
Appendix F

Economic Analysis

Appendix F Economic Analysis

Table F-1. Economic Analysis Watdog Project – Alternative B.

		Total Acres = 2,176 acres			
VALUE - Groups		Total Acres = 231	Low mbf/ac deduction \$0		
PP 23 to 29.9 inch sawtimber *	5.0%	302 mbf	×	(\$430/mbf + \$0/mbf)	\$129,650
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	10.0%	603 mbf	×	(\$220/mbf + \$0/mbf)	\$132,666
DF 23 to 29.9 inch sawtimber *	5.0%	302 mbf	×	(\$390/mbf + \$0/mbf)	\$117,590
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	80.0%	4,824 mbf	×	(\$150/mbf + \$0/mbf)	\$723,631
		6,030 mbf		26.1 mbf/acre	
Biomass Value when Removed		231 acres	×	15.0 tons/acre × \$15.00/ton	\$51,975
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VALUE – DFPZ		Total Acres = 1,945	Low mbf/ ac deduction \$0		
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$220/mbf + \$0/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$390/mbf + \$0/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	10,288 mbf	×	(\$150/mbf + \$0/mbf)	\$1,543,200
		10,288 mbf		5.3 mbf/acre	
Biomass Value when Removed		1945 acres	×	15.0 tons/acre × \$15.00/ton =	\$437,625
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VALUE - ITS		Total Acres = 0 acres	Low mbf/ac deduction \$0		
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$220/mbf + \$0/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$390/mbf + \$0/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	×	(\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	0 mbf	×	(\$150/mbf + \$0/mbf)	\$0
		0 mbf		0.0 mbf/acre	
Biomass Value when Removed		0 acres	×	15.0 tons/acre × \$15.00/ton =	\$0
TOTAL HARVEST VALUE		16,318 mbf			\$3,136,337
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COSTS	(Assumes Harvesting Sawtimber and Biomass in One Operation)				
Add sawtimber skyline cost		0 mbf	×	\$0/mbf =	\$0
Additional Cost - Helicopter		0 mbf	×	\$250/mbf	\$0
Additional Cost - Long Skid		0 mbf	×	\$20/mbf	\$0
		Average Unit Size = 20 acres		\$68/acre	
		Contract Length = 2 years		(\$34)/acre	
		Months Operation = 5 months		\$0/acre	
Acres of 6 in. to 9.9 in. biomass-tractor		0 acres	×	(\$340/acre + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-tractor		2,176 acres	×	(\$400/acre + \$34/acre)	\$944,384
Acres of 6 in. to 9.9 in. biomass-skyline		0 acres	×	(\$1,000 + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-skyline		0 acres	×	(\$2,000 + \$34/acre)	\$0
		2,176 Biomass Acres			
No. of sawtimber loads		16,318 mbf/	4 mbf/truck		4,080
Additional Haul Cost (4 hr avg)		0 hours/trip	×	\$50/hour × 4,080 trips	\$0
No. of biomass loads		2,176 acres	×	15 tons/acre/ 25 tons/truck =	1,306
Haul Cost Biomass		5.5 hours/trip	×	\$50/hour × 1,306 trips	\$359,150
Surface Replacement-sawtimber		16,318 mbf	×	\$10.00/mbf	\$163,183
Surface Replacement-biomass		2,176 acres	×	15.0 tons/acre × 1.67/ton	\$54,400
Subsoiling Costs		54 acres	×	\$230/acre	\$12,374
BD Costs		16,318 mbf	×	\$2.00/mbf	\$32,637
Road Construction-New		1.2 miles	×	35,000/mile	\$42,000

Table F-1. Economic analysis Watdog Project – Alternative B (continued).

Road Construction-Recon		17.8 miles	×	15,000/mile	×		\$267,000
Temp Roads		0.5 miles	×	4,200/mile			\$2,100
Advertised Rate-sawtimber		16,318 mbf	×		\$28.41/mbf		\$463,587
Advertised Rate-biomass		2,176 acres	×	15 tons/acre	×	\$0.20/ton	\$6,528
Yield Tax		\$3,136,337	×	2.9%			\$90,954
Scaling Sawtimber		4,080 trips		\$17/trip			\$69,360
Scaling Biomass		1,306 trips		\$3			\$3,918
TOTAL HARVEST COST							\$2,511,574
NET HARVEST VALUE							\$624,763
				PERCENT ABOVE VALUE			20%
Groups:				Acre/job	Direct	Indirect	
Reforestation Costs	231 acres	×	\$150/acre	110	2	3	\$34,650
Grapple Pile	231 acres	×	\$420/acre	150	2	2	\$97,020
Exams, w Releases	231 acres	×	\$740/acre	400	1	1	\$170,940
WO/RO/SO Overhead Costs	50.5% of above costs						\$152,818
Subtotal							\$455,428
DFPZ:							
Mastication	1,096 acres	×	\$400/acre	150	7	10	\$438,400
Grapple Pile	19 acres	×	\$450/acre	150	0	0	\$8,550
Hand Pile and Burn	31 acres	×	\$650/acre	120	0	0	\$20,150
Hand Prune and Pile	319 acres	×	\$650/acre	120	3	4	\$207,350
Underburn	2,785 acres	×	\$150/acre	400	7	10	\$417,750
Hand Line	2,080 chains	×	\$65/chain	200	10	15	\$135,200
Dozer Line	800 chains	×	\$15/chain	5,000	0	0	\$12,000
Pile Burning	627 acres	×	\$200/acre	120	5	7	\$125,400
Road Decommissioning	13.1 miles	×	\$5,000 mile	40	0	0	\$65,500
Monitoring and Mitigations Costs							\$73,248
Harvest/Biomass					106	106	
					144	1,159	
TOTAL NON-HARVEST COST							-\$1,503,548
Reduced Fire Suppression Cost							
TOTAL PROJECT VALUE							-\$878,785
TOTAL FULL TIME JOBS							302
TOTAL EMPLOYEE-RELATED INCOME							\$13,006,611

Assumptions:

* Harvest Value Schedules, CA State Board of Equalization, Table G, Area 7, Tractor, Median Values (Volume per Log: 150-300).

** Harvest Value Schedules, CA State Board of Equalization, Table 1, Misc. Harvest Values, Small Sawlogs (SSM).

Deduction if average volume per acre under 5mbf/ac -\$25.

Skyline Yarding Deduct - \$50/mbf. Helicopter Yarding - Deduct \$80/mbf

Cost/ac for unit size increases 0% for 400 ac to 20% for 5 ac.

Cost/ac for contract length decreases 10% every year after one year.

Cost/ac for months of operation decreases 10% for 10 months or more and increases 10% for 4 months or less.

Based on historical relationships between employment and harvest in California during the 1980s, each million board feet harvested supports 6.5 year-around jobs (1 in logging, 4 in sawmill, and 1.5 in US Forest Service employment). In regional economic models of employment for California and the Pacific Northwest, and estimate of one indirect or induced job for every direct timber job is added. Indirect jobs result from the employment created by the local purchase of materials for the sawmill, local expenditures by workers, and the demand for local government employees. Each million board feet harvested supports a total of 13 jobs that are timber related. The restoration and fuel work would support additional direct and indirect employment. There are approximately 1.4 indirect jobs for every full time field job. All jobs are equivalent to year-around employment.

Table F-2. Economic analysis Watdog Project – Alternative C.

		Total Acres = 2,176 acres		
VALUE - Groups		Total Acres = 151	Low mbf/ac deduction \$0	
PP 23 to 29.9 inch sawtimber *	5.0%	197 mbf	× (\$430/mbf + \$0/mbf)	\$84,750
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	10.0%	394 mbf	× (\$220/mbf + \$0/mbf)	\$86,721
DF 23 to 29.9 inch sawtimber *	5.0%	197 mbf	× (\$390/mbf + \$0/mbf)	\$76,866
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	80.0%	3,153 mbf	× (\$150/mbf + \$0/mbf)	\$473,023
		3941.855	26.1 mbf/acre	\$51,975
Biomass Value when Removed		151 acres	× 15.0 tons/acre × \$15.00/ton	
VALUE – DFPZ		Total Acres = 2,025	Low mbf/ ac deduction (\$25)	
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$220/mbf + \$0/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$390/mbf + \$0/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	8,821 mbf	× (\$150/mbf + \$0/mbf)	\$1,102,613
		8,821 mbf	5.3 mbf/acre	
Biomass Value when Removed		2,025 acres	× 15.0 tons/acre × \$15.00/ton =	\$455,625
VALUE - ITS		Total Acres = 0 acres	Low mbf/ac deduction \$0	
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$220/mbf + \$0/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$390/mbf + \$0/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	0 mbf	× (\$150/mbf + \$0/mbf)	\$0
		0 mbf	0.0 mbf/acre	
Biomass Value when Removed		0 acres	× 15.0 tons/acre × \$15.00/ton =	\$0
TOTAL HARVEST VALUE		12,763 mbf		\$2,313,572
COSTS	(Assumes Harvesting Sawtimber and Biomass in One Operation)			
Add sawtimber skyline cost		0 mbf	× \$0/mbf =	\$0
Additional Cost - Helicopter		0 mbf	× \$250/mbf	\$0
Additional Cost - Long Skid		0 mbf	× \$20/mbf	\$0
		Average Unit Size =	20 acres	\$68/acre
		Contract Length =	2 years	(\$34)/acre
		Months Operation =	5 months	\$0/acre
Acres of 6 in. to 9.9 in. biomass-tractor		0 acres	× (\$340/acre + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-tractor		2,176 acres	× (\$400/acre + \$34/acre)	\$944,384
Acres of 6 in. to 9.9 in. biomass-skyline		0 acres	× (\$1,000 + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-skyline		0 acres	× (\$2,000 + \$34/acre)	\$0
		2,176 Biomass Acres		
No. of sawtimber loads		12,763 mbf/	4 mbf/truck	3,191
Additional Haul Cost (4 hr avg)		0 hours/trip	× \$50/hour × 4,080 trips	\$0
No. of biomass loads		2,176 acres	× 15 tons/acre/ 25 tons/truck =	1,306
Haul Cost Biomass		5.5 hours/trip	× \$50/hour × 3,191 trips	\$359,150
Surface Replacement-sawtimber		12,763 mbf	× \$10.00/mbf	\$127,628
Surface Replacement-biomass		2,176 acres	× 15.0 tons/acre × 1.67/ton	\$54,400
Subsoiling Costs		54 acres	× \$230/acre	\$12,420
BD Costs		12,763 mbf	× \$2.00/mbf	\$25,526
Road Construction-New		1.2 miles	× 35,000/mile	\$42,000

Table F-2. Economic analysis Watdog Project – Alternative C (continued).

Road Construction-Recon		17.8 miles	×	15,000/mile	×		\$267,000
Temp Roads		0.5 miles	×	4,200/mile			\$2,100
Advertised Rate-sawtimber		12,763 mbf	×			\$23.83/mbf	\$304,085
Advertised Rate-biomass		2,176 acres	×	15 tons/acre	×	\$0.20/ton	\$6,528
Yield Tax		\$2,313,572	×	2.9%			\$67,094
Scaling Sawtimber		3,191 trips		\$17/trip			\$54,247
Scaling Biomass		1,306 trips		\$3			\$3,918
TOTAL HARVEST COST							\$2,270,479
NET HARVEST VALUE							\$43,093
PERCENT ABOVE VALUE							2%
Groups:							
				Acre/job	Direct	Indirect	
Reforestation Costs	151 acres	×	\$150/acre	110	1	2	\$22,650
Grapple Pile	151 acres	×	\$420/acre	150	1	1	\$63,420
Exams, w Releases	151 acres	×	\$740/acre	400	0	1	\$111,740
WO/RO/SO Overhead Costs	50.5% of above costs						\$99,894
Subtotal							\$297,704
DFPZ:							
Mastication	1,096 acres	×	\$400/acre	150	7	10	\$438,400
Grapple Pile	19 acres	×	\$450/acre	150	0	0	\$8,550
Hand Pile and Burn	31 acres	×	\$650/acre	120	0	0	\$20,150
Hand Prune and Pile	319 acres	×	\$650/acre	120	3	4	\$207,350
Underburn	2,785 acres	×	\$150/acre	400	7	10	\$417,750
Hand Line	2,080 chains	×	\$65/chain	200	10	15	\$135,200
Dozer Line	800 chains	×	\$15/chain	5,000	0	0	\$12,000
Pile Burning	627 acres	×	\$200/acre	120	5	7	\$125,400
Road Decommissioning	13.1 miles	×	\$5,000 mile	40	0	0	\$65,500
Monitoring and Mitigations Costs							\$73,248
Harvest/Biomass							83 83
						119 134	
TOTAL NON-HARVEST COST							-\$1,503,548
Reduced Fire Suppression Cost							
TOTAL PROJECT VALUE							-\$1,460,455
TOTAL FULL TIME JOBS							253
TOTAL EMPLOYEE-RELATED INCOME							\$10,868,351

Assumptions:

* Harvest Value Schedules, CA State Board of Equalization, Table G, Area 7, Tractor, Median Values (Volume per Log: 150-300).

** Harvest Value Schedules, CA State Board of Equalization, Table 1, Misc. Harvest Values, Small Sawlogs (SSM).

Deduction if average volume per acre under 5 mbf/ac -\$25.

Skyline Yarding Deduct - \$50/mbf. Helicopter Yarding - Deduct \$80/mbf

Cost/ac for unit size increases 0% for 400 ac to 20% for 5 ac.

Cost/ac for contract length decreases 10% every year after one year.

Cost/ac for months of operation decreases 10% for 10 months or more and increases 10% for 4 months or less.

Based on historical relationships between employment and harvest in California during the 1980s, each million board feet harvested supports 6.5 year-around jobs (1 in logging, 4 in sawmill, and 1.5 in US Forest Service employment). In regional economic models of employment for California and the Pacific Northwest, and estimate of one indirect or induced job for every direct timber job is added. Indirect jobs result from the employment created by the local purchase of materials for the sawmill, local expenditures by workers, and the demand for local government employees. Each million board feet harvested supports a total of 13 jobs that are timber related. The restoration and fuel work would support additional direct and indirect employment. There are approximately 1.4 indirect jobs for every full time field job. All jobs are equivalent to year-around employment.

Table F-3. Economic analysis Watdog Project – Alternative D.

		Total Acres = 2,176 acres		
VALUE - Groups		Total Acres = 231	Low mbf/ac deduction \$0	
PP 23 to 29.9 inch sawtimber *	5.0%	137 mbf	× (\$430/mbf + \$0/mbf)	\$58,932
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	10.0%	274 mbf	× (\$220/mbf + \$0/mbf)	\$60,303
DF 23 to 29.9 inch sawtimber *	5.0%	137 mbf	× (\$390/mbf + \$0/mbf)	\$53,450
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	80.0%	2,193 mbf	× (\$150/mbf + \$0/mbf)	\$328,923
		2,741,025	26.1 mbf/acre	
Biomass Value when Removed		105 acres	× 15.0 tons/acre × \$15.00/ton	\$23,625
VALUE – DFPZ		Total Acres = 874	Low mbf/ ac deduction \$25	
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$25/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$25/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$220/mbf + \$25/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$390/mbf + \$25/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$25/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	1,661 mbf	× (\$150/mbf + \$25/mbf)	\$207,575
		1,661 mbf	1.9 mbf/acre	
Biomass Value when Removed		874 acres	× 15.0 tons/acre × \$15.00/ton =	\$196,650
VALUE - ITS		Total Acres = 0 acres	Low mbf/ac deduction \$0	
PP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
SP 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
WF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$220/mbf + \$0/mbf)	\$0
DF 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$390/mbf + \$0/mbf)	\$0
IC 23 to 29.9 inch sawtimber *	0.0%	0 mbf	× (\$430/mbf + \$0/mbf)	\$0
ALL 10 to 22.9 inch sawtimber **	100.0%	0 mbf	× (\$150/mbf + \$0/mbf)	\$0
		0 mbf	0.0 mbf/acre	
Biomass Value when Removed		0 acres	× 15.0 tons/acre × \$15.00/ton =	\$0
TOTAL HARVEST VALUE		16,318 mbf		\$929,458
COSTS		(Assumes Harvesting Sawtimber and Biomass in One Operation)		
Add sawtimber skyline cost		0 mbf	× \$0/mbf =	\$0
Additional Cost - Helicopter		0 mbf	× \$250/mbf =	\$0
Additional Cost - Long Skid		0 mbf	× \$20/mbf =	\$0
		Average Unit Size = 20 acres	\$68/acre	
		Contract Length = 2 years	(\$34)/acre	
		Months Operation = 5 months	\$0/acre	
Acres of 6 in. to 9.9 in. biomass-tractor		0 acres	× (\$340/acre + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-tractor		979 acres	× (\$400/acre + \$34/acre)	\$944,384
Acres of 6 in. to 9.9 in. biomass-skyline		0 acres	× (\$1,000 + \$34/acre)	\$0
Acres of 3 in. to 9.9 in. biomass-skyline		0 acres	× (\$2,000 + \$34/acre)	\$0
		979 Biomass Acres		
No. of sawtimber loads		4,402 mbf/	4 mbf/truck	1,100
Additional Haul Cost (4 hr avg)		0 hours/trip	× \$50/hour × 1,100 trips	\$0
No. of biomass loads		979 acres	× 15 tons/acre/ 25 tons/truck =	587
Haul Cost Biomass		5.5 hours/trip	× \$50/hour × 587 trips	\$161,425
Surface Replacement-sawtimber		4,402 mbf	× \$10.00/mbf	\$44,016
Surface Replacement-biomass		979 acres	× 15.0 tons/acre × 1.67/ton	\$24,475
Subsoiling Costs		54 acres	× \$230/acre	\$12,420
BD Costs		4,402 mbf	× \$2.00/mbf	\$8,803
Road Construction-New		0.0 miles	× 35,000/mile	\$0

Table F-3. Economic analysis Watdog Project – alternative D (continued).

Road Construction-Recon		17.4 miles	×	15,000/mile	×		\$261,000
Temp Roads		0.5 miles	×	4,200/mile			\$2,100
Advertised Rate-sawtimber		4,402 mbf	×			\$47.53/mbf	\$209,214
Advertised Rate-biomass		979 acres	×	15 tons/acre	×	\$0.20/ton	\$2,937
Yield Tax		\$929,458	×	2.9%			\$26,954
Scaling Sawtimber		1,100 trips		\$17/trip			\$18,700
Scaling Biomass		587 trips		\$3			\$1,761
TOTAL HARVEST COST							\$1,198,691
NET HARVEST VALUE							(\$269,234)
PERCENT ABOVE VALUE							-29%
Groups:							
				Acre/job	Direct	Indirect	
Reforestation Costs	105 acres	×	\$150/acre	110	1	1	\$15,750
Grapple Pile	105 acres	×	\$420/acre	150	1	1	\$44,100
Exams, w Releases	105 acres	×	\$740/acre	400	1	0	\$77,700
WO/RO/SO Overhead Costs	50.5% of above costs						\$69,463
Subtotal							\$207,013,123
DFPZ:							
Mastication	2,291 acres	×	\$400/acre	150	15	10	\$438,400
Grapple Pile	19 acres	×	\$450/acre	150	0	0	\$8,550
Hand Pile and Burn	31 acres	×	\$650/acre	120	0	0	\$20,150
Hand Prune and Pile	319 acres	×	\$650/acre	120	3	4	\$207,350
Underburn	2,785 acres	×	\$150/acre	400	7	10	\$417,750
Hand Line	2080 chains	×	\$65/chain	200	10	15	\$135,200
Dozer Line	800 chains	×	\$15/chain	5,000	0	0	\$12,000
Pile Burning	627 acres	×	\$200/acre	120	5	7	\$125,400
Road Decommissioning	13.1 miles	×	\$5,000 mile	40	0	0	\$65,500
Monitoring and Mitigations Costs					29	29	\$73,248
Harvest/Biomass					72	89	
TOTAL NON-HARVEST COST							-\$1,981,548
Reduced Fire Suppression Cost							
TOTAL PROJECT VALUE							-\$2,250,781
TOTAL FULL TIME JOBS							161
TOTAL EMPLOYEE-RELATED INCOME							\$6,929,967

Assumptions:

* Harvest Value Schedules, CA State Board of Equalization, Table G, Area 7, Tractor, Median Values (Volume per Log: 150-300).

** Harvest Value Schedules, CA State Board of Equalization, Table 1, Misc. Harvest Values, Small Sawlogs (SSM).

Deduction if average volume per acre under 5mbf/ac -\$25.

Skyline Yarding Deduct - \$50/mbf. Helicopter Yarding - Deduct \$80/mbf

Cost/ac for unit size increases 0% for 400 ac to 20% for 5 ac.

Cost/ac for contract length decreases 10% every year after one year.

Cost/ac for months of operation decreases 10% for 10 months or more and increases 10% for 4 months or less.

Based on historical relationships between employment and harvest in California during the 1980s, each million board feet harvested supports 6.5 year-around jobs (1 in logging, 4 in sawmill, and 1.5 in US Forest Service employment). In regional economic models of employment for California and the Pacific Northwest, and estimate of one indirect or induced job for every direct timber job is added. Indirect jobs result from the employment created by the local purchase of materials for the sawmill, local expenditures by workers, and the demand for local government employees. Each million board feet harvested supports a total of 13 jobs that are timber related. The restoration and fuel work would support additional direct and indirect employment. There are approximately 1.4 indirect jobs for every full time field job. All jobs are equivalent to year-around employment.

Table F-4. Breakdown of monitoring and mitigation costs.

Monitoring Costs	Units	Quantity	Unit Cost	Total Cost
Air Quality - Smoke Permits	Acres	2,775	\$0.50	\$1,387.50
Air Quality - Smoke Mgt	Days	13	\$220.00	\$2,860.00
Archaeology	Days	50	\$260.00	\$13,000.00
Botanical Plants	Days	15	\$220.00	\$3,300.00
Noxious Weeds	Days	15	\$220.00	\$3,300.00
Silviculture - Survival Exam (1st/3rd)	Acres	231	\$90.00	\$20,790.00
Soil Quality BMPs	Days	5	\$240.00	\$1,200.00
Water Quality BMPs	Days	5	\$240.00	\$1,200.00
Wildlife	Days	30	\$150.00	\$4,500.00
Totals				\$51,537.50
Mitigation Costs	Units	Quantity	Unit Cost	Total Cost
Noxious Weed Control (3 acre area)	Acres	15	\$500.00	\$7,500.00
Straw Mulching	Acres	50	\$700.00	\$35,000.00
Subsoiling / Tilling	Acres	54	\$230.00	\$12,420.00
Totals				\$54,920.00

Table F-5. Restoration habitat improvement costs.

Additional Treatments	Units	Quantity	Unit Cost	Total Cost
Black Oak Restoration (acres)	Acres	40	\$500.00	\$20,000.00
Fish Passage Improvement (Upgrade Culvert)	Arch	2	\$150,000.00	\$300,000.00
Fish Passage Improvement (Remove Culvert)	Culvert	3	\$20,000.00	\$60,000.00
Meadow Restoration	Acres	40	\$500.00	\$20,000.00
Streambank Stabilization / Remove Low Water Crossing	Feet	1100	\$272.73	\$300,000.00
Totals				\$700,000.00

