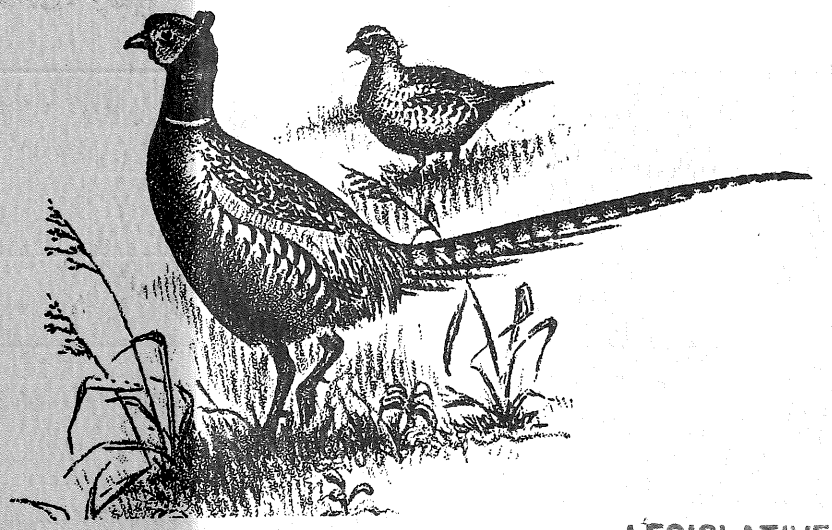
WILDLIFE HABITAT IMPROVEMENT

Under the Minnesota Private Land and Federal Land Retirement and Cost-Sharing Programs



Minnesota Department of Conservation
Division of Game and Fish
1969

WILDLIFE HABITAT IMPROVEMENT UNDER THE MINNESOTA PRIVATE LAND AND FEDERAL LAND RETIREMENT AND COST-SHARING PROGRAMS

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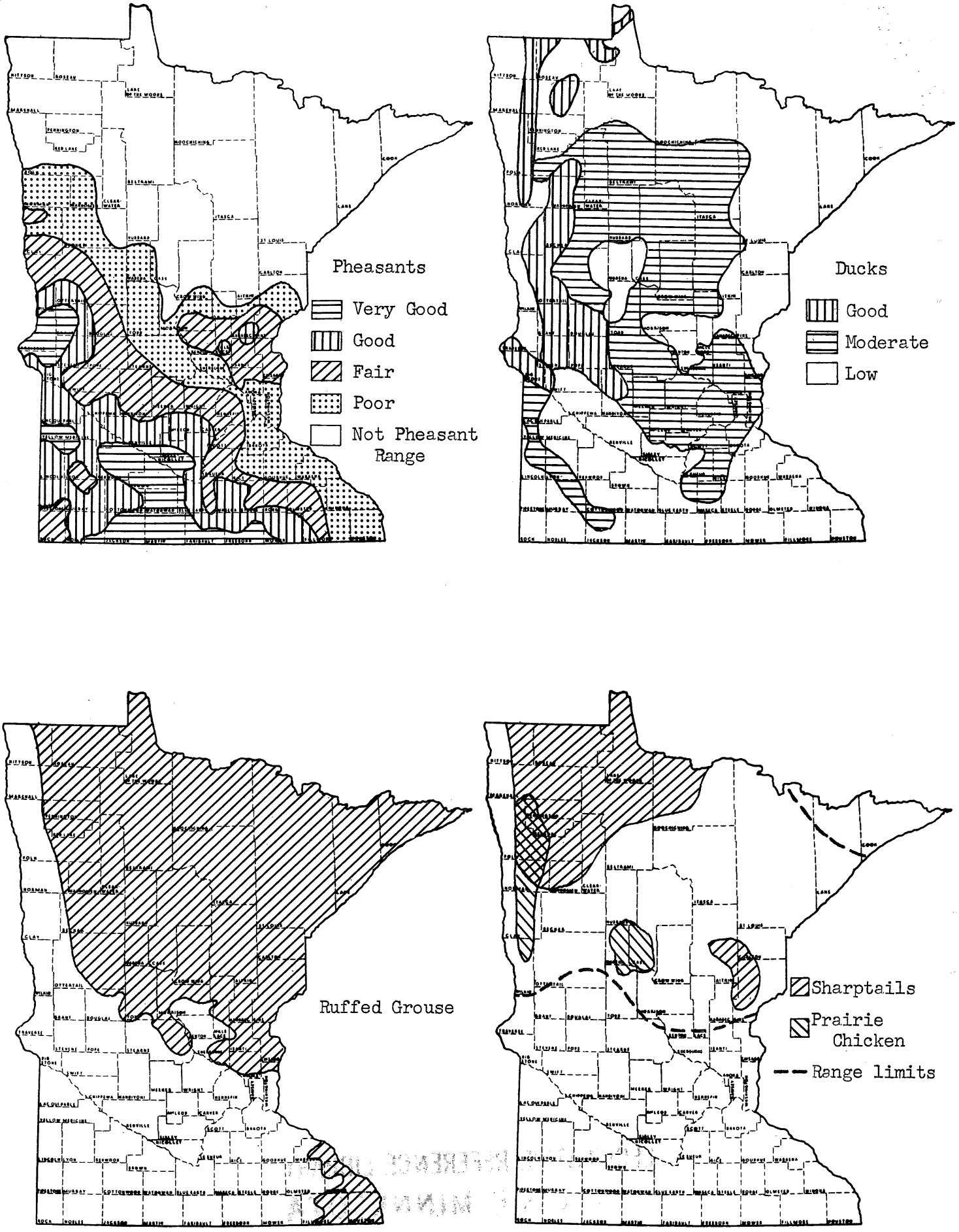


Figure 1. General distribution and abundance of game birds in Minnesota in the 1960's.

INTRODUCTION

Adequate habitat is the key to farm game abundance. Without it other efforts to foster wildlife cannot succeed.

This booklet summarizes the opportunities now available for providing and improving wildlife habitat on farms under the several federal programs designed to divert from production some croplands now producing surplus agricultural commodities. It will aid Agricultural Stabilization and Conservation Service (ASCS) personnel and Conservation Department personnel in assisting farmers to select federal and state cost-sharing programs which can provide more and better wildlife habitat on their land. Additional details on these programs are defined in the Agricultural Conservation Program (ACP) Handbook for Minnesota and brochures available from the Minnesota Conservation Department.

NESTING COVER FOR PHEASANTS AND DUCKS

Both pheasants and ducks must have adequate undisturbed cover in spring and early summer if they are to nest and bring off broods of young. In the intensively farmed areas of Minnesota specialization in row crops such as corn and soybeans, early mowing of alfalfa, and fall plowing have brought about shortages of safe cover for nesting birds and their young.

For pheasants, the most valuable nesting cover is a mixture of legumes and grasses. The need for nesting and brood cover is most critical in the southern and southwestern counties; (Zone I, figure 2). In the zone to the north of this area (Zone II) additional nesting cover is also desirable but the need is less critical. Here there are more small grains and undisturbed grasslands. The extreme southeastern counties (Zone III) are also marginal for pheasants, largely due to the extensive woodlands and the scarcity of cereal grains and safe nesting cover. In Zone IV farming is commonly less intense and winter foods and weather are more critical problems for pheasants than is nesting cover. Because of this

and other factors, Zone IV should be considered marginal pheasant range. Zone V in the northern counties is largely forested and has few pheasants.

For ducks, adequate upland nesting cover is also essential where there are ponds, wetlands and other water in areas of intensive farming. Many species of wild ducks, such as teal and mallard, nest mostly on upland some distance from water. Throughout the main farming region of Minnesota (Zone I, II, and IV) legume-grass plantings close to water are highly desirable for duck nesting cover. These same plantings can also be used for nesting by pheasants and Hungarian partridge. North of the main agricultural area (Zone V) the land is more wooded (except in the Red River Valley) and here legume-grass plantings are of value both for waterfowl and sharptail grouse.

To provide greatest benefit for ducks, the diverted acres planted to legumes and grasses should be less than a half mile from shallow water areas that retain water all or most of the summer.

For sharp-tailed grouse and prairie chicken, which are quite limited in their distribution in Minnesota, establishment of cover under the program should be limited to areas where they are known to occur. Ranges of sharp-tailed grouse and prairie chicken are shown in Figure 1. Legume-grass mixtures are best for sharp-tailed grouse and grass alone is best for prairie chicken.

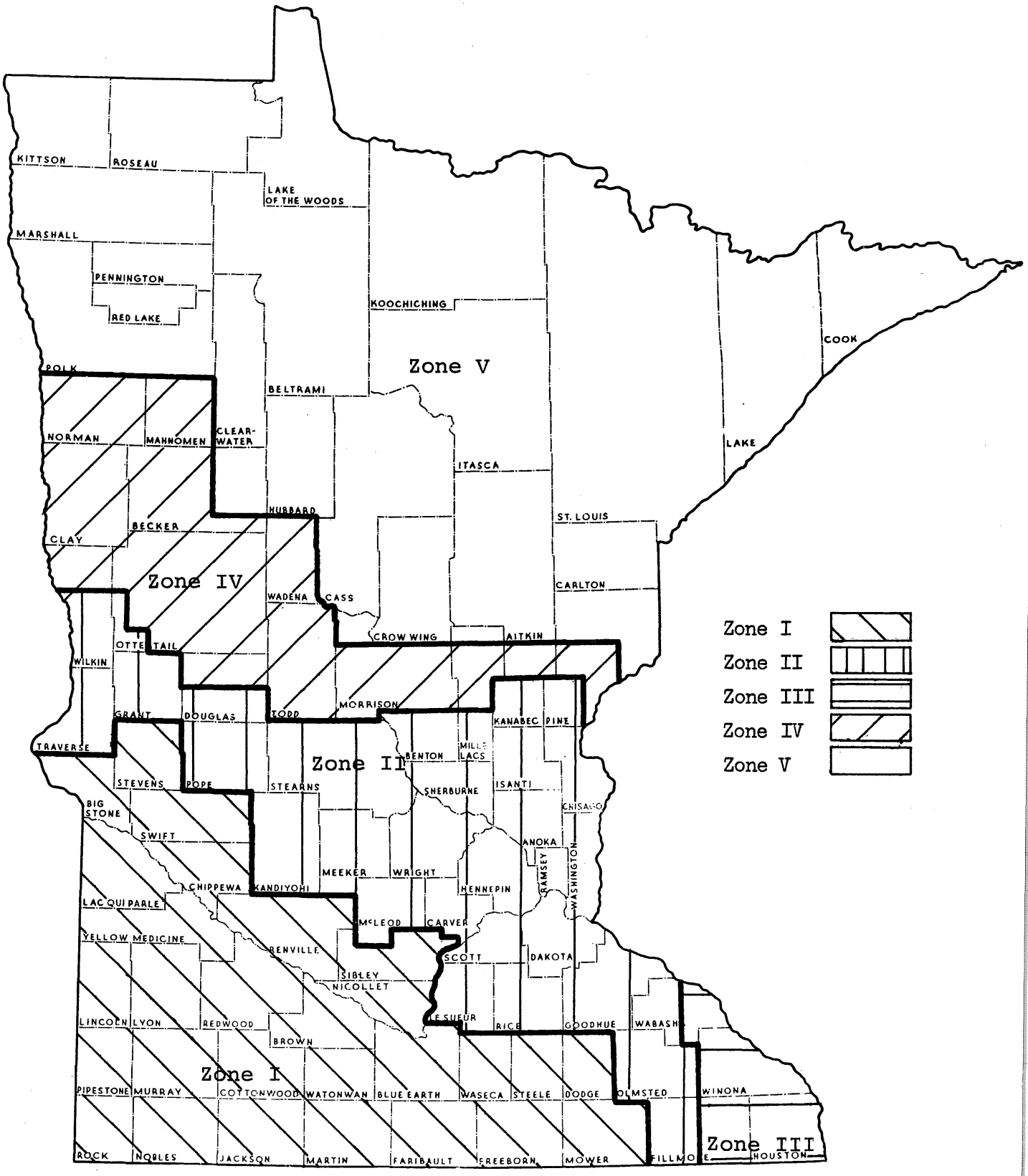


Figure 2. Zonation of state for planting of nesting cover for game birds. Nesting cover needs decrease progressively from Zone I to Zone V.

ESTABLISHING AND MANAGING NESTING COVER

Annual cereal crops such as oats provide good nesting cover, if planted early enough. Many pheasants are hatched in oat fields each year. Legumes, particularly alfalfa, are even more attractive to nesting pheasants and ducks and this cover type produces good crops of pheasants and other farm wildlife if it is not mowed during the nesting season. Mowed alfalfa is a poor cover crop however, because almost all of the nests are mowed over before they have had time to hatch.

Preferably nesting cover crops should be established for a period of at least two years since unmown legume-grass plantings produce early nesting cover and are highly attractive to game birds. Such cover crops also are soil conserving and should be encouraged under the land retirement programs. Management of cover crops for both the first year and during subsequent years that the land is diverted is discussed below.

Establishing Cover During the First Year.

1. Small grains should be seeded as a nurse crop to help establish a perennial or biennial cover crop of legumes and grasses. Oats is especially good as a nurse crop because, if seeded early, it will provide good nesting cover the first year. A mixture of alfalfa and brome grass is preferred for permanent cover for both pheasants and ducks. If prairie grouse are to benefit, red top or timothy may be substituted for brome.
2. The small grains seeded as a nurse crop should be planted at rates not less than 1½ bushels per acre, to provide sufficient cover for nesting and soil conservation purposes.
3. Small grains used as a nurse crop should be of a variety that is short to medium in height at maturity and has at least medium straw strength so it will not lodge when mature.

4. Where alfalfa, red clover, or sweet clover is planted, the minimum seeding rate for best results should be 8 pounds per acre. Perennial grasses should be seeded at rates not lower than those recommended by the U. S. Department of Agriculture. Sweet clover provides excellent cover the second year but usually does not prepetuate itself well. Therefore, sweet clover is not recommended for pheasant cover where the same plot is to be diverted from crop production for more than two years, unless other legumes are with it. Legumes of kinds other than sweet clover should be used in plantings to benefit ducks and sharp-tailed grouse because these birds prefer a lower and more open cover type than do pheasants. Only grasses should be planted for prairie chicken nesting cover.
5. Seeding of the nurse crop and the legumes and grasses fostered by it should be completed by May 10 unless approval has been granted by the County ASCS Committee for extension of time because of adverse weather or other conditions. The reason for seeding before May 10 is that the nurse crop will not make sufficient growth to provide adequate nesting cover unless planted before that date.
6. If noxious weeds become a problem, control by spraying with herbicides is recommended wherever this can be done without undue damage to legumes. If the weeds are in scattered patches, spot clipping or cutting may be done as necessary. When clipping is necessary, it should be done at a height of 6 or more inches above ground so that there will be less danger of killing nesting hens and young birds.
7. Clipping of the entire nurse crop should be done only if it is obvious that survival of the legume and perennial grasses is endangered. <u>Any clipping or removal of the nurse crop on a retired acreage should be delayed until after July 20 to allow pheasant and duck nests to hatch.</u>

<u>Management of Diverted Acres in Second and Subsequent Years</u>

1. After permanent cover is established on the diverted acres it will be most beneficial to wildlife if it is not clipped. The reason for this is that the standing stalks of the plants raised the previous year and the accumulated litter to the soil are both beneficial to nesting game birds.

2. Scattered patches of noxious weeds may be spot clipped or sprayed as is necessary. Clipping of the entire acreage is not recommended but may be done if necessary to control noxious weeds. If the land is not to be diverted from agriculture the following year, plowing down of the cover crop can be done any time after July 30, but preferably as late as possible.

WOODY COVER FOR FARM GAME

All farm game needs some protection from winter storms, snow and exposure to cold winds. Under ACP regulations farmers may receive cost-sharing for providing such cover. In the past, winter protection for wildlife has been provided by ready marshes and wetlands, by farm woodlots, groves, and windbreaks, and by odd corners and fencelines having natural thickets of tall herbaceous plants, shrubs and small trees. Drainage of wetlands, clean farming and maturation and cutting of trees around farmsteads and elsewhere have all resulted in a loss of winter cover. As an example of what can happen when winter cover is inadequate, 50 to 60 per cent of the pheasants in southern Minnesota died in March 1965 during a single two-day storm, and up to 90 per cent of the pheasant population were lost in Minnesota during the winter of 1968-69. Although nesting and brood cover is the most critical need in southern Minnesota, improvement of nesting cover must be associated with adequate winter cover to provide the greatest benefit.

A good farmstead windbreak will provide multiple benefits. Well planned windbreaks beautify the farmstead, prevent drifting snow around buildings, reduce fuel costs and provide protection for wildlife. In order for windbreaks to benefit wildlife, they should contain a minimum of ten rows of trees and shrubs. At least four rows of a low growing conifer such as spruce and/or cedar should be located on the inner part of the windbreak. Here they will provide maximum protection for wildlife and year around beautification of the farmstead.

A design for a typical windbreak is shown in figure 3.

Woody cover can often be planted on lands that are marginal for agriculture and can be tied in with control of soil erosion, protection of farmsteads from

wind and snow, preservation of stream banks, conservation of surface water, and beautification of the landscape.

Plantings of trees and shrubs that are made specifically for winter protection of wildlife should be in fairly large plots to be effective. Woody plantings should be in blocks at least 150 feet deep from north to south. Maximum depths need not exceed 300 feet. Plantings should be laid out so that the center of the plot will be of evergreen trees that provide good shelter from wind and snow. Red cedar (juniper), Black Hills spruce and white spruce are all good. Of these three, red cedar is the most hardy and has the fastest growth rate. Cedars and spruce are better than pine which eventually becomes too tall and open to provide good protection for wildlife on the ground.

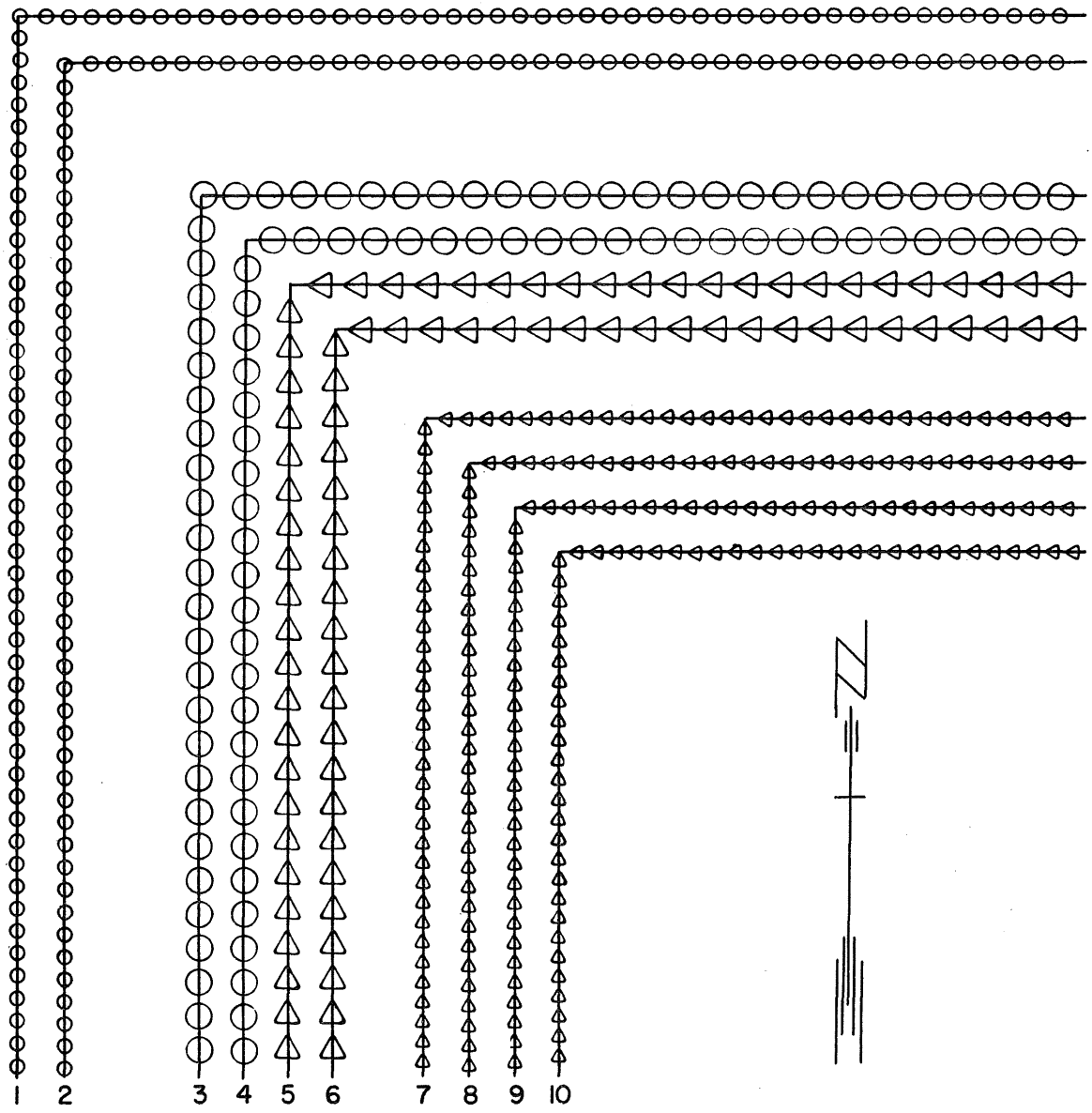
Wild plum, which is a small shrubby tree, grows well in the prairie region and makes a dense protective thicket around the evergreens. On the outside, several rows of honeysuckle should be planted to form a hedge and serve as a snow-catch. Other shrubs such as lilac, buffaloberry and Russian olive can also be used when available.

The shrubs around the edge of the planting provide attractive loafing areas for pheasants during all seasons and serve as a snow-catch in winter. A design for a block wildlife planting is shown in Figure 4. Spacing between rows depends a great deal on the equipment available for cultivation of the trees during the first several years.

Many of the original windbreaks planted on farmsteads in southern Minnesota were of deciduous trees, such as ash, soft maple and elm. These trees, when mature, are of less value for wildlife than the recommended species since they provide only limited protection from wind as the ground beneath them is quite open. Such trees should not be used in plantings designed to provide winter cover for wildlife.

Wildlife plantings are most effective when they are near feeding areas and natural cover, such as a marsh or an existing grove. South-facing slopes are especially desirable because they absorb more of the sun's warmth and provide additional

Figure 3. Suggested Windbreak Planting



Rows 1 & 2 Shrubs - honeysuckle, lilac, buffaloberry, caragana, ninebark, or sand cherry
Plant shrubs 2-3 feet apart within the row

Rows 3 & 4 Shrubby Trees - American plum, Russian olive, nannyberry, or highbush cranberry
Plant shrubby trees 5-6 feet apart within the row

Rows 5 & 6 Tall Evergreens or Deciduous Trees - Norway (red) pine, ponderosa (western yellow) pine, white pine, hackberry, or ash
Plant tall evergreens or deciduous trees 8-10 feet apart within the row

Rows 7,8,9,10 Medium Evergreens - Black hills spruce, white spruce, red cedar, Colorado spruce, or white cedar
Plant medium evergreens 8 feet apart within the row

Spacing between rows should be 12 to 14 feet depending upon equipment to be used to cultivate the planting.

Deciduous trees such as maple, elm, willow, cherry and poplar although used extensively are often damaged by rabbits during their first years of growth.

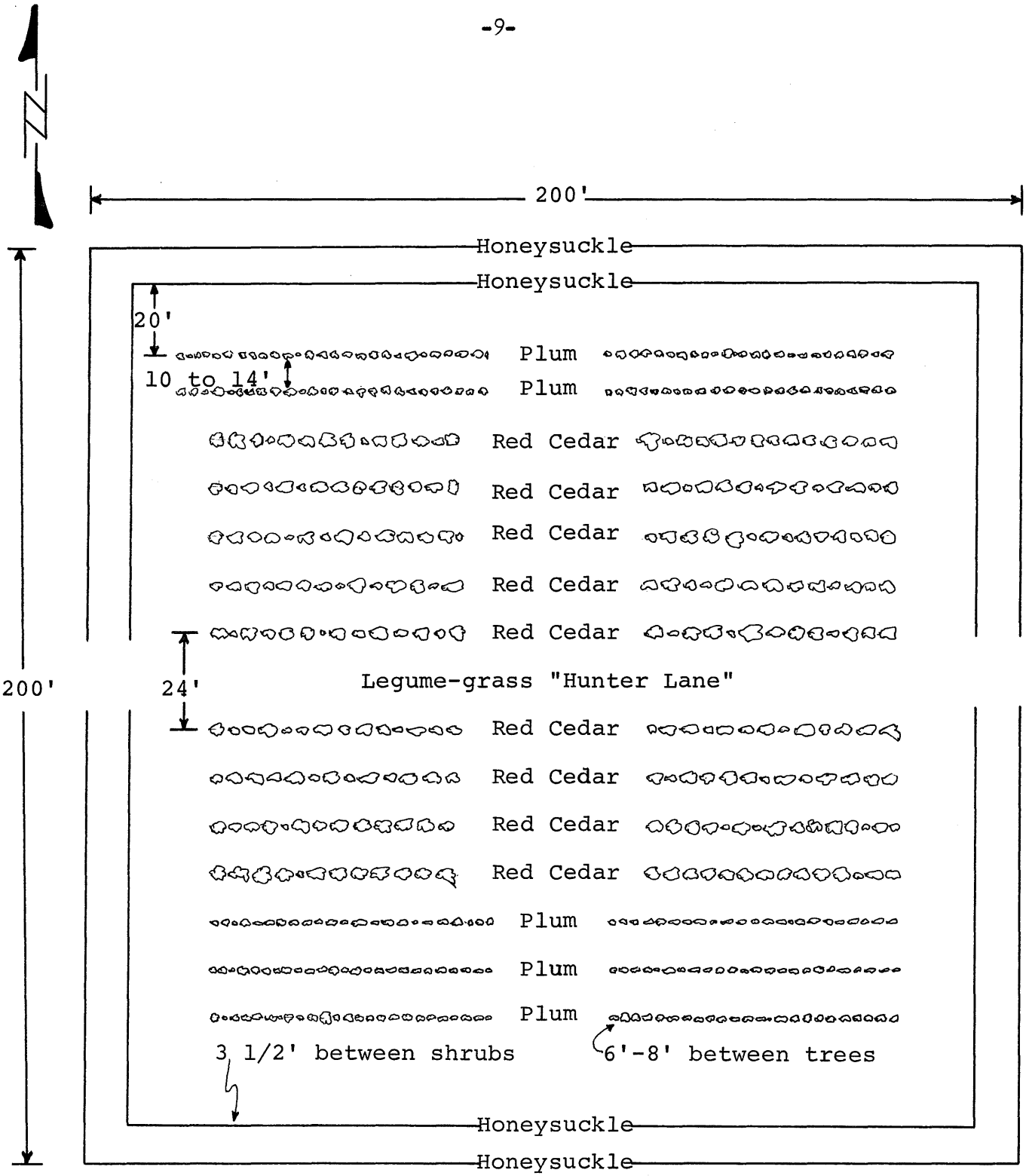


Figure 4. Suggested plant composition, planting pattern and minimum size for wildlife field planting where the pheasant is the primary species to benefit.

protection from winter winds. Plantings on exposed knolls or ridges are apt to be least used by wildlife.

In addition to block plantings of woody cover, plantings of shrubs along field borders are also helpful. These provide resting areas and travel lanes, even though they are not wide enough to give adequate protection during severe winter storms.

All plantings should be kept reasonably free of weeds for at least three years, and for five years for evergreens. This will allow a vigorous and dense growth to develop.

FOOD PLOTS FOR WILDLIFE

Food plots are most needed for pheasants and prairie chickens. However, sharp-tailed grouse, Hungarian partridge, cottontails, jack rabbits, squirrels and deer also can benefit, especially in local areas. Food plots should meet the following requirements: 1) one or more of the kinds of wildlife to benefited should occur in the area of the proposed plot; 2) the plot must be in the vicinity of good winter cover; and 3) it should be likely that food for wildlife will be insufficient unless a food plot is provided.

The need for food plots for pheasants generally increases from south to north. Prairie chickens are dependent upon cereal grains throughout the winter and food plots can be highly beneficial to them. Sharp-tailed grouse need supplemental foods most when deep snow buries standing crops. Therefore, it is desirable to shock or stack a portion of the crop raised on food plots established for them.

Corn is the most effective food plant for wildlife where it can be grown to maturity. Plots of corn in which the stalks are standing the spring after planting and on which there is a substantial carry-over of corn may be left a second year. This is especially desirable where a light seeding of legume and/or grasses was broadcast on the plot following the last cultivation of the preceding summer.

Wildlife foods other than corn, when rated in approximate order of their winter food value, are soybeans, sorghum, sunflower, flax, buckwheat, and small grains.

Food plots of 1 and 2 acres in size per farm are normally sufficient for all wildlife, except where there are concentrations of deer.

WETLAND DEVELOPMENT PROJECTS

Shallow water areas are very important to waterfowl as courting and breeding areas. There must also be permanent water, food, and cover available near by to attract and hold ducks in the area. Ducks prefer ponds or wetlands with a good stand of reeds that will provide cover for young ducklings. This vegetation is also important to diving ducks for nesting sites. Upland nesting cover for puddle ducks should be located within a half mile of the water areas. Wood ducks must have hollow trees in which to nest or be provided with nesting boxes.

Wetland areas can sometimes be created or restored by constructing water control structures. In addition, low areas that are presently too shallow or lack water entirely during much of the summer can be improved by a structure. A border of grasses should be maintained around these wetland developments to provide nesting cover and to prevent erosion.

Open water may be created in dense marsh vegetation by using a dragline or by blasting. Where large areas are to be developed and where they are accessible, a dragline will do an excellent job. When smaller areas are to be restored or when the site is not accessible to a dragline, blasting is suggested. The use of ammonium nitrate and fuel oil (AN/FO) explosives is an inexpensive method of improving many marsh areas.

Dugouts must contain a minimum of 500 square feet and 1,500 square feet is preferable. Dugouts should be built in groups of not less than five and located near a permanent waterfowl marsh or lake. The average depth should be 2 - 3 feet with a maximum depth of 5 feet. Gradually sloping shorelines are the most desirable. Deep holes with steep banks have very little value for wildlife.

A feasibility check by a Soil Conservation Service technician will be made on all projects to be approved for payment by the ASCS. The Soil Conservation Service can also provide engineering services if needed. On any project where assistance is provided by the Minnesota Conservation Department, the local area game manager must be contacted for his approval.

CONCLUSION

The land-use practices described here are primarily those that can be expected to be of substantial benefit to pheasants and ducks. However, production of other wildlife such as Hungarian partridge, furbearers, rabbits, prairie grouse, deer, and songbirds will also result. Most farmers enjoy having an abundance of wildlife on their lands, and under present state private land development and ASCS programs there is an opportunity for farmers to have more wildlife by applying the proven wildlife management practices described in this booklet.