The Valley of the Flowers Chapter of the Montana Native Plant Society represents a large and diverse geographic area centered in Madison, Gallatin and Park Counties. Mountain ranges comprised of many different rock types, weathering into a variety of soil types, tower over wide-open valleys. The plant life ranges from alpine to riparian, forest to grassland. Patterns of native plants combine to form a rich mosaic of color and texture, while providing beneficial habitat for animal, bird and insect life. We offer this information to help residents of this special place use native plants wisely in their environments. Celebrate Montana’s natural heritage with native plants!
Frequently asked Questions

What is a native plant?
Native plants are plant species that have evolved in place over geologic time or occur naturally in a specific region or area. Where particular native plants are found across the landscape is largely a response to climate and the result of adaptation to specific site conditions. Montana native plants are those plants that were here before Euro/American settlement and are indigenous to Montana. Large-scale changes to the flora of North America occurred as a result of European settlement and the introduction of exotic plants. We recommend planting species native to Montana and when appropriate, plants native to the Valley of the Flowers area.

What is an exotic plant?
An exotic or non-native species is a plant that was introduced into a particular area by humans, either intentionally or accidentally. While some exotics are harmless and may be used to help meet your landscaping objectives, others pose serious threats to local, biological diversity and can become serious pests. The “What To Avoid” section that follows has additional information. Escaped exotics can change the composition of native plant communities, successfully compete for resources, displace native species, reduce plant diversity, contribute to soil erosion and carry exotic insects and disease. Exotic species can also diminish the availability of food plants for wildlife, and alter the behavior of native pollinators, plant-eating insects and fruit-eating birds. Invasion by exotics is one factor that contributes to the threat of native plant extinctions. Don’t forget that birds, dogs, other animals, people, vehicles and water can transport and spread plant seeds. An exotic plant from your yard may become a problem in a natural area near you, so during the planning stage consider how invasive a particular exotic species is and determine if your landscaping objectives can be met by using a Montana native plant instead. Also become familiar with plants that are categorized as noxious weeds by the state of Montana. The MNPS Conservation Committee created: Voluntary Guidelines for Selecting Horticultural Plant Material in Montana

What is a “cultivar”?
Nurseries may advertise certain plant species as “native” however, they may be cultivars. A cultivar is a plant species that has been selected for propagation based on characteristics such as size, flower color, or seed production. These cultivated varieties, often propagated vegetatively, may be of unknown lineage. Many of these plants, developed from native species, do not have the same genetic composition as natives. Sometimes cultivars are more aggressive and can out compete other native species. In your home native landscaping, cultivars should be avoided if possible, unless they have Montana origins. This is of special importance in the urban-interface zone where natural vegetation and man-made landscapes come into close contact, or in rural homesites where they might contaminate the gene pool of naturally occurring native plants of the same species.

Reasons to Use Native Plants

Native Plants are Adapted
Montana offers home landscapers, landscape designers/architects and reclamation specialists a wide variety of native plants, including colorful wildflowers, unique grasses, interesting shrubs and trees, both evergreen and deciduous. These natives are genetically adapted to our unique landscape, with its variable and unpredictable climate, soil requirements, temperature extremes of hot and cold, and elevations. Native plants, properly sited, are adapted to these cold, dry, often erratic conditions and display less evidence of stress. They often require less water and won’t require fertilization once they are established in the proper site. Remember that some Montana natives are adapted to cool, shady or moist areas along stream banks, some to low plains, valleys and dry prairies, while others are suited to higher elevation sites. There are Montana native plants suitable for your site-specific landscaping needs!
Native Plants are Less Invasive
Montana native plants that evolved here belong here. They have natural partners that keep them from becoming invasive. These natural predators and diseases are compromised when non-native plants are introduced. Native plants are part of a natural community of plants and other organisms that developed in a particular landscape with particular conditions and have reached a balance that includes changes. Native plants tend to stay within naturally evolved limits on their chosen landscape. You help to prevent future weed problems by planting natives.

Native Plants Celebrate Our Natural Heritage
Montana supports a unique floral landscape that is worth promoting and protecting. Montana natives inspire a sense of place and connect us to this land of prairies and mountains. Native landscapes reflect where we are and celebrate our unique climatic and ecological conditions. We have the opportunity to express our diversity by maintaining a variety of distinctive native plantings. Such plantings foster pride in our regional communities and heritage and counter the trend toward the homogenization of landscapes. Native plant gardens, big and small, provide an educational opportunity and are a great way to introduce students of all ages to the complexities of the natural environment. Enjoyment of native species can broaden public awareness of natural environments and the species they support.

Native Plants Protect Biodiversity and Restore Regional Landscapes
Throughout much of the United States, some species of native plants are scarce and are in danger of becoming extinct. Planting native species, especially those that come from a local seed source, may enhance gene flow between native populations separated by development and habitat fragmentation. Even small native plant gardens can help restore the integrity of regional landscapes. You can help perpetuate the native vegetation that is necessary for wildlife and natural ecosystem function by being mindful of what you plant on your property.

Native Plants Provide for Wildlife and Pollinator Needs
Planting native trees can result in increased numbers of native birds. Many birds and other fauna are adapted to using native trees and prefer them for food and resting places. Many native grasses provide food and shelter for birds and small mammals, and native shrubs provide browse for deer, moose and other large mammals, as well as food for birds and small critters. Conversely, some native species are less attractive to browsing wildlife and can be selected to discourage urban browsers. Native plants and animals evolved together and depend on each other in a mutually beneficial web. Even beneficial native insects need native plants to carry out their important roles in the ecosystem.

Native Plants Are Fun!
Most of all, native plants are fun, interesting, colorful and attractive. They can provide hours of enjoyment ranging from hands-on puttering to admiring your mature, native plant landscape from your favorite lawn chair. You can help reestablish native plant communities in our part of Montana by choosing to landscape with native plants. Regardless of the scale of the project, you can help conserve water and other natural resources while restoring and celebrating the unique character of our landscape.

Seeds and Plants

Getting Started
Begin to tune into native plants and their habitats. The Montana Native Plant Society sponsors presentations and field trips that provide opportunities to learn about native plants and plant communities. While hiking or driving the backroads, take note of where certain native plants grow, and what plants are often found growing together. Because this region encompasses both prairies and mountains, arid lowlands and wetlands, it is important to conduct a site inventory to determine the conditions on your property. Consult the Recommended Species List on our chapter landscape page to match up your soil, light and water conditions with appropriate species of grasses, wildflowers, shrubs, trees, vines or wetland plants. This reference will also help you identify plants that are perennial, biennial, annual, or self-seeders. Then consider using native plants that occur together in natural habitats.
The Bozeman area typically experiences minimum winter temperatures between -20 and -30 degrees F and summer highs in the 80s and 90s. This is considered a USDA plant hardiness zone 4. You may see references to zones when you do plant research. Livingston and Big Timber can be slightly warmer but often have very windy conditions, especially in the Yellowstone valley. Bozeman receives the most moisture with 18 inches annually on the average, with Ennis at 14 inches, Livingston at 16 inches and Big Timber at 15 inches.

If you are building a new home, work with your contractor to ensure that displaced topsoil is stored so you can use it to develop landscaped areas and leave as many natives as possible undisturbed. Weed control and site preparation may need to be done prior to planting, and while native plants are becoming established on the site. Remember, it takes time for seeds or transplants to become firmly rooted. You should expect native plants to take longer to become established and extra care, weeding, shelter from sun or wind, and water may be required.

Using Plants or Seeds
If you’re a beginner, it may be easiest to start by putting in a few potted native plants rather than planting from seed. However, some plants, like Lewis’s blue flax (Linum lewisii), prairie coneflower (Ratibida columnifera) and blanket flower (Gaillardia aristata) are very easy to grow from seed. Try them first, and then expand as your confidence grows. If you’re planting native plants from seed, patience is the key. Native plants, like any other plant, require care and attention for them to look their best. Growing native plants takes time, but once they are established you will be rewarded with natural beauty, hardiness and minimal maintenance. For more information on using plants and seeds in landscapes, please see Bridger Plant Materials publication: Creating Native Landscapes in the Northern Great Plains and Rocky Mountains.

Don’t worry if you don’t know the scientific names for plants. Our Recommended Species List has both common and scientific names. However, when you go to the nursery or look at a seed packet, check the scientific name to be sure you’re getting what you want. Often the same common name will be used for very different plants and knowing the scientific name will help you get the right plant. Consult one of the books listed in Recommended Books and Field Guides if you need to see what a plant looks like or look it up online, see Internet Resources, both on our chapter landscape page. If you don’t see what you’re looking for at the nursery, ask for it! More natives are being grown all the time and as the demand increases, so will the supply.

Origins of Native Seed and Plants
Definitions of “native” vary from one grower and nursery to the next and may include cultivated varieties (cultivars) of native species, as well as native plants from another part of the state. For restoration and native habitat projects, it is usually best to use plants originating from the nearest available natural sites. In most instances it is impractical for local nurseries to rely entirely on local sources. Simply ask where your nursery’s plants come from and try to get plants as close to locally propagated as possible. When they are available, it is always better to buy native Montana seeds or transplants from a local producer. Please consult our Montana Native Plants Source Guide.

Collecting Plants and Seed in the Wild
If you’re thinking of collecting seed or plants in the wild, it’s essential that you first familiarize yourself with the legal criteria and environmental ethics involved in this activity. Seed and plant collecting is prohibited in many areas of Montana. In general, we discourage collections from the wild unless permission is granted on private land, or plants and seeds are rescued from areas that are scheduled to be disturbed by new construction, road building, etc. MNPS has a helpful information sheet: Guidelines for Collecting Native Plants.

Seed Mixes
Some commercially available wildflower mixes (“meadows in a can”) contain both natives and non-natives, and many include weedy species. Recent research has demonstrated that many mixes are improperly labeled and contain weeds. Often with pre-packaged wildflower seed mixes it is difficult to determine what is really in the mix and the relative percentages of each species. Mixes often contain a high percentage of species that are outside
their natural ranges. We suggest buying individual native wildflower seeds or customizing your own mix. Many wildflower species may only be available in single-seed form anyway. If you’re buying packaged wildflower seeds, remember that “adapted to Montana” is not the same as “native to Montana” and may indicate the presence of non-native species.

The same goes for native grass mixes. If the grasses in a mix are advertised as ‘native’ but are not to be found in the grass section of our Recommended Species List, you can be almost sure that they are either non-native or not adapted to our area. Always check the labels well and ask for botanical names. See information on native grass and forbs mixes: Native Grass Seed Mix Recommendations.

What To Avoid
Some nurseries and garden centers sell exotic species as “wildflowers.” Some of these plants are not native to Montana or even to North America. Some wildflower seeds are not native to Montana but are native to states near us. An example is California poppy. Many of these North American plants may be used without danger of becoming invasive problems. But Montana native species are adapted to our landscape and have built-in controls to keep them from becoming too invasive. The dangers of planting exotic species are well documented and include such things as the loss of Montana wetlands to aggressive ornamentals like purple loosestrife, and the conversion of many acres of land in western Montana to spotted knapweed. Our area too is experiencing a rapid increase in spotted knapweed and care must be taken to identify and control initial invasions.

We recommend that you avoid the following species that may be found in wildflower mixes or as single-species seeds: baby’s breath (Gypsophila paniculata), bouncing bet (Saponaria officinalis), corn poppy (Papaver rhoeas), bachelor buttons (Centaurea cyanus), dame’s rocket (Hesperis matronalis), foxglove (Digitalis purpurea), and Queen Ann’s lace (Daucus carota). Some mixes still contain oxeye daisy (Chrysanthemum leucanthemum), a plant that is a noxious weed in Montana.

We also advise you to avoid using the following plant species that are very invasive. Instead, try to find a native plant or a non-aggressive exotic to meet your landscaping or reclamation needs: black medic (Medicago lupulina), Canada bluegrass (Poa compressa), cheatgrass (Bromus tectorum), creeping bellflower (Campanula rapunculoides), crested wheatgrass (Agropyron cristatum), Kentucky bluegrass (Poa pratensis), orchard grass (Dactylis glomerata), Russian olive (Elaeagnus angustifolia), scotch broom (Cytisus scoparius), smooth brome (Bromus inermis), soft brome (Bromus mollis), teasel (Dipsacus sylvestris), white sweet clover (Melilotus alba), yellow sweet clover (Melilotus officinalis), and members of the spurge (Euphorbia) family.

For more information on plant species that are, or may become invasive, see: Voluntary Guidelines for Selecting Horticultural Plant Material in Montana and the most up to date noxious weed lists: Montana Noxious Weed Information.

When to Seed or Plant
With our short growing season, most landscapers and home gardeners will plant any time the soil is not frozen! Spring and fall can be the best times to plant because the weather is cooler and wetter. If planting during the hotter, drier months, make sure the plants get plenty of irrigation until they’re well rooted and established. Spring is a good time to divide existing plant root sections and for planting bare root plants.

Fall is a good time to plant wildflower (forb) seeds. Going through a Montana winter will help break down the germination inhibitors associated with many native plant seeds. This process is termed stratification. Species that require cool soil temperatures for germination will be favored using this method. Fall planting, in our area, is from October to November (or later if the ground is not frozen) and varies depending on the temperature and moisture conditions. Native grass seed sown earlier than late October may germinate if weather is unseasonably warm and the seedlings may winter kill. Fall plantings generally do not need to be watered and work best if you receive snow cover in the winter. You may not have great success with fall planting if the area to be planted is dry and exposed to wind. If fall seeding is not possible, seeds can also be planted as soon as the ground is frost-free, generally from April to mid-June. If forb seeds are sown without being prepared with moist stratification (a period of cold, moist treatment), germination of some species will not begin until the following spring, after the seed has gone through a winter treatment. If your seeds don’t come up right away, don’t give up on them until they have
gone through a winter. Spring seedings may require supplemental watering if conditions are dry. Keeping the soil moist for 3 to 6 weeks after planting will ensure good germination. For more information on germination see Germination of Wildland Collected Seed by Mark Majerus and other information in the “Landscaping” pages of the Montana Native Plant Society website.

**Planting Environments**

**Matching Plants to Sites**
For landscaping purposes, it is important to remember that plants are specifically adapted to particular site conditions. Soil moisture, soil type and light availability are important limiting factors that determine where a particular plant species can grow and thrive. The ultimate determinants of site suitability are elevation (which affects temperature and degree of exposure to sun and wind), topography (which affects moisture, light availability, and exposure), soil type, and light conditions. Matching plants to site conditions will result in the best plant growth. Check our Recommended Species List on our chapter landscape page to see what conditions are necessary for optimal growth of particular species. Also look to see if a plant is an annual, a biennial or a perennial and place each in an area that meets your landscaping objectives.

**Lawns**
The Audubon Society has determined that home lawns blanket 40 million acres of land in the U.S. Depending on the conditions, a 25-by-40-foot yard can drink 10,000 gallons of water in a summer. Lawn care accounts for 70 million pounds of pesticides applied in the United States each year, 10 times more than even what is used in farming. The toxic runoff percolates into groundwater, threatening wildlife and human health.

Shrubs, trees, perennial flowers and groundcovers usually consume less water than traditional lawns (check plant requirements), add interest and color to your landscape, and provide a welcoming habitat for birds and pollinators. To reduce the size of an already established lawn, try planting groundcovers, low shrubs or perennials beneath mature trees, or expanding the size of an existing plant bed. Eliminate grass from areas where it is hard to grow (dense shade, wet spots, exposed areas, steep slopes, small areas) and plant natives there instead. Also see our information on grass alternatives: Waterwise Grasses: Alternatives to Kentucky Bluegrass Turf

**Native Prairie/Meadows**
Many landowners wish to reclaim disturbed areas to native grass and wildflowers. This can be a lengthy process that requires non-natives to be removed prior to establishing a native grass community. The seeding rates of native grasses are much lower than mowed grass. The lower density allows native wildflowers to flourish.

Often with native grass seed, cultivars are the only alternative. These cultivars were selected for easier establishment and not all have origins in Montana. To retain genetic diversity, seed can be harvested from the wild and ‘increased’ in special grass nurseries. Unfortunately, this process is time consuming and not practical for most landowners. Bridger Plant Materials Center in Bridger Montana has introduced several cultivars for MT native grasses and forbs. See information on native grass and forbs mixes: Native Grass Seed Mix.

**Recommendations**

**Fire Prone Environments**
If your home is located within or adjacent to wildlands or if you’re considering building a home in the urban-wildland interface, you will want to consider the possibility of wildland fire. Fires have shaped the western landscape for centuries and the Valley of the Flowers area is part of a fire dependent ecosystem. Fire is a natural process that will happen at some time in our dry, arid climate. As a homeowner, what you do with your home and with the property immediately surrounding your home, can make the difference if a wildland fire occurs near you. Research by Jack Cohen, a research scientist at the Fire Sciences Laboratory in Missoula, Fire Sciences Laboratory in Missoula, has demonstrated that home ignitability, rather than wildland fuels, is the principle cause of home losses during urban-wildland interface fires. The key components to help make your home defensible are design elements, elimination of flammable roofing materials such as cedar shingles, and reducing the presence of
burnable vegetation (debris, wood piles, shrubs, wood decks) immediately adjacent to your home. Consult Living with Fire-Homeowners Firesafe Guide for Montana.

**Big or Complex Projects**

If you have a large property to rehabilitate you may wish to contact your local office of the Natural Resource Conservation Service (NRCS) for information (see Public Agencies in South Central Montana on our chapter landscape page). They may be willing to send someone to your property to advise you on the logistics of large-scale restoration. However, they may not always be knowledgeable about native plants or the benefits of using native plants for restoration. An excellent publication: Revegetation Guidelines-Considering Invasive and Noxious Weeds, has good information on large scale rangeland seedings.

Regardless of size, you may choose to work with a landscape designer or landscape architect to develop an original site plan for your landscape. These professionals have different degrees of experience working with Montana native plants. Finding one who meets your needs involves checking their credentials and finding out how many years they have they worked in this region. Then have a conversation making your priorities clear and assuring that the designer/architect is comfortable with them. Finally, it’s worthwhile to check references – what is the level of satisfaction of previous clients whose projects were similar to yours? If there are properties that can be viewed in public, take the time to visit those.

**In Conclusion**

Consider your landscape and garden a work in progress that can change and evolve as you learn more and become more confident. It all begins with the first seeds you sow. Who knows, it may be the beginning of a love affair with Montana’s native plants!


**Special Thanks:**
Kelsey Chapter member Kathy Lloyd for writing the original text.

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