# RUFFED GROUSE MANAGEMENT
# PLANNING AHEAD FOR WILDLIFE SURVIVAL

The ruffed grouse is the most widespread of any non-migratory game bird in North America. It's range extends from Alaska to Georgia, including Missouri.

Early settler in Missouri found ruffed grouse statewide, except for the extensive prairie areas. As the first settlers cleared the forest for homesteads and timber, grouse became more abundant. In fact, there are reports of market hunters taking thirty to forty birds in a day's time.

This period of abundance was short-lived, however. As the rural population of settlers grew more dense, woods grazing and burning became a way of life. Forest wildlife habitat was seriously depleted. The hunting season was closed in 1905, but the ruffed grouse were already gone from most of Missouri by the early 1930's.

Since then, forest wildlife habitat has greatly improved. Marginal farms were abandoned, but most of the cattle and hogs were taken out of the woods, and burning has declined. The ruffed grouse, as a result, is still with us.

The history of grouse in Missouri has essentially paralleled the history of man's impact on the land. Man's effect can be either good or bad. Through effective forest management practices, man's impact can be beneficial, both for timber and wildlife. Ruffed grouse respond to and depend on good woodland management practices.

## RUFFED GROUSE HABITAT

Ruffed grouse habitat is characterized by a number of vegetation stages or types. The more important of these are: young hardwoods, field edges, regeneration stands, abandoned homesites, brushy creek bottoms, and reverting old fields.

Ruffed grouse habitat can be identified as an area with a very high number of woody plants per acre. Habitat will vary with the birds's seasonal needs.

Habitat studies in central Missouri have shown that grouse use areas having the highest density of woody stems per acre. As an example, habitat used throughout the year averaged over 8,000 stems per acre, while areas selected for drumming logs had nearly 12,000 stems per acre. To put this more into perspective, the ruffed grouse is a bird of the "brush-stage" forest.

Ruffed Grouse Foods: Missouri food habit studies showed that a grouse used only 1.4 percent (by volume) animal matter, primarily insects. Animal foods are used by hens during the egg formation and laying periods, while chicks feed on insects during the first three weeks of life.

The balance of the ruffed grouse diet comes from vegetation. Plants which furnish a large part of this food are:

1. ironwood (hophornbeam)
2. acorns
3. wild grape
4. fragrant sumac
5. bittersweet
6. hazelnut
7. Christmas fern
8. dogwoods (flowering & gray)
9. apple
10. hawthorn

These studies also showed that only 15 percent of the year-round foods were furnished by high canopy trees; 45 percent came from understory trees, shrubs, and vines; while 40 percent came from forbs and grasses. Therefore, areas with a good interspersion of plant communities provide the foods necessary through the year and meet the varying seasonal habitat needs of ruffed grouse.

The food habits of grouse are so variable that the planting or direct management of food species is seldom practical or necessary. Proper woodland and "edge" management will usually produce the required food species.

# SPECIFIC SEASONAL HABITAT NEEDS

Drumming Habitat: Drumming males select logs on sites where the vegetation is open enough to allow visibility of at least 60 feet. The area must have sufficient stem density and canopy coverage (regeneration and small saplings) to provide protection from hawks and owls. Although these sites have high stem densities, the low shrub and herbaceous component is sparse. Stem counts as high as 18 to 20 thousand stems per acre have been reported on drumming sites.

Although other raised objects (rocks, stumps, ditch banks, etc.) are occasionally used as drumming stages, logs are used at least 95 percent of the time. The typical drumming log averages 14 to 16 inches in diameter, and is usually decayed to the point that all or part of the bark has sloughed off.

Brood Habitat: Broods are most often found in semi-open areas in early stages of woodland succession (successionally younger than drumming habitat). These areas are characterized by diverse herbaceous ground cover that provides a low canopy with openings at ground level through which birds can move and feed (the briar, herb, and small sprout stage). This structural situation provides the insect and plant foods, low overhead cover, and relief from summer heat that brood habitat must supply. Dense stands of grasses and forbs do not provide brood habitat since they restrict movement.

Hens with chicks will often use upland brood habitat until the chicks are three to four weeks old. They will usually then move to stream bottoms and lower slopes, especially during hot summer weather.

Nesting Habitat: Nesting hens choose sites with sparse shrub and ground cover so that visibility is not obscured. These sites are most often in pole or small sawtimber stands, but are usually within 100 feet of fields, road or trail edges, old homesites, or breaks in the forest canopy such as logged areas or old log landings.

Winter Habitat: Dense stands of woody regeneration, grape tangles, small pine plantings and cedar clumps provide winter habitat. Grape thickets form protective pockets for winter shelter as well as some fruit which may persist on the vine. Both grape and bittersweet should be encouraged to grow for winter food and cover. A few trees may need to be cut to allow sunlight to reach the vines.

NOTE: Nesting habitat is the most plentiful in Missouri. Proper forestry management practices will help provide the other three habitats where these are lacking.

# FOOD AND COVER MANAGEMENT

Ruffed grouse management must be directed at creating and maintaining the variety of forest habits required through the year. Large, continuous stands of mature or pole-sized timber and large conifer plantations do not provide ruffed grouse habitat.

For large tracts, the best and most economical ruffed grouse management is even-aged timber management or clear-cutting. The ideal program for both deer and grouse would include five to twenty acre clear-cuts scattered through a timber tract. A rule of thumb might be to clear-cut around 10 percent of the forested area every ten years.

The benefits of both timber stand development and wildlife habitat improvement far outweigh the short-term unsightly cut-over look of a clear-cut. An alternative would be "group selection cuts" which amounts to miniature clear-cuts. The openings created will allow regeneration on the forest floor.

# SMALL ACREAGE MANAGEMENT

Since some tracts under private ownership are too small for even-aged management, smaller "group selection cuts" could also be effective. Two to three acre openings will create good grouse habitat. Within these areas, small groups of three to five big trees (especially den trees) or clumps of food trees, such as ironwoods and dogwoods, could be left. This will cause irregular shading that will add variation to the herbaceous and sprout response in the clear-cut openings. This is not as effective as the larger clear-cuts, however, since the regeneration is less uniform.

Another method is to clear-cut strips sixty to ninety feet wide along firebreaks, roads, and field edges. The regrowth of brush will provide grouse habitat for ten to twenty years. After this time, the strips can either be recut or allowed to grow firewood. In this case, other nearby strips could be cut, establishing a ten-year rotation.

A practice which will benefit grouse, deer, quail, rabbit, and songbirds is the establishment of "feathered edges" next to fields. One method is to cut-over three, thirty foot wide bands along the field. As an example, cut seventy-five percent of the trees in the first band next to the field; fifty percent in the second; and twenty-five percent in the third band. The variable amount of sunlight which reaches the ground will produce a larger variety of plants beneficial to wildlife. The trees left standing could include walnut, den trees, and seed or fruit producing species.

It should be emphasized that both Timber Stand Improvement (T.S.I.) and single tree selection cutting is of little value in grouse management. The openings in the canopy are soon closed by nearby trees, eliminating the short-term benefits.

"Brush" or regeneration may be difficult to establish in small plots where there is heavy browsing by deer. If browsing by deer or cattle is severe, fencing the area for four or five years will help establish the vegetation. This may be expensive, but in some localities it will be the only way to successfully establish brushy vegetation on small areas.

These management practices will initially provide brood habitat in the herbaceous-small sprout stage. As the woody vegetation grows over a period of time, a transition to drumming habitat occurs. This is gradual, but will normally occur at seven to ten years. Grouse foods will be produced as the vegetation progresses to the drumming habitat stage.

Where the percentage of open land is much larger than the wooded portion of the ownership, steps can be taken to provide grouse habitat and increase the proportion of woodlands. Grouse cover can be added by allowing woody vegetation to invade adjacent fields, especially along creeks and in draws.

If necessary, shrubs and trees can be planted along woods edges to increase the proportion of woods to fields. Many native shrubs can be successfully transplanted from nearby sites or ordered from the state nursery at Licking, Missouri. Suitable plants to improve grouse cover include: alder, hawthorn, gray dogwood, bush honeysuckle, swamp dogwood, blackberry, raspberry, autumn olive, or any of the viburnums. Seedlings occasionally are difficult to establish in this situation and may need protection from gnawing rodents and browsing deer. Place a cylinder of quarter-inch wire mesh around the seedlings. Bury the end six inches deep to prevent rodents from burrowing underneath.

Logging, roads and trails can be seeded to white dutch clover, a favorite grouse food. Seeding should be at the rate of five to eight pounds per mile of road. This can be an expensive but worthwhile practice. These plantings should be maintained by monthly mowing and top dressing with fertilizer every two years during July and August or as necessary to maintain the clover. Check lime requirements every five years. this method of maintenance will provide a rather lush growth of clover.

A less expensive alternative is to conduct no maintenance at all and to simply reestablish the clover after three to five years or when necessary. Although this method will not produce a lush growth, there will be enough clover for the grouse until it is nearly eliminated. Heavy browsing by deer can hasten the elimination of the clover. For grouse, clover is an "icing on the cake" sort of situation. It does make the birds more visible as they work along old roads, but it should not have priority over other management practices.