

# Managing Brushland for Game

## opening and later management of chamise brushland improve conditions for production of deer, other game

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**Opening chamise brushland**—by controlled burning, grazing, mechanical means, or chemical treatments—encourages increases in game populations.

A three-year study in Lake County investigated the relationship of brushland management and game population, and determined satisfactory ways of managing chamise brushland for game production.

Black-tailed deer populations were studied under three different conditions: in heavy brush cover, protected from fire; in wildfire burn; and in controlled brushland, opened so it consisted of grass lands interspersed with patches of dense brush.

Populations of the California jack-rabbit, brush rabbit, valley quail, mountain quail, and mourning dove also were observed but studied in somewhat lesser detail.

The open brush cover was favorable for game. The deer population in open brush ranged from 40 to 110 per square mile, but only 10 to 30 in dense heavy brush. In a wild-fire burn, the deer fluctuated in number, from five to 160 per square mile.

In the open brush the reproduction rate was higher, and the bucks were heavier than in dense unopened brush. Also, hunting conditions were more favorable in open brush.

Forage plants when available and green were utilized heavily by deer. From February to May the deer in open brush foraged largely on herbaceous plants, in heavy brush almost entirely on shrubs. In the wildfire burns herbaceous plants comprised about half of the forage in March and April.

Jackrabbits numbered from 10 to 45 per square mile in the opened brush, five to 10 in wildfire burns, and only about one in heavy brush.

Brush rabbits were numerous in heavy brush but in wildfire burns and opened areas they existed largely in the remaining spots of heavy brush.

Valley quail populations in late summer were about two and one-half times as great in open brush as in heavy brush or in a wildfire burn.

More mountain quail were counted in open than dense brush.

Mourning doves were found most abundantly in opened brush, occasion-

ally in wildfire burns, and seldom in heavy brush.

Spring and late fall burning were satisfactory in opening chamise brush. Summer burning is not recommended because of difficult and expensive fire control.

Control of sprouts through browsing following initial brush removal was essential in the opening of dense chamise brushlands.

Spot burns of about five acres evenly scattered are probably sufficient for starting a program of managing chamise brushlands. Ultimately not more than 70% of a brush area should be treated, and the remainder left in dense brush as cover for game.

Some areas may be opened by mechanical means such as bulldozing or disking. Use of hormone sprays was limited to treatment of seedlings and sprouts, as other means of opening the brush appeared more practical.

Seven factors should be considered in opening chamise brushlands and improving conditions for game.

1. The chamise brushland to be opened should have at least a few deer or quail in the general locality. Opening the brush will not lure deer long distances to areas of low concentration. Absence of deer may indicate lack of water or other limiting factors; in this case opening of the brush may be of little benefit.

2. Areas should be selected where there is reasonable assurance that grasses will grow abundantly. Soils and topography should be considered, and the more productive areas selected.

3. Methods of opening an area—burning or mechanical means—depend largely on the risk of using fire, brush-cover conditions, and type of terrain. The decision must be made for each area.

4. The extent to which a brush area should be opened depends almost entirely on the deer population present. Where a square mile has less than 10 deer, a half dozen scattered, opened areas of about five acres each may be sufficient. As deer population increases, more areas should be opened. Enough untreated areas should remain to furnish adequate protective cover for the game.

5. Areas cleared of brush should be reseeded to adapted forage plants before the first fall rains. Where possible, species valuable for forage and water-shed cover

should be used—soft chess, smilo, hardinggrass, and others.

6. Reburning in spots may be necessary three to four years after a first burn to kill some of the seedlings and further open the brush. If the area burned at first is not too large for the deer population, the animals will tend to suppress the brush seedlings and sprouts, and lessen the need for reburning.

7. Good grazing management will leave enough grass residue on the ground for an effective watershed cover, and maintain a high level of fawn production without depletion of range-carrying capacity. Where the browse species are properly utilized, the grasses are likely to be properly grazed, too.

Knowledge of both the game populations and the plant populations in the brush area to be opened is essential for successful management.

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**Area of opened brush produced by spot burning. The interspersed grass and brush forms a favorable habitat for deer. During late winter and early spring the deer graze heavily on the grasses. The spots of dense brush form necessary cover.**

