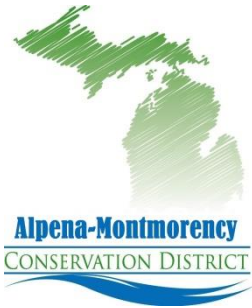


DESIGNING WOODY PLANTINGS FOR WILDLIFE FOREST STEWARDSHIP MANAGEMENT NOTE #27



INTRODUCTION

The type and abundance of wildlife in an area is largely determined by the nature of the local vegetation (FSMN #40,41). Thus, managing vegetation is often the most effective way to manage wildlife. Because viable wildlife populations require large areas of suitable habitat, practices aimed at maintaining or improving the quality of natural vegetation should usually be the top priority wildlife managers. However, planting trees and shrubs can be one of the most effective means of quickly improving habitat in selected locations.

This Note summarizes general considerations related to woody plantings for wildlife and provides more specific comments on some commonly planted species. Sources of further information are listed. Considerations for herbaceous plantings to benefit wildlife are presented elsewhere in this series (FSMN #7,25).

GENERAL CONSIDERATIONS FOR WOODY PLANTINGS FOR WILDLIFE

1. **TARGET WILDLIFE SPECIES** - The first step in designing a wildlife planting is to identify the "target species" that the landowners want to promote (FSMN #34). Although some plants benefit many types of wildlife, plantings will be most successful if they are customized according to the food preferences and cover requirements of the target species.

FOOD HABITATS - To find out what plants will benefit the target species, their food habits must be known. Reference #14 is an excellent source of this type of knowledge. It allows you look up a bird or a mammal and find a list of the plants (and animals) it eats with ratings as to their importance.

HABITAT REQUIREMENTS - It is also necessary to know the cover requirements of the target species, but this is somewhat easier as most species generally require only broad vegetation types rather than certain plant species. Reference #6 (appendices) is an excellent source of information on the habitat requirements of amphibians, reptiles, birds, and mammals. Reference #3 provides similar information that is more local, but less detailed.

2. **CAPABILITIES AND LIMITATIONS OF THE LAND** - Given a list of preferred food plants and cover types for the target species, the next step is to assess the property in terms of its ability to support these plants. This is largely a matter of soil type, but climate can also be a limiting factor (FSMN #4). Use the maps in the Soil Survey of your county to make a list of the soil types that occur in the areas where planting is being considered (FSMN #4). Then look up the characteristics of each soil in terms of composition (e.g., sandy loam), moisture (e.g., poorly drained), pH (e.g., acidic), and other key properties. Examine the sites in person to make sure the maps match up with reality.

Soil Surveys also give climatic data that may be needed to determine if certain plants are likely to survive the winter. Reference #11 has a good map of plant hardiness zones for the Midwest. Although some of this information may not be needed until the final selection of plant species (below), an early knowledge of the soil and climate limitations of the project site will help sort out the possibilities sooner.

3. **AVAILABILITY OF PLANT MATERIAL** - It is possible to get seedlings, or seeds, or cuttings, etc. of almost any plant species if you look hard enough and are willing to pay the price, but for most people the choice will be fairly limited. The Soil Conservation Districts in many counties have annual tree sales, and these are usually a good source of locally adapted trees and shrubs. Other sources of plant material are listed in FSMN #43. Consult these and other sources to decide which of the plants that would benefit the target species are available at an affordable price.

After finding out about availability and prices, it may be helpful to find out more about the wildlife values of the more affordable plant species. Reference #14 is an excellent source of information in this regard. In it, you can look up a plant species or group and find lists of the wildlife species that eat the various parts of that plant.

For shrubs and vines, Reference #10 provides detailed information on habitat requirements, wildlife uses, management practices, and other characteristics of native and naturalized species. Reference #11 provides a good introduction to landscaping for wildlife, including special plantings for butterflies, bees, moths, hummingbirds, and orioles. This publication also contains extensive appendices listing wildlife uses and other characteristics of many types of plants. Other publications also have tables or summaries of the wildlife value of various plants (#2,5,8,13,18,20).

4. **SUITABILITY OF PLANT SPECIES** - Given a list of plants that are preferred by the target species and that are available at an affordable price, the next step is to further assess the suitability of these plants for the specific project. References #11 and #16 contain information on plant hardiness zones, moisture requirements, and soil types preferred by a wide variety of commonly planted species of trees, shrubs, and herbaceous plants. By comparing these requirements to the soil conditions of the project site, one can select plants that are likely to prosper.
5. **GIVE PREFERENCE TO NATIVE PLANT SPECIES** - Because they have grown here for thousands of years, native species have two main advantages over non-native species (also called alien, exotic, or introduced). First, native species are well adapted to the conditions and are more likely to thrive. Second, when non-natives do thrive they tend to become weedy and crowd out native species. Some introduced species have not caused problems, but native species are generally preferable if they serve the purpose.
6. **BE AWARE OF COST AND TIME COMMITMENTS** - Planting trees and shrubs is an expensive and time-consuming project if substantial numbers of plants are involved. Before committing to a large planting, study the steps potentially involved in establishing and maintaining plantings (FSMN #8-14) and get estimates from contractors if you plan to hire the work done.
7. **USE PLANTINGS TO SUPPLEMENT OTHER HABITAT MANAGEMENT EFFORTS** - Because of the costs involved, it is generally wise to consider plantings as a small part of a broader habitat management program that focuses on existing vegetation (FSMN #16,17,24-26,28-29). Where possible, design herbaceous and woody plantings to serve multiple functions (FSMN #7-9,31,33).

NOTES ON COMMONLY PLANTED SPECIES (OR GROUPS)

1. **APPLES** - Apple fruits are very attractive to many types of wildlife. Old trees can often be successfully rejuvenated (FSMN #29). If new trees are to be planted, many authorities recommend standard-size trees over dwarfs and semi-dwarfs as they are much hardier and longer-lived (#9). Young trees should be protected against browsing by mice, rabbits, and deer (FSMN #13). Orchards provide a valuable habitat type, especially if they are not mowed until after the nesting season.
2. **BITTERSWEET** - American bittersweet is a climbing vine that produces thick cover along fencerows and edges and attractive berries that are eaten by birds and squirrels. The stems and leaves are also eaten by rabbits and deer. It can be used for erosion control and is collected for ornamental and craft uses.
3. **BRAMBLES** - Blackberries, raspberries, and related brambles are well known as an excellent source of "soft mast" (fruit) for wildlife (and people). The leaves and stems are also eaten by rabbits and deer. These species typically invade suitable areas via seed from bird droppings, but they can be planted if they fail to establish from natural sources.
4. **CRABAPPLES** - Crabapples are similar to apples except the fruit is smaller. They are useful for wildlife purposes because they consistently bear heavy crops of fruit and they provide cover, especially where they form, spiny thickets. Like apples, crabapples need plenty of sun and well-drained soil. The flowers are also very fragrant and attractive.
5. **DOGWOODS** - Several species of dogwoods are native to the eastern U.S., including flowering dogwood that is often used as an ornamental. The species that are most commonly planted for wildlife (silky, red-osier, etc.) are small shrubs adapted to wet soils where they can be effectively used for streambank erosion control. They produce berries, browse, and cover.
6. **ELDERBERRIES** - There are two species of native elderberries both of which produce fruit used by birds. American elderberry is adapted to wet soils and is the species people use for jam and wine. Red elder grows on moist soils.
7. **EVERGREENS OR CONIFERS** - The seeds of cone-bearing trees are valuable food for many species of birds and small mammals, but evergreens are most often planted for wildlife because of their winter cover value (#15,17). Even small clusters of evergreens add greatly to the wildlife habitat quality of deciduous woodlands (the opposite is also true).

8. GRAPES - Grapes produce fruit that is eaten by many types of birds and mammals. The leaves and stems are eaten by deer, and the stringy bark is used by birds and mammals to make nests. The tangled vines provide excellent summer cover for wildlife but can become weedy and inhibit tree growth in some areas. Grapes do best on moderately moist soils.
9. HAWTHORNS - Hawthorns, or thornapples, are similar to apples and crabapples, but they have long distinctive thorns, and their fruit is the smallest of the three.
10. HAZELS - Two species of hazels are native in Michigan, American hazel and beaked hazel. These shrubs are excellent source of "hard mast" (nuts) for wildlife (and people). They grow best on light, well-drained mixtures of sand and loam. Hazels are also used for browse and the male flowers (catkins) are a good protein source for grouse. Non-native species are also available.
11. MOUNTAIN-ASH - Mountain-ash, and its European counterpart, the Rowan-tree, are small trees of northern climates. They prefer moist sites and open areas, but they also thrive in partial shade and on thin soils in rocky areas. Both species produce large, flat clusters of showy, red berries that are eaten by many types of wildlife. Mountain-ash is also a preferred browse, so protection may be required.
12. OAKS - Because of their acorns and their browse value, oaks are among the most important of all trees for wildlife (#19). Wherever they grow, all oak species should be favored if wildlife is an important objective. Oaks require a lot of sun to grow well so established oaks should be given plenty of room to grow by thinning around them. If oaks are planted, they should be put in openings or gaps. In many areas it will also be necessary to protect them from browsing (FSMN #13).
13. SERVICEBERRIES - Also called juneberries, shadblow, sugarplums, and many other names, these shrubs or small trees. They are one of the earliest plants to bear fruit, so they readily attract a wide variety of wildlife. Several native species occur and these are adapted to a wide variety of soil conditions. The flower early in the spring and are well worth planting for aesthetic reasons alone.
14. SUMACS - There are a few species of native sumacs, but staghorn sumac and smooth sumac are most suitable for wildlife plantings. Their persistent, dry berries are an important source of food for birds late in fall and winter. The stems are also heavily browsed by rabbits. It is adapted to well-drained soils. Once established, it readily spreads and old stands can be propagated by cutting or mowing. The foliage is very attractive in summer and turns spectacular shades of red in the fall.
15. VIBURNUMS - There are several native species of viburnum shrubs, including arrowwood, cranberrybush (highbush cranberry), and witherod (wild raisin). They typically prefer moist or wet soils and plenty of sun. Their fruits ripen in late summer and fall and tend to be persistent. Viburnum thickets are good summer cover.

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CITATION: Burnett, Christopher D. 1994. Designing woody plantings for wildlife. Michigan Forest Stewardship Management Note #27. Michigan Department of Natural Resources, Forest Management Division.

ACKNOWLEDGEMENTS: This project was supported, in part, by a grant from the Michigan Department of Natural Resources and the USDA Forest Service.