

Appendix A: Required Timber Direction

1. Introduction	3
2. Long-term Sustained-yield Timber Capacity (LTSYC).....	3
3. Timber Sale Program Quantity (TSPQ).....	6
4. Planned Harvest Exceeding the Long-term Sustained-yield Capacity.....	8
5. Timber Tables	8
5.1. Estimated Vegetation Management Practices	8
5.2. Timber Productivity Classification	11
5.3. Display of Long-term Sustained-yield Capacity and Timber Sale Program Quantity	12
5.4. Current Conditions and Estimated Trends of Successional Stage for Lands Generally Suitable for Timber Harvest.....	14
5.5. Forest Conditions Where Timber Production Achieves or is Compatible with Desired Conditions and Resource Objectives	15

Appendix A: Required Timber Direction

1. Introduction

Forest Service Handbook 1909.12, (Land Management Planning Handbook) Chapter 60 (Forest Vegetation Resource Planning), effective January 31, 2006, brings forward requirements established under the Forest and Rangeland Renewable Resource Planning Act (RPA) of 1974 (as amended through Public Law 106-580, December 31, 2000). However, some of the traditional definitions in Chapter 60 did change.

The tables below are based on preliminary analysis pending finalization of timber suitability for both the Dixie and Fishlake National Forests. Finalizing timber suitability for this revision process is anticipated to be completed around the end of July 2006. Since this is preliminary data and is expected to change, the process and logic for determining the results are not included.

2. Long-term Sustained-yield Timber Capacity (LTSYC)

Acres are from the Vegetation Dynamics Development Tool (VDDT) data set. Productivity is from the General Technical Report, *Coniferous Forest Habitat Types for Central and Southern Utah* (Youngblood and Mauk 1985).

Forest Inventory and Analysis (FIA) data has not been requested at this time (June 2006) to confirm these numbers. Once timber suitability is finalized FIA data will be requested.

Table A-1. VDDT Models for the Dixie and Fishlake National Forests

Code	Description
bj	Black sage with pinyon and juniper
wj	Wyoming sage with pinyon and juniper
mj	Mountain sage with pinyon and juniper
ma	Mountain sage with aspen
ok	Gambel oak
xj	Mountain shrub with pinyon and juniper
oj	Oak with pinyon and juniper
pd	Ponderosa pine, Douglas-fir, and white fir with mountain mahogany
op	Gambel oak and ponderosa pine
pa	Ponderosa pine and aspen
da	Ponderosa pine, Douglas-fir, white fir, and aspen
sa	Engelmann spruce and subalpine fir and aspen
bp	Black sage and ponderosa pine
ts	Tall forb and silver sage
gm	Grass forb and meadow

Table A-2. Long-term Sustained-yield Timber Capacity for the Dixie National Forest

VDDT Model	Long-term Sustained-yield Timber Capacity					
	Production Acres			Other Acres		
	FT3/ac/yr	Acres	FT3/yr	FT3/ac/yr	Acres	FT3/yr
bj	N/A	N/A	N/A	15	5,480	82,200
gm	N/A	N/A	N/A	15	4,450	66,750
h2o	N/A	N/A	N/A	15	30	450
ma	N/A	N/A	N/A	15	700	10,500
mj	N/A	N/A	N/A	15	5,790	86,850
ok	N/A	N/A	N/A	15	1,100	16,500
op	N/A	N/A	N/A	15	2,330	34,950
rock	N/A	N/A	N/A	15	370	5,550
un	N/A	N/A	N/A	15	2	30
wj	N/A	N/A	N/A	15	4,510	67,650
xj	N/A	N/A	N/A	15	1,140	17,100
da	24	8,740	209,760	24	8,740	209,760
pa	32	77,650	2,484,800	32	77,650	2,484,800
pd	38	47,940	1,821,720	38	47,940	1,821,720
ts	N/A	N/A	0	38	8,940	339,720
sf	59	67,110	3,959,490	45	156,590	7,046,550
Total ft3	8,475,770			12,291,080		
BDF ¹	48,311,889			70,059,156		

¹ Factor is 5.7bdf/ft3

N/A – Not applicable; not suitable timber production acres.

Table A-3. Long-term Sustained-yield Timber Capacity for the Fishlake National Forest

VDDT Model	Long-term Sustained-yield Timber Capacity					
	Production Acres			Other Acres		
	FT3/ac/yr	Acres	FT3/yr	FT3/ac/yr	Acres	FT3/yr
bj	N/A	N/A	N/A	15	40	600
gm	N/A	N/A	N/A	15	730	10,950
h2o	N/A	N/A	N/A	15	110	1,650
ma	N/A	N/A	N/A	15	210	3,150
mj	N/A	N/A	N/A	15	260	3,900
ok	N/A	N/A	N/A	15	370	5,550
op	N/A	N/A	N/A	15	0	0
rock	N/A	N/A	N/A	15	0	0
un	N/A	N/A	N/A	15	1	15
wj	N/A	N/A	N/A	15	0	0
xj	N/A	N/A	N/A	15	929	13,935
da	24	137,700	3,304,800	24	137,700	3,304,800
pa	N/A	N/A	0	32	0	0
pd	38	2,250	85,500	38	2,250	85,500
ts	N/A	N/A	0	38	0	0
sf	59	21,990	1,297,410	45	51,310	2,308,950
Total ft3			4,687,710			5,739,000
BDF ¹			26,719,947			32,712,300

¹ Factor is 5.7bdf/ft3

N/A – Not applicable; not suitable timber production acres.

3. Timber Sale Program Quantity (TSPQ)

Table A-4. Timber Sale Program Quantity for the Dixie National Forest

Practice	Timber Production	Water Yield	Wildlife/ Fisheries	Recreation/ Scenery	Fire/Fuels/ Forest Health	Other	Totals
Lands where Timber Production Achieves or is Compatible with Desired Conditions and Objectives							
Regeneration Cutting (even or two aged)	0	0	150,000	0	50,000	0	200,000
Uneven-aged Management	0	0	3,880,000	0	1,280,000	0	5,160,000
Intermediate Harvest							
Commercial thinning	0	0	350,000	0	125,000	0	475,000
Sanitation/salvage	0	0	700,000	0	250,000	0	950,000
Other Harvest Cutting	0	0	75,000	0	25,000	0	100,000
Subtotal, Sawtimber (MMBF)	0	0	5.2	0	1.7	0	6.9
Subtotal, All Products (MMCF)	0	0	0.9	0	0.3	0	1.2
Other Lands							
Regeneration Cutting (even or two aged)	N/A	0	250,000	0	100,000	0	350,000
Uneven-aged Management	N/A	0	6,320,000	0	2,120,000	0	8,440,000
Intermediate Harvest	N/A						
Commercial thinning	N/A	0	575,000	0	200,000	0	775,000
Sanitation/salvage	N/A	0	1,150,000	0	400,000	0	1,550,000
Other Harvest Cutting	N/A	0	125,000	0	50,000	0	175,000
Subtotal, Sawtimber (MMBF)	N/A	0	8.4	0	2.9	0	11.3
Subtotal, All Products (MMCF)	N/A	0	1.5	0	0.5	0	2.0
Grand Totals - Sawtimber (MMBF)	N/A	0	13.6	0	4.6	0	18.2
Grand Totals - All Products (MMCF) ¹	N/A	0	2.4	0	0.8	0	3.2

¹ Factor is 5.7bdft/ft³

Table A-5. Timber Sale Program Quantity for the Fishlake National Forest

Practice	Timber Production	Water Yield	Wildlife/ Fisheries	Recreation/ Scenery	Fire/Fuels/ Forest Health	Other	Totals
Lands where Timber Production Achieves or is Compatible With Desired Conditions and Objectives							
Regeneration Cutting (even or two aged)	0	0	200,000	0	100,000	0	300,000
Uneven-aged Management	0	0	3,720,000	0	1,240,000	0	4,960,000
Intermediate Harvest							
Commercial thinning	0	0	250,000	0	100,000	0	350,000
Sanitation/salvage	0	0	500,000	0	200,000	0	700,000
Other Harvest Cutting	0	0	2,450,000	0	25,000	0	2,475,000
Subtotal, Sawtimber (MMBF)	0	0	7.1	0	1.7	0	8.8
Subtotal, All Products (MMCF)	0	0	1.2	0	0.3	0	1.5
Other Lands							
Regeneration Cutting (even or two aged)	N/A	0	200,000	0	100,000	0	300,000
Uneven-aged Management	N/A	0	4,400,000	0	1,440,000	0	5,840,000
Intermediate Harvest							
Commercial thinning	N/A	0	300,000	0	100,000	0	400,000
Sanitation/salvage	N/A	0	600,000	0	200,000	0	800,000
Other Harvest Cutting	N/A	0	100,000	0	25,000	0	125,000
Subtotal, Sawtimber (MMBF)	N/A	0	5.6	0	1.9	0	7.5
Subtotal, All Products (MMCF)	N/A	0	1.0	0	0.3	0	1.3
Grand Totals - Sawtimber (MMBF)	N/A	0	12.7	0	3.5	0	16.3
Grand Totals - All Products (MMCF) ¹	N/A	0	14.0	0	0.6	0	14.6

¹ Factor is 5.7bdft/ft3

No acres are planned for primary timber production as the result of the *Conservation Strategy and Agreement for the Management of Northern Goshawk Habitat in Utah* (1998).

4. Planned Harvest Exceeding the Long-term Sustained-yield Capacity

Based on anticipated budgets and available workforce, planned harvests are not expected to exceed long-term sustained-yield capacity.

5. Timber Tables

5.1. Estimated Vegetation Management Practices

Projected acres are based on the recent history of activities and are reflective of current and anticipated budgets and workforce not on levels of treatments needed to achieve desired conditions.

**Table A-6. Estimated Vegetation Management Practices Dixie National Forest
(Annual Average Treatment Area [Acres] in First Decade for Lands Generally
Suitable for Timber Harvest)**

Practice	Timber Production	Water Yield	Wildlife/ Fisheries	Recreation/ Scenery	Fire/Fuels/ Forest Health	Other	Totals
Lands where Timber Production Achieves or is Compatible with Desired Conditions and Objectives							
Regeneration Cutting (even or two aged) ¹	0	0	15	0	5	0	20
Uneven-aged Management	0	0	970	0	320	0	1,290
Intermediate Harvest							
Commercial Thinning	0	0	140	0	50	0	190
Salvage/Sanitation	0	0	140	0	50	0	190
Other Harvest Cutting	0	0	30	0	10	0	40
Reforestation ¹	0	0	1,000	0	340	0	1,340
Timber Stand Improvement	0	0	140	0	50	0	190
Other Lands							
Regeneration Cutting (even or two aged) ²	0	0	25	0	10	0	25
Uneven-aged Management	0	0	1,580	0	530	0	2,110
Intermediate Harvest							
Commercial Thinning	0	0	230	0	80	0	310
Salvage/Sanitation	0	0	230	0	80	0	310
Other Harvest Cutting	0	0	50	0	20	0	70
Reforestation	0	0	1,650	0	550	0	2,200
Timber Stand Improvement	0	0	230	0	80	0	310

¹ Includes both natural and artificial regeneration.

**Table A-7. Estimated Vegetation Management Practices Fishlake National Forest
(Annual Average Treatment Area [Acres] in First Decade for Lands Generally
Suitable for Timber Harvest)**

Practice	Timber Production	Water Yield	Wildlife/ Fisheries	Recreation/ Scenery	Fire/Fuels/ Forest Health	Other	Totals
Lands where Timber Production Achieves, or is Compatible with Desired Conditions and Objectives							
Regeneration Cutting (even- or two-aged) ²	0	0	20	0	10	0	30
Uneven-aged Management	0	0	930	0	310	0	1,240
Intermediate Harvest							
Commercial Thinning	0	0	100	0	40	0	140
Salvage/Sanitation	0	0	100	0	40	0	140
Other Harvest Cutting	0	0	40	0	10	0	50
Reforestation ³	0	0	980	0	330	0	1,310
Timber Stand Improvement	0	0	100	0	40	0	140
Other Lands							
Regeneration Cutting (even- or two-aged) ²	0	0	20	0	10	0	30
Uneven-aged Management	0	0	1,100	0	360	0	1,460
Intermediate Harvest							
Commercial Thinning	0	0	120	0	40	0	160
Salvage/Sanitation	0	0	120	0	40	0	160
Other Harvest Cutting	0	0	40	0	10	0	50
Reforestation	0	0	1,200	0	390	0	1,590
Timber Stand Improvement	0	0	120	0	40	0	160

² Two-aged methods regenerate and maintain stands with two-age classes. The resulting stand may be two-aged or tend towards an uneven-aged condition. Two-aged methods include clearcutting with reserves, seed tree with reserves, and shelterwood with reserves.

³ Includes both natural and artificial regeneration.

5.2. Timber Productivity Classification

Productivity from Youngblood and Mauk 1985.

Table A-8. Timber Productivity Classification (DRAFT): Dixie

Dixie Potential Growth (Cubic Feet/Acre/Year)	Lands on which Timber Production is one of the Management Objectives (Acres)	Other Lands (Acres)
Less than 20		25,902
20-49	134,330	143,270
50-84	67,110	130,790
85-119		
120-164		
165-224		
225+		

Table A-9. Timber Productivity Classification (DRAFT): Fishlake

Fishlake Potential Growth (Cubic Feet/Acre/Year)	Lands on which Timber Production is one of the Management Objectives (Acres)	Other Lands (Acres)
Less than 20		2,650
20-49	161,940	161,679
50-84	21,990	30,510
85-119		
120-164		
165-224		
225+		

5.3. Display of Long-term Sustained-yield Capacity and Timber Sale Program Quantity

There is a great deal of uncertainty that goes into these graphs. The Timber Sale Program Quantity is based on current budgets and workforce, which at this time are not anticipated to change significantly. Any future changes in budgets, workforce, or priorities could change the amount of timber harvested.

Long-term sustained-yield capacity is also based on current information. It is very difficult to predict the long-term trends in sustained-yield capacity with uncertainties concerning global warming, potential impacts of large scale uncharacteristic fire, inability to treat sufficient acres resulting in conversions to other vegetation types, or unforeseen large scale events that could impact long-term yield.

Figure A-1. Dixie – Display of Long-term Sustained-yield Capacity (LTSYC) and Timber Sale Program Quantity¹ (TSPQ)

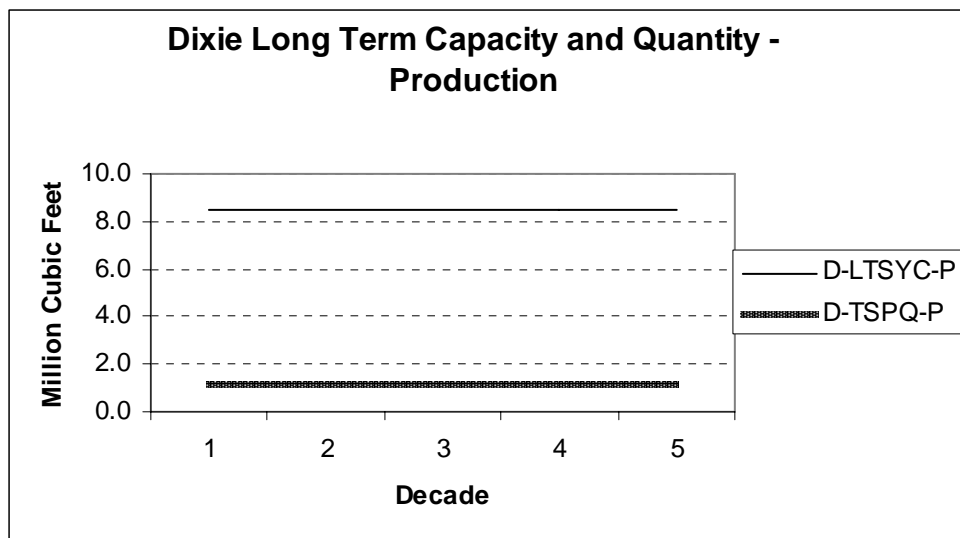


Figure A-2. Fishlake – Display of Long-term Sustained-yield Capacity (LTSYC) and Timber Sale Program Quantity¹ (TSPQ)

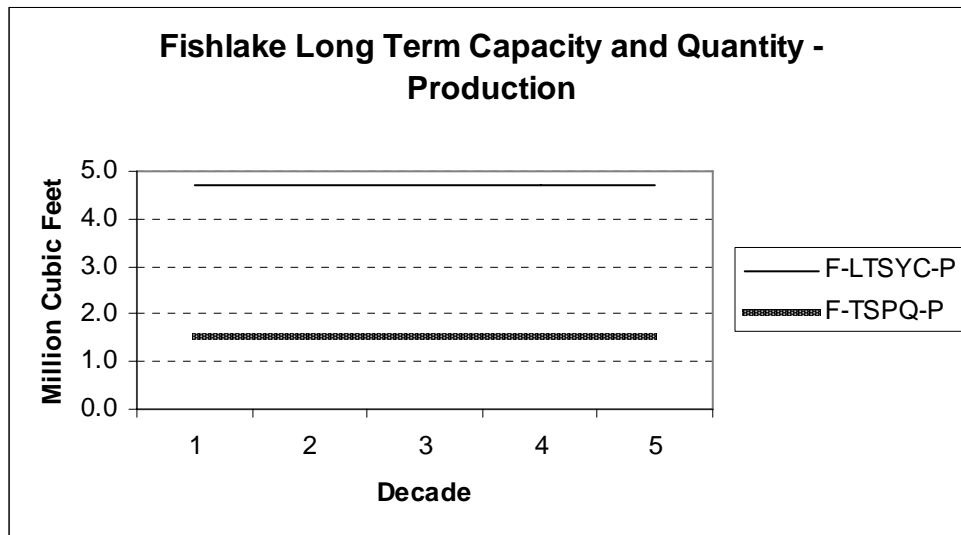


Figure A-3. Dixie – Display of Long-term Sustained-yield Capacity (LTSYC) and Timber Sale Program Quantity¹ (TSPQ)

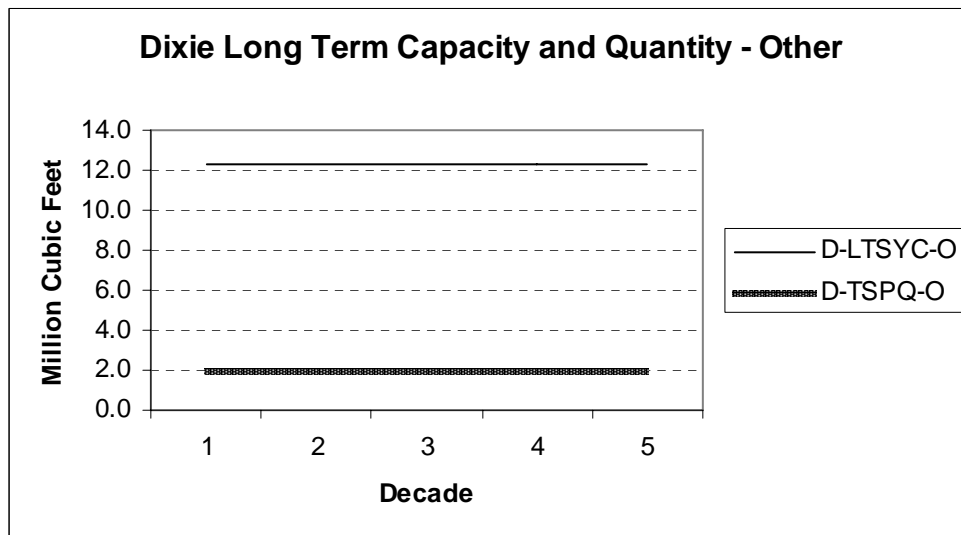
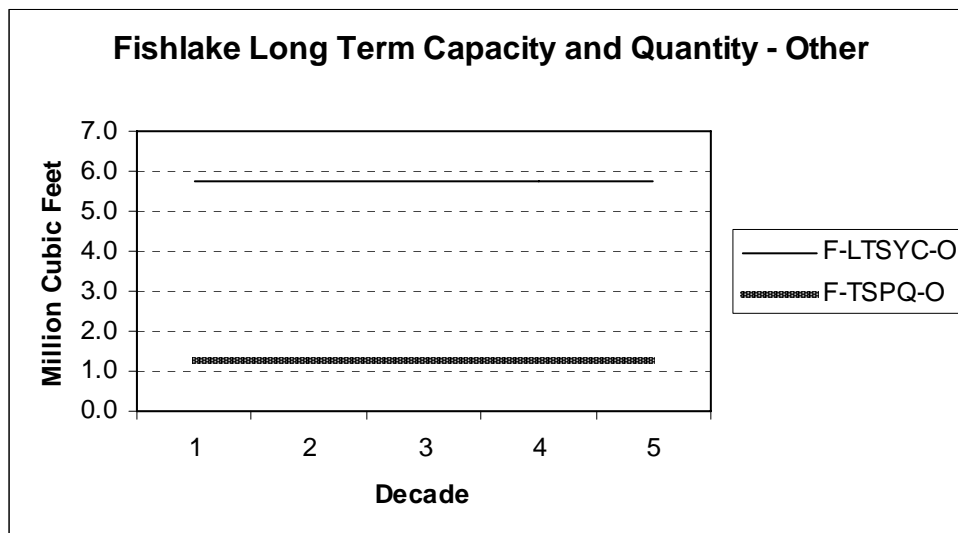


Figure A-4. Fishlake - Display of Long-term Sustained-yield Capacity (LTSYC) and Timber Sale Program Quantity¹ (TSPQ)



5.4. Current Conditions and Estimated Trends of Successional Stage for Lands Generally Suitable for Timber Harvest

Vegetation Structure Stage (VSS) interpreted from VDDT data set. Historic range of variation interpreted from O'Brien's Table 32 (1999).

Table A-10. Dixie – Current Conditions and Estimated Trends of Successional Stage for Lands Generally Suitable for Timber Harvest

Successional Stage Distribution (Acres)	Historic Range of Variation*	Present Forest	Desired Future Forest	Projected Forest in 50 Years**
VSS 1	201,401	80,285	52,710	50,000
VSS 2	201,401	50,132	52,710	50,000
VSS 3	49,831	29,042	105,420	90,000
VSS 4	58,692	88,951	105,420	70,000
VSS 5	12,177	148,504	105,420	100,000
VSS 6	3,598	130,186	105,420	100,000

VSS = Vegetation Structural Stage (Reynolds et al. 1992)

*See Disclaimer in write up

**See document write up - only an estimate at this time

Table A-11. Fishlake – Current Conditions and Estimated Trends of Successional Stage for Lands Generally Suitable for Timber Harvest

Successional Stage Distribution (Acres)	Historic Range of Variation*	Present Forest	Desired Future Forest	Projected Forest in 50 Years**
VSS 1	139,731	53,849	36,570	50,000
VSS 2	139,731	21,162	36,570	50,000
VSS 3	34,573	24,775	73,140	60,000
VSS 4	40,720	81,210	73,140	60,000
VSS 5	8,448	107,705	73,140	90,000
VSS 6	2,496	76,999	73,140	80,000

VSS = Vegetation Structural Stage (Reynolds et al. 1992)

*See Disclaimer in write up

**See document write up - only an estimate at this time

5.5. Forest Conditions Where Timber Production Achieves or is Compatible with Desired Conditions and Resource Objectives

Information to complete these tables will be sought from FIA sources based on the most current data after timber suitability is finalized

Table A-12. Dixie – Forest Conditions where Timber Production Achieves, or is Compatible with, Desired Conditions and Resource Objectives

DIXIE	Lands where Timber Production Achieves, or is Compatible with, Desired Conditions and Resource Objectives Measured in Millions of Cubic Feet (MMCF)
Present Forest:	
Growing Stock	
Live Cull	
Salvable Dead	
Annual Mortality	
Net Annual Growth	
Future Forest:	
Growing Stock	
Net Annual Growth	
Rotation Age	

Table A-13. Fishlake – Forest Conditions where Timber Production Achieves, or is Compatible with, Desired Conditions and Resource Objectives

FISHLAKE	Lands where Timber Production Achieves, or is Compatible with, Desired Conditions and Resource Objectives Measured in Millions of Cubic Feet (MMCF)
Present Forest:	
Growing Stock	
Live Cull	
Salvable Dead	
Annual Mortality	
Net Annual Growth	
Future Forest:	
Growing Stock	
Net Annual Growth	
Rotation Age	