

The Role of the Seedling Nursery in Helping Its Reforestation Clients

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Abstract

To be successful in their work, reforestation managers rely on a variety of information sources to acquire the information they need to understand seedling physiology and make good management decisions. Nursery managers and growers can be a great source of information and critical allies to the reforestation manager, helping them to achieve high rates of survival and optimum growth after field planting. This paper was presented at the 2019 Joint Annual Meeting of the Forest Nursery Association of British Columbia and the Western Forest and Conservation Nursery Associations (Sidney, BC, September 30-October 2, 2019).

Managing a reforestation project may seem like a simple endeavor: bring together seedlings, planters, and a reforestation site, and voila... Right? Anyone who has ever managed a reforestation project is grinning and shaking his or her head in disagreement. Reforestation might look that easy from a distance, but it is not. A successful reforestation manager is a facilitator who brings together the necessary knowledge, partners, and resources in the correct time and space, so that each piece and phase of the project supports the next, ultimately resulting in the establishment of a well-growing, young forest (figure 1).

Reforestation managers can hire planting contractors and order seedlings, but where do they get all of their “necessary knowledge” to manage a successful reforestation program? They only get some of it from college. After college, the lucky ones start their real learning as an assistant to a reforestation manager, during which time they can benefit from the manager’s experience. Others are tossed directly into the deep water as a reforestation manager and must learn as they go. There is a huge amount of information about reforestation practices available from government publications, university extension agents, and

forestry research articles, but searching the web to find pertinent articles and then reading them takes a lot of time. Today’s challenge is time, and the work-day for any reforestation manager is loaded with a long list of must do’s.

Reforestation managers can also gather information at workshops and conferences, and can turn to experienced reforestation partners such as nursery managers, seedling growers, and extension specialists to ask questions and increase their understanding about such concerns as why seedlings are not growing well, or if a certain species/stocktype combination would be appropriate for a particular reforestation situation. These professionals are the people that the reforestation manager can contact for a detailed understanding about seedling physiology and how to help seedlings grow well at the reforestation site. For the nursery manager/grower, it is important to remember that reforestation clients will usually continue to purchase seedlings from your nursery when they are successful with their



Figure 1. Reforestation managers must understand various impacts on seedling growth and survival to be able to be able to duplicate a favorable outcome and avoid the unfavorable outcome. For example, these 1-year-old lodgepole pine seedlings, both from the same seedlot and planted by the same planter, were planted in different microsites resulting in differing field performance. (Photo by Dennis Farquharson)



Figure 2. A high-quality seedling from the nursery planted in favorable conditions is a win-win for both nursery managers/growers and reforestation managers. This 2-year-old, nursery-grown Douglas-fir seedling is doing very well after outplanting. (Photo by Dennis Farquharson)

seedlings (figure 2). A positive relationship between nurseries and reforestation managers, characterized by good communication, is critical to reforestation success (Haase 2014).

In addition to seasonal questions and conversations between nursery and reforestation managers related to seedling cost, over-sow factors, seedling performance,

crop status, seedling balance, hardiness, and overruns; ongoing questions can arise regarding broader plantation survival, establishment, and growth performance. Some important questions that reforestation managers want to discuss with nursery managers and other plant professionals with regard to reforestation opportunities are:

- Are there growth benefits from selective micro-site planting? If so, what are the features of a preferred planting microsite and what sort of gain should be expected?
- Does prompt planting benefit the seedlings due to the population of mycorrhiza or other beneficial organisms in the soil? If so, what degree of benefit can be expected? Will that benefit decline over time and if so, over what duration will that occur?
- Due to climate change and seemingly more frequent drought events, should we be considering a different stock-type to improve the reforestation success? Also, would planting the same, or a different, stock-type at a different time of the year improve the reforestation success?

Other things nursery managers can do to support their client (the reforestation manager) are:

- Get to know them and become part of their professional network.
- Invite them to view their seedlings at the nursery.
- Contact them to discuss sowing dates, germination rates, and species stock-type selections.
- Offer to stop by their work for a visit and maybe a tour of some recently planted seedlings, or a reforestation challenge.
- Look for opportunities to streamline or reduce their workloads. This could be something as simple as reducing the number of invoices annually, modifying box labels to highlight relevant information, or helping to coordinate seedling transportation. It could also be something significant like individually wrapping frozen seedlings to increase the flexibility and reduce the management of thawing and shipping for planting.
- Make environmental adjustments that reduce the use of packaging, pesticides, etc.

Ultimately, the active participation of the nursery team as members of the reforestation team will support the reforestation manager and positively influence the reforestation project (figure 3).

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Figure 3. Ultimately, good communication and an abundance of knowledge and experience results in a team of nursery and field professionals that can ensure reforestation success such as this healthy, 6-year-old Douglas-fir seedling. (Photo by Dennis Farquharson)

REFERENCES

Haase, D.L. 2014. A quality relationship between nurseries and foresters is imperative to successful reforestation. *Western Forester*. 59(1): 1–3.