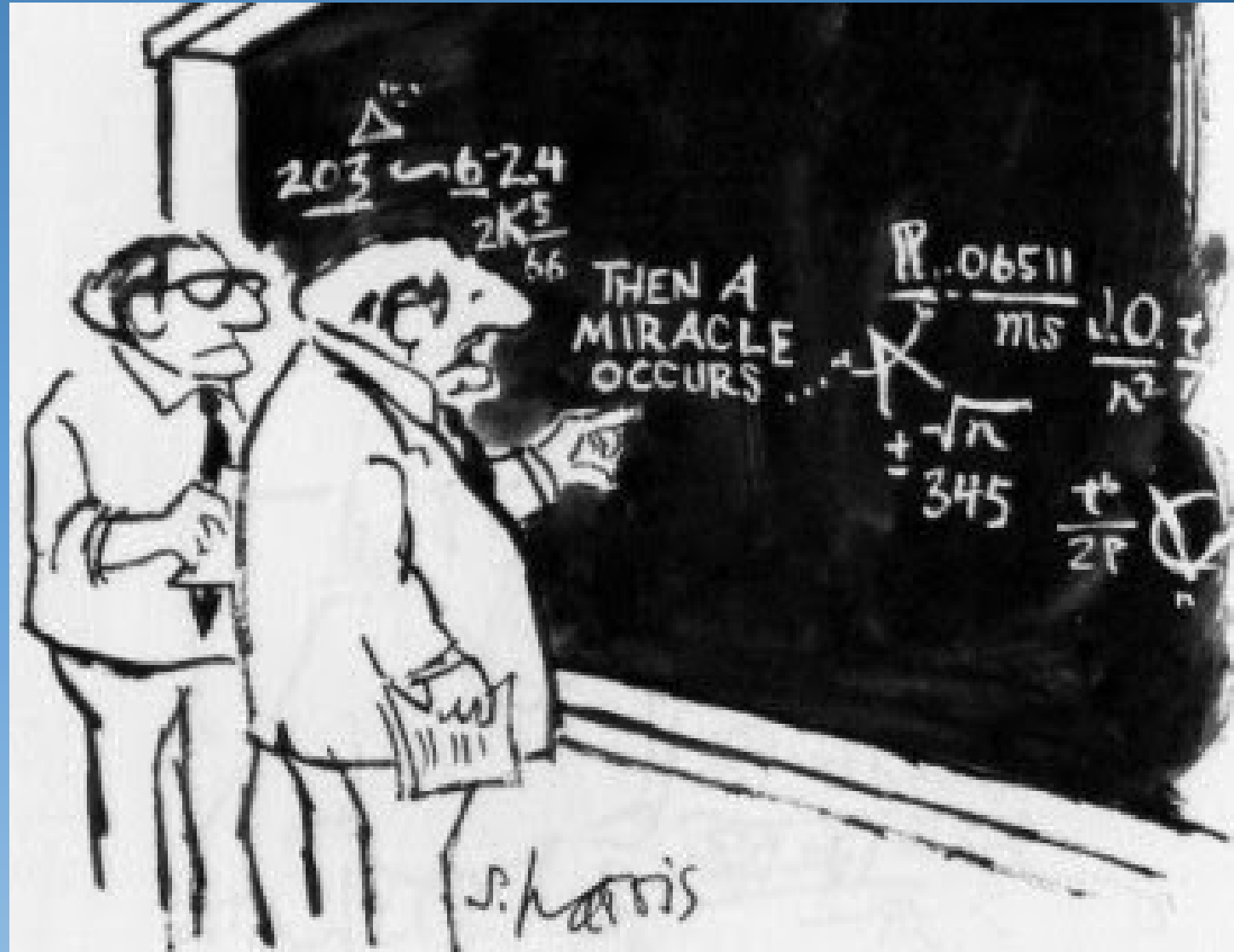


WHAT'S LUCK GOT TO DO WITH IT? Incremental Miracles in Plant Propagation

*Lee Riley
Horticulturist/Restoration Specialist
Dorena Genetic Resource Center*



What's News at Dorena

The Four Fs



Freeze



Flood



Fire

What's News at Dorena The Four Fs



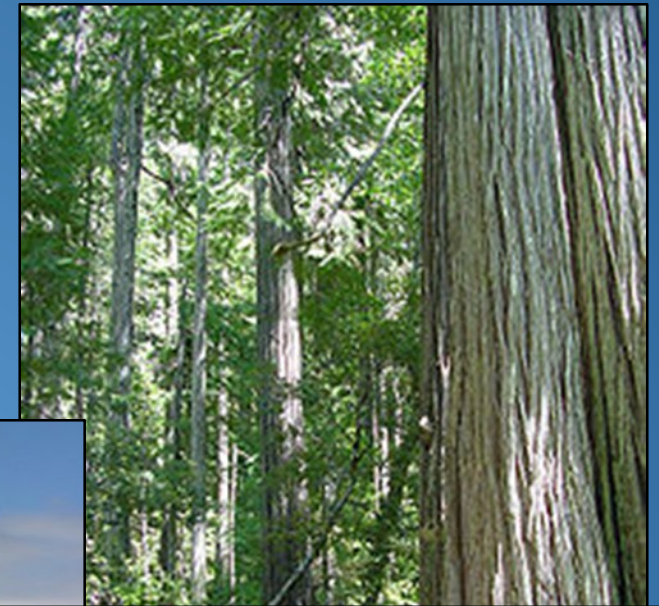
Furlough

Dorena Genetic Resource Center

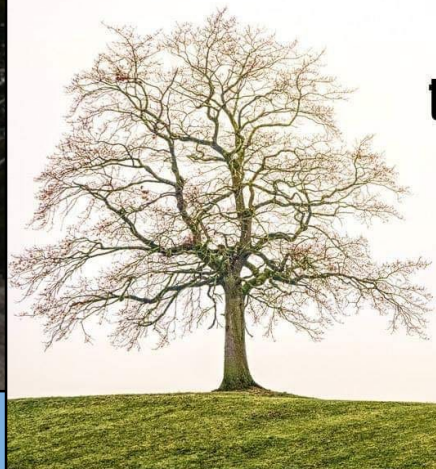
50 Years of Promoting Healthy Forests



for the greatest good



**I talked to someone about climate change, and they told me :
"Sooner or later we'll invent a machine that can capture carbon from the atmosphere in an efficient way".**



**I told them that it already exists and its called :
"A TREE."**

moretreeslessassholes.org

Trees...and so much more

Regional genetic resistance testing and breeding

5-Needle Pine Resistance to White Pine Blister Rust



Operational Screening

- Western white pine
- Sugar pine
- Whitebark pine
- Limber pine
- Bristlecone pine
- Southwestern white pine

Regional genetic resistance testing and breeding

Port-Orford-Cedar Resistance to *Phytophthora lateralis*



13 Breeding Zones

Off-site testing at Oregon State University

First cycle of selection and testing near completion

Advanced generation breeding is underway to increase resistance

Resistant seed being used on all lands

Regional genetic resistance testing and breeding

Latest projects

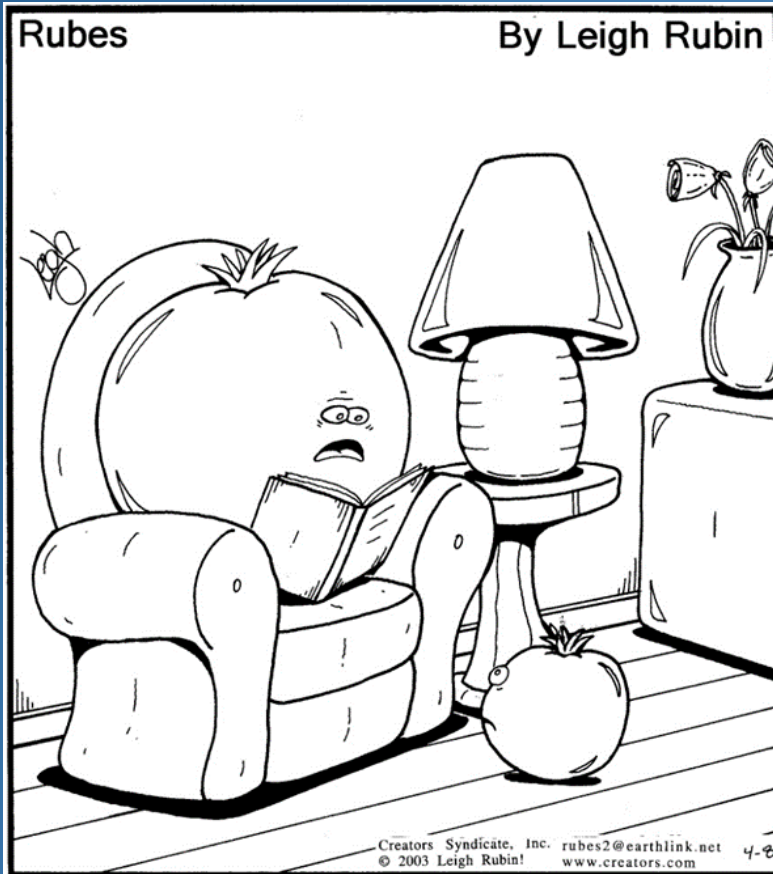


Tanoak to *Phytophthora ramorum*

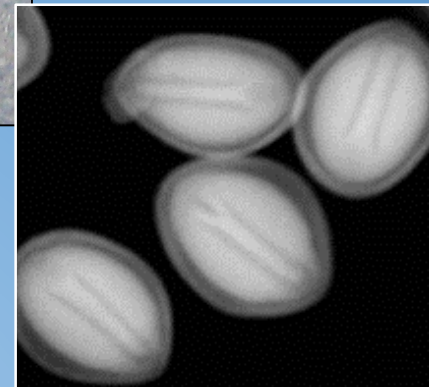


Oregon ash to emerald ash borer

Regional Tree Improvement Seed Extractory



"Well, son, there's really not much to explain about the birds and the bees ... You see, your mother and I got you from a seed catalogue."



Specialty seed extraction, processing and long-term improved seed storage

Training in seed biology and cone collection

National Tree Climbing Program

Annual Instructor training

Coordinate technical safety requirements and manage certification program

Provide DGRC and other climbers to forests



Dorena Native Plant Production



Plants Grown at Dorena
Restoration Services Team
Small lot orders
JH Stone overrun
Hard-to-grow species



Native Plant Production from Seeds

Restoration

100+ species of trees and shrubs



Rhododendron macrophyllum

Rubus parviflorus

Symphoricarpus albus

Native Plant Production from Seeds

Restoration

100+ species of trees and shrubs



Vaccinium membranaceum
Fire restoration on tribal lands

Native Plant Production from Seeds

Restoration

100+ species of trees and shrubs



Quercus garryana
Oak woodland restoration

Native Plant Production from Seeds

Restoration

100+ species of trees and shrubs



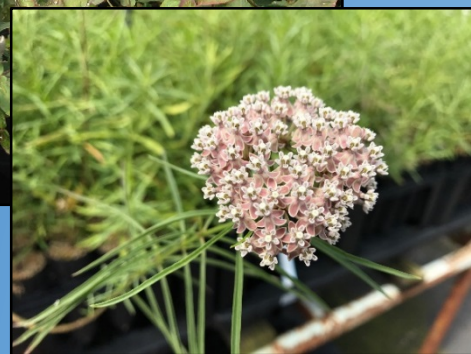
Artemisia tridentata
Sage grouse restoration

Native Plant Production from Seeds

Restoration/

Pollinator Habitat Enhancement

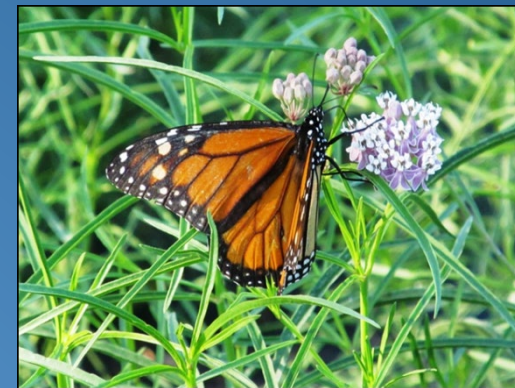
70 species of forbs



Asclepias cordifolia, A. fascicularis, A. speciosa



Lupinus microcarpus, Mimulus guttatus



Castilleja pruinosa

Native Plant Production from Seeds

Wetlands

23 species of sedges and rushes



Carex amplifolia

Glyceria striata

Carex cusickii

Native Plant Production from Seeds

Wetlands

23 species of sedges and rushes



Lysichiton americanus

Native Plant Production from Seeds

Wetlands

23 species of sedges and rushes



Wetland mats

Native Plant Production from Seeds

*Locally Endemic, Sensitive,
and T&E species*



Sophora leachiana
Rogue River-Siskiyou NF



Mirabilis macfarlenei
Oregon/Idaho



Hieracium longiberbe
Historic Columbia River
Highway State Trail



Arnica vicosa
Crater Lake NP



Boechera horizontalis
Crater Lake NP

Native Plant Production from Cuttings

“When the project is a surprise”

19 species



Cornus sericea, Paxistima myrsinites



Dorena Rooting Chamber

Alas poor Yorick

Native Plant Production from Cuttings

“When the project is a surprise”

Hopefully soon reborn



It may not be pretty

Native Plant Production from Stooling Beds



Conifer Production

*Yes, we do grow a few of those, too
23 species*



Propagation Protocol Development

When you just HAVE to have that species

118 New Protocols Developed

105 Protocols Modified



Polystichum munitum

Why we do it

https://npn.mgr.net/propagation/protocols?SearchableTex... Propagation Protocols — R... x

HOME PUBLICATIONS RESOURCES SEED LAB TRIBAL TROPICAL ABOUT FORUM

home → native plant network → propagation → propagation protocols

RINGR

Propagation Protocols

The Native Plant Network is dedicated to the sharing of information on how to propagate native plants of North America (US, Canada, Mexico and the Caribbean Islands).

To search the database, enter search criteria to the right and then click the Search button. For best results, use fairly broad search criteria (so enter text in one or two fields) and narrow your search as needed. The results will be shown below.

To submit updates or additions to the database of species you successfully grow, use the [Add/Edit Protocols](#) link to learn more about becoming a propagator or to login and start editing your protocols.

Search Results
2 results matched your search criteria: Genus

View for Printing	Genus (species)	Synonyms
<input type="checkbox"/>	Rosa (nutkana)	

[View / Print Protocols Checked](#)

ABOUT
NATIVE PLANTS JOURNAL
PROPAGATION
Propagation Techniques
Protocol Database
Add/Edit Protocols
Become a Propagator
Member Login

LINKS

NATIVE PLANTS JOURNAL | PROPAGATION PROTOCOL DATABASE | LINKS

keyword search

SEARCH RESULTS

Sorry, we were unable to find any results that matched your criteria.

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541-767-5709 (fax)
leriley@fs.fed.us



Family Scientific Name: **Rosaceae**
Family Common Name: **Rose**
Scientific Name: **Rosa nutkana**
Common Name: **Nootka rose**
Species Code: **RONU**
Ecotype: **East Sand Island, Columbia River, Oregon**
General Distribution: **Rosa nutkana grows in the western US, from the Rocky Mountain states to the Pacific Coast, and in British Columbia and Alaska**
Propagation Goal: **Plants**
Propagation Method: **Seed**
ProductType: **Container (plug)**
Stock Type: **444 ml (27 in3) container**
Time To Grow: **20 weeks**
Target Specifications: **Stock Type: Container seedling**
Root System: Firm plug in container.
Propagule Collection: **Seed is obtained by collecting rose hips after they turn a bright red color**
Propagule Processing: **Berries should be stored in a plastic bag at ~4 °C until extraction, within 2 weeks or so to prevent mold growth. Macerate berries in mortar and pestle as gently as possible. Check seeds regularly to ensure seeds are not being cracked or otherwise damaged. Add water to pestle to mix, and pour mixture in beaker. Add sufficient water. Water to berry mixture should be 3:1. Add pectinase (approximately 1 table spoon per liter) to volume and stir. Leave mixture at room temperature for 24 hours. Most seeds should sink to bottom if filled and properly macerated initially. Pour off top layer while gently mixing, or adding water from a faucet. Do not mix so violently that seed rises in the water column, but just enough that berry skin begins to float and pour off the non-seed debris. When seeds are as clean as possible, pour wet seed onto paper towel and allow to dry. Pick out debris with tweezers. Dry to <38% RH. Store at 4 °C.**
Pre-Planting Treatments: **Seeds are placed into fine mesh bags and soaked in a 1% hydrogen peroxide (3:1 water/3% hydrogen peroxide) 24 hours, rinsed, and placed in water for an additional 24 hours. Seeds are layered in peat in a sealed container and placed into cold stratification (1 to 3 °C) for 100 to 110 days. It is very important to check seeds in warm strat and peat weekly. If mold is evident, seeds should be treated with 1% hydrogen peroxide.**
Growing Area Preparation/
Annual Practices for Perennial Crops: **Seeds are directly sown into containers. Seeds are lightly covered with nursery grit. Growing medium used is 40:20:20:20 peat:composted fir bark:perlite:pumice with Apex controlled release fertilizer (16N:5P2O5:10K2O with minors; 6 to 7 month release rate at 21C) at**

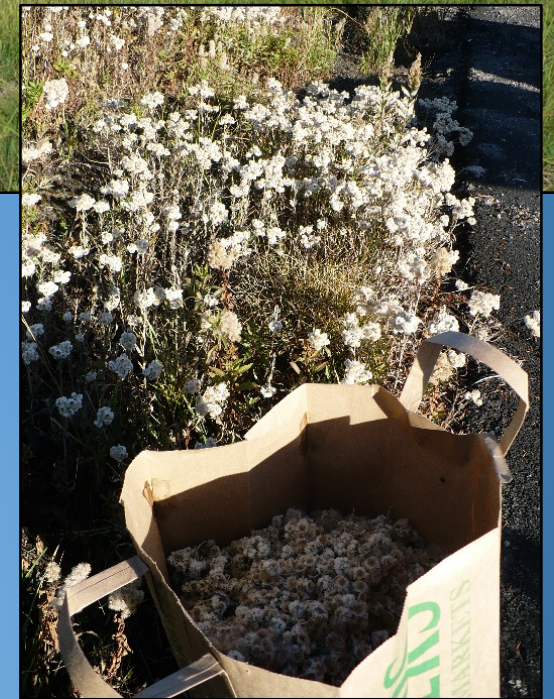
And it's NOT JUST for nurseries

The inherent problem of discovering new protocols



Additional Services

Seed Collection for Nursery Container Production



Additional Services

Vegetation Collection for Steckling Production



Additional Services Outplanting Assistance



Innovative planting techniques



Personnel



Seedling care

Additional Services

Hydroseeding

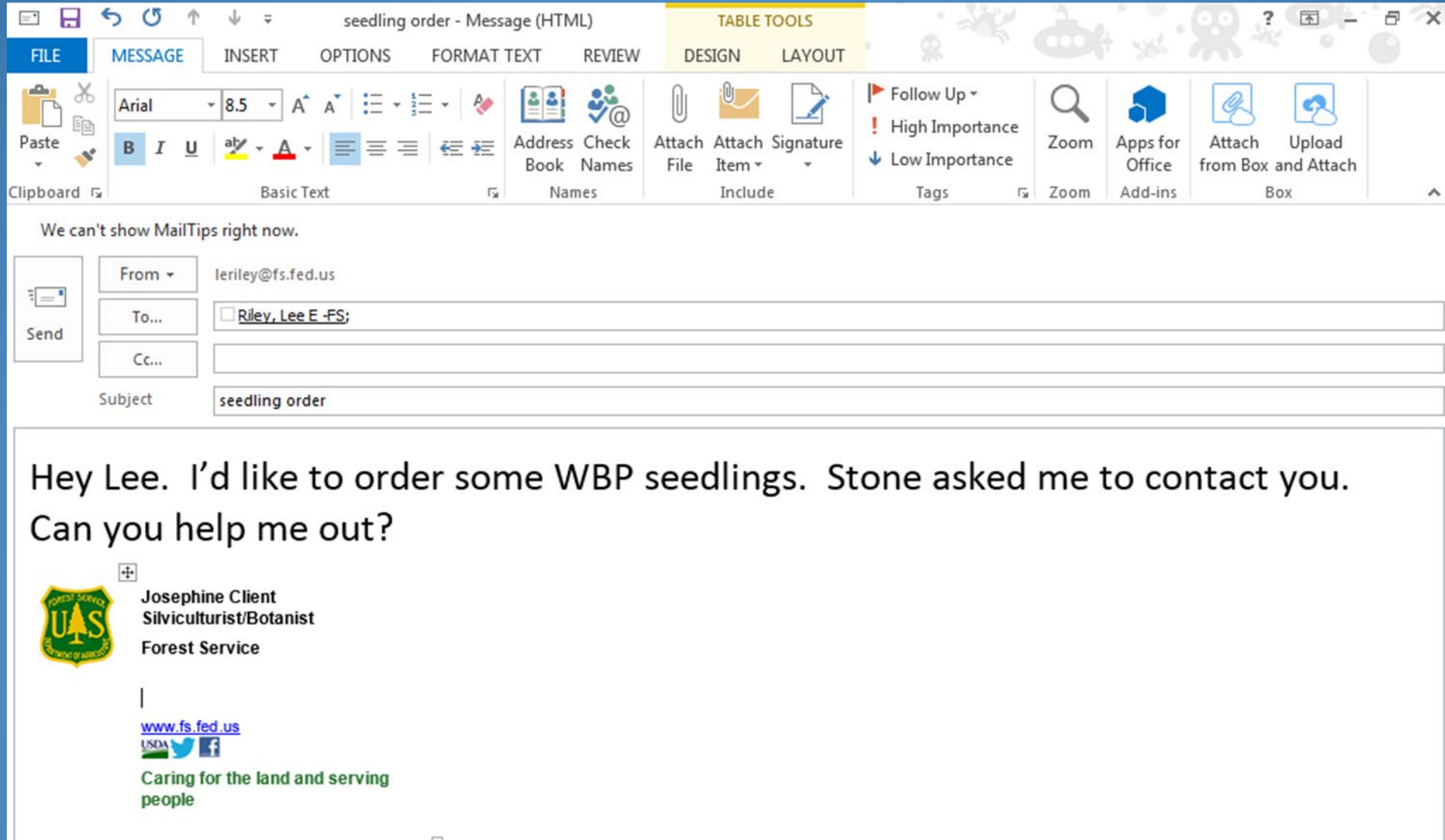


Additional Services

Tree Climbing for Cone Collection



Ordering made easy



The screenshot shows the Outlook interface for an email titled "seedling order - Message (HTML)". The ribbon includes FILE, MESSAGE, INSERT, OPTIONS, FORMAT TEXT, REVIEW, DESIGN, and LAYOUT. The MESSAGE ribbon is active, showing options for text formatting (font, size, bold, italic, underline, color, background color), alignment, and other tools like "Address Book Names", "Attach File", "Attach Item", "Signature", "Follow Up", "High Importance", "Low Importance", "Zoom", "Apps for Office", "Attach from Box", and "Upload and Attach".

The email header shows:

- From: leriley@fs.fed.us
- To: Riley, Lee E -FS;
- Cc:
- Subject: seedling order

The email body contains the following text:

Hey Lee. I'd like to order some WBP seedlings. Stone asked me to contact you. Can you help me out?

Below the text is a contact card for Josephine Client, Silviculturist/Botanist, Forest Service. The card includes the Forest Service logo, the website www.fs.fed.us, and social media icons for USDA, Twitter, and Facebook. The tagline "Caring for the land and serving people" is also present.

Questions?



Search ID: mgdn1248

"I'm just planting invasive species this year. Let them kill each other."