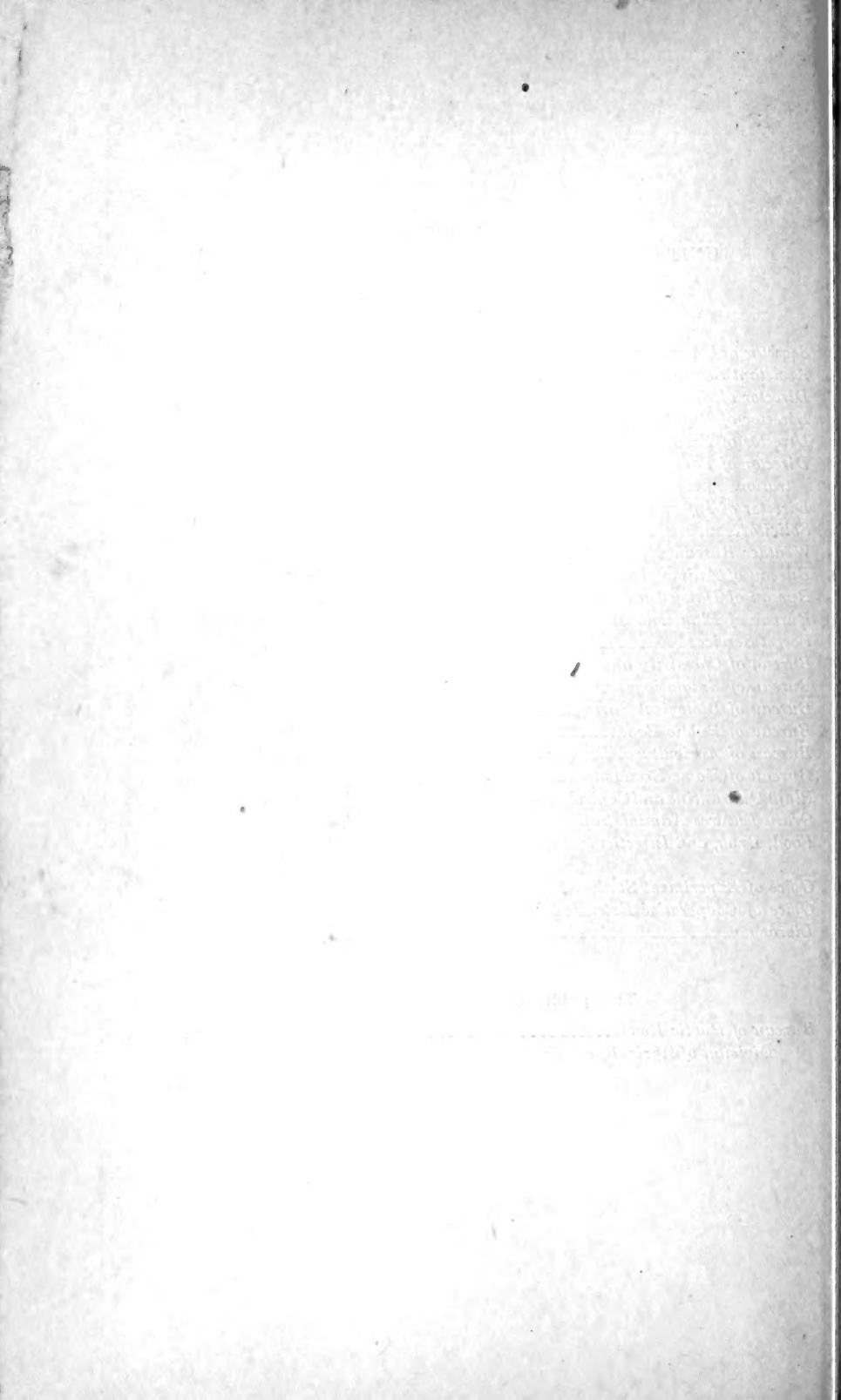


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# RIO GRANDE NATIONAL FOREST COLORADO

PREPARED BY THE ROCKY MOUNTAIN DISTRICT  
OF THE FOREST SERVICE



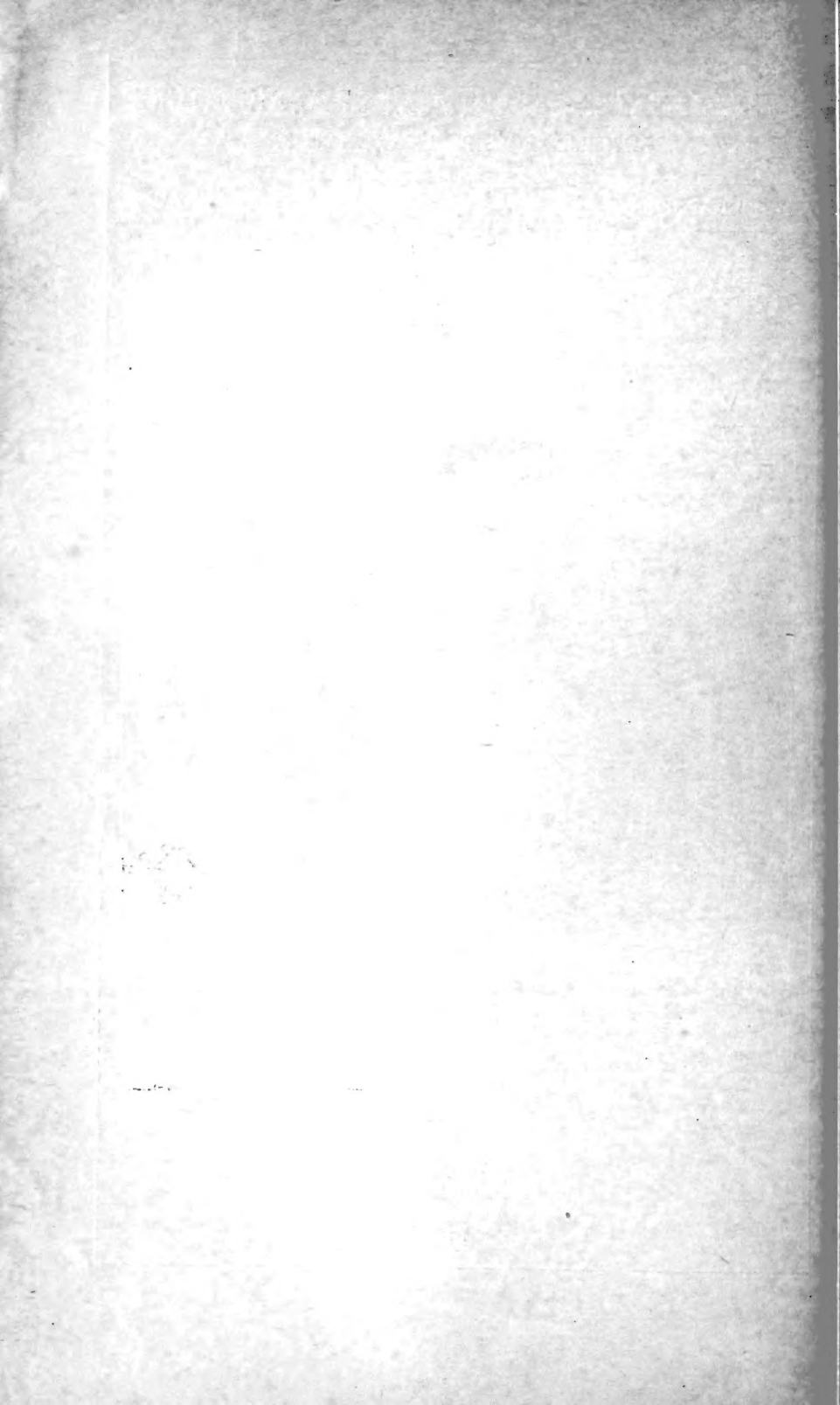
SOUTH CLEAR CREEK FALLS

F-156259

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1929



## RIO GRANDE NATIONAL FOREST, COLORADO

Along the headwaters of the Rio Grande del Norte, "Great River of the North," lies a rugged country favored with an abundance of natural wealth. Many stockmen are dependent upon it for summer range. Farmers know it to be the source from which flow the waters that make the San Luis Valley a prosperous community. Tourists call it scenic. Fishermen know it as a place for a sure catch. And foresters are managing there a valuable stand of timber. Such is the Rio Grande National Forest, risen to importance out of the ashes of one of Colorado's early mining flares. When "It was day all day



FIG. 1.—Summer home on Rio Conejos

F-221082

in the daytime and there was no night in Creede" the rich yields of ore and the business of mining held men's attention to the exclusion of all else, but a pause in the production of minerals has revealed other wealth.

### THE NATIONAL FOREST

Area, net.....	acres..	1, 135, 764
Timber.....	board feet..	2, 000, 000, 000
Forage.....	sheep and cattle grazed..	220, 000
Fishing streams.....	miles..	600
Roads.....	do..	150
Trails.....	do..	1, 200

The Rio Grande National Forest is a storehouse of great natural wealth. It is an important economic factor in the welfare of surrounding local communities. It is a public asset in which everyone of its users should have a personal interest.

Timber production and watershed protection are of first importance in the administration of the forest, but management of grazing lands and the development of the recreational resources are also important. Recreational uses are free, except where permits for summer homes or lodges are desired. A charge is made for permits for summer homes and other special uses, for grazing privileges, and for timber.

Of the annual income derived from the forest 35 per cent is spent locally—25 per cent through a cash fund returned to the counties within the forest for roads and schools, and 10 per cent through the development by the Forest Service of roads and trails within the forest. In addition, community development is furthered by the



FIG. 2.—At the crest of the Continental Divide, Wolf Creek Pass Highway

F-176358

large amounts spent from the regular Federal forest road appropriation for the building of roads within and adjacent to the forest for the purpose of making the natural resources more accessible and improving the means of forest protection.

### THE TIMBER CROP

The Rio Grande National Forest may be regarded as a large diversified farm, the main products of which are timber and forage crops.

The annual crop of timber is represented by the total annual growth of all the trees, or growing stock. In any one year the crop is taken from only a part of the forest. Each part of the forest is cut over in turn and is then left to accumulate a new crop. Operations are confined to the cutting of ripe or mature trees, and the weeding out of

those that are overmature, diseased, or defective. This leaves a stand of thrifty immature trees, the basic growing stock, free from competition and in a condition favorable for increased growth, the production of seed, and the perpetuation of the stand.

The annual growth of timber at this time amounts to about 20,000,000 board feet, and an annual crop equal to that amount can be



FIG. 3.—Making the finished product of a stabilized industry

F-188131

removed in the form of mature trees without jeopardizing the future forests or lessening the total stand. Present local demand for timber, however, does not warrant harvesting any considerable part of the annual growth, and most of the accumulation is being "stored on the stump," where it will be safe from decay for many years.

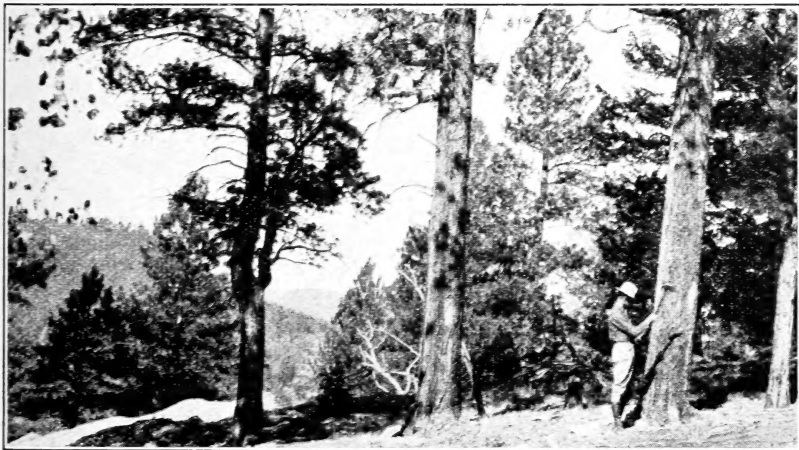


FIG. 4.—The first step in marketing timber—a tree marked for removal

F-210548

### TREES OF THE RIO GRANDE<sup>1</sup>

Tree growth on the Rio Grande Forest is of two general types: Coniferous or evergreen, and broadleaf or deciduous.

<sup>1</sup> This list is for popular use in identifying the trees found on the Rio Grande Forest and does not attempt to give detailed botanical distinctions.

## CONIFERS

## PINES

The four kinds of pines found on the Rio Grande Forest always have long, needle-shaped leaves in clusters of from two to five. The cones are woody and hang from the limbs.

*Western yellow pine.*—Western yellow pine is found at lower elevations. Leaves 3 to 5 inches long, deep green, usually two in a cluster but often in threes, and in tufts at the ends of the branches. Cones 3 to 5 inches long, oval; usually found near end of branches. Cone scales armed with spines.

*Limber pine.*—Limber pine is sometimes erroneously called piñon or nut pine. Found in foothills and also in rocky places in high mountains. Leaves dark green, always in clusters of five,  $1\frac{1}{2}$  to 3 inches long. Cones 3 to 5 inches long, with seeds about one-third inch in length. Cone scales smooth. Bark light gray or silvery white, except on old trunks, which are blackish brown.

*Piñon.*—Piñon pine is confined to the foothills. Needles three-fourths to  $1\frac{1}{2}$  inches long, in clusters of two and rarely of three. Cones  $1\frac{1}{2}$  inches long and almost as broad. Seeds are the common piñon nuts of trade.

*Bristlecone pine.*—Bristlecone pine is found at higher elevations, usually close to timber line. Needles 1 to 2 inches long, always in clusters of five, and covered with tiny specks of pitch. Cones 3 to 4 inches long with the scales armed with a slender bristle.

## SPRUCES

Spruces are of two kinds. Both have short, square, single leaves, which easily roll between the fingers. Crowns have a whitish or bluish cast. Cones are not woody but fibrous and hang from the branches.

*Engelmann spruce.*—The small branches of Engelmann spruce are covered with soft, short hairs. Leaves less rigid and sharply pointed than those of blue spruce; dark blue, green, or pale steel blue. Cones 1 to 2 inches long. Bark is dark, reddish brown, and separates in the form of small rounded scales.

*Blue spruce.*—The small branches of blue spruce are always smooth. Leaves stiff and with sharp points. The blue spruce can be told from Engelmann spruce by grasping the tip of a branch and noting the spinelike stiff leaves. Cones 2 to 3 inches long. Bark on old trunk gray, divided lengthwise into ridges.

## FIRS

Firs are of two kinds.

*Alpine fir.*—Alpine fir has flat leaves, 1 to  $1\frac{3}{4}$  inches long, without any stem where they join branches. Cones standing straight up on branches,  $2\frac{1}{2}$  to 4 inches long, dark purple. In the fall the cones fall to pieces and leave only a spike on the branch.

*White fir.*—White fir is found at the lower elevations with western yellow pine and Douglas fir. Leaves single, flat, 2 to 3 inches long, soft. Cones 3 to 5 inches long, standing straight up on branches. Bark on old trees 5 to 6 inches thick, deeply divided into broad, rounded ridges broken on the surface into irregularly shaped platelike scales.

## JUNIPERS OR CEDARS

Junipers or cedars are of two kinds, one a small tree and the other a shrub. Seed in berries, not cones.

*Rocky Mountain red cedar.*—Rocky Mountain red cedar has scale-like pointed leaves, very small, that cover the slender, four-sided twigs in four rows of alternately opposite pairs; stiff branches. Mature berries one-fourth inch in diameter, bluish or black, covered with a whitish bloom.

*Dwarf juniper.*—Dwarf juniper is always a shrub, 1 to 3 feet high. Leaves in groups of three, separate on branches, sharp pointed. Branches not stiff.



## DOUGLAS FIR

There is one kind only of Douglas fir. It has flat leaves, three-quarters to  $1\frac{1}{2}$  inches long, apparently with a short stem joining them to branches. The cones hang down on long, stout stems, 2 to 4 inches long, with 3-pronged bracts protruding from between the cone scales.

## BROADLEAF TREES

## ASPEN

Aspen has flat, nearly heart-shaped leaves about 2 inches across that tremble characteristically in a breeze. Bark whitish or very pale green, smooth with black scars where branches have dropped off. Trees rarely more than 20 feet high. (Commonly called quaking aspen or quaking asp locally.)

## NARROW-LEAF COTTONWOOD

Narrow-leaf cottonwood is usually a tall tree, 40 to 60 feet high. Bark dark gray, heavily ridged half or two-thirds of the way up the tree; above that smooth, pale green. Leaves one-fourth to one-half inch wide by 2 to 3 inches long, very similar to willow leaves.



FIG. 5.—Excellent summer range for San Luis Valley herds

F-154759

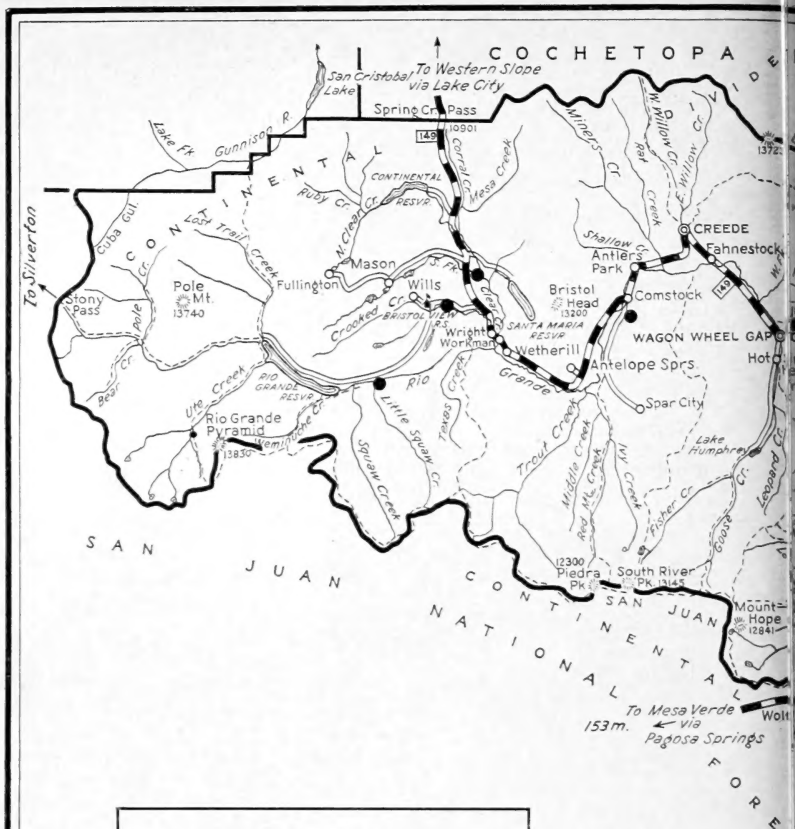
## ALDER

Alder is found along and overhanging the streams, usually in clumps, several trees growing from the same root, frequently 4 to 6 inches in diameter and 15 to 25 feet high. Leaves large and sharply double-toothed. Matured seed-bearing fruit noticeable in winter.

## THE FORAGE CROP

Grasses and weeds suitable for forage are found in many of the timber stands and in the parks and large open areas above timber line. Wild game has always roamed over these natural pastures, but they require only a small part of the available growth. The bulk of the forage is available for domestic stock.

The grazing of livestock is, in general, a secondary use on the national forests, but at this time it is the largest activity on the Rio



# RIO GRANDE NATIONAL FOREST

## COLORADO

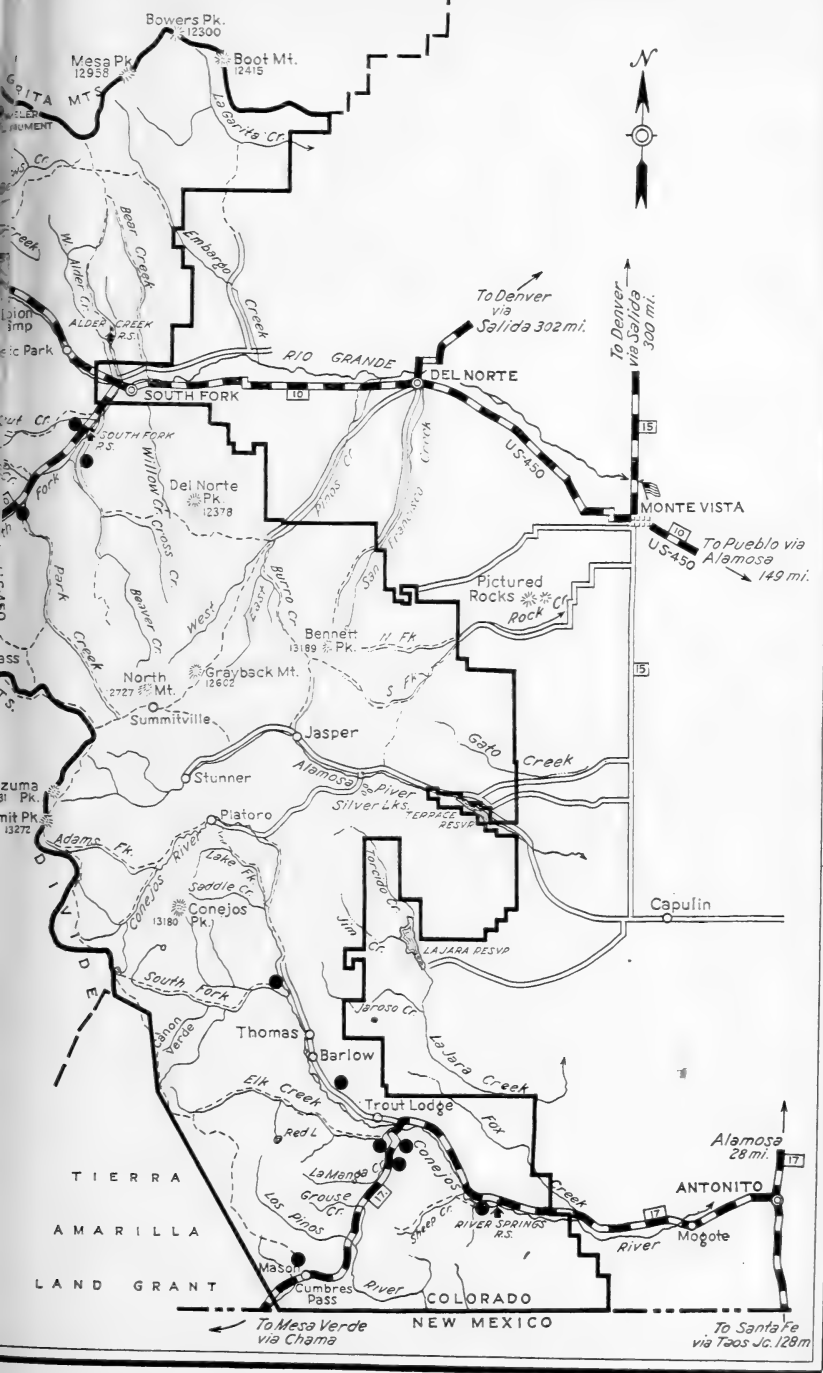
R. Y. STUART, FORESTER

Scale  
0 1 2 3 4 5 Miles

### LEGEND

- Main motor highways
- Other motor roads
- Trails
- National forest boundary
- Adjacent national forest boundary
- Supervisors headquarters
- Ranger stations
- Camp grounds
- State highway numbers

TIONAL FOREST



To Denver  
via Salida 302 mi.

To Denver  
via Salida  
300 mi.

To Pueblo via  
Alamosa  
US-450  
149 mi.

Alamosa  
28 mi.

To Santa Fe  
via Taos Jc. 128 m

To Mesa Verde  
via Chama

COLORADO  
NEW MEXICO

TIERRA  
AMARILLA  
LAND GRANT

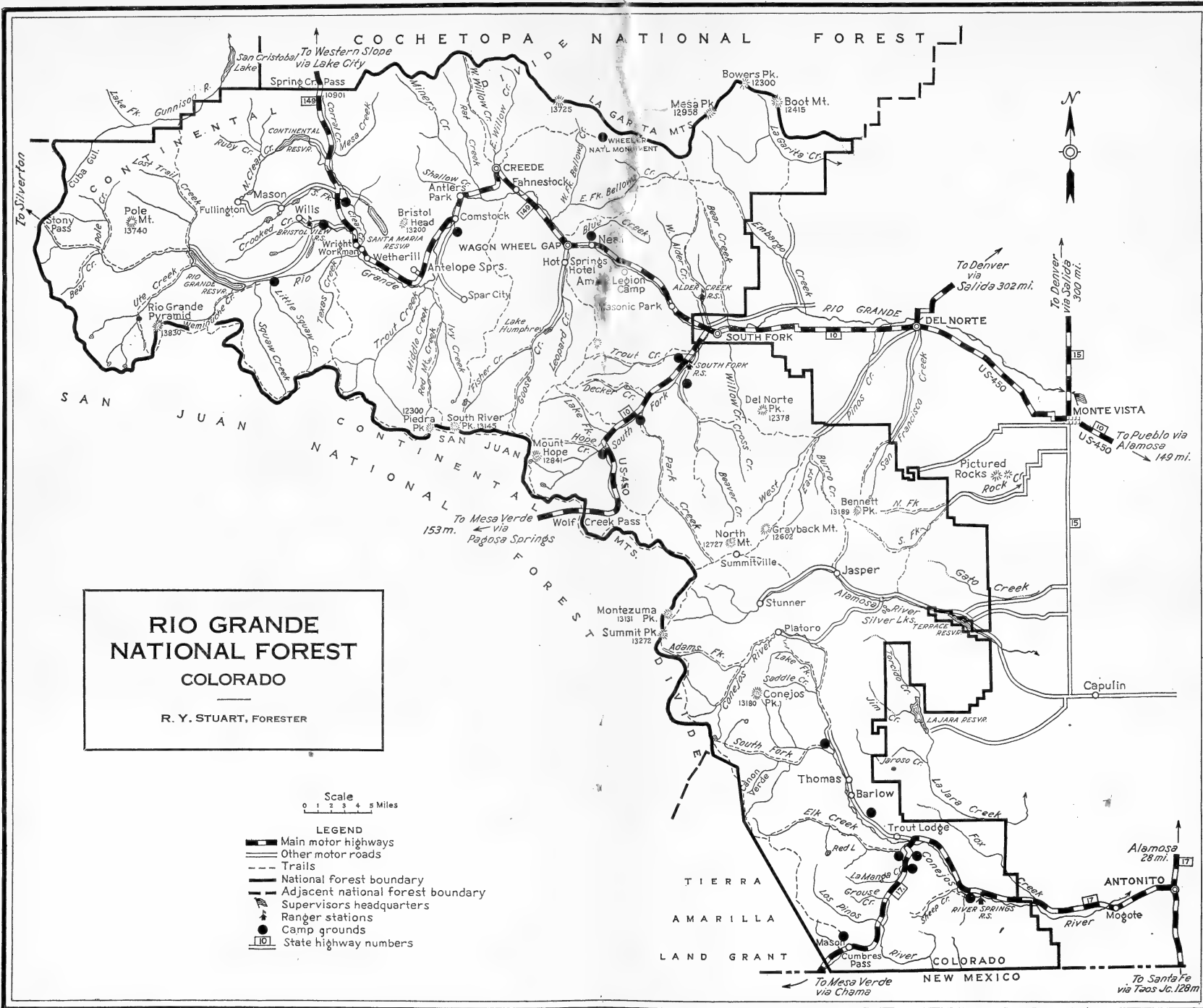
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Grande. The 220,000 head of sheep and cattle with their offspring which are supported by the forage of this national forest represent an investment of nearly \$5,000,000. This is in addition to the investment in ranch property required for carrying on the livestock business.

The efficient handling of the summer range is in itself a large enterprise. The range must be used to the fullest extent, and at the same time its future capacity must not be endangered by overgrazing. Neither must grazing be allowed to injure forest reproduction.

The time of grazing and the number of stock using the range must be limited in order to insure ample feed during unfavorable as well as favorable years. Stock should not be turned on the range until



FIG. 6.—A contented herd on luxuriant summer feed

F-16965

the forage plants have had a chance to get "set," and the number of stock should be kept down so that from 10 to 20 per cent of the palatable species will be left to mature and produce seed.

Experiments in range management are carried on constantly by the Forest Service, and improved methods are applied as fast as they are proved worth while and can be put into operation. Because of the limited amount of national-forest range it is very important that the utmost care be given to its use and protection.

### GAME

Deer, elk, mountain sheep, bear, lion, bobcats, blue and willow grouse, ptarmigan, duck, and many other kinds of game range on the Rio Grande. It is the policy of the Forest Service in handling the grazing of domestic livestock and all other uses of the forest to reserve adequate range for these wild animals, many of which are a distinct asset in mountain country. The game naturally use parts of the forest which can not be used efficiently for domestic stock. Furthermore, the relatively small amount of wild game which now

remains makes the conflict with domestic stock practically negligible. The killing off of lions and bobcats, as well as individual outlaw bears, is encouraged. State laws give limited protection to deer,



FIG. 7.—Grouse find protection in the aspen

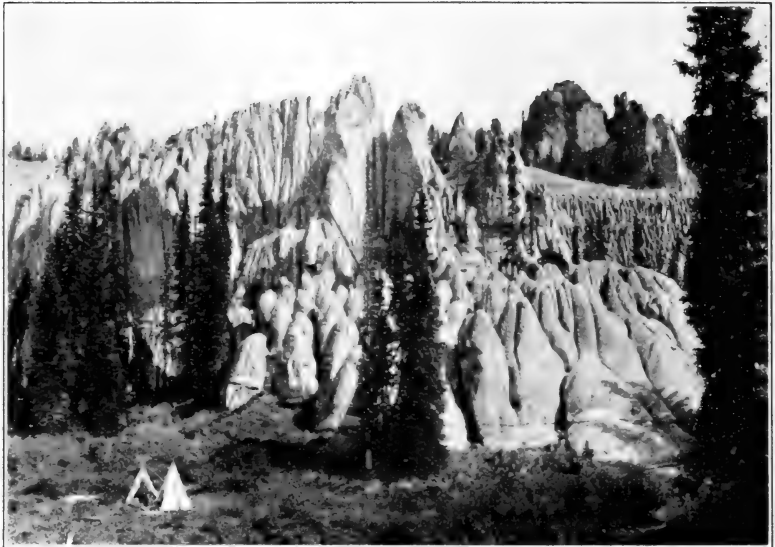


FIG. 8.—Under protection elk are increasing rapidly

grouse, ducks, and other game, permitting hunting only during a specified open season. Elk and mountain sheep are protected the year around. No hunting is permitted without a State license.

## WATERSHED PROTECTION

Watershed protection is one of the primary purposes for which the national forests are maintained. Irrigation is the keystone of the prosperity of the San Luis Valley, and most of the water for this purpose comes from the Rio Grande National Forest. In addition, the welfare of a large territory in southwestern United States and northern Mexico depends upon the waters of the Rio Grande, and the effects of overgrazing, fire, or destructive logging along the headwaters of this river, all of which are within the Rio Grande National Forest, would be felt far beyond the limits of the forest. Using only so much timber and forage as is grown each year helps to establish and maintain on the forest those conditions necessary to prevent erosion on the watershed.



F-28465-A

FIG. 9.—“Parade of the ghosts,” Wheeler National Monument

## WHEELER NATIONAL MONUMENT

The Wheeler National Monument, a grotesquely eroded geological feature within the Rio Grande Forest, has been set aside by presidential proclamation and named in honor of George Wheeler, United States Engineers.

Ages ago lava outpourings piled up at this spot and the elements have worn them into figures of exceptional beauty. The monument may be reached by a trip of 12 miles over a Forest Service trail.

Saddle horses may be hired at Creede, and the trail leads across the face of Mammoth Mountain (11,042 feet), giving a superb view of the upper Rio Grande country and of Creede with its adjacent mining activities.



At the monument are a shelter cabin, fireplace, and the usual sanitation improvements, together with a small pasture for saddle and pack stock.



FIG. 10.—Rock Creek ranger station

F-20315-A

### FIRE

Fire is always a menace to the forest. Seventy-five per cent of the forest fires are man-caused and, therefore, are preventable. This places a direct responsibility on the shoulders of every user of the



FIG. 11.—Forest fires leave only monuments to a wasted resource

F-178931

national forests. Unnecessary fires must be avoided. The Forest Service, with the cooperation of local residents, maintains an efficient fire protection organization to take care of lightning fires,

which can not be prevented. But the Federal Government and local men and women can not trail careless tourists in order to make the forests safe.

### INFORMATION

The headquarters of the Rio Grande National Forest is in Monte Vista, Colo., and additional information or assistance may be obtained by writing the forest supervisor there or by getting in touch with one of the forest rangers, who are located at various points throughout the forest.

### SIX RULES FOR HEALTH PROTECTION

1. *Purification.*—Mountain streams will not purify themselves in a few hundred feet. Boil or chlorinate all suspected water.



FIG. 12.—A Continental Divide trail

F-238589-A

2. *Garbage.*—Burn or bury all garbage, papers, tin cans, and old clothes.

3. *Excretions.*—Bury a foot deep all human excrement at least 200 feet from streams, lakes, or springs.

4. *Washings.*—Do not wash soiled clothing, utensils, or bodies in streams, lakes, or springs. Use a container and throw dirty water on the ground away from the water supply.

5. *Toilets.*—Use public toilets where available. They are properly located. Toilets should be at least 100 feet from streams and not in gulches.

6. *Obeying laws.*—Observe rules and endeavor to have others do the same. National and State laws impose heavy penalties for health-law violations. Report all violations or insanitary conditions (including dead animals) to the nearest health officer or United States Forest Service officer.

## SIX RULES FOR PREVENTION OF FOREST FIRES

1. *Matches.*—Be sure your match is out. Break it in two before you throw it away.

2. *Tobacco.*—Be certain that pipe ashes and cigar or cigarette stubs are dead before throwing them away. Never throw them into brush, leaves, or needles.

3. *Making camp.*—Before building a fire scrape away all inflammable material from a spot 5 feet in diameter. Dig a hole in the center and in it build your camp fire. Keep it small. Never build a fire against trees or logs or near brush.

4. *Breaking camp.*—Never break camp until your fire is out—dead out.

5. *Brush burning.*—Never burn slash or brush in windy weather or while there is the slightest danger that the fire will get away.

6. *How to put out a camp fire.*—Stir the coals while soaking them with water. Turn small sticks and drench both sides. Wet the ground around the fire. Be sure the last spark is dead.

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