

Wildlife Values of Single-Row Shelterbelts

by Dan Svedarsky

Two-year study has been completed at the Northwest Experiment Station to document wildlife use of different types of single-row windbreaks in the Red River Valley. Wildlife values are often mentioned as a benefit of windbreak plantings but very little data had been available. Windbreak types were evaluated for summer bird use from late May to early July with incidental use by mammals also noted.

Birds may use windbreaks for attaching nests, singing perches, a food source and as a resting and feeding place in the case of migrating birds. Windbreak types studied were: green ash, Siberian elm, hybrid poplar and cottonwood. Lower branches of windbreaks are commonly pruned to allow a more even distribution of snow downwind and the effect of this practice on bird use was also evaluated.

Thirty-one species were regularly observed during the study with 15 species nesting in at least one windbreak type. The most common species observed were: vesper sparrows, red-eyed blackbirds, brown-headed cowbirds, American goldfinches, robins, mourning doves, eastern kingbirds, clay-colored sparrows, northern orioles and bobolinks. Some windbreak types were more attractive to birds than others and they are arranged according to increasing bird use in Figure 1. Siberian elm was the most attractive type, especially if it had not been pruned. Pruning removes lower, more horizontally-oriented branches which are used for nest placement by birds such as robins, and mourning doves. Pruning also allows farm machinery to work closer to trees and this results in less ground vegetation habitat than an unpruned windbreak. Siberian elms were also important as a food

source since they typically supported large numbers of fall cankerworms. Birds from farmstead shelterbelts were commonly observed feeding on cankerworms in windbreaks.

Tree height was also a factor influencing bird use since birds such as orioles generally attach their hanging nests to branches of trees over 30 feet high. The crops adjacent to a windbreak explained the occurrence of species like clay-colored sparrows and bobolinks which nested in the ground cover. Small grain and alfalfa provided more cover than row crops.

A surprising amount of deer sign was noted to be associated with windbreaks. Fresh tracks were noted on 30% of the census visits and these tended to parallel windbreaks, indicating that windbreaks were being used as travel cover. A network of single-row windbreaks in the intensively-farmed Red River Valley

probably increases the summer use of larger farmstead shelterbelts as deer fawning area due to this travel cover value. Moose, fox, rabbit and other mammal use was noted as well.

In summary, single-row windbreaks do have significant wildlife values in an intensively-farmed landscape. Siberian elm was the most attractive tree species evaluated due to its food and cover values. More green ash and poplar windbreaks are currently being planted and, while not as attractive to summer birds, they tend to require less maintenance by pruning than elm and this trend will likely continue. To maximize wildlife values of windbreaks, the height and width of tree cover needs to be increased. Double tree rows are sometimes planted to further increase wildlife use.

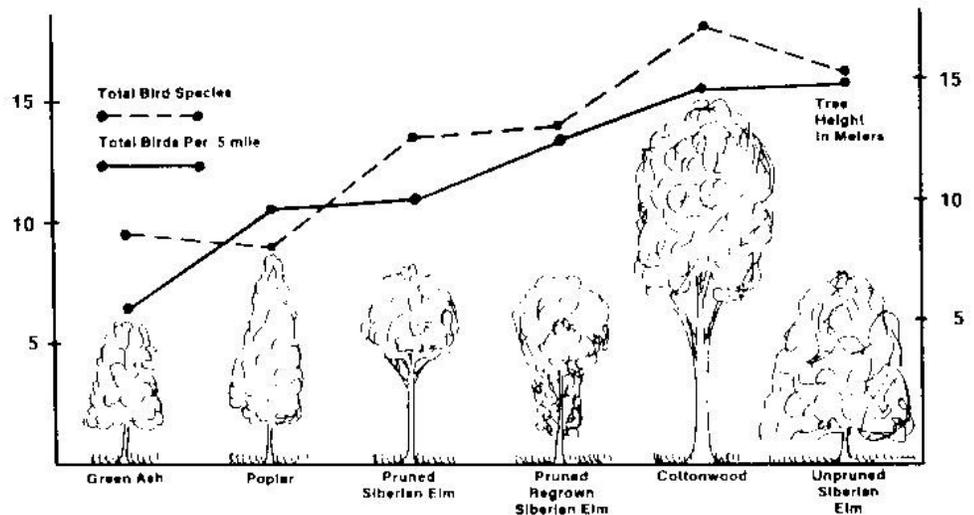


Fig. 1 TOTAL BIRDS & SPECIES DIVERSITY PER WINDBREAK TYPE

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