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TO STATE FOREST SERV.

# Forest Stewardship Assistance

All programs and assistance are offered on a nondiscriminatory basis without regard to race, color, national origin, religion, sex, age, marital status, or handicap.



Name JAMES PHILLIP GRAVES  
 Address P.O. Box 924 (515 POORMAN ROAD SUNSHINE CANYON) City BOULDER  
 State COLO. Zip code 80306 Phone (303) 442-5154 home  
WORK - 444-0573

I recognize that ownership of my property not only grants me the right to manage this property for my benefit, but also carries with it the responsibility to be a good steward of the land and the natural resources on it. As a good steward I wish to improve the productivity, enhance the natural resources, and preserve future options for the use of this property.

The legal description of my property is NORTH 1/2 NORTHEAST 1/4 SOUTHWEST 1/4 section 22, township 1 N, range 71 W, OF THE 6TH principal meridian, BOULDER County, Colorado. Acres of forest land: 6.328, acres of land suitable for growing trees: 6 ACRES, total stewardship acres: 6 ACRES.

My objectives for forest stewardship management are:

- healthy forest
- aesthetics
- insect and disease control
- fire prevention and fuel reduction
- wildlife habitat improvement for (species) \_\_\_\_\_
- soil & water protection or improvement
- riparian area improvement
- grazing improvement
- forest products (WILL USE SLASH & CUT-TREES FOR OWN FIREWOOD)
- forest agriculture (property tax) classification
- conservation planting for:
  - windbreak or shelterbelt
  - screening
  - noise abatement
  - wildlife habitat for (species) \_\_\_\_\_
  - Christmas trees
  - erosion control
  - reforestation
- other (specify) \_\_\_\_\_

In order to be a good steward of my property I am requesting the assistance of RUSSELL S. SLADE (SEE CARD) to help me develop a stewardship plan to guide me in the managing the resources entrusted to me. I understand that this plan may qualify me for Stewardship Incentive Program (SIP) cost sharing.

James Graves  
Landowner's signature

1/27/92  
date

FOREST STEWARDSHIP PLAN  
FOR  
THE GRAVES PROPERTY  
BOULDER COUNTY, COLORADO

James Graves, Owner  
PO Box 924  
Boulder, CO 80306

Prepared by  
Russell S. Slade, Consultant Forester  
2200 Garland Street  
Lakewood, CO 80215  
April 1992  
Revised May 1992

#### ACKNOWLEDGEMENTS

Thanks to the Soil Conservation Service for making available their publication "Soil Survey of Boulder County Area, Colorado" and to the following State Foresters of the Golden and Boulder Districts for assisting me on the technical aspects of this plan: Boyd Labeda, Doug Stevenson, and Greg Jones.

TABLE OF CONTENTS

- I Objectives
- II General Property Description
- III Past, Current, and Future Use
- IV Topography, Soils, and Climate
- V Wildlife of the Area
- VI Management of the Six Acres
- VII Appendix

## I Objectives

The natural resource management objectives of the Graves property are prioritized as follows:

(1) Defensible space around the home will be thinned and the remaining trees pruned so that a wildfire may be more easily kept away from the home. Jim Graves picked this practice as number one. He is acutely aware of recent disasters in this area, such as the Black Tiger Fire in 1989 which destroyed forty homes.

The list of trees to be cut and estimate of cost are listed in the appendix.

(2) Thin to improve health and reduce inflammability of the woodland on the rest of the property and use thinnings for own firewood.

(3) Maintain the nature trail established by a previous owner.

(4) Maintain wildlife habitat and improve the habitat of the Mountain Bluebird.

(5) Maintain the intermittent draws which form the east and west boundaries of the property. These draws show no sign of erosion now.

## II General Property Description

N NE SW Sec. 22 T14N R71W of 6th Meridian and is 6.3 acres.

The Graves property is located about three miles up the Sunshine Canyon and Poorman Roads as shown on Map #1 taken from the Boulder Quadrangle U.S. Geological Survey.

Map #2 shows the six-acre Graves property surrounded on three sides by private property and the fourth side by a wildlife sanctuary deeded to Boulder County.

### III Past, Current, and Future Use

The Graves property has been used as a home site for several years. Mr. Graves has served as a volunteer fireman and in the seventies worked on Mountain Pine Beetle control on his property and on neighbors' lands.

In the foreseeable future this property will continue to serve as a home site.

### IV Topography, Soils, and Climate

As the maps indicate this area is quite steep with slopes varying from 5 percent where the home is located to 60 percent on the area to the eastern boundary.

According to the soils survey, the Graves property is entirely JrF or the Juliet series which are shallow and excessively drained. JrF is this kind of soil with many granite rock outcrops and this rock is the parent material as well. Most of the JrF profiles are 6 to 11 inches deep. These profiles absorb water quickly but are very erodible if exposed.

Annual precipitation is 18" to 24" and mean annual air temperature is 43 degrees to 46 degrees and frost-free season varies from 80 to 120 days. Month-long droughts occur at any time throughout the year.

### V Wildlife of the Area

The Graves property is located in Latilong Block C-4. By maintaining a forest cover (all animal species listed in Appendix) should be benefited with the exception of the whooping crane which require a river environment. Deer are frequently seen passing through and the Mountain Mahogany show evidence of browsing. Here again trees provide good cover but compete with good browse plants.

Mr. Graves picked the Mountain Bluebird as a wildlife species which would benefit from the following proposed management program on his property. Refer to appendix for improvement of Mountain Bluebird ecosystems.

## VI Management of the Six Acres of Ponderosa Pine

Since the basal area per acre averages 102.5 square feet of tree stems, this average figure should be reduced by improvement and thinning cuts to about 80 square feet per acre.

This reduction in basal area should be obtained by *girdling or* removing the deformed and diseased trees so that the remaining trees will be more vigorous and resistant to insect, disease, and wild fire attack. These six acres of thinning and improvement cuts should be accomplished in 1993 through 1997. At present the distribution of age classes is fairly good. All eight plots had some older yellow pines and one of these was 130 years old and 40 feet tall. This would indicate a site index of 40 feet with very little more height or diameter growth to be expected in this case.

In addition to these mature trees, the remaining ones are immature stems varying in age from reproduction (1 to 10 years old) to trees less than 100 years old.

MANAGEMENT CRUISE

APRIL 1992

STAND: GRAVES PROPERTY, SUNSHINE CANYON

PER ACRE STAND SUMMARY - ALL STEMS PONDEROSA PINE

HEIGHT CLASS

	DBH	10.0	20.0	30.0	40.0	50.0	60.0	TOTAL
STEMS 3		1.0						1.0
CUVOL		.1						.1
STEMS 4		1.0						1.0
CUVOL		.3						.3
STEMS 5		1.0						1.0
CUVOL		6.5						6.5
STEMS 6			2.0					2.0
CUVOL			15.0					15.0
STEMS 7			3.0	2.0				5.0
CUVOL			24.4	26.0				50.4
STEMS 8			3.0	7.0				10.0
CUVOL			25.5	93.6				119.1
STEMS 9				9.0				9.0
CUVOL				123.8				123.8
STEMS 10				6.0				6.0
CUVOL				83.3				83.3
STEMS 11			1.0	5.0	3.0			9.0
CUVOL			9.1	70.6	57.0			136.7
STEMS 12				1.0	6.0	1.0		8.0
CUVOL				14.3	114.8	24.1		153.2
STEMS 13				4.0	4.0	1.0		9.0
CUVOL				57.0	77.0	24.3		158.3
STEMS 14			1.0	2.0		4.0		7.0
CUVOL			11.7	28.8		97.0		137.5
STEMS 15					1.0	1.0	1.0	3.0
CUVOL					19.4	24.4	29.3	73.1
STEMS 16				1.0	4.0	2.0		7.0
CUVOL				14.5	77.5	48.8		140.8
STEMS 17							1.0	1.0
CUVOL							29.4	29.4
STEMS 18					1.0	1.0		2.0
CUVOL					19.5	24.5		44.0
STEMS 19							1.0	1.0
CUVOL							29.4	29.4
TOTALS		2.0	11.0	37.0	19.0	10.0	3.0	82.0
		.4	92.2	511.9	365.2	243.1	88.1	1300.9

Stand: Graves Property  
Stems All Ponderosa Pine  
Per Acre Summary  
Stems 82                    BA = 102.5

DBH        = Diameter Breast High  
CUVOL      = Cubic Foot Volume  
BA         = Basal Area Occupied by Tree Stems

Height Class = in ft.  
10.0 = 10 to 10.9 feet

90 cu ft = One Cord  
          therefore 14.45 cords Per Acre

Russell S. Slade, Consultant Forester  
2200 Garland Street  
Lakewood, CO 80215  
(303) 237-0279

April 1992  
Revised May 1992

I Improvement of Mountain Bluebird Ecosystems

According to "Managing Forested Lands for Wildlife" by the Colorado Division of Wildlife, in cooperation with U.S. Forest Service, Rocky Mountain Region, 1984, the Mountain Bluebird uses all forested ecosystems of western Colorado including the western half of Boulder County for spring, summer, and fall habitat.

Since this property of 6.3 acres is surrounded by similar habitat it may contain room enough for two to three bluebird territories. Therefore, two more bluebird houses should be placed as widely distributed as possible from the one existing box. Also since these boxes need to be replaced periodically, a more permanent solution would be the creation of two tree snags per acre for a total of twelve snags for the whole property. Snags should be created from trees by girdling with an ax. These potential snags should be at least ten inches in diameter breast high and have the mid to upper trunk obscured by branches of live trees.

Also there should not be plant cover around the base of these potential snags sufficient to hide predators. These potential snags should be selected jointly by owner and consultant. In addition to nesting sites the thinning of the trees from 102.5 to 80 sq. feet will lower the crown cover to 40 percent closure and thereby provide more room for bluebird insectivorous feeding. Here again the selection of the trees to be cut should be a joint project of owner and consultant.

II Schedule of Forest Management Practices

(1) Defensible space improvement to be done in 1992. Since the owner will be doing all the work, he will keep track of his time and expenses. 69 trees are to be cut and slash to be chipped and used for mulch around the home. Estimated cost is \$513. Two more bluebird houses will be added to the property.

(2) In 1993 a portion of the 6 acres will be thinned by removing 27 sq. feet of basal area which would yield 0.3 of one cord at an estimated cost of \$50 less \$1.50 for stumpage. The owner will do all this work and use the resulting wood for fire wood. As in practice (1) the owner will keep track of his time and expenses. Also the owner will create two snags by girdling with an ax.

(3) In 1994 through 1997, 108 sq. feet will be removed leaving an average of 80 sq. feet per acre or a total of 480 sq. feet for the six acres. Estimated cost would be \$48.50 per year. Mr. Graves will use all wood produced for his own firewood. Some of the slash produced will be piled to create "houses" for small animals, such as the Nuttals cottontail. Also Mr. Graves will girdle ten (10) more trees for well distributed snags. This will provide for a total of 12 snags for the entire property.

REVISED APPENDIX June 3, 1992

STATISTICAL ANALYSIS OF EIGHT PLOTS TAKEN ON  
JIM GRAVES LAND ON SUNSHINE CANYON NW OF BOULDER  
April 3, 1992

Plot #	Tree Count	Deviation	
		from Mean	2 (Dev.)
1	11	.75	.56
2	17	6.75	45.56
3	3	7.25	52.56
4	18	7.75	60.06
5	6	4.25	18.06
6	10	.25	.06
7	9	1.25	1.56
8	8	2.25	5.06

$$n = 8 \quad \frac{8 \quad 82}{M = 10.25} \quad Z \text{ (Dev)}^2 = 183.48$$

$$\text{Std Dev} = \sqrt{\frac{\sum z(D)^2}{n-1}} = \sqrt{\frac{183.48}{7}} = \sqrt{26.21} = 5.12 = \text{SD}$$

$$\text{Std Error} = \frac{\text{SD}}{\sqrt{n}} = \frac{5.12}{\sqrt{8}} = \frac{5.12}{2.83} = 1.81 = \text{SE}$$

$$\text{LE (Limit of Error)} = \frac{\text{SE}}{M} = \frac{1.81}{10.25} = 0.18 = 18\%$$

$$\text{CV (Coef of Var.)} = \frac{\text{SD}}{M} = \frac{5.12}{10.25} = 0.50 = 50\%$$

N of Plots

$$N \text{ (For 1 SD)} = \frac{(1)^2}{\frac{(\text{CV})^2}{2}} = \frac{(1)^2}{\frac{(.50)^2}{2}} = \frac{.25}{.04} = 6.25$$

(% Acc)                      (.20)

Russell S. Slade, Consultant Forester  
 2200 Garland Street, Lakewood, CO 80215  
 Phone 303-237-0279  
 April 2, 1992

To: Jim Graves  
 PO 924  
 Boulder, CO 80306

Re: Trees marked for removal in your defensible space surrounding your home  
 in Sunshine Canyon

TABLE OF TREES TO BE REMOVED

DBH	Total Tree Ht. Ft.				Total	Cords
	10	20	30	40		
2	12	1			13	.039
4	8	9			17	.153
6	5	13			18	.594
8		2	3		5	.330
10		2	9	1	12	1.176
12				2	2	.348
14			1		1	.204
16				1	1	.307
Totals	25	27	13	4	69	3.151

At \$5.00 per cord the stumpage value of these trees should be \$15.76. It is estimated to cut these trees down without damaging buildings and other improvements would take about 48 hours at \$8.50 = \$408 plus \$105 for branch chipper rental which would equal \$513 for total of cost of felling and disposing of the 69 trees in the defensible space.

Also please find enclosed a statistical analysis of the eight plots we have measured for the management plan.

I will have the management plan completed soon and will send you a copy.

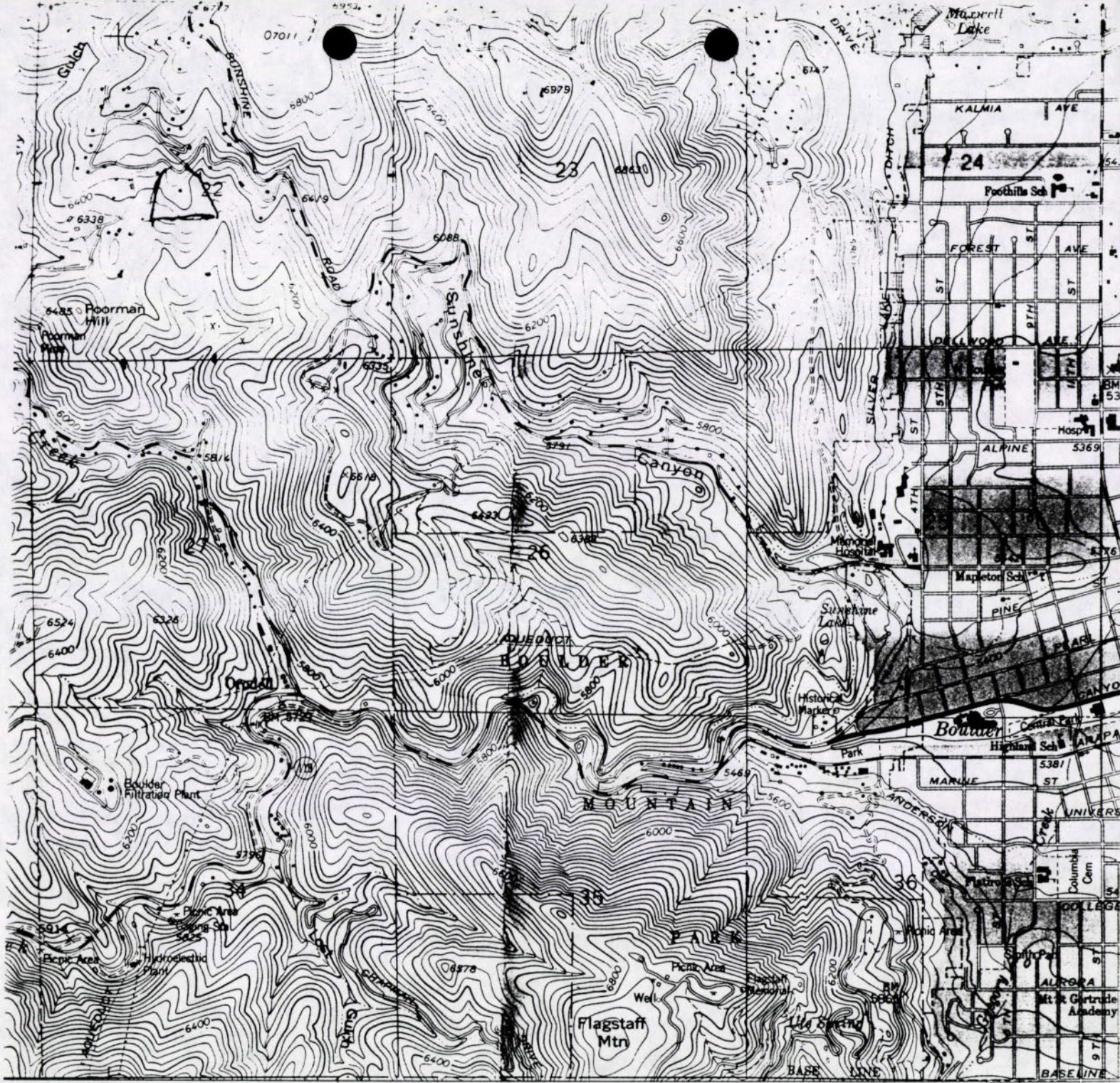
Copy: Greg Jones  
 Colorado State Forest Service  
 936 Lefthand Canyon Dr.  
 Boulder, CO 80302

PLEDGE OF INTENT

This management plan has been prepared at my request to guide my Stewardship management activities which I voluntarily apply on my property. I believe that activities recommended in this plan are appropriate to meet my objectives and will benefit the natural resources on my property. I intend to apply the recommended practices and to maintain them for a period of ten years, thus helping me to be a good Steward of the forest and associated resources entrusted to me on my property.

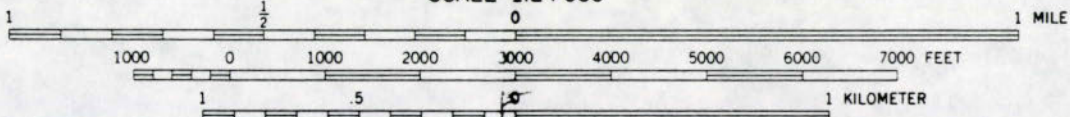
  
(Landowner)

4/25/92  
Date



20 472 IELDORADO SPRINGS) 474 475 17'30" R. 71 W. F

SCALE 1:24 000



CONTOUR INTERVAL 40 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

C NORTH SHEET

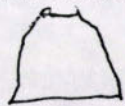
within the

state reservations

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

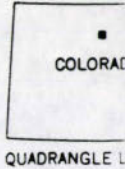
in American Datum 1983  
eters north and  
shed corner ticks

Map #1



Graves Property  
N 2 NE + SW 4 Sec 22 T1N R 71W  
6th Meridian

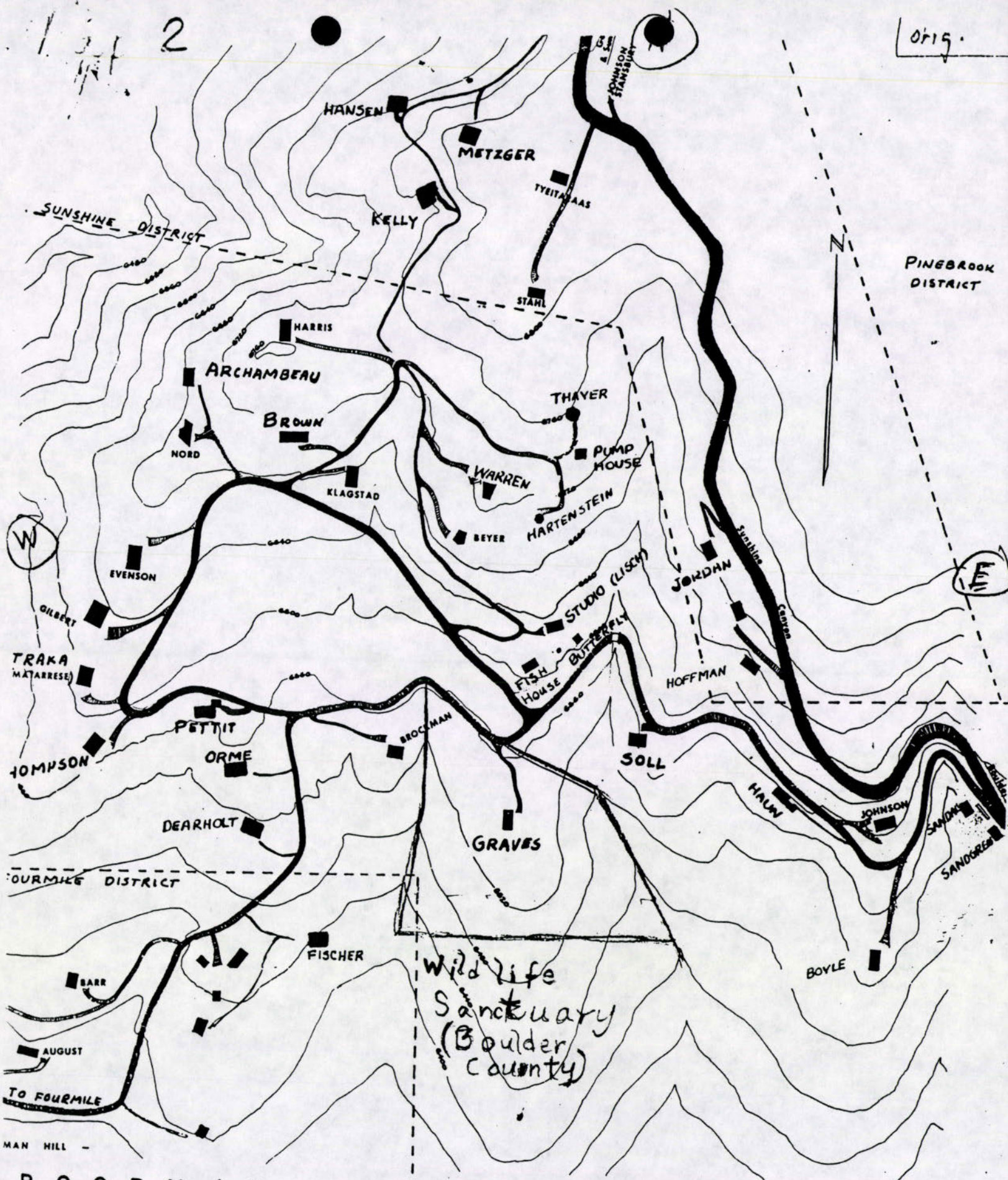
Revisions shown in purple  
taken 1978 and other sourc  
field checked. Map edited  
Purple tint indicates exten



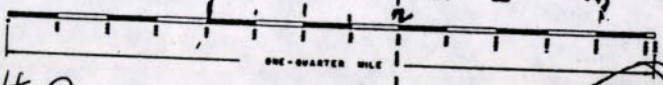
QUADRANGLE L

2

0119



POORMAN FIRE AREA



Map #2

Legal Description  
 N<sup>2</sup>NE<sup>4</sup>SW<sup>4</sup>Sec 22  
 T<sup>11</sup>N R<sup>7</sup>W of 6th Meridian

Table 3.—Gross merchantable volumes, in cubic feet inside bark per square foot of basal area, merchantable stem excluding stump and top, ponderosa pine in the Front Range of Colorado. Top diameter 4 inches inside bark. Stump height 1 foot

d.b.h. inches	Total height (feet) above ground								
	20	30	40	50	60	70	80	90	100
5	5.2	9.2	13.1	17.1					
6	6.0	9.9	13.9	17.9					
7	6.5	10.4	14.4	18.3	22.3				
8	6.8	10.7	14.7	18.7	22.6	26.6			
9	7.0	11.0	14.9	18.9	22.9	26.8			
10	7.2	11.1	15.1	19.1	23.0	27.0			
11	7.3	11.3	15.2	19.2	23.1	27.1	31.1		
12	7.4	11.4	15.3	19.3	23.2	27.2	31.2		
13	7.5	11.4	15.4	19.4	23.3	27.3	31.2		
14		11.5	15.5	19.4	23.4	27.3	31.3		
15		11.5	15.5	19.5	23.4	27.4	31.3		
16		11.6	15.5	19.5	23.5	27.4	31.4	35.3	
17		11.6	15.6	19.5	23.5	27.5	31.4	35.4	
18		11.6	15.6	19.6	23.5	27.5	31.4	35.4	
19		11.7	15.6	19.6	23.5	27.5	31.5	35.4	
20		11.7	15.6	19.6	23.6	27.5	31.5	35.4	
21			15.7	19.6	23.6	27.5	31.5	35.5	
22			15.7	19.6	23.6	27.6	31.5	35.5	39.4
23			15.7	19.7	23.6	27.6	31.5	35.5	39.5
24				19.7	23.6	27.6	31.5	35.5	39.5
25				19.7	23.6	27.6	31.6	35.5	39.5
26				19.7	23.6	27.6	31.6	35.5	39.5
27				19.7	23.7	27.6	31.6	35.5	39.5
28					23.7	27.6	31.6	35.5	39.5
29					23.7	27.6	31.6	35.5	39.5
30					23.7	27.6	31.6	35.6	39.5

Computed from:  $VIB = 0.39603H - 81.90019/D^2$   
Diameter classes full-inch (e.g., 20-inch class includes 20.0 to 20.9 inches d.b.h.)

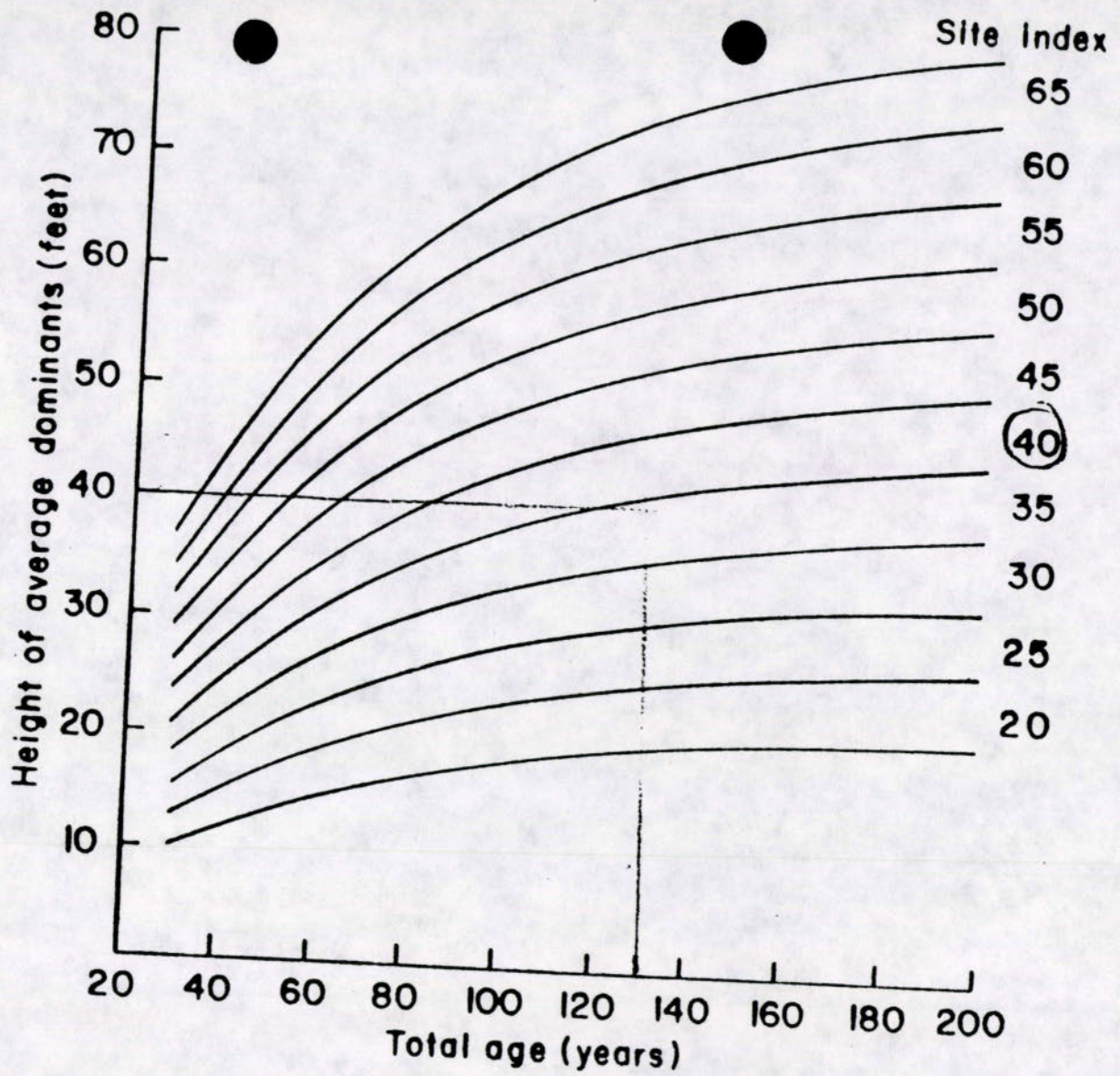


Figure 26.—Site index curves for ponderosa pine.  
 East slope Front Range, Colorado.  
 Base age: 100 years, total age.

11045

MAP OF COLORADO



Map #3 for Endangered & Threatened Species of Wildlife & Plants

