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# Grand Mesa National Forest COLORADO

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U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE



# Where It Is • How To Get There

**T**HE GRAND MESA National Forest is located in west-central Colorado, and is named for Grand Mesa, a high plateau, which is its most striking topographic feature. Most of the forest lies between the Colorado and Gunnison Rivers and their tributaries, and is characterized by high mesas and beautiful mountain lakes. It contains 679,804 acres, of which 26,639 are privately owned.

The Battlement Mesa Forest Reserve, as the forest was originally known, was established by President Benjamin Harrison by proclamation on December 24, 1892. President Calvin Coolidge gave the forest its present name on March 11, 1924.

Visitors to the Grand Mesa National Forest, from the east, have a choice of two highways, U S 50 and U S 24, which unite at Grand Junction, and continue westward as U S 50. The Denver and Rio Grande Western Railroad follows nearly the same routes, but automobile travel is necessary to reach the forest.

Several roads enter the forest. State Highway 65 branches off U S 24 seven miles east of Palisade and reaches the forest by way of the town of Mesa. Continuing up the north side of Grand Mesa, the traveler has wonderful views of the surrounding country. Winding between beautiful lakes, through alpine meadows, and dense groves of spruce and fir, the road crosses Grand Mesa, and descends by way of Cedaredge to a junction with U S 50 at Delta. This highway, known locally as the Skyway Drive, is safe to drive at all times, except when closed by snow.

Another approach to Grand Mesa is by way of the Lands End Highway, a Forest Service road which extends from U S 50 at Whitewater to State 65 on the Mesa, and is one of the noted scenic roads of the State. This road winds up the west side of Grand Mesa to Lands End, the westernmost extension of the Mesa, where spectacular views extend

to the plateau and cliff country of northwestern Colorado and eastern Utah, the La Sal and Blue Mountains of Utah, the Uncompahgre and Wilson Mountain groups, and the Lone Cone in western Colorado. The artistic stone house on Lands End provides shelter for those who wish to linger and enjoy the scenic wonders. Here, also, the tourist may get information, maps, and refreshments before continuing along the Mesa.

A third route to Grand Mesa is by way of the town of Collbran. This is an attractive drive, but should be made in dry weather only. State Highways 92 and 135 follow the Gunnison and North Fork Valleys eastward from Delta. At the junction of Muddy and Anthracite Creeks, the Muddy-Buzzard Road branches from State 135 and crosses the forest to the Buzzard Creek Valley. From that point one branch extends along the Plateau Valley to Collbran, and another crosses the Buzzard-Mamm divide of the forest to junctions with U S 24 at Rifle, Silt, and New Castle. During favorable weather this is a drive of exceptional beauty, through vast slopes of aspen, open parks, and natural wild flower gardens.

## Ask the Forest Officers

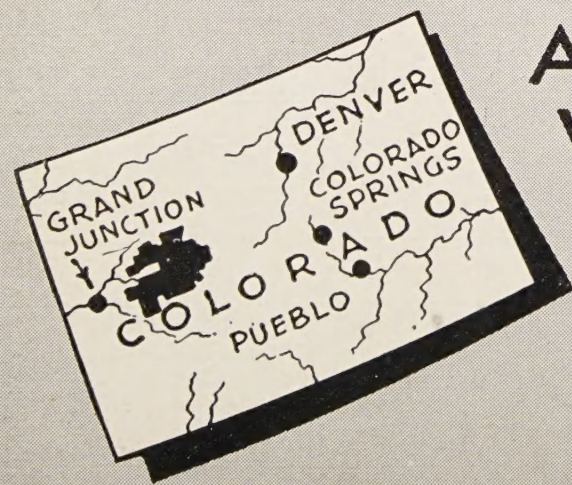
The Grand Mesa National Forest is administered by a forest supervisor with headquarters in the Federal Building at Grand Junction. He is assisted by an office staff and four forest rangers, each in charge of a ranger district. These employees of the Forest Service are always glad to give information concerning roads, camp or picnic grounds, the better places to fish or hunt, how the forests are administered, and especially how to cooperate in the protection of the forests. Contact the forest personnel, cooperate with them, and they will assist in making your vacation more satisfying and enjoyable.

Inquiries should be directed to:  
Forest Supervisor, U. S. Forest Service, Grand Junction, Colo.

Forest Ranger, Muddy District, Paonia, Colo.  
Forest Ranger, Lakes District, Cedaredge, Colo.  
Forest Ranger, Mesa District, Mesa, Colo.  
Forest Ranger, Collbran District, Collbran, Colo.

If you find a forest fire, put it out if you can. If you cannot put it out, report it to the forest supervisor, the ranger, the sheriff, or the nearest telephone operator. Location of the headquarters of the supervisor and the rangers is indicated on the map.

**An Ideal  
Vacation Land  
—A Valuable  
Resource**





## Our Other National Forests

The Rocky Mountain National Forest Region, in which the Grand Mesa Forest is located, has headquarters in Denver. Twenty-one forests are included in this group, 14 of them in Colorado, 4 in Wyoming, 2 in South Dakota, and 1 in Nebraska.

The national forests in Colorado are:

Arapaho	Montezuma	San Isabel
Cochetopa	Pike	San Juan
Grand Mesa	Rio Grande	Uncompahgre
Gunnison	Roosevelt	White River
Holy Cross	Routt	

A small portion of the La Sal Forest, most of which is in Utah in the Intermountain Region, extends into Colorado. Including this small tract, the total net area of national forest land in the State is 13,629,532 acres, or a little more than one-fifth of its total land area.

There are 161 national forests within the United States, distributed through 40 States, and the Territories of Alaska and Puerto Rico. They contain approximately 175,000,000 acres of public land, and are administered by the Forest Service, U. S. Department of Agriculture.

For economical and effective administration the national forests are grouped in 10 regions, each with a regional forester in charge.

The main purposes of the national forests are the growing of wood crops and the conservation of water. To grow succeeding crops of timber is highly important in the economic development of the Nation, and to preserve a forest and vegetative cover on the watersheds of our public lands is necessary as a preventive measure against erosion. Therefore, to protect, use, and perpetuate the timber and all other natural resources of the national forests for the benefit of all citizens has been the keynote of their administration by the Forest Service.

**Wildlife Is An Important National Forest Resource**

# A Forest of Many Uses

THE NATURAL RESOURCES of the Grand Mesa National Forest are bountiful and alluring. The forest provides water, wood, and range for the use of the people who live in the adjacent river valleys, and during the long, hot summer it is a cool and restful haven, easily accessible. The many natural or improved reservoirs of its mesa land hold enormous stores of water for irrigation and domestic use in the surrounding valleys, and its spruce-fir forests aid in conserving this water supply.

Grand Mesa, the unusual plateau which gave the forest its name, lies 15 to 40 miles southeast of Grand Junction, the forest headquarters. It has an area of 34,200 acres and an average elevation of 10,300 feet or 5,000 feet above the surrounding valleys. With its many resources and attractions it is an area of high economic value and an ideal vacation land. The geological formation of Grand Mesa is interesting. The oldest rocks in the exposed field are hard and, because of their resistance to erosion, form the lower canyon walls. Above these hard strata is the soft Mancos shale, overlain in turn by hard sandstone. These are overlain by the easily eroded Green River formation, and these by the sheet of hard basalt that caps the Mesa and forms its rim of cliffs. Over the whole tract Nature has thrown her green mantle of forest, chaparral, and grass, making it a high tableland of beauty and charm.

Battlement Mesa, for which the present forest was first named, is smaller but comparatively as prolific in resources as the more widely known Grand Mesa. It forms the northern division of the forest and adds materially to its economic importance. The two plateaus are separated by the broad Plateau Creek Valley, whose residents, as well as those of the Grand and Gunnison River Valleys to the north, west, and south, depend largely on the water, timber, and forage of the mesas.

The remainder of the forest, extending eastward from the mesas along the Buzzard Creek-North Fork divide to the Ragged Mountains, is an area of intermingled grasslands and forests. Some of the better grazing range of the State is in this section.

Approximately 475 permits for the use of Government land have been issued on the forest. Such privileges are granted

only where private or semipublic use does not conflict with public needs or interests. In many cases the use is advantageous to the Government while serving a local economic need. In addition to the special uses, 219 easements for reservoirs have been granted.

Revenue derived from these permits is combined with receipts from sales of timber, grazing, and miscellaneous purposes. Annually 25 percent of the total is returned to counties for support of schools and roads. Mesa, Delta, Garfield, and Gunnison Counties share proportionately in the fund according to the acreage of forest land in each county. Mesa County, with an area of 359,778 acres in the forest, received \$5,464.99 in 1938.

**TIMBER AND WATERSHED VALUES.**—There are approximately 650,000,000 feet, board measure, of timber on the Grand Mesa National Forest, including only trees of saw-timber size. Engelmann spruce and alpine fir are the principal commercial species and constitute 28 and 41 percent, respectively, of the total stand. Aspen forms 26 percent of the stand and is used extensively for farm improvements. Blue spruce, Douglas fir, and ponderosa pine make up the remaining timber.

The annual cut of timber during the 5-year period 1934-38 averaged 1,147,500 feet.

The most important resource of the forest is the water supply which originates within its boundaries. There are 225 reservoirs with a total surface area of 6,305 acres, the largest number of reservoirs and the greatest water surface in any area of similar size in the State. Forty thousand acres of farm lands in the surrounding valleys depend on the life-giving streams from the springs, lakes, and reservoirs within the forest boundaries. Rifle, DeBeque, Collbran, Palisade, Grand Junction, Fruita, Delta, Cedaredge, and Hotchkiss obtain water from the forest. Some of these cities and towns have funds invested in reservoirs and pipe lines and are financially and economically interested in preserving the forest cover and conserving the water.

(Continued on next fold)

One of the many beautiful lakes on Grand Mesa.



## Camps and Picnic Grounds

The Grand Mesa National Forest has many recreational advantages. Motorists looking for good places to picnic or camp will find them readily. Hikers or horseback riders seeking more primitive conditions will soon discover the place which they desire. Grand Mesa offers students of geology, biology, or botany unlimited opportunities for study in a comparatively limited range.

Twenty-two areas for picnicking and camping have been developed at convenient places within the forest, where simple, rustic facilities for the comfort of the forest visitor have been installed. All campers or picnickers are urged to use these areas wherever possible. There is no charge for the use of the grounds or facilities, but all users are expected to help keep them sanitary and usable.

The campgrounds (also shown on the map) are listed here for convenience.

Lands End, Steamboat Rock, and Wild Rose picnic grounds are on the Lands End Road on the west end of Grand Mesa.

Glacier Spring picnic ground and Jumbo campground are on the Cedaredge-Mesa Road near Mesa Lakes under the north rim of Grand Mesa. Carp Lake, Skyway, Little Gem, Masonic, Piedra, Ward Lake, Eggleston Lakes Nos. 1 and 2, and Kiser picnic grounds are on the same highway on the south end of Grand Mesa.

Cottonwood and Granby picnic grounds are in the same general vicinity, but are off the highway several miles and can be reached only by trail.

Bonham and Trickle Park picnic grounds are on the Collbran Road on the east side of Grand Mesa. Leon Lake and Weir and Johnson campgrounds are accessible by trail from the end of a spur road near Trickle Park. Dyke Creek and Buzzard picnic grounds are on the Buzzard Creek Road on the east side of the forest.

Accommodations, such as meals, lodging, and housekeeping cabins, may be obtained at reasonable rates within the forest, also boats for fishing. Guides with saddle horses, especially at Mesa Lakes or near the Alexander Lakes group will pilot visitors to the back country.

**Enjoy Your Vacation . . .  
but Leave a Clean Camp**



# Timber • Water • Forage • Wildlife • Recreation

**REGULATED USE OF RANGE.**—Livestock raising is one of the principal industries of the country surrounding the forest. Approximately 34,000 head of cattle and 31,000 head of sheep use the summer ranges on the Grand Mesa National Forest. Although they must have enough ranch property to take care of their livestock when it is not on the national forest, owners of livestock are very dependent upon this summer range and would be unable to conduct their business unless it were available to them year after year.

Prior to the establishment of the forest, destructive range wars were waged for possession of grazing lands. These were especially bitter on Grand Mesa; and Sheep Creek, which heads on the Mesa, got its name from the fact that an entire band of sheep was killed there in the late nineties. Another band was exterminated on Whitewater Creek on the way to Grand Mesa at about the same time.

The struggle between the large cattle outfits and the small ranchmen was nearly as severe as the war between sheep and cattle interests. At the time the forest was established the large cattle outfits were in possession, and the more accessible parts of the forest were badly overgrazed. On account of improper handling, the inferior quality of stock, and lack of bulls on the range, calf crops were poor. The regulation of grazing has, without question, done more to build up the communities around the forest than any other single factor. Range privileges are now distributed through more than 450 permits for cattle and horses and over 80 permits for sheep annually. Through special bull rules adopted by associations and enforced by regulations, the calf crop has been materially increased. Overgrazed ranges have been brought back and range wars have ceased.

**WILDLIFE RESOURCES.**—There are 166 miles of streams and 60 fishing lakes with a surface area of about 3,000 acres in the forest. Most of them are well stocked with native, rainbow, and brook trout. The fisherman finds a special inducement in Island Lake, whose waters are stocked annually with yellowfin natives, which were introduced from Yellowstone Park and found in no other waters on the forest.

Hunters find plenty of game animals and birds during the open seasons. The latest wildlife census shows 5,750 deer and 750 elk, and varying number of bears, coyotes, mountain lions, bobcats, lynx, and wild turkeys recently released on the forest will add eventually to the other wildlife attractions. Year-long hunting with a camera is encouraged, and hunting with a gun in season is invited. All State game laws must be observed.

All forest officers cooperate with State wardens in the care, protection, and propagation of game in an effort to build the wildlife resources of the forest to the number that the ranges will support.

**WILDERNESS SURROUNDINGS.**—There is no established wilderness area on the forest, but large tracts where primitive conditions exist may be reached by foot or on horse.

The Crag-Crest Trail along the divide between Cottonwood and Island Lakes on Grand Mesa is a favorite of trail riders. Built along the crest of the ridge, which sometimes narrows to trail width, with precipitous thousand-foot depths on either side, the trail thrills the most seasoned traveler. Often the beauty of the trail is lost in the boundless panorama of mountains, canyons, and plains that unfolds as travel progresses.

From Lake View Point, a rocky promontory, the beauty and charm of Grand Mesa is displayed in wide expanses of spruce-fir forests, interspersed with silvery lakes. Here, as is often the case in our national parks, the aesthetic far exceed the tangible values.

Many miles of good trails invite the vacationist to leave the roads and go into the forests. Once inside, with landmarks established, even the trails can be abandoned and all the minor attractions of the forest may be enjoyed. Intimate studies of trees, plants, and animals are possible with ordinary care and patience.

The chattering squirrel, the playful chipmunk, the busy beaver, and all the other members of the animal family are approachable after a little coaxing. The songbirds, jays, and all the feathered family, including the game birds, may be seen and studied on the Grand Mesa National Forest.

If one is interested in botany, a hunt for the various forms of plant life will be well repaid. The calypso—a mountain orchid, elephantella—the small pink elephant heads; and the golden pond lily are a few of the flowers that are worth hunting. Hundreds of others may be found. Do not wantonly destroy flowers. Pick sparingly, if at all.

**WINTER SPORTS.**—Those people who like winter sports may enjoy that form of recreation on the Grand Mesa National Forest. Near the south boundary 11 miles north of Cedaredge (26 miles from Delta) adjacent to State Highway 65, the local ski clubs have developed a small skiland. There is a quarter-mile downhill and slalom racing course; a downhill run with jump, affording leaps of 100 to 150 feet; a small practice slope; and a cross-country course. From this area cross-country skiing to the top of Grand Mesa, 3½ miles, is a challenge to the experienced ski enthusiast.

Under the north rim of Grand Mesa, near Mesa Lakes, another area has been developed near State Highway 65. Fourteen miles above Mesa (48 miles from Grand Junction), this area is the popular skiland for Grand Junction and Palisade enthusiasts.

The Jumbo practice course is two-thirds of a mile in length and from 100 to 1,000 feet wide. A tow has been constructed. A down-mountain run 2 miles in length, which begins and ends on the highway, has been cleared along Mesa Creek. It is steep, with a variety of grades, and several routes are available. The course begins high above the floor of the Colorado River valley, where the picturesque panorama of the valley and of the Book Cliffs in the background approximate those of the Grand Canyon in vastness of scenic values.

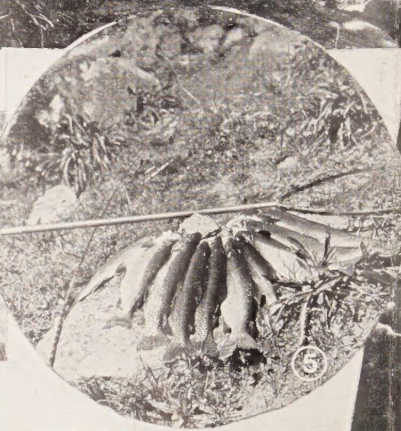
**FACTS ABOUT FIRES.**—Prior to the establishment of the forest, fires were frequent and a large part of the present national forest was burned over. George B. Sudworth made an examination of the area now included in the Grand Mesa National Forest in 1898 for the United States Geological Survey. The following is an excerpt from his statement concerning fires in the Twentieth Annual Report of the Survey:

"Forest fires have been very prevalent throughout the area. All of the interior valleys and canyons are more or less marked with old and new fires. All of the great slopes about Grand and Battlement Mesa bear the marks of fierce fires which have swept off hundreds of acres of young timber. Nor have the high wooded plains been exempt, Battlement Mesa having suffered the greater loss."

There have been but few destructive fires, and only small losses in timber values, since the cumulative fire record was started in 1909. During the 30-year period 1909 to 1938, 71 fires occurred, which burned 2,746 acres, mostly brush-covered land on the slopes of Battlement and Grand Mesas. Seventy-eight percent of this, or 2,152 acres, occurred in 3 bad fire years. Excluding this area, the annual average loss is 22 acres for the remaining 27 years. During 18 years of the period there was no fire loss. Over half of the fires have been man-caused and could have been prevented. Unceasing vigilance of the forest personnel and the hearty cooperation of the citizens of the forest and adjacent valleys are responsible for the good record.

In traveling through the forest, visitors will see evidence of the old burns if they watch closely for them, though beautiful young aspen, spruce, and fir stands now replace the blackened areas of a generation ago, and there are almost no new fire scars. Another result of fire protection, and not so apparent to the visitor, is the great improvement in the mountain streams. The "old timers" of the vicinity will relate, particularly in the case of West Divide and Buzzard Creeks, that these streams used to produce destructive floods in the spring, then go dry in late summer. Now they are clear streams that run year round.

To continue this gain, every visitor is requested to be careful with fire. The most important things to remember are: (1) Do not throw away burning cigarettes, cigars, or pipe tobacco in the forest; and (2) do not leave a campfire until the last spark is dead out. Attention is called particularly to the SIX RULES OF FIRE PREVENTION which are shown elsewhere in this folder.



(1) The shelter house at Lands End. F-377967

(2) Island Lake from Lake View Point. F-355360

(3) Forest cover on West Muddy Creek in the Grand Mesa National Forest, photographed in 1898. F-38590

(4) Scene from the same point as in No. 3 showing advance in forest cover as a result of protection, photographed in 1937. F-352022

(5) "The limit" from Mesa Lakes. F-185112

(6) Sheep grazing on national forest range. F-284278

(7) Grazing land under the Ragged Mountains. F-358100

(8) Ward Lake Ranger Station on the Grand Mesa National Forest. F-355350

(9) Lumber for local use from Grand Mesa. F-355378

## Yours to Enjoy • • • and to Help Protect



# Break Your Match in Two

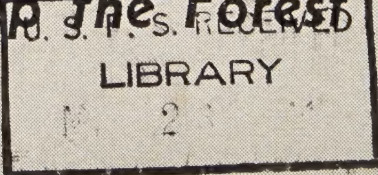
## Rules For Fire Prevention

1. **MATCHES.**—Be sure your match is out. Break it in two before you throw it away.
2. **TOBACCO.**—Be sure that pipe ashes and cigar or cigarette stubs are dead before throwing them away. Never throw them into brush, leaves, or needles. Don't smoke while traveling through the woods.
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 campfire. Keep your fire small. Never build it against trees or logs, or near brush.
4. **BREAKING CAMP.**—Never break camp until your fire is out—dead out.
5. **BONFIRES.**—Never build bonfires in windy weather or where there is the slightest danger of their escaping from control. Don't make them larger than you need.
6. **HOW TO PUT OUT A CAMPFIRE.**—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.

## Rules For Health Protection

1. **PURIFICATION.**—Mountain streams will not purify themselves in a few hundred feet. Boil or chlorinate all suspected water.
2. **GARBAGE.**—Burn and bury all garbage, papers, tin cans, and old clothes.
3. **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.
4. **TOILETS.**—Use public toilets where available. They are properly located. Where toilets are not available bury a foot deep all human excrement, at least 200 feet from streams, lakes, or springs.
5. **OBEYING LAWS.**—Observe rules and endeavor to have others do the same. Report all violations or insanitary conditions (including dead animals) to the nearest health or forest officer.

Keep the Forest Green





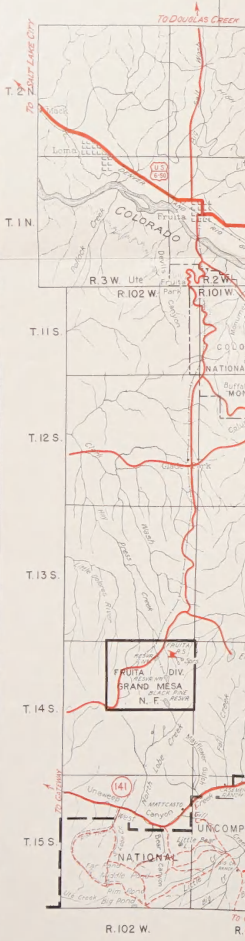
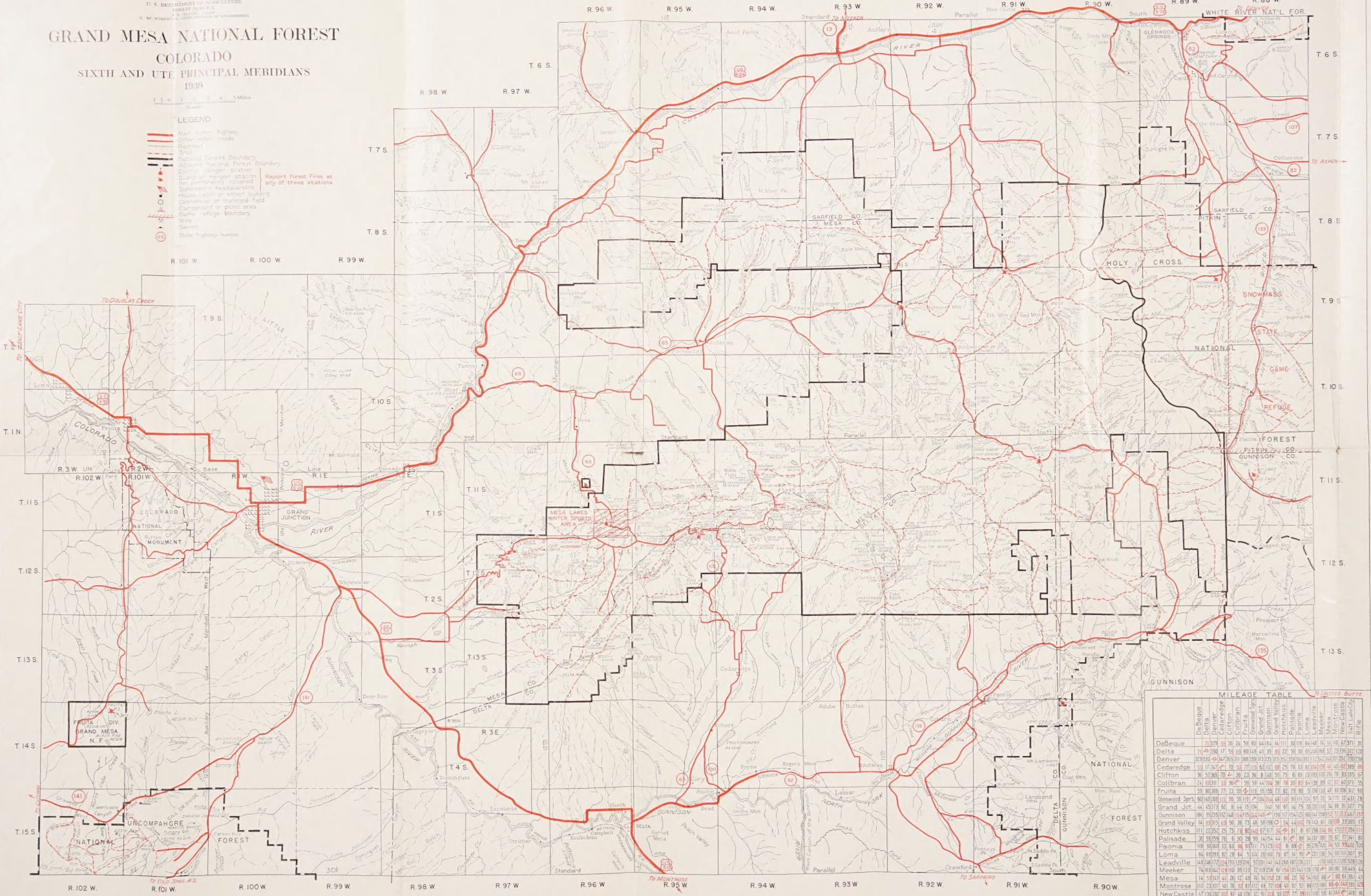


U. S. DEPARTMENT OF AGRICULTURE  
**GRAND MESA NATIONAL FOREST**  
 COLORADO  
 SIXTH AND UTE PRINCIPAL MERIDIANS  
 1939

1 2 3 4 5 Miles  
 1 2 3 4 5 Kilometers

- LEGEND**
- Main station highway
  - Other station roads
  - Boundary
  - Trail
  - National Forest Boundary
  - District manager station
  - Guard or ranger station not performing duties
  - Supervisor's headquarters
  - House, cabin or other building
  - Commercial or municipal fold
  - Camping or picnic area
  - Game refuge boundary
  - Line
  - Sawmill
  - State highway number
- Report Forest Fires at any of these stations

**PREVENT FOREST FIRES—IT PAYS**



**MILEAGE TABLE**

	DeBeque	Delta	Clifton	Clifton	Clifton	Grand Jct.	Hatchess	Hotchkiss	Leadville	Montrose	New Castle	Paonia	Steamboat	Steamboat	Steamboat
DeBeque		71	117	158	199	240	281	322	363	404	445	486	527	568	609
Delta			46	87	128	169	210	251	292	333	374	415	456	497	538
Clifton				41	82	123	164	205	246	287	328	369	410	451	492
Grand Jct.					41	82	123	164	205	246	287	328	369	410	451
Hatchess						41	82	123	164	205	246	287	328	369	410
Hotchkiss							41	82	123	164	205	246	287	328	369
Leadville								41	82	123	164	205	246	287	328
Montrose									41	82	123	164	205	246	287
New Castle										41	82	123	164	205	246
Paonia											41	82	123	164	205
Steamboat												41	82	123	164
Steamboat													41	82	123
Steamboat														41	82

Compiled at Regional Office, Denver  
 From U.S.G.S. 2.5", 1:50,000 Scale  
 Other sources: U.S. Geological Survey  
 Drawn by F.O. Thornton, 1939

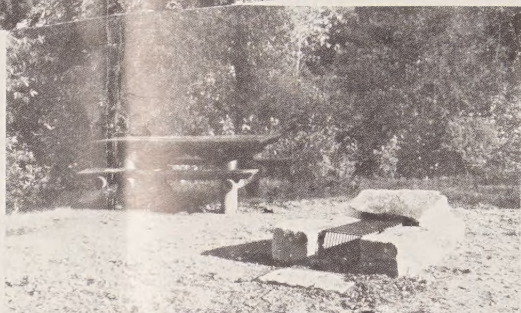
**PUT OUT YOUR CAMP FIRE WITH WATER**

\* Via Bizard Road Via Grand Mesa Skyway in red figures  
 \*\* Via Grand Junction





ABOVE.—From desert  
land to alpine coolness  
on Lands End Highway.



RIGHT.—Rustic facilities  
of a national forest  
campground.

## Trees and Shrubs of the Grand Mesa Forest

### CONIFERS

**PINES.**—Three species. The pines have their needles gathered together at the base in bundles of from two to five. The cones are woody and pendant.

**LIMBER PINE** (*Pinus flexilis*).—The dark-green needles are stout, rigid,  $1\frac{1}{2}$  to 3 inches long, in bundles of five. Cones are 3 to 10 inches long, with seeds one-third inch long, cone scales smooth. Bark is light gray or silvery white, except on old trunks, which are blackish brown and furrowed. Pines of this species are scarce on Grand Mesa.

**PONDEROSA PINE** (*Pinus ponderosa*).—Needles 4 to 7 inches long, deep yellow green, usually three in a bundle, but sometimes two, and in tufts at the ends of the branches. The cones are 3 to 6 inches long, cone scales armed with spines. When young, the bark is dark and the tree is often called "black jack" or "bull" pine. When older, the bark is yellowish and occurs in thick scales.

**PIÑON OR PIÑON PINE** (*Pinus edulis*).—Piñon is confined to the foothills. It has needles  $\frac{3}{4}$  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. Large seeds are the common piñon nuts of trade.

**SPRUCES.**—Two species. Needles are scattered over the twigs singly. They are sharp pointed, four-sided, leaving twigs rough when they fall off. Cones pendent with parchmentlike scales.

**ENGELMANN SPRUCE** (*Picea engelmanni*).—The young twigs are covered with soft short hair. Needles are less rigid and less sharply pointed than those of blue spruce; green, dark blue, or pale steel blue. Cones are usually about 2 inches

long. Bark is reddish brown and separates in the form of small rounded scales. Main trunk, unlike blue spruce, is smooth, clean.

**BLUE SPRUCE** (*Picea pungens*).—The young twigs are always smooth. Needles stiff with sharp points, varying in color from silvery blue to green. Cones usually 3 inches long. Bark of mature trunks is gray and deeply furrowed. Main trunk always has numerous short twigs pushing out between branches.

**ALPINE FIR** (*Abies lasiocarpa*).—Flat leaves, 1 to  $1\frac{3}{4}$  inches long, without any stem where they join branches. Soft to the touch and fragrant. Bark is smooth, grayish white, furrowed on mature trees. Blisters containing liquid pitch or balsam are on smoother bark. Cones, unlike those of other conifers, stand erect,  $2\frac{1}{2}$  to 4 inches long, dark purple. In the fall the cones fall to pieces and leave a spike on the branch. The tree has a sharp, spirelike crown.

**DOUGLAS FIR** (*Pseudotsuga taxifolia*).—Although similar in name, this species is not a true fir. Flat leaves,  $\frac{3}{4}$  to  $1\frac{1}{2}$  inches long, with a short stem that joins them to the branches. Cones with three-pronged bracts protruding from between the cone scales are persistent and fall off the tree whole. Buds are sharp pointed, shiny, smooth, red brown.

**ONE-SEED JUNIPER** (*Juniperus monosperma*).—Seed in berrylike fruit, not cones. Fruit is dark blue or occasionally copper colored and usually contains but one seed. Foliage is grayish green and rough to the touch, because of the slightly spreading points of the scalelike leaves. Occurs in dry situations, usually with piñon pine.

### BROADLEAF TREES

**ASPEN** (*Populus tremuloides*).—Flat, nearly heart-shaped leaves up to  $4\frac{1}{2}$  inches across that tremble characteristically in a breeze. Bark whitish or very pale green, smooth with black scars where branches have dropped off. (Commonly called quaking aspen or "quakers" locally.) This species covers a large portion of the forest.

**NARROWLEAF COTTONWOOD** (*Populus angustifolia*).—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  $\frac{1}{2}$  to 1 inch wide by 2 to 3 inches long, very similar to willow leaves. Usually found along streams at lower elevations.

**MOUNTAIN ALDER** (*Alnus tenuifolia*).—Found along and overhanging 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. Mature seed-bearing fruit noticeable in winter.

**BOXELDER** (*Acer negundo*).—Leaves

compound, usually 3, rarely 5 to 7, on a single stalk. Tree low and freely branched, 50 to 70 feet high and up to 4 feet in diameter, has drooping clusters of greenish flowers. Seed is paired and winged.

**MOUNTAIN OR DWARF MAPLE** (*Acer glabrum*).—Usually a shrub, but frequently 20 to 30 feet high. Has paired opposite buds, sharply lobed leaves, light gray bark, and paired winged seed. Leaves 1 to 2 inches long, opposite each other.

**PACIFIC SERVICEBERRY** (*Amelanchier florida*).—Usually a shrub, 6 to 15 feet high. Leaves are silvery, sharply toothed toward the end, and alternate on branches; flowers white, in clusters. Five hard seeds in each berry. Berries edible and dark blue when ripe.

**SCRUB OAK** (*Quercus* sp.).—Usually a shrub, rarely over 15 feet high, alternate leaves, smaller at the base than at the ends, with deep lobes, frequently drying on the tree and remaining over winter. Fruit a short, pointed acorn.