

General Guidelines for Planting Trees and Shrubs for Wildlife

Habitat Extension Bulletin

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Planning tree and shrub plantings should include considerations beyond the basic recommended plant spacing and planting depth. When landscaping for wildlife, a landholder should remember some general concepts regarding species selection and layout.

Function

In addition to appearance, screening, protection from wind, insulation, and filling odd areas, the value of the planting to wildlife should be considered during planning and plant species selection. An evaluation should be made regarding how well prospective plant species and landscape design will address basic wildlife requirements.

The wildlife requirements that can be fulfilled by woody plantings include: food, reproductive sites, escape cover, shelter, and perching, resting, and loafing areas. In some cases, these requirements may be at least partially provided by other landscaping elements. Woody plantings can be used to provide benefits not available from these other elements or to complement them. For example, tall, woody species can provide nesting habitat for canopy nesting birds or provide persistent fruits that are available during winter to supplement foods available from other, less persistent sources. Woody species also provide dense hiding and thermal cover, seasonally or throughout the year.

Diversity

Landscape diversity is important in meeting the needs of wildlife. To a point, the more diverse the "habitat," the greater the variety of animal species that will be attracted to and use it. In addition, increased habitat diversity will help hold wildlife species on or near the property and will

provide more seasonal habitat needs. There are four types of diversity to be considered:

Plant species diversity

An effort should be made to provide a wide array of plant species that supply different cover characteristics and a variety of foods throughout as much of the year as possible. For example, low shrubs, berry producers, and tall evergreens planted together provide ground cover, persistent food, and winter cover in close proximity to satisfy many year-long requirements.

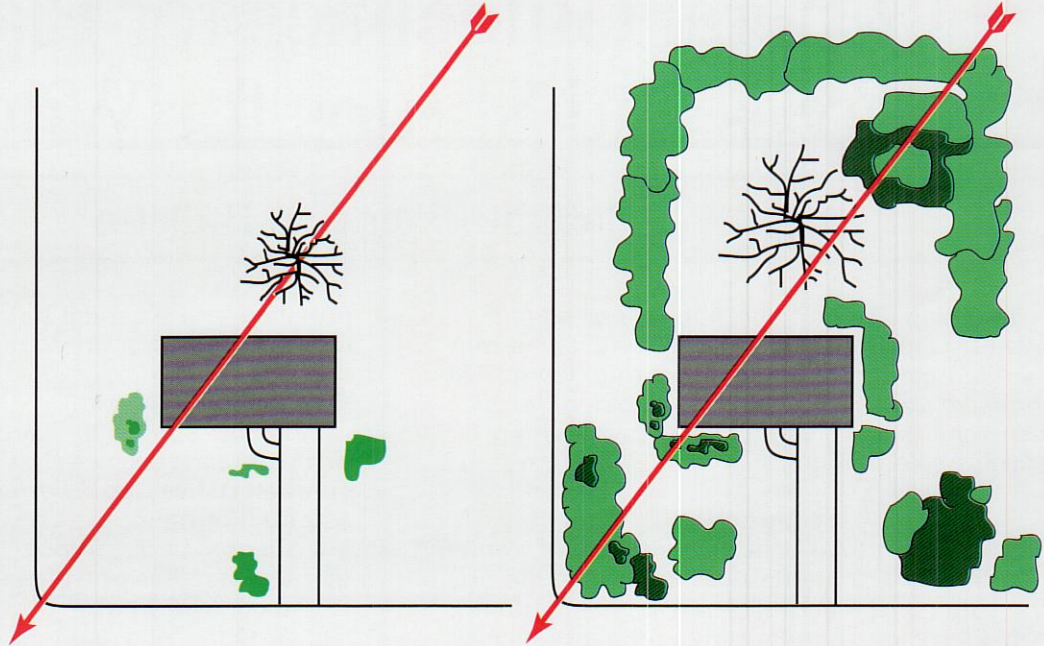


Landowners who plant trees will eventually have squirrels in them, but song birds will show up almost immediately. House finches (pictured above) and a variety of other small birds like to perch in trees even if they are only a few feet tall. And they will nest in blue spruce and other evergreens that are only five or six feet high. Sometimes song birds land in trees moments after they are planted.

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A yard planted with numerous species in several plantings creates horizontal diversity which produces increased edge. A line drawn across a relatively undeveloped lot intersects few vegetation types and ecotones. A line drawn across a diverse lot intersects a variety of vegetation types and ecotones. Generally, the greater the diversity across a yard, the more wildlife habitat components that are present.

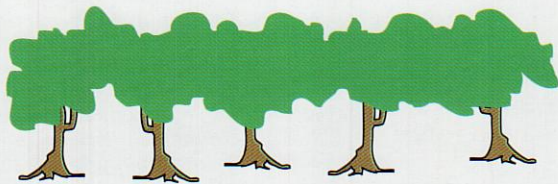


Structural diversity

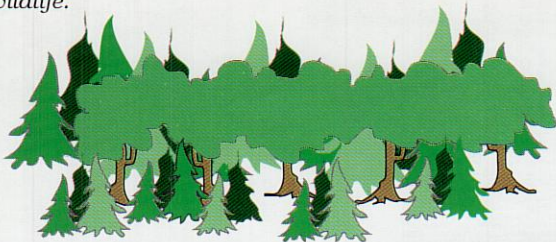
This is related to plant species diversity and includes variety in the growth form, size, foliage type and density, and limb size and configuration. All these aspects are important in providing various cover types through the year. Through careful planning, characteristics of shrubs and trees can be used to tailor landscaping to needs of wildlife and landowners.

Vertical diversity

The more numerous the layers of foliage (or canopies), the more cover provided by landscaping in a given area. Multi-layered plantings place wildlife habitat requirements in close proximity, provide various layers to accommo-



Large trees in association with a lawn provide little vertical diversity and limited wildlife habitat. Below, a multi-storied canopy (several layers) composed of different tree and shrub species creates abundant habitat features for a wide variety of wildlife.



date needs of species that breed, forage, and use cover at different heights, and provide benefits to the landowner (such as better screening/wind protection and greater esthetics).

Horizontal diversity

A variety of shrub and tree plantings interspersed with other landscaping features on a particular piece of property will create more areas of cover. These different landscaping components create habitat diversity across the property. By planting groups or rows of species that complement one another, a landholder can provide more wildlife benefits, particularly if these rows comprise different species and heights of plants.

An additional feature created by various plantings in an area is edge effect. Edge is the interface between two or more plant associations. The ecotone or zone of influence created by an edge supports more species than the cumulative number the associations creating it can support. This interface places wildlife habitat requirements in close proximity, often providing conditions that otherwise would not support certain species. The greater the contrast between associations creating the edge, the greater the benefits. An example of this concept is the edge between tall trees and an open, grass/forb area. Neither of these two types alone would support mountain bluebirds which require snags for nesting and open areas for foraging. The interface between the two types creates the setting bluebirds need.

Although these types of diversity have been addressed separately, they are related and can actually be provided in a group planting.



Rabbits and rosy finches are common winter visitors to yards where there is cover and food.

Seasonality

The various seasonal benefits of shrub and tree species should be evaluated. This will determine location, grouping, and species that best meet the intended purpose. Certain species may be better suited to nesting cover for some wildlife as well as summer/fall forage, while others provide forage and cover year-long, and still others may provide single benefits during certain times of the year.

Arrangement

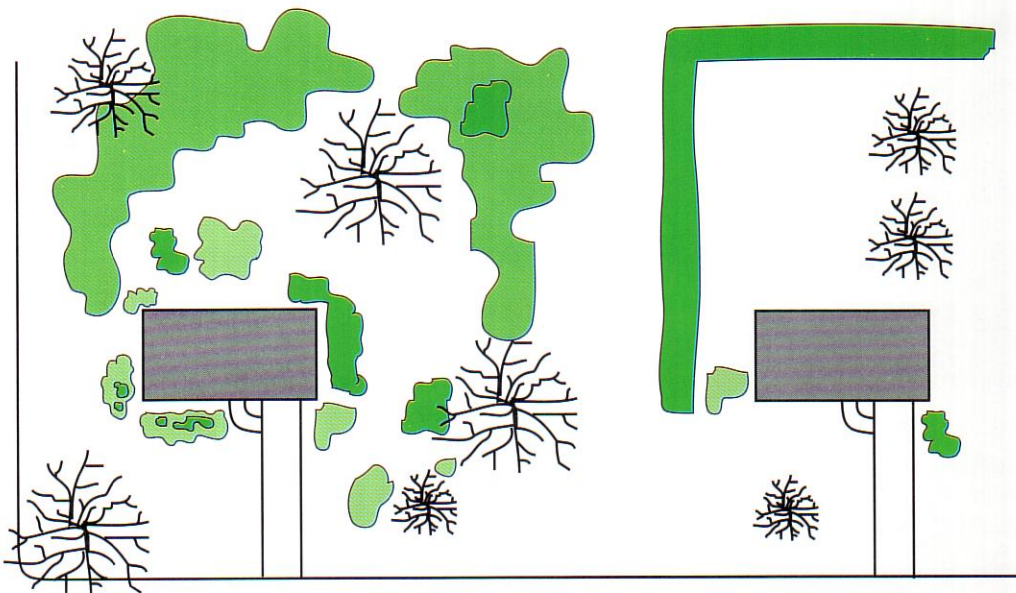
Shrub and tree plantings should be properly situated and interspersed to maximize their value to wildlife and place their respective values in close proximity. Species planted in associations, whether in shelterbelts, hedges, filler plantings, or clumps should complement one another (each providing certain features others do not) in fulfilling life requirements, maximizing vertical diversity and providing landowner benefits. It is more beneficial to plant irregular rows or groupings than straight, symmetrical, or uniform patterns. This irregu-

larity produces more edge while creating a more naturalized setting.

Cover plantings should ideally be planted in out-of-the-way locations to reduce disturbance from human activity. Placing a planting away from human activity allows shyer wildlife species to feel comfortable using it and reduces flushing, which conserves energy and lowers stress, particularly in cold weather. Odd areas that are difficult to care for or where it is desirable to eliminate care are logical places.

Water sources should be placed in shaded locations near woody plantings so the water is kept cool and there is security in the closeness of escape cover. And, food plants should be situated on the leeward side of major plantings such as shelterbelts to provide wildlife with feeding areas protected from cold winter winds.

Following is a list of potential tree and shrub species for Wyoming. Local nurseries, extension agents, and other authorities should be consulted for advice on which species are best suited for your location.



Random, irregular plantings can create the same human benefits, i.e., shade, screening, as more orderly landscaping while providing greater horizontal diversity, edge, and habitat.

Potential Tree and Shrub Species for Wyoming
Contact local authorities for applicability

Deciduous Tree Species

European Mountain Ash	(<i>Sorbus aucuparia</i>)
Green Ash	(<i>Fraxinus pennsylvanica</i>)
Oak-leaf Mountain Ash	(<i>Sorbus hybrida</i>)
American Basswood	(<i>Tilia americana</i>)
Cutleaf/Weeping Birch	(<i>Betula pendula 'gracilis'</i>)
Narrowleaf Cottonwood	(<i>Populus angustifolia</i>)
Plains Cottonwood.....	(<i>Populus sargentii</i>)
Siouxland Cottonwood	(<i>Populus deltoides</i>)
Quaking Aspen.....	(<i>Populus tremuloides</i>)
Boxelder	(<i>Acer negundo</i>)
Siberian Elm	(<i>Ulmus pumila</i>)
Chinese Elm	(<i>Ulmus parviflora</i>)
Hackberry	(<i>Celtis occidentalis</i>)
Russian Hawthorn	(<i>Crataegus ambigua</i>)
Willow Hawthorn	(<i>Crataegus saligna</i>)
Amur Maple	(<i>Acer ginnala</i>)
Rocky Mountain Maple.....	(<i>Acer glabrum</i>)
Bur Oak	(<i>Quercus macrocarpa</i>)
Russian Olive	(<i>Elaeagnus angustifolia</i>)
Osage-orange	(<i>Maclura pomifera</i>)
Bebb Willow	(<i>Salix bebbiana</i>)
Golden Willow	(<i>Salix alba</i>)
Pacific Willow	(<i>Salix lasiandra</i>)
Pussy Willow	(<i>Salix discolor</i>)
Scouler Willow	(<i>Salix scouleriana</i>)

Coniferous Tree Species

Douglas Fir	(<i>Pseudotsuga menziesii</i>)
Subalpine Fir	(<i>Abies lasiocarpa</i>)
White Fir	(<i>Abies concolor</i>)
Common Juniper	(<i>Juniperus communis</i>)
One Seed Juniper.....	(<i>Juniperus monosperma</i>)
Rocky Mountain Juniper	(<i>Juniperus scopulorum</i>)
Austrian Pine	(<i>Pinus nigra</i>)
Bristlecone Pine	(<i>Pinus aristata</i>)
Limber Pine	(<i>Pinus flexilis</i>)
Lodgepole Pine	(<i>Pinus contorta</i>)
Pinyon Pine	(<i>Pinus edulis</i>)
Ponderosa Pine.....	(<i>Pinus ponderosa</i>)
Scotch Pine	(<i>Pinus sylvestris</i>)
Swiss Mountain Pine	(<i>Pinus mugo mugo</i>)
Black Hills Spruce	(<i>Picea glauca densata</i>)
Colorado Blue Spruce.....	(<i>Picea pungens</i>)
Engelmann Spruce	(<i>Picea engelmannii</i>)

Shrubs (Evergreen)

Pfitzer Juniper	(<i>Juniperus chinensis 'pfitzerana'</i>)
Common Juniper	(<i>Juniperus communis</i>)
Savin Juniper	(<i>Juniperus sabina</i>)
Tamarix Juniper	(<i>Juniperus sabina tamariscifolia</i>)
Meyer Single Seed Juniper	(<i>Juniperus squamata 'meyeri'</i>)
Rocky Mountain Juniper	(<i>Juniperus scopulorum</i>)

Shrubs (broadleaf)

Prairie Almond	(<i>Prunus triloba</i> x <i>P. pedunculata</i>)
Newport, Cistena Purple-leaved	(<i>Prunus</i> sp.)
Bearberry	(<i>Arctostaphylos uva-ursi</i>)
Blackberry/Raspberry	(<i>Rubus</i> spp.)
Blueberry	(<i>Vaccinium</i> spp.)
Common Bladder-senne	(<i>Colutea arborescens</i>)
Chokeberries	(<i>Aronia</i>)
Christmasberry	(<i>Toyon</i>)
Coalberry	(<i>Symphoricarpos orbiculatus</i>)
Antelope Bitterbrush	(<i>Purshia tridentata</i>)
Sea Buckthorn	(<i>Hippophae rhamnoides</i>)
Common Buckthorn	(<i>Rhamnus cathartica</i>)
Dahurian Buckthorn	(<i>Rhamnus davurica</i>)
Rock Buckthorn	(<i>Rhamnus saxatilis</i>)
Russet Buffaloberry	(<i>Sheperdia canadensis</i>)
Nanking Cherry	(<i>Prunus tomentosa</i>)
Sandcherry	(<i>Prunus besseyi</i>)
Western Chokecherry	(<i>Prunus virginian demissa</i>)
Pincherry	(<i>Prunus pennsylvanica</i>)
Friedricksen Bush Cinquefoil	(<i>Potentilla fruticosa</i> 'friedrichsenii')
Farrer Bush Cinquefoil	(<i>Potentilla parvifolia</i> 'farreri')
Shrubby Cinquefoil	(<i>Potentilla fruticosa</i> L.)
Peking Cotoneaster (black fruit)	(<i>Cotoneaster acutifolius</i>)
European Cotoneaster (red fruit)	(<i>Cotoneaster integerrimus</i>)
Hedge Cotoneaster (black fruit)	(<i>Cotoneaster lucidus</i>)
Sungari Redbead Cotoneaster (red fruit)	(<i>Cotoneaster racemiflorus soongoricus</i>)
Highbush Cranberry	(<i>Viburnum cassinoides</i> L.)
Highbush Cranberry	(<i>Viburnum trilobum</i>)
Wax Currant	(<i>Ribes cereum</i>)
Colorado Red Osier Dogwood	(<i>Cornus sericea</i>)
Red Osier Dogwood	(<i>Cornus stolonifera</i>)
Gray Dogwood	(<i>Cornus racemosa</i>)
Red Elderberry	(<i>Sambucus pubens</i>)
Blueberry Elderberry	(<i>Sambucus caerulea</i>)
Common (Black) Elderberry	(<i>Sambucus canadensis</i> L.)
Redman Elderberry	(<i>Sambucus racemosa</i>)
Siberian (Chinese) Elm	(<i>Ulmus pumila</i>)
New Mexico Forestiera	(<i>Forestiera neomexicana</i>)
Black Greasewood	(<i>Sarcobatus vermiculatus</i>)
Leadplant	(<i>Amorpha canescens</i>)
Hawthorns	(<i>Crataegus</i> spp.)
Hobblebush	(<i>Viburnum alnifolium</i>)
Zabel Blueleaf Honeysuckle	(<i>Lonicera korolkowii zabelii</i>)
Arnold Red, Cardinal, Carlton, Valentia Honeysuckle	(<i>Lonicera</i> sp.)
Tatarian Honeysuckle	(<i>Lonicera tatarica</i>)
Honeysuckle	(<i>Lonicera</i> sp.)
Huckleberry	(<i>Gaylussacia</i> spp.)
Hungarian Lilac	(<i>Syringa josikaea</i>)
Persian Lilac	(<i>Syringa xpersica</i>)
Late Lilac	(<i>Syringa villosa</i>)
Ellen Willmott, Leon Gambatta, Lucie Baltet, Marechal Foch, Mne., F. Morel, Monge, Pocahontas, Congo, J. Callot, Thunberg, Pres. Carnot.	(<i>Syringa (lilac) hybrids</i>)
Villosa Lilac	(<i>Syringa</i> sp.)
Curleaf Mountain Mahogany	(<i>Cercocarpus ledifolius</i>)
True Mountain Mahogany	(<i>Cercocarpus montanus</i>)
Pointleaf Manzanita	(<i>Arctostaphylos pungens</i>)
Lewis Mockorange	(<i>Philadelphus lewisii</i>)
Mrs. Thompson and Silvia	(<i>Philadelphus</i> sp.)

Shrubs (broadleaf) Continued

Nannyberry	(<i>Viburnum lentago</i>)
Ninebark	(<i>Physocarpus opulifolius</i>)
Russian Olive	(<i>Elaeagnus angustifolia</i>)
Autumn Olive	(<i>Elaeagnus umbellata</i>)
Siberian Peashrub	(<i>Caragana arborescens</i>)
Globe Russian Peashrub	(<i>Caragana frutex 'globosa'</i>)
Littleleaf Peashrub	(<i>Caragana microphylla</i>)
Pygmy Peashrub	(<i>Caragana pygmaea</i>)
Russian Sage Perovskia	(<i>Perovskia atriplicifolia</i>)
American Plum	(<i>Prunus americana</i>)
New Mexican Privet	(<i>Forestiera neomexicana</i>)
Lodense Privet	(<i>Ligustrum vulgare 'Nanum'</i>)
Privet, Cheyenne Cultivar	(<i>Ligustrum vulgare</i>)
Douglas Rabbitbrush	(<i>Chrysothamnus viscidiflorus</i>)
Rubber Rabbitbrush	(<i>Chrysothamnus nauseosus</i>)
Austrian Copper Rose	(<i>Rosa foetida 'bicolor'</i>)
Harisons Yellow or Yellow Rose of Texas	(<i>Rosa sp.</i>)
Hansen's Hedge Rose	(<i>Rosa sp.</i>)
Wood Rose	(<i>Rose woodsii</i>)
Big Sagebrush	(<i>Artemisia tridentata</i>)
Black Sagebrush	(<i>Artemisia nova</i>)
Cudweed Sagewort	(<i>Artemisia ludoviciana</i>)
Fringed Sagebrush	(<i>Artemisia frigida</i>)
Sand Sagebrush	(<i>Artemisia filifolia</i>)
Silver Sagebrush	(<i>Artemisia cana</i>)
Saltbrush	(<i>Atriplex gardneri</i>)
Big Saltbrush	(<i>Atriplex sp.</i>)
Fourwing Saltbrush	(<i>Atriplex canescens</i>)
Shadescale Saltbrush	(<i>Atriplex confertifolia</i>)
Saskatoon Serviceberry	(<i>Amelanchier alnifolia</i>)
Indian Pear Shadbush	(<i>Amelanchier sp.</i>)
Siberian Crab	(<i>Malus sp.</i>)
Smooth Sibirea	(<i>Sibiraea laevigata</i>)
Snowberry	(<i>Symphoricarpus albus</i>)
Buckbrush	(<i>Ceanothus fendleri</i>)
Snowbrush	(<i>Ceanothus velutinus</i>)
Mongolian Spirea	(<i>Spiraea gemmata</i>)
Nippon Spirea	(<i>Spiraea nipponica</i>)
Sargent Spirea	(<i>Spiraea sargentiana</i>)
Snowwhite Cultivar	(<i>Spiraea trichocarpa x S. trilobata</i>)
Threelobe Spirea	(<i>Spiraea trilobata</i>)
VanHoutte Spirea	(<i>Spiraea vanhouttei</i>)
Wilson Spirea	(<i>Spiraea wilsonii</i>)
Skunkbush Sumac	(<i>Rhus trilobata</i>)
Staghorn Sumac	(<i>Rhus typhina L.</i>)
Viburnums	(<i>Viburnum sp.</i>)
Manchurian Viburnum	(<i>Viburnum burejaeticum</i>)
Wayfaring Tree	(<i>Viburnum lantana</i>)
Winterfat	(<i>Ceratoides lanata</i>)
Heavenly Blue, Azure, Blue Mist	(<i>Caryopteris sp.</i>)

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This publication is one in a series of habitat extension bulletins produced by the Wyoming Game and Fish Department. Call 1-800-842-1934 for additional information or assistance.

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