

GROUSE RANGE IMPROVEMENT PLAN

FOR THE

MIDLAND GAME REFUGE

By

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Spring Program

In order that a grouse range improvement plan may be initiated immediately, the Spring work will necessarily be limited to two activities, food patch plantings and controlled burning.

Food Patches

Food patches are designed to supplement the diet of Ruffed Grouse at two periods of the year; in the Fall before the birds go on a bud diet, and in the Spring when the birds again vary their diets with food picked off the ground.

This being the first attempt at artificial feeding of Ruffed Grouse, a variety of annual grains must be used to determine a preference list from the standpoint of soil requirements, maintenance, weather, and palatability.

Buckwheat - This grain is preferred because of its ability to grow on most any type of soil. It lodges easily under snow but may be a valuable Spring food.

Manchurian Hemp - On the sandy soil of the Alleghen Resettlement Administration project, this plant did very well and should grow successfully here. The stem is stout and the seed is abundant.

Hegaro Sorghum - This cane is comparable to hemp in that it has a stout stem and is prolific in seed production. How well it will grow on sandy soil must be determined.

Millets - These grains are easily sown and require little maintenance, but lodge easily under snow. The millets, as with buckwheat, may be valuable Spring foods if the supply is not depleted by small rodents under the snow.

Soybeans - Beans are valued because of the size of the seed, the stout stems hold the pods above snow, and are prolific bearers.

Sudan Grass - When this grain is broadcast it lodges easily, but in doing so produces a tangle of stems in which a bird can be safe from feathered predators.

Sunflowers - The abundance of large seeds makes sunflowers desirable for food patches.

Sweet Clover - Each food patch will have adjacent to it a small strip of clover to provide the necessary "greens". The seed must be inoculated and sown with a nurse crop.

Controlled Burning

Certain parts of the refuge have grown up to solid, extensive stands of poplar on both upland and lowland. By the use of controlled burning, it is hoped to create grassy meadows in order to increase the supply of insects, chiefly grasshoppers. Burning will also establish cover type "edges" along which most animals tend to travel. The burnings in the lowland poplar and alder stands are designed to encourage the growth of briar tangles, huckleberries, winterberry, maple sprouts, and also create "edges".

These burnings should be irregular in shape and should be from thirty to one hundred feet in width. They should be located on, or in close proximity to, lines along which a grouse census might be run.

Fall Program

The most valuable managed area is one that requires little maintenance and only by planting perennial stock can such a condition be approached. By employing such planting stock, the dispersal of cover types can be speeded up over that of natural reproduction and also can be put in desired places. The Fall program will consist of coniferous and deciduous plantings.

Conifers

Norway Pine - This species is indigenous to the area and should grow readily. Any coniferous plantings will be made to provide roosting cover for the birds. Such cover is conspicuously absent in many parts of the range and may be a limiting factor in population numbers.

If three-foot stock is reasonably available, it should be used because when planted at six by six feet it would already be effective cover. Thirty to sixty trees to a clump would provide good roost cover regardless of normal losses in the plantings. They should be planted in the burnings or adjacent to them as an underplanting in the poplar.

Deciduous Plantings

The deciduous plantings used should be for the purpose of creating a food supply and escape cover for the birds. According to a former-market hunter who lives in the vicinity of the refuge, grouse were abundant in the stream bottoms before the introduction of beaver and where grape tangles made it nearly impassable to human beings.

Along the stream banks is found an outcropping of heavy, clay soil on which ash, viburnum, high-bush cranberry, Siberian pea, elderberry, and grape should thrive.

Although the system of food patches may necessarily be extended a few years, the deciduous, fruit-bearing species should be the ultimate in supplying food.

Predator Control

From observations made during the past winter, only one species of predator seems to be "out of balance" and that is the weasel. Although no weasel kills were found to indicate predation on grouse, the animals apparently inhabit the lowlands in preference to other types and may constitute a limiting factor especially when the birds go to the lowlands during the moulting season. A "wait and see" policy should be adopted for the present and a close check made for kills in the summer when the birds have retired to the lowlands.

Skunk sign found in the latter part of February and in March, indicated a "normal" population. The skunk is responsible in New York State ¹as a destroyer of grouse nests and may warrant control on this area.

Fox apparently pass through the refuge on their "beats" as indicated by investigation last winter and will probably need little or no control.

Food Patch Details

Patch No. 1 -- One-half acre of Hegaro sorghum planted in rows twenty-eight inches apart. The hills should be ten inches apart with five to eight seeds in each hill. Rate of sowing is eight pounds per acre.

¹Progress Report of the Ruffed Grouse Investigation—Gardiner
November 1930 - 1931

Sudan grass - 10 pounds
German millet - 6 pounds
Sunflower - 4 pounds
Sweet clover - 7 pounds
Oats - 7 pecks
Innoculation (clover) - 20 ounces
Innoculation (soybeans) - 20 ounces
Norway pine - 540 trees
Hawthorn - 910 trees
Mountain Ash - 910 trees
Viburnum - 819 shrubs
Highbrush cranberry - 819 shrubs
Siberian Pea - 819 shrubs
Elderberry - 819 shrubs
Grape - 1092 cuttings

Acreage of Burns

Burn No. 1 - $1\frac{1}{2}$ acres
" No. 2 - 2 acres
" No. 3 - 5 acres
" No. 4 - 10 acres
" No. 5 - 10 acres
" No. 6 - 5 acres
" No. 7 - 5 acres

Labor Schedule

- 14 man-days on burning
- 9 man-days on food patches
- 4 man-days on coniferous plantings
- 37 man-days on deciduous plantings
- 5 tractor-days with disc on food patches
- 4 team-days for cultivating food patches.

A total of sixty-four man-days, four of which will be spent on cultivating food patches. The tractor and disc will be used to break the ground. A team and cultivator can be used on three of the food patches.

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Food Patch - ■
Burn - ○
Conifers - ●
Deciduous plantings - ●
Private land - p

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OWNER _____

