Growing Target Seedlings for Reforestation

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In the USA, foresters have been actively engaged in reforestation for more than a century. For most of that time, a unidirectional relationship existed between the nursery manager and the forester, whereby reforestation seedlings were often provided as standard, one-size-fits-all stocktype from the nursery. Currently in the USA, about 1 billion seedlings are produced annually by private, forest industry, state, tribal, and federal nurseries. The number of seedlings for reforestation, however, continues to decrease because of reduced harvests from federal lands, forest industry divesting forest lands to real estate investment companies, a climate of government austerity that has reduced tree planting incentives, and continued forest fragmentation that decrease forest management options. Concurrently, however, efforts have continued to improve the effectiveness of reforestation activities. These efforts have, as foundation, the Target Plant Concept, a science-driven way to define what seedlings are grown in the nursery to meet the needs on planting sites to achieve reforestation goals. Three interrelated ideas guide the defining process of the target seedling and provide the broad, fundamental basis needed to successfully complete reforestation: 1) start at the outplanting site; 2) forge a nursery-client partnership; and 3) emphasize seedling quality, not appearance. Rather than being satisfied with a one-size-fits-all stocktype, the nursery manager and client systematically answer eight interrelated questions to ultimately define a unique target seedling. These questions focus on the reforestation goals, site characteristics, factors limiting survival and growth, mitigation of those factors, appropriate species and genetic source, the best stocktype, proper planting tools, and the best outplanting season. Once a target seedling is defined, grown, and planted, the success or failure is verified by trials that monitor survival and growth. This performance information provides valuable feedback to the nursery manager who works with the client to refine the target plant specifications for the next crop. Reforestation is an extension of forest restoration. In the USA, a variety of seedling plant forms (grasses, forbs, shrubs, and non-commercial trees) in a plethora of stocktypes are being produced following the Target Plant Concept to meet traditional reforestation and emerging forest restoration needs.

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