Shelterwood - Natural Seeding - Return Analysis

Rotation (years)	51
Annual 'Diameter' Growth Maintained after First Thinning (inches)	0.25
Annual Merchantable Height Growth in Feet after First Thinning (Merch. Ht.)	0.55
Acres	100
Seedlings per Acre (natural seeding)	1,000
Mortality between establishment and 1st Thinning	15%
Mortality between thininnings (after 1st Thinning)	10%
Discount and Reinvestment Rate (alternative investment rate)	5.31%
Management Expenses	15%
After thinning dbh increase (inches; smaller trees removed)	0.25
Seedling Cost per Seedling (pickup, storage, & delivery)	NA
Planting Cost per Seedling	NA
Cumulative Reforestaton Cost	$ (120)
Intermediate Treatment Investments	$ (90)
Regular Thinning Target Basal Area	80
1st Shelterwood Thinning Basal Area	40
2nd Shelterwood Thinning Basal Area	12

Rotation Length: 51
Acres: 100
Rate of Return: 6.1%
Net Present Value: $ 181

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Note: Generally, poor regeneration will result in less than 75% of property being adequately stocked, rendering lower actual returns.

						Diameter & Height Growth			Harvest Volumes per Acre: Per Tree		Harvest Volumes per Acre: Per Acre			*Numbers below do not include appreciation*						
					Thinned	Dbh.	Merch.	Logs	CF	Tons	CF	Tons	Ton Rate	Harvest		Investment		ROR	NPV	NAV
	Year	Age	Treatment	Trees	Trees	(inches)	Ht. (feet)	(16 feet)						Per Acre	Total	Per Acre	Total	Per Acre	Per Acre	Per Acre
51	2004	0	Land													$ (400)	$ (40,000)	$ (400)	$ (400)	$ (5,598)
51	2004	0	Regeneration Burn													$ (35)	$ (3,500)	$ (35)	$ (35)	$ (490)
51	2004	0	Regeneration Spray	1,000												$ (85)	$ (8,500)	$ (85)	$ (85)	$ (1,190)
46	2009	5	Final Harvest Seed Trees in previous stand's financial (not part of financial summary in this stand																	
45	2010	6	Precommercial Thin	538	416											$ (90)	$ (9,000)	$ (63)	$ (66)	$ (923)
31	2024	20	Thinning #1	215	291	8.3	38	2.38	5.6	0.19	1,628	55	$ 6	$ 280	$ 27,979			$ 86	$ 99	$ 1,391
30	2025	21		215		8.5	39	2.41												
29	2026	22		215		8.8	39	2.44												
28	2027	23		215		9.0	40	2.48												
27	2028	24		215		9.3	40	2.51												
26	2029	25		215		9.5	41	2.55												
25	2030	26		215		9.8	41	2.58												
24	2031	27	Thinning #2	139	68	10.3	42	2.62	13.6	0.46	930	31	$ 15	$ 400	$ 39,970			$ 81	$ 99	$ 1,384
23	2032	28		139		10.5	42	2.65												
22	2033	29		139		10.8	43	2.68												
21	2034	30		139		11.0	44	2.72												
20	2035	31		139		11.3	44	2.75												
19	2036	32		139		11.5	45	2.79												
18	2037	33		139		11.8	45	2.82												
17	2038	34	Thinning #3	97	38	12.3	46	2.86	20.0	0.67	756	25	$ 35	$ 758	$ 75,795			$ 101	$ 131	$ 1,827
16	2039	35		97		12.5	46	2.89												
15	2040	36		97		12.8	47	2.93												
14	2041	37		97		13.0	47	2.96												
13	2042	38		97		13.3	48	2.99												
12	2043	39		97		13.5	48	3.03												
11	2044	40		97		13.8	49	3.06												
10	2045	41	1st Sheltewood Thin	36	55	14.3	50	3.10	32.0	1.08	1,757	59	$ 42	$ 2,114	$ 211,359			$ 186	$ 253	$ 3,546
9	2046	42		36		14.5	50	3.13												
8	2047	43		36		14.8	51	3.17												
7	2048	44		36		15.0	51	3.20												
6	2049	45		36		15.3	52	3.23												
5	2050	46	2nd Shelterwood Thin	8	25	15.8	52	3.27	41.0	1.38	1,033	35	$ 44	$ 1,302	$ 130,222			$ 85	$ 121	$ 1,687
4	2051	47	Regeneration Burn in next stand's financial			16.0	53	3.30												
3	2052	48	Regeneration Spray in next stand's financial			16.3	53	3.34												
2	2053	49		8		16.5	54	3.37												
1	2054	50		8		16.8	54	3.41												
0	2055	51	Final Harvest Shelterwood	8	7	16.8	54	3.41	51.0	1.72	367	12	$ 48	$ 505	$ 50,489			$ 25	$ 36	$ 505
0	2055	51	Land Sale											$ 400	$ 40,000			$ 19	$ 29	$ 400
													Total (without appreciation)	$ 5,758	$ 575,814	$ (610)	$ (61,000)	$ (0)	**$ 181**	**$ 50**
													Rate of Return - ROR (without appreciation*)	**6.1%**						**$ 37**
													Net Present Value - NPV (without appreciation*)	**$ 181**						NAV based on 75% stocking success.

Note:

1) Cost of land was included in the analysis and sold at the end without appreciation ($400/acre).
2) Analysis was after costs, without tax treatment, and with no appreciation or inflation added.
3) 15% management expense was removed for administrative costs.
4) Alternative investment rate was based on August 25, 2003 30-Year Treasury Bill rate of 5.31%.
5) ROR = Rate of Return
6) NPV = Net Prestent Value
7) NAR = Net Annual Value

* Add 5% to include appreciation.