



## *Webinar Brief for Resource Managers*

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# An Introduction to the Target Plant Concept

*To Be Presented on 21 January 2016 by Anthony S. Davis, Director, University of Idaho Center for Forest Nursery and Seedling Research, and Jeremiah R. Pinto, Research Plant Physiologist and Tribal Nursery Specialist, USDA Forest Service, Rocky Mountain Research Station, Moscow, ID.*

### **Project Summary** (2-3 sentences):

The Target Plant Concept presents the opportunity to improve restoration success by quantifying seedling attributes that are linked to outplanting success. Essentially, by determining which parameters are most influential on seedling performance after planting, and then measuring those variables, one is able to continuously refine planting practices across broader ranges of site conditions and species.

### **Abstract** (250 word minimum):

The Target Plant Concept (TPC) incorporates five tenets: Objectives and Constraints, Limiting Factors on the Outplanting Site, Stocktype, Source of Plant Material, and Outplanting and Follow-up Practices that should be considered as determining factors for how, where, and when nursery stock are produced for restoration projects. Using the TPC as a standard for successful restoration, the procurement of plant material moves from being based on availability and economics to inclusion of specific seedling attributes that are likely to result in establishment success. Properly cultivated and selected seedlings can be one of the most effective ways to re-establish vegetation following a period of absence. Traditionally, a unidirectional relationship existed, whereby the plant material used on a restoration site was provided by a standard, one-size-fits-all, process from the nursery. This particular method overlooks potential survival, performance, and growth gains that can be achieved by properly matching nursery stock to specific outplanting conditions. This presentation highlights the use of this framework through current research and operational examples and provides guidance for potential new approaches in restoration practices. For example, in determining the objectives and constraints, one must consider the resources available and best way to allocate them in relation to the purpose of the project. It may be that fewer, larger plants that are likely to be seed bearing sooner, and then can be placed in specific areas, are more desirable than a large number of small plants in a

### **Management Implications**

- Seedling selection should be a core part of the decision making process for restoration planning.
- Simply choosing from available seedlings negates an opportunity to manage the genetic, physiological, morphological, and economic resources in a manner that optimizes outplanting success.
- Cost considerations should include the total cost per established plant, not just the cost of the individual seedling at the time the project is started.

broader spacing. Understanding the factors that keep plants from growing (limiting factors on the outplanting site), such as water availability, browsing, or vegetative competition can allow for one to change the way seedlings are grown in the nursery or tended after planting. Other similar examples exist for the selection of appropriate genetic material, the timing and methods of outplanting, and tending after planting.

### **Most Relevant References:**

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