

USDA, FOREST SERVICE  
NURSERY CAPACITY AND STOCK NEEDS

Richard G. Miller  
Timber Management  
USDA, Forest Service  
Washington, D.C.

INTRODUCTION

During December of 1976, Chief McGuire approved a plan for the study of reforestation and timber stand improvement programs on the National Forests. One of the action items resulting from this study directed Timber Management, Washington Office, to analyze Forest Service seedling needs and supply, and to determine if additional Forest Service nursery capacity is required to meet reforestation targets. The nursery capacity data was developed by a six-person task force created in December 1978. The objectives were to: 1) determine present capacity of all existing nurseries, 2) determine possibilities for future expansion of each nursery, 3) analyze nursery efficiency and seedling quality potential, and 4) determine improvements needed to maintain current capacity and planting stock quality on a long-term basis. The task force solicited data from each nursery via a questionnaire and then selected team members visited each nursery. The team's report was completed in August 1979.

During June 1979, a letter was sent to all Forest Service Regions requesting data on estimated planting stock needs by species and elevation zones. Data was reported in five tables--four tables reported various combinations for reforesting backlog acres by 1989, and the fifth summarized current reforestation need through 1989.

This paper will summarize the nursery capacity and stock needs data.

PRESENT SITUATION

The Forest Service currently operates 13 bare-root and 3 container nurseries. Two of the bare-root nurseries also operate container facilities. One bare-root nursery is scheduled to be closed by 1984.

Nursery capacity as calculated in the Service-Wide Study (1979) and updated to 1981 is shown in Table 1. Total bare-root capacity using recognized soil management and crop rotation practices is 191.6 million seedlings annually. Nursery expansion expected to be completed with existing funds will bring capacity to 211 million seedlings annually. Bare-root production could be expanded even more at existing nurseries; however, due to the specific location of the nurseries, some species and specific

seed sources could not be grown in existing nurseries even if space were available.

Container production is more difficult to quantify as the size of container and the number of crops per year can drastically change production levels. Current container production capacity is about 14.5 million seedlings annually. Capacity could be expanded if necessary. The formulas shown in Table 2 are used to compute bare-root and container capacity for each facility.

The estimated Forest Service seedling needs, the estimated number of seedlings that will be grown for cooperators, and the estimated number of seedlings that may be purchased from other sources are shown in Table 3. A comparison of nursery capacity and total estimated production is shown for each Region in Figure 1.

#### DISCUSSION

While Servicewide totals for nursery capacity and seedling needs suggest adequate capacity exists, data for individual Regions show the Forest Service does not have sufficient nursery capacity in certain locations. Seed from some specific zones cannot be successfully grown in existing nurseries. This has only recently become a problem as some State nurseries in the West and South have reduced the amount of stock they will grow for the Forest Service.

The data shown in Figure 1, clearly indicates that Regions 1, 2, 3, 4, 5, 9 and 10 have adequate nursery capacity, and that Regions 6 and 8 need to further evaluate their overall conditions, including contracting stock production from State and private nurseries, and developing additional capacity.

Estimates of private nursery capacity currently available for seedling production are highly questionable because the calculations are made without reference to any specific standards. Furthermore, the available capacity is highly variable. Capacity is available when timber harvest is down (as at present) and areas are not available for planting. As timber harvest increases and sites become available for planting, stock needs increase dramatically and nursery capacity in all sectors is short. A challenge exists for the private nursery sector to develop nursery capacity data based on standard criteria. The formulas shown in Table 2 would provide the standard for calculating nursery capacity. Another challenge for the private nursery sector is to consistently produce acceptable quantities of stock that meet prescribed quality standards.

#### SUMMARY

The Forest Service nursery system has been developed over many years with full support of Congress and the Executive Branch.

The Forest Service presently has adequate nursery capacity in all but two Regions - 6 and 8. These Regions are evaluating their overall situations. Options include contracting with State and private nurseries and/or developing additional capacity. The Forest Service will continue to produce the majority of the planting stock for reforesting National Forest System lands. The exact amount will vary by Region and depend on the available capacity and the reliability of production in the State and private sectors. The private sector should develop nursery capacity data based on standard criteria.