Shelterbelts and Windbreaks:

A WELCOME PLACE FOR PLAINS WILDLIFE

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Early settlers of the U.S. Plains planted shelterbelts and windbreaks to resemble the treed areas they left behind. Additionally, several of the "Timber Culture Acts" passed by Congress in the 1870's required settlers to plant trees on their homesteads. Settlers soon realized these plantings protected them from the windy conditions that were prevalent day and night and during all seasons. They eventually discovered the plants also protected crops, livestock and wildlife. Since the early years of shelterbelt and windbreak planting, much research has been done to provide us with more plentiful and accurate information.

HOW DO SHELTERBELTS AND WINDBREAKS BENEFIT PLANTING PLANS AND WILDLIFE AT THE SAME TIME?

Many bird and insect species eat other insects that cause damage to crops and other plants humans favor. One study showed birds ate 260 pounds of insects per half-mile of windbreak each year. Hunting in and around shelterbelts and windbreaks provides us with a great investment in recreational opportunities. There is a continuing demand for this type of recreation, but people also want to observe wildlife. Nature photography is a strong hobby and even a career for some. Shelterbelts and windbreaks can become a place for family activities.

WHAT DOES WILDLIFE NEED THAT SHELTERBELTS AND WINDBREAKS PROVIDE?

1 First, wildlife need a place to nest and raise their young. More than 50 kinds of birds have been recorded using windbreaks during the breeding season. The list includes mourning doves, wrens, catbirds, orioles, robins, kingbirds, thrashers and goldfinches. Many mammals use windbreaks for rearing their young such as rabbits, squirrels, raccoons, opossums, deer and mice.

2 Second, wildlife need food and sites to allow them to find food. A variety of food can be found in windbreaks such as fruits, nuts, acorns, seeds, foliage, insects and other invertebrates. The availability of these foods depends on the season and the plants growing in the windbreaks. Thankfully, some trees and shrubs hold onto their fruit in the winter when food sources are scarce. A number of game bird species, songbirds, squirrels and deer seek out nuts, acorns and other seeds from trees and shrubs.

Seeds from grasses and other plants adjacent to the windbreak and food plots help wildlife tremendously during cold seasons of the year. In addition, butterfly, bee and hummingbird species actively seek out food sources of nectar and pollen from trees such as apricot, crabapple, hackberry, hawthorn, linden, maple and pear. They also enjoy shrubs such as cherry, chokeberry, cotoneaster, current, dogwood, elderberry, honeyberry, honeysuckle, plum, rose and viburnum.

Not all wildlife seek food in shelterbelts and windbreaks. Land adjacent to belts usually contain waste corn, soybeans and other grains sprinkled with wildflower seeds, weed seeds and insects. No-till fields leave the ground covered with these seeds; helping game birds, doves and other wildlife find this food.

3 Third, wildlife need escape cover. Shelterbelts and windbreaks provide cover and respite from predators, people and other things of the modern world. The best shelterbelts are wide with low ground covers. In some situations, planting shrubs and small to medium trees is better for wildlife than large foliage; especially if there are hawks and owls in the area.

4 Fourth, wildlife need shelter from the weather. Shelter from wind is critical during winter months. The leeward side of the belt allows wildlife to shelter out of the wind and find food, cover and a resting area without having to withstand the rigors of wind and cold. This can be a lifesaver. Shelterbelt quality should be evaluated annually. Its success is dependent on age, belt size, density, orientation, location and what it is composed of. Other factors impacting shelterbelt usefulness include what kinds of wildlife use the belt, what kinds of weather occurs and what food is available in the area.

SHELTERBELTS & WINDBREAKS BENEFIT BOTH LAND & WILDLIFE

Game birds, like pheasants, seek out shelterbelts in the winter because they provide the proper climate and cover the birds need for resting. Game birds also seek out shelterbelts in the spring to get away from heavy rain. Key attributes of a quality shelter belt are a wide enough space, plenty of snow storage, enough cover near the ground and a close food source.

5 Fifth, wildlife need the ability to travel to find food and to move between suitable habitats. Shelterbelts and windbreaks produce long, linear corridors allowing safe travel. The same species using belts for nesting and rearing young use them to travel to and from feeding areas, as protective cover and for movement between habitats. Migrating songbirds use them as stopover points in the spring and fall.

WHAT SHOULD BE PLANTED IN SHELTERBELTS AND WINDBREAKS?

Years ago, we were very limited to what we could grow on lands for shelterbelts and windbreaks. Nurseries now grow more than 100 kinds of shrubs and trees for shelterbelt and windbreak planting. The number one limiting factor is soil type. Insects and disease come in a distant second place. Soil surveys provide landowners with useful information concerning their soil at the belt location. The surveys estimate an accurate number tree and shrub species that should be planted. Material should not only establish itself, but grow, survive and achieve maximum size and age. For the greatest number of benefits, the belt needs to have an established canopy and an understory of mid-size trees, small trees, tall shrubs and short shrubs. As the saying goes, "Variety is the very spice of life." The same holds true for shelterbelts and windbreaks. Planting a diverse number of species of trees and shrubs creates a vertical and horizontal habitat structure, which attracts the greatest number of wildlife species.

Hardwood trees and shrubs allow for the greatest amount of nesting and food stores. Those include ash, aspen, black cherry, bur oak, cottonwood, elms resistant to Dutch elm disease (DED), hackberry, American and littleleaf linden, silver maple, Ohio buckeye, black walnut and willow. Small trees to plant include apricot, chokecherry, crabapple, hawthorn, mulberry and harbin pear. Shrub varieties (approaching 50 kinds) to plant are numerous to say the least. Almost all shrubs produce fruit, nuts and seeds that wildlife crave. Here are just a few: cherry, current, dogwood, elderberry, gooseberry, hazelnut, Juneberry, plum, sumac and viburnum. Conifer/evergreen species really block wind and snow and provide sheltered nesting sites and places for migrating birds to rest.

WHAT GUIDELINES SHOULD BE FOLLOWED?

Choose trees and shrubs with the greatest amount of wildlife benefits. In field windbreaks, trees can be alternated with shrubs to fill in gaps and provide a greater amount of food and nesting area. Plant a variety of trees and shrubs because this attracts the greatest amount of wildlife while minimizing the potential for insect or disease problems. If possible, plant near a larger habitat such as a river, stream, wetland, draw, etc. Consider installing a food plot or leaving adjacent grass or crop fields for forage opportunities. A shrub row on the outside of the belt will trap snow and improve wind protection. Farmstead and feedlot shelterbelts usually need four to eight rows to protect buildings and livestock. Conifers are usually used on the windward and leeward side of the belt for snow protection. Middle rows are for tall deciduous trees and the other rows are for small, tall shrubs and shorter trees.

The size of the shelterbelt will vary depending on how much protection is needed, but one to three acres is a common size. As the shelterbelt ages, it becomes more complex with plants and will be readily accepted by wildlife after only a few years of growth. If the existing belt does not meet your wildlife habitat management objectives, additional rows can be added or renovation may be in order. Dead trees may not need to be removed from the belt. Tall, dead trees are good for cavity nesters and for insect foragers. Consider leaving a few. You can also add nest boxes to your site.

MORE INFORMATION AND RESOURCES FOR DESIGNING AND INSTALLING SHELTERBELTS AND WINDBREAKS CAN BE GATHERED BY CONTACTING THESE OFFICES:

1. **Your local conservation district office (*sdconservation.org/*).**

2. **The Natural Resources Conservation Service (NRCS) office.**

3. **The South Dakota Department of Agriculture, Division of Resource Conservation and Forestry (*sdda.sd.gov*) offices in Mitchell, Sioux Falls, Watertown, Pierre, Rapid City, Hot Springs and Lead.**

4. **Your local conservation officer or regional Game, Fish and Parks office (*gfp.sd.gov*).** ■