

For Wild Life Assoc. publication

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GAME MANAGEMENT AND AGRICULTURAL PRACTICES  
with pictures & references.

The relative importance of farm-game has increased tremendously in the past few years. As a result many farmers, who are also sportsmen, have requested the Department of Conservation to make suggestions on improving the farm environment so a larger number of pheasants, rabbits, or other desirable wildlife would thrive on their land. Recommendations for improvement, in most cases, cannot be given without first knowing the conditions now existing on the farm. If specific improvements are desired, <sup>it is necessary that we</sup> visit the farm and carefully note the proportions of food and cover and the relative abundance of the various game species. This followed by a survey of hunting pressure would make it possible for us to give recommendations for habitat or management improvement which would increase the game.

From the above it may be inferred that each separate farm is a unit in game production which must receive special treatment to obtain the maximum results. Upon examination of the land it might be found that the game supply could be increased appreciably by providing nesting cover, food, or perhaps controlling overhunting. In other instances, the farm might be producing a maximum population of game at present and little or no doctoring would be necessary or feasible.

The methods advocated in this discussion are not designed to deal with specific areas but are used to suggest practices beneficial to the farmer as well as to the game. If it is desired to develop the farm as a unit for producing a maximum population of game or other wildlife, the Game Division technicians will be available without cost to the landowners.

Farmers occupying valuable farm lands may consider that to plant or leave bushes in fence rows, or to give up the use of corners of fields for food patches and herbaceous game cover would be poor farm management, and refrain from making improvements for game. Other farmers living on land where brush



and swales are abundant may consider the suggestions equally absurd and believing they have the necessary environment, likewise consider improvements unnecessary. However, it should be noted that the vast area of cleanly farmed, well drained, fertile soils comprising the central and eastern portion of the southern half of the Lower Peninsula is now producing the bulk of the pheasant crop, and conversely, the hilly, lighter soil types which have adequate brush and swale cover are doing but a mediocre job.

Undoubtedly, either of the above types could be improved for wildlife by borrowing game habitats from the other. The hilly country, with its apparently adequate amount of cover could profit by increasing the fertility of the soil, and the cleanly farmed, fertile soils would profit by having more cover. At present the fertile soil is doing a much better job of producing pheasants than the hilly, morainic soils of poorer quality, and the latter is producing a better crop of rabbits, 'coon, and squirrels than the fertile level soils. Consequently, we believe that farm practices which will maintain or increase the soil fertility of the poorer soils; better methods of managing wood lots; and methods of harvesting crops which will increase cover on the better lands will be reflected in a greater game supply.

There has been little uniformity in farm cultural practices in Michigan. In nearly every section of land having a given soil's classification, we can find good, excellent, and poor farms. Since we cannot, therefore, suggest general plans which will work in every section, township, or county, it will be necessary for each farmer to take stock of conditions on his particular piece of land and make improvements accordingly. Certainly the owner of the poorer types of soil will profit most by stressing farm practices which will restore the fertility of the soil.

### Maintaining Soil Fertility

Any practices which will maintain or improve the fertility of the soil should be reflected in an increased game bird supply. However, there is a growing tendency among farmers living on high producing soils to practice very clean farming (allowing nothing to grow which will lessen the efficiency of cultivation). In such cases we may assume that game production practices are incompatible with agricultural production, although the area is potentially capable of producing both. Fortunately, there are but few of these areas in this state. It is probable that the reduced game supplies, due to careless methods of soil management, are far more numerous and important than caused by the ordinary semi-intensive cultural methods.

The barnyard manure produced on the farm is far too valuable to waste. It is considered very poor economy to allow manure to lie in the barnyard to rot and leach beneath the eaves; through leaching the soluble, readily available fertilizing constituents run off into drains or ditches, their value being lost to the land. Decomposition of organic materials is a chemical change promoted by bacteria and hastened by high temperatures. The results of decomposition are readily recognized by the moldy, dusty, burnt appearance of the manure. Much of the value of barnyard manure may be lost through careless handling.

Where the land is level it is a good plan to haul and spread the manure on the fields at regular intervals throughout the winter months. By this method the soluble salts in the manure leach directly into the soil, and decomposition is kept to a minimum by the low temperatures. Birds, especially Hungarian partridges, pheasants, and snow buntings will utilize the waste grain and weed seeds found in the manure.

The above method is considered a sound and economical way of handling the barnyard manure on level lands only. On hilly farms where erosion



is continuous throughout the winter, a manure pit should be used. The practice of spreading manure daily or weekly throughout the winter months distributes the farm labor more evenly throughout the year. Improving the fertility of the soil benefits wildlife by supplying undigested and waste grains during the critical period of the year.

Pasture and Wood Lot Management: Permanent Pastures.

Lands used for grazing will make ideal nesting cover and range for game species if the necessary precautions are taken to maintain the permanency of the pasture. The pasture lands are often the most abused of farm properties, probably due to the fact that lands classified as permanent pastures are unsuited to cultivation because of poor drainage or hilly topography. On the hilly type of land, excessive grazing removes fertility and strips the land of its cover, thereby causing sheet erosion and gullying. Lowland permanent pastures can usually stand more grazing than the rougher land types, but in either case the farmer will be benefited financially if he makes some provisions for care of his permanent pastures.

The crop of livestock produced, whether used for meat, wool, milk, or power, removes a given amount of fertility from the soil. The manure returned to the land by the grazing animals represents only the portion of the plant growth not available to the beast. A large percentage of the nitrogen, phosphorus, potash and other important mineral fertilizers present in the grazed plants is extracted and becomes a part of the animal's body. These elements in most instances come from the soil and to replace them requires an expenditure for commercial fertilizer or a period of waiting until further disintegration takes place in the soil structure, an extremely slow process.

Therefore, a permanent pasture should not be expected to produce crops for grazing indefinitely without some sort of treatment. Many progressive farmers fertilize the pasture as they would cropped land. In some instances a complete commercial fertilizer is used, in other instances barnyard manure is applied. If erosion is a major problem the pastures should be alternated to make sure that the ground cover never gets so scant and weakened as to permit erosion to occur. The alternation of pastures is especially important in sheep management as their close cropping of vegetation reduces the cover rapidly. Also land used continually for sheep pasture builds a heavy infestation of parasites harmful to the sheep.

In the West the grazing of sheep has been likened to the work of locusts; they have also been called "ground-cover maggots." However serious the damage done by sheep, we must remember that they are useful to mankind and are directly under his control, so any depredations done to the land and its cover should be blamed upon the shepherd and not upon the sheep. Sheep can be used successfully in the farmer's livestock program, but pasture rotation and planting must be practiced.

Sheep pastures can and should be managed with the future of the land in mind. Pastures should never be depleted of their cover by grazing or of surface soil by erosion. Hillsides too steep to stand pasturing should be allowed to grow vegetation which will hold the soil in place. The setting aside of such areas by fencing may be considered as wasting land, but the beneficial results obtained by checking erosion thereby preserving the soil and its fertility will pay big dividends in cash and game for the landowner of the future. The minimum cover that should be allowed to remain on pasture lands will benefit wildlife tremendously and contribute to the permanency of the pasture lands.

#### Food Lots

A few species of game, such as squirrels and raccoons, require a wooded



habitat to succeed. Other species as quail, pheasants and rabbits use the woody habitat to supplement the open field type of cover. For the squirrel and raccoon there must be den trees, and for rabbits there must be escape cover such as holes and brush. Quail and pheasants appreciate and use the tangled brush about the edge of wood lots for shelter and protection from natural enemies and hunters.

Many wood lots are handled in such a manner that neither game nor trees can thrive. The well managed wood lot is kept free from grazing because the feeding of live stock destroys the new shoots. The trampling of the animals packs the soil and hastens the rate of water runoff, thereby destroying the layer of leaf mold. Grasses follow and form a dense sod in which the seeds of trees cannot germinate and grow. Thereafter all cutting of wood for fuel removes the capital stock of trees and as seedlings are not taking their place the wood lot soon becomes a park-like area with scattered trees, and finally an open wooded pasture lot. While such management is justified on some types of soil and topography where the ultimate use of the land is to be cultivation, it is to be discouraged in most instances.

A good wood lot supplies fuel, sugar, fence posts, windbreaks and timber at very little expense to the owner. Of these products the value of timber for fuel supply is the least appreciated by those who have never been forced to buy coal or wood for heating purposes. To heat the average small five-room bungalow requires an annual expenditure of \$60-\$100 for coal. An adequately heated farm home would require a much greater cash outlay if the farm-grown fuel supply was not available. Conservatively estimating this expenditure to be \$100 per year we could well afford to pay the taxes on a 10 acre wood lot and allow no other use to be made of the area. By comparing the costs involved in labor, machinery and risk necessary to produce a crop of grain with that of growing and harvesting the

fuel supply, it will be readily understood that the wood lot is supplying one of the most valuable products on the farm.

An ungrazed wood lot with its brush piles, den trees and underbrush cover requires but little expenditure other than the taxes to maintain; and the dividends returned in fuel, syrup or sugar, fence posts, timber and game are real assets to any farmer. Nothing should be done which, like grazing, would reduce the capital stock of trees.

Around the edge of the ungrazed wood lot the woodchuck may be allowed to live without hazarding livestock. The holes produced by them should increase the rabbit and fur-bearer supply. Quail and pheasants can find refuge from the wintry winds, and all life, including man, benefits directly or indirectly.

#### Methods of Harvesting Crops

Perhaps the harvesting of the hay crop takes a greater toll on wildlife than any other single farm operation. The mowing season coincides with the nesting time for pheasants and quail. This results in a considerable percentage of the birds' nests being destroyed, and many birds and rabbits killed or maimed. Outside of the various flushing bars, there has not been devised any satisfactory means of protecting the game from the cutter bar and hay rake. The increased acreage of alfalfa, the first cutting of which takes place during the height of the nesting season, has undoubtedly added to the heavy toll. However, the valuable alfalfa crop must be grown and game managers will have to find a method of coping with the situation. It may be that in the future that annual reduction of alfalfa seed will occupy a permanent place in the rotation. In such event a portion of the crop normally cut for hay will be allowed to ripen for several weeks on the stalk, the game benefiting in the proportion the seed crop bears to the harvested hay crop. Until such practices are established we must be content to use the flushing bar or take extra precautions when mowing. (Ref. English Flushing Bar - Ref. Alfalfa Seed Prod.)



Another harvesting practice which is growing in favor among farmers is the use of the small grain combines. The combine cuts the straw somewhat higher than the binder and due to delayed harvesting, the waste grain is evenly distributed over the field. Farmers occupying level lands, and having large grain fields, should investigate the economy of small combines.

The corn crop is harvested by various methods throughout the corn growing sections of the country. Formerly corn was grown primarily for the grain and dried stalk value. Today a good percentage of the crop is ensiled, especially in districts where dairying and cattle feeding are the major livestock enterprises. In areas where hogs are of importance many farmers practice hogging down the corn, letting the hog conduct the harvesting thereby saving themselves the cost of cutting, shocking, and husking the crop, at the same time eliminating the tedious job of feeding, and drawing cornstalk manure. The hogs do a good job at gleaning the corn crop, and but little grain is lost. The lost grain becomes available for rabbits, squirrels, and game birds, rather than for rats, mice, and sparrows which normally infest the barnyard and barns. The stalks remaining after the hogs have taken the grain will serve as game cover. Try this method of feeding pigs and harvesting corn. It will be found to be labor saving, economical and beneficial to game.

Corn stalks have but little value per ton as feed when compared with clover, timothy or alfalfa hay. The costs of labor and machinery involved in cutting the cornstalks, shocking, hauling, feeding and handling manure strewn with stalks further minimizes the net values received. Farmers who do not need the stalks for feeding in the barn will do well to consider picking the ears from the standing stalks as they now do in the corn belt, later pasturing the leaves from the stalks by sheep, cattle or horses. Again this method is



economical and labor saving and the waste grain is left well distributed over the land for wildlife. It is difficult to imagine a more inefficient method of handling a crop than that of cutting and shocking the corn and then leaving the unhusked shocks in the field. Although this method benefits wildlife greatly, it cannot be called good farming. Under such a system of harvesting the losses due to rodents are tremendous. This loss incurred, plus cutting, shocking, and husking costs greatly reduce the income from the corn crop.

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Fence row cover.

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