CM-IR-72

AGRICULTURAL EXTENSION SERVICE
UNIVERSITY OF CALIFORNIA
PLUMAS AND SIERRA COUNTIES
Quincy, California

March - 1972

WHITE FIR CHRISTMAS TREE COST STUDY

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Special thanks to Bill Beskeen, Quincy,
for his assistance in the cost and return study.

WHITE FIR CHRISTMAS TREE COST STUDY - 1972

The cost study represents production from cut-over timber land. The costs in this study do not represent what necessarily would apply to any individual operation. The information should be used as a guide to analyze the individual operator's Christmas tree production, and provides a means of studying various costs.

Management and harvest costs are based on 10 years experience on a cost-return test plot near Quincy on mixed conifer cut-over land. Harvesting and management data collected from four managed 1/2 acre plots with a stem population of 606 trees per acre was used for the "Managed Cost-Return Analysis", and from two unmanaged 1/2 acre plots for the "Unmanaged cost-return Analysis".

The study considers a managed situation Table I, and an unmanaged situation Table II of 50 acres of cut-over forest land. The areas are stocked with a population of 500 white fir trees per acre. These 50 acres as represented on any ownership may be scattered in smaller lots, but for purposes of the study a 500 tree population per acre was used.

Labor costs include both cash and fringe costs. The cash cost at $3.00/hour and fringe costs (workmens compensation, social security and other) at 60¢/hour.

MANAGED SITUATION - TABLE I

The cash costs of managing, harvesting and miscellaneous costs including office, interest on operating capital, taxes, etc., represent nearly 50% of the total costs.

The remaining costs are slightly over 50% of the total, they include overhead costs on equipment, interest on land; these costs are high on equipment because of the limited acreage on which the equipment is used. We are assigning all over-head costs to 50 acres. If this was spread over 100 acres or 200 acres the overhead costs per acre would be decreased appreciably.

If available, consideration should be given to contracting or renting equipment for the few weeks of annual use. This would be especially the case with the unmanaged situation.

Depreciation on the four-wheel drive pickup with a new cost of $4,800.00 is figured on a 15 year life, the trailer 15 year life and the chain saw five year life. Depreciation shown for the pickup truck of $6.40 an acre is based upon $96.00 the investment per acre divided by a 15 year life.

Interest on equipment is based upon a rate of 7% of 1/2 of the new cost. Another way of saying it is, 7% of the average cost. The buildings valued at $5,000 have use for equipment storage.

The management charge of 5% of gross income is to cover decision making, planning, etc.

Land is valued at $200 an acre, which may be a reasonable figure for a fairly large acreage of cut-over-land. Land is not depreciable in the sense that equipment and buildings are, and the interest is charged on the full value. Bulldozer costs are on the basis of a D8 machine including the operator at $24.00 an hour. All of the other equipment is assumed to be owned and the cost of it is shown as cash costs including fuel and repairs and overhead costs including depreciation, interest, taxes and insurance.

This study shows that over a fifteen year period a total of $795.95 of income over costs or $53.00 per acre per year would be enjoyed.

It appears that with management a higher quality tree which should command a higher price results. A constant value of 65¢/ft. was used for the managed trees.

UNMANAGED SITUATION - TABLE II

Here no management or improvement work of any kind is done. Suitable trees in numbers shown were harvested during the first five years of the study. After that, the closing canopy of trees being allowed to mature for timber production would reduce the production suitable for Christmas trees to approximately five per acre per year. The total income during the first five years would be $625.14 or $125.00 per acre per year. From then on the production would slow down and show a negative value when charged against the other stated management costs.

The difference in price per foot after the third year on the unmanaged is due to lower quality trees.

The minutes per tree for harvesting and processing; and management work were the result of data collected on the cost and return test plots. This will vary with each operator depending on type of stand, accessibility, available equipment, experienced labor, topography, etc.

CHRISTMAS TREE FARM

Monthly Labor & Equipment Record in Hours

Work Done By: Work Location Month 19

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total Hours
Cultural Total																																
Weeding																																
Thinning																																
Basal Prun.																																
Side Shear																																
Leader Prun.																																
Basal Scar.																																
Fertilizing																																
Slash Piling																																
Burning																																
Lopping																																
Reprod.Cult.Tot.																																
Comp. Thin.																																
Basal Reduction																																
Leader Prun.																																
Side Shear.																																
Trees Treated No.																																
Rd. Const. & Mt.																																
Travel																																
Harvest Total																																
Cutting																																
Shagging																																
Loading																																
Unloading																																
Hauling																																
Tally																																
Trees Harv. No.																																
Equip. Moving																																
Equip. Repairs																																
Equip. Labor																																
Equip. Use																																
Pick-Up Truck																																
4x4 Truck																																
Tractor																																
Chain Saw																																
Trailer																																
1½ Truck																																
Snowmobile																																
Hand Tools																																

Table I - MANAGED

Operation	Cost Per Acre 1st Year	2nd Year	3rd Year	4th Year	5th Year	Full Production 6-15th Year
Trees cut per acre	57	57	55	40	45	25
Income (Based on 6' trees @ 65¢/ft.)	$ 222.30	$ 222.30	$ 214.50	$ 156.00	$ 175.50	$ 97.50
Clear and Build Roads						
1.0 M. Hr. 1st yr: .5 hr. total maintenance	$ 3.60	$ .13	$ .13	$ .13	$ .13	$ .13
4 W/D Pickup for 14 yrs. period 1.0 hr. 1st	2.00	.07	.07	.07	.07	.07
Bulldozer (contract)	24.00	.85	.85	.85	.85	.85
Manage 500 trees/acre						
Initial mgt., weeding thinning & lopping 2.16 min/tree = 18 hrs. @ $3.60		64.80				
Thin, prune, shear, scar & stump culture .3 min/tree = 2.4 hrs/acre/year			8.64	8.64	8.64	8.64
4 W/D Pickup use 9 hrs. 2nd yr. (2 man crew)		18.00				
Other yrs. use 1.2 hrs.			2.40	2.40	2.40	2.40
TOTAL MANAGEMENT COST	$ 29.60	$ 83.85	$ 12.09	$ 12.09	$ 12.09	$ 12.09
Harvest (cut and yard)						
Labor 1st yr. 12 min/tree 11.4 hrs. @ $3.60/hr.	$ 41.04					
2nd-15th year, 6 min/tree @ $3.60/hr		$ 20.52	$ 19.80	$ 14.40	$ 16.20	$ 9.00
4 W/D Pickup, based on 1/2 man hrs. @ $2/hr	11.40	5.70	5.50	4.00	4.50	2.50
TOTAL HARVEST COST	$ 52.44	$ 26.22	$ 25.30	$ 18.40	$ 20.70	$ 11.50
TOTAL MANAGEMENT AND HARVEST COST	$ 82.04	$ 110.07	$ 37.39	$ 30.49	$ 32.79	$ 23.59
Cash Overhead						
Misc. 6% of above	$ 4.90	$ 6.60	$ 2.28	$ 1.86	$ 1.98	$ 1.44
Taxes	2.00	2.00	2.00	2.00	2.00	2.00
TOTAL CASH OVERHEAD	$ 6.90	$ 8.60	$ 4.28	$ 3.86	$ 3.98	$ 3.44
TOTAL CASH COSTS	$ 88.94	$ 118.67	$ 41.67	$ 34.35	$ 36.77	$ 27.03
Depreciation						
Equipment, $105	$ 7.53	$ 7.53	$ 7.53	$ 7.53	$ 7.53	$ 7.53
Buildings, $100	3.33	3.33	3.33	3.33	3.33	3.33
TOTAL DEPRECIATION COST	$ 10.86	$ 10.86	$ 10.86	$ 10.86	$ 10.86	$ 10.86
Interest on Investment						
Equipment on 1/2 cost	$ 3.68	$ 3.68	$ 3.68	$ 3.68	$ 3.68	$ 3.68
Buildings on 1/2 cost	3.50	3.50	3.50	3.50	3.50	3.50
Land $200/acre	14.00	14.00	14.00	14.00	14.00	14.00
TOTAL INTEREST ON INVESTMENT	$ 21.18	$ 21.18	$ 21.18	$ 21.18	$ 21.18	$ 21.18
TOTAL COSTS	$ 120.98	$ 150.71	$ 73.71	$ 66.39	$ 68.81	$ 59.07
Management 5% of Gross Income	$ 11.12	$ 11.12	$ 10.73	$ 7.80	$ 8.78	$ 4.88
TOTAL ALL COSTS	$ 132.10	$ 161.83	$ 84.44	$ 74.19	$ 77.59	$ 63.95
INCOME PER ACRE	$ 90.20	$ 60.47	$ 130.06	$ 81.81	$ 97.91	$ 33.55
INCOME PER TREE	$ 1.58	$ 1.06	$ 2.33	$ 2.02	$ 2.09	$ 1.36

Table II - UNMANAGED

Operation	Cost Per Acre 1st Year	2nd Year	3rd Year	4th Year	5th Year	Natural Production 6-15th Year
Trees Cut Per Acre	117	84	49	4	36	5
Income (Based on 6' trees @ 65¢ 1-3rd yr. trees @ 50¢ 4-15th yr.	$ 456.30	$ 327.60	$ 191.10	$ 12.00	$ 108.00	$ 15.00
Harvest (cut and yard)						
Labor 1 st yr. 12 min/tree = 23.4 hrs. X $3.60	$ 84.24					
2nd yr. 12 min/tree = 16.8 hrs. X $3.60		$ 60.48				
3rd yr. 12 min/tree = 9.8 hrs. X $3.60			$ 35.28			
4th yr. 12 min/tree = .8 hrs. X $3.60				$ 2.88		
5th yr. 12 min/tree = 7.2 hrs. X $3.60					$ 25.92	
6-15th yr. 12 min/tree = 1 hr. X $3.60						$ 3.60
4 W/D Pickup, cost based on 1/2 man hrs. @ $2.00/hour	23.40	16.80	9.80	.80	7.20	1.00
TOTAL HARVEST COST	$ 107.64	$ 77.28	$ 45.08	$ 3.68	$ 33.12	$ 4.60
Cash Overhead						
Misc. 6% of above	$ 6.04	$ 4.62	$ 2.70	$ .22	$ 1.97	$ .28
Taxes	2.00	2.00	2.00	2.00	2.00	2.00
TOTAL CASH OVERHEAD	$ 8.04	$ 6.62	$ 4.70	$ 2.22	$ 3.97	$ 2.28
TOTAL CASH COST	$ 115.68	$ 83.90	$ 49.78	$ 5.90	$ 37.09	$ 6.88
Depreciation						
Equipment, $105	$ 7.53	$ 7.53	$ 7.53	$ 7.53	$ 7.53	$ 7.53
Buildings, $100	3.33	3.33	3.33	3.33	3.33	3.33
TOTAL DEPRECIATION COST	$ 10.86	$ 10.86	$ 10.86	$ 10.86	$ 10.86	$ 10.86
Interest on Investment						
Equipment on 1/2 cost	$ 3.68	$ 3.68	$ 3.68	$ 3.68	$ 3.68	$ 3.68
Buildings on 1/2 cost	3.50	3.50	3.50	3.50	3.50	3.50
Land $200/acre	14.00	14.00	14.00	14.00	14.00	14.00
TOTAL INTEREST ON INVESTMENT	$ 21.18	$ 21.18	$ 21.18	$ 21.18	$ 21.18	$ 21.18
TOTAL COST	$ 147.72	$ 115.94	$ 81.82	$ 37.94	$ 69.13	$ 38.92
Management 5% of Gross Income	$ 22.90	$ 16.80	$ 9.55	$ .60	$ 5.40	$ .75
TOTAL ALL COSTS	$ 170.62	$ 132.74	$ 91.37	$ 38.54	$ 74.53	$ 39.67
INCOME PER ACRE	$ 285.68	$ 194.86	$ 99.73	$ 11.40	$ 33.47	$ -24.67
INCOME PER TREE	$ 2.44	$ 2.32	$ 2.04	$ 2.85	$ .93	$ -4.94