

RNGR: A National Resource for Forest Seedling Production and Outplanting Programs

Diane L. Haase

Overview:

- The USDA Forest Service's Reforestation, Nurseries, and Genetic Resources (RNGR) Team is a unique and innovative collaboration across all three Deputy Chief Areas.
- The RNGR Team develops and delivers science-based technology used by the Agency and Federal, State, Tribal, and private partners to produce high-quality, genetically appropriate seedlings critical for meeting reforestation, conservation, and restoration goals nationally and internationally.

Summary:

The U.S. Department of Agriculture, Forest Service's National Reforestation, Nursery, and Genetics Resources (RNGR) Program is conducted by a team of specialists (referred to as the "RiNGer Team") that provides regional and national technical assistance to nursery, reforestation, restoration, and seed professionals. The Forest Service National Seed Laboratory (NSL), a Tribal nursery emphasis, and research projects are also key components of the RNGR Program. RNGR Team members are geographically dispersed (fig. 1) and attuned to both regional and national needs.

Through on-site visits, workshops, regional meetings, publications, web resources, and partnerships, the RNGR Team provides technical expertise and resources to solve problems, improve efficiency, and increase quality and diversity of nursery-grown plants. Many of RNGR's technical publications often serve as the authoritative standard (fig. 2). The RNGR website (<https://rngr.net>) is used extensively by nursery, forestry, and restoration professionals around the world. The site contains a repository of more than 12,000 articles, a national nursery directory, a database of more than 3,000 propagation protocols, a calendar of events, and many other resources.

Given the rising demand for nursery production and outplanting to restore forests affected by wildfire, pests, insects, and other disturbances, RNGR's coordination, development, and dissemination of science-based technology will continue to be an integral resource for nursery and land managers engaged in ecosystem restoration.

Silvicultural Concepts:

- The success of reforestation and restoration outplanting projects necessitates the use of quality plant materials from genetically and ecologically appropriate seed sources.
- Each tree species has its own requirements for seed germination, propagation, storage, and handling.
- The agency's RNGR team provides technological support regarding all aspects of seedling production, handling, planting, and quality.

Management Applications:

- The current rise in attention and legislation for expanding forest restoration and seedling production necessitates expert technical support on all aspects of seedling production from seed to outplanting.
- The RNGR Team provides current, relevant technical assistance to help managers respond to an ever-increasing demand for ecologically appropriate plant materials critical for addressing forest restoration, climate change, invasive species and pests, habitat loss, wildfire, and other factors.





Figure 1—The eight-member Reforestation, Nurseries, and Genetics Resources (RNGR) Team is geographically dispersed to provide expert support both regionally and nationally.



Figure 2—Technical manuals and publications generated by RNGR often serve as the industry standard.

References

- Fargione, J.; Haase, D.L.; Burney, O.T.; Kildisheva, O.A.; Edge, G.; Cook-Patton, S.C.; Chapman, T.; Rempel, A.; Hurteau, M.D.; Davis, K.T.; Dobrowski, S.; Enebak, S.; De La Torre, R.; Bhuta, A.A.R.; Cubbage, F.; Kittler, B.; Zhang, D.; Guldin, R.W. 2021. Challenges to the reforestation pipeline in the United States. *Frontiers in Forests and Global Change*. 4:629198.
- Haase, D.L.; Pinto, J.R.; Dumroese, R.K.; Hernández, G.; Karrfalt, B.; Overton, R. 2011. RNGR: A national resource for reforestation, restoration, and nursery professionals. *Tree Planters' Notes*. 54(1): 28–34.
- Haase, D.L.; Pike, C.; Enebak, S.; Mackey, L.; Ma, Z.; Silva, C.; Warren, J. 2021. Forest nursery seedling production in the United States—fiscal year 2020. *Tree Planters' Notes*. 64(2): 108–114.