



Part I. Potential Wildlife Uses

This supplement provides design and management options for land users and planners seeking to enhance windbreaks and shelterbelts for wildlife. Wildlife associated with scattered woody cover in the Northern Plains may benefit greatly from properly designed and maintained windbreaks and shelterbelts in agricultural landscapes.

Windbreaks potentially provide food, nesting and brood-rearing habitats, fawning sites, loafing sites, protection from wind and adverse weather, and escape cover or refuge for many species of birds and mammals. Windbreaks that are part of a habitat complex may provide travel corridors that facilitate movement of animals between other habitats.

Windbreaks are used also as resting stops by some migratory birds. Over 100 species of native and nonnative birds are known to use windbreaks.

Part II. Planning and Design Considerations

Site Considerations

- Landowner's wildlife objectives
- Proximity to habitats required by the desired wildlife species
- Adjacent land uses
- Windbreak suitability group
- Connection to other wildlife habitats
- Prevailing winds and snow drifting patterns
- Width of area and ability to accommodate desired wildlife species
- Special wildlife resources (e.g., threatened or endangered species)

Design Considerations

Fish and wildlife design considerations for windbreaks and shelterbelts in Northern Plains agricultural landscapes include: 1) windbreak/shelterbelt width and length; 2) wildlife habitat value of plants; 3) plant selection and placement to create nonuniform vegetative structure; 4) plant selection and placement to provide refuge from winter winds and snow; 5) proximity to winter food sources and blocks of tall herbaceous cover that will persist over winter; 6) adjacent land uses; and 6) opportunities to link other wildlife habitats.

Native woodlands in the Great Plains consisted primarily of corridor forests and scattered woody vegetation along streams and rivers, around lakes and wetlands, and in draws and on slopes that provided extra moisture or protection. Native woody species in the Northern Great Plains tolerate or have adaptations for the climatic extremes of the northern prairie ecosystem.

Windbreaks and shelterbelts attract a wide variety of birds, including many that are not native to the Great Plains. Introduction of tall, woody cover into prairie landscapes may adversely affect many prairie wildlife species, such as grassland birds, that require open habitat. Careful consideration should be given when planting trees and tall shrubs in historic prairie regions.

Opportunities to use windbreaks to connect natural forested habitats, such as riparian areas, are limited. However, windbreaks may provide shelter and facilitate





movement between habitats by species such as deer, pheasants and songbirds.

To enhance the wildlife value, include conifers and fruit-producing shrubs and trees in these plantings. Prevailing winds and snow drifting patterns will influence wildlife use of windbreaks and shelterbelts. Place the species that will serve as a food source or dense cover in the portion of the windbreak that will have the best protection from prevailing winds. Alternatively, an additional row of shrubs or a strip of unharvested crop left 50' to 100' upwind of the buffer will serve to reduce drifting within the windbreak or shelterbelt.

Wider windbreaks with diversified plantings of deciduous and evergreen trees and shrubs will attract more species of wildlife than narrow strips of a single species. At least ten rows of trees and/or shrubs, including evergreens, are recommended for winter shelter.

For migrating and nesting songbirds, plantings that provide food sources and both vertical and horizontal structure are recommended. For example, the windbreak may be planted to form blocks of a particular species or rows may have alternating segments of species that provide particular food or cover values.

Assure that the windbreak provides adequate width for the desired wildlife species, as some require additional width for successful reproduction. Narrower shelterbelts may be more attractive to edge species, such as cowbirds, that may become a problem for or interfere with the successful reproduction of other nesting birds. Nest boxes that are properly sized for desired species may be placed in the windbreak or shelterbelt.

Maintenance Considerations

The amount of maintenance required and the methods used to maintain windbreak vegetation depends on the wildlife and habitat goals. Timing of maintenance may be

critical if nesting or migratory birds use the site.

To minimize disturbance to nesting birds and avoid tree insect and disease problems, prune or thin while trees are dormant, usually between October and April. Cavity nesting birds are common in the northern plains and need dead and dying trees or limbs for habitat. If removal is necessary, then do so selectively, leaving a minimum of one snag every 200 feet.

Part III. Recommended Shrubs and Trees

Develop the species for planting as appropriate for the soils and windbreak suitability group, using the tree and shrub species approved for this practice in the *South Dakota Technical Guide*. Be certain to check the compatibility of species that are to be planted adjacent to one another.

Part IV. Specifications Sheet

Use form SD-CPA-26, *Wildlife Habitat Management*, to document the wildlife species that the land user wishes to benefit and to document how and where the species' required habitats are to be established and/or maintained. Follow specification requirements for the practices "Windbreak/Shelterbelt Establishment" or "Hedgerow Planting" as outlined in the *South Dakota Technical Guide*, using form SD-CPA-6, *Tree Planting*.



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