THE CAPABILITY OF PRIVATE NURSERIES TO MEET FEDERAL LONG-TERM NEEDS

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INTRODUCTION

Since the early 1900's, federal agencies within the Pacific Northwest have had the responsibility to ensure that the public forest lands are managed in such manner to continue timber harvesting and other forest activities in perpetuity as a non-declining resource. As timber harvests were increased upon these public lands, it was soon apparent that natural regeneration would not adequately reforest those harvested areas and that artificial regeneration would become increasingly important as the means to meet their mandate for "non-declining yield."

Federal agencies, such as Bureau of Land Management, United States Forest Service, and Bureau of Indian Affairs, found during these early years that there was no established source of reforestation stock within the private sector to draw upon. Therefore, their need resulted in the construction of both federal and state nurseries which are still in production, today.

Industry was soon to follow in the 1950's as another land steward in need of adequate reforestation stock. Initially, their needs could be handled by the existing state nurseries. However, as demand increased within the private and public sector, industry recognized the need to develop their own nurseries to ensure an adequate supply of reforestation stock for their own needs. A major force in construction of these nurseries was the Industrial Forestry Association and Weyerhaueser, during the 1960's and early 70's.

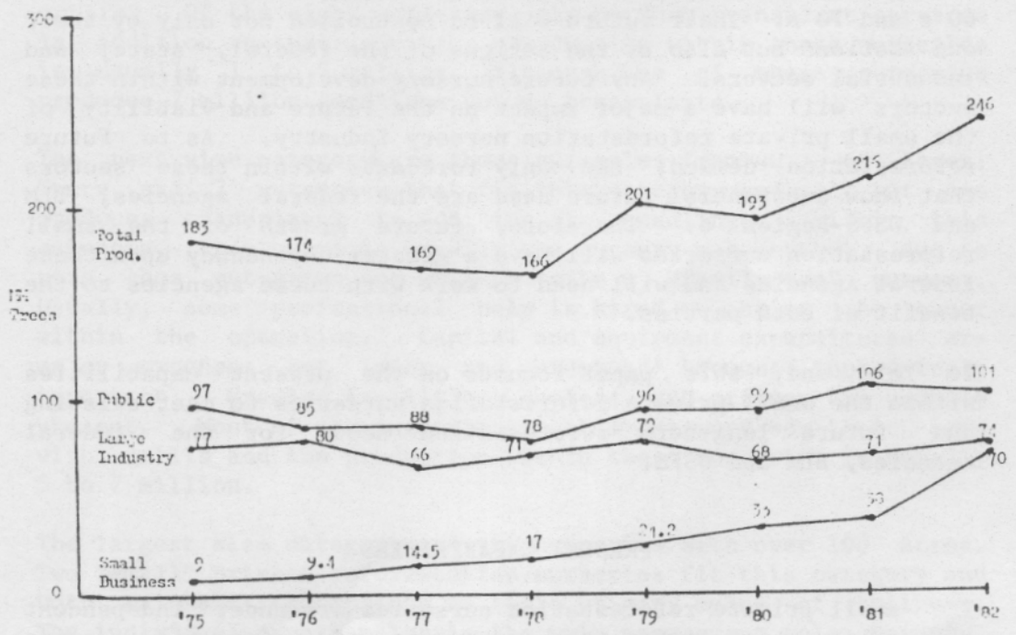
Up to the early 1970's, small private nurseries continued to play a very minor role in producing reforestation stock within the Pacific Northwest. State, Federal, and Industrial nurseries were keeping up with the increased demand for reforestation stock and, due to the economics of scale, were able to produce these seedlings much cheaper than small private nurseries could. However, the 70's were also the culmination of social awareness for environmental concerns, in conjunction with high timber prices causing increased harvesting pressure. The public perceived the need for better stewardship of both private and public forest land and Forest Practice Acts for Oregon and Washington were implemented to ensure adequate reforestation within the Pacific Northwest. Soon state, federal, industrial and non-industrial landowners realized that additional nursery capacity would be necessary to meet the additional demand for reforestation stock.

In addition to expanding existing Public and Industrial nurseries

and developing new ones, these landowners decided to give small private nurseries an opportunity to grow reforestation stock through contractual arrangements.

During 1973 and 1974, seedling contracts were initiated with a few small private nurseries. Those contracts were mainly derived from the Bureau of Land Management, Georgia-Pacific Corp., U.S. Plywood, and International Paper. Since that period, the small private reforestation nurseries have grown in number from 7 in 1974 to over 20 in 1980. Production of reforestation stock within small private nurseries has increased from 9 million seedlings in 1975 to over 33 million in 1980 with approximately 20 timber companies, both states of Oregon and Washington, and 4 federal agencies using small private nursery facilities under contractual arrangements.

FIGURE 1. ANNUAL REFORESTATION STOCK PRODUCTION AMONG PUBLIC, LARGE INDUSTRY, AND SMALL BUSINESS NURSERIES.[1]



[1]Information compiled from Reforestation Notes, '75 to '81. See References. 1982 information compiled by independent survey.

The 1980's, however, will be a dynamic period for the capabilities of the small private nurseries. For the first time, since the early growth of the reforestation nurseries, production substantially exceeds demand. Few economists would have predicted that the housing industry would be in a slump not seen since World War II or that the timber industry would experience unemployment levels not seen since the Great Depression of the 1930's. During 1981 and 1982, many small private nurseries had found themselves in an untenable position of high capital costs from initial development and decreasing seedling contracts from both federal agencies and industry. In addition, speculation markets of private nurseries to X-mas Tree Growers and the non-industrial landowners was threatened to some extent by the large surpluses of seedlings being produced by the state, federal, and industrial nurseries.

The small private nurseries, therefore, are at a critical turning point. During the 1980's, the small nursery owner *cannot* expect the growth and insatiable demand for reforestation stock of the 60's and 70's. Their future will be controlled not only by their own actions but also by the actions of the federal, state, and industrial sectors. Any future nursery development within these sectors will have a major impact on the future and viability of the small private reforestation nursery industry. As to future reforestation demand, the only forecasts within these sectors that show substantial future need are the federal agencies, BLM and USFS-Region 6. Therefore, future growth of the small reforestation nurseries will have a greater dependency upon these federal agencies and will need to work with these agencies to the benefit of both parties.

To this end, this paper focuses on the present capabilities within the small private reforestation nurseries to meet existing and future long-term reforestation needs for the federal agencies, BLM and USFS.

PRESENT CAPABILITIES

The small private reforestation nurseries are under independent ownership which makes the gathering of information quite difficult. Most nurseries are listed within "Forestation Notes," #67 Nursery Directory, 1981 - but not all. Additional nurseries were found through advertisements, contract bid announcements, and word-of-mouth. Twenty three nurseries were located and each was sent a nursery survey that requested certain information about their nursery for use in preparing this paper. Not every individual nursery was willing to answer all questions and of the twenty three surveys sent, fourteen were returned. A followup phone survey was used to gather additional information from those non-respondents or the information was obtained through the Forestation Notes, #67, 1981 Nursery Directory.

The small private reforestation nurseries range in size from .5A to 200 acres. Basically, there are four size categories that can

be distinguished among the 23 nurseries. The .1-5 Acre category consists of 5 nurseries. These are mainly seedling nurseries in which the ownership is primarily the sole workforce and views the reforestation nursery as their secondary means of support. Usually capital and equipment expenditures are kept to a minimum in this size of nursery. Most do not have on-site cooler facilities but use existing off-site coolers or rented 40' reefer vans. They prefer to handle relatively small seed lots of 10 to 20M seedlings. Sowing is usually done by a broadcast method and production is usually less than 1MM.

The next major size category are those nurseries from 15 to 30 Acres. There are 8 nurseries within this size category. In most cases, these nurseries remain family-run operations yet view their nurseries as their primary means of support. Capital and equipment expenditures are major expense items for these nurseries. Most have permanent grading facilities and on-site coolers. Approximately half of the nurseries within this category continue to broadcast sow while the other half uses drills. Of the eight nurseries, six perform transplant services in addition to their sowing. Production within these nurseries is usually 1 to 3 million, although one of these nurseries produces 7 million seedlings but no transplants.

The next size category are those nurseries from 40 - 60 Acres. There are 7 nurseries that fit this category and all but one produces transplants in addition to seedlings. Within this category, the owner is usually the nursery manager but, due to size, has out-grown the ability to be a "family-run" nursery. Usually, some professional help is hired to assist the owner within the operation. Capital and equipment expenditures are major expenses but labor and overhead becomes increasingly important. Grading facilities, coolers, and offices are usually present. Most of the nurseries in this category sow their seed with drills and the production within these nurseries is usually 5 to 7 million.

The largest size category are the nurseries with over 100 Acres. Two "small" private reforestation nurseries fit this category and both maintain transplants as their primary means of business. The individual owners maintain the main management role, however, professional assistance is used to a greater extent than the other private nurseries. These nurseries contain on-site cooler facilities, grading facilities, offices and equipment shops. They sow their seed with drills. An interesting facet of these nurseries is their "bullish" outlook to the future. These nurseries are quite willing to expand into future markets and the production for these nurseries is currently 12 to 13 million.

The total acreage of all twenty three nurseries is 908 Acres. These nurseries will produce about 70 million seedlings and transplants for shipment in '82-83. Their total available capacity is quite a bit higher as they indicate space and facilities to support 129 million seedlings and 23 million transplants, annually.

TABLE 1. ACREAGE, AVAILABLE CAPACITY, AND CURRENT PRODUCTION OF SMALL PRIVATE NURSERIES.

Acreage

.1 - 5 A	5 Nurseries	Average: 2.6 A
6 - 15 A	3 Nurseries	Average: 13.0 A
16 - 30 A	6 Nurseries	Average: 24.2 A
31 - 100 A	7 Nurseries	Average: 52.3 A
100 A	2 Nurseries	Average: 172.5 A
	23 Nurseries	Total Acreage: 908 A

Available Capacity

	2-0 Seedlings		Transplants	
.1 - 1 MM	6 Nurseries	Ave: 700M	4 Nurseries	Ave: 460M
1.1 - 5 MM	6 Nurseries	Ave: 2.82 MM	4 Nurseries	Ave: 1.75 MM
5.1 - 10 MM	6 Nurseries	Ave: 7.67 MM	2 Nurseries	Ave: 6.00 MM
10 MM	3 Nurseries	Ave: 13.33MM		
	21 Nurseries Total	(129.11MM)	10 Nurseries Total	(22.85MM)

Current Production

	2-0 Seedlings		Transplants	
.1 - 1 MM	8 Nurseries	Ave: 440M	5 Nurseries	Ave: 340M
1.1 - 5 MM	8 Nurseries	Ave: 2.87MM	5 Nurseries	Ave: 2.5MM
5MM - 10 MM	3 Nurseries	Ave: 6.5 MM	1 Nursery	Ave: 9.0MM
10 MM				
	19 Nurseries Total	(45.96MM)	11 Nurseries Total	(23.33MM)

AVAILABLE CAPACITY FOR USFS CONTRACTS

Out of the twenty three nurseries doing business within reforestation, thirteen indicated a willingness to work under a contractual agreement with the federal agencies. Those that indicated no desire to commit to federal contracts had various reasons.

Typically, the reason was due to nursery size not allowing for future expansion or the perception that existing contracts with industry and x-mas tree growers were much less risky and, therefore, more attractive than governmental contracts.

Those nurseries interested in pursuing federal contracts were from all four size categories. The smallest private nurseries (1/2 to 5A) indicated a desire to contract if the USFS and BLM would be interested in contracting small lots of less than 30M. Within this category were two nurseries willing to grow a total

of 900M for federal agencies. One uses off-site cooler facilities of unlimited capacity whereas the other, packs for immediate shipment. Their grading production is 10 to 50M/day.

The next category of nurseries (15 to 30A) were willing to devote up to half of their current production to federal contracts, if contracts were available and risk was reasonable. This group of 6 nurseries would be willing to grow up to 15 million seedlings and 4 million transplants for federal agencies. Two of these nurseries use 40' reefers, three have on-site coolers, while one has a on-site cooler in construction. Their grading production ranges from 50 to 250M/day while they average 150/day, overall.

The next size category (40 to 60A) consisted of 3 nurseries. As in the previous category, these nurseries were also willing to contract up to half of their available capacity to the federal agencies. Their total space available would enable federal contracting of 17 million seedlings and 3 1/2 million transplants. Two of these nurseries have on-site coolers while one uses an off-site cooler of unlimited capacity. The grading production for these three nurseries ranges from 100 to 300M/day.

Both of the largest private nurseries (100A) were willing to contract to federal agencies over half of their available capacity, if the business was available. They would be willing to grow over 36 million seedlings and 6 million transplants for the federal agencies. Both have on-site cooler facilities and can grade up to 320M/day.

In total, the thirteen nurseries indicated a willingness to grow over 68 million seedlings and 13 million transplants, if the contracts were available.

TABLE 2. PRIVATE NURSERIES (Small Business)

Available Capacity for USFS Contracts:

	2-0's		T.P.	
.1 - 1 MM	2 Nurseries	Ave: 450M	3 Nurseries	Ave: 830M
1.1 - 5 MM	4 Nurseries	Ave: 2.13MM	4 Nurseries	Ave: 2.75M
5MM - 10MM	5 Nurseries	Ave: 5.80MM		
10MM	1 Nursery	Ave: 30 MM		
	12 Nurseries	Total (68.4MM)	7 Nurseries	Total (13.5MM)

Cooler Facilities within Prospective Nurseries

40 Reefers	2 Nurseries	
Off-site (unlimited)	2 Nurseries	
On-site		
1 - 100M	1 Nursery	(100M)
.11 - 1 MM	1 Nursery	(600M)
1.1 - 5 MM	3 Nurseries	(3.5MM) Ave.
5 MM	1 Nursery	(10 MM)
	6 Nurseries	21.2 MM Total on-site

Grading Production (2-0's) Within Prospective Nurseries

1 - 50M/day	3 Nurseries	Ave: 40M/day
51 - 100M/day	2 Nurseries	Ave: 100M/day
101 - 200M/day	1 Nursery	Ave: 150M/day
200M/day	3 Nurseries	Ave: 290M/day
	9 Nurseries	(1,340M) Total packed per day

FEDERAL LONG TERM NEEDS

BLM (Oregon) has indicated that their long term needs would approach 24 million annually during the next 20 years. They had sowed for over 20 million in 1980, even though 1982 sowing dropped down to 16 million. BLM has a financial commitment to grow at least 14 million seedlings within the public nurseries but will grow up to 28% (6.72MM) of their total needs with the private nurseries when their total sowing exceeds the 14 million quota.

USFS - Region 6 estimates a long-term annual need of 113 million seedlings over the next 20 years and only a current nursery capacity of 82 million. Their deficit to contract would be 31 million seedlings, if no additional federal nurseries were constructed or expanded.

Together, these two agencies show a potential need for nursery space to grow nearly 38 million seedlings, annually, beyond their own existing facilities.

TABLE 3. FEDERAL LONG TERM SOWING NEEDS (USFS & BLM)

	Long Term Needs	Available Bed Space
BLM	24MM	7MM State of Oregon, Elkton Nursery 10MM USFS Nurseries
	Net Deficit: 7MM Seedlings	
USFS R6	97MM	7MM Humboldt
R5	6MM	12MM Bend
BLM	10MM	36MM Medford
		27MM Wind River
	113MM	82MM
	Net Deficit: 31MM Seedlings	
	Total Federal Deficit (BLM and USFS): 38MM Seedlings	

CONCERNS

Even though there appears to be adequate nursery space within the small private reforestation nurseries to grow the expected deficits of the federal agencies, "space" is not the only concern of both parties.

The USFS - Region 6 indicated 7 points of concern when dealing with the private nurseries.

1. Previous unhappy experiences w/Container Contracts.
2. Low performance on past contracts with BLM.
3. Little control on the choice of the contracting nursery.
4. Expected high bid costs.
5. No guarantee of nursery acres available each year.
6. Difficulty in excluding low performance nurseries from bidding and awards.
7. Suspicions that available capacity figures within the private sector are exaggerated.

On the other hand, private nurseries have indicated a number of concerns they encompass when dealing with the federal agencies. These are:

1. Artificially high wage standards within service-type contracts vs. supply type contracts.

2. Inconsistent contract amounts each year.

3. USFS nursery procedures replacing successful private nursery practices.
4. Low bid prices creating low profit margins.
5. Excessively large contracts causing additional capital development, and high risk when contracts are dropped yet capital costs remain.
6. Inconsistent contract requirements, i.e., Bonds (Performance, Bid, and Payment).
7. Subjective guidelines for grading trees. Increased high grading during times of surplus.
8. Too much paper work and "red tape."
9. Federal Surplus disposal policies conflict with private nursery speculation sales.

It is not within the scope of this paper to discuss these concerns but merely to mention them as a factor towards the future capabilities of private nurseries in meeting federal long term needs. Of paramount importance will be that communication between both parties is maintained and some type of resolution agreed upon.

A CASE OF COSTS: (To build or not to build)

One alternative for the federal agencies is to construct another major nursery within the Willamette Valley in order to bring federal nursery capacity up to meet their long term needs. This nursery would have to be similar to the USFS, J. Herbert Stone Nursery in Medford, Oregon, which was constructed from 1976 to 1981, at an appropriate cost of $8,000,000.

Using J. Herbert Stone Nursery as an example; the "cost of production" assessed to it's crop in '81-82 was $110.00/M. This cost included only the depreciable portion of the total development cost.

During the same year, five private nurseries bid on a seedling contract put out by USFS - Region 6. The average contract price was $93.82/M. These contract bids were for final payment two years hence, so that some inflationary margin was within the bid. Despite inflationary adjustments, the net effect by contracting with private nurseries was a potential savings of $16.08/M to the federal agencies. Extending this type of savings to a potential 38 million seedling need, the willingness to contract among small private nurseries could represent a savings of over $600,000 annually, to the federal agencies and eliminate an $8,000,000 initial development expenditure.

CONCLUSION

The small private reforestation nurseries appear to be capable of handling the future production deficits that the federal agencies may encounter as they approach their long term needs. The small private nurseries have extended themselves to construct modern

facilities, appropriate cooler storage, and purchase new equipment. These investments have resulted in lower unit costs and higher quality reforestation material. Although a number of concerns exist between small private nurseries and the federal agencies, these concerns are not insurmountable and should be minimized through increased communication.

From a cost viewpoint, the potential savings to the government in capital outlays and production costs, justify further future contract commitments with the small private reforestation nurseries.

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BIOGRAPHY

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