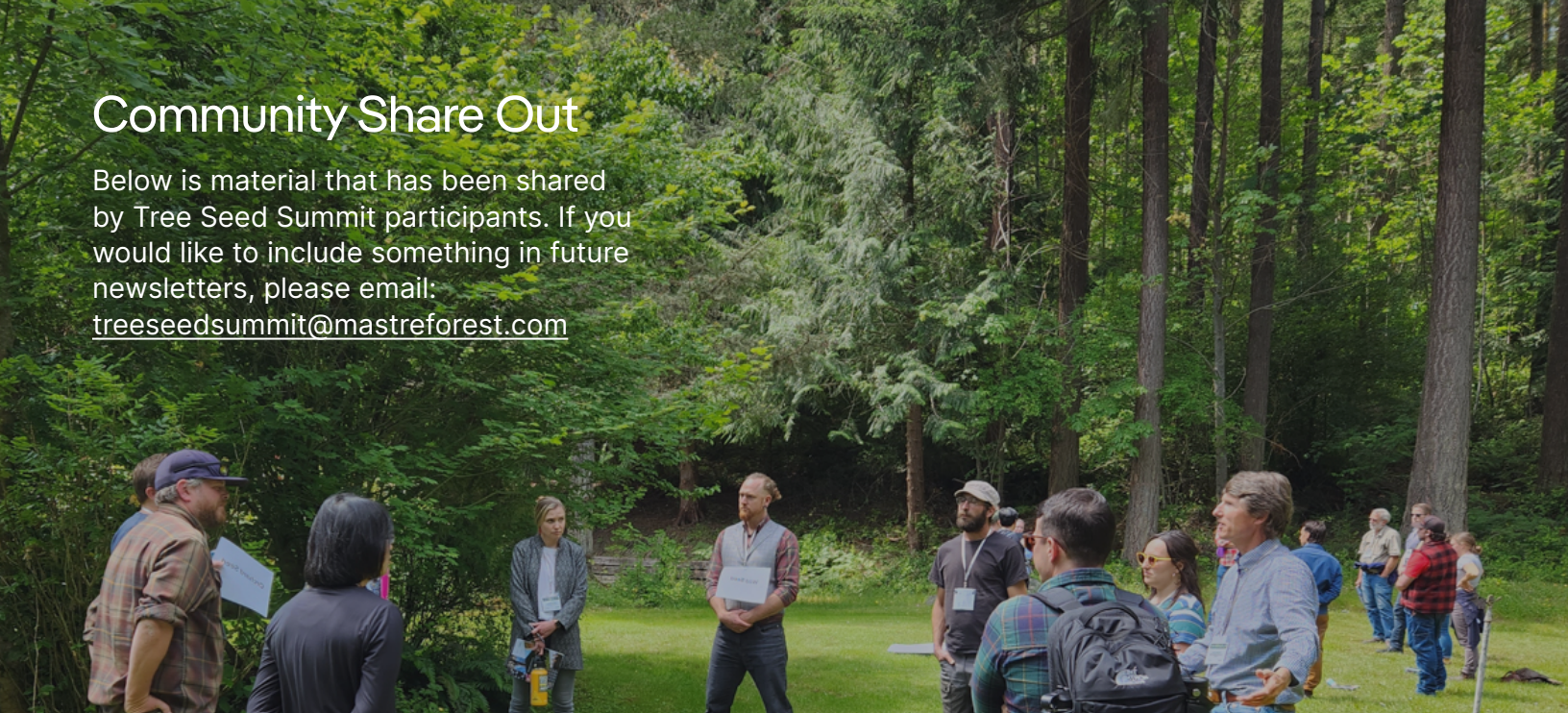
[Climate Adapted Seed Tool](#)

[Climate Change Informed Species Selection Tool \(British Columbia\)](#)



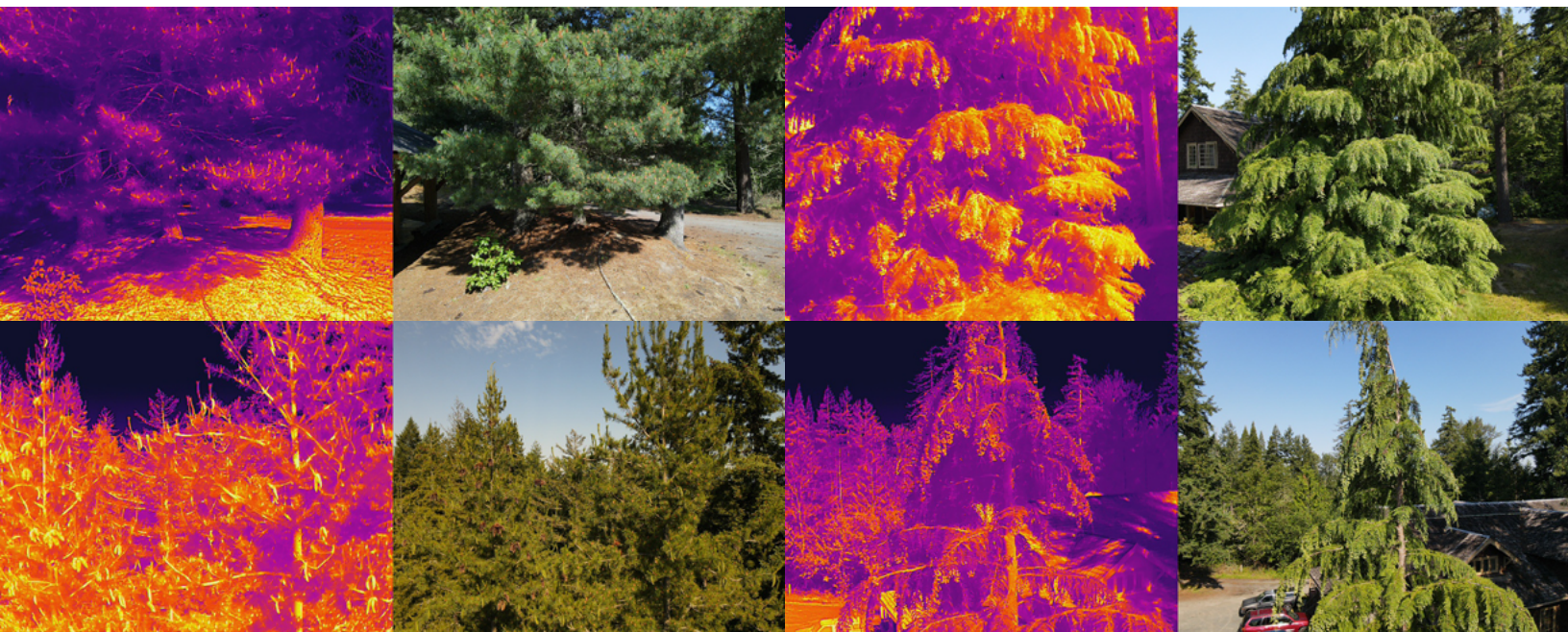
## Community Share Out

Below is material that has been shared by Tree Seed Summit participants. If you would like to include something in future newsletters, please email: [treeseedsummit@mastreforest.com](mailto:treeseedsummit@mastreforest.com)



## Viewing trees through multi-spectral imagery

During 2023 TSS, forester Nick Kunz popped up his DJI Mavic drone and snapped some multispectral images of the surrounding trees (see pictures below). Multispectral images consist of a few layers of the same scene, each from a particular wavelength. Common uses for multispectral imagery include examining plant health, evaluating forest burn severity, or classification of crops in agriculture. As this technology develops, it may have uses to evaluate crop potential given the ability to identify spent cones, or other tree characteristics. It is exciting to see what technological advancements we may see in the field in the future.



*Photos Courtesy of Nick Kunz*



# Upcoming Events & How to Get Involved



## Events

### **Growing Pains: Scaling up the Reforestation Pipeline**

Sept 19 - 21, 2023 in Portland, Oregon

[Link to register](#)

### **Society of American Foresters (SAF) National Convention**

October 25-28, 2023 in Sacramento, California

[Link to register](#)

### **National Native Seed Virtual Conference 2024**

February 7-8, virtual, 8am - 2pm PST

[Website](#)

## Send Us Feedback or Get involved

We want to hear from you! If you have content you would like to share in future newsletters, or would like to see something in future versions, let us know!

Email feedback or future content to share to: [treeseedsummit@mastreforest.com](mailto:treeseedsummit@mastreforest.com)

## Reforestation Priorities Survey

A group of researchers from public, academic, and private institutions are looking for participants to provide input on reforestation needs and trends in the western U.S. The survey should only take about ten minutes to complete, please consider providing your feedback if you are a landowner, land manager, or represent either: [Western US Reforestation Priorities Survey](#)



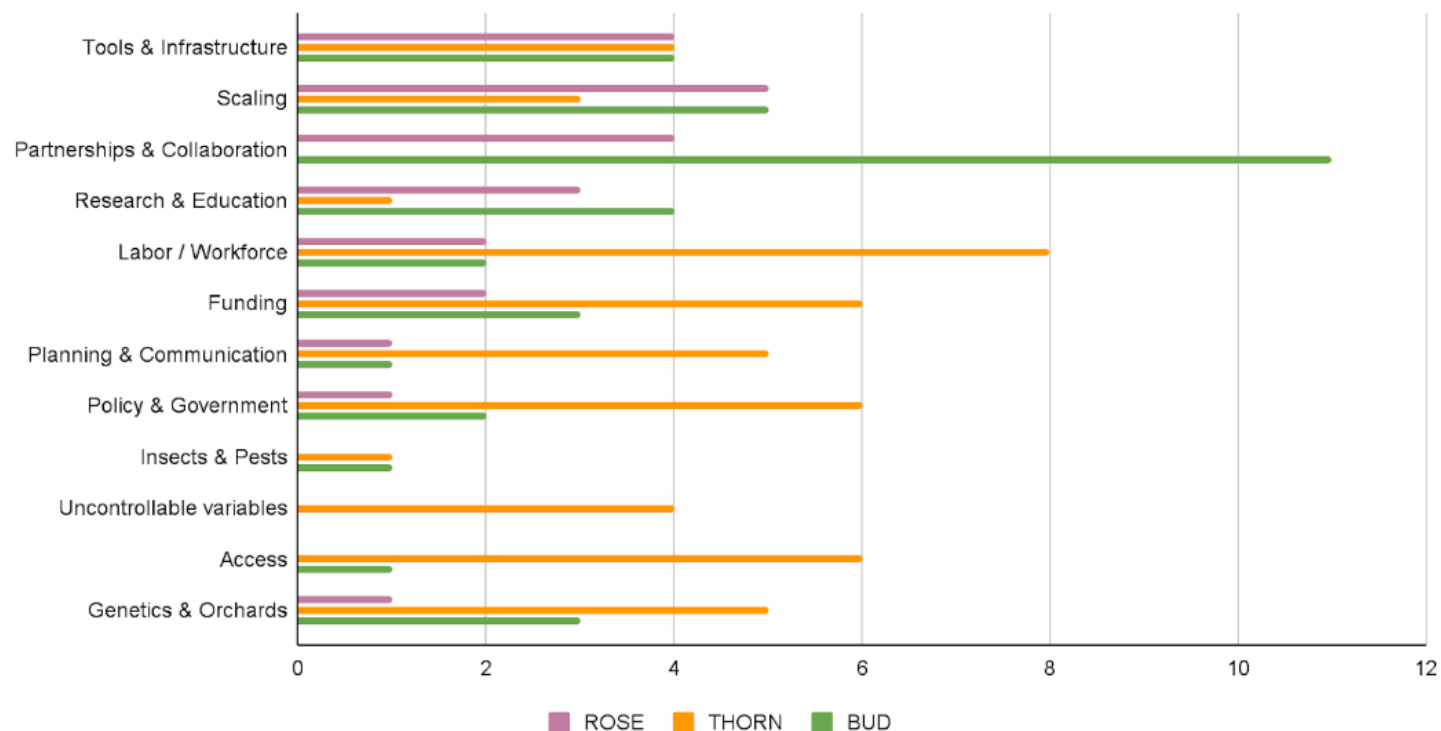
Seed: Buds	
Category	Selected Detailed Answers
Tools & Infrastructure	<ul style="list-style-type: none"> <li>• Seed processing &amp; storage facility coming soon</li> <li>• Seed enhancement to improve direct seeding</li> <li>• Further development of seed zones by species</li> <li>• Improvements in storage for long-term banking</li> </ul>
Scaling	<ul style="list-style-type: none"> <li>• Seeds are starting to grow for restoration opportunities</li> <li>• In two years collecting ~18k bushels and 14k lbs of seed across 5 states</li> <li>• Potential market for surplus seed that could supplement collections, diversity, logistical challenges</li> <li>• Increased demand</li> </ul>
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>• Collaboration in technical training with local schools (trade and community college)</li> <li>• Native seed network re-launch</li> <li>• Partnership and development of “Montana Native Seed Network”</li> <li>• Creating a collaboration network between regional land trusts to increase access to seed/cones</li> <li>• Networking and cross collaboration among agencies</li> <li>• Effort integration between BC Forest Service Parks, Commercial interest (forestry/mining), wrt white pine recovery</li> <li>• Emerging markets with climate adapted seedlings</li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>• Opportunity to educate public</li> <li>• People are starting to realize the need to pre-scout with images / guide for forester and others to use</li> <li>• Build consistency and streamline cone collection opportunities</li> </ul>
Labor / Workforce	<ul style="list-style-type: none"> <li>• Having a large number of 1st time climbers wanting to collect</li> <li>• Interest from ISA climbers in cone collections</li> </ul>
Funding	<ul style="list-style-type: none"> <li>• Due to consulting, Cone Camps, Seed Summit, monitoring will be funded</li> <li>• Increased need for seed means money invested</li> <li>• New business opportunities</li> </ul>
Planning & Communication	<ul style="list-style-type: none"> <li>• Aligning seed zones and standards</li> </ul>
Policy & Government	<ul style="list-style-type: none"> <li>• Reforestation Act</li> </ul>
Insects & Pests	<ul style="list-style-type: none"> <li>• Seed and cone insect interest has begun to increase in USFS</li> </ul>
Uncontrollable Variables	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Access	<ul style="list-style-type: none"> <li>• Standardized permits</li> </ul>
Genetics & Orchards	<ul style="list-style-type: none"> <li>• More ecological approaches to forestry</li> <li>• Assisted migration</li> </ul>

Seed: Roses	
Category	Selected Detailed Answers
Tools & Infrastructure	<ul style="list-style-type: none"> <li>• <b>Seed orchards big enough to produce</b></li> <li>• <b>Remote sensing</b></li> <li>• <b>Canada has CBST (Climate based seed transfer) and CCIS (Climate Change Informed Species Selection)</b></li> </ul>
Scaling	<ul style="list-style-type: none"> <li>• <b>Successful collections</b></li> <li>• <b>Increasing seed zone coverage</b></li> </ul>
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>• <b>Cone picker relationships</b></li> <li>• <b>Training indigenous communities on seed collection</b></li> <li>• <b>Community engagement</b></li> <li>• <b>Securing local contracts</b></li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>• <b>Research project with the FS Seed Orchard to control cone worm and midge</b></li> <li>• <b>Research collections</b></li> </ul>
Labor / Workforce	<ul style="list-style-type: none"> <li>• <b>Expertise in New Mexico</b></li> <li>• <b>Experienced collections</b></li> </ul>
Funding	<ul style="list-style-type: none"> <li>• <b>Funding viable squirrel cache</b></li> <li>• <b>Funding operations research</b></li> </ul>
Planning & Communication	<ul style="list-style-type: none"> <li>• <b>Monitor before collecting led to high yields</b></li> </ul>
Policy & Government	<ul style="list-style-type: none"> <li>• <b>WA Dept of Natural Resources has stable seed supply</b></li> </ul>
Insects & Pests	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>
Uncontrollable Variables	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>
Access	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>
Genetics & Orchards	<ul style="list-style-type: none"> <li>• <b>Seed orchards big enough to produce in Eastern OR</b></li> </ul>

Seed: Thorns	
Category	Selected Detailed Answers
Tools & Infrastructure	<ul style="list-style-type: none"> <li>• <b>Lack of processing</b></li> <li>• <b>Aging infrastructure</b></li> <li>• <b>Continuing cleaning challenges for different species</b></li> <li>• <b>Transportation and storage of bushels of cone</b></li> </ul>
Scaling	<ul style="list-style-type: none"> <li>• <b>How to scale research and development for scaling collections</b></li> </ul>
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>• <b>Standardized collection methods are missing</b></li> </ul>
Labor / Workforce	<ul style="list-style-type: none"> <li>• <b>Lack of workforce or training, including longevity</b></li> <li>• <b>Areas were not scouted</b></li> <li>• <b>Lack of manpower in seed orchards</b></li> <li>• <b>It's HARD work</b></li> </ul>
Funding	<ul style="list-style-type: none"> <li>• <b>Seed is undervalued</b></li> <li>• <b>Value of wild stand collections in Canadian / BC-centric Timber values</b></li> <li>• <b>Ability to make a profit</b></li> </ul>
Planning & Communication	<ul style="list-style-type: none"> <li>• <b>Short time window</b></li> <li>• <b>Knowing the seed details of existing seed</b></li> <li>• <b>Chasing crop: Being pointed to poor crops, then driving and looking for good crops to pick</b></li> <li>• <b>Working with multiple land managers and conflicts</b></li> <li>• <b>No monitoring means bunk seeds full of bugs</b></li> </ul>
Policy & Government	<ul style="list-style-type: none"> <li>• <b>Forest Service is always difficult</b></li> <li>• <b>USFS seed orchards in R6 have not been managed</b></li> <li>• <b>A lot of defunding of USFS over the years</b></li> <li>• <b>Politics of where reforestation center should go, not fully funded</b></li> </ul>
Insects & Pests	<ul style="list-style-type: none"> <li>• <b>We don't know how much insect damage in cones</b></li> </ul>
Uncontrollable Variables	<ul style="list-style-type: none"> <li>• <b>Mast availability, bad crops</b></li> <li>• <b>Reductions in viable seed due to climate change</b></li> <li>• <b>Small window for collecting</b></li> </ul>
Access	<ul style="list-style-type: none"> <li>• <b>Land available for collections</b></li> <li>• <b>Decreased access</b></li> <li>• <b>Impractical permitting funding for scouting</b></li> </ul>
Genetics & Orchards	<ul style="list-style-type: none"> <li>• <b>Not enough seed collection from novel ecotypes</b></li> <li>• <b>Misperceptions about woods run genetic diversity</b></li> <li>• <b>Genetic diversity of wild stand seed</b></li> <li>• <b>Use and expansion of orchard</b></li> </ul>

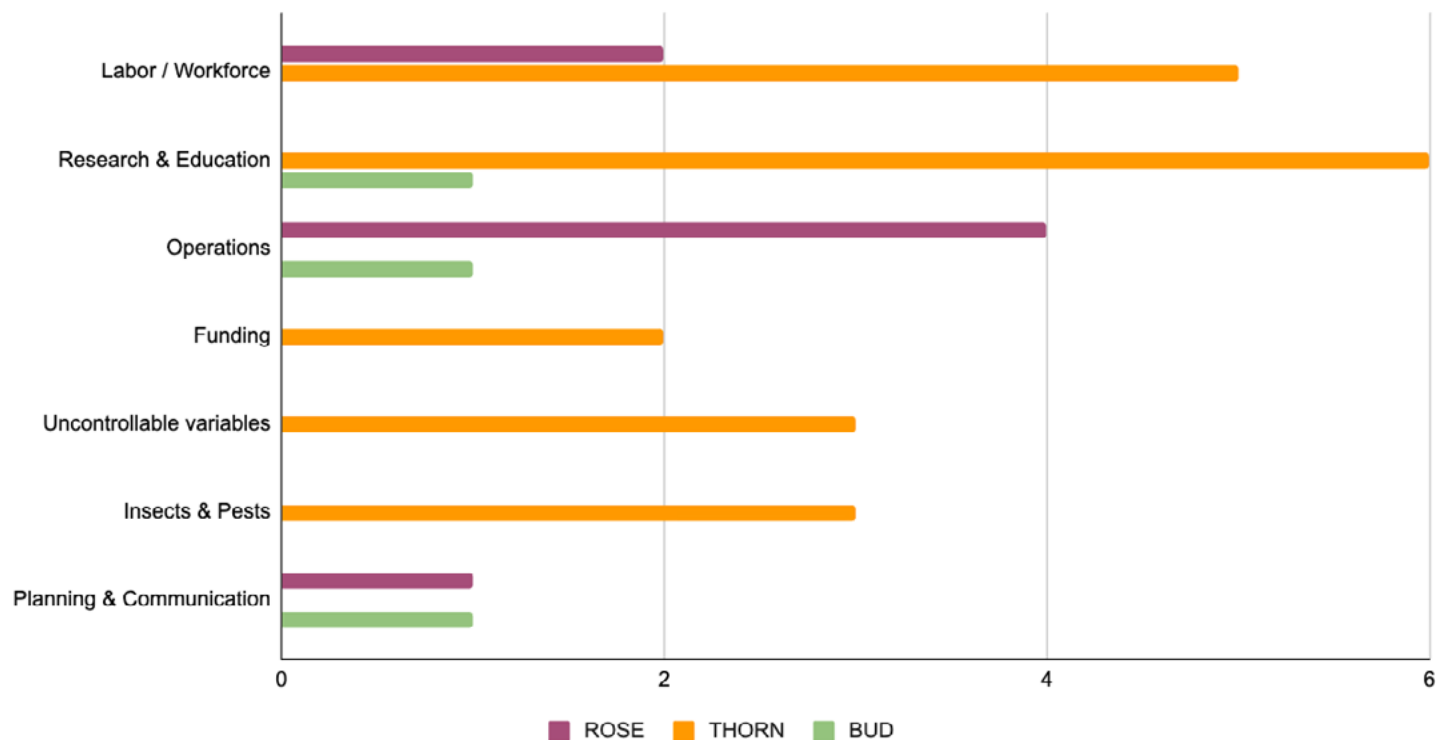


Data provided shows a chart with answers categorized, and table of detailed answers for roses, thorns and buds.



Nursery			
Category	Roses	Thorns	Buds
Labor / Workforce	<ul style="list-style-type: none"> <li>Staffing</li> </ul>	<ul style="list-style-type: none"> <li>Lack of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Opportunity for training</li> </ul>
Funding	<ul style="list-style-type: none"> <li>Phase 1 (\$8.5M) funded for NM Reforestation Center</li> </ul>	<ul style="list-style-type: none"> <li>Upfront costs</li> </ul>	<ul style="list-style-type: none"> <li>New funding (NMRC)</li> <li>Potential funding for progress payments on orders</li> </ul>
Planning &	<ul style="list-style-type: none"> <li>Having adequate lead time for planting needs</li> </ul>	<ul style="list-style-type: none"> <li>Last-minute changes in orders</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>Learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Lack of knowledge</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Research for best nursery practices</li> </ul>
Scaling	<ul style="list-style-type: none"> <li>Single seed / cell planting</li> </ul>	<ul style="list-style-type: none"> <li>Supply, availability, capacity</li> <li>Logistical challenges around growing smaller, custom/ contract seedlots rather than large speculative seedlots</li> </ul>	<ul style="list-style-type: none"> <li>Vertical integration to improve long-term survival of reforestation efforts</li> </ul>
Policy & Government	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>USFS</li> <li>Increasing awareness from state legislature for seedling capacity</li> </ul>	<ul style="list-style-type: none"> <li>R1 Nursery in CDA looks great; gives hope for R6</li> </ul>
Perception	<ul style="list-style-type: none"> <li>Public eager to participate</li> <li>Small industry with increased name recognition</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

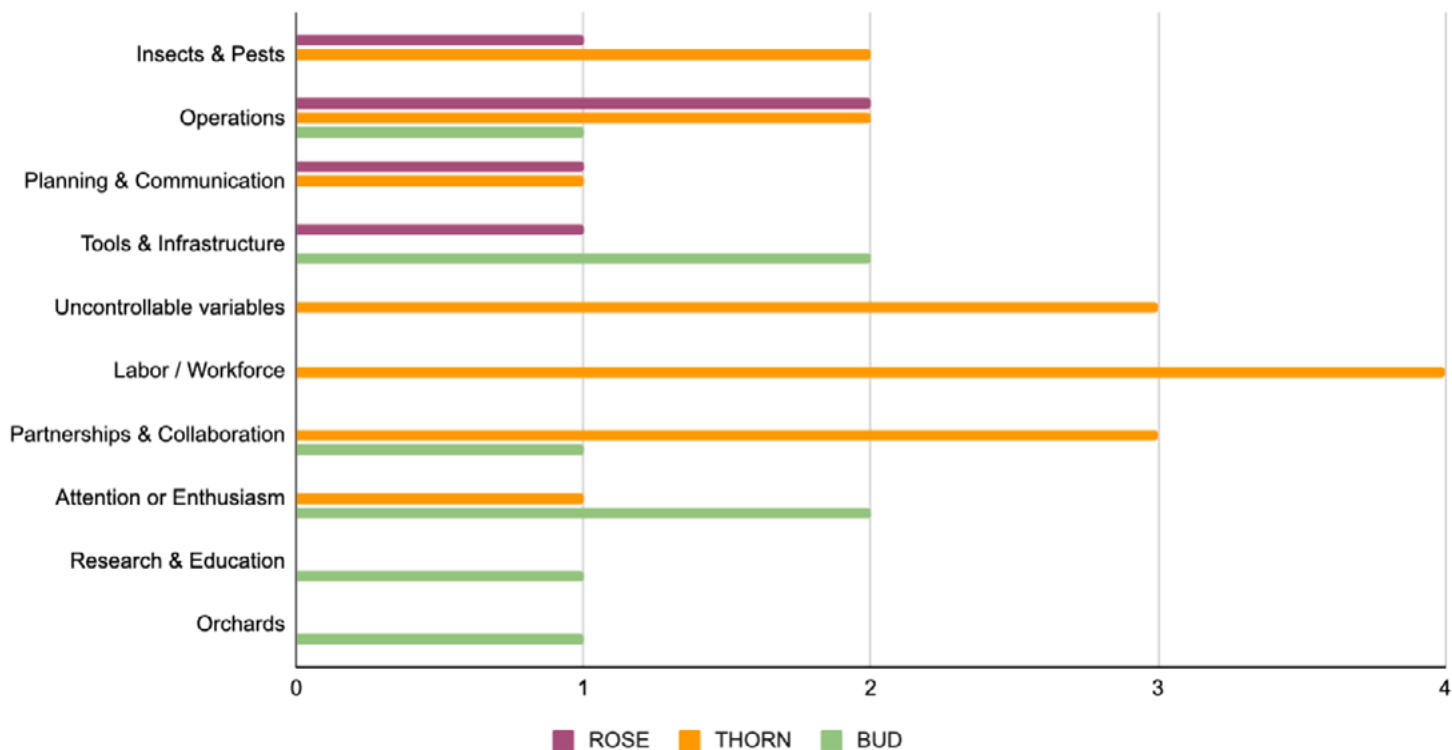
Data provided shows a chart with answers categorized, and table of detailed answers for roses, thorns and buds.



Outplanting			
Category	Roses	Thorns	Buds
Labor / Workforce	<ul style="list-style-type: none"> <li>Contractors in the fall available to complete units</li> <li>Having a viable workforce available</li> </ul>	<ul style="list-style-type: none"> <li>Please help. Rewarding, but man it's painful</li> <li>Lack of planting crews, workforce, training</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Lack of best available science of what / where to plant</li> <li>Need to understand what, why, when to plant</li> </ul>	<ul style="list-style-type: none"> <li>Lots of opportunity to learn</li> </ul>
Operations	<ul style="list-style-type: none"> <li>Getting all of our trees planted</li> <li>Seeing the results of large-scale reveg projects</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Pulling it off with your resources</li> </ul>
Funding	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Time and cost for site preparation</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Uncontrollable variables	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Weather</li> <li>Heat dome</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Insects & Pests	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Vermints killing seedlings</li> <li>Browse</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Planning & Communication	<ul style="list-style-type: none"> <li>Timely planning</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Discussion about changing planting timing in WA State</li> </ul>



Data provided shows a chart with answers categorized, and table of detailed answers for roses, thorns and buds.

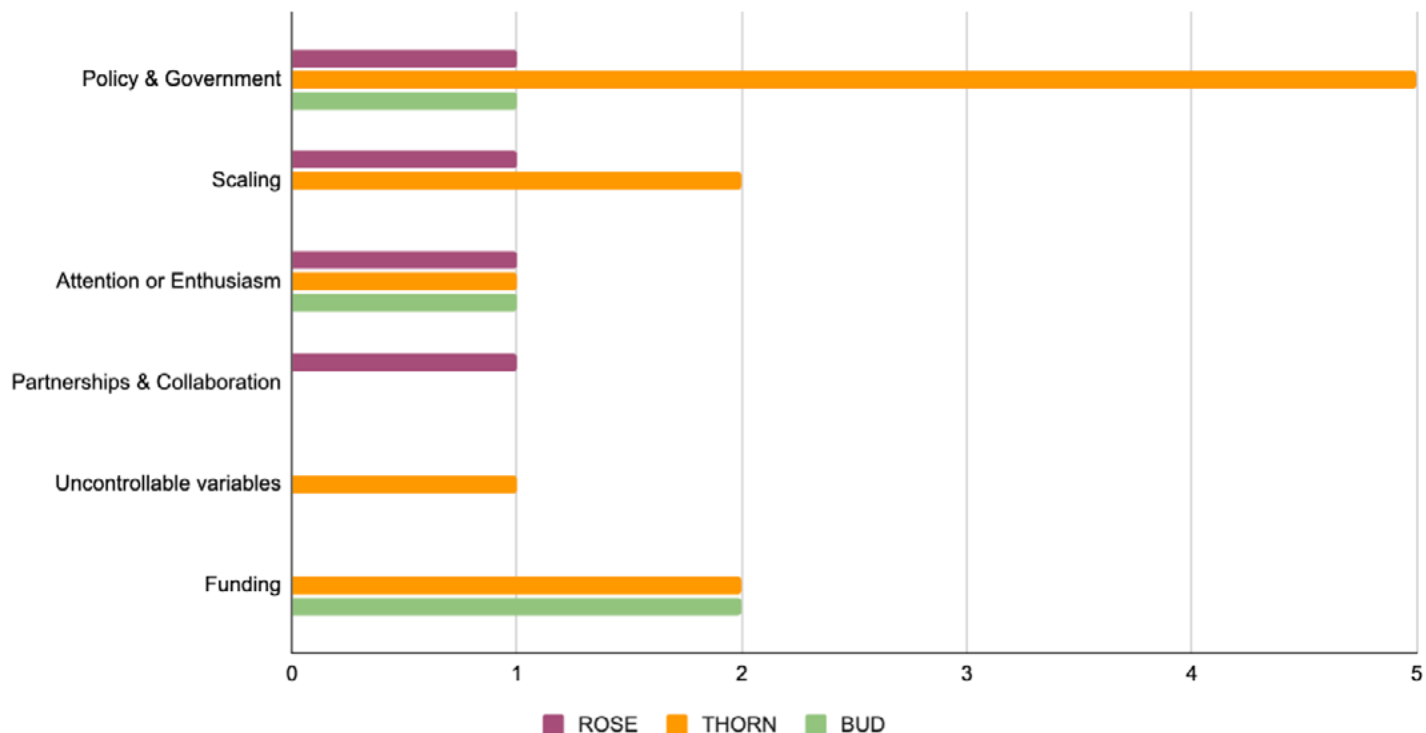


Post-Planting			
Category	Roses	Thorns	Buds
Insects & Pests	<ul style="list-style-type: none"> <li>Years of help controlling insect and disease issues on federal, state, and private land</li> </ul>	<ul style="list-style-type: none"> <li>So many weeds. Why does nature stop us?!</li> <li>Browse &amp; bear damage</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Operations	<ul style="list-style-type: none"> <li>Survey protocol</li> <li>Successful monitoring and modeling</li> </ul>	<ul style="list-style-type: none"> <li>Low rates of establishment</li> <li>0.3% of seedlings monitored</li> </ul>	<ul style="list-style-type: none"> <li>Cutting down a tree I planted</li> </ul>
Planning & Communication	<ul style="list-style-type: none"> <li>Long term projects and clients that provide updates</li> </ul>	<ul style="list-style-type: none"> <li>Need to improve monitoring and data sharing</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Tools & Infrastructure	<ul style="list-style-type: none"> <li>Geospatial technology to enhance the way we can manage and monitor sites</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>New repellent to test</li> <li>Remote sensing for monitoring</li> </ul>
Uncontrollable variables	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Uncertain fire, weather, future conditions</li> <li>Watching species begin to decline due to climate change - no easy fix</li> <li>Trees dying due to drought / temps</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Labor / Workforce	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Who does monitoring?</li> <li>Over-abundance of specialists</li> <li>Fire season overlap</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

Post-Planting			
Category	Roses	Thorns	Buds
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cross-organizational goals and end use</b></li> <li>• <b>Communication</b></li> <li>• <b>Timing and contracting</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>New cross-organizational relationships</b></li> </ul>
Attention or Enthusiasm	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Little funding or interest in post-planting follow-up</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Public and research interest</b></li> <li>• <b>Groups are paying attention to assisted migration and proper seed survey</b></li> </ul>
Research & Education	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Lots to learn about survival and growth with climate change</b></li> </ul>
Orchards	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>N/A</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Orchards have good records</b></li> </ul>



Data provided shows a chart with answers categorized, and table of detailed answers for roses, thorns and buds.



Financier			
Category	Roses	Thorns	Buds
Policy & Government	<ul style="list-style-type: none"> <li>REPLANT Act</li> </ul>	<ul style="list-style-type: none"> <li>USFS</li> <li>Finding relevant grants and applying for them, competitive, need more opportunities</li> <li>Increasing funding for collections</li> <li>Government keeps shifting plans and scaring investors</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Scaling	<ul style="list-style-type: none"> <li>Expansion of Silvaseed's historical collections and network</li> </ul>	<ul style="list-style-type: none"> <li>Staying nimble - fires, etc only give ~1 yr lead</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Attention or Enthusiasm	<ul style="list-style-type: none"> <li>Focus on importance of collections</li> </ul>	<ul style="list-style-type: none"> <li>Financiers (carbon project developers) considering and understanding constraints at seed, nursery, outplanting points</li> </ul>	<ul style="list-style-type: none"> <li>Environmental capital interest</li> </ul>
Partnerships & Collaboration	<ul style="list-style-type: none"> <li>Help some planting partners scale up</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Uncontrollable variables	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Couldn't collect in New Mexico – No mast</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>
Funding	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Small acreage landowners lacking capital (and able to tap into financing due to economies of scale)</li> <li>Site prep is very expensive</li> </ul>	<ul style="list-style-type: none"> <li>Finding financing for crews</li> <li>Funding for co-benefits (carbon)</li> </ul>