APPENDIX F

HURRICANE TIMBER SALE
and
ASSOCIATED ACTIVITIES

ECONOMIC ASSUMPTIONS
and
FINANCIAL EFFIECENCY ANALYSIS

ECONOMIC ASSUMPTIONS

Hurricane Environmental Assessment
Compartments 452-458, 463 and 464

PURPOSE

The purpose of the financial efficiency analysis is to present the estimated costs and revenues of the alternatives considered in the Environmental Analysis for the Proposed Hurricane Timber Sale and Associated Activities, Appalachian Ranger District, Pisgah National Forest.

ASSUMPTIONS

For the purpose of this analysis, the following assumptions will apply:

1. Discount Rate is 4%.

2. Inflation rate is 0% throughout the analysis period (60 years plus).

3. Estimated timber revenues were calculated using the base prices from the Pisgah and Nantahala National Forests 3rd Quarter Adjustment Sheet for Fiscal Year 2002 (Base Period 4/1999 – 3/2002) issued out of the Forest Supervisor's office in Asheville, North Carolina.

4. Sale preparation costs and timber harvest administration costs were obtained from budget figures for the National Forests in North Carolina. Sale preparation costs are approximately $7.15/CCF and timber harvest administration costs are approximately $3.30/CCF.

5. Analysis and Documentation costs were based on the number of days spent by the Interdisciplinary Team Leader/NEPA writer, Silviculturalist, and Prescriptionist on this project multiplied by an average daily rate of $275/day.

6. Resource support costs were based on the number of days spent by the various resource professionals multiplied by an average daily rate of $250/day.

7. Reforestation and silvicultural treatment costs were taken from averages of actual contract costs on the Appalachian Ranger District plus an additional 25% to cover district preparation and administration costs. Herbicide site preparation was estimated at $175/acre, prescribed burning was estimated at $50/acre, and supplemental oak planting was estimated at $100/acre.

8. Road construction was estimated at $60,000/mile and road reconstruction was estimated at $30,000/mile.

9. KV costs associated with this project other than reforestation were estimated as follows: wildlife field conversion was estimated at $400/acre, wildlife field construction was estimated at $2,500/acre, manual timber stand improvement was estimated at $125/acre, advanced oak treatment was estimated at $175/acre, erosion control at dispersed camping sites was estimated at $4,500, treatment of invasive species was estimated at $500/acre for herbicide with manual treatment near streams and $1,500/acre for manual treatment, signs were estimated to cost $500 each, and barriers were estimated to cost $1,250 each.

10. A 60-year long-term projection was used for comparison basis only. Many of these stands will be carried for a longer rotation period.

LIMITATIONS OF ANALYSIS

Any financial analysis must draw limitations on the amount of data to be included or the entire process would quickly become a mix of different alternatives and expected yields or losses. For instance, inflation rate is assumed to be 0% over the entire analysis period; a situation rarely encountered in the real world. The differences between the economic values of the alternatives remain the same, regardless of the inflation rate, so constant dollars were used for comparisons between alternatives.

FINANCIAL ANALYSIS WORKSHEET
ALTERNTIVE B

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

SALE REVENUE ESTIMATES

Species Product+	Volume (CCF)	Adjusted BPP*	Revenues^
White Pine ST	58.8	$69.54	$4,091.25
Hemlock ST	3.5	$10.00	$35.04
No. Red Oak ST	410.2	$131.65	$54,007.90
Black Cherry ST	28.0	$200.00	$5,609.85
White Oak/Ash ST	343.6	$51.62	$17,738.21
Yellow Poplar ST	1764.2	$56.52	$99,711.55
Mixed Hardwood ST	607.6	$52.80	$32,079.70
White Pine RW	3.3	$1.00	$3.32
Hardwood RW	907.7	$6.30	$5,718.37
TOTAL	4,127		$218,995.18

+ ST = Saw Timber, RW = Roundwood or Pulpwood
*BPP = Based Period Price
^Revenues vary slightly due to rounding of volumes

SALE COST ESTIMATES

Activity	Units	Number	Cost/Unit	Total Costs
Sale Preparation	CCF	4,127	$7.15	$29,508
Harvest Administration	CCF	4,127	$3.30	$13,619
Analysis and Documentation	Days	140	$275	$38,500
Other Resource Support	Days	30	$250	$7,500
Site Preparation - Herbicide	Acres	133	$175	$23,275
Prescribed Burning	Acres	43	$50	$2,150
Road Design & Engineering Const.	Miles	0.6	$60,000	$36,000
Road Design & Engineering Reconst.	Miles	0.3	$30,000	$9,000
Wildlife Field Conversion	Acres	12	$400	$4,800
Wildlife Field Construction	Acres	3	$2,500	$7,500
Timber Stand Improvement - Manual	Acres	110	$125	$13,750
Advance Oak - Herbicide	Acres	66	$175	$11,550
Oak Planting	Acres	0	$100	$0
Erosion Control Dispersed Camping	Unit	1	$4,500	$4,500
Treatment of Invasive Species	Acres	1	$500	$500
Signs	Unit	2	$500	$1,000
Barriers	Unit	2	$1250	$2,500
TOTAL				$205,652

ALTERNTIVE B Continued

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

Year	Discount Factor	Revenue	Cost	PNV*	BCR+
0	0	**$218,995**	**$205,652**	**$13,343**	**1.06**
60	0.095	$20,805	$19,537	$1,268	1.06

*Net Present Value, +Benefit Cost Ratio

FINANCIAL ANALYSIS WORKSHEET
ALTERNATIVE C

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

SALE REVENUE ESTIMATES

Species Product+	Volume (CCF)	Adjusted BPP*	Revenues^
White Pine ST	58.8	$69.54	$4,091.25
Hemlock ST	3.5	$10.00	$35.04
No. Red Oak ST	568.5	$131.65	$74,840.39
Black Cherry ST	36.2	$200.00	$7,236.20
White Oak/Ash ST	541.4	$51.62	$27,945.62
Yellow Poplar ST	2109.5	$56.52	$119,226.68
Mixed Hardwood ST	704.9	$52.80	$37,220.15
White Pine RW	3.3	$1.00	$3.32
Hardwood RW	1120.7	$6.30	$7,060.27
TOTAL	5,147		$277,658.91

+ ST = Saw Timber, RW = Roundwood or Pulpwood
*BPP = Based Period Price
^Revenues vary slightly due to rounding of volumes

SALE COST ESTIMATES

Activity	Units	Number	Cost/Unit	Total Costs
Sale Preparation	CCF	5,147	$7.15	$36,801
Harvest Administration	CCF	5,147	$3.30	$16,985
Analysis and Documentation	Days	140	$275	$38,500
Other Resource Support	Days	30	$250	$7,500
Site Preparation - Herbicide	Acres	224	$175	$39,200
Prescribed Burning	Acres	28	$50	$1,400
Road Design & Engineering Const.	Miles	0.6	$60,000	$36,000
Road Design & Engineering Reconst.	Miles	0.3	$30,000	$9,000
Wildlife Field Conversion	Acres	12	$400	$4,800
Wildlife Field Construction	Acres	6	$2,500	$15,000
Timber Stand Improvement - Manual	Acres	110	$125	$13,750
Advance Oak - Herbicide	Acres	50	$175	$8,750
Oak Planting	Acres	183	$100	$18,300
Erosion Control Dispersed Camping	Unit	1	$4,500	$4,500
Treatment of Invasive Species	Acres	1	$500	$500
Signs	Unit	2	$500	$1,000
Barriers	Unit	2	$1250	$2,500
TOTAL				$254,486

ALTERNTIVE C Continued

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

Year	Discount Factor	Revenue	Cost	PNV*	BCR+
0	0	**$277,659**	**$254,486**	**$23,173**	**1.09**
60	0.095	$26,378	$24,176	$2,202	1.09

*Net Present Value, +Benefit Cost Ratio

FINANCIAL ANALYSIS WORKSHEET

ALTERNATIVE D

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

SALE REVENUE ESTIMATES

Species Product+	Volume (CCF)	Adjusted BPP*	Revenues^
White Pine ST	8.4	$69.54	$586.08
Hemlock ST	0	$10.00	$0
No. Red Oak ST	411.0	$131.65	$54,101.70
Black Cherry ST	25.7	$200.00	$5,131.00
White Oak/Ash ST	301.9	$51.62	$15,584.80
Yellow Poplar ST	1578.4	$56.52	$89,210.49
Mixed Hardwood ST	300.4	$52.80	$15,862.23
White Pine RW	0.3	$1.00	$0.30
Hardwood RW	710.7	$6.30	$4,477.41
TOTAL	3,337		$184,954.01

+ ST = Saw Timber, RW = Roundwood or Pulpwood

*BPP = Based Period Price

^Revenues vary slightly due to rounding of volumes

SALE COST ESTIMATES

Activity	Units	Number	Cost/Unit	Total Costs
Sale Preparation	CCF	3,337	$7.15	$23,860
Harvest Administration	CCF	3,337	$3.30	$11,012
Analysis and Documentation	Days	140	$275	$38,500
Other Resource Support	Days	30	$250	$7,500
Site Preparation - Herbicide	Acres	149	$175	$26,075
Prescribed Burning	Acres	28	$50	$1,400
Road Design & Engineering Const.	Miles	0	$60,000	$0
Road Design & Engineering Reconst.	Miles	0	$30,000	$0
Wildlife Field Conversion	Acres	12	$400	$4,800
Wildlife Field Construction	Acres	3	$2,500	$7,500
Timber Stand Improvement - Manual	Acres	110	$125	$13,750
Advance Oak - Herbicide	Acres	125	$175	$21,875
Oak Planting	Acres	124	$100	$12,400
Erosion Control Dispersed Camping	Unit	1	$4,500	$4,500
Treatment of Invasive Species	Acres	1	$500	$500
Signs	Unit	2	$500	$1,000
Barriers	Unit	2	$1250	$2,500
TOTAL				$177,172

ALTERNTIVE D Continued

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

Year	Discount Factor	Revenue	Cost	PNV*	BCR+
0	0	**$184,954**	**$177,172**	**$7,782**	**1.04**
60	0.095	$17,571	$16,831	$740	1.04

*Net Present Value, +Benefit Cost Ratio

FINANCIAL ANALYSIS WORKSHEET

ALTERNATIVE E

Sale Name:	Hurricane	Analyst:	Compton
Treatment Year:	2003	Date:	9/20/2002

SALE REVENUE ESTIMATES

Species Product+	Volume (CCF)	Adjusted BPP*	Revenues^
TOTAL	0		$0

+ ST = Saw Timber, RW = Roundwood or Pulpwood
*BPP = Based Period Price
^Revenues vary slightly due to rounding of volumes

SALE COST ESTIMATES

Activity	Units	Number	Cost/Unit	Total Costs
Sale Preparation	CCF	0	$7.15	$0
Harvest Administration	CCF	0	$3.30	$0
Analysis and Documentation	Days	140	$275	$38,500
Other Resource Support	Days	30	$250	$7,500
Site Preparation - Herbicide	Acres	0	$150	$0
Prescribed Burning	Acres	0	$50	$0
Road Design & Engineering Const.	Miles	0	$60,000	$0
Road Design & Engineering Reconst.	Miles	0	$30,000	$0
Wildlife Field Conversion	Acres	0	$400	$0
Wildlife Field Construction	Acres	0	$2,500	$0
Timber Stand Improvement - Manual	Acres	110	$125	$13,750
Advance Oak - Herbicide	Acres	0	$175	$0
Oak Planting	Acres	0	$100	$0
Erosion Control Dispersed Camping	Unit	1	$4,500	$4,500
Treatment of Invasive Species	Acres	1	$1,500	$1,500
Signs	Unit	2	$500	$1,000
Barriers	Unit	2	$1250	$2,500
TOTAL				$69,250

Year	Discount Factor	Revenue	Cost	PNV*	BCR+
0	0	$0	$69,250	-$69,250	0
60	0.095	$0	$6,579	-$6,579	0

*Net Present Value, +Benefit Cost Ratio