

Lankford Foresters, Inc.

Private Forest and Land Management • Forestry Consulting

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Wildfire Hazard and Vegetation Report

for the

Proposed Subdivision Project
located north of Shoup Road, 0.25 east of Highway 83

Prepared by
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VERSION # 2
DATE 9/15/08

January, 1999

Introduction

This report is a result of a field, map, and aerial photo study of the proposed subdivision area north of Shoup Road and east of Highway 83 in northern El Paso County, Colorado. See Figure 1, Topographic Map.

Vegetation

General conditions:

- a. In the south area, scattered oak is in clumps, with adequate separation to make and wildfire fuel discontinuous and less of a hazard.
- b. Knapweed was found along the main road into the property -- and needs control.
- c. In the timber areas, short steep slopes of 10 - 50 percent grades are populated with trees of large and small diameters -- some stands of 5-8" trees very dense and extreme fire hazard. Others have oak understory, also mountain mahogany brush species.
- d. Only very old evidence of fire was found-- old burned-out stumps and logs. The trees range in age to 150-170 years (oldest). Last timber cut was evidently over 100 years ago.

Wildfire Hazard Ratings

See Figure 2. Wildfire Hazard Rating Map. This was prepared using current aerial photos and field observations. The classification system is that adopted by the Colorado State Forest



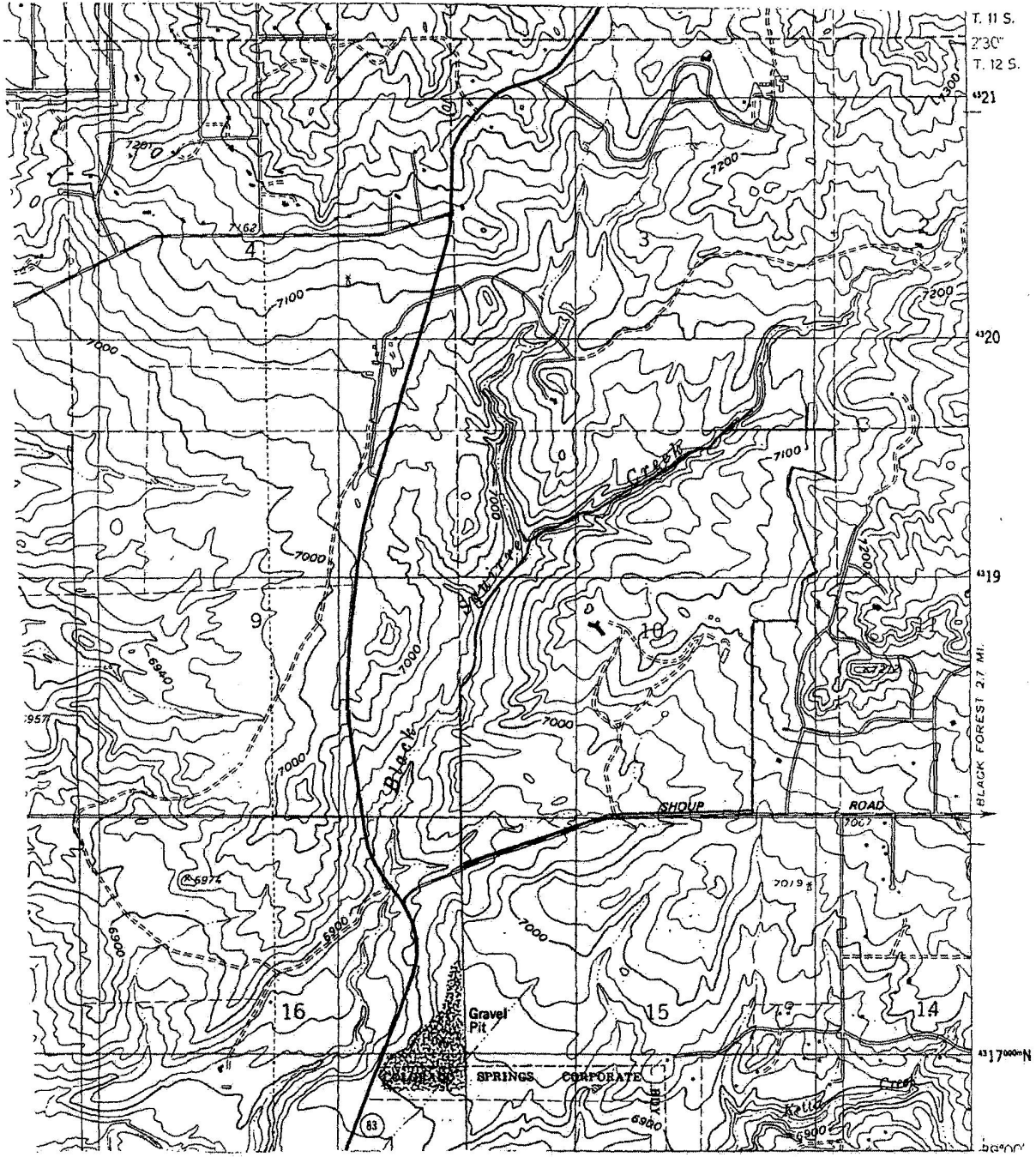
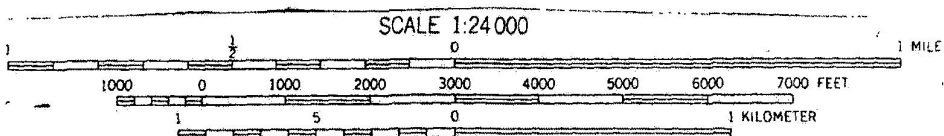


FIGURE 1.
 TOPOGRAPHIC MAP - SUBDIVISION PROJECT
 FROM USGS QUAD - MONUMENT, 1986



CONTOUR INTERVAL 20 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

Service, as developed by George R. Fahnestock in "Rating Forest-Fire Hazard in Residential Developments in Colorado Forests," 1971. See Table 1. Fire behavior and vegetation characterizing fire hazard classes" from page 5 of that document.

Approximately one-half of the proposed subdivision area is in classifications X and A, both of low fire hazard. The other half is in classifications B and C, or combinations B-C where short steep slopes and dense tree cover cause parts of the stands to be rated up to C. All B and C areas need treatment.

Recommended Treatments

The recommendations for Zones 1 and 2 of the Colorado State Forest Service for "Creating Fire-Safe Zones," publication Number 6.302 of CSU Cooperative Extension Service, 6/97, (copy attached) should be implemented near new homes on the property. Recommendations for Zone 3 should be applied to the rest of the property.

The following are additional recommendations for fire hazard and forest health treatments to be done forest-wide on the property:

- The dense stands need fire hazard removal through selective thinning to keep better trees and those less susceptible to snow bend. These are full-crowned and thus healthier than the rest and will respond to the thinning with increased vigor. The exceptions may be on the very steep banks of the streambed bordering the northwest side of the property -- here the dense trees are stabilizing the soil, though some areas have landslides and tree loss evident.
- The steep valleys contribute a potential fuel chimney effect in a wildfire, and thus need special treatment in a housing area by dramatic thinning and removal of lower fuels and small trees.
- The understory of oak and small pine regeneration (which is not common on this property due to grazing) needs to be broken up and the ladder fuels on remaining trees need reduction --- green and dead low branches.
- Some oak trees of tree sizes and other larger oak need preservation as rare specimens.
- There is a good interspersing of meadows in the timber areas of the property (rated as "A" on the map), but these need enlarging and preservation. Low, small trees on edges of the meadows should be removed or re-spaced to other parts of the property.
- Also in the steep ravines are rare Douglas-fir of diameters up to 6". These show the potential of the area for alternative trees species which could enhance the site. A few ground juniper were also found and contribute to vegetation diversity.

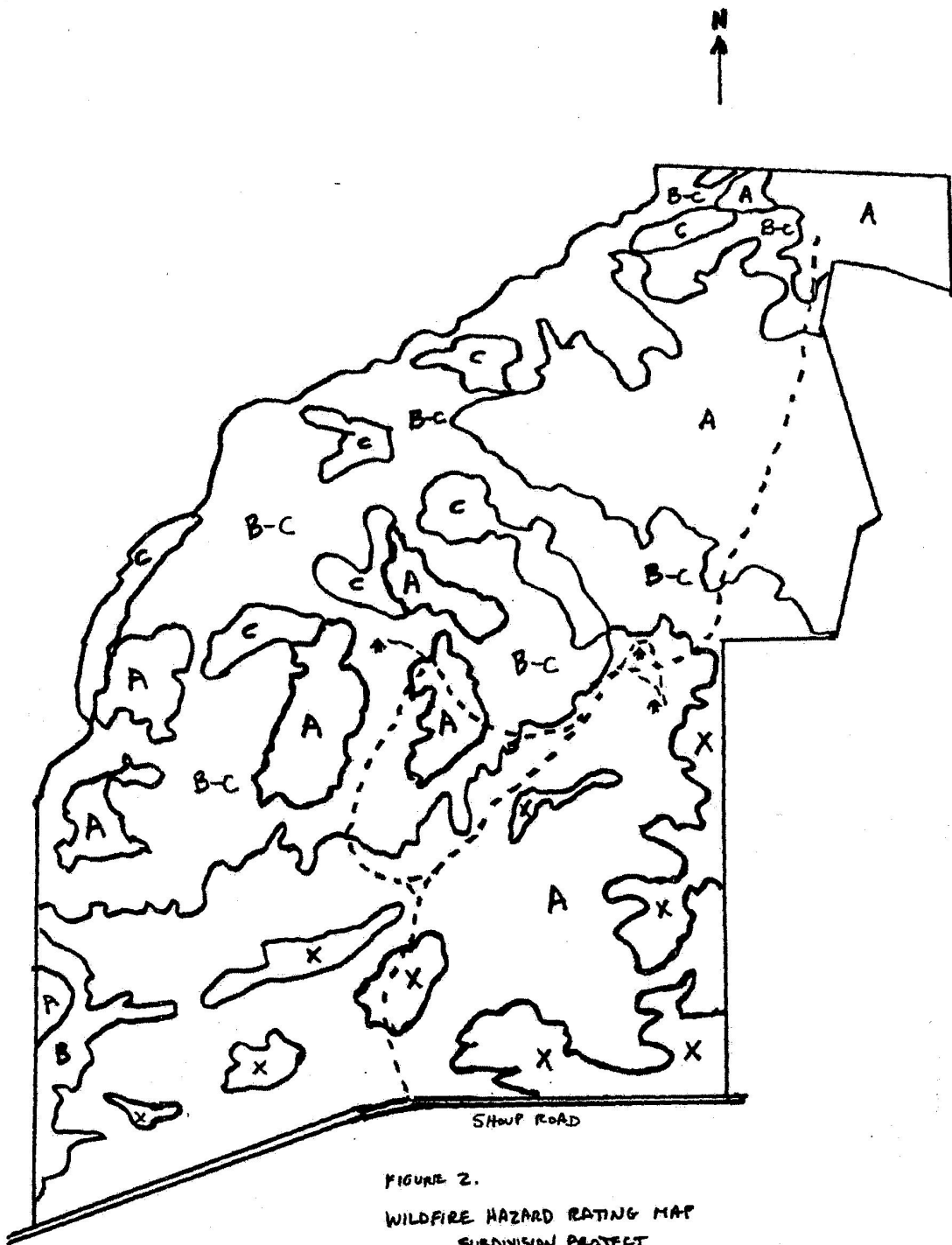


FIGURE 2.

WILDFIRE HAZARD RATING MAP
SUBDIVISION PROJECT

1999

SCALE 1:10,500

X, A, B, C = HAZARD CLASS . FROM AERIAL PHOTOS NO.
1-1 THROUGH 1-4
LM 9830, MAY 30, 1998.

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--Some over 30-inch pines are present. Also, lightning-struck trees, dead trees with cavity-nesting birds, and low fire-hazard trees, including willows in the creek bed, aspens, and cottonwoods. Wildlife species include white-tail deer, rabbits, squirrels, and porcupines. The willows, aspen, cottonwood, cattails, and water in the creek and in man-made water holes on the property contribute to wildlife habitat diversity, and they should be preserved. The northern stand of aspen is unique and should also be preserved.

--Some of the pole-size stands have up to 30 cords/acre -- extreme densities of up to 200 BA (square feet per area of tree diameters at breast height). These areas, rated "C", need general reduction to 80 BA or lower, and interspersing of more tree regeneration for eventual replacement strategy. This will also help as far as mountain pine beetle prevention thinning, where the healthiest trees are released to grow more in vigor and thus less susceptible to insect attack.

--No pine mistletoe infections were found, which is an indicator that the stands are fairly healthy.

--Some pine regeneration in the south pastures could be spread into areas currently without trees.

Table 1. Fire behavior and vegetation characterizing fire hazard classes.

Hazard Class	Expected Fire Behavior	Vegetation (Fuel) <u>1/</u>
O	None	None (open water, bare rock, cultivated field, etc.)
X	Flames 5-20' high, of brief duration; fire spread usually fast, at least 40 acres per hour; human being can not safely pass through flames but can occupy just-burned area within about 15 minutes; short range spotting common from blowing leaves.	Dense to moderately dense flammable vegetation \leq 10' high, including Gambel oak (in fall), big sagebrush, conifer reproduction; abundant litter and/or herbaceous fuel; scattered conifer stand may be present.
A	Flames \leq 5' high, higher flare-ups rare; duration of highest flames brief; fire spread slow to fast, 1-40 acres per hour; human beings can run through flames without serious injury and can occupy just-burned area; spotting generally rare, short range.	Grass, weeds, brush \leq 1' high, deadwood in contact with ground; open conifer stand may be present; includes aspen, cottonwood, willow, grassland, brush other than oak, sage or ceanothus.
B	Intermittent flare-ups occurring to many feet above tree tops; short and medium-range spotting common; behavior between flare-ups as in Class A; passing through fire front sometimes possible but chancy; parts of burned area can be occupied within $\frac{1}{2}$ hour.	Medium-density conifer stands; surface fuel mainly herbage and litter; some patches of reproduction and deadwood; becomes Class C if slash is present.
C	Flare-ups higher than trees frequent to continuous; spread up to several hundred acres per hour; fire front impassable; spotting several hundred yards common, possible to a mile or more; just-burned area untenable for an hour or more.	Dense conifer stands with any surface fuel; medium-density stands with Class X fuels or much deadwood from blowdown, bug-kill, or logging.

1/ See figures.

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26. **WILDFIRE HAZARD REDUCTION:**

A. Clearing: Unless performed pursuant to the requirements contained in Colorado Revised Statutes (C.R.S.) § 38-33.3-106.5(e)(2007), approval shall be obtained from the Declarant or subsequently, the ACC, to cut down or clear any trees on any lot, except dead or diseased trees. Owners of lots shall dispose of such cleared trees in a way to prevent accumulations of brush, slash, stumps, trash, or other materials which may constitute a fire hazard or render a lot unsightly. This shall not restrict lot owners from storing fireplace wood in neat stacks on their lots, stacked away from the house to reduce fire danger. Owners are responsible for prompt treatment or removal of trees infected by pine beetle or other insects, which can kill trees and spread to adjacent trees and lots, and to reasonably contain any trees with slow parasitic growth such as mistletoe. In addition, owners are responsible for controlling and removing weeds declared noxious by government authorities and in accordance with El Paso County weed control rules and regulations.

B. Guidelines: Owners in NBR should observe the following guidelines to reduce fire hazard. These guidelines are those of the Black Forest Fire Department, the Colorado State Forest Service, the 2003 International Urban Wild Land Interface Code and CSU publication 6.302, Creating Fire Safety Zones.

(1) Safety Zone: All buildings shall have a thirty (30) foot defensible or "safety zone" in all directions. Homes larger than 6000 Square feet shall have a forty five (45) foot defensible zone in all directions. All brush within ten feet of any building should be removed and replaced with an irrigated greenbelt (grass, flowers or shrubs) or noncombustible materials, such as rock, brick pavers or gravel.

(2) Debris: Grasses should be kept trimmed to 2 inches and well watered, roofs and roof gutters should be kept clear of pine needles and leaves. Firewood should be stacked uphill and at least ten feet from structures. Dead limbs, leaves and grass clippings should not be allowed to pile up, as they could pose a fire hazard.

(3) Driveways: Driveways should be cleared to a width of at least twelve feet to create a firebreak. All driveways and addresses shall be readily identifiable from the street, and shall be unobstructed at all times as per paragraph 4.E.(11), Addressing.

(4) Burning: Open fires are prohibited on NBR, including on-site burning of trash, leaves and weeds. Fireworks are also prohibited.

(5) Protection: All homes will be equipped with smoke detectors and should contain at least one fire extinguisher maintained in accordance with the manufacturer's recommendations. All homes will be equipped with an interior sprinkler system, per 4.(16).

27. **RIGHTS OF DECLARANT:** Notwithstanding any contrary provision of this declaration, the Declarant, its officers, directors, agents, successors or assigns, expressly reserves the following rights and privileges, which may or may not be exercised in the Declarant's sole discretion and which may be exercised without prior notice to any owner :