

FOREST STEWARDSHIP PLAN

for

LARRY BUTLER  
1503 Adonia Circle  
Lafayette, CO 80026  
665-6902

W1/2 E1/2 NE1/4 SE1/4, Sec 9, T1N, R69W, S.P.M.

(10.0 Acres)

Prepared By:

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September 19, 1993

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 at least ten years, thus helping me to be a good steward of the forest and associated resources entrusted to me on my property.

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Larry Butler

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Date

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## OBJECTIVE

To create windbreaks to protect a future house, backyard and wildlife area, a plum thicket to provide wildlife shelter and food (primarily birds) and a pine thicket to provide cover and nesting sites for mourning doves.

## DESCRIPTION

The property is located at 9825 Philips Road on the north side, 0.8 miles east of Ninety-fifth Road.

Buildings have not yet been constructed. The building site is located about 350 feet from the road and 135 feet from the west property line. A three-row perimeter windbreak planting is proposed on all sides except the north 300 feet of the west side, where two wildlife shelter plantings will double as windbreaks.

Annual precipitation is about 15 inches. Plant cover is entirely grass and forbs, except where trees have been planted around the building site.

The soil is Ascalon sandy loam at the north end of the property, grading to Ascalon-Otero complex as it approaches the road.

These are deep, well-drained soils formed on terraces and uplands in mixed alluvium and eolian deposits. Climax vegetation is mainly blue grama. The growing season is 140 to 155 days. The surface layer is gray-brown sandy loam, about 8 inches thick. These soils are slightly alkaline at depths greater than twelve inches, becoming strongly calcareous at a depth of 60 inches. Root penetration exceeds 60 inches. On eroded sites, species sensitive to high pH should be avoided. American plum and Rocky Mountain juniper would both work here. Runoff is slow to medium; water erosion hazard is slight to moderate; wind erosion hazard is high. Land capability unit is IIIe-8, non-irrigated; tree suitability group is 4.

Capability Unit IIIe-8 (non-irrigated) can be used for dry crops if a summer-fallow rotation is used to conserve water. Grass or plant residues have to be maintained to prevent wind damage. Crested wheatgrass, pubescent wheatgrass, intermediate wheatgrass and Russian wildrye are suited to this site. Trees grow well without irrigation if weed barrier, cultivation or other water-conserving practices are applied.

## INVENTORY

Currently, there is no native woody vegetation on the property. Several ornamental trees have been planted near the house site. Most of the site is occupied by broadleaved annuals.

## WILDLIFE

Rabbits currently use the site. No threatened or endangered species have been seen in the vicinity. Meadow larks were seen nearby.

## PLANTING PROJECTS

## Wildlife Thickets

## Purpose:

1. To provide escape cover and ameliorate the predator-lane effect.
2. To provide wildlife food sources.
3. To shelter the north end of the property, creating a protected area for ground-nesting birds.

Description: Two 1/10-acre shrub thickets (SIP-8, WH2) are planned. Each thicket occupies 0.1 acres and benefits 3.0 acres. Plums are on a 4'X4' spacing; pines are on an 8'X8' spacing.

Thicket #1: At the north end of the west-side windbreak, adjoining the property line, a four-row planting of American plum on a four-by-four spacing will join the west-side and north-side windbreaks. The plum thicket will be 16 feet wide by 300 feet long (32 feet by 310 feet, including buffer strips) and require 300 seedlings. Including buffer strips, it will occupy 0.23 acres.

Thicket #2: Adjoining and parallel to the plum planting, a two-row ponderosa pine thicket will add height and provide nesting sites for tree-nesting birds. It will be 16 feet wide by 300 feet long (28 feet by 310 feet, including buffer strips) and require 75 seedlings. Including buffer strips, it will occupy 0.20 acres.

Below is a list of costs associated with both types of thickets.

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Plum Thicket (Planting A):

300 Bare-root shrubs @ \$0.38 ea.:	\$ 108.00
1215 Staples @ \$43.40/1000:	52.73
900' Weed Barrier @ \$110.00/300':	<u>330.00</u>
SUB-TOTAL	\$ 490.73
Sales Tax (3%)	<u>14.72</u>
TOTAL, MATERIALS:	\$ 505.45
LABOR, PLANTING; 300 trees @ \$1.50 ea.:	450.00
LABOR, WEED BARRIER; 300 yards @ \$0.88 ea.:	<u>264.00</u>
GRAND TOTAL*	\$1183.45
From Stewardship Incentives Program	<u>-280.00</u>
Net cost	\$ 903.45

Ponderosa Pine Thicket (Planting B):

74 Large-pot trees @ \$0.91 ea.:	\$ 67.34
710 Staples @ \$43.40/1000:	30.74
600' Weed Barrier @ \$110.00/300':	<u>220.00</u>
SUB-TOTAL	\$ 318.08
Sales Tax (3%)	<u>9.54</u>
TOTAL, MATERIALS:	\$ 327.62
LABOR, PLANTING; 75 trees @ \$1.50 ea.:	112.50
LABOR, WEED BARRIER; 200 yards @ \$0.88 ea.:	<u>176.00</u>
GRAND TOTAL*	\$ 616.12
From Stewardship Incentives Program	<u>-280.00</u>
Net cost	\$ 336.12

\*Based on 1993 prices. Prices are approximate and subject to change. If machines are used for planting and laying weed barrier, labor costs can be considerably reduced (approximately halved), but machines usually have higher mortality and shock rates and cannot achieve the precise spacing possible by hand. Bulk rates are available if you do several projects at once and order enough trees. If you do the work yourself, you can charge your own labor as a reimbursable cost. Also, tree planting costs are deductible for Federal and State income taxes. The exact amounts saved vary with your income, deductions and other circumstances; check with a professional tax preparer for details.

Farmstead Windbreaks, West and North Sides (SIP-4, FFW & MUL):

Purpose: To protect the house site from direct exposure to west and northwest winds.

## STEWARDSHIP INCENTIVES PLAN

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Description: These are three-row windbreaks along the west side and crossing through the center of the property. Each is 24 feet wide (36 feet, counting buffer strips; eight feet between rows) and will shelter a 400-foot-wide strip on the downwind side when it reaches a height of 20 feet (about twelve years with good care and maintenance).

West Side House Windbreak (Planting D): Area treated is 0.5 acres; area benefitted is 6.0 acres. Length is 565 feet. Plums are on a four-foot spacing; junipers and pinyons are on a six-foot spacing.

141 American plums @ \$0.38 ea.:	\$ 53.58
94 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	85.54
94 Large-pot pinyon pines @ \$0.91 ea.:	85.54
1906 Staples @ \$43.40/1000:	82.73
1695' Weed Barrier @ \$110.00/300':	<u>621.50</u>
SUB-TOTAL	\$ 928.89
Sales Tax (3%)	<u>27.87</u>
TOTAL, MATERIALS:	\$ 956.76
LABOR, PLANTING; 329 trees @ \$1.50 ea.:	493.50
LABOR, WEED BARRIER; 565 yards @ \$0.88 ea.:	<u>497.20</u>
GRAND TOTAL	\$1947.46
From Stewardship Incentives Program:	<u>-500.00</u>
Net Cost	\$1447.46

North Side House Windbreak (Planting C): Area treated is 0.2 acres; area benefitted is 2.5 acres; length is 268 feet. Plums are on a four-foot spacing; junipers and pinyons are on a six-foot spacing.

67 American plums @ \$0.38 ea.:	\$ 25.46
44 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	40.04
44 Large-pot pinyon pines @ \$0.91 ea.:	40.04
907 Staples @ \$43.40/1000:	39.38
804' Weed Barrier @ \$110.00/300':	<u>294.80</u>
SUB-TOTAL	\$ 439.72
Sales Tax (3%)	<u>13.19</u>
TOTAL, MATERIALS:	\$ 452.91
LABOR, PLANTING; 155 trees @ \$1.50 ea.:	232.50
LABOR, WEED BARRIER; 268 yards @ \$0.88 ea.:	<u>235.84</u>
GRAND TOTAL	\$ 921.25
From Stewardship Incentives Program:	<u>-200.00</u>
Net Cost	\$ 721.25

## STEWARDSHIP INCENTIVES PLAN

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West Side Backyard Windbreak (Planting E): Area treated is 0.2 acres; area benefitted is 2.5 acres; length is 275 feet. Plums are on a four-foot spacing; junipers and pinyons are on a six-foot spacing.

68 American plums @ \$0.38 ea.:	\$ 25.84
45 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	40.95
45 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	40.95
930 Staples @ \$43.40/1000:	40.40
825' Weed Barrier @ \$110.00/300':	<u>302.50</u>
SUB-TOTAL	\$ 450.64
Sales Tax (3%)	<u>13.52</u>
TOTAL, MATERIALS:	\$ 464.16
LABOR, PLANTING; 158 trees @ \$1.50 ea.:	237.00
LABOR, WEED BARRIER; 275 yards @ \$0.88 ea.:	<u>242.00</u>
GRAND TOTAL	\$ 943.16
From Stewardship Incentives Program:	<u>-200.00</u>
Net Cost	\$ 743.16

North Side Backyard Windbreak (Planting F): Area treated is 0.2 acres; area benefitted is 2.5 acres; length is 268 feet. Plums are on a four-foot spacing; junipers and pinyons are on a six-foot spacing.

67 American plums @ \$0.38 ea.:	\$ 25.46
44 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	40.04
44 Large-pot pinyon pines @ \$0.91 ea.:	40.04
907 Staples @ \$43.40/1000:	39.38
804' Weed Barrier @ \$110.00/300':	<u>294.80</u>
SUB-TOTAL	\$ 439.72
Sales Tax (3%)	<u>13.19</u>
TOTAL, MATERIALS:	\$ 452.91
LABOR, PLANTING; 155 trees @ \$1.50 ea.:	232.50
LABOR, WEED BARRIER; 268 yards @ \$0.88 ea.:	<u>235.84</u>
GRAND TOTAL	\$ 921.25
From Stewardship Incentives Program:	<u>-200.00</u>
Net Cost	\$ 721.25

## STEWARDSHIP INCENTIVES PLAN

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North Side Wildlife Area Windbreak (Planting G): Area treated is 0.2 acres; area benefitted is 2.6 acres; length is 288 feet. Plums are on a four-foot spacing; junipers and pinyons are on a six-foot spacing.

72 American plums @ \$0.38 ea.:	\$ 27.36
48 Large-pot Rocky Mtn. junipers @ \$0.91 ea.:	43.68
48 Large-pot pinyon pines @ \$0.91 ea.:	43.68
975 Staples @ \$43.40/1000:	42.32
864' Weed Barrier @ \$110.00/300':	<u>316.80</u>
SUB-TOTAL	\$ 473.92
Sales Tax (3%)	<u>14.22</u>
TOTAL, MATERIALS:	\$ 488.14
LABOR, PLANTING; 168 trees @ \$1.50 ea.:	252.00
LABOR, WEED BARRIER; 288 yards @ \$0.88 ea.:	<u>253.44</u>
GRAND TOTAL	\$ 993.58
From Stewardship Incentives Program:	<u>-200.00</u>
Net Cost	\$ 793.58

Visual Barriers/Hedgerows (SIP-4, HEP & MUL):

**Purpose:** To provide a privacy screen along the road and along the neighbor's property line.

**Description:** These three-row plantings are similar to windbreaks, except that there is a wider selection of species. The shrub row can consist of any deciduous shrub of adequate form and resistance to slightly high pH planted on a four-foot spacing. The medium-height row can be either Rocky Mountain juniper or pinyon on a six-foot spacing. The tall row can be any tall-growing species suitable for the site; except that, it might be wise to avoid ponderosa pine because of its extensive use in the other plantings and its low tolerance to high pH conditions. Blue spruce also is sensitive to high pH conditions.

South Side Visual Barrier (Planting H): Area treated is 0.2 acres; area benefitted is 2.5 acres; length is 268 feet.

## STEWARDSHIP INCENTIVES PLAN

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67 Shrubs @ \$0.38 ea.:	\$ 25.46
44 Large-pot pinyons or junipers @ \$0.91 ea.:	40.04
33 Large-pot trees @ \$0.91 ea.:	30.03
907 Staples @ \$43.40/1000:	39.38
804' Weed Barrier @ \$110.00/300':	<u>294.80</u>
SUB-TOTAL	\$ 429.71
Sales Tax (3%)	<u>12.89</u>
TOTAL, MATERIALS:	\$ 442.60
LABOR, PLANTING; 144 trees @ \$1.50 ea.:	216.00
LABOR, WEED BARRIER; 268 yards @ \$0.88 ea.:	<u>235.84</u>
GRAND TOTAL	\$ 894.44

From Stewardship Incentives Program:	<u>-200.00</u>
Net Cost	\$ 694.44

East Side Visual Barrier (Planting I): Area treated is 1.1 acres; area benefitted is 10.0 acres (Visual Barrier) or 11.8 acres (Windbreak); length is 1290 feet.

322 Shrubs @ \$0.38 ea.:	\$ 122.36
215 Large-pot pinyons or junipers @ \$0.91 ea.:	195.65
161 Large-pot trees @ \$0.91 ea.:	146.51
4345 Staples @ \$43.40/1000:	188.57
3870' Weed Barrier @ \$110.00/300':	<u>1419.00</u>
SUB-TOTAL	\$2072.09
Sales Tax (3%)	<u>62.16</u>
TOTAL, MATERIALS:	\$2134.25
LABOR, PLANTING; 698 trees @ \$1.50 ea.:	1047.00
LABOR, WEED BARRIER; 1290 yards @ \$0.88 ea.:	<u>1135.20</u>
GRAND TOTAL	\$4316.45

From Stewardship Incentives Program:	<u>-1100.00</u>
Net Cost	\$3216.45

## MAINTENANCE

The use of weed barrier just about eliminates the need for maintenance, if it can be placed by mid-June (preferably June 1st). The only thing needed is an occasional inspection tour to re-anchor weed barrier that comes loose. Watering will increase survival and growth, but it is not needed.

You can expect about 15% loss during the first year a planting is in the ground. One year after planting, seedlings usually look terrible. Tenth-acre shrub thickets can tolerate about 30% loss without replanting, but windbreaks and snowfences must be replanted if they suffer even minor losses to keep from losing their effectiveness. These maintenance plantings may be

cost-shared and generally pay the entire 65%. By the third year of a planting, transplant losses should no longer be a problem. A seedling is considered established after surviving five years.

Gaps in a windbreak are disastrous - wind blows harder through the gap than it does on the open plain. Gaps wider than 1.5 times the specified spacing should be filled with trees at the next maintenance planting.

There are a number of things that should be done to enhance seedling survival and growth:

Grass is a vigorous competitor with tree seedlings. It drinks up water and adds compounds to soil to poison competition. Seedlings grow much better if they don't have to compete with it.

Weed barrier is a woven plastic cloth. It kills grass. Laid around tree seedlings, it provides needed relief from competition. It is expensive (\$2.17 per tree for widely-spaced trees). It is cheaper if seedlings are placed close together (like plums). Weed barrier used in windbreaks can be cost-shared. In 1/10-acre shrub patches, the cost of weed barrier is included in the totals.

## RECOMMENDATIONS

Complete planting projects in the priority listed:

	Project	Cost	SIP	Net
1.	Thicket A (Plum)	\$1183.45	\$ 280	\$ 903.45
2.	Thicket B (Juniper)	616.12	280	336.12
3.	Windbreak D	1947.46	500	1447.46
4.	Windbreak C	921.25	200	721.25
5.	Windbreak E	943.16	200	743.16
6.	Windbreak F	921.25	200	721.25
7.	Windbreak G	993.58	200	773.58
8.	Hedgerow H	894.44	200	694.44
9.	Hedgerow I	4316.45	1100	3216.45

The #1 and #2 plantings are "required" by Stewardship, in that they fill the minimum requirements for a wildlife practice and a wood-producing practice. If these are completed, nothing else is required. All activities listed should be applied in the order listed to have the best chance at cost-sharing.

No time table is given for the plantings. If done in the order listed, any desired annual schedule may be used. Each planting may need up to three years of additional maintenance that must be done, if needed.

## FUTURE COST-SHARING:

Figures shown above are for installation of plantings on the attached map. There are economies of scale for larger plantings, so it would be good to combine phases. The exact combination chosen is likely to affect the cost-sharing as various thresholds are crossed.

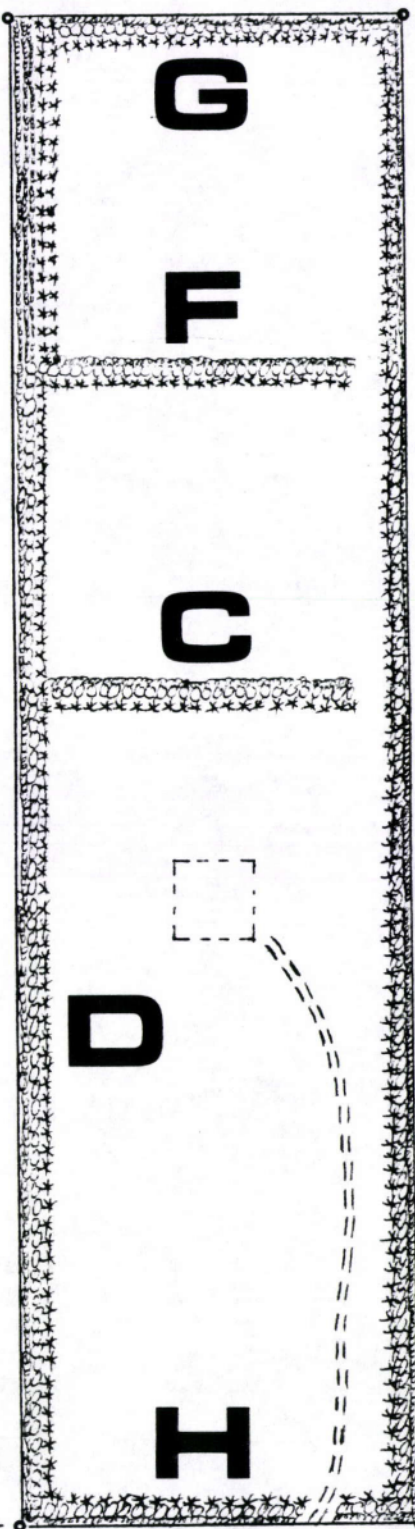
Without knowing precise survival rates, costs of maintenance planting cannot be calculated; however, it usually grosses about one-fifth of the cost of installation and current cost-sharing rates are set to cover the full 65% of actual cost. Though cost-sharing for maintenance is not guaranteed, there is a concern for protecting the government's investments. Maintenance is usually given a high priority.

Respectfully Submitted By:

Douglas J. Stevenson  
Assistant District Forester

**A**  
**B**  
**C**  
**D**  
**E**

336'



300'  
575'  
275'  
725'  
150'  
415'

165 Feet  
10 Rods



- o Known Corner
- Property Line
- == Drive (Proposed)
- [ ] House (Proposed)
- ▨ Shrub Row
- ∞ Pinyon/Juniper Row
- \*\* Ponderosa Pine Row

# Larry Butler

W1/2 E1/2  
SE1/4 NE1/4,  
Section 9,  
T1N, R69W,  
S.P.M.

10.0 Acres

Drawn By: *Douglas J. Stevenson*

September 18, 1993