

# CRYSTAL MT. TIMBER SALE

SECTION 36, T7N, R72W

6TH P.M.

1" = 200 FEET

1 SQ. IN. = 0.91 ACRES



15.97

KE STAMPAO © CROSS SECTION  
MADE IN U.S.A.

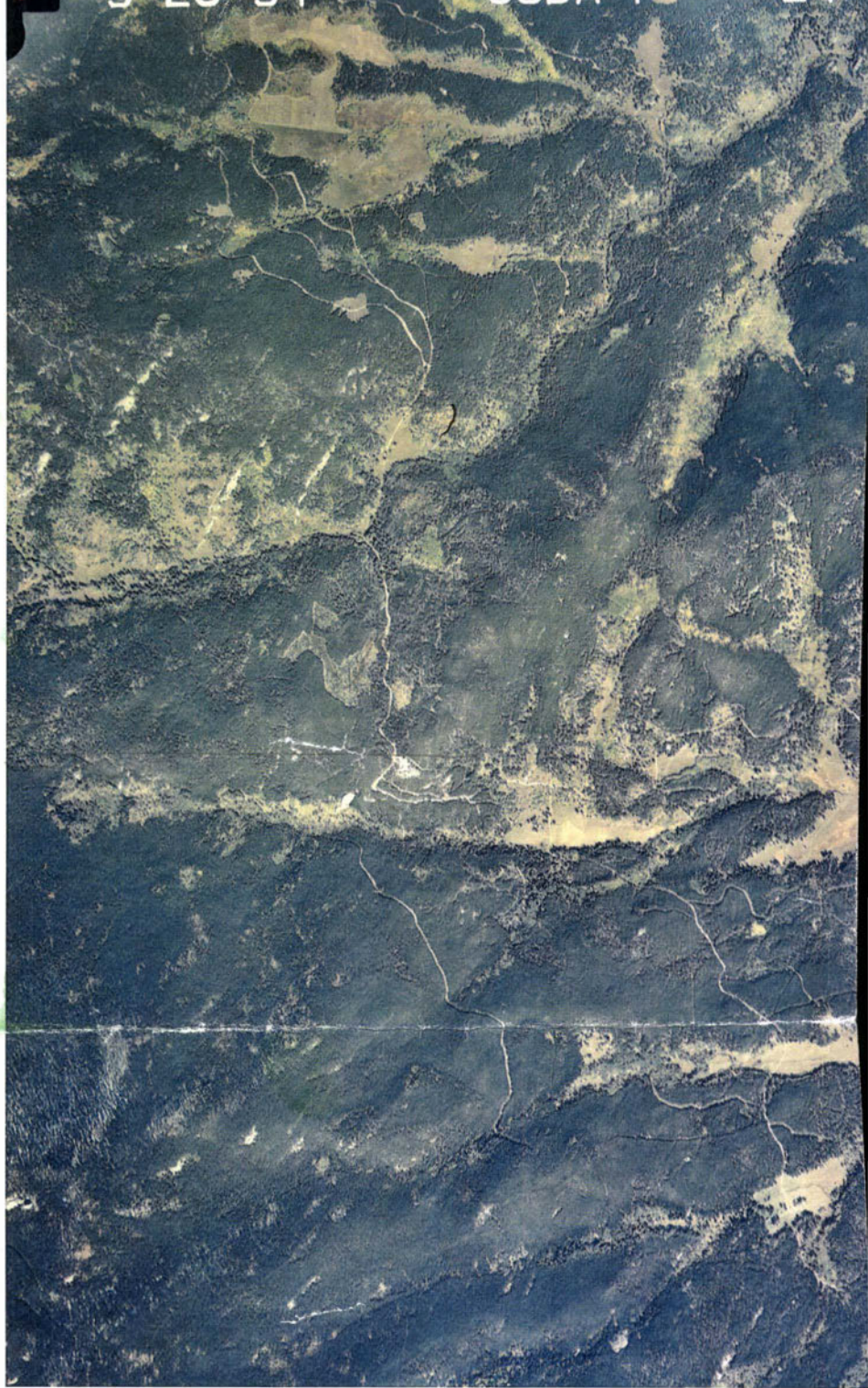
KE STAMPAO © CROSS SECTION  
MADE IN U.S.A.

KE STAMPAO © CROSS SECTION  
MADE IN U.S.A.











Colorado State Forest Service

Colorado State University  
Fort Collins, Colorado  
80523

January 20, 1986

2330

Randy Hediger  
10829 Rist Canyon  
Bellvue CO 80512

Dear Randy:

A procedure is now in effect for State Land sales that I was not aware of when we discussed the Crystal Mountain Section. It is a change that became effective in 1985 that may impact the sale negatively from your standpoint.

All sales that exceed \$1,000 in value must be advertised. No sale of that or higher value may be made to an individual/partnership without going through bid procedure.

Our discussion was for a 5-year sale with an average of 200 trees/year being sold. Total sale value would exceed \$3,000. The addition of fuelwood from the same sale area would increase the dollar amount. I have no choice but to advertise the sale.

Of course you will be eligible to bid but other individuals will also have that opportunity. As a result, there is no guaranty that you would be the successful bidder with a resultant sale award.

I'm sorry I provided you with incorrect information when we discussed the sale. I am still willing to proceed if you are still interested under this new condition. I am considering oral bids after a qualifying sealed bid opening.

Please let me know of your interest.

Sincerely,

Raymond L. Mehaffey  
District Forester

RLMkrp



Area (cuts)

Stand

Plot

BAF

BA

JL+MH

7-13-98

afternoon

Species

DBH

Ht.

DMR

Remarks

①

LLP

4.9

20.7

5

12% slope

4.2

20

5

N aspect

4.1

20

5

Std 11A

30-32  
yrs  
oldSAP { 23 LLP  
1 SpruceREG { spruce  
fir  
LLPLarger size (6.4" dia) LLP  
with mistletoe that was  
left from cut 30+ yrs② Spruce  
LLP

5.1

20

4.0

20

⑤

- Rose

- Barberry

- Lupine

- Common  
Snipe

Std 11A

SAP { 24 LLP

Reg { spruce  
fir  
LLP

10% slope

N aspect

Avg 25 Large LLP  
left per acre from  
previous cutusing  
1/5 acAspen reg-  
in area  
outside  
plot

CUTS



Area amStand           Plot           BAF 20BA JL1MB2-7-89

Species	DBH	Ht.	DMR	Remarks
① LPP	4.4"	15'	Ø	<p>UNTS - wof rd Lgr cut 15% slope E. 3600 sapl 1/4</p> <p>lupine blackberry golden rod? juniper comm vaccinium rose red tail Kinickinik Age 26 Thistle Degeneration</p>
<p>Std 11B</p> <p>② LPP</p> <p>11B</p>	<p>4.8</p> <p>fireweed vaccinium, myrtle lupine <del>rose</del> Kinickinik raspberry moss</p>	15	Ø	<p>E. Aspect, 13% reg sp LPP Dead: Sapl 4.4"</p>



SPP	DBH	Ht	Dmr	Remarks
3 SPP LPP	4.2	12		NE, 14%
	4.1	12		Reg LPP IIII
	4.2	12		<4 LPP IIII
				Sap LPP IIII

(11B)

Elderberry  
*Jonesia americana*  
 Strawberry  
 2

---

4 LPP	4.0	10	Ø	Small north cut E, 15%
(11B)				Ø <4 IIII IIII
				Reg LPP II



④ Stumps - Area has been cut lots of  
regen - just N of patch/clear cut

LPP — 9.0 — 43' — 3  
11.4 — 43' — 2  
12.0 — 35' — 3

Slp w  
V3p 7%

regen =  
LPP = 20

grnd =  
juniper  
lupine  
Bearberry  
TersL411  
10 LPP  
1 ES



⑤ Skipped 2 plots @ Rd in  
11 chns going due North from  
Last plot. (Yellow Flag)

(275 paces from where flag is  
to Rd that entered  
≈ 21 chns)

1211  
1211  
1211  
15

1  
Sta  
3



Area

CM

Stand

Plot

BAF

BA

20

Species

DBH

Ht.

DMR

Remarks

Std (31)

(1)

LPP

5.8

E

11.6

Rd x

head W.

\* 7.8

30'

Ø

SW

130%

7.1

40'

Ø

regen = Ø

6.8

35'

Ø

under = Ø

7.9

35'

Ø

Trees L4 = 1

9.4

40'

Ø

X Age = 110.

Std

31

(2)

W 4 ms

LPP

7.8

43

Ø

(Past Fire)

LPP

7.2

35

Ø

evidence

AS

4.0

25

Ø

SLP = 150%

LPP

7.5

25

Dead

ASP = W

LPP

8.4

35

Dead

regen =

LPP

8.1

40

Ø

12 AS

LPP

5.8

25

Dead

1 ES

LPP

11.6

40'

2

under =

LPP

9.7

40'

2

Bear berry

LPP

10.0

30'

2 Dead

grass (patches)

LPP

8.0

30'

2 Dead

SLP = W

LPP

10.3

40'

2

ASP = 80%

LPP

10.5

40'

2

regen = 0

LPP

10.5

40'

2

under =

LPP

10.5

40'

2

Sparse

LPP

10.5

40'

2

Lupine

LPP

10.5

40'

2

Juniper

LPP

10.5

40'

2

Trees L4 = 0

LPP

10.5

40'

2



Area CM

Stand

Plot Page 2BAF 20BA SL+MH

8-4-98

Species

DBH

Ht.

DMR

Remarks

LLP

Cut Area

(30 yrs)

West Aspect

41.0

1 17%

Tree 47

18 LLP

2 Aspen

1 spruce

-Lupine

-Common Juniper

-Elderberry

Avg 20' trees

53 Aspen

Aspen Stand

13.8

73

10.9

20

13.3

65

12.2

65

11.3 dead

40

13.8

65

13.5

57

10.5

60

11.4

65

13.2

70

13.6

70

5% slope

west aspect

Regen 2 Aspen

heavily

browsed

lots of grass

Take out some

of large LLP

along edge

-Golden Banner

-Daisy Aster

-Spruce under

story

(outside plot)

Aspen \*

11.2

76

11.5

70

11.8

65

12.1

70

10.0

70

13.3

60

11.8

65

10.9

65

12.4

70

12.9

65

70

\* Age = 86

slp = 5%

ASP = W

regen =

4 Aspen

(Browse)

under =

pt brush

banner

grass

thistle

lupine



Area CMBAF 20Stand JL1 MH  
BAPlot 8-4-98

Species	DBH	Ht.	DMR	Remarks
(std 31) Head N off Rd			@ Quarry	4x4 chns.
(X mark out area)		skip	plot	
<del>LLP</del>	6.8	43	3	Regen: 1 LLP
	8.7	33		• Common Juniper
	9.3	30		• Lupine
(31)	7.0	25		2 LLP < 4"
	8.5	35		10N rock
	6.2	35		outcrop
	8.4	40		West Aspect 10% slope
<del>LLP</del>	5.3	30	4	West Aspect 8% slope
	2.4	40		4 LLP < 4"
(31)	5.1	35 dead top		No Regen
	5.6	30		
	7.3	35		
	4.1	20		
	6.3 dead	25		
	6.8	30		
	5.6 dead	25		
	7.5	25		
<del>LLP</del>	10.7	30	5	18% West Aspect
	9.7	35		• Lupine
	5.5	20		• Barberry
(31)	4.5	23		
	6.4	25		
	6.5	30		
	11.0	25		
	5.7	28		

std, 3



Area CMStand           Plot ②BAF 20BA 02

Species	DBH	Ht.	DMR	Remarks
Rd N of Quarry E of main Rd				
Walk. in $\approx 12$ chns (plots W of Rd)				
④ LPP	6.1	25'	3	Slp = 11%
	4.3	25'	3	Asp = W
dog	6.4	30'	4	regent = $\emptyset$
Heave	4.3	25'	4	under = $\emptyset$
⑤	5.7	30'	4	
Stal 31	Trees L 4" =		20+	
⑥ LPP	4.2	30'	2	Slp = level
	4.2	30'	2	Asp = (None)
	4.1	30'	2	regent = $\emptyset$
⑦	4.6	30	2	grad = $\emptyset$
Stal 31	4.9	25	2	
⑧				



Area CM

Stand

Plot

#32

BAF 20MH  
BA

8/4/98

Species	DBH	Ht.	DMR	Remarks
① Std # 32 LLP	6.6	41	3	SIP = 20
	5.2	40		NSP = N
	7.7	40		under =
	7.2	43		Bearberry
Aspen	*7.3	43		Banner
LLP	7.4	251		Curran
	8.2	45		regen = 6 Aspen
				2 spruce
②				Age 1 fir
LLP	2.0	42		4 LLP < 4"
Norm	5.4	35	2	ASP = NW
	7.9	45		SIP = 18
	4.5	25		regen =
	7.7	40		AS = 1
	7.4	45		Subfir = 1
	9.6	45		6 trees 44"
	8.0	40		
	4.6	30		
	5.7	35		
	4.8	30		
③				
LLP	2.8	45		NW: 16
	5.8	40		16
	6.8	40		
	7.7	45		5 Aspen Regen
	8.0	40		2 < 4"
	6.3	40		
	5.8	40		
	6.7	35		
	5.1	35		
	5.5	35		
	5.6	40		
	6.2			

Std. 3



Area CMStand           Plot Page 5BAF 20BA 5L+MH

8-4-98

Species	DBH	Ht.	DMR	Remarks
L.F.	6.5	35		28%
(A)	5.5	40	2	N. Aspect
X	8.9	45		
std	6.7	43		Age 88
32	7.2			regen = $\phi$
	6.7	35		
	1.0	35		
	5.8 dead	30		
	9.7	45		

under  
Rose  
Vaccinium



Area crystalStand           Plot           BAF 20BA JL

7/13/98

Species	DBH	Ht.	DMR	Remarks
Arca	South of	Lg. Rock outcrop		
① LLP	6.5	34	4	No Regen. <div>7: &lt; 4" LLP in 1/100 ac</div> S. aspect 10% slope
	5.8	25	110 yrs.	
	5.8	35		
	7.3	40		
	4.9 dead	30		
	5.3 dead	30		
	7.5	35		
	4.7	25		
	5.6	30		
	6.2	30		
	6.0	35		
	6.3	30		
	6.2	30		
	5.1 dead	25		
			↓	
② LLP	6.3	30	3	Plot is just north of road SE Aspect 15% slope  No Regen <div>2: &lt; 4" LLP in 1/100 ac</div> Scattered Aspen + Ponderosa <del>Spand</del> near edge of stand
	6.7	35		
	4.6	25		
	4.8	30		
	7.3	35		
	5.6	30		
	5.8	30		
	5.9	30		
	4.7	25		
	4.8	25		
	4.3	25		
	5.1	30		
	4.2	25		
	7.5	35		
			↓	

Std 2 + Std 1



(x-road)

Species

LLP

New  
Stand  
std 2 ✓

Dia  
7.8  
9.9  
11.7  
9.7  
7.9  
7.4  
7.0  
7.8  
8.8  
8.1  
10.1

Ht.  
54  
45  
55  
55  
55  
50  
45  
50  
55  
45  
50

DMR

0

120 yrs.

SE Aspect  
13% slope

No Regen.

- Best 10 yrs :  $1\frac{1}{4}$ "

- Last 10 yrs :  $< \frac{1}{4}$ "

Scattered  
Aspen +  
Ponderosa  
near edge of  
Stand

- Aspen Regeneration near edge of plot
- Much potential for Aspen sprouting if LLP is Patch cut
- would recommend clearcutting LLP



Area Crystal Mtn

Stand

Plot

BAF 20

BA

JL

7/10/98

Species	DBH	Ht.	DMR	Remarks
start @ NE corner		2 chns. in from E line		(4x4 plots)
① grassy meadow w/ aspen		20'		and aspen regen scattered sm. P near plot
slope - 5-10%				
aspect - SE				
understory - grass, rose, yellow daisy, columbine				
regen - 12 aspen				
② X Road - open area, aspen regen, scattered sm. P, LPP				
slope - 12%				plot adj to LPP stand near E line.
asp - SE				
under - grass				
regen - Ø				
③ Entered LPP stand				
LPP	9.0	42'	3	
* LPP	10.8	45'	3	* Age = 95
LPP	8.2	12'	DEAD	
LPP	8.2	40'	3	Heavy down fuels
LPP	8.7	45	3	
slope - 5%				
aspect - SE				
regen - 9 aspen, 1 LPP				
under - bearberry, lupine, common juniper				
④ LPP	12.2	60'	2	
LPP	7.0	35	DEAD	Asp - SE
LPP	9.1	40'	2	Slope - 10-12%
LPP	10.6	45	2	regen - 6 AS
LPP	10.3	55'	2	
AS	7.3	30'	Dead	under - grass
* LPP	14.0	70'	0	+ brush, columbine
AS	7.5	40'	-	* Age = 105
LPP	9.5	55'	2	std 5 ✓

Std

Std.



<u>SP</u>	<u>DBH</u>	<u>HT</u>	<u>DMT</u>
LPP —	10.9 —	60' —	3
AS —	6.5 —	40' —	—
AS —	7.5 —	45' —	—

trees > 4" = 2 (AS, ES)

③ X opening, back in LPP, Rock outcrops slid 5 ✓

LPP —	6.0 —	40' —	3
LPP —	6.2 —	37' —	2
LPP —	7.7 —	50' —	2
LPP —	7.3 —	50' —	2
LPP —	4.3 —	30' —	Dead
LPP —	8.7 —	55' —	2
LPP —	7.5 —	50' —	2
LPP —	6.6 —	45' —	4
LPP —	5.7 —	40' —	3
LPP —	5.3 —	40' —	3
LPP —	4.2 —	35' —	3
LPP —	6.3 —	40' —	2

slope - 10%

asp - E

under -  $\emptyset$

regen -  $\emptyset$

trees > 4" =  $\emptyset$

④ LPP —	5.7 —	40' —	2
LPP —	5.9 —	40' —	0
LPP —	7.9 —	30' —	Dead
LPP —	6.3 —	40' —	0
*LPP —	6.8 —	40' —	0
LPP —	6.1 —	40' —	0
LPP —	8.1 —	45' —	0
LPP —	5.8 —	25' —	Dead

slid 5 ✓

Asp - SE

slp - 15-18%

under -  $\emptyset$

regen -  $\emptyset$

\* Age = 100



Area Crystal MIN Stand

Plot

BAF 20

7/17/98

BA

Species

DBH

Ht.

DMR

Remarks

NE Corner - Std: # 60 St @ Rd + N line  
read S 3 cans E taking plots to E line 4x4

① LPP

5.8 — 27' — 0  
4.3 — 30' — 0  
5.0 — 35' — 0  
5.2 — 30' — 0  
6.3 — 35' — 0

dead top

Aspect - NE  
slope - 10%  
Regen - 0  
under - 0  
Trees > 4" = 14

\* Age = 82

Best 10 - 12/20m  
last 10 - 4/20m

? P sm woody plant - opposite - pubescent leaves  
\* on underside + rib. Flat terminal bud

Buffalo-berry

w/ brown hairs



② Rock outcrops small

LPP — 5.4 — 30' — 0  
4.4 — 30' — 0  
5.0 — 30' — 0

ASP - N

Slope - 10%

Regen - 0

under - 0

trees &gt; 4" = 22

(Doghair)

③ LPP

\* 7.1 — 40' — 0  
6.9 — 40' — 0  
4.9 — 35' — 0  
5.0 — 30' — 0  
4.4 — 30' — 0  
~~3.5 — 35' — 0~~  
5.8 — 35' — 0  
6.3 — 35' — 0  
5.0 — 35' — 0  
5.5 — 35' — 0

Slope - 18%

ASP - NE

Regen - 0

under - woods rose

&gt; 4" sparse

4 trees

\* Age = 100

Best 10 = 13/20m  
last 10 = 4/20m

Std



Area Crater Stand            Plot             
 BAF            Mm BA 20 JL 7/17

Species DBH Ht. DMR Remarks

X opening - getting closer to stream

New stand Nice trees

Sta 7

(4) LPP

8.0	50'	0
* 8.3	60'	0
12.1	65'	0
6.6	55'	0
7.6	58'	0
7.5	50'	0
7.0	55'	0
6.6	45'	0
6.1	50'	0
7.4	55'	0
7.9	55'	0
8.9	60'	0
5.0	40'	0

slope - 17%

aspect - E

Regen - 17 aspen

under Rose mullen  
 Bearberry  
 ? woody plant  
 Lupine

Trees 74" = 0

Dead tip Evidence of browse on aspen

Aspen is scattered in this stand

Best 10 = 10/20m

Last 10 = 3/20m

(5) Edge of Riparian zone

LPP	10.6	50'	0
	9.8	62'	0
	9.0	62'	0
	8.8	60'	0
	9.6	55'	0
	9.7	50'	0

(45 passes w of creek)

Asp = E

Slope = 15%

Regen = 4 LPP  
 16 asp

under =

(spruce regen adv to plot)

com juniper

mullen  
 lupine  
 woody plant  
 Bearberry  
 grass

(OVER)

Sta 7  
 Sta 20



$S_{11} = 264 *$



5th Q3

Region = 2 HSPEN  
2 ES

$O = \text{dis}$   
m deg

X	-	50'	-	9.4 - 7.0
X	-	45'	-	8.8 - 7.5
X	-	45'	-	7.2 - 6.5
X	-	50'	-	5.9 - 5.5
X	-	55'	-	4.7 - 4.5
Ø	-	681	-	15.7 - LPP
Ø	-	681	-	14.0 - LPP
X	-	140'	-	7.1 head - AS
X	-	50'	-	7.0 - AS



Area Crystal

Stand

Plot

BAF 22

BA

JL

7-17-98

Species

DBH

Ht.

DMR

Remarks

E Line x creek, went thru Riparian  
 ↑ slope back in LPP (NE cornerish).

This std goes south quite a  
 ways - will get it with the rest of  
 the std.

Std

Std

std a open area w/ Aspen / LPP / PP

AS — 6.0 — 40' — X  
 X LPP — 21.0 — 78' — 2  
 LPP — 13.4 — 65' — 2  
 AS (Dead) 5.3 — 30' — X  
 AS — 6.0 — 45' — X  
 (Dead) AS — 5.6 — 40' — X  
 AS — 6.9 — 45' — X

Asp E  
 SLP 18%

Regen —

LPP — 1  
 AS — 11

under — grass  
 Forbs / meadow  
 Rose

com juniper

\* Age 105

(Broke berry 11)

std 9

North of this std is the smaller LPP  
 E edge was the taller LPP

This plot falls in a group of PP

PP — 26.4 — 75' — 2  
 PP — 25.8 — 75' — 2  
 PP — 12.6 — 30' — 2  
 PP — 22.0 — 55' — 2  
 PP — 23.3 — 65' — 2  
 PP — 9.5 — 35' — 2  
 PP — 17.6 — 65' — 2

Asp E

SLP — 20%

Regen = BAS

under =

same

Witches  
 Broom



Std 9

③ Aspen present all along  
sheep creek -

LPP — 13.1 — 50' —  $\phi$   
— 11.4 — 45' — 0  
— 10.4 — 40' — 0  
— 11.2 — 40' — 0  
— 9.8 — 35' — 0  
— 14.0 — 45' — 0  
— 10.0 — 30' — 0

Asp = S  
SIP = 25%  
Regen = S AS  
under-grass<sup>1 LPP</sup>  
Bearberry  
Lupine

① Pkt aspen Along N edge of Std.

AS — 10.5 — 50'  
AS — 7.8 — 50'  
AS — 10.8 — 50'  
AS — 9.7 — 45'  
AS — 9.8 — 50'  
AS — 10.8 — Brkn Top 35'  
AS — 10.4 — 50'

Std 13

Slope — 10%  
Asp — S  
Regen — 2 PP  
1 LPP  
under — Lupine  
com. juniper  
grass  
forbes

Std 10 OPEN MEADOW

std 10 Wld Rd Running thru xing ck.

grass w Aspen regen along edge  
scattered, PP, ES, mature AS  
lg Rock Outcrop (photo)

Rd goes along ck & meets main  
rd,



Area Crystal Mtn Stand

Plot

BAF 20

BA JL

7-18-98

Species	DBH	Ht.	DMR	Remarks
(12) ✓ LPP	7.4	25'	4	Slope = 25% AS = SE
(9)	11.4	45'	4 (14)	Regen = 2 AS under = Bearberry Lupine
plot falls in open area Heavy Browse on AS				Trees > 4" = 0
X Plane wreckage				
(13) LPP	10.1	30'	4	Slope = 13% AS = SE
(10) ✓	8.1	40'	3 (14)	Regen = 1 LPP
	4.0	20'	6 DEAD TOP	
	5.3	35'	2	
	6.6	40'	2	
	4.6	30'	2	under = Juniper Bearberry sage grass
	5.7	25'	5	Trees 4" = 3
	5.5	30'	6	
	5.2	30'	2	
	6.0	30'	2	
	6.7	30'	2	
(14) Flat ridge top / Rocky / wind				thrown trees
LPP	7.4	25'	DEAD	Slope = 13° AS = S
	7.4	20'	Dead	Regen =
	7.1	25	Dead top	ES - III LPP - III III III
-ES- 6.2	30		X	under = Bearberry and Juniper < 4" = 5 LPP

SL AS

SL 14



(11) [STD 11]

(15) LPP — 7.8 — 25' — 5  
 7.3 — 30' — 4  
 6.8 — 30' — 3  
 5.9 — 25' — Dead

Slope 13%

ASP: SE

Regen — LPP

Under  
 Bear Boppy  
 Com. Juniper

(Plot adj to Rockoutcrop)

Trees > 4" = 1

(16) LPP — 4.0 — 40 —  $\phi$   
 5.9 — 40 —  $\phi$   
 6.1 — 40 —  $\phi$   
 6.8 — 45 —  $\phi$   
 5.0 — 45 —  $\phi$   
 6.8 — 50 —  $\phi$   
 6.8 — 45 —  $\phi$   
 7.0 — 50 —  $\phi$   
 4.9 — 45 —  $\phi$   
 \* 7.0 — 45 —  $\phi$   
 5.1 — 40 —  $\phi$   
 8.7 — 45 —  $\phi$   
 7.7 — 40 —  $\phi$

SIP = 25%

ASP = E

Regen —  $\phi$

grnd = juniper

Trees > 4" =  $\phi$

Age = 103

Best = 13/20th

Last = 4/20th

Back in Nice tall std  
 connects with plot N



Area Crystal Mtn. Stand

Plot

BAF

BA

20

JL 7118198

Species	DBH	Ht.	DMR	Remarks
(1) W ✓	[Std # 11]			Top of ridge
LPP	4.5	20'	6	Short, skinny,
*	5.7	25'	5	thick Doghair
Slope = 18%				Std.
Asp = E				Lots' o small
std 14				trees < 4" = 15
40 BA				* Age = 100
				Last = 3/20m
				Best = 14/20m
(2) X Plane wing				
LPP	7.3	38'	5	18 paces ?
std 15	7.7	45'	3	
	4.7	30'	5	Slope - 10%
	5.3	25'	5	Asp - SE
180 BA	9.8	50'	3	Regen - 1 LPP
	6.2	40'	3	under - Bearberry
	6.8	40'	3	Juniper
(Lunch)	8.0	35'	4	4" = 1
	8.1	35'	3	
Back in nice LPP				Edge trees
std 1 Rock outcrops /				
(3) LPP	4.8	30'	0	Slope - 18%
(5) std 14	6.2	35'	3	Asp - E
	4.7	30'	0	Regen - 0
	5.5	30'	2	under -
	5.7	25'	0	1 patch grass
	5.6	30'	2	
	5.4	30'	3	4" = 6
160 BA	7.5	35'	2	



Kept going 8 chns to Lg Rock

start 2 chns S head E

(Std II)

⑨ ⑥

LPP — 6.4 — 25 — 2  
4.8 — 25 — 3  
5.6 — 25 — 4  
4.9 — 25 — DEAD

Slp = 18%

ASP = S

Regen =  $\emptyset$

under =  
sparse grass  
under 4" = 2

⑩ ⑦

LPP — 5.0 — 30' —  $\emptyset$   
8.1 — 40' —  $\emptyset$   
9.1 — 40' —  $\emptyset$   
9.8 — 50' —  $\emptyset$   
\* 9.6 — 45' —  $\emptyset$   
FIR — 7.5 — 40' —  $\emptyset$  FIR  
AS — 4.7 — — Dead

Slp = 20%

ASP = SE

Regen =

6 AS

1 LPP

under =  
Bearberry  
Woodrose  
com. juniper  
grass

\* Age  $\frac{100}{\text{Best} = 10/20ms}$   
last = 4/20ms

⑪ mixed S 1 chn

LPP — 7.1 — 34 — 3  
4.3 — 20 — 3  
6.9 — 25 — 3  
5.9 — 25 — 3  
5.1 — 34 — 3  
8.1 — 40 — 3  
5.0 — 25 — 3  
1.4 — 30 — 3

Slp = 27%

ASP = E

regen =  $\emptyset$

under =  
Bearberry  
Yellow fir  
Trees 4" =  $\emptyset$



Area Crystal Mtn Stand Plot  
BAF 20 BA JL 7-18-98

Species	DBH	Ht.	DMR	Remarks
St @	N line +	Rd: head	W/ (in)	
① LPP	[STAND # 14] ✓			2 chns (4x4)
	6.4	25'	φ	slope - 18°
	6.2	30'	φ	Asp - S
	7.1	35'	φ	Regal - φ
	4.0	20'	φ	under - nom. juv grass
	8.7	40'	φ	<u>Sparse!</u>
	8.7	25'	φ	
Dead	5.3	20'	φ	Trees 4" = 4
	* 7.5	25'	φ	+ Age = 90
	5.8	25'	φ	
② X opening		Sta 14 ✓		slope - 20%
LDP	4.2	30'	φ	Asp - S
	4.7	30'	φ	Reg - 1 LPP
	4.7	30'	φ	
	4.5	25'	φ	under - nom. juv
	5.6	30'	φ	current
	4.3	25'	φ	sparse
	5.7	34'	φ	
	6.3	35'	φ	Trees 4" = 4
③ X rock outcrop		Sta 14 ✓		slope - 20%
LPP	4.0	20'	φ	Asp - E
	7.2	30'	φ	Reg - φ
	4.3	25'	φ	under - φ
	4.3	20'	φ	
	4.8	25'	φ	Trees 4" = 2
	4.0	20'	φ	
	6.1	30'	φ	



LPP - 4.9 — 20' —  $\phi$  ✓ 180 BtA  
 7.5. — 35' —  $\phi$

④ LPP — 11.6 — 50' —  $\phi$   
std 15 ✓  
 8.1 — 45' —  $\phi$   
 8.3 — 40' —  $\phi$   
 \* 9.7 — 55' —  $\phi$   
 4.2 — 20 — Dead  
 4.0 — 25' —  $\phi$   
 7.1 — 45 —  $\phi$   
 7.2 — 30' —  $\phi$   
 8.2 — 50' —  $\phi$   
 7.1 — 40' —  $\phi$   
 8.6 — 50' —  $\phi$

Slope - 12%  
 Asp - E  
 Regen -  $\phi$   
 under - Bearberry  
 can juniper  
 4" = 2

\* Age 100  
 Best 10 = 1"  
 last 10 = 4/20m

This is a nice std of lgr diam. trees  
 better spacing - may call this a diff.  
 std. . .

⑤ LPP — 5.0 — 40' — 2  
std 15 ✓  
 6.1 — 45' — 2  
 \* 6.7 — 40' — 2  
 5.3 — 30' — Dead  
 5.9 — 40' — 4  
 6.2 — 40' — 3  
 5.2 — 35' — 2  
 7.6 — 40' — 2

Slope - 20%  
 asp - E  
 Regen -  $\phi$   
 und - sparse  
 Forbs  
 juniper  
 Rose  
 4" trees - 3

\* Age 110

Best 11/20  
 Last 4/20

BtA  
 160



Area Crystal Mm Stand \_\_\_\_\_

Plot \_\_\_\_\_

BAF \_\_\_\_\_ JZ

BA 20

7-18-98

Species	DBH	Ht.	DMR	Remarks
<u>std 12</u>	2 chns	x	Aspen / Mix	
(17) (6)	<u>stais</u>			
LPP	8.5	50	φ	Slope 23%
	7.1	40	φ	Asp = E
	6.0	35	φ	Regen = φ
	7.9	40	φ	under =
	8.3	50	φ	scarce grass
	9.1	55	φ	under 4" = 2

Still in nice std of LPP

@ 2 chns E enter meadow w/ As.

on E slope still nice LPP (✓ photo)

on photo

LPP just N

of meadow



Area Crystal Mtn

Stand

Plot Page 1

BAF 20

BA

JL / MH

7-23-98

Species	DBH	Ht.	DMR	Remarks
① LLP ✓ ↓ std 16	5.5 8.6 10.1 10.6 8.5 5.9	20 23 23 30 20 30	5 4 dead 4 dead 87 yrs. 5	Aspect: S Slope 16 near ridge top (very exposed) - barberry - Lupine No regn.
2 LLP ✓ ↓ std 16	8.5 7.3 7.6 6.2 6.9	31 25 30 25 25	5 4 4 5 5	Aspect: S Slope: 13% - yellow flower - grass - Common juniper - barberry near small rock outcrop 1 tree < 4"
3 LLP ✓ ↓ std 16	5.6 10.3 9.2 10.1	25 30 34 30	3 4 3 6	Aspect: E slope 10% barberry Lupine 1 LLP Regn 2: < 4"

\* Stand 16 near NW 1/4  
east of road / west of rock

std. 1



stal 16 W of Rd  
head S off N line.



BAF 20

BA

54/mH

7-23-98

Species	DBH	Ht.	DMR	Remarks
① LLP	4.7	23	3	Aspect: S
✓	5.1	20	3	Slope: 15%
Std 17	8.4	35	4	Common juniper
	5.5	25	4	yellow flower
	8.8	40	3	no regen
	6.9	30	3	"2: < 4"
	4.4	20	3	
	5.4	30	3	
	5.8	30	3	
				Last 10: < 1/4
				Best 10: 1 1/4
② LLP	6.1	34	4	Aspect: SE
ZLP ✓	6.9	34	3	Slope: 18%
LLP	7.3	34	3	Regen: 8 Aspen
LLP	6.7	25	2	sp-outs
Aspen	6.3	35		heavily browsed
Aspen	5.0	30		Edge of Aspen Stand
Std 17				
③ Aspen	7.1	Aspen Stand		Aspect: SW
	6.8	34		Slope: 15%
	6.9	30		2 spruce regen
	8.5	34		- juniper
	6.0	34		- bareberry
	7.3	30		- aster
	5.4	30		- paintbrush
	7.5	34		- (regime)
	7.2	35		large Pondo
	8.4	35		just outside plot
	7.1	30		
19				



Area

Stand

Plot Page 3

BAF

BA

54/11/11

Species

DBH

Ht.

DMR

Remarks

(3) 4P

Sd

17

(200)

6.1

35

2

8.0

45

2

10.0

40

2

5.1

35

3

6.0

30

2

6.0

25

3

5.2

35

2

4.1

35

dead

4.2

25

0

9.3

45

0

5.9

25

dead

6.3

35

0

6.8

35

4

9.2

50

2

5.7

30

dead

5.5

30

dead

Aspect: E  
Slope: 15%-16 aspen  
regeneration sprout-rose  
-grass

(4) 4P

Sd

17

(200)

6.8

44

3

6.2

35

3

5.6

35

2

7.2

40

2

6.7

30

2

5.4

30

3

7.1

35

3

8.0

45

2

4.5

35

2

5.8

30

3

SE: Aspect  
19% slope

-rose

No regen

R: &lt; 4"

(5) 4P

Sd

17

Age 95 yr

11" BCL  
2" 1/4 LAST

(200)

\* 7.1

44

0

6.8

50

0

7.7

55

0

7.6

50

0

5.8

45

0

8.6

50

0

6.1

40

0

6.3

45

0

6.8

45

0

6.3

45

0

SE: Aspect  
15%

No Regen

grass

rose

yellow flower

mystery



Area Crystal Mtn Stand

Plot

BAF 20

JL / MH

BA

7-23-98

After Lunch

Species	DBH	Ht.	DMR	Remarks
① LLP ✓	5.1	40	2	(Finger Branch)
Std ✓	5.2	40		(Road's W end)
<del>Std</del>	8.2	50		2 chns e. of
<del>Std</del>	8.4	50		rock
<del>Std</del>	11.1	50		SE: aspect
<del>Std</del>	7.0	45		13% slope
<del>Std</del>	8.9	48	104 yrs.	11 aspen sprouts
<del>Std</del>	5.7	35		2 = < 4" LLP
18	9.6	50		3.3" last ten yrs
	10.2	50		1 1/2" best 10 yrs
20	9.1	45		
	8.9	45		
	6.4	35		
	7.0	40		
① LLP ✓	9.2	45	0	Aspect SE
	15.5	60		Slope 14%
①	8.0	45		small Pando just
	6.0	30		outside plot
	8.1	35		- Lupin
	10.9	40		- common juniper
	13.2	45		14 aspen sprouts
18	10.9	35		3: < 4" LLP's
				- mystery
				- hawberry
				- yellow flower
② PP ✓	13.5	35	0	Aspect: S
LLP	11.0	40		Slope: 18%
LLP	8.5	35		- Lupine
LLP	11.4	40		- Rocky Mtn Maple
				- mystery
				12 Aspen Sprouts

Std. 18



Area \_\_\_\_\_

Stand \_\_\_\_\_

Plot \_\_\_\_\_

BAF \_\_\_\_\_

BA \_\_\_\_\_

Species

DBH

Ht.

DMR

Remarks

④ ✓

5.4

30

0

S: Aspects

13.0

65

14% slope

11.0

60

9.4

45

13 Aspen  
sprouts

12.5

55

- hysterical

10.5

55

- common juniper

10.3

45

- grass

10.1

45

- Spruce & aspen  
pools in area

10.1

52

13.8

52

200

edge of new std near  
creek mix spruce fir ahead.Std  
18



Area

Stand

Plot

BAF

20

Crystal

BA

JL

7-27-98

Species

DBH

Ht.

DMR

Remarks

STD  
20

①

Aspen along Rd. (west side)

AS — 8.4 — 30'

AS — 5.3 — 25'

AS — 9.7 — 40'

AS — 10.5 — 40'

\* AS — 10.0 — 30'

under =

com. Juniper  
 pt. Brush  
 Rose  
 grass / forbs  
 Bitter Bush

\* Ag = 85

DEAD

As = SE

slp = 15%

Regen = 3 Aspen  
w/ Browse

Adj to

plot: PP + ES regen

②

std  
20

LPP — 14.0 — 55'

AS — 10.4 — 48'

AS — 8.7 — 45'

AS — 10.2 — 48'

AS — 9.9 — 45'

AS — 10.7 — 50'

regen = 2 ES

1 AS

Fire

Ring

(on NE Edge  
of std #10)

As = S

slp = 10%

under =

grass

forbs

Lupine

pt. Brush

Aster

common Juniper

Rose

Std 20



Std 20 - E side of Rd

(3) AS - 8.2 - 55' - Thick ground cover

AS - 7.0 - 45' - Dead

AS - 7.8 - 40' - Dead A = S

AS - 9.1 - 50' - Dead S = 5%

AS - 8.2 - 45' - Dead under = same

AS - 9.3 - 55' regen @ AS

Trees < 4" = 2 ES

(Lg Rock outcrop on W side Rd) photo

(4) Plot on E side Rd just N of meadow & main Rd

AS - 9.3 - 40'

- 7.2 - 35' - Dead

- 10.1 - 45'

- 8.2 - 40'

- 8.4 - 40'

- 9.4 - 35'

- 7.9 - 30' - Dead

- 9.9 - 40'

- 8.1 - 30' - Dead

- 7.5 - 30'

- 8.0 - 35'

Slope - 13%

Asp - S

Regen - 11 ES

under = grass / forbs / rose / pt. brush  
Clover  
corn juniper  
Lupine

Age = 100





Area Crystal

Stand \_\_\_\_\_

Plot \_\_\_\_\_

BAF 20

BA \_\_\_\_\_

7-13-98

Afternoon

Species

DBH

Ht.

DMR

Remarks

① LLP

8.2

53

105 yrs

Island N of Creek  
E of Rock

7.7

53

5.6

40

9.5

53

S. aspect  
8% slope

5.6

40

8.2

50

9.2

50

3: < 4" in 1/100  
acre

7.3

50

5.4

40

8.6

50

10.7

60

No Regen

9.6

50

Best 10 yrs 1 5/8"

9.7

50

Last 10 yrs. &lt; 1/4"

8.0

50

② LLP

4.4

25

0

No Regen

7.2

50

SE Aspect

8.6

50

12% slope

8.7

53

Grasses present

9.1

53

Some windthrow  
= more fuel  
buildup

5.9

40

9.0

50

5.6

30

7.3

45

along roads  
thru islands =  
more scattered  
LLP w/ Aspen  
spruce  
Ponds

Std 22

Std 3

~~std 23 3 oaks of Rd 728~~

~~std 22 (2 oaks 2 p.d.s)~~  
~~std 22 (E side)~~

DBH HT BMT

① LPP — 13.6\* — 60' — 2

10.9 — 40' — 2

12.3 — 55' — 2

7.5 — 45' — 2

10.1 — 55' — 2

10.6 — 50' — 2

10.0 — 45' — 2

14.5 — 50' — 2

13.7 — 60' — 2

5.1 — 25' — 2

12.0 — 45' — 2

std 22  
E side

BA =  
210

~~std 23~~  
Barn  
Rd 28

\* Age = 96 - (great growth rate!) under = grass  
comp. Juniper

slope - 18%

Bearberry

Azp - SE

Trees < 4" = 3 LPP

Regen = 8 AS

Best 10 = 1 1/2"

last 10 = 1/2"

This std is spaced out



Area crystal mtn Stand            Plot           BAF 20BA 12

Species	DBH	Ht.	DMR	Remarks
LPP	5.6	35	3	Age = E
Std. ①	4.1	20	Dead	Slp = 23
23	*7.2	40	4	Regen ES-I
	5.6	35	2	AS-III
	4.5	20	5	
	6.8	40	4	* Age = 103
	7.3	45	3	
	9.8	45	Dead	
Trees < 4" = 4 LPP				under-juniper patches grass
(2) W H LPS				sparse forbs
X old rd @ 3 chgs				needles
filling w/ LPP regen				Buffaloberry
on E side of rd Doghair LPP				Bearberry
This plot is in a cut area/ old				
stumps & pt cans				
LPP	6.5	23	4	Slp = 8%
LPP	7.7	40	6	Age = E
Trees < 4" = 4 LPP				Regen = 11 LPP
				(Heavy OMT AREA)
				under =
				Lupine
				Bearberry
				Juniper
				Rose

Std 23

(OVER)

Std 23

x thru aspen regen, Now in nicer LPP std.

③ LPP - \*



7.6 — 40 — 3  
8.4 — 45 — 2  
8.3 — 35' — 2  
8.4 — 40' — 3  
7.5 — 45' — 3  
5.8 — 35' — 2  
5.9 — 42' — 2

Slp — 13%

Asp — SE

regen —  $\emptyset$

under =

Juniper

Bearberry

Rose / Buffalo berry

\* Age = 100

Trees L411 =  $\emptyset$

Aspen mixed in (pkts of regen too)

④ LPP -

Std  
23

7.9 — 44' —  $\emptyset$   
9.4 — 40' —  $\emptyset$   
8.0 — 40' —  $\emptyset$   
11.5 — 40' —  $\emptyset$   
11.7 — 40' —  $\emptyset$   
11.7 — 45 —  $\emptyset$   
9.9 — 50 —  $\emptyset$   
9.4 — 50 —  $\emptyset$

Slp = 15%

Asp = S

regen =  $\emptyset$

under =

Sparse!

Juniper

Bearberry

patch grass

@ Lg Rock Outcrop (photo)

Up on Rock walking N — Std w of Rock  
is smaller diam / shorter Ht Dense — do not  
include w/ Std # 23

Scattered PP along E edge of rock.



③

Area cm

Stand           

Plot           

BAF 20

7-29-98

BA           

0

Species	DBH	Ht.	DMR	Remarks
Riparian area: southern creek				
Just off south line				
LPP	15.7	72'	0	Slope = 18%
AS	7.2	50'		Asp = NE
AS	7.6	50'		Regen 2.3
AS	11.9	60'		under golden banner
ES	13.2	35'		3 Erbs
LPP	10.3	50'	0	Aster
LPP	9.8	50'	seed	
ES	15.0	70'		

7  
141

std. 20

Area Crustal Mtn Stand JL Plot 7-27-98  
BAF 20 BA

Species	DBH	Ht.	DMR	Remarks
std 23	walk N on back row	head E to rd		A - SE
⑤ LPP	8.0	40	2	S - 20
	6.7	40	3	Regen - 4
	5.5	30	2	under -
	7.6	45	0	sparse
	9.4	50	0	Buffalo:
	9.3	40	2	Bearberry
	6.7	35	4	
	6.5	40	4	
Nice std				
⑥	E 4 chs	@ 2 chs		cut area
plot	Falls in Regen	Area has been cut		Heavy DMT
LPP	4.8	25	4	in LPP
	8.9	30	4	Asp = 200%
				SLP = E
Regen =	LPP = 10			under - Thick
AS = 7				grass / Rose
				Bear
				Lupine
				Grass
⑦	X Rd @ 1 1/2 chs			
X	thin sparse std @ 3 chs			Big trees

(over)

std 23  
std 24



x24

NEW

Std

⑦ Plot on Edge of open area

LPP — 6.1 — 40' — Dead  
 \* LPP — 13.0 — 65' —  $\emptyset$   
 LPP — 13.7 — 65' —  $\emptyset$   
 ES — 21.5 — ~~100'~~ 90  
 ES — 14.1 — 60  
 ES — 23.0 — ~~105'~~ 90'

Slope — 10%

Asp — E

Region = 3ES

Trees L4" = 1ES

Big Spruce

under =

grass

Ferns

Blue pt on LPP

\* Azr = 110

Best — 1 1/5"

Last — 2/5th "

Ht Rd in 2 1/2 chrs on  
 Edge of meadow

Area \_\_\_\_\_

Stand \_\_\_\_\_

Plot \_\_\_\_\_

BAF \_\_\_\_\_

BA \_\_\_\_\_

Species	DBH	Ht.	DMR	Remarks
<del>Riparian</del>				
LPP	14.8	60	φ	Aspect E
SP	7.5	35		70%
SP	8.0	30		Geranium
AS	10.3	50		G. Bannock
SP	12.8	30		Monkshead
AS	8.9	40		Sap Sp III
AS	13.2	40		Reg Sp IIII
AS	9.9	40		Rose
SP	8.8	30		G. Bannock
SP	18.5	60		mes
				fern
				Hemlock/Pasque
				Yarrow
				Harbell
				Thistle



AS	16.4	55
11	15.4	50
10	11.6	40
11	14.6	55
11	13.1	40
11	11.8	40
SP	13.6	30

after  
close  
thistle

Aspect E  
6%

Area

CM

Stand

31

Plot

Page 3

BAF

20

BA

JL + MH

8-4-98

Species

DBH

Ht.

DMB

Remarks

LLP

6.3

35

3

North  
1.8%

Aspen

6.1

30

Spruce

11.5

50

X LLP

8.1

43

Spruce

8.4

43

LLP

4.4

30

Spruce

6.4

30

Spruce

6.6

30

LLP

11.1

40

Dead top

X Age = 82

5 LLP - 4411

Regen

ES = 1

AS = 9

under

Bearberry

X SF

10.3

53

SF

8.3

45

Aspen

5.7

40

SF

8.4

30

Aspen

6.4

25

Spruce

8.6

40

SF

11.4

53

Spruce

12.4

50

Spruce

12.1

60

X Age = 82

SIP 18

Asp = NW

Avg 10 yr = 1/2"

(Pretty Good Growth)

4 spruce &lt; 4"

4 f.f. Regen

-Buffaloberry

-Lupine

-Barberry

Riparian @

N. end of Std  
#32



Area nmStand J<sub>2</sub> BAPlot ①BAF 20

BA

7-29-98

Species	DBH	Ht.	DMR	Remarks
---------	-----	-----	-----	---------

Start @ Rd W. of Quarry

Quarry

@ Split

N 2 chns - Run line

inc

4x4

W to W line

① LPP

\*7.0 — 40'

5.2 — 35'

4.3 — 30'

6.0 — 35'

6.3 — 40'

5.4 — 35'

4.6 — 30'

6.3 — 35'

4.9 — 30'

5.2 — 30'

5.6 — 30'

4

Slope - 9%

Asp - (NE)

regen -  $\emptyset$ 

under-

common juniper

Trees  $> 4" = 4$   
LPP

\* Age = 105

Best 3/5m

last  $< 1/4$ 

② Head W 4 chns - plot lands

on road

go 4 more chns

5.2 — 30'

5.1 — 30'

4.4 — 25'

5.1 — 30'

4.7 — 30'

4.6 — 25'

3

SIP - 15%

Asp - E

regen -  $\emptyset$  $> 4" = 10$  LPP

under-juniper

Rose (sparse)

③ W 4 chns X mm dog hair on ridge

This plot adj to Lg Rock outcrop

LPP — 5.9 — 30'

— 7.4 — 30'

— 8.6 — 40'

— 7.6 — 35'

— 6.7 — 35'

— 6.3 — 30'

— 6.7 — 30'

— 4.8 — 25'

— 5.5 — 30'

4

Dead

Std. 29

(OVER plot continues)

LPP-8.5-30 — 4

SIP SE  
Asp 22%  
regen  $\phi$

trees  $< 4'' = 6$  LPP

④ plot on rock outcrop

LPP Doghair adj

74" trees 20+

Regen  $\phi$  slope 27%

grnd  $\phi$  asp SE (28)

⑤ LPP-8.5\* — 45' — 2

6.9 — 45' —

7.8 — 35' —

5.4 — 30' —

6.0 — 30' —

8.1 — 25' — (dead top)

5.7 — 30' —

7.1 — 35' —

4.5 — 30' —

7.8 — 30' —

5.2 — 30' —

SIP = 18%

Asp = SE

regen = 0

under =  
Bearberry  
sparse

trees  $< 4'' = 2$  LPP

\* Age = 110

Best = 1 1/4"

last = 2 1/4"

(28)

⑥ skip one plot go 4 more chns.

LPP-8.9 — 25' (Bkn top) — 2

7.4 — 35' —

8.4 — 30' —

6.1 — 30' —

9.6 — 40' —

7.9 — 35' —

SIP = 10%

Asp = SE

regen =  $\phi$

under = Bearberry  
sparse

trees  $< 4'' =$

2 LPP

(28)



Area NMStand JLPlot (2)BAF 20BA 7-29-98

Species	DBH	Ht.	DMR	Remarks
(Skip plot)		(Skip)	another	plot - Ridge top, exposed area - Spruce Limber pine LPP - Heavy DM
		Skip another, still on ridge	Exposed LPP - Poor quality trees	
<p>⑦ Passed thru Dog hair LPP w/ 5-6 DMR</p> <p>This plot is just S of Road. (✓ photo)</p>				
LPP	5.3	35'	510	
	5.5	30'		
	5.0	30'		
	5.1	25'		
	4.7	30'		
	4.1	25' - dead		
	4.1	35'		
	4.8	25'		
	5.0	30'		
			In trunks of trees	* Age 110 Best = 314" Last = 214"
				Slp - 5 Asp - 80° regen - 0 under = 0 Trees L411 = 4 LPP
⑧ (Skip plot)		Still in Heavy DM		
		X Rd again Rd Running N/S @ pt.		
(Skip plot)				

Area 20 cm Stand IL/MB Plot 8-1-98  
 BAF 20 BA IL/MB

Species	DBH	Ht.	DMR	Remarks
As	7.9	Lean/Died		Riparian
SP	7.2	40		
Std #	11.4	60		Fungi
<del>SP</del>	6.7D	40		10% NE
29	10.3	50		
	10.2	50		
	7.7	40		≤ 4" F-11
LP	11.4	50		
				Sparsely Ground Cover
SP	13.8	60		
	9.9	50		
	9.8	50		
	12.9	60		
	11.8	50		
	11.5	50		
	6.4	30		
Fv	12.2	60		

Std. 29

||||| ||||| ||||| ||||| ||



(2)

As	7.8	30
"	7.9	30
<del>5.0</del> 29	7.5	35

0  
|  
Sap SPB 14  
NE 8%

SP	26.8	30
"	26.5	80

Broken top

As	6.0	30	D	6
"	7.9			

currant  
oaccinium  
herbs  
fungi  
fern  
rose

(3)

LP	4.7	35
	5.1	}
<del>5.0</del> 29	7.0	
	7.3	
	5.8	
	7.0	
	6.4	
	4.8	—

0

~

NE  
10%

Age 110

Regen  
Fizl

Area Crystal Mtn

Stand

Enter 27

Plot

BAF

20

BA

JL-MH

T-28-198

Species

DBH

Ht.

DMR

Remarks

Std 20

Spruce

10.6

35'

11

12.4

45'

11

15.8

55'

11

21.5

70'

11

22.8

70'

Riparian Area

Lots of Alder

Willow

Aspen

Creek is within 15'

1: spruce regen

Lots outside plot

Wichita South of Riparian Area

LLP

6.1

40

9.8

50

105 yrs.

6.0

35

6.0

35

6.0

35

6.0

40

6.8

40

8.0

40

7.9

45

5.0

30

7.4

40

18% Slope

N Aspect

Some Aspen in Area

- 6 Aspen Sprout Regen

- with 30' of dry trib. to creek

- 3 &lt; 4" LLP

- Lots of dead &lt; 4" LLP

- rose

LLP

5.6

42

9.0

45

4.4

35

7.4

42

6.2

40

6.5

40

4.4

30

5.5

35

7.6

45

23% Slope

N Aspect

Common Juniper

1 sub-fir regen

1 Elderberry

5: &lt; 4" LLP

CHECK W/ DAVE

Std. 27

Std. 26



Area

Stand

Plot

BAF

BA

7-28-98 Page 4-3

Species	DBH	8chns Ht.	DMR	Remarks
⑤ LLP ✓ 27	5.8 4.8 5.1 6.2 4.4 4.0 4.7 4.8	New Line 6' id 33 30 30 30 25 20 20 25	2 109 yrs.	N Aspect 18% Slope 7 LLP < 4" 1 sub-fir sapling 1 sub-fir regen did not start at West boundary line
⑥ LLP ✓ 27	6.3 7.2 6.4 6.8 7.2 6.9 9.4 4.6 4.2 7.0 7.0 4.6	40 50 40 35 40 40 40 30 40 45 40 40	3	15% Slope N Aspect -Rosc 2 spruce } Regen 1 Aspen } 1 sub-fir } 5 spruce } < 4" 4 LLP } skipped 1 between plots Saw 2 Dougfir + 1 Limber Pine
⑦ LLP ✓ LLP ✓ Aspen LLP	7.2 8.9 6.4 8.5 dead 7.9 6.9 7.7 6.0 5.6 6.1 7.2	37 40 35 35 45 45 40 40 35 35 35	3	-18% slope N. Aspect -blackberry -dead Aspen -1 Aspen regen 1 LLP < 4"

Area

Stand

Plot

Page 2

BAF

BA

Species

DBH

Ht.

DMR

Remarks

L4P

6.1

45'

2

9% Slope  
N. Aspect

✓

7.6

45

Spruce + Fir Saplings  
in Area

5.8

6.2

35

5.7

7.7

45

7.2

5.7

40

8 Fir } Regen  
8 Aspen }

Aspen

4.7

dead 30

45

7.3

7.3

45

4 spruce < 4"  
2 LLPBunch of small  
trees L4P

1 skinny

LPP near

Rock outcrops

Skipped 2 plots  
on 4 chrs

L4P

5.3

35

LLP

7.4

55

LLP

9.8

50

N. Aspect  
23 % Slope

Aspen

4.7

40

LPP

4.0

40

Common Juniper  
Rose  
Golden Banner  
Lupine

9.6

5.2

55

2 Aspen } Regen  
1 spruce }

5.0

8.6

50

8.1

8.8

55

2 LLP &lt; 4"

10.0

7.8

50

7.8

7.8

50



66  
+12  
132  
660  
792

66  
116  
276  
556  
1032



Area Crystal mtn Stand            Plot           BAF 20BA           

7-28-98 Page 4

Species	DBH	Ht.	DMR	Remarks
Skipped 2 plots				
① LLP	* 5.7	36'	4 AVE	13% Slope
↓	6.0	40'		N Aspect
✓	4.2	35'		Regen = 9 Aspen
	4.9	35'		* 94 Age
	5.1 dead	30'		under =
	4.9	30'		green plant
	5.3	30'		Blueberry
Aspen	5.0 dead	25'		4 trees < 4"
LLP	7.0	40'		
T	8.4	35'		
I	4.3	30'		
Next Plot near cut and spur road that leads to cut				
0	18 8			
2				
2				
2				
4				
2				
2				
3				
3				

Area cmStand           Plot ①BAF 20BA 8-3-98

Species

DBH

Ht.

DMR

Remarks

Rd @ Quarry E of Main Rd - In 3 chns  
 Regent SE 4 x 4  
 (1) SD 30  
 LPP 7.8 25' 4  
 4.8 20' 5  
 5.2 25' 5  
 ASP = SE  
 SLP = 18%  
 Regen = 0  
 Under =  
 Bearberry  
 Juniper  
 Trees L4" =

\* Age = 105

PLAN HEAD NE

Rd @ Quarry E of

main rd.)

SLP - 13%

regen - 0

ASP - W

under - nom. Juniper

8 trees L4" =

Note: Rock outcrops

(DMT ON TRUNK OF TREES)

NE 4 chs

4.2 20' 6

4.7 25' 5

4.3 20' 5

ASP = E

SLP = 12%

Regen = 0

under = 0

L4" = 14

7.1 25' 5

6.3 30' 4

7.0 30' 4

4.9 20' 6

ASP = SW

SLP = 5

regen = 0

under =

Bearberry  
Juniper  
Rose

Trees L4" = 2

(High DMT AREA)

\* Age = 100 <sup>test = 1/2"</sup> <sub>last = 2 1/5"</sub>



	SP	DBH	HT	DMT	Remarks
④	LPP	6.5	30'	5	Asp = W Slp = 80%
		8.2	30'	4	regen = 0
		7.4	25'	4	under =
		6.5	25'	5	Bearberry
		5.8	25'	Dead	patch of grass
		6.1	30'	6	Trees < 4" = 2
		5.3	25'	5	
		5.6	30'	5	
		7.7	30'	4	

Trees are  
Spaced better  
Lgr diam.

⑤	LPP	7.0	33'	4	Slp = E
		5.9	35'	4	Asp = 100%
		9.4	30'		regen = 0
		6.0	25'		under =
		6.1	35'		Bearberry
		9.0	30'		< 4" = 1
		9.8	30'		

Head out to Rd.

Area Crystal Mtn

Stand

Plot

BAF 20

BA JL

7/10/98

Species	DBH	Ht.	DMR	Remarks
⑥ LPP	4.6	25'	0	Asp - SE Slp - 15-20% Regen - $\emptyset$ und - w. moss sparse trees > 4" = 6
LPP	4.8	30'	0	
LPP	6.3	30'	0	
LPP	4.8	25'	0	
LPP	4.6	30'	3	
std 30				Rock outcrops
⑦ Doghair	std	20-25'	> 4" diam	Asp - SE Slp - 15-20% und - $\emptyset$ Regen - $\emptyset$ trees > 4" + 20
LPP	DMT present	→	4-5	
Cored tree - tight rings - at least 80 yrs				
Rock outcrops				
⑧ 20'	> 4" LPP	std 30		Asp S Slope - 5-8% und - $\emptyset$ Regen - $\emptyset$ trees > 4" + 20
ground levels out				
No signs of DMT fruiting bodies but w. broom evident				
⑨ X Rd @ (Yellow flag)	2 chns	from plot #9	std 30	

Std. 30



CrystalMtnRecordsDon Hass

1997 - 75 trees @ 650/tree  
1996 - 100 trees @ 625/tree  
1995 - 100 trees @ 525/tree  
1994 - 100 trees @ 525/tree  
1992 - 200 trees @ 450/tree

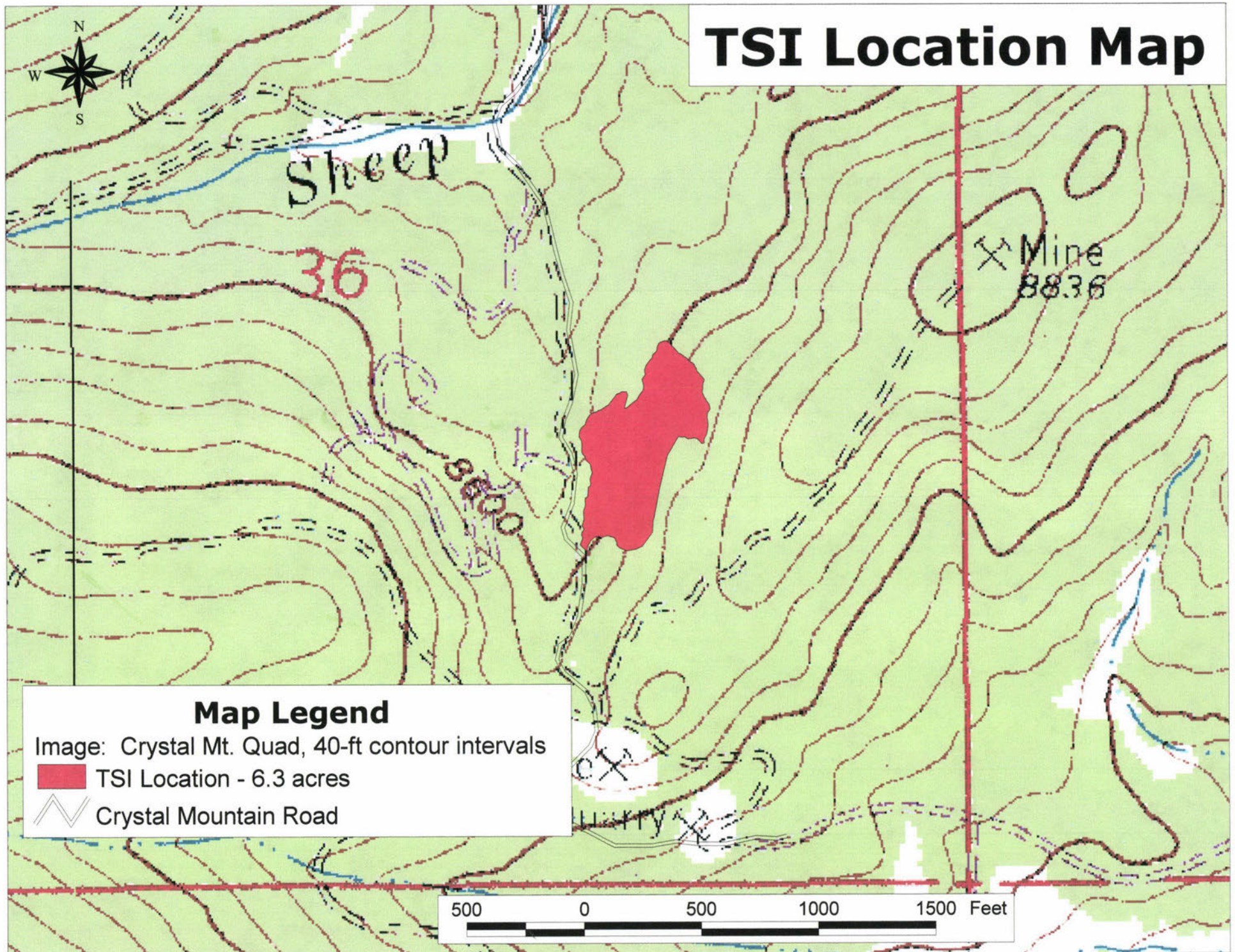
George Herish

1993 (Apr 1) 25 Aspen @ 360/tree  
LPP, ES, PP / 25 3-6' @ 440/tree  
                  \ 50 1-2' @ 100/tree

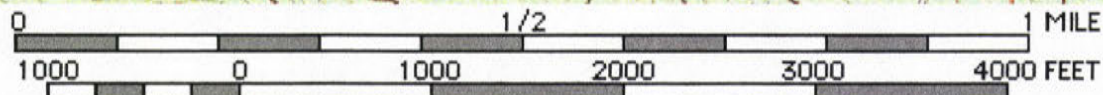
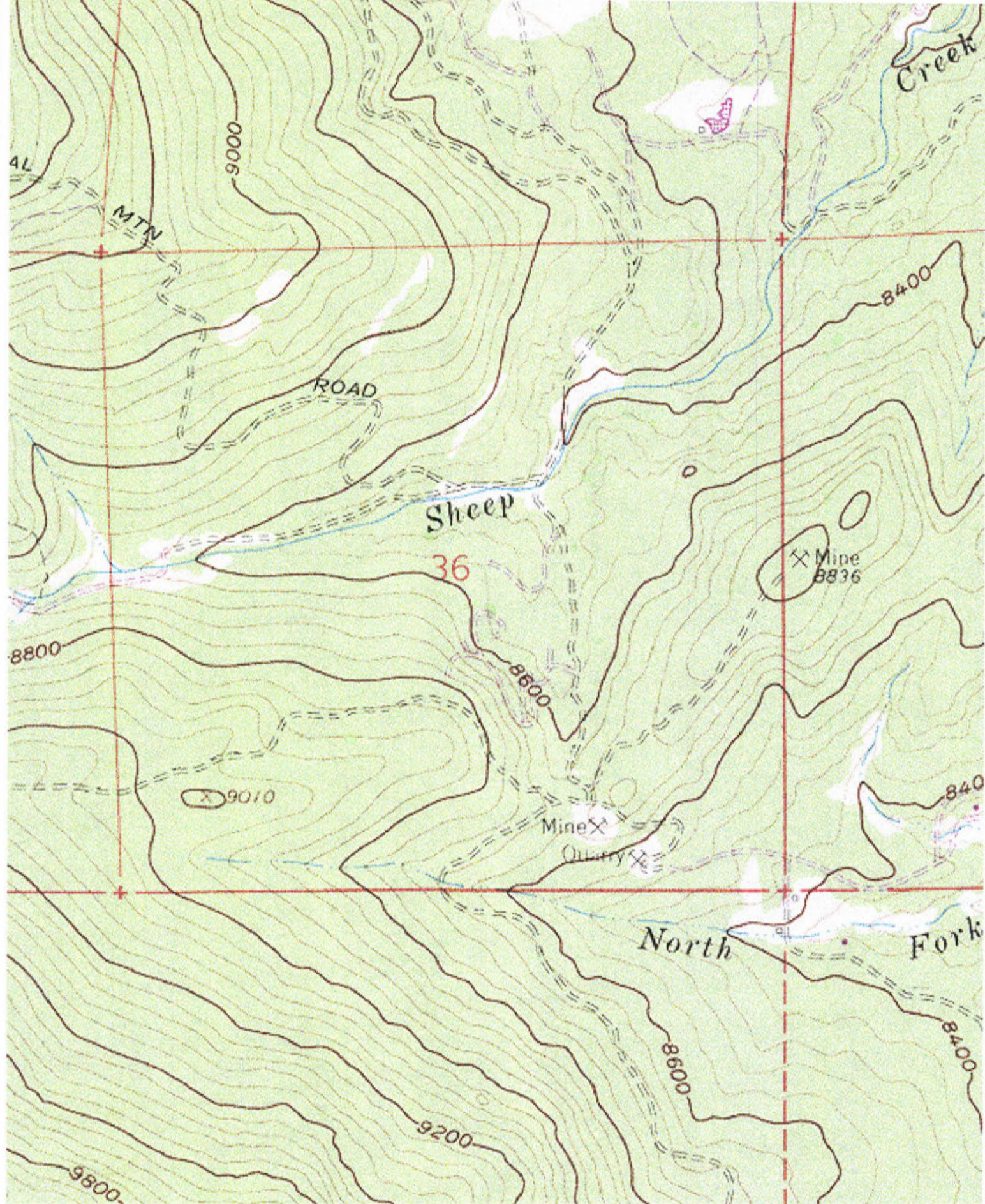
1993 (Jan) 50 Aspen @ 360/tree



# TSI Location Map







Printed from TOPO! ©1997 Wildflower Productions ([www.topo.com](http://www.topo.com))







# **FOREST STEWARDSHIP PLAN**

**For  
The Crystal Mountain Section**

## **Property Legal Description:**

**360 acres in Section 36  
Township 7 North, Range 72 West  
6th Principal Meridian  
Larimer County, Colorado**

**Prepared by:  
Jennifer Langen  
Fort Collins District  
Colorado State Forest Service  
Foothills Campus, Building #1052, CSU  
Fort Collins, Colorado 80523  
970-491-8660**

**July, 1998**

## Table of Contents

Purpose of the Plan .....	1
Objectives .....	1
General Property Description	
Location .....	2
Topography .....	2
Roads .....	5
Climate .....	5
Land Use .....	5
Resource Inventory	
Insects & Disease .....	6
Wildlife .....	6
Soils .....	7
Wildfire Hazards .....	7
Management Units: Descriptions and Recommendations .....	9
Management Recommendations .....	11
Management Unit Breakdown	
Management Unit 1 .....	13
Management Unit 2 .....	14
Management Unit 3 .....	15
Management Unit 4 .....	15
Management Unit 5 .....	16
Management Unit 6 .....	17
Management Unit 7 .....	18
Management Unit 8 .....	18
Management Unit 9 .....	19
Management Unit 10 .....	20
Management Unit 11 .....	20
Management Unit 13 .....	21
Management Unit 14 .....	22
Management Unit 15 .....	23
Management Unit 16 .....	24
Management Unit 17 .....	25
Management Unit 18 .....	26
Management Unit 19 .....	27
Management Unit 20 .....	28
Management Unit 22 .....	39
Management Unit 23 .....	30



Management Unit 24 .....	31
Management Unit 26 .....	32
Management Unit 27 .....	33
Management Unit 28 .....	34
Management Unit 29 .....	35
Management Unit 30 .....	36
Management Unit 31 .....	37
Management Unit 32 .....	38
Management Unit 33 .....	39

Glossary .....	40
----------------	----

#### Appendix A: Inventory Data

#### Appendix B: Growing Stock Levels for Lodgepole pine

## **STATEMENT OF PURPOSE**

This section is presently under control of the State Land Board. Their purpose is to generate revenue from forest products for the states schools. They have asked the Colorado State Forest Service for assistance with timber related activities. Any forest management activity must be accomplished in a way that protects the productivity of the land and other forest resources. In order to simplify this plan the Crystal Mountain section will be called the "section" throughout this project.

## **GENERAL PROPERTY DESCRIPTION**

### **Location**

The Crystal Mountain section is located northwest of Masonville. From Masonville travel 10 ½ miles on 27 road (Buckhorn road) to 44H. Travel 8 ½ miles on 44H to Crystal Mountain road (FR 344). Travel approximately 2.5 miles on Crystal Mountain road to a fork in the road (Map 2). The east fork travels through gated private land and enters the section on the north end near the 1/4 mark from the northeast corner. The north line is 0.8 miles from the gate. The west fork runs parallel to the east fork through forest service land and is a rough 4x4 road.

Map 1 shows the general location for the Crystal Mountain section. Map 2 shows the two routes to access the section.

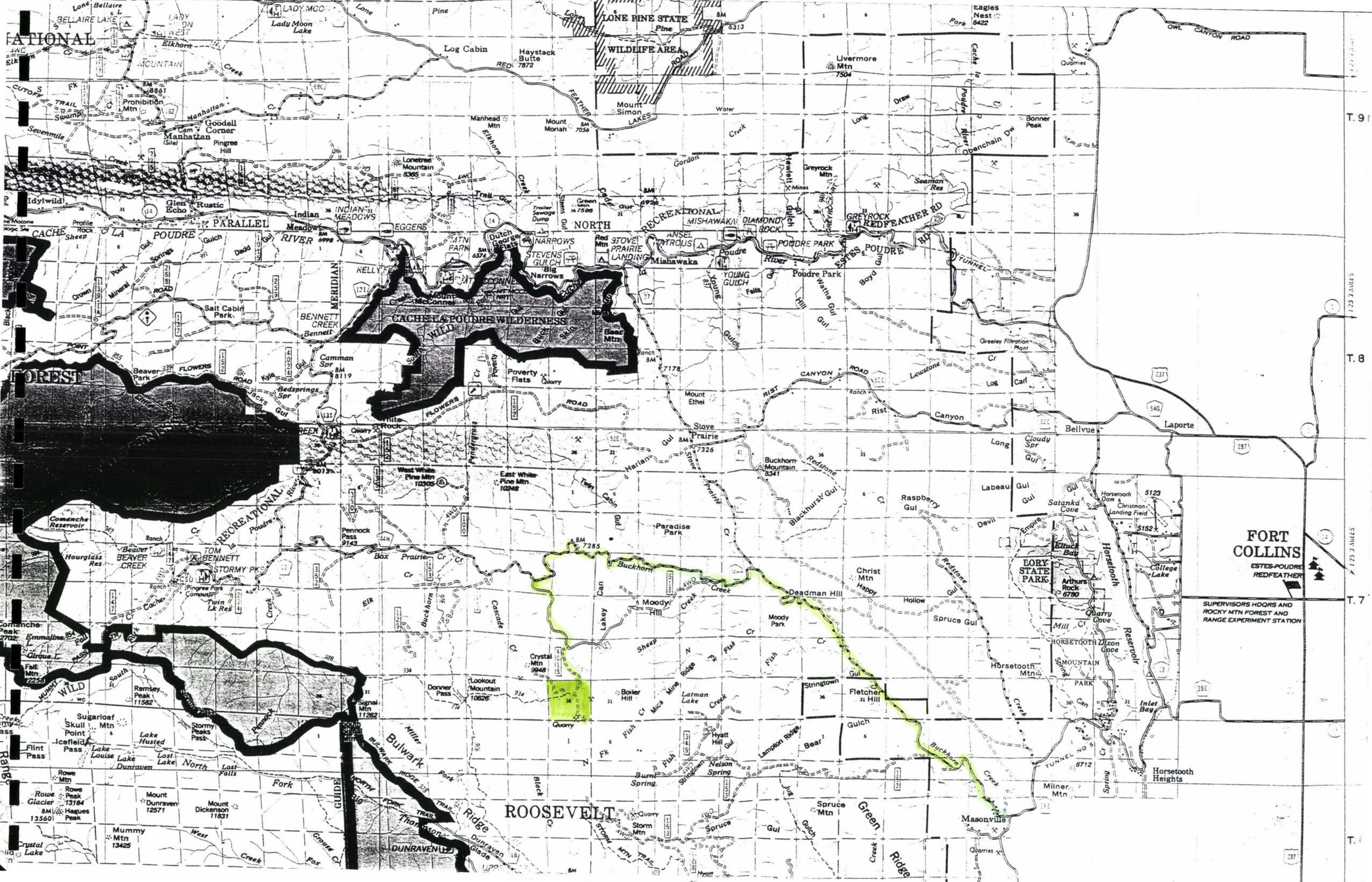
This section is located in the Roosevelt National Forest. It is bordered mainly by Forest Service land with private land to the east. A complete legal description is listed on the cover page of this plan.

### **Topography**

Slopes in the Crystal Mountain section range from nearly level to 28%. Elevations range from 9,200 feet at the highest point in the northwest corner to 8,280 feet at the lowest point where Sheep creek crosses the east line in the northeast corner (Map 3). Aspect varies throughout the section.

Two creeks flow through the section. Sheep Creek runs from the north east corner through the middle of the west line while the north fork of Fish creek skirts the southern line. Due to the available moisture, riparian zones are located within these areas. The riparian zones increase the diversity of the section allowing for a variety of tree species and ground cover. These areas are also beneficial for wildlife.

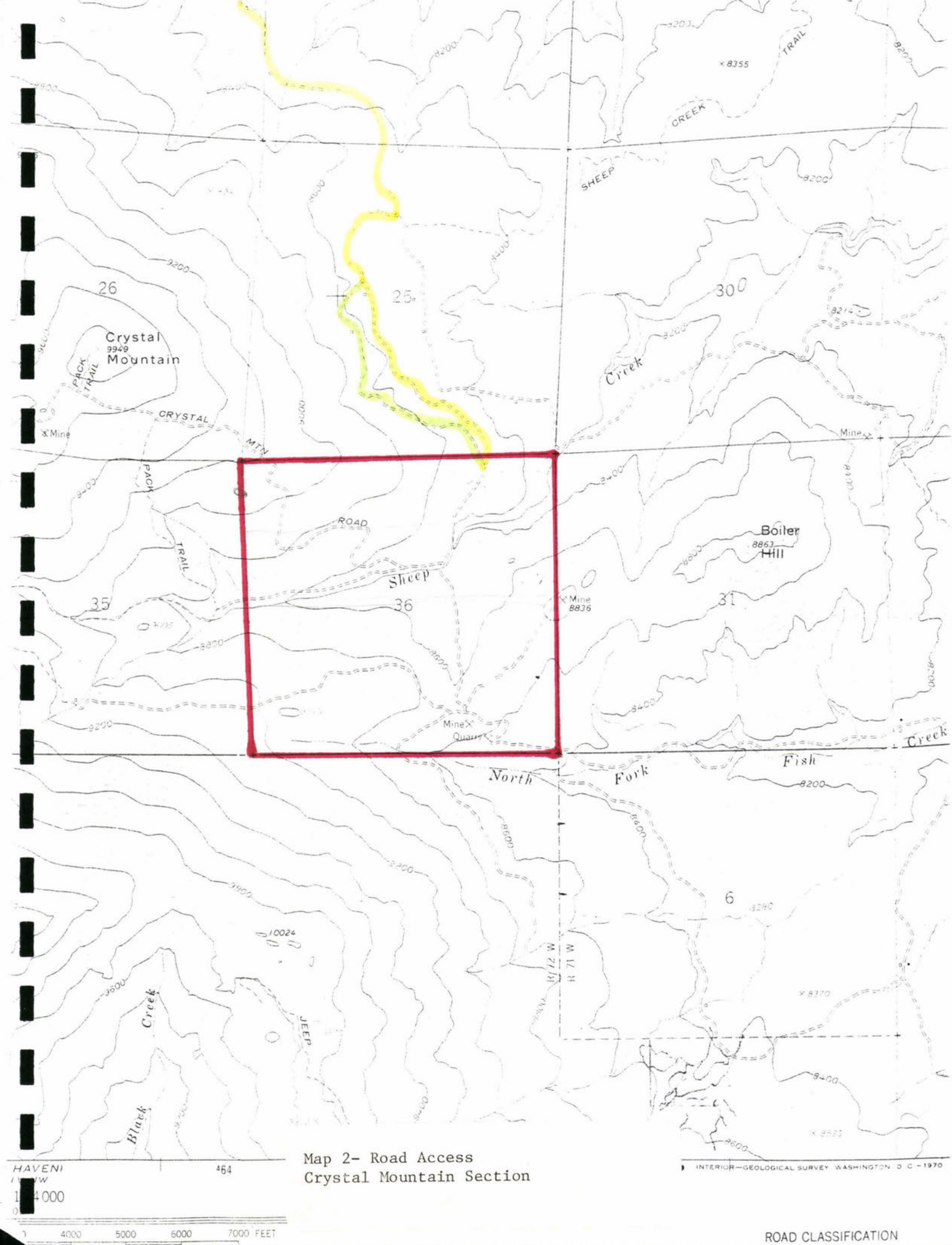






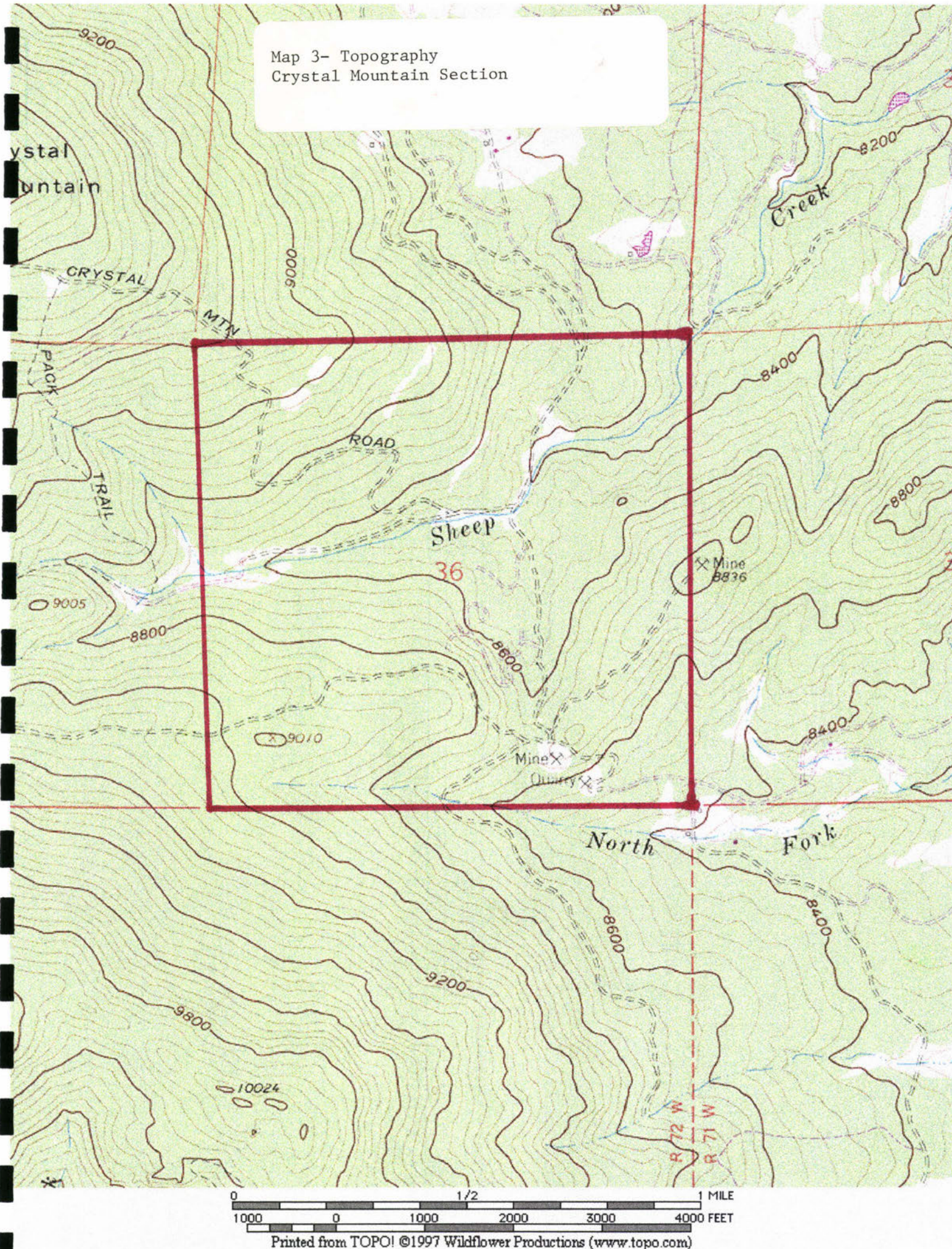
Map 1- General Location  
Crystal Mountain Section







Map 3- Topography  
Crystal Mountain Section





## **Roads**

A majority of the section is accessible by motor vehicle. This is due to the established roads and logging trails that run through the section. The easiest access into the section is the east fork off of Crystal Mountain Road which travels through private land.

## **Climate**

Climate in the Crystal Mountain section is typical of the Front Range foothills, with warm to hot summers and cold winters. Most of the 14 inches of annual precipitation falls as summer showers and thunderstorms. Snow can cover the ground for most of the winter. Chinook winds, which blow downslope and are dry and warm, often melt and evaporate the snow and increase fire danger.

In winter the average temperature is 29 degrees Fahrenheit and the average daily low is 17 degrees. Summer temperatures average 60 degrees, with an average daily high of 76 degrees, though temperatures above 90 are not uncommon.

Of the total precipitation, 10.5 inches, or 75 percent, generally falls during the period from April through September. Thunderstorms number about 44 each year, 24 of which occur in July and August. The average seasonal snowfall is about 48 inches. On the average, 18 days have at least 1 inch of snow on the ground, but the number of days varies greatly from year to year.

Average relative humidity in mid-afternoon in spring is about 35 percent, and during the rest of the year is about 42 percent. The average relative humidity at dawn is 75 percent.

## **Land Use**

The land around the section is rich in history. The area was created during a period of mountain building known as the Laramide Orogeny. Glaciers left evidence of their existence throughout the area, scouring the land with moraines and depressions.

Before recorded history, the Arapaho and Cheyenne Indians utilized the area for hunting and gathering wild plants. Fur trappers worked the local streams in search of pelts during the 1800's to 1850's. In the mid-1800's prospectors searched the streams for gold and other valuable minerals.

The section has history of timber activities. During the late-1800's lumberjacks who supplied ties to the railroad entered the region in search of suitable timber. It appears that some of the larger

and older timber was harvested at this time from the section. There is also evidence of logging at a later date. Old stumps can be found throughout several of the stands.

The section was probably involved with the large fires which burned most of the region in the 1890's. There are fire scars on many of the older trees. It is highly probable that there has been more recent smaller wildfires. In any case the section has a proven history of fire occurrence.

## **RESOURCE INVENTORY**

The variable plot cruising method was used to inventory forest resources. Twenty-four stands were delineated. The inventory gathered information on stand type, plot location, slope, aspect, ground cover, wildlife sign, fuel loading, insects and disease, and site index. Site tree information was determined as an indicator of land productivity. The field inventory is summarized in the management unit descriptions and in Appendix A.

### **Insect and Disease**

The primary problems that were observed during the inventory process were lodgepole pine dwarf mistletoe and blister rust. Levels of infection varied with cover type and topography.

### **Wildlife**

The Crystal Mountain section provides several types of "cover" and food sources for wildlife. In the commonly used sense, cover is something that protects an animal or bird from weather or its enemies, or provides places for it to rest, reproduce, and to raise its young. Cover on the section is provided by trees, shrubs, plants, geomorphic structures, and topographical features.

Recommendations for forest management activities within this document take into account the various species or groups of species found on the property and are intended to protect or enhance the existing cover. Recommendations address vertical as well as horizontal spatial arrangements of cover. For example, some species have rather demanding vertical cover requirements in terms of nesting, feeding, and roosting (squirrels, turkeys, hawks, eagles) as opposed to those that demand adequate cover for concealment from aerial predators (mice, ground squirrels, rabbits).

Birds common to the lodgepole pine ecosystem include: downy woodpeckers, northern flickers, nuthatches, mountain chickadees, humming birds, Stellar's jay, and dark-eyed junco. Elk, mule deer and coyote appear to be common. An elk was observed near the south line of the section and signs of deer were also noted.



## Soils

The Crystal Mountain section has not been surveyed for soil purposes. Therefore no soil information is available at this time.

## Wildfire Hazards

Wildfire hazard in the section varies from Low to Severe depending on the topography and the species (Map 4). These hazards are based on the expected fire behavior (refer to the following table), potential for crown fires, vegetation, and slope.

This property contains 64 acres of Hazard Class A, 127 acres of Hazard class B, 430 acres of Hazard class C, and 19 acres of Hazard Class X.

### Expected fire behavior of Wildfire Hazard Classes

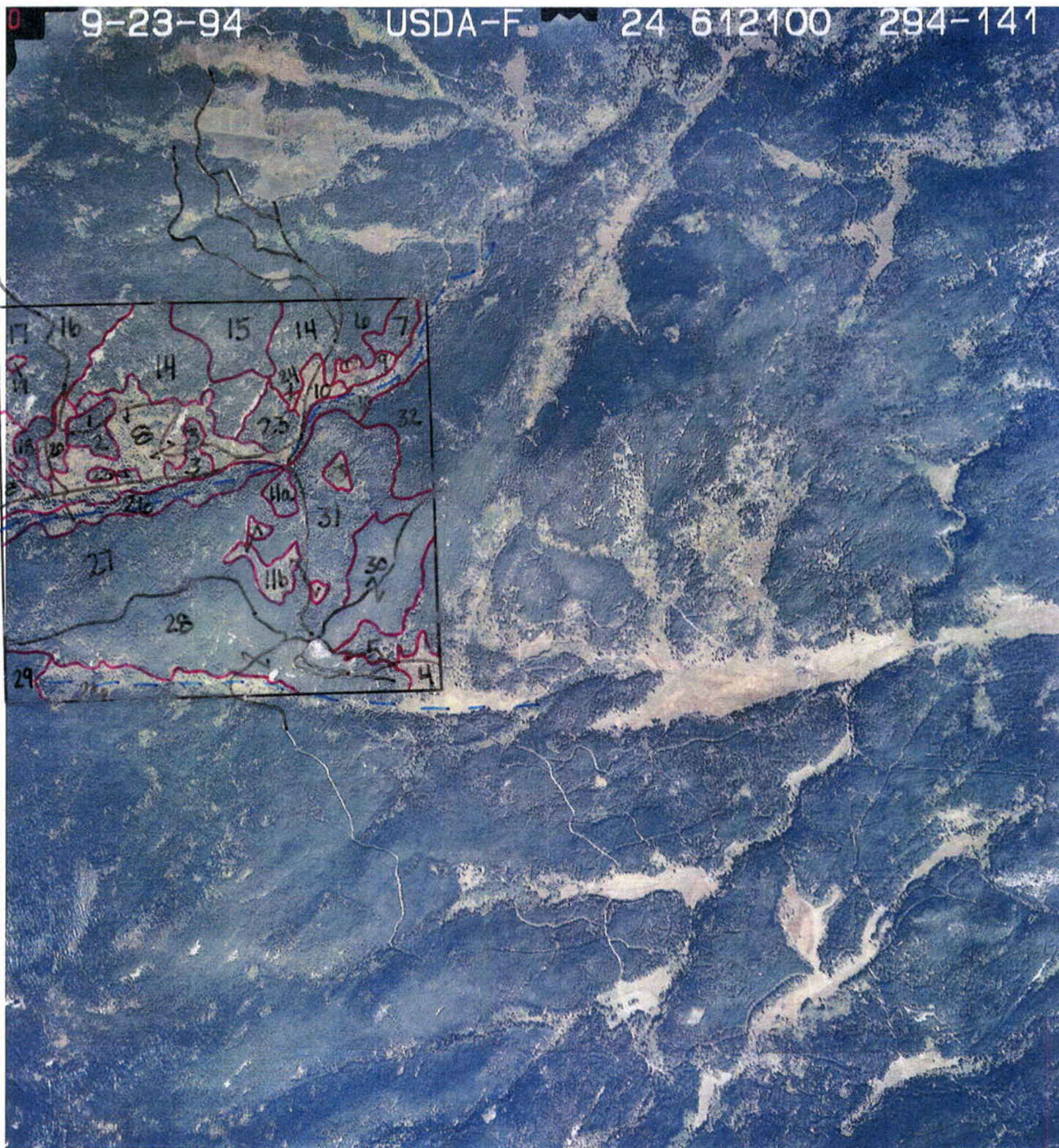
Hazard Class	Expected Fire Behavior
A (Low Hazard)	Low intensity/short duration fires. Flame lengths up to 5' high, higher flareups rare; duration of highest flames brief; fire spread slow to fast, 1-40 acres per hour; spotting generally rare, short range.
B (Moderate Hazard)	Moderate intensity/longer duration fires. Intermittent flareups occurring to many feet above tree tops; short and medium-range spotting common; behavior between flareups as in class A
C (Severe Hazard)	High intensity/long duration fires. Flareups higher than trees frequent to continuous; spread up to several hundred acres per hour; fire front impassable; spotting several yards common; possible to a mile or more.
X (Severe Hazard-brush)	High intensity/medium duration fires. Flames 5-20' high, of brief duration; fire spread usually fast, at least 40 acres per hour; short range spotting common from blowing leaves.



Map 4- Fire Hazard  
Crystal Mountain Section







Map 5- Management Units  
Crystal Mountain Section



## **MANAGEMENT UNITS: DESCRIPTIONS AND RECOMMENDATIONS**

This section describes the management units identified on the Crystal Mountain section.

The following recommendations are intended to meet the short and long term objectives for managing the property. After each stand description there is one or more recommendation numbers. These numbers correspond to the forest management practices listed on pages 11-12. A detailed description of each of these practices along with the optimal growing stock levels can be found in appendix B.

As in all management plans, the scheduling and achievement of these activities will depend upon resources, environmental conditions, availability of technical assistance and commercial markets.

### **MANAGEMENT UNIT BREAKDOWN**

#### **Forest Cover**

The Crystal mountain sections' forest cover consists primarily of lodgepole pine with pockets of aspen and scattered Engelmann spruce, Douglas-fir, subalpine fir and a few large ponderosa pine. Alder, willow, and Rocky Mountain maple are present in the riparian zone along the creek. These species occur in a variety of age, size and density conditions. This range of forest cover types is the result of topographic and soils influences, insect and disease infestations, and previous management activities.

30 management units (Map 5) were identified to help guide management activities. Each unit was based on forest cover type, landowner objectives, management needs, location, access, and past activities. During the inventory process some stands were combined therefore the numbering is not consecutive (ie. stands: #12, #21, and #25 were eliminated). Management unit descriptions and recommendations are as follows:



## **Management Prescriptions**

### **(1) Thin to Growing Stock Level (GSL) 80**

Thinning the stand to a growing stock level (GSL) of 80 means that the basal area is at 80.0 square feet per acre when the average stand diameter is 10.0 inches after thinning. Practically speaking, this yields an ideal spacing distance between the trees after thinning dependent on their average diameter (*Refer to Table 1 in appendix B*). Both GSL and basal area (BA) are measurements of stand density. GSL's are used as a guideline to control the number of trees per acre. By referring to Table 1 and determining the average diameter of the stand an ideal distance between trees can be determined. Managing at GSL 80 will eventually reduce the number of trees per acre by removing poorly shaped, overtopped, diseased, damaged, and competing smaller trees. Trees with multiple or dead tops should be removed. Trees infected by dwarf mistletoe or western gall rust should be removed. Removing these trees should improve the vigor of individual trees and overall stand health. Retain tree species other than pine whenever possible. "Character" trees, or trees with specific uses, such as wildlife snags, should be retained.

### **(2) Thin to Growing Stock Level (GSL) 100, 120, or 140**

This is similar to the above thinning prescription, but to a slightly higher basal area. Distance between trees will be slightly less. Different sites may support a different spacing, especially north facing slopes. Different species, such as Douglas fir, also require different spacing. Again, by referring to Table 1 in appendix B and determining the average diameter of the stand, an ideal distance between trees can be determined. Remove poorly shaped, overtopped, diseased, damaged, and competing smaller trees. Trees with multiple or dead tops should be removed. Trees infected by dwarf mistletoe or western gall rust should be removed. Removing these trees should improve the vigor of individual trees and overall stand health. Retain tree species other than pine whenever possible. "Character" trees, or trees with specific uses, such as wildlife snags, should be retained.

### **(3) Patch Cut to Sanitize Dwarf Mistletoe**

Where patches of dwarf mistletoe occur, cut all infected trees within the infestation, to sanitize the stand. These patch clearcuts should not exceed 12 acres in size. Patch cuts should be started on the outside of the infected areas, and proceed into the center. This prevents the further spread of this parasitic disease to uninfected trees outside the patch cut.

### **(4) Patch Cut**

This is a variation of a clearcut regeneration system, where all the trees within an area are removed to establish a new, even-aged stand. These patch cuts should not exceed 15 acres in size.

### **(5) Clearcut**

The purpose of a clearcut is to remove all the trees within a stand, providing an open area for natural or artificial regeneration. This management technique creates an even-aged stand with no competition from other trees. This practice is especially useful in stagnant stands of "dog hair"

lodgepole pine infected with dwarf mistletoe. If aspen is present in the stand clearcutting can be a management tool to convert the stand from lodgepole pine to aspen which is non-susceptible to dwarf mistletoe.

**(6) Improvement Cut**

The purpose of an improvement cut is to remove badly diseased, damaged, standing dead, and poorly shaped trees to reduce fire hazard and to improve the residual stand. Generally these conditions occur in stands that were heavily infested by mountain pine beetle or cutover during previous years. Frequently the improvement cut may also serve as a salvage cut, and the stand may need to be replaced with seedlings or natural regeneration.

**(7) Replant or Reseed**

This practice involves the establishment of new trees through planting of seedlings or natural regeneration. Generally, regeneration should be of the same species present in the stand prior to management activities. However, in the case of patch cuts for dwarf mistletoe, or in stands where the disease is present and not under control, susceptible seedlings should not be established. In these cases non-susceptible species such as Douglas fir and Rocky Mountain juniper can be under planted in the stand prior to the complete removal and control of the infected trees. In other situations, natural regeneration from existing trees may be desired. In this case suitable seedbeds must be present for seedling establishment.

**(8) Broadcast Burning**

The purpose of broadcast burning is to burn the slash of clearcut areas as it lies within prepared fire lines. Practically all of the remaining vegetation, except for that of sprouting species, is destroyed. The sites are left in reasonably good condition for hand planting, direct seeding, or natural seeding from adjacent stands.

**(9) Piling & Burning**

Burning is done when sufficient snow cover exists to prevent fire spread. Piles are located far enough away from remaining trees to prevent scorching and should be compact enough to burn easily. A few scattered piles may be left for wildlife use without compromising fire danger.

**(10) Lop and Scatter**

Tops and limbs of downed trees are lopped (cut) into small segments, scattered, and left to decompose. All pieces are cut small enough so all slash is within 12 inches of the ground. The closer to the ground the pieces lie, the more rapid the decomposition. This method provides greater nutrient recovery to the site as slash decomposes, reduced surface erosion, and improved seedling establishment for some species, ie. lodgepole pine.

**(11) Transplants**

Transplanting seedlings or whips from the understory to relocate in understocked areas or to sell.



## Management Unit 1

**Description:** Management unit 1 is located in the northwest quarter of the section on the north side of the road. This cover type is dominated by poletimber size lodgepole pine with many small stems under 4" diameter. Dwarf mistletoe is present in this stand with ratings between 3 and 4. Regeneration is lacking. The forest floor consists of needles and duff with no understory vegetation.

The following summarizes stand data:

**Management Unit 1 - Stand data**

Forest cover type	Lodgepole pine
Unit size	4.5 acres
Slope	10% to 15%
Aspect	South / Southeast
Basal area (average)	250 square feet/acre
Trees/acre	1393
Average tree diameter	5.7"
Average tree height	30'
Estimated stand age	110 years
Site index	30 ' per 100 years
Stocking	Overstocked for GSL 80
Regeneration	Poor
Estimated stand volumes	2,430 cubic feet/acre 4,830 board feet/acre 10 cords/acre
Wildfire hazard rating	A- Low Hazard & B- Moderate Hazard
Mistletoe rating	3 - 4 range

**Recommendations:** #5 to prevent the spread of Dwarf mistletoe, #9 or #10 to encourage natural regeneration.

## Management Unit 2

**Description:** Unit 2 is located in the northwest quarter of the section on the south side of the road. This stand is over stocked with poletimber size lodgepole pine. There is no lodgepole pine regeneration but aspen regeneration is present near the edge of the plot. The understory consists of needles and duff. No dwarf mistletoe was observed in this stand.

The following summarizes stand data:

**Management Unit 2 - Stand data**

Forest cover type	Lodgepole pine
Unit size	5 acres
Slope	13%
Aspect	Southeast
Basal area (average)	200 square feet/acre
Trees/acre	502
Average tree diameter	8.5"
Average tree height	51'
Estimated stand age	120 years
Site index	50 ' per 100 years
Stocking	Overstocked for GSL 80
Regeneration	Poor
Estimated stand volumes	4,632 cubic feet/acre 19,240 board feet/acre 38 cords/acre
Wildfire hazard rating	A- Low Hazard & B- Moderate Hazard
Mistletoe rating	0

**Recommendations:** #5 to encourage aspen sprouting, #9 or #10.



### Management unit 3

**Description:** Unit 3 is located in the center of the section and consists of overstocked poletimber size lodgepole pine. Aspen, Engelmann spruce and ponderosa pine are also present along the road. Regeneration is lacking and grasses make up the ground cover. Dwarf mistletoe was not observed in this stand.

The following summarizes stand data:

**Management Unit 3 - Stand data**

Forest cover type	Lodgepole pine
Unit size	5 acres
Slope	8% to 12%%
Aspect	South to Southeast
Basal area (average)	200 square feet/acre
Trees/acre	676
Average tree diameter	7.4"
Average tree height	48'
Estimated stand age	105 years
Site index	50 ' per 100 years
Stocking	Overstocked for GSL 80
Regeneration	Poor
Estimated stand volumes	4,186 cubic feet/acre 14,588 board feet/acre 29 cords/acre
Wildfire hazard rating	C - Severe Hazard & A - Low Hazard
Mistletoe rating	0

**Recommendations:** #2 GSL140, #2 GSL 100, #2 GSL 80, #9 or #10.

### Management unit 4

**Description:** Unit 4 is located in the southeast corner of the section. This unit is a grassy

meadow with scattered aspen, lodgepole pine, and ponderosa pine all under 20' in height. Aspen regeneration is also present. The ground vegetation consists of: grasses, columbine, woods rose, and daisies.

**Recommendations:** This open area adds diversity to the section and is beneficial to wildlife providing grasses and forbs for grazing purposes. Therefore this area should be preserved for wildlife and no management is recommended.

### Management unit 5

**Description:** Unit 5 is located along the east line in the southeast corner of the section. This stand consists of pole size lodgepole pine with scattered aspen. Regeneration is lacking with the exception of scattered aspen. The understory vegetation consists of: bearberry, Indian paint brush, columbine, lupine, and grasses. Dwarf mistletoe is present in this stand with ratings between 2-4.

**Management Unit 5 - Stand data**

Forest cover type	Lodgepole pine
Unit size	20 acres
Slope	10% to 18%
Aspect	East/Southeast
Basal area (average)	170 square feet/acre
Trees/acre	587
Average tree diameter	7.3"
Average tree height	43'
Estimated stand age	104 years
Site index	40 ' per 100 years
Stocking	overstocked GSL 80
Regeneration	Poor for lodgepole pine, fair for aspen
Estimated stand volumes	3128 cubic feet/acre 11,509 board feet/acre 23 cords/acre
Wildfire hazard rating	C - Severe Hazard
Mistletoe rating	2 - 4 range

**Recommendations:** #5 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #9 or #10.



## Management unit 6

**Description:** Unit 6 is located in the northeast corner of the section. This stand is overstocked with small diameter lodgepole pine (doghair). This stand is stagnant at 100 years old. Regeneration is lacking. The understory vegetation consists sparsely of: buffaloberry, and woods rose. Dwarf mistletoe was not observed in this stand.

The following summarizes stand data:

**Management Unit 6 - Stand data**

Forest cover type	Lodgepole pine
Unit size	13.5 acres
Slope	10% to 18%
Aspect	North/Northeast
Basal area (average)	87 square feet/acre
Trees/acre	520
Average tree diameter	5.5"
Average tree height	34'
Estimated stand age	93 years
Site index	40 ' per 100 years
Stocking	overstocked GSL 80
Regeneration	Poor
Estimated stand volumes	973 cubic feet/acre 1,534 board feet/acre 3 cords/acre
Wildfire hazard rating	C - Severe Hazard
Mistletoe rating	0

**Recommendations:** #5 to encourage natural regeneration, #9 or #10.

## Management unit 7

**Description:** Unit 7 is located in the northeast corner of the section. This stand consists of pole timber size lodgepole pine. Aspen is found scattered throughout this stand. Regeneration is good for aspen and fair for lodgepole pine. The understory vegetation consists of: lupine, woods rose, mullen, buffaloberry, bearberry and grasses. Dwarf mistletoe was not observed in this stand.

The following summarizes stand data:

**Management Unit 7 - Stand data**

Forest cover type	Lodgepole pine
Unit size	8.5 acres
Slope	15% to 17%
Aspect	East
Basal area (average)	180 square feet/acre
Trees/acre	550
Average tree diameter	7.7"
Average tree height	55'
Estimated stand age	120 years
Site index	50' per 100 years
Stocking	overstocked GSL 80
Regeneration	fair
Estimated stand volumes	4,477 cubic feet/acre 18,087 board feet/acre 36 cords/acre
Wildfire hazard rating	C - Severe Hazard & A - Low Hazard
Mistletoe rating	0

**Recommendations:** #4 to encourage aspen sprouting, #2 GSL 120, #1 GSL 80, #9 or #10.

## Management unit 8

**Description:** Unit 8 is located in the north half of the section. This is an open meadow with scattered pockets of ponderosa pine, lodgepole pine, and aspen. Regeneration is scattered with aspen, lodgepole pine, ponderosa pine, and Engelmann spruce coming in. Dwarf mistletoe was not observed in this area.



**Recommendations:** This open area adds diversity to the section and is beneficial to wildlife providing grasses and forbs for grazing purposes. Therefore this area should be preserved for wildlife and no management is recommended.

### **Management unit 9**

**Description:** Unit 9 is located in the northeast quarter of the section. This is an open area with patches of aspen, ponderosa pine and lodgepole pine. Regeneration is good for aspen and poor for ponderosa and lodgepole pine. The understory vegetation consists of: lupine, woods rose, bearberry and grasses. Dwarf mistletoe is present in ponderosa and lodgepole pine with an average rating of 2.

The following summarizes stand data:

**Management Unit 9 - Stand data**

<b>Forest cover type</b>	Ponderosa pine, Lodgepole pine, and Aspen
<b>Unit size</b>	5 acres
<b>Slope</b>	18% to 25%
<b>Aspect</b>	East & South
<b>Basal area (average)</b>	133 square feet/acre
<b>Trees/acre</b>	550
<b>Average tree diameter</b>	9.8"
<b>Average tree height</b>	49'
<b>Estimated stand age</b>	105 years
<b>Site index</b>	50' per 100 years
<b>Stocking</b>	overstocked GSL 80
<b>Regeneration</b>	fair
<b>Estimated stand volumes</b>	2,627 cubic feet/acre 10,499 board feet/acre 21 cords/acre
<b>Wildfire hazard rating</b>	A- Low Hazard
<b>Mistletoe rating</b>	2

**Recommendations:** #6 to prevent the spread of Dwarf mistletoe or pruning if applicable.

## **Management unit 10 - 8 acres**

**Description:** Unit 10 is a grassy meadow located in the northeast quarter of the section. Scattered ponderosa pine, Engelmann spruce and mature aspen are present within the unit. Aspen regeneration is found along the edge of the meadow. A road runs along the creek connecting with the Crystal mountain road. There is a large rock outcrop in this meadow.

**Recommendations:** This open area adds diversity to the section and is beneficial to wildlife providing grasses and forbs for grazing purposes. Therefore this area should be preserved for wildlife and no management is recommended.

## **Management unit 11**

**Description:** Unit 11 is located in the eastern half of the section. This unit is comprised of 4 units that were patch cut 30 years ago. They are broken down into stand 11A at 5 acres and 11B at 10 acres. These stands consist of 10 to 20 foot lodgepole pine with an average diameter of 4.4" using a basal area factor of 20.

Stand 11A is overstocked with < 4" diameter trees, saplings, and spruce, fir, and lodgepole pine regeneration. Dwarf mistletoe is present in this stand with an average rating of 5. An average of 25 trees per acre were left from the previous cut. These larger trees have an average diameter of 6.5" and are also infected with dwarf mistletoe. The understory consists of: woods rose, bearberry, lupine, and common juniper. Aspen regeneration is present along the edge of the cut.

Stand 11B is also overstocked with <4" diameter trees and saplings. Regeneration consists of lodgepole pine and spruce. Dwarf mistletoe was not observed in this stand. The understory consists of: lupine, bearberry, golden rod, vaccinium, woods rose, bearberry, thistle, and common juniper.

**Recommendations:** This unit is in need of TSI (timber stand improvement). The recommendation is to manage for Christmas trees using an 8 to 12 foot spacing. Live slash can be piled in openings or along the road and burned in the winter. On the edge where aspen is present, strips can be cut and slash burned in these strips to encourage aspen sprouting. Aspen whips can also be sold from this area.



### Management unit 13

**Description:** Unit 13 is located in the northeast quarter of the section. This stand consists of mature aspen. Regeneration is poor for aspen with ponderosa and lodgepole pine coming up in the understory. The understory vegetation consists of: common juniper, lupine, and grasses.

**Management Unit 13 - Stand data**

Forest cover type	Aspen
Unit size	1 acre
Slope	10%
Aspect	South
Basal area (average)	120 square feet/acre
Trees/acre	181
Average tree diameter	11.0"
Average tree height	39'
Estimated stand age	80 years
Site index	50' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	1,727 cubic feet/acre 1,447 board feet/acre 3 cords/acre
Wildfire hazard rating	A- Low Hazard
Mistletoe rating	NA

**Recommendations:** This small stand of mature aspen should be left for diversity and wildlife habitat. No management recommendations are necessary at this time. Re-evaluate this stand in 10 years.

## Management unit 14

**Description:** Unit 14 is located in the northern half of the section. This stand is overstocked with small diameter lodgepole pine (doghair) This stand is stagnant at 97 years old. Regeneration is poor for lodgepole pine and fair for aspen in certain areas. The understory vegetation consists of: common juniper, bearberry and grasses. Dwarf mistletoe is present with ratings from 0-6.

**Management Unit 14 - Stand data**

Forest cover type	Lodgepole pine
Unit size	65 acres
Slope	13% to 7%
Aspect	South / Southeast / East
Basal area (average)	109 square feet/acre
Trees/acre	537
Average tree diameter	6.1"
Average tree height	31'
Estimated stand age	97 years
Site index	30' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	1,139 cubic feet/acre 2,929 board feet/acre 6 cords/acre
Wildfire hazard rating	A- Low Hazard & C- Severe Hazard
Mistletoe rating	0-6 range; 2 average

**Recommendations:** #3 to prevent the spread of Dwarf mistletoe, #9 or #10.



## Management unit 15

**Description:** Unit 15 is located in the north central half of the section on the north line. This stand consists of poletimber size lodgepole pine. Regeneration is poor for lodgepole pine. The understory vegetation consists of: common juniper, bearberry, woods rose and grasses. Dwarf mistletoe is present with rating from 0-5.

**Management Unit 15 - Stand data**

Forest cover type	Lodgepole pine
Unit size	25 acres
Slope	12% to 25%
Aspect	East / Southeast
Basal area (average)	157 square feet/acre
Trees/acre	649
Average tree diameter	6.7"
Average tree height	41'
Estimated stand age	105 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	2,591 cubic feet/acre 8,697 board feet/acre 17 cords/acre
Wildfire hazard rating	A- Low Hazard & C- Severe Hazard
Mistletoe rating	0-5 range; 2 average

**Recommendations:** #3 to prevent the spread of Dwarf mistletoe, #2 GSL100, # GSL80, #9 or #10.

## Management unit 16

**Description:** Unit 16 is located in the northwest quarter of the section on the north line. This stand consists of poletimber size lodgepole pine. Regeneration is poor. The understory vegetation consists of: bearberry, lupine and grasses. Dwarf mistletoe is heavy in this stand.

**Management Unit 16 - Stand data**

Forest cover type	Lodgepole pine
Unit size	17 acres
Slope	10% to 16%
Aspect	South / East
Basal area (average)	93 square feet/acre
Trees/acre	649
Average tree diameter	7.7"
Average tree height	27'
Estimated stand age	87 years
Site index	30' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	999 cubic feet/acre 3,511 board feet/acre 7 cords/acre
Wildfire hazard rating	A- Low Hazard & B- Moderate Hazard
Mistletoe rating	3-6 range; 4 average

**Recommendations:** #4 to prevent the spread of Dwarf mistletoe, #1 GSL 80, #9 or #10.



## Management unit 17

**Description:** Unit 17 is located in the northwest corner of the section. This stand consists of poletimber size lodgepole pine with scattered aspen mixed in. Regeneration is poor for lodgepole pine and fair for aspen. The understory vegetation consists of: common juniper and grasses. Dwarf mistletoe is present in this stand with 2-3 ratings.

**Management Unit 17 - Stand data**

<b>Forest cover type</b>	Lodgepole pine
<b>Unit size</b>	15 acres
<b>Slope</b>	15% to 18%
<b>Aspect</b>	South / Southeast
<b>Basal area (average)</b>	184 square feet/acre
<b>Trees/acre</b>	832
<b>Average tree diameter</b>	6.4"
<b>Average tree height</b>	37'
<b>Estimated stand age</b>	97 years
<b>Site index</b>	40' per 100 years
<b>Stocking</b>	overstocked GSL 80
<b>Regeneration</b>	poor for lodgepole pine, fair for aspen
<b>Estimated stand volumes</b>	2,627 cubic feet/acre 8,219 board feet/acre 16 cords/acre
<b>Wildfire hazard rating</b>	A- Low Hazard, B- Moderate Hazard and C-Severe Hazard
<b>Mistletoe rating</b>	2-4 range; 3 average

**Recommendations:** #5 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #9 or #10.

## Management unit 18

**Description:** Unit 18 is located in the northwest quarter of the section. This stand consists of poletimber size lodgepole pine with a few scattered ponderosa pine mixed in. Regeneration is poor for lodgepole and ponderosa pine and fair for aspen. The understory vegetation consists of: common juniper, lupine and grasses. Dwarf mistletoe is present but lite with a 0-2 rating.

**Management Unit 18 - Stand data**

Forest cover type	Lodgepole pine
Unit size	7.5 acres
Slope	13% to 18%
Aspect	South / Southeast
Basal area (average)	184 square feet/acre
Trees/acre	160
Average tree diameter	8.4"
Average tree height	45'
Estimated stand age	104 years
Site index	50' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for lodgepole and ponderosa pine, fair for aspen
Estimated stand volumes	3,245 cubic feet/acre 12,924 board feet/acre 26 cords/acre
Wildfire hazard rating	B- Moderate Hazard
Mistletoe rating	0-2 range; <1 average

**Recommendations:** #3 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #2 GSL120, #2 GSL 80, #9 or #10.



## Management unit 19

**Description:** Unit 19 is located in the northwest quarter of the section. This stand consists of mature aspen. Regeneration is poor for aspen with spruce coming up in the understory. The understory vegetation consists of: common juniper, bearberry, aster, and Indian paintbrush.

**Management Unit 19 - Stand data**

Forest cover type	Aspen
Unit size	0.5 acres
Slope	15% to 18%
Aspect	South / Southeast
Basal area (average)	200 square feet/acre
Trees/acre	160
Average tree diameter	6.9"
Average tree height	32'
Estimated stand age	100 years
Site index	30' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for aspen, fair for spruce
Estimated stand volumes	1,898 cubic feet/acre 3,042 board feet/acre 6 cords/acre
Wildfire hazard rating	A- Low Hazard & C- Severe Hazard
Mistletoe rating	NA

**Recommendations:** #5 to replace poor quality stand, # 9.

## Management unit 20

**Description:** Unit 20 is located in the northwest quarter of the section along the road heading north. This stand consists of mature aspen. Regeneration is poor for aspen with spruce and ponderosa pine coming up in the understory. The understory vegetation consists of: common juniper, woods rose, lupine, aster, clover, Indian paintbrush, bitter bush and grasses.

**Management Unit 20 - Stand data**

Forest cover type	Aspen
Unit size	7 acres
Slope	5% to 15%
Aspect	South / Southeast
Basal area (average)	130 square feet/acre
Trees/acre	332
Average tree diameter	8.5"
Average tree height	41'
Estimated stand age	85 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for aspen, fair for spruce
Estimated stand volumes	1,833 cubic feet/acre 2,397 board feet/acre 5 cords/acre
Wildfire hazard rating	A- Low Hazard & B- Moderate Hazard
Mistletoe rating	NA

**Recommendations:** This stand of mature aspen along the road should be left for diversity and wildlife habitat. No management recommendations are necessary at this time. Re-evaluate this stand in 10 years.



## Management unit 22

**Description:** Unit 22 is located in the northwest quarter of the section on the north side of the road. This stand consists of poletimber size lodgepole pine. Regeneration is poor for lodgepole pine and fair for aspen. The understory vegetation consists of: common juniper, bearberry, and grasses.

**Management Unit 22 - Stand data**

Forest cover type	Lodgepole pine
Unit size	3 acres
Slope	18%
Aspect	Southeast
Basal area (average)	200 square feet/acre
Trees/acre	429
Average tree diameter	9.2"
Average tree height	47'
Estimated stand age	96 years
Site index	50' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for lodgepole pine, fair for aspen
Estimated stand volumes	4,273 cubic feet/acre 17,883 board feet/acre 36 cords/acre
Wildfire hazard rating	B- Moderate Hazard
Mistletoe rating	2 rating; 2 average

**Recommendations:** #3 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #2 GSL 140, #2 GSL 100, #1 GSL 80, #9 or #10.

## Management unit 23

**Description:** Unit 23 is located in the northeast quarter of the section on the north side of the road. This stand consists of lodgepole pine heavily infected with dwarf mistletoe. There are also pockets of aspen mixed in. Regeneration in lodgepole pine, spruce and aspen is fair. The understory vegetation is sparse consisting of: common juniper, bearberry, buffaloberry, lupine, woods rose, and grasses.

**Management Unit 23 - Stand data**

<b>Forest cover type</b>	Lodgepole pine
<b>Unit size</b>	10 acres
<b>Slope</b>	8% to 23%
<b>Aspect</b>	East / Southeast / South
<b>Basal area (average)</b>	110 square feet/acre
<b>Trees/acre</b>	376
<b>Average tree diameter</b>	7.3"
<b>Average tree height</b>	39'
<b>Estimated stand age</b>	101 years
<b>Site index</b>	40' per 100 years
<b>Stocking</b>	overstocked GSL 80
<b>Regeneration</b>	fair
<b>Estimated stand volumes</b>	1,821 cubic feet/acre 6,656 board feet/acre 13 cords/acre
<b>Wildfire hazard rating</b>	A- Low Hazard & C- Severe Hazard
<b>Mistletoe rating</b>	0-6 rating; 3 average

**Recommendations:** #5 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #9 or #10.



## Management unit 24

**Description:** Unit 24 is located in the northeast quarter of the section on the west side of the road. This stand consists of sawlog size lodgepole pine and Engelmann spruce. This stand is adjacent to an open aspen area. Regeneration in lodgepole pine and Engelmann spruce is poor while aspen regeneration is good. The understory vegetation consists of: forbs and grasses.

**Management Unit 24 - Stand data**

<b>Forest cover type</b>	Lodgepole pine and Engelmann spruce mix
<b>Unit size</b>	1 acre
<b>Slope</b>	10%
<b>Aspect</b>	East
<b>Basal area (average)</b>	100 square feet/acre
<b>Trees/acre</b>	75
<b>Average tree diameter</b>	15.7"
<b>Average tree height</b>	74'
<b>Estimated stand age</b>	110 years
<b>Site index</b>	70' per 100 years
<b>Stocking</b>	overstocked GSL 80
<b>Regeneration</b>	poor in lodgepole pin and fair in Engelmann spruce
<b>Estimated stand volumes</b>	3,084 cubic feet/acre 15,135 board feet/acre 30 cords/acre
<b>Wildfire hazard rating</b>	A- Low Hazard
<b>Mistletoe rating</b>	0

**Recommendations:** This is a unique stand with large diameter trees. This area should be preserved for wildlife and aesthetics.

## Management unit 26

**Description:** Unit 26 makes up the riparian areas on the section. There are two creeks that flow through the section. The North Fork of Fish creek skirts the south line of the section and Sheep creek runs through the north half of the section. These two areas are similar and will be treated in the same manner in regards to management. Regeneration is good for spruce, aspen, fir, and lodgepole pine. The understory vegetation consists of: bearberry, lupine, buffaloberry, golden banner, aster, woods rose, mullen, columbine, Indian paintbrush, currant, common juniper, and grasses. Dwarf mistletoe is present but lite with a 1 average.

### Management Unit 26 - Stand data

Forest cover type	Spruce / Fir
Unit size	41 acres
Slope	0% to 18%
Aspect	none
Basal area (average)	155 square feet/acre
Trees/acre	331
Average tree diameter	9.3"
Average tree height	48'
Estimated stand age	92 years
Site index	50' per 100 years
Stocking	overstocked GSL 80
Regeneration	good
Estimated stand volumes	2,888 cubic feet/acre 9,064 board feet/acre 18 cords/acre
Wildfire hazard rating	A- Low, B- Moderate, C- Severe, X- Severe- Brush
Mistletoe rating	0-3 rating; 1 average.

**Recommendations:** #3, #4 on the edge of the riparian zone. Heavy on the lodgepole pine lite on the spruce to encourage aspen. Mark larger diameter trees and wench out. Keep all machinery out of the riparian area.



## Management unit 27

**Description:** Unit 27 is located in the south half of the section on the north side of the road. This stand consists of lodgepole pine in varying diameters and densities depending on terrain. Aspen is sparsely scattered within the stand. Regeneration in lodgepole pine is poor while aspen, spruce, and fir regeneration is good. The understory consists of: common juniper, woods rose, golden banner, lupine, and vaccinium, Dwarf mistletoe is present with ratings between 0-4.

**Management Unit 27 - Stand data**

Forest cover type	Lodgepole pine
Unit size	86 acres
Slope	9% to 23%
Aspect	North
Basal area (average)	185 square feet/acre
Trees/acre	850
Average tree diameter	6.3"
Average tree height	39'
Estimated stand age	105 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for lodgepole pine; good for aspen, spruce and fir
Estimated stand volumes	2,808 cubic feet/acre 8,875 board feet/acre 18 cords/acre
Wildfire hazard rating	A- Low, B- Moderate, C- Severe, X- Severe- Brush
Mistletoe rating	0-4 rating; 2 average.

**Recommendations:** #3 to prevent the spread of Dwarf mistletoe and encourage aspen sprouting, #2 GSL 120, #1 GSL 80, #9 or #10.

## Management unit 28

**Description:** Unit 28 is located in the south half of the section on the south side of the road. This stand is overstocked with dense, small diameter lodgepole pine (dog hair). This stand is stagnant at 108 years old. Regeneration is non existent. The understory consists of: common juniper and sparse amounts of bearberry and woods rose. Dwarf mistletoe is present with an average rating of 3.

**Management Unit 28 - Stand data**

Forest cover type	Lodgepole pine
Unit size	76 acres
Slope	8% to 22%
Aspect	Northeast / East / Southeast / South
Basal area (average)	163 square feet/acre
Trees/acre	851
Average tree diameter	5.9"
Average tree height	32'
Estimated stand age	108 years
Site index	30' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	1,769 cubic feet/acre 4,272 board feet/acre 8 cords/acre
Wildfire hazard rating	A- Low, C- Severe
Mistletoe rating	2-6 rating; 3 average.

**Recommendations:** #3 to prevent the spread of dwarf mistletoe, #9 or #10.



## Management unit 29

**Description:** Unit 29 consists of poletimber and sawlog size lodgepole pine, aspen, Engelmann spruce, and subalpine fir. This stand is located in the southwest corner of the section . Regeneration is poor for all species. The understory consists of: currant, vaccinium, woods rose, ferns, and fugi. Dwarf mistletoe is not present.

**Management Unit 29 - Stand data**

Forest cover type	Aspen / Mixed conifers
Unit size	8 acres
Slope	8% to 10%
Aspect	Northeast
Basal area (average)	147 square feet/acre
Trees/acre	508
Average tree diameter	7.3"
Average tree height	40'
Estimated stand age	110 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	2,102 cubic feet/acre 5,159 board feet/acre 10 cords/acre
Wildfire hazard rating	C- Severe Hazard
Mistletoe rating	0

**Recommendations:** #4 heavy on lodgepole pine, lite on spruce to encourage aspen sprouting, #9 or #10.

## Management unit 30

**Description:** Unit 30 is located in the southeast quarter of the section. This stand consists of lodgepole pine in varying densities depending on terrain. Regeneration is nonexistent. The understory is sparse consisting of: common juniper, bearberry, woods rose, and grass. Dwarf mistletoe is present with an average rating of 4.

**Management Unit 30 - Stand data**

Forest cover type	Lodgepole pine
Unit size	40 acres
Slope	5% to 20%
Aspect	West / East / Southwest / Southeast / South
Basal area (average)	100 square feet/acre
Trees/acre	500
Average tree diameter	6.1"
Average tree height	28'
Estimated stand age	100 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	897 cubic feet/acre 2,407 board feet/acre 5 cords/acre
Wildfire hazard rating	B- Moderate Hazard & C- Severe Hazard
Mistletoe rating	0-6 range; 4 average

**Recommendations:** #3 to prevent spread of Dwarf mistletoe, #9 or #10.



## Management unit 31

**Description:** Unit 31 is located in the east half of the section. This stand consists of poletimber size lodgepole pine. Regeneration is poor for lodgepole pine and fair in certain areas for aspen. The understory is sparse consisting of: common juniper, golden banner, Indian paintbrush, aster, thistle, bearberry, lupine and grass. This unit is infected with dwarf mistletoe with an average rating of 3.

**Management Unit 31 - Stand data**

Forest cover type	Lodgepole pine
Unit size	59 acres
Slope	5% to 18%
Aspect	West
Basal area (average)	115 square feet/acre
Trees/acre	443
Average tree diameter	6.9"
Average tree height	32'
Estimated stand age	110 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for lodgepole pine, fair for aspen
Estimated stand volumes	1,405 cubic feet/acre 4,702 board feet/acre 9 cords/acre
Wildfire hazard rating	A- Low Hazard, B- Moderate Hazard , C- Severe Hazard
Mistletoe rating	0-5 range; 3 average

**Recommendations:** #3 to prevent spread of Dwarf mistletoe, #4 to encourage aspen sprouting, #1 GSL 80, #9 or #10.

## Management unit 32

**Description:** Unit 32 is located in the northeast quarter of the section. This stand consists of poletimber size lodgepole pine. Regeneration is poor for lodgepole pine and fair for aspen, spruce and fir. The understory consists of: bearberry, currant, golden banner, woods rose, and currant. This unit is infected with dwarf mistletoe with an average rating of 2.

**Management Unit 32 - Stand data**

Forest cover type	Lodgepole pine
Unit size	23 acres
Slope	16% to 28%
Aspect	North / Northwest
Basal area (average)	185 square feet/acre
Trees/acre	837
Average tree diameter	6.4"
Average tree height	39'
Estimated stand age	93 years
Site index	40' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor for lodgepole pine; fair for aspen, spruce, and fir
Estimated stand volumes	2,770 cubic feet/acre 8,355 board feet/acre 17 cords/acre
Wildfire hazard rating	C- Severe Hazard
Mistletoe rating	2-3 range; 2 average

**Recommendations:** #3 to prevent spread of Dwarf mistletoe and encourage aspen sprouting, #2 GSL 120, #1 GSL 80, #9 or #10.



## Management unit 33

**Description:** Unit 33 is a stand of mature aspen located in the northeast quarter of the section. Regeneration in aspen is heavily browsed. The understory consists of: golden banner, thistle, Indian paintbrush, lupine, and grass.

**Management Unit 33 - Stand data**

Forest cover type	Aspen
Unit size	3 acres
Slope	5%
Aspect	West
Basal area (average)	190 square feet/acre
Trees/acre	248
Average tree diameter	11.9"
Average tree height	65'
Estimated stand age	86 years
Site index	60' per 100 years
Stocking	overstocked GSL 80
Regeneration	poor
Estimated stand volumes	4,729 cubic feet/acre 14,327 board feet/acre 29 cords/acre
Wildfire hazard rating	A- Low Hazard
Mistletoe rating	NA

**Recommendations:** This small stand of mature aspen should be left for diversity and wildlife habitat. No management recommendations are necessary at this time. Re-evaluate this stand in 10 years.

## GLOSSARY OF TERMS

**All Age** - In a stand of trees where there are considerable difference in age of trees and in which three or more age classes are represented.

**Artificial Regeneration** - Where artificial means such as seeding or planting are used to establish a stand of trees.

**Basal Area** - A measure of density. It is the square footage of stump tops that would be exposed on an acre if all the trees were cut off at 4 1/2 feet above the ground. Often expressed as BA/Acre.

**Board Foot** - A board foot is 1" x 1" x 12".

**Chipping** - Refers to the chipping of logging slash, insect killed material, thinning residue, or potential wildfire fuels into small chips or flakes by a mechanical device. Chips make a good mulch if not piled too deep.

**Cord** - A unit of wood volume equal to a stack 4' x 4' x 8' solid. (128 cubic feet).

**Cutting Cycle** - The time interval between treatments.

**DBH (Diameter Breast High)** - The measurement of tree diameter at a point 4 1/2 feet above the uphill ground level. Usually expressed in inches.

**Dog Hair** - A stand of trees growing so closely together as to give the impression the trees are "as thick as hair on a dog's back."

**DMR (Dwarf-Mistletoe Rating)** - Refers to Hawksworth 's 6-point rating level for measurement of differing levels of dwarf-mistletoe infection.

**Entry** - Actual entering of stands for treatment purposes.

**Even-Aged** - A stand of trees in which the dominant trees originated at about the same time. Generally only one age class is represented.

**Forage** - Food available to grazing livestock or wildlife in the form of grasses, shrubs, and forbs.

**Fuelwood** - Dead woody material that has not begun to decay and that can be utilized for heating purposes.

**Fuel Treatment** - Practices used to reduce wildfire hazard by changing the composition of forest fuels.

**Group Selection** - Removal of a group of mature trees with intent to obtain natural regeneration from seeds produced adjacent to the area occupied by the group.



**GSL (Growing Stock Level)** - Stand density after treatment is expressed as a relationship between basal area and average stand diameter after cutting. A level is named by the basal area desired when average diameter is 10.0 inches. Basal areas increase with diameter until 10.0 inches diameter is reached, and remain constant thereafter. i.e., GSL 80 = basal area of 80.0 square feet when average stand diameter after cutting is 10.0 inches or larger.

**Harvest** - Removal of mature (commercial) trees.

**Houselog** - A portion of a tree which can be manufactured into a log that will be used in the construction of a log cabin. At least 8 feet long and 8 inches in diameter at the smallest end.

**Lineal Foot** - (Running foot) A unit of measure for houselogs, posts and poles. Only length is measured since diameter is not relevant.

**Lop and Scatter** - Tops and limbs of downed trees are lopped (cut) into small segments, scattered, and left to decompose. The closer to the ground pieces lie, the more rapid the decomposition.

**Management Units** - Areas or units with similar tree characteristics and management objectives. Can be a portion of one stand or several stands combined.

**Marginal** - Where commercial harvest becomes impractical for numerous reasons including: steep slope, transportation costs, tree density, tree quality, species, existing markets, etc.

**Mature/Overmature** - Trees that have reached their maximum growth potential and are falling victim to insects, diseases, and natural mortality.

**Merchantable Material** - Portions of a tree which can be processed and sold at a profit.

**Thousand Lineal F MBF (eet)** - 1,000 l.f., common unit of measure in sales of posts, poles, and houselogs.

**Natural Regeneration** - Tree seedlings which become established without added costs of seeding and/or planting. Seed source comes from existing or adjoining trees.

**Patch** - An area of trees of relatively uniform density, tree quality, and age structure that is too small to be treated as a stand.

**Piling and Burning** - Slash or other forest woody fuels is bunched into piles and burned to eliminate fire hazard. Piling can either be done by machine or by hand. Burning should be done under safe conditions by permit from local air quality agency.

**Posts and Poles** - Generally a product of thinning. Size range from 6 1/2 feet to 20 feet in length and 2 1/2 to 10 inches in diameter at the small end of the individual piece.

**Pruning** - Removal of branches to improve tree beauty, increase future lumber value, remove ladder fuels, and remove disease infested limbs.

**Reproduction** - Synonymous with regeneration. See artificial and natural.

**Right-of-Way** - Legal access for transporting forest products.

**Sawlog** - A portion of a tree which can be manufactured into lumber. At least 8 feet long and 6 inches in diameter at the small end of the cylinder.

**Seed Cut** - Reduction of the density of mature trees to encourage the establishment of natural regeneration over an area large enough to be treated as a stand.

**Silvicultural Practices** - Tree management techniques and procedures utilized to reach a given desirable stand condition.

**Site Index** - Relative measure of the potential productivity of an area. Generally it is the height of a tree at 100 years of age. On trees less than 100 years, graphs are used to extrapolate the normal base age.

**Skidding** - The process of moving felled (cut) trees to a central point for loading on a vehicle for transport to the manufacturing point. Can utilize crawler tractors, 4-wheel drive rubber-tired tractors, cable cranes, horses or mules.

**Stand** - A subdivision of a treatment area that is several acres in size, usually 5 acres or larger. Applicable to an area of even-aged or all-aged trees that can be regenerated by a single reproduction method.

**Thinning** - Removal of poorest formed, damaged, suppressed, and crowded trees in a stand to improve growth and form of remaining trees.

**Two-Storied Stand** - A stand composed of two definite age classes of trees with a significant or noticeable difference in tree heights giving a "layered" effect.

**Uneven-Aged** - Same as all-aged.

**Wolf Tree** - A slang term for a poor form, open grown tree which has numerous, large green branches. Another term often used is "apple-orchard" tree. Not a desirable, single-stem, self-pruning, upright tree.

**Yarding** - Same as skidding.



**APPENDIX A**  
**INVENTORY DATA**

PROGRAM RMCRUZ4

09:19:34 08-12-1998

STAND: stand 1

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	418	841	0	0	0	0	0	0	0	0	0	1259
CUVOL	6	330	1499	0	0	0	0	0	0	0	0	0	1828
SCRIB	6	0	2507	0	0	0	0	0	0	0	0	0	2507
STEMS	8	0	100	34	0	0	0	0	0	0	0	0	134
CUVOL	8	0	433	169	0	0	0	0	0	0	0	0	601
SCRIB	8	0	1716	675	0	0	0	0	0	0	0	0	2390
TOTAL													
STEMS	0	418	940	34	0	0	0	0	0	0	0	0	1393
CUVOL	0	330	1931	169	0	0	0	0	0	0	0	0	2430
SCRIB	0	0	4223	675	0	0	0	0	0	0	0	0	4898

STAND: stand 1

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
1393	250	5.7	30	110

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 2      AVG. # TREES/PT.=12.5



STAND: stand 2

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											
	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	8	0	0	131	233	0	0	0	0	0	0	0	364
CUVOL	8	0	0	784	1904	0	0	0	0	0	0	0	2687
SCRIB	8	0	0	3181	7854	0	0	0	0	0	0	0	11035
STEMS	10	0	0	37	75	0	0	0	0	0	0	0	112
CUVOL	10	0	0	421	995	0	0	0	0	0	0	0	1417
SCRIB	10	0	0	1759	4178	0	0	0	0	0	0	0	5936
STEMS	12	0	0	0	26	0	0	0	0	0	0	0	26
CUVOL	12	0	0	0	528	0	0	0	0	0	0	0	528
SCRIB	12	0	0	0	2269	0	0	0	0	0	0	0	2269
-----													
TOTAL													
STEMS	0	0	0	168	334	0	0	0	0	0	0	0	502
CUVOL	0	0	0	1205	3428	0	0	0	0	0	0	0	4632
SCRIB	0	0	0	4940	14300	0	0	0	0	0	0	0	19240

STAND: stand 2

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
502	200	8.5	51	120

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 1      AVG. # TREES/PT.=10.0

STAND: stand 3

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	58	232	0	0	0	0	0	0	0	0	291
CUVOL	6	0	92	575	0	0	0	0	0	0	0	0	667
SCRIB	6	0	0	0	0	0	0	0	0	0	0	0	0
STEMS	8	0	0	34	230	0	0	0	0	0	0	0	265
CUVOL	8	0	0	194	1835	0	0	0	0	0	0	0	2029
SCRIB	8	0	0	785	7563	0	0	0	0	0	0	0	8348
STEMS	10	0	0	0	104	16	0	0	0	0	0	0	120
CUVOL	10	0	0	0	1200	290	0	0	0	0	0	0	1490
SCRIB	10	0	0	0	5014	1226	0	0	0	0	0	0	6240
TOTAL													
STEMS	0	0	58	267	335	16	0	0	0	0	0	0	676
CUVOL	0	0	92	769	3035	290	0	0	0	0	0	0	4186
SCRIB	0	0	0	785	12577	1226	0	0	0	0	0	0	14588

STAND: stand 3

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
676	200	7.4	48	105

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 2      AVG. # TREES/PT.=10.0



STAND: stand 5

PER ACRE STAND SUMMARY  
ALL SPECIES

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	27	0	298	0	0	0	0	0	0	0	0	325
CUVOL	6	35	0	921	0	0	0	0	0	0	0	0	956
SCRIB	6	0	0	2450	0	0	0	0	0	0	0	0	2450
STEMS	8	14	51	72	61	0	0	0	0	0	0	0	198
CUVOL	8	37	190	474	460	0	0	0	0	0	0	0	1161
SCRIB	8	138	743	1935	1892	0	0	0	0	0	0	0	4708
STEMS	10	0	0	27	19	8	0	0	0	0	0	0	54
CUVOL	10	0	0	304	262	146	0	0	0	0	0	0	712
SCRIB	10	0	0	1270	1099	615	0	0	0	0	0	0	2984
STEMS	12	0	0	0	0	6	0	0	0	0	0	0	6
CUVOL	12	0	0	0	0	142	0	0	0	0	0	0	142
SCRIB	12	0	0	0	0	624	0	0	0	0	0	0	624
STEMS	14	0	0	0	0	0	5	0	0	0	0	0	5
CUVOL	14	0	0	0	0	0	158	0	0	0	0	0	158
SCRIB	14	0	0	0	0	0	743	0	0	0	0	0	743
TOTAL													
STEMS	0	41	51	398	80	14	5	0	0	0	0	0	587
CUVOL	0	72	190	1699	722	288	158	0	0	0	0	0	3128
SCRIB	0	138	743	5654	2991	1239	743	0	0	0	0	0	11509

STAND: stand 5

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
587	170	7.3	43	104

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 4      AVG. # TREES/PT.= 8.5

PROGRAM RMCRUZ4

09:46:02 08-12-1998

STAND: stand 6

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	470	26	0	0	0	0	0	0	0	0	496
UVOL	6	0	753	110	0	0	0	0	0	0	0	0	862
SCRIB	6	0	658	433	0	0	0	0	0	0	0	0	1092
STEMS	8	0	0	24	0	0	0	0	0	0	0	0	24
UVOL	8	0	0	111	0	0	0	0	0	0	0	0	111
SCRIB	8	0	0	442	0	0	0	0	0	0	0	0	442
TOTAL													
STEMS	0	0	470	50	0	0	0	0	0	0	0	0	520
UVOL	0	0	753	221	0	0	0	0	0	0	0	0	973
SCRIB	0	0	658	875	0	0	0	0	0	0	0	0	1534

STAND: stand 6

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
520	87	5.5	34	93

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 3      AVG. # TREES/PT.= 4.3



STAND: stand 7

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	0	115	91	0	0	0	0	0	0	0	207
CUVOL	6	0	0	314	441	0	0	0	0	0	0	0	755
SCRIB	6	0	0	739	1765	0	0	0	0	0	0	0	2504
STEMS	8	0	0	0	133	105	0	0	0	0	0	0	238
CUVOL	8	0	0	0	960	1107	0	0	0	0	0	0	2067
SCRIB	8	0	0	0	3940	4613	0	0	0	0	0	0	8553
STEMS	10	0	0	0	56	42	0	0	0	0	0	0	97
CUVOL	10	0	0	0	760	590	0	0	0	0	0	0	1350
SCRIB	10	0	0	0	3191	2482	0	0	0	0	0	0	5673
STEMS	12	0	0	0	0	13	0	0	0	0	0	0	13
CUVOL	12	0	0	0	0	304	0	0	0	0	0	0	304
SCRIB	12	0	0	0	0	1357	0	0	0	0	0	0	1357
TOTAL													
STEMS	0	0	0	115	280	159	0	0	0	0	0	0	555
CUVOL	0	0	0	314	2162	2002	0	0	0	0	0	0	4477
SCRIB	0	0	0	739	8896	8452	0	0	0	0	0	0	18087

STAND: stand 7

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
555	180	7.7	55	120

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 2      AVG. # TREES/PT.= 9.0

STAND: stand9

PER ACRE STAND SUMMARY  
ALL SPECIES

		HEIGHT CLASS											
	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	44	99	0	0	0	0	0	0	0	0	142
CUVOL	6	0	41	259	0	0	0	0	0	0	0	0	300
SCRIB	6	0	0	0	0	0	0	0	0	0	0	0	0
STEMS	10	0	37	11	0	0	0	0	0	0	0	0	48
CUVOL	10	0	283	125	0	0	0	0	0	0	0	0	408
SCRIB	10	0	972	520	0	0	0	0	0	0	0	0	1492
STEMS	12	0	8	19	0	0	0	0	0	0	0	0	27
CUVOL	12	0	76	270	0	0	0	0	0	0	0	0	346
SCRIB	12	0	232	1134	0	0	0	0	0	0	0	0	1366
STEMS	14	0	0	6	7	7	0	0	0	0	0	0	20
CUVOL	14	0	0	142	158	199	0	0	0	0	0	0	498
SCRIB	14	0	0	624	692	914	0	0	0	0	0	0	2230
STEMS	18	0	0	0	0	4	0	0	0	0	0	0	4
CUVOL	18	0	0	0	0	170	0	0	0	0	0	0	170
SCRIB	18	0	0	0	0	816	0	0	0	0	0	0	816
STEMS	22	0	0	0	3	0	0	3	0	0	0	0	5
CUVOL	22	0	0	0	144	0	0	223	0	0	0	0	367
SCRIB	22	0	0	0	710	0	0	1149	0	0	0	0	1860
STEMS	24	0	0	0	2	0	0	0	0	0	0	0	2
CUVOL	24	0	0	0	144	0	0	0	0	0	0	0	144
SCRIB	24	0	0	0	717	0	0	0	0	0	0	0	717
STEMS	26	0	0	0	0	0	4	0	0	0	0	0	4
CUVOL	26	0	0	0	0	0	394	0	0	0	0	0	394
SCRIB	26	0	0	0	0	0	2019	0	0	0	0	0	2019
-----													
TOTAL													
STEMS	0	0	88	135	12	11	4	3	0	0	0	0	253
CUVOL	0	0	400	795	446	368	394	223	0	0	0	0	2627
SCRIB	0	0	1205	2277	2119	1730	2019	1149	0	0	0	0	10499

STAND: stand9

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
253	133	9.8	49	105

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 3      AVG. # TREES/PT.= 6.7



PROGRAM RMCRUZ4

11:26:18 08-12-1998

STAND: stand13

PER ACRE STAND SUMMARY  
ASPEN

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS 10	0	71	34	0	0	0	0	0	0	0	0	0	105
CUVOL 10	0	459	291	0	0	0	0	0	0	0	0	0	750
SCRIB 10	0	567	271	0	0	0	0	0	0	0	0	0	838
STEMS 12	0	0	57	0	0	0	0	0	0	0	0	0	57
CUVOL 12	0	0	632	0	0	0	0	0	0	0	0	0	632
SCRIB 12	0	0	460	0	0	0	0	0	0	0	0	0	460
STEMS 14	0	0	19	0	0	0	0	0	0	0	0	0	19
CUVOL 14	0	0	345	0	0	0	0	0	0	0	0	0	345
SCRIB 14	0	0	150	0	0	0	0	0	0	0	0	0	150
-----													
TOTAL	0	0	71	110	0	0	0	0	0	0	0	0	181
STEMS	0	0	71	110	0	0	0	0	0	0	0	0	181
CUVOL	0	0	459	1268	0	0	0	0	0	0	0	0	1727
SCRIB	0	0	567	880	0	0	0	0	0	0	0	0	1447

STAND: stand13

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
181	120	11.0	39	80

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 1      AVG. # TREES/PT.= 6.0

PROGRAM RMCRUZ4

11:32:45 08-12-1998

STAND: stand 14

PER ACRE STAND SUMMARY  
ALL SPECIES

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	176	241	8	0	0	0	0	0	0	0	0	425
CUVOL	6	171	383	29	0	0	0	0	0	0	0	0	583
SCRIB	6	109	526	114	0	0	0	0	0	0	0	0	750
STEMS	8	35	38	26	0	0	0	0	0	0	0	0	98
CUVOL	8	103	146	154	0	0	0	0	0	0	0	0	403
SCRIB	8	389	571	580	0	0	0	0	0	0	0	0	1540
STEMS	10	0	0	8	3	0	0	0	0	0	0	0	11
CUVOL	10	0	0	71	43	0	0	0	0	0	0	0	114
SCRIB	10	0	0	295	179	0	0	0	0	0	0	0	474
STEMS	12	0	0	3	0	0	0	0	0	0	0	0	3
CUVOL	12	0	0	39	0	0	0	0	0	0	0	0	39
SCRIB	12	0	0	165	0	0	0	0	0	0	0	0	165
TOTAL													
STEMS	0	211	279	43	3	0	0	0	0	0	0	0	537
CUVOL	0	274	528	294	43	0	0	0	0	0	0	0	1139
SCRIB	0	499	1097	1153	179	0	0	0	0	0	0	0	2929

STAND: stand 14

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
537	109	6.1	31	97

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 11      AVG. # TREES/PT.= 5.5



PROGRAM RMCRUZ4

11:42:55 08-12-1998

STAND: stand 15

PER ACRE STAND SUMMARY  
ALL SPECIES

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	18	121	250	13	0	0	0	0	0	0	0	401
CUVOL	6	24	198	736	71	0	0	0	0	0	0	0	1029
SCRIB	6	0	296	1752	288	0	0	0	0	0	0	0	2336
STEMS	8	10	42	128	47	0	0	0	0	0	0	0	227
CUVOL	8	32	178	724	377	0	0	0	0	0	0	0	1310
SCRIB	8	123	702	2928	1553	0	0	0	0	0	0	0	5307
STEMS	10	0	0	0	20	0	0	0	0	0	0	0	20
CUVOL	10	0	0	0	252	0	0	0	0	0	0	0	252
SCRIB	10	0	0	0	1054	0	0	0	0	0	0	0	1054
-----													
TOTAL													
STEMS	0	28	163	377	81	0	0	0	0	0	0	0	649
CUVOL	0	56	375	1460	700	0	0	0	0	0	0	0	2591
SCRIB	0	123	998	4681	2895	0	0	0	0	0	0	0	8697

STAND: stand 15

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
649	157	6.7	41	105

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 6      AVG. # TREES/PT.= 7.8

PROGRAM RMCRUZ4

11:44:34 08-12-1998

STAND: stand 16

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	96	35	0	0	0	0	0	0	0	0	0	132
CUVOL	6	155	66	0	0	0	0	0	0	0	0	0	220
SCRIB	6	389	0	0	0	0	0	0	0	0	0	0	389
STEMS	8	56	38	0	0	0	0	0	0	0	0	0	94
CUVOL	8	173	168	0	0	0	0	0	0	0	0	0	341
SCRIB	8	660	667	0	0	0	0	0	0	0	0	0	1328
STEMS	10	12	49	0	0	0	0	0	0	0	0	0	61
CUVOL	10	66	372	0	0	0	0	0	0	0	0	0	438
SCRIB	10	266	1528	0	0	0	0	0	0	0	0	0	1794
TOTAL													
STEMS	0	165	122	0	0	0	0	0	0	0	0	0	287
CUVOL	0	394	605	0	0	0	0	0	0	0	0	0	999
SCRIB	0	1315	2196	0	0	0	0	0	0	0	0	0	3511

STAND: stand 16

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
287	93	7.7	27	87

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 3      AVG. # TREES/PT.= 4.7



STAND: stand17

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	90	441	127	16	0	0	0	0	0	0	0	673
CUVOL	6	100	875	489	86	0	0	0	0	0	0	0	1550
SCRIB	6	122	1695	1654	345	0	0	0	0	0	0	0	3816
STEMS	8	0	39	61	35	0	0	0	0	0	0	0	135
CUVOL	8	0	172	374	280	0	0	0	0	0	0	0	827
SCRIB	8	0	684	1519	1156	0	0	0	0	0	0	0	3360
STEMS	10	0	0	16	9	0	0	0	0	0	0	0	24
CUVOL	10	0	0	157	93	0	0	0	0	0	0	0	251
SCRIB	10	0	0	654	389	0	0	0	0	0	0	0	1043
TOTAL													
STEMS	0	90	479	203	60	0	0	0	0	0	0	0	832
CUVOL	0	100	1047	1021	459	0	0	0	0	0	0	0	2627
SCRIB	0	122	2379	3827	1890	0	0	0	0	0	0	0	8219

STAND: stand17

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
832	184	6.4	37	97

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 5      AVG. # TREES/PT.= 9.2

STAND: stand 18

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	0	107	34	0	0	0	0	0	0	0	0	141
CUVOL	6	0	220	67	0	0	0	0	0	0	0	0	287
SCRIB	6	0	429	0	0	0	0	0	0	0	0	0	429
STEMS	8	0	27	63	38	0	0	0	0	0	0	0	128
CUVOL	8	0	151	381	338	0	0	0	0	0	0	0	871
SCRIB	8	0	611	1548	1401	0	0	0	0	0	0	0	3560
STEMS	10	0	8	50	36	0	0	0	0	0	0	0	94
CUVOL	10	0	81	523	492	0	0	0	0	0	0	0	1096
SCRIB	10	0	339	2179	2064	0	0	0	0	0	0	0	4583
STEMS	12	0	0	15	13	8	0	0	0	0	0	0	36
CUVOL	12	0	0	189	250	146	0	0	0	0	0	0	585
SCRIB	12	0	0	794	1077	616	0	0	0	0	0	0	2486
STEMS	14	0	0	0	5	5	0	0	0	0	0	0	10
CUVOL	14	0	0	0	121	150	0	0	0	0	0	0	271
SCRIB	14	0	0	0	544	684	0	0	0	0	0	0	1228
STEMS	16	0	0	0	0	4	0	0	0	0	0	0	4
CUVOL	16	0	0	0	0	135	0	0	0	0	0	0	135
SCRIB	16	0	0	0	0	638	0	0	0	0	0	0	638
-----													
TOTAL													
STEMS	0	0	142	162	92	17	0	0	0	0	0	0	413
CUVOL	0	0	452	1160	1202	430	0	0	0	0	0	0	3245
SCRIB	0	0	1379	4521	5087	1937	0	0	0	0	0	0	12924

STAND: stand 18

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
413	160	8.4	45	104

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 4      AVG. # TREES/PT.= 8.0



PROGRAM RMCRUZ4

11:52:29 08-12-1998

STAND: stand 19

PER ACRE STAND SUMMARY  
ASPEN

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	384	0	0	0	0	0	0	0	0	0	384
CUVOL	6	0	650	0	0	0	0	0	0	0	0	0	650
SCRIB	6	0	0	0	0	0	0	0	0	0	0	0	0
STEMS	8	0	380	0	0	0	0	0	0	0	0	0	380
CUVOL	8	0	1249	0	0	0	0	0	0	0	0	0	1249
SCRIB	8	0	3042	0	0	0	0	0	0	0	0	0	3042
TOTAL													
STEMS	0	0	764	0	0	0	0	0	0	0	0	0	764
CUVOL	0	0	1898	0	0	0	0	0	0	0	0	0	1898
SCRIB	0	0	3042	0	0	0	0	0	0	0	0	0	3042

STAND: stand 19

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
764	200	6.9	32	100

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 1      AVG. # TREES/PT.=10.0

PROGRAM RMCRUZ4

11:54:09 08-12-1998

STAND: stand20

PER ACRE STAND SUMMARY  
ASPEN

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	33	0	0	0	0	0	0	0	0	0	0	33
CUVOL	6	21	0	0	0	0	0	0	0	0	0	0	21
SCRIB	6	0	0	0	0	0	0	0	0	0	0	0	0
STEMS	8	0	77	86	14	0	0	0	0	0	0	0	177
CUVOL	8	0	252	435	98	0	0	0	0	0	0	0	785
SCRIB	8	0	616	689	109	0	0	0	0	0	0	0	1414
STEMS	10	0	20	56	47	0	0	0	0	0	0	0	123
CUVOL	10	0	113	452	462	0	0	0	0	0	0	0	1027
SCRIB	10	0	156	451	376	0	0	0	0	0	0	0	983
-----													
TOTAL													
STEMS	0	33	97	142	61	0	0	0	0	0	0	0	332
CUVOL	0	21	365	887	561	0	0	0	0	0	0	0	1833
SCRIB	0	0	772	1140	485	0	0	0	0	0	0	0	2397

STAND: stand20

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
332	130	8.5	41	85

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 4      AVG. # TREES/PT.= 6.5



STAND: stand22

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	141	0	0	0	0	0	0	0	0	0	0	141
CUVOL	6	108	0	0	0	0	0	0	0	0	0	0	108
SCRIB	6	0	0	0	0	0	0	0	0	0	0	0	0
STEMS	8	0	0	65	0	0	0	0	0	0	0	0	65
CUVOL	8	0	0	392	0	0	0	0	0	0	0	0	392
SCRIB	8	0	0	1592	0	0	0	0	0	0	0	0	1592
STEMS	10	0	0	68	69	0	0	0	0	0	0	0	136
CUVOL	10	0	0	799	1002	0	0	0	0	0	0	0	1801
SCRIB	10	0	0	3341	4216	0	0	0	0	0	0	0	7557
STEMS	12	0	0	25	24	0	0	0	0	0	0	0	50
CUVOL	12	0	0	434	524	0	0	0	0	0	0	0	957
SCRIB	12	0	0	1830	2279	0	0	0	0	0	0	0	4109
STEMS	14	0	0	0	17	20	0	0	0	0	0	0	37
CUVOL	14	0	0	0	463	552	0	0	0	0	0	0	1015
SCRIB	14	0	0	0	2099	2527	0	0	0	0	0	0	4626
-----													
TOTAL													
STEMS	0	141	0	158	110	20	0	0	0	0	0	0	429
CUVOL	0	108	0	1624	1989	552	0	0	0	0	0	0	4273
SCRIB	0	0	0	6763	8593	2527	0	0	0	0	0	0	17883

STAND: stand22

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
429	200	9.2	47	96

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 1      AVG. # TREES/PT.=10.0

PROGRAM RMCRUZ4

11:58:27 08-12-1998

STAND: stand 23

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	63	71	59	0	0	0	0	0	0	0	0	194
CUVOL	6	50	155	215	0	0	0	0	0	0	0	0	420
SCRIB	6	82	175	633	0	0	0	0	0	0	0	0	891
STEMS	8	0	17	112	0	0	0	0	0	0	0	0	128
CUVOL	8	0	93	674	0	0	0	0	0	0	0	0	767
SCRIB	8	0	378	2737	0	0	0	0	0	0	0	0	3114
STEMS	10	0	0	20	20	0	0	0	0	0	0	0	40
CUVOL	10	0	0	192	235	0	0	0	0	0	0	0	426
SCRIB	10	0	0	796	981	0	0	0	0	0	0	0	1777
STEMS	12	0	0	14	0	0	0	0	0	0	0	0	14
CUVOL	12	0	0	207	0	0	0	0	0	0	0	0	207
SCRIB	12	0	0	874	0	0	0	0	0	0	0	0	874
-----													
TOTAL													
STEMS	0	63	88	205	20	0	0	0	0	0	0	0	376
CUVOL	0	50	249	1288	235	0	0	0	0	0	0	0	1821
SCRIB	0	82	553	5040	981	0	0	0	0	0	0	0	6656

STAND: stand 23

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
376	110	7.3	39	101

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 6      AVG. # TREES/PT.= 5.5



PROGRAM RMCRUZ4

12:03:24 08-12-1998

STAND: stand 24

PER ACRE STAND SUMMARY  
ALL SPECIES

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS 14	0	0	0	0	0	60	0	0	0	0	0	0	60
CUVOL 14	0	0	0	0	0	1688	0	0	0	0	0	0	1688
SCRIB 14	0	0	0	0	0	7616	0	0	0	0	0	0	7616
STEMS 22	0	0	0	0	0	0	0	0	8	0	0	0	8
CUVOL 22	0	0	0	0	0	0	0	0	705	0	0	0	705
SCRIB 22	0	0	0	0	0	0	0	0	3745	0	0	0	3745
STEMS 24	0	0	0	0	0	0	0	0	7	0	0	0	7
CUVOL 24	0	0	0	0	0	0	0	0	692	0	0	0	692
SCRIB 24	0	0	0	0	0	0	0	0	3773	0	0	0	3773
-----													
TOTAL	0	0	0	0	0	60	0	0	15	0	0	0	75
STEMS	0	0	0	0	0	60	0	0	15	0	0	0	75
CUVOL	0	0	0	0	0	1688	0	0	1396	0	0	0	3084
SCRIB	0	0	0	0	0	7616	0	0	7519	0	0	0	15135

STAND: stand 24

PER ACRE SUMMARY

STEMS BA DBH HT AGE  
75 100 15.7 74 110

CRUISE SUMMARY

BAF USED= 20 POINTS SAMPLED= 1 AVG. # TREES/PT.= 5.0

STAND: stand 26

PER ACRE STAND SUMMARY  
ALL SPECIES

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	11	56	14	24	0	0	0	0	0	0	0	106
CUVOL	6	15	120	27	79	0	0	0	0	0	0	0	241
SCRIB	6	0	83	0	0	0	0	0	0	0	0	0	83
STEMS	8	0	28	50	32	0	0	0	0	0	0	0	110
CUVOL	8	0	110	272	172	0	0	0	0	0	0	0	554
SCRIB	8	0	209	737	259	0	0	0	0	0	0	0	1205
STEMS	10	0	0	9	27	4	0	0	0	0	0	0	41
CUVOL	10	0	0	77	334	72	0	0	0	0	0	0	483
SCRIB	10	0	0	76	1048	305	0	0	0	0	0	0	1429
STEMS	12	0	3	13	10	10	3	0	0	0	0	0	39
CUVOL	12	0	30	167	154	191	78	0	0	0	0	0	620
SCRIB	12	0	108	433	618	588	351	0	0	0	0	0	2099
STEMS	14	0	5	5	2	7	2	0	0	0	0	0	22
CUVOL	14	0	65	76	53	204	77	0	0	0	0	0	475
SCRIB	14	0	249	42	237	925	361	0	0	0	0	0	1814
STEMS	16	0	0	0	5	0	4	0	0	0	0	0	9
CUVOL	16	0	0	0	157	0	152	0	0	0	0	0	310
SCRIB	16	0	0	0	709	0	714	0	0	0	0	0	1423
STEMS	18	0	0	0	0	1	0	0	0	0	0	0	1
CUVOL	18	0	0	0	0	63	0	0	0	0	0	0	63
SCRIB	18	0	0	0	0	293	0	0	0	0	0	0	293
STEMS	22	0	0	0	0	0	2	0	0	0	0	0	2
CUVOL	22	0	0	0	0	0	141	0	0	0	0	0	141
SCRIB	22	0	0	0	0	0	719	0	0	0	0	0	719
-----													
TOTAL													
STEMS	0	11	92	93	101	23	11	0	0	0	0	0	331
CUVOL	0	15	325	619	950	531	449	0	0	0	0	0	2888
SCRIB	0	0	649	1288	2871	2111	2145	0	0	0	0	0	9064

STAND: stand 26

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
331	155	9.3	48	92

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 8      AVG. # TREES/PT.= 7.8



PROGRAM RMCruz4

01:33:29 08-18-1998

STAND: stand27

PER ACRE STAND SUMMARY  
ALL SPECIES

		HEIGHT CLASS											
	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	55	318	242	0	0	0	0	0	0	0	0	615
CUVOL	6	28	533	676	0	0	0	0	0	0	0	0	1236
SCRIB	6	0	695	1759	0	0	0	0	0	0	0	0	2454
STEMS	8	0	22	139	44	0	0	0	0	0	0	0	204
CUVOL	8	0	112	774	350	0	0	0	0	0	0	0	1236
SCRIB	8	0	448	3127	1444	0	0	0	0	0	0	0	5019
STEMS	10	0	0	11	19	0	0	0	0	0	0	0	30
CUVOL	10	0	0	93	242	0	0	0	0	0	0	0	336
SCRIB	10	0	0	387	1015	0	0	0	0	0	0	0	1402
TOTAL													
STEMS	0	55	340	392	63	0	0	0	0	0	0	0	850
CUVOL	0	28	644	1543	593	0	0	0	0	0	0	0	2808
SCRIB	0	0	1143	5273	2460	0	0	0	0	0	0	0	8875

STAND: stand27

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
850	185	6.3	39	105

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 8      AVG. # TREES/PT.= 9.3

STAND: stand 28

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											TOTAL
DBH		20	30	40	50	60	70	80	90	100	110	120	
STEMS	6	97	594	28	0	0	0	0	0	0	0	0	719
CUVOL	6	69	921	115	0	0	0	0	0	0	0	0	1106
SCRIB	6	0	1160	455	0	0	0	0	0	0	0	0	1615
STEMS	8	17	92	17	0	0	0	0	0	0	0	0	126
CUVOL	8	67	407	127	0	0	0	0	0	0	0	0	601
SCRIB	8	265	1614	524	0	0	0	0	0	0	0	0	2403
STEMS	10	0	0	7	0	0	0	0	0	0	0	0	7
CUVOL	10	0	0	61	0	0	0	0	0	0	0	0	61
SCRIB	10	0	0	254	0	0	0	0	0	0	0	0	254
-----													
TOTAL													
STEMS	0	114	686	52	0	0	0	0	0	0	0	0	851
CUVOL	0	137	1328	304	0	0	0	0	0	0	0	0	1769
SCRIB	0	265	2774	1233	0	0	0	0	0	0	0	0	4272

STAND: stand 28

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
851	163	5.9	32	108

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 6      AVG. # TREES/PT.= 8.2



PROGRAM RMCRUZ4

12:11:34 08-12-1998

STAND: stand 29

PER ACRE STAND SUMMARY  
ALL SPECIES

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	0	245	27	0	0	0	0	0	0	0	0	272
CUVOL	6	0	426	83	0	0	0	0	0	0	0	0	508
SCRIB	6	0	335	0	0	0	0	0	0	0	0	0	335
STEMS	8	0	132	44	0	0	0	0	0	0	0	0	176
CUVOL	8	0	469	175	0	0	0	0	0	0	0	0	644
SCRIB	8	0	1579	354	0	0	0	0	0	0	0	0	1933
STEMS	10	0	14	0	23	0	0	0	0	0	0	0	37
CUVOL	10	0	105	0	247	0	0	0	0	0	0	0	352
SCRIB	10	0	433	0	186	0	0	0	0	0	0	0	619
STEMS	12	0	0	0	9	9	0	0	0	0	0	0	19
CUVOL	12	0	0	0	161	152	0	0	0	0	0	0	313
SCRIB	12	0	0	0	678	75	0	0	0	0	0	0	753
STEMS	26	0	2	0	0	0	0	2	0	0	0	0	3
CUVOL	26	0	84	0	0	0	0	201	0	0	0	0	285
SCRIB	26	0	393	0	0	0	0	1126	0	0	0	0	1519
TOTAL													
STEMS	0	0	392	71	33	9	0	2	0	0	0	0	508
CUVOL	0	0	1084	257	408	152	0	201	0	0	0	0	2102
SCRIB	0	0	2740	354	864	75	0	1126	0	0	0	0	5159

STAND: stand 29

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
508	147	7.3	40	110

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 3      AVG. # TREES/PT.= 7.3

PROGRAM RMCRUZ4

12:18:14 08-12-1998

STAND: stand30

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

		HEIGHT CLASS											
	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	262	140	0	0	0	0	0	0	0	0	0	401
CUVOL	6	221	280	0	0	0	0	0	0	0	0	0	501
SCRIB	6	178	669	0	0	0	0	0	0	0	0	0	848
STEMS	8	23	55	0	0	0	0	0	0	0	0	0	78
CUVOL	8	61	204	0	0	0	0	0	0	0	0	0	265
SCRIB	8	227	796	0	0	0	0	0	0	0	0	0	1023
STEMS	10	0	21	0	0	0	0	0	0	0	0	0	21
CUVOL	10	0	132	0	0	0	0	0	0	0	0	0	132
SCRIB	10	0	536	0	0	0	0	0	0	0	0	0	536
-----													
TOTAL													
STEMS	0	285	215	0	0	0	0	0	0	0	0	0	500
CUVOL	0	282	615	0	0	0	0	0	0	0	0	0	897
SCRIB	0	406	2001	0	0	0	0	0	0	0	0	0	2407

STAND: stand30

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
500	100	6.1	28	100

CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 6      AVG. # TREES/PT.= 5.0



STAND: stand31

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	126	152	0	0	0	0	0	0	0	0	0	278
CUVOL	6	141	280	0	0	0	0	0	0	0	0	0	420
SCRIB	6	248	458	0	0	0	0	0	0	0	0	0	706
STEMS	8	26	51	45	0	0	0	0	0	0	0	0	121
CUVOL	8	69	251	264	0	0	0	0	0	0	0	0	584
SCRIB	8	259	1006	1070	0	0	0	0	0	0	0	0	2335
STEMS	10	0	19	19	0	0	0	0	0	0	0	0	37
CUVOL	10	0	140	185	0	0	0	0	0	0	0	0	325
SCRIB	10	0	576	770	0	0	0	0	0	0	0	0	1346
STEMS	12	4	0	3	0	0	0	0	0	0	0	0	7
CUVOL	12	28	0	48	0	0	0	0	0	0	0	0	76
SCRIB	12	115	0	200	0	0	0	0	0	0	0	0	315
TOTAL													
STEMS	0	155	221	67	0	0	0	0	0	0	0	0	443
CUVOL	0	238	671	497	0	0	0	0	0	0	0	0	1405
SCRIB	0	622	2040	2041	0	0	0	0	0	0	0	0	4702

STAND: stand31

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
443	115	6.9	32	110

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 8      AVG. # TREES/PT.= 5.8

STAND: stand32

PER ACRE STAND SUMMARY  
LODGEPOLE PINE

	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	6	73	295	246	0	0	0	0	0	0	0	0	615
CUVOL	6	38	548	786	0	0	0	0	0	0	0	0	1372
SCRIB	6	0	696	1967	0	0	0	0	0	0	0	0	2663
STEMS	8	0	18	185	0	0	0	0	0	0	0	0	203
CUVOL	8	0	71	1118	0	0	0	0	0	0	0	0	1189
SCRIB	8	0	279	4539	0	0	0	0	0	0	0	0	4819
STEMS	10	0	0	20	0	0	0	0	0	0	0	0	20
CUVOL	10	0	0	210	0	0	0	0	0	0	0	0	210
SCRIB	10	0	0	873	0	0	0	0	0	0	0	0	873
TOTAL													
STEMS	0	73	313	451	0	0	0	0	0	0	0	0	837
CUVOL	0	38	619	2113	0	0	0	0	0	0	0	0	2770
SCRIB	0	0	975	7380	0	0	0	0	0	0	0	0	8355

STAND: stand32

## PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
837	185	6.4	39	93

## CRUISE SUMMARY

BAF USED= 20      POINTS SAMPLED= 4      AVG. # TREES/PT.= 9.3



STAND: stand 33

PER ACRE STAND SUMMARY  
ASPEN

		HEIGHT CLASS											
	DBH	20	30	40	50	60	70	80	90	100	110	120	TOTAL
STEMS	10	0	0	0	0	35	31	0	0	0	0	0	66
CVOL	10	0	0	0	0	471	535	0	0	0	0	0	1007
SCRIB	10	0	0	0	0	280	247	0	0	0	0	0	527
STEMS	12	0	0	14	0	65	52	0	0	0	0	0	131
CVOL	12	0	0	148	0	1249	1080	0	0	0	0	0	2477
SCRIB	12	0	0	115	0	4474	3678	0	0	0	0	0	8268
STEMS	14	0	0	0	0	40	11	0	0	0	0	0	51
CVOL	14	0	0	0	0	975	271	0	0	0	0	0	1246
SCRIB	14	0	0	0	0	4324	1209	0	0	0	0	0	5533
-----													
STEMS	0	0	0	14	0	140	93	0	0	0	0	0	248
CVOL	0	0	0	148	0	2696	1886	0	0	0	0	0	4729
SCRIB	0	0	0	115	0	9078	5134	0	0	0	0	0	14327

STAND: stand 33

PER ACRE SUMMARY

STEMS	BA	DBH	HT	AGE
248	190	11.9	65	86

CRUISE SUMMARY

PAF USED= 20      POINTS SAMPLED= 2      AVG. # TREES/PT.= 9.5

**APPENDIX B**  
**GROWING STOCK LEVELS**  
**FOR LODGEPOLE PINE**



## Growing Stock Levels for Lodgepole Pine

Average distance between residual trees in the stand in relation to average stand diameter after thinning to the growing stock levels.

DBH	GSL 50	GSL 60	GSL 70	GSL 80	GSL 100	GSL 110	GSL 120
(Distance between trees in feet)							
2.0	11.1	10.2	9.4	8.8	7.8	7.5	7.2
3.0	12.0	11.0	10.2	9.5	8.5	8.1	7.8
4.0	13.2	12.0	11.1	10.4	9.3	8.9	8.5
5.0	14.4	13.0	12.0	11.3	10.1	9.6	9.2
6.0	15.6	14.4	13.2	12.3	11.0	10.5	10.0
7.0	16.9	15.4	14.3	13.3	11.9	11.4	10.9
8.0	18.3	16.7	15.5	14.5	13.0	12.3	11.8
9.0	20.1	18.2	16.8	15.8	14.1	13.4	12.9
10.0	21.8	20.1	18.4	17.2	15.4	14.7	14.1

