MANAGING YOUR BRUSHLAND FOR WILDLIFE

Photo Credit: MN DNR

Minnesota Brushlands

To some, the term “brushland” describes a wasteland - something that should be cleared and drained in order to be farmed, pastured, or planted to trees. However, a variety of brushland and other open habitat types, ranging from shrub swamp and wet meadow/fen types through relatively open aspen parkland and stagnant conifer bogs, are native plant communities that occur throughout Northern Minnesota. These communities are home to a wide variety of wildlife species, many of which require large areas of open habitat. Brushland communities are usually early successional or “young” habitat types and require periodic disturbances to maintain and sustain them.

Photo Credit: MN DNR

History

About 10,000 years ago, as the large glacial lakes of Northwestern and East-central Minnesota slowly dried and finally disappeared, they left large, relatively flat landscapes that were once lake bottoms. The largest was Glacial Lake Agassiz, which covered all of Northwestern Minnesota, Northeastern North Dakota, and extended far in Canada. In East-central Minnesota, the smaller Glacial Lakes Aitkin, Upham, St. Croix, and Duluth left the same land pattern. Historically, forests were rare on these lakebeds due to peaty soils and wet conditions. When the land did dry enough to grow trees, naturally occurring wildfires kept these areas from converting to forest. During the homestead era that began in the late 1800’s, many of these lands were ditched in an attempt to drain them for farming. Most of these efforts ultimately failed, and while the ditch networks remain, much of this landscape today is a mosaic of wild and semi-agricultural open land and non-productive forest. Successful wildfire reduction programs, tree planting, and changes in general land use are resulting in the conversion of many acres of brushland habitat into marginal or stunted forest and decadent, less productive brushlands. As a result, populations of many brushland wildlife species are declining.

Photo Credit: MN DNR

Brushland Wildlife

Many wildlife species have adapted to life in Northern Minnesota's brushlands. Some species require large areas of open brushland, while others are equally at home in both brushland and forested habitats. Sharp-tailed grouse, white-tailed deer, woodcock, furbearers, and various other game and non-game species all utilize brushland habitats.

Sharp-tailed Grouse

The sharp-tailed grouse, or "sharptail" is an obligate brushland species, meaning that it requires large areas of brushland habitat. Unlike its cousins, the ruffed grouse and spruce grouse, sharptails cannot live in typical forests, (sharptails will utilize relatively open forests such as stagnant conifer bogs), and unlike its other cousin the prairie chicken, sharptails in Minnesota do not prosper in brush-free grasslands. The sharptail is native to Minnesota and historically thrived wherever there were natural open landscapes. It reached its peak during the logging and settlement era, when vast areas of northern Minnesota were converted to open land. At that time it was the most common grouse species in Minnesota and hunters harvested up to 150,000 sharptails yearly through the 1940's. However, harvests have diminished as brushland habitat and sharptail populations have declined, so that today, about 10,000 are taken each year.

Photo Credit: MN DNR

Sharptails require large expanses of open habitat with a mix of grass, brush, and small, scattered clumps or "islands" of trees. The larger the open habitat block, the better. The landscape can be any combination of upland and lowland, as long as it is open.

During the spring, several males gather on traditional dancing grounds, or leks, and vie for the chance to mate. Usually, the lek is located on the most open and slightly raised piece of ground available. The Minnesota DNR and the

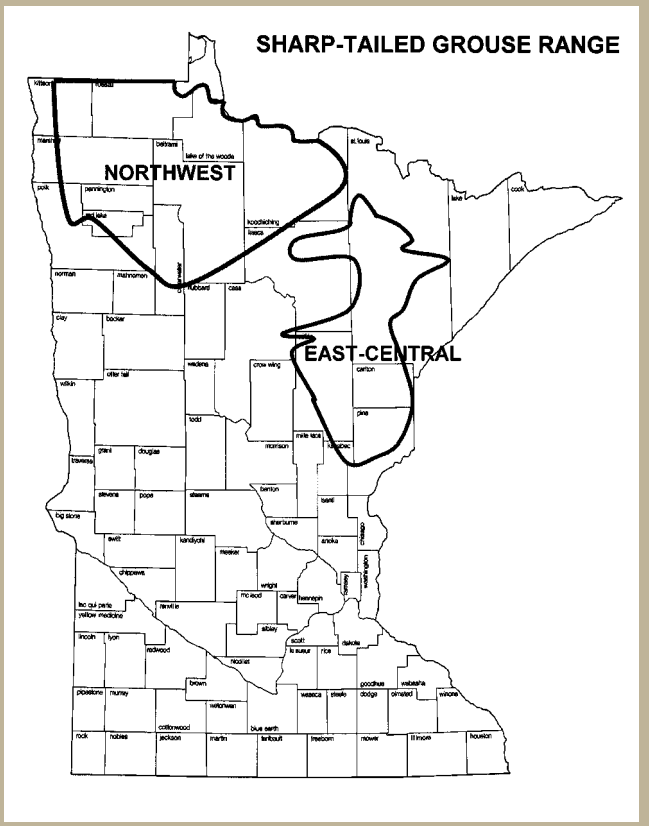

Photo Credit: MN DNR

Brushland Wildlife

Photo Credit: Craig Borck, St. Paul Pioneer Press

Minnesota Sharp-tailed Grouse Society place observation blinds on select leks each spring, enabling hundreds of people to watch this beautiful and often comical display. In the fall, sharptails often engage in short migrations to open bogs where they spend the winter. Summer foods include insects, berries, clover, alfalfa, and various other native forbs and grasses. Winter foods include the buds and twig ends of bog birch, paper birch, aspen, and various remaining seeds and fruits. Sharptails also utilize small grains, especially buckwheat and oats. For more information, please refer to the "Managing Your Land For Sharp-tailed Grouse" brochure available at your local DNR Wildlife Office, or consult with your local DNR Wildlife Manager.

Photo Credit: Craig Borck, St. Paul Pioneer Press

Photo Credit: G.N. Rysgaard

Photo Credit: Minnesota Deer Hunters Association

White-tailed Deer

The white-tailed deer is classified as an edge species, due to its use of both forested and open areas, with increased use occurring along the transition or edge between the two cover types. Deer home ranges vary from 150-300 acres for does to over 800 acres for bucks. A highly sought after game species, deer are pursued by nearly half a million hunters annually in Minnesota and are the most popular game species that landowners choose to manage for.

Photo Credit: J. Mueller

Brushland Wildlife

Photo Credit: MN DNR

Deer habitat can be composed of any mix of forested and open areas. Open areas are an important component of good deer habitat. Brushlands, clear-cuts, agricultural lands, forest openings, pasturelands, and food plots provide essential herbaceous forage that can be scarce under the shady, closed canopies of mature forests. Brushlands provide preferred food sources in the form of grasses, forbs, berries, buds, and twig ends at browse level year-round. In addition to providing excellent feeding areas, they provide optimal fawning sites, loafing cover, and escape cover. Brushlands are used by deer during every season, except during severe winters when many migrate to more heavily forested areas. For more information please refer to the “Managing Your Woodland for White-tailed Deer” brochure available at your local DNR Wildlife Office, or consult with your local DNR Wildlife Manager.

Photo Credit: Patrick D. Karns

Woodcock

The American woodcock is a unique member of the shorebird family that has adapted to life in upland habitats. Woodcock are migratory, spending their summers across much of the Northeastern US and Canada and wintering in the Southeastern US. They begin to arrive on their breeding grounds in Minnesota about mid-March and remain until mid-October. Woodcock require a mix of brushlands and young forests to meet their needs during their breeding cycle. They utilize dense stands of young brush and young deciduous trees, particularly alder and aspen, for feeding, nesting, and brood rearing. Closed canopy coniferous forests (pine, spruce, and balsam) and mature forests of any type do not provide quality woodcock habitat; however, very old forests with patchy canopy gaps and dense shrubs or saplings are utilized by woodcock.

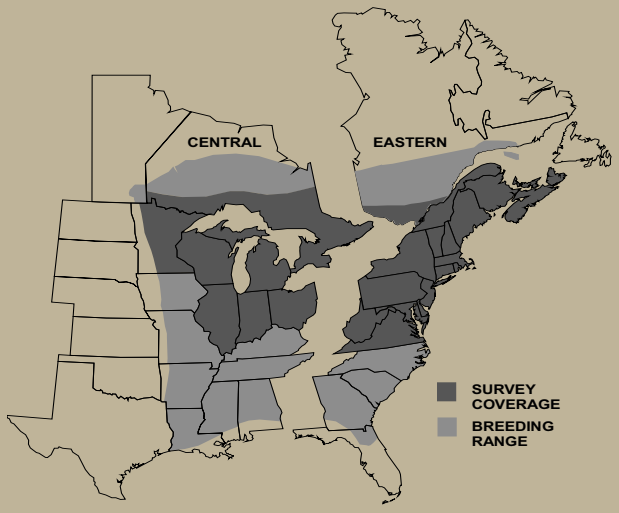

Photo Credit: U.S. Fish & Wildlife Service

Male woodcock establish “singing grounds” in small openings with low ground cover where they engage in a unique mating display. They emit several nasal sounding calls or “peents” from the ground, followed by a spiral flight over the area to heights of 100-300 feet, during which they make characteristic twittering sounds with their wing feathers. They then utter a melodic warbling call

Brushland suitable for Woodcock habitat, Photo Credit: MN DNR

Photo Credit: Mark Spoden

while gliding back to the singing ground. These courtship displays are easily observed at dawn and dusk. Females nest in areas with thick ground cover, often within 500 feet of the male's singing ground. By mid-summer chicks are on their own and both adults and chicks seek large grassy fields to roost in at night, while returning to dense young alder or aspen during the day where their favorite foods, earthworms and insects, are abundant. For more information please refer to the "Managing Your Land For Woodcock" brochure available at your local DNR Wildlife Office or consult with your local DNR Wildlife Manager

Photo Courtesy of Ruffed Grouse Society

Photo Credit: MN DNR

Nongame and Other Wildlife

Minnesota is home to over 600 wildlife species, of which nearly two-thirds are classed as "nongame." These wildlife species are not hunted, trapped, or fished. Dozens of wildlife species utilize open grass-brush habitats in the northern forest, and many are rare or unique. Some depend on the large open landscapes also required by sharp-tailed grouse, while others use smaller open areas. Some prefer drier areas, some prefer wetter areas, and some can be found in both uplands and lowlands. Although a totally inclusive list is beyond the scope of this brochure, the following is a sample of some of the diverse wildlife species that depend on Northern Minnesota's brushland habitats.

Sandhill Crane, Photo Credit: MN DNR

Bird species that inhabit brushlands or open landscapes are more at risk than any other group of species, and some are even on the state's threatened and special concern lists. These include the yellow rail and sharp-tailed sparrow, both of which require large expanses of sedge lowlands. Large brushland habitat complexes also attract Eastern meadowlarks and bobolinks, both of which are suffering from general population declines across the Upper Midwest. Another imperiled songbird, the golden-winged warbler, reaches its greatest breeding densities in young forests near open habitats. Uncommon upland sandpipers and the rather common Eastern bluebird frequent brushlands intermixed with old upland pasture or hayland. Northeastern Minnesota's brushlands are also home to some of the easternmost populations of black-billed magpies, a long-tailed black and white bird common in the mountains and prairies of the West. Grass and brush habitats in lowland areas attract yellow warblers, sedge

Eastern Bluebird,
Photo Credit: Carrol Henderson

Common Snipe, Photo Credit: Thomas R. Crum

Brushland Wildlife

wrens, sora rails, American bitterns, and even sandhill cranes, which are a close relative of the critically endangered whooping crane. Several of Minnesota's frog species, including spring peepers and wood frogs, are also common in lowland areas. Great gray owls, uncommon diurnal (day-hunting) short-eared owls, along with Northern harriers or "marsh hawks", and American kestrels or "sparrow hawks" hunt for the insects and small mammals, such as meadow voles, that abound in grass and brush habitats. If you are interested in managing your property for nongame or other brushland wildlife, good habitat management should be your primary concern; however, installing properly constructed and maintained nesting structures will also help attract certain species such as Eastern bluebirds and American kestrels. For more information please consult with your local DNR Wildlife Manager or DNR Nongame Specialist.

American Kestrel, Photo Credit: Carrol Henderson

Short-eared Owl, Photo Credit: MN DNR

Sandhill Crane, Photo Credit: Walt Huss

Shearing & Mowing

"Shearing" with a bulldozer over frozen ground is often used to regenerate large stands of stagnant brushland. The over-mature brush and trees are sheared off at ground level and vigorously sprout new growth, providing optimum habitat for brushland species for several years. Mowing or chopping stagnant brush with a rotary-axe mower basically accomplishes the same thing, and the shredded vegetation is generally cleaner in appearance immediately following management. In general, shearing is cheaper than mowing, but mowing is more effective in areas where the diameter of the brush is smaller (shearing often leaves "whips" or small diameter stems that remain standing in such areas) and drier sites can be mowed at any time during the year (optimal brush control is often obtained in late summer/early fall). Regardless of whether an area is sheared or mowed, the debris will deteriorate naturally and is barely noticeable within 1-2 years. A prescribed burn can be used to further eliminate debris and will help maintain your brushland habitat in favorable condition.

Rotary-Axe Mower, Photo Credit: MN DNR

Photo Credit: MN DNR

Burning

Prescribed burning is another method commonly used to manage brushlands. Burning top-kills brush and trees, reduces litter, encourages seed germination, stimulates sprouting, and often improves berry production, thereby providing excellent sources of food for wildlife. Burning is most effective in brushlands that have a mixture of shorter brush and grass. Therefore, prescribed burning is often used to maintain brushland habitat that has been previously sheared or mowed, as it is much cheaper than either mowing or shearing. Prescribed burns are usually conducted in spring or, less commonly, in fall when the vegetation is dormant and dry. A rotation of 2-8 years between burns, depending on the vegetation, should be sufficient to maintain your brushland in favorable condition. Do not be overly concerned about destroying bird nests during your spring burns. The adult females usually escape harm and many will re-nest. The long term benefits of burning far out-weigh any temporary setbacks. For more information on burning and necessary permits, please refer to "The Benefits of Prescribed Burning on Private Land" brochure available at your local DNR Wildlife Office or consult with your local DNR Wildlife Manager.

Managing Your Brushlands

Haying

Haying brushland that mainly consists of grasses will help keep the area more open. In areas that are hayed every year, waiting until after the primary nesting season will help reduce bird nest destruction. In addition, scattered hayfields, especially those without nearby trees, provide sharp-tailed grouse with open areas suitable for dancing grounds.

Photo Credit: Penny Backman

Grazing

Grazing, particularly in tree-free areas with a mix of grass and brush, can maintain brushlands in a more open condition. Managed rotational or prescribed grazing systems, where livestock is managed to impact areas needing treatment, and removed before the areas are overgrazed, are preferred over season-long unmanaged grazing systems.

Hand-Cutting

Hand-cutting with brush saws or hand tools is another effective method for managing stagnant brushland. However, the amount of labor involved generally restricts the use of this method to small areas.

Timber Sales

If trees surrounding and within brushland habitat complexes are of merchantable size, and are present in sufficient quantity and quality, a timber sale may become a management option. A clear-cut without reserves (no trees left standing) is the appropriate type of harvest scheme in brushland areas. Timber sales provide personal income and result in excellent habitat for various brushland wildlife species. A private forestry consultant or your local DNR Wildlife Manager and DNR Forester can help you determine the value of your timber and facilitate harvesting.

Food Plots

Food plots are not a replacement for good habitat management; however, food plots consisting of small grains, sunflowers, clovers, or corn are another way to benefit and attract brushland wildlife to your property. Food plots provide concentrated sources of readily available food relished by a variety brushland wildlife including white-tailed deer, sharp-tailed grouse, waterfowl, bear, and sandhill cranes. Basically, a food plot is simply a “fast food restaurant” next to the “health food store”.

Additional DNR publications that are available include:

- Managing Your Woodland for White-tailed Deer
- Managing Your Woodland for Ruffed Grouse
- Managing Your Woodland for Wild Turkey
- Managing Your Land for Sharp-tailed Grouse
- Landscaping for Wildlife
- Woodworking for Wildlife
- Woody Cover Plantings for Wildlife
- DNR Reports

Contact Information:

For information and materials on natural resources, or DNR facilities, services, and regulations contact:

DNR Information Center
500 Lafayette Road
St. Paul, MN 55155-4040
Toll Free: 1-888-MINN-DNR (646-6367)
651-296-6157 Fax: 651-297-3618
Telecommunication Device for the Deaf
651-296-5484
800-657-3929

Credits:

Minnesota DNR Section of Wildlife
651-296-6157
The Minnesota Sharp-tailed Grouse Society
218-326-4253
The Ruffed Grouse Society
888-JOIN-RGS
The Minnesota Deer Hunters Association
800-450-3337