



REFORESTATION REPORTER

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NEW STAFFING STRUCTURE WITHIN THE WISCONSIN REFORESTATION PROGRAM

By Carmen Hardin, Forest Management Bureau Director

Late last year, the decision was announced to consolidate seedling production at Wilson State Nursery in Boscobel. Hayward State Nursery and Griffith State Nursery, while no longer producing seedlings, will still be used by the Department for a variety of purposes, including seed cleaning and storage, seed orchards, herbicide and other trials, and research plots (currently looking at High Bush Cranberry and American Hazelnut)

As a result of moving all seedling production to Wilson State Nursery and refocusing the Program on broader reforestation efforts, the staffing structure of the Reforestation Program was modified to reflect its new direction. The changes include going from three supervisors to one for the program, going from three Assistant Nursery Managers to one, and creating a new Regeneration Specialist position. The changes went into effect September 6, 2015 and I am pleased to introduce these familiar faces in their new roles.

The new Reforestation Team Leader/Nursery Superintendent is **Joe Vande Hey**. Joe graduated from the University of Wisconsin - Stevens Point with a BS Forest Management in 1989. Following graduation, he worked a 6 month internship with Mead Paper Co. as a container nursery technician in Escanaba, MI. In the summer of 1990, Joe began working for the Oklahoma Department of Agriculture, Division of Forestry; spending 3 years as a Technician and 5 years as Superintendent of Oklahoma's Tree Improvement Program and started Oklahoma's containerized nursery operation. Returning to his home state of Wisconsin in the fall of 1998, Joe joined the Wisconsin Department of Natural Resources and has spent the



past 17+ years as Nursery Superintendent at the F.G. Wilson State Forest Seedling Nursery in Boscobel. When not at work, Joe loves to spend time with his lovely wife Lauree and 6 beautiful children. They are actively involved in their church and he enjoys working with the kids on faith formation. Joe and his family spend plenty of time tending to their small 18-acre farmette in rural Boscobel, raising a large

garden, chickens and a few steers. They also enjoy hunting, swimming, biking and hiking.

The new Assistant Nursery Manager for the Reforestation Program is **Roger Bohringer**. Roger grew up in Cassville, WI, three blocks away from his favorite fishing hole on the Mississippi River. He graduated from UW Platteville in 1992 with a degree in field biology. After several years of on and off LTE work all over Wisconsin in Fisheries, Wildlife, and Research, Roger started full time seasonal employment with DNR Forestry as a nursery technician in Boscobel 17 years ago. Over the years, his duties changed, and his position became full time instead of seasonal. From 2004 until 2014, as assistant nursery manager, Roger's time was split between nursery duties and reforestation monitoring, with much of his time spent on the road looking at new plantings. With the re-organization of the reforestation program and the reduction to one active nursery, his job has changed once again. Roger is back to his nursery roots, with the primary responsibility of managing the day to day operations at Wilson State Nursery. When not working, Roger enjoys hunting, trapping, and spending time with his wife, Penny and three children, Joelle, Beth, and Ben.



The new Regeneration Specialist is **Jeremiah Auer**. Jeremiah started his DNR career in 2002 as a trainee under the expert tutelage of Steve Grant in Wisconsin Rapids. He then transferred to Antigo as the Langlade County liaison forester and learned how to be a successful forester (and person) from the best: Ron Zalewski, Ted Ave'Lallemant, Keith Lindner, Tom Duke, Terry Flugger, Pete Solin, and Pam Freeman-Gillen. When the Griffith State Nursery assistant manager position came available, he jumped back into Central Wisconsin, learning how to grow little trees from nuts from another group of experts in Jim Storandt and Kevin Christison.



Now, as the Reforestation Program transitions into a new mission, he is excited to start as the Regeneration Specialist. When not focusing on seeds and seedlings, he is cultivating his crop of six wonderful children. He and his bride, Kim, can also be found enjoying the rural life of SE Portage County,



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working as religious education instructors at their beloved church, St. Maximilian Kolbe, and participating in all of the fun (and exhausting) activities that come with an active group of family and friends. He looks forward to working with his fellow forestry colleagues on their regeneration needs.



NEW LEADERSHIP FOR WISCONSIN REFORESTATION PROGRAM

By Darrell E. Zastrow, Deputy Division Administrator

It is with great pleasure that I announce our new Forest Management Bureau Director and Forestry Leadership Team member, **Carmen Hardin**. Carmen shares some history of her work and interests: "I've worked for the Department since 1998, first hired as an LTE in the Water Division working on Waterway and Wetland permits and later became an FTE for the Shoreland Zoning Program. In 2004, I moved to the Forestry Division as the Forest Hydrologist and in 2012, I became the Forest Science Section Chief. Prior to working



for the Department, I managed a 100 acre native plant nursery in southwestern Wisconsin and provided consulting services for prairie, wetland and woodland restorations. I have Bachelors of Science in Soils and Biological Aspects of Conservation, as well as a Masters in Environmental Planning, all from UW-Madison. Outside of work, I enjoy waiving my fly rod around, trying to tempt trout, small mouth bass or panfish, and in the fall, I like to take my non-traditional hunting dog (Seamus the cockapoo) out looking for birds. Unfortunately, I'm not nearly as good as he is at finding the birds. I'm looking forward to working with all the staff in the Forest Management Bureau as well as all our partners in this new role."



SPECIES FOCUS: SWAMP WHITE OAK (QUERCUS BICOLOR)

By Joe Vande Hey, Reforestation Program Team Leader

Swamp White Oak, *Quercus bicolor*, in the Beech Family (Fagaceae), and the white oak subgroup. It is found most

commonly in the Midwest from Wisconsin, Iowa and Missouri and east to New York and Pennsylvania, but can be found throughout most of the eastern United States up into southern Canada, as far south as Alabama, and up into Minnesota. It is found throughout all of Wisconsin. http://plants.usda.gov/plantguide/pdf/cs_qubi.pdf. Swamp white oak grows on a wide range of soil in bottomland forests along rivers, streams and lakes as well as poorly drained uplands. It grows best in full sun and will tolerate seasonal flooding. Swamp white oak is a moderate to fast grower depending on the site and is a relatively long lived species. Swamp white oak is not as valuable a crop tree as other species in the oak family because its branches persist, making for a knottier wood. Yet it is still used in the furniture, flooring and cabinet industry, as well as railroad ties, and was once sought after for barrel and keg making. It is a very valuable species for wildlife communities providing shelter and heavy mast crops with large sweet acorns that support a wide range of wildlife including deer, waterfowl and turkeys.

Swamp white oak is an excellent species to be included in a new tree planting especially if the focus is on bottomland hardwoods on those wet sites. With the invasion of emerald ash borer into Wisconsin, more planting has been occurring in these habitats to replace ash. There are a few things to consider when including swamp white oak in your tree planting. Swamp white oak is moderately shade intolerant so it is best to plant in open fields or heavily thinned woods. Swamp white oak is browsed by whitetail deer, but not to the extent of most other hardwood species. If you are planting in an area with high deer populations there are some management and protection options that can be used to help reduce browse such as repellents, shelters, fencing, and hunting. Location within the planting could be used to reduce browsing as well. Swamp white oak is susceptible to various insects and diseases, but not nearly as much as other oak species. The state reforestation program offers high quality swamp white oak, in both one and two year old bare root seedlings, for sale. These seedlings are from a Wisconsin adapted seed source. Swamp white oak, along with a variety of other species, are available for reforestation and conservation purpose to serve Wisconsin landowner's reforestation needs. See our website at <http://dnr.wi.gov/topic/TreePlanting/> for ordering information.



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MIDWESTERN NURSERY PROFESSIONALS

WORKING TOGETHER

By Roger Bohringer, Assistant Manager, Wilson State Nursery

In August, 2015 assistant nursery manager Roger Bohringer represented the Wisconsin DNR during a Technical Assistance Visit (TAV) to the Badoura State Nursery in Akeley, MN. The visit was coordinated by USFS regeneration specialist Ron Overton, and included nursery representatives from Michigan DNR, Minnesota DNR, and USFS Toumey Nursery, MI.

The TAV started with an overview of the Minnesota state nursery system, followed by an in-depth discussion of nursery cultural practices, equipment modifications, and a tour of the buildings and grounds. It was a great opportunity for growers from four different locations and backgrounds to compare notes on how each approaches some of the problems common to all large seedling nurseries. Plus, everyone was able to tap into Ron Overton's considerable knowledge of all things relating to forest nurseries and larger regeneration issues across the eastern U.S.

The TAV also included a visit to the Red Lake Band of Chippewa greenhouse. This is a state of the art greenhouse growing containerized seedlings for planting onto lands owned by the tribe. It has the capacity to grow 1million seedlings per year. The tribe's goal is to plant 1000 acres per year for the next 50 years, but so far they are only able to harvest and prep about half that amount annually, so the nursery is operating below capacity. It was a very interesting tour, which left all the visiting nursery personnel envious of the great facility, as well as the security of a promised 50 years of full production.

Overall, the visit was well worth the trip, with the knowledge gained, assistance provided, relationships created and comradery forged, the Reforestation Program will be able to better serve our partners and customers.



UPDATES

Direct Seeding Site – Portage County Revisited

*By Jeremiah Auer
Regeneration specialist, WI DNR*

With input from Lyle Eiden, Portage County forester

In the Fall of 2012, the Reforestation staff and Portage County forester, Lyle Eiden combined efforts to assist a landowner with a hardwood direct seeding project.

The landowner broadcast 6 bushels (bu.) of acorns (3 bu. red oak, 2 bu. white oak and 1 bu. bur oak) over 1.5 acres. The site was disked, the seeds broadcast by hand and then rolled into the soil using a common garden roller.

In the Spring of 2013, the red oak seedlings sprouted very well. However, the white oak acorns, both in direct seeding



Figure 1: Deer exclusion fence around direct hardwood seedling
Photo: Jeremiah Auer, WDNR

areas and nursery beds did not. The staff concluded that the dry conditions of the summer of 2012 stressed the seed during a very large acorn production year. This seed then had to endure a long, cold, wet winter, with minimal frost. This combination of stressors probably led to rotting seed and poor germination. Overall, the site was adequately stocked. As the Spring of 2014 began, some small areas of rodent damaged were obvious, but the

seedlings were thriving. In the late summer, the landowner applied glyphosate. Unfortunately, this was a little too early for the seedlings and most of them were killed, along with the targeted broadleaf weeds.

The landowner was undeterred and as the Fall of 2014 approached, he prepared the site again, upgraded the deer fence (the polypropylene fence had deteriorated in the sunlight) to an 8-ft wire mesh, and replanted with 4 bushels of red oak acorns. This time, he used a tree planter and put the seeds in rows. This way, he would be able to mow between the rows and apply herbicides without impacting the established seedlings. This approach seems to be working. As the landowner and I walked the planting in the Fall of 2015, we measured approximately 7,500 seedlings/acre, averaging 6" in height. The landowner was able to keep the area mowed



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throughout the summer and may utilize some rodenticides to limit the impact of the mice and voles over winter.

While this planting has definitely had some challenges, with time and effort, we believe it is on its way to a successful conclusion. Look for another update in 2018.

Regeneration Ad Hoc Team

By Jeremiah Auer

Regeneration Specialist, WDNR

Currently, the Division of Forestry regeneration program (both natural and artificial) on State lands is generally decentralized, with the forester assigned to a particular timber sale or reforestation project responsible for monitoring regeneration success, updating reconnaissance, and prescribing any additional regeneration practices. The level of monitoring and scheduling of regeneration practices varies across the state and the Division has limited assessments of the statewide success of regeneration harvests because the data is typically kept at the local level. In addition, the methods and standards we use to monitor regeneration vary widely. For example, foresters sometimes confuse the discrepancy between minimum medium stocking requirements under MFL and the minimum stocking levels recommended for individual cover types in the Silviculture Handbook. The Public Forest Lands Handbook, Silviculture Handbook, and Tax Law Handbook each contain guidance related to regeneration monitoring. The successful regeneration of desirable forest tree species is a basic and critical element of sustainable forest management. Forest regeneration has been identified as an implementation issue in the Division of Forestry Strategic Direction, as well as been identified as an opportunity for improvement in forest certification audits on State lands.

Monitoring and data collection of artificial regeneration is more advanced because of a special monitoring program started by the Reforestation Program in 2007. The program has been monitoring a representative sample of each year's tree plantings on both public and private lands, assessing a wide array of planting variables from the nursery bed to the field. The goals of this initiative are to improve overall reforestation success, as well as monitor for the occurrence of invasive species on reforestation sites. The Reforestation Program has been working with Science Services to analyze the last several years of monitoring data. Based on initial results, the program is adjusting their monitoring protocols to

better answer particular questions related to artificial regeneration. The program piloted an effort in the summer of 2015 to establish fixed plots that can be used to monitor specific nursery stock over several years. Based on the Reforestation Program's new direction, they are also charged with assisting statewide natural regeneration monitoring efforts.

The objective of the team will be to review current handbook guidance, as well as that found around the Lake states, on natural regeneration monitoring methods and standards, develop efficient and effective forest regeneration monitoring protocols, collect and manage reforestation monitoring data, and finally to better define the role and responsibilities of the DNR forester in regeneration monitoring. The team will consist of a wide range of regeneration professionals, including members from DNR, County Forests, Consulting foresters and possibly, an interested landowner.

The ad hoc committee will begin organizing in January of 2016 and wrap up its efforts by the end of the year.

Reforestation Monitoring - 2015

By Jeremiah Auer

Regeneration Specialist, WDNR

As we have previously reported, the Reforestation Program has been gathering data on nursery grown, newly established tree and shrub plantations since 2007. After utilizing the expertise of our colleagues within the Sciences Services Bureau, the Reforestation Program adjusted its protocol. While much of the site selection criteria remain the same, a greater emphasis has been placed on landowners with forest establishment as their primary goal. In the past, we included windbreaks and wildlife habitat plantings. The new plots are also permanent, 1/50th an acre, and number either 3 (smaller sites) or 6 (larger sites) per planting. Each seedling within the plot is marked, mapped and measured. In addition, two stocking plots are temporarily established 50-ft from plot center to ascertain current survival. While the Reforestation Program awaits the decision on field data recorders, we utilized trusty paper and pencil. The data is entered into a database and the results analyzed during the winter. At this point, we have collected data on 34 plantations established in the spring of 2015, 23 plantations previously monitored in 2013 and now through their 3rd growing season and 6 plantations previously monitored in 2009 and now through their 7th growing season.



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After a full season of field work, we have come to a few conclusions:

1. This form of data collection is much more time consuming and runs most efficiently with 2 individuals. We may need to expand our employee data collection force, depending on the direction of the program.
2. Data analysis will be much more applicable to the questions we are most interested in answering; i.e. planting depth and its impact on current and future survival, deer browse impacts on individual species height growth.
3. While we feel this new protocol is superior to our previous protocol, it will still require the same level of dedication and persistence to maintain the data in a form that is both usable and relevant.

In the future, we hope to tweak some of the data collection protocols and gather data on the tree plantations of Wisconsin. Hopefully, these efforts will increase the success of the property managers and landowners of Wisconsin's forests.

2016 Spring Tree and Shrub Seedling Sales

The 2016 seedling sales are continuing at a steady pace. We have sold out many of the lowland hardwoods species, swamp white oak 1-0, hackberry 2-0, silver maple 2-0, and a few conifers; jack pine 1-0, tamarack 2-0 and red pine 3-0. However, a number of the conifers and upland hardwoods are still available in good supply. Contact any of our Reforestation Program staff for more information.

New Name, Same Publication

Did you notice something different with this month's publication? In an effort to remain consistent with the changes within the Nursery-now Reforestation Program, the "Nursery News" has become the "Reforestation Reporter". Same pithy articles, same pithy staff.

Thank you for taking the time to read the Reporter. If you have any comments, questions, or suggestions, please contact Jeremiah Auer at the Griffith Nursery at (715) 459-1999.

Reforestation Reporter is published in January and July with the intent to keep individuals abreast of regeneration topics.

Reforestation Program Nursery properties:

Griffith State Nursery (Wisconsin Rapids)
715-424-3700
Wilson State Nursery (Boscobel)
608-574-4904
Hayward State Nursery (Hayward)
715-492-1204

www.dnr.wi.gov, search "tree planting"

THE VISION of the state nursery program is to insure a consistent supply of high quality seedlings, of desirable forest species, at an economical price, to encourage reforestation in Wisconsin.



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