

WHY WILDLIFE OPENINGS IN FOREST HABITAT

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Forest game management is the art of tending forest environment for annual crops of game and sustained yields of wood products. Habitat, then, consists of trees, shrubs, lesser vegetation and canopy openings. Primeval cover consisted of forest, grassland, and marsh. In the forest, game increased with man's feeble attempt to clear and cultivate the soil. Opening of the forest canopy and manipulation of the soil to produce crops stimulated native grasses and forbs. Thus, more wildlife food was produced in the fields than was found in the forest.

On the grasslands, quite the opposite happened—those soils, once disturbed, failed to produce the native food plants game were accustomed to eating. Under these conditions, native populations decreased, as, for example, the prairie chicken.

The several periods of land abandonment in the South have resulted in profound changes in habitat and, possibly, some erroneous conclusions. Abandonment following the boll weevil outbreak in the late 19th and early 20th centuries, that, which following World War I and the depression of the 30's, provided excellent habitat. The reverting farm lands, having been carved from forest soils, were highly productive of game foods. Game populations increased. This phenomena was undoubtedly responsible for the belief that farm game habitat was the only environment that would support good populations, for example, quail. Forest habitat will support good game populations if we understand the requirements of the species and do something about it.

A vast unbroken forest canopy is not prime game habitat. This condition did not occur in nature, consequently our native game species did not encounter it during their evolutionary process. Disturbance of the earth's surface and cover has been a common occurrence since time began. Earthquakes, volcanoes, landslides, and glaciation caused changes in terrain. Winds, fire, disease, drought and insects were responsible for changes in cover. Openings resulting from such disturbance are a natural segment of forest environment. The affinity of our native deer, quail, turkey and grouse for these openings indicates their importance.

Early man recognized the importance of canopy openings to his way of life. He knew that game—food to him—were drawn to such areas. If he were to eat, stone-age man had to entice his prey to a situation where it could be taken with his crude weapons and traps—he had no weapon capable of moving targets. His feet were his only means of movement and fire was the solution to his problem. Although his early use of fire was to draw game together, later, as his weapons improved, he used it to drive game out of dense forests where it could be more readily reduced to the family larder.

Disturbances which created openings in the forest canopy, principally fire, are a natural phenomena. It was in this environment that our native game species evolved. Fire exclusion in recent years has been responsible for creating large areas of unbroken forest. These are not in themselves balanced game habitat. Balance can be achieved by judiciously placed openings. The need for wildlife openings in forest habitat is not a figment in the imagination of game biologists. It is a basic habitat requirement, if we are to sustain stable crops of harvestable game in forest environment. Their location and area should be on a planned basis, however, rather than haphazardly as was the case when nature called the shots. The key is not so much how big the openings are, but how they are distributed.

Openings in a forest canopy satisfy wildlife requirements for nesting, resting and feeding. So far as nesting is concerned, the perimeter is the sensitive area. Cover, stimulated by full sunlight

in the total opening, is normally too dense for nesting. Also, danger from avian predation is greater. Within the forest, quite the opposite is true. Predator pressure may be reduced, but cover is lacking, due to suppression of understory by shade. The zone where the opening meets the forest receives the right amount of sunlight to stimulate moderately dense cover and at the same time trees furnish concealment from avian predators. It is in this sensitive zone that ground nesting birds—quail, turkey and grouse—find favorable conditions for nesting.

In the winter and following heavy rains throughout the year, birds seek openings in sunlight for warmth and drying out. All game species, even deer, spend time loafing in the sunshine.

Full sunlight stimulates production of fruits from blackberry, elderberry and plum, for instance, as well as seeds from grasses and forbs. In this grass-forb-brush association, bug populations are high, providing ample food for quail and grouse chicks and turkey poults, within easy range of their nest on the perimeter.

Size of openings and their frequency depends on several related factors. I have in mind four, there are probably more, but these are: radius of mobility, homing instinct, intraspecific behavior and economics.

Different species will travel various distances in search of food. In the main, however, they fit together rather well. Grouse and quail have about the same mobility habits—40 acres, although these two are rarely found in the same area. Turkey are wider ranging and nomadic, often traveling a mile or so for food and water.

Our native species appear to have an inherent urge to return to specific areas for breeding and nesting. To retain stable populations, then, these areas should remain in suitable condition and in the same place. Transitory openings, resulting from timber harvest, and poorly stocked spots do not meet this nesting need, nor will such conditions support a stable population—if permanent openings are lacking.

Quail, grouse and turkey, much like ourselves, do not like to live too crowded. It is not a matter of food—it is a social thing.

That is why we rarely find stable populations of quail exceeding one bird per acre or turkey in excess of one bird per 25 acres. For this reason, large single openings do not contribute as much as several small dispersed openings. Continuous openings, such as cleared rights-of-way will, in my opinion, contribute no more than several small dispersed openings. Possibly, one-fourth mile out of every mile of such a right-of-way is on the plus side.

A grass-forb-brush opening of several acres cannot be made, then forgotten. Plant succession on most southern soils moves rapidly—especially so when the majority of preferred plants are pioneers. Valuable seed-producing plants are rapidly suppressed by those less desirable. Thus, maintenance can become a financial burden. Fire, mowing, discing and spraying, applied periodically, are relatively cheap methods for maintaining desired successional stages. Widely distributed openings do, however, run up the per acre cost.

Based on the four related factors, radius of mobility, homing instinct, intraspecific behavior and economics, it appears that forest openings should be planned and installed about as follows. Where turkey is the key species of management, openings of 2-5 acres should be planned at half-mile intervals, with water holes. Where either quail or grouse is the key species, then openings of 1-2 acres at one-fourth mile intervals would be satisfactory.

So far, this discussion has been aimed at the value of forest openings to wildlife. These openings also benefit forests. The value of insectivorous birds in regulating sawfly and beetle populations up to moderate infestation levels cannot be discounted. The impact of such predation, particularly on the adult stage, is sufficient reason to favor environmental attraction to insectivorous birds. Both Lay and Sharp report bird increases as great as 95 per cent adjacent to openings, as compared to the interior of the forest.

The vast areas of "pure pine" now common in the South, are

"sitting ducks" for insect outbreaks. Particularly those forms which utilize terminal leaders high in the crowns. If insect populations can be held in check by insectivorous birds whose numbers are held at high levels by wildlife openings, then the acreage devoted to the opening is a cheap price to pay for protection.

In summary, then, grass-forb-brush openings furnish the basic requirements for nesting and survival of native game species. They should be well distributed throughout the forest and large enough to promote vigorous growth of desirable food-producing species. Southern forest soils are rich in the important sub-climax food plants and given sunlight these plants will produce satisfactory food and cover. The openings may be maintained in the proper plant succession and condition by either burning, mowing, discing or spraying—whichever is most expedient.

I repeat, they are a basic ingredient of stable game populations.

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