Managing for the Most:

A Landowners Planning and Planting Guide to Conserving North Dakota's Wildlife Legacy

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Introduction

The objective of wildlife conservation is to retain for all people the opportunity to enjoy, use, and appreciate wildlife. This objective not only includes keeping wild animals from becoming extinct, but also ensuring that the greatest possible variety exists in each community.

Wildlife management, the art and science of wildlife conservation, attempts to make land produce and sustain populations of wildlife so all people may realize its value.

Wildlife in the United States is owned by the public, with primary responsibility for most wildlife conservation programs delegated to governmental agencies such as our state's Game and Fish Department. Although the Game and Fish Department is legally responsible for managing most wildlife on North Dakota public and private lands, a number of federal agencies, private organizations, industrial interests and individual citizens also conduct wildlife conservation activities.

Nearly all funds to conduct these conservation activities are provided by the users of the resource, notably those who hunt and fish. For most state wildlife management agencies, no general tax dollars are used to support their conservation activities.

Wildlife agencies and organizations employ persons with a variety of scientific training and vocational skills. Private citizens also assist these agencies by participating in the political process and their involvement in wildlife conservation organizations.

All these groups would not be able to function effectively if it were not for this country's other wildlife managers; our farmers, ranchers, and landowners. With less than 10 percent of North Dakota in public ownership, it is evident that the state's private landowners play a key role in wildlife conservation.

Landowners managing a certain portion of their land to create new habitats can be of tremendous benefit to wildlife.

We hope the information presented in the following pages will serve as a guide for landowners, both rural and urban, for planning and planting of such areas to help further North Dakota's rich wildlife legacy.

What Makes More Animals?

Wildlife habitat is simply the place or home where wildlife live. Within this habitat, wildlife find the basic needs for survival: food, water, shelter, and living space. It is the ability of the habitat to meet these basic needs that determines what kinds and numbers of animals a piece of land can support. The number of animals this habitat can support at a given time is called its **carrying capacity**.

A habitat's **carrying capacity** may vary by season and year, being greatest in late spring through fall and lowest in winter. A deficit in one of the four basic requirements, regardless of the abundance of the others, will also reduce a habitat's **carrying capacity**.

The key to managing wildlife then becomes a matter of matching the animal's habitat needs with the habitat. Attracting the greatest kinds and numbers of wildlife requires providing variety in food and cover. Citizen conservationists can work to provide wildlife with food and water, by planting food plots, engaging in wildlife winter feeding operations and the development of wildlife watering areas through the creation or restoration of wetlands.

Time To Get Started

Over the course of this publication, you will find several additional specific management techniques and suggestions for different habitat types which not only are designed to benefit wildlife, but may also if implemented help a landowner to increased outputs and reduced in soil erosion. The habitat types discussed will include grasslands, woodlands, waterlands, croplands, and the backyard.

If you have any questions about specific practices or your chances of being successful in restoring wildlife habitat for certain species, contact your local wildlife agencies or organizations, Soil Conservation Service or Extension Service representative. They can help you develop a conservation plan for your property that incorporates wildlife habitat needs.

Managing Croplands For Wildlife

Croplands can be or are beneficial to wildlife. For example, wildlife use waste grain and weed seeds as winter food. Alfalfa crops provide nesting and brooding areas for birds such as waterfowl, pheasant and grouse.

Just how farming affects wildlife depends on the production scheme. All farming changes the height, variety and mix of vegetation as we plow, plant, cultivate and harvest crops. In response to these changes some animals have flourished, but others have been harmed.

Growing the same crop on a large acreage in the same field year after year sharply reduces the variety of plant cover and may eliminate winter cover, nesting areas and food plants. This practice, called monoculture, may also result in diseases and pests having "a field day" at the expense of the producer.

Other agricultural practices such as fall plowing or tillage bury waste grain and other residues that can provide food or cover to help wildlife survive the winter. Stubble left standing reduces accumulations of soil and snow in shelterbelts and marshes which are traditional wildlife wintering areas. Elimination of fall plowing or tillage increases crop residues and reduces soil loss from wind and water.

Although fall plowing may increase yields over the short term, yields will eventually benefit under spring tillage management because of soil and water savings. However, once a field is tilled, wildlife loses nearly all the benefits of cropland.

Specific agricultural practices benefiting both wildlife and the producers are: land set-aside or retirement programs, minimum and no-till cultivation crop rotations, cover and green manure crops, contour and stripcropping, grass waterways, terraces, field windbreaks, "odd area" maintenance, and field border management.

Each of these practices will reduce wind and water erosion, maintain soil fertility and productivity, and prevent pesticide runoff to waterways. Many of these practices are eligible for cost-sharing through federal farm programs as administered by the Agricultural Stabilization and Conservation Service (ASCS). Additional help both financial and technical, is available through a number of other public and private programs.

Land retirement or set-aside opportunities

The U.S. Department of Agriculture offers a variety of programs to encourage farmers to set aside or idle portions of their land. The most recent of these is the Conservation Reserve Program (CRP), designed to remove marginal lands from crop production and return them to some type of permanent grass cover.

Conservation tillage, minimum or no-till

Reducing cropland tillage destroys fewer nests and remaining crop residues provide food and cover for animals feeding in the field. Recent studies from no-till winter wheat fields in North Dakota indicate they support a greater number and variety of nesting birds than clean tilled fields.

Cover and hay crops

Alfalfa, clover and grass in a cropping system provide forage and hay, reduce soil erosion, add organic matter to the soil, and also provide nesting and brood rearing areas for birds. However, annual haying usually coincides with peak nestings, and haying may destroy many nests.

To reduce haying impacts on wildlife, consider starting in the center of the field, then working toward the perimeter. By doing so, broods contained within the field will have a better chance to escape. Effects of mowing on wildlife can also be reduced by leaving a 20 to 30 foot field border. A majority of nesting hens tend to nest within 50 feet of the field perimeter.

Reducing mowing speeds to under 3 mph as well as delaying first crop cutting until early July will also decrease haying mortality of nesting birds and young. However, by delaying mowing of alfalfa past the 10 percent bud stage, the protein quality of the forage will decrease. (Note - there currently is a federal wildlife program that may compensate landowners for delaying haying to benefit waterfowl production.)

Contour and stripcropping

Strips of row crops alternated with soil conserving strips of small grains or cover crops planted on contours attract more ground-nesting birds than undivided fields. Contoured and stripcropped fields create more "edge" where more food and cover are available.

A large field has a smaller percentage of borders and edge than that of several smaller fields. For example, a single quarter section field will have only two miles of edge. If the same field was divided into four smaller 40-acre-square fields, it would have three miles of borders or edges. But, by dividing it into four forty-acre strips, it will yield 3.5 miles of edge. By increasing the edge and using a different crop in each small field, an operator could dramatically increase wildlife numbers on the land.

Crop rotations

Almost every crop in North Dakota has some value to wildlife, depending on the season and availability of other suitable habitats. Unharvested blocks of small grains and row crops such as corn, sunflowers, grain sorghums, and soybeans adequately spaced across the field, adjacent to fence rows, shrubby cover, or wetlands reduce drifting and provide supplemental food during periods of heavy snow. Blocks of unharvested crops are better than a few rows or narrow strips because they are less likely to be flattened by wind or choked with snow.

Wildlife food plots can also be incorporated into crop rotations. Food plots should be block plantings of at least two acres per quarter section (160 acres). The plots should be planted on the east or south side of native woodlands, multiple-row tree belts, wetlands or other wildlife cover. Square plots are best in most cases since they are not as easily filled with snow as are long narrow plots.

Crops which are readily used by wildlife are corn, sunflowers, grain sorghums, wheat, barley, millets, buckwheat, oats, rye, flax and clovers. It is best to seed food plots with a combination of crops ensuring that food will be available at different heights for a variety of wildlife species.

Rotating crops can reduce or prevent a long-term buildup of certain pests, reducing costs for chemical pesticide applications.

Grass Waterways and Terraces

Grass waterways and terraces reduce water erosion on sloping cropland by intercepting runoff and carrying it slowly off the field. The value of waterways to wildlife depends on the grasses and legumes selected. Similarly, the value of terraces depends on whether the terrace slopes are cropped. Narrow base terraces planted to permanent cover can provide nesting and feeding areas for wildlife if the proper plants are selected. For a guide to woody, grass and legume plantings that benefit wildlife, refer to the tips included in the supplement sections on woodlands and grasslands.

Field Windbreaks

Windbreaks of trees and shrubs reduce wind erosion, trap blowing snow, conserve moisture, protect crops and livestock, and may provide food and cover for many kinds of wildlife. Select plants adapted to the site that also provide wildlife foods or cover. A list of suitable trees and shrubs for windbreak plantings can be found in the woodland section of this supplement.

Field Borders

Probably the most beneficial areas to wildlife on grain-producing farms are field borders. Such borders are often found on the sloping ends of contoured or stripcropped fields. When seeded with grass and legume mixtures, these areas control erosion, reduce competition from adjacent woodland and provide travel lanes for not only farm machinery, but wildlife. Wildlife will also use these borders for nesting, brood rearing and protection from predators and the weather.

A field border made up only of a fence line will attract few wild animals, whereas if that same land has a few weeds giving it a 1 or 2-foot width, wildlife use will increase dramatically. In general, the wider the border, the greater the benefit to wildlife.

Borders from 20 to 100 feet, depending on the plants found there, are useful as travel lanes, but also provide nesting, brood rearing, roosting and escape areas.

Field borders that contain mixtures of native and introduced grass, legumes, annual and perennial weeds, shrubs and trees will be used more by wildlife than areas seeded only with, for example, bromegrass.

Odd Areas

Odd areas on farms and ranches are places that are not cropped. They include fence corners, abandoned roads and road ditches, rocky spots, abandoned farmsteads, highly erodible areas and other parcels that may be isolated by roads, ditches or streams. Due to site limitations, many of these areas are unsuitable for cultivation, but they can still be valuable to wildlife. By preserving the natural vegetation of these areas and establishing additional food and cover, odd areas can supply wildlife with those basic needs that may be lacking in adjacent cropland. These areas also make excellent sites for erecting nest boxes.

In managing odd areas to obtain the greatest wildlife benefits, delay grazing or mowing of such areas until late July, and if some noxious weeds are present, use spot applications of herbicides when necessary. Cropland acres are too valuable to be overlooked as wildlife habitat. The techniques identified in this section can be implemented with little or no impact on agricultural profits.

Managing Water For Wildlife

Water is a basic requirement of life. For this reason rivers, streams, lakes, and wetlands have been hubs of both human and animal activities since time began.

With proper management, such areas will continue to yield substantial benefits to all creatures that depend upon them.

The intent of this section is to offer some water management ideas that may be beneficial to both landowner and wildlife. This section will deal specifically with the development and management of farm ponds and streams on private lands.

Farm Ponds and Streams

Although many farm ponds are established primarily for watering livestock, they can also function as valuable wildlife habitat if certain guidelines are followed in construction and management.

Farm ponds developed with a gradual slope provide habitat for emergent plants like cattails. This vegetation in turn provides cover and food for a number of wildlife species. If cattle are fenced to only allow access to a portion of the shoreline, the vegetative response will attract wildlife. Seeding grass around the pond, in addition to creating habitat, will control runoff water entering the pond, reducing silting and turbidity, making the pond more suitable for aquatic life.

To preserve water quality in farm ponds, lakes, streams and rivers, it is a good idea to plant crops at least 30 feet from the edge of the vegetation along the water area. This distance minimizes the impact of agricultural runoff on the water quality. Leaving a vegetational edge around wetlands can also reduce the risk of saline soils developing, which occurs frequently when wetlands are cultivated too close to the edge.

Role of wetlands

Wetlands are vital components of the habitat needs of migrating waterfowl and wetlands of all sizes are important to waterfowl. Large, small, shallow, and deep wetlands are all important to the different life cycles of prairie waterfowl.

Wetlands also can provide substantial flood control, groundwater recharge water quality and livestock forage benefits.

Wetlands restoration opportunities

With the advent of the Conservation Reserve Program (CRP), opportunities presently exist for developing wetland habitats for wildlife.

Lands that qualify for the CRP program must be seeded or returned to some type of permanent cover. Under CRP guidelines water is acceptable as a permanent cover. Thus, if drained wetlands exist on enrolled CRP acres, they can be restored. And, as with other CRP practices, the cost of restoring a wetland is shared between the landowner and ASCS.

Additional state and federal programs are also operating to pick up the landowner's cost of the wetland restoration. Landowners who restore or develop wetlands under CRP may not have to bear any expense of the restoration activities. Sportsmen and wildlife clubs have also assisted in wetland restoration by paying for the associated costs.

In addition to the cost sharing program available for wetland restoration, similar types of programs are available to assist landowners in developing wetland areas for wildlife.

In order to maximize the wildlife benefits of restored or developed wetland areas, the surrounding uplands should be seeded to suitable upland cover. This cover in addition to providing secure nesting habitat will also minimize soil erosion from adjacent croplands into wetlands. To further enhance these areas, consider constructing earthen islands or using elevated nesting structure to attract waterfowl and geese.

For more information on restoring or creating water areas for wildlife, contact your local wildlife agency or Soil Conservation Agency representative.

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