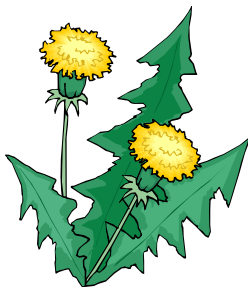


Wildflowers in the Home Garden

Because few sights are as spectacular as a field of wildflowers, many gardeners wish to include them in their home gardens. Wildflowers are admired for their combination of beauty and self-sufficiency. However, the most common misconception about wildflower gardening is that it is maintenance-free. Like any garden, a wildflower area will take some work. Once established, maintenance will diminish greatly but normal weeding, tilling and watering will make the garden successful.



For some, the idea of having a strictly “wildflower” garden has been expanded to include a more integrated planting of flowers and shrubs, including as many native plantings as possible. Wildflowers should be mixed into your garden along with other selected perennials, bulbs, herbs, and flowering shrubs. Planting wildflowers alone will show a dominance of annuals the first year with the more persistent perennials settling into dominance. Retaining diversity will require a bit of work but your efforts will be rewarded. Your goal as a gardener should be to create an effect, choosing from as many different kinds of plant material as necessary, whether perennials, bulbs, herbs, annuals, and, of course, wildflowers.

Factors to consider:

- **Site location**, which can determine the success or failure of your wildflower garden, should consider the amount of sunlight, what is growing now, provision of adequate moisture, and weeds and rocks in the area.
- **Soil preparation** is critical for prompt germination and healthy growth of seedlings. **Remove all weeds/grasses before planting.**
- **Plant in spring or fall** -- late fall is best, especially if seed is grown or collected locally as some native plants require an over-wintering period to break dormancy of the seed. Try to plant just prior to the rainy season if supplemental water is not available.
- **It is best to start small.** Consider: blooming time, height, color scheme, maintenance, propagation methods, moisture, use of mulches, problem areas, fertilization, weed control, and reseeding.

- **Wildflower seed mixes** should be formulated for your specific geographic region -- read the label to see if the mix meets your growing conditions. Mixes usually contain both native and naturalized wildflower species.
- **Grasses**, if added, should be the non-aggressive clumping grasses like sheep fescue. Another option is to use native grasses such as big bluestem, blue grama, buffalograss, Indian ricegrass, sand dropseed, lovegrass or side-oats grama with wildflowers. These are slower growing than fescue, so consider combining fescues and native grasses.
- **Note taking:** Make a habit of taking notes about your garden. They will be invaluable as a reference later. You should note such things as pleasing color combinations, plants you want to add or subtract, ideas from other people’s gardens, when certain plants bloom, etc. These notes are most useful in the winter months when planning for the next season.

Working with Native Wildflower Seed:

Note from Native Seeds/SEARCH: Gardeners should be aware that seeds of wild plants need to be treated differently from those of domesticated plants. Wild plant seed may have germination inhibitors, dormancy requirements, or extra-hard seed coats to insure survival of the plant. Before planting wild seeds, gardeners may find it helpful to pre-treat the seeds. Chemical inhibitors on seeds, well known on chilte pines, need to be flushed away. (One gardener found that a solution of 1 tsp. vinegar to 1 cup of water worked well.) Dry seeds of plants native to cold-winter climes may benefit from a few days to weeks in the freezer. Hard seed coats can be sanded or filed in order to promote water absorption.

Seed Saving and Storage

1. Select seeds from more than one plant.
2. Dry seeds.
3. Clean and store in a glass jar with a tight fitting lid.
4. Label seeds and include crop names or variety, date grown, and source.
5. To prevent insect damage, freeze dry seeds for 5-7 days. This kills larvae under the seedcoat.

Seed Collection: Look for indications in the fruiting structures that hold the seed as to when the seed is ready for collection. Regular and careful inspection of developing seed is a must. In general, when seed is maturing, it will turn from a lighter to a darker color and expand in size. Collection of mature seed is critical for good germination. When broken, a mature seed will reveal a moist white embryo inside. Be sure to place seed of each wildflower species in a separate container to avoid contaminating seed lots. Collecting seed from the wild requires some planning. Plants should be marked when in flower, because often a plant looks different in fruit than in flower. The location should be recorded to enable return to the exact spot to harvest the seed. If insects are found in freshly collected seed, fumigation will be necessary. "No-pest strips" placed among the seed in a sealed paper bag and left for two weeks is effective.

Seed Cleaning: After collection, seed should be cleaned right away. Some seed can be air dried for 1 to 2 days and the seeds will disperse from the capsules, whereas some seed will need to be shaken free from the capsules after drying. Other seed, that is tiny and difficult to extract, requires that the capsule be crushed and worked through a sieve to separate the seed. Fleshy seed coats should be removed. Seed contained in larger capsules can be easily removed by splitting open the capsule.

Seed Storage: Plan to store the seed immediately following cleaning. The condition of the seed (dry or moist) is a clue as to how the seed should be stored. Dry seed should be stored dry in an air tight container. Moist seed should be 'stratified' or layered in a moist medium, such as whole-fiber sphagnum moss, and placed in an air tight container. Containers of seed should be labeled and placed in the refrigerator for the winter months.

Seed Sowing: Seed can be sown indoors in late winter or directly into a seed bed outdoors in the fall or in spring when the danger of frost is past. If sowing indoors, a well-drained seed mix, such as equal parts of peat moss, vermiculite, and sand should be used. Commercial seed mixes are also available at local garden centers. Select a container large enough to spread seeds out evenly. Tiny seed can be broadcast on the surface of the seed mix. Larger seed should be covered with an amount of soil twice the size of the seed. Freshly sown seed is best watered from below, i.e. immerse the seed flat in a shallow pan of water until the surface of the soil is moist. Place the seed flat in a warm (70-75 degrees F) location and cover with clear plastic or a glass panel to retain moisture. As the seedlings develop, the cover may be removed a little more each day to gradually adjust the plant to lower humidity.

Seeds sown outdoors in the fall or spring should be in prepared seed beds of fine soil and covered with a wire mesh for protection against rodents. Hand broadcasting is

the most common method of dispersing seed over a small area. It is advisable to mix the seed with an inert carrier (sand or vermiculite) at a ratio of 2:1 (sand to seed) for more even distribution. Once distributed, the seed should be covered with a minimum of 1/8 to 1/4 inches of soil, which can be achieved by lightly raking over the area. Seed cultivated too deeply will not germinate. Finally, cover the entire area with mulch to reduce moisture loss and help protect the seeds from birds. During the germination period it is important not to let the seed bed dry out. Gardeners may find the most prolific method of propagation for some wildflowers to be the natural self-sowing process in the garden.

Transplanting Seedlings: Seedlings grown indoors are ready to be transplanted when the second set of true leaves has developed. When removing a seedling from the flat, avoid contact with the stem and roots. Grasp a leaf with one hand and with the other hand pry under the seedling with a wooden label or popsicle stick. Loosen the roots and remove the plant. A thorough watering prior to transplanting will ease removal. Generally, a 3-inch container is the next step for the seedling. Set the seedling into a hole large enough to accommodate the roots and at the same level at which the plant was growing in the seed flat. Gently firm the soil at the base of the seedling. (Tall, thin seedlings can be planted slightly deeper for stability.) Seedlings will benefit from a weekly application of a general purpose fertilizer, applied at half-strength for several weeks after transplanting. Seedlings are ready to be moved into the garden when a vigorous root system has developed and danger of frost is past.

Transplanting and Establishing New Plants in the Home Garden: Select the proper location for new plants. Consult the cultivation instructions for specifics. Container material is best transplanted on a cloudy day or late in the afternoon on a clear day. (If transplanting cannot be carried out soon, protect plants from the sun and keep them watered.) Transplants should go directly into prepared garden soil. A transplant should be planted at the same level as it was growing in the pot. Many of the plants may be pot-bound. It is important to break up the root mass in order to allow the roots freedom to grow into their new environment. Firm the soil around the plant; water thoroughly, and mulch.

Post-planting/Sowing Care: Supplemental water should be given during dry months. Once established, the amount of water given to wildflowers can be gradually reduced. If well adapted to the area, the wildflowers will survive drought periods without supplemental water. However, for longer and showier blooming periods, 1/2-inch water a week is recommended except during the rainy season. **Weeding** may be necessary for the first two years. Once the nights have cooled down and the flowers have declined (fall), **mowing** of the wildflower

garden will simultaneously scatter ripened seed and add a layer of organic mulch. Your mower should be set at 4 to 6 inches for best results. Wildflowers tend to prefer soil of low fertility, so the addition of **fertilizers is not generally necessary**. Older wildflower gardens produce fewer flowers due to nutrient depletion. In this case, a fertilizer with a 5-10-10 ratio of nitrogen, phosphorus and potassium should correct any deficiencies.

Wildflowers to Consider for Specific Themes:

- **Hummingbirds:** Beardtongues (*Penstemon spp.*); Columbine (*Aquilegia spp.*); Red Sage (*Salvia coccinea*) (*Stachys coccinea*); Skyrocket (*Gilia spp.*); Cardinal Flower (*Lobelia cardinalis*); Lupines (*Lupinus spp.*); Indian Paintbrush (*Castilleja integra*); Toadflax (*Linaria maroccana*); Beebalm (*Monarda spp.*); Aloes (*Aloe spp.*); Ocotillo (*Fouquieria splendens*); and Desert Willow (*Chilopsis linearis*).
- **Butterflies:** Milkweeds (*Asclepias spp.*); Buckwheats (*Eriogonum spp.*); Beebalm and Mints (*Monarda spp.*); Yarrow (*Achillea spp.*); Parsley and Passion Vine (*Passiflora sp.*).
- **Birds:** Chia (*Salvia columbariae*); Prickly Pear (*Opuntia spp.*); Sunflower (*Helianthus spp.*) and many species of grasses. For shelter and nesting consider Wolfberry (*Lycium pallidum*); Barberry (*Berberis spp.*); Sumacs (*Rhus spp.*); Cat-Claw Acacia (*Acacia greggii*); Hackberry (*Celtis reticulata*); Quailbush (*Atriplex lentiformis*); Saltbush (*Atriplex canescens*); Hopbush (*Dodonaea viscosa*); Cholla (*Opuntia spp.*); Desert Coreopsis (*Coreopsis bigelovii*).
- **Children:** Devil's Claw (*Proboscidea spp.*); Bubblegum Plant (*Agastache cana*); Chocolate Flower (*Berlandiera lyrata*); Five Spot (*Nemophila maculata*); Mexican Hat (*Ratibia columnifera*); Sunflower (*Helianthus spp.*) Hopi Black Dye; Watermelon (*Citrullus lanatus*) Tohono O'odham Yellow.
- **Containers:** Mexican Sunflower (*Tithonia rotundifolia*); Bluebells (*Phacelia campanularia*); Poppy (*Papaver nudicaule* and *rheas*); Tidy Tips (*Layia platyglossa*).
- **Night Garden:** Tufted Primrose (*Oenothera caespitosa*); Angel's Trumpets (*Mirabilis longiflora*); Sundrops (*Oenothera tetragona*); Yucca (*Yucca spp.*); Pale Blue Trumpets (*Ipomopsis longiflora*).



- (*Salvia columbariae*); Bluebells (*Phacelia campanularia*); Desert Verbena (*Vebena goodingii*).
- **For Bedding Plants:** Daisy (*Chrysanthemum leucanthemum*); Purple Coneflower (*Echinacea purpurea*); Scarlet Sage (*Salvia coccinea*); Baby Blue Eyes (*Nemophila insignis*); Iceland (*Papaver nudicaule*) and Flanders (*Papaver rheas*) Poppy.
- **For Red/White/Blue:** Red/Blue Flax (*Linum grandiflorum 'rubrum'/Linum lewisii*); Bluebells (*Phacelia campanularia*); Scarlet Gilia/Skyrocket (*Gilia aggregata*); Daisy (*Chrysanthemum leucanthemum*).
- **For Beginners:** Arroyo Lupine (*Lupinus sp.*); Scarlet Flax (*Linum grandiflorum 'rubrum'*); California Poppy (*Eschscholzia mexicana*); Bluebells (*Phacelia campanularia*); Desert Coreopsis (*Coreopsis bigelovii*); Mexican Evening Primrose (*Oenothera berlandieri*).
- **For Master Gardeners:** Indian Paintbrush (*Castilleja integra*); Butterfly Weed or Butterfly Milkweed (*Asclepias tuberosa*); Sundrops (*Oenothera tetragona*); Monkeyflower (*Mimulus spp.*); Bluedicks (*Dichelostemma pulchellum*).
- **For Shade:** Baby Blue Eyes (*Nemophila menziesii*); Daisy (*Chrysanthemum leucanthemum*); Five Spot (*Nemophila maculata*); Chinese Houses (*Collinsia heterophylla*); Toadflax (*Linaria maroccana*); Delphinium (*Delphinium spp.*); Larkspur (*Consolida ambigua*); Beebalm (*Monarda spp.*); Scarlet Gilia/Skyrocket (*Gilia spp.*); Columbine (*Aquilegia spp.*); Coral Bells (*Heuchera sanguinea*); Scarlet Sage (*Salvia coccinea*).
- **For Summer:** Butterfly Weed (*Asclepias tuberosa*); Coneflower (*Echinacea spp.*); Sunflower (*Helianthus spp.*); Golden Fleece (*Dyssodia pentachaeta*); Desert Marigold (*Baileya multiradita*); Desert Senna (*Cassia covesii*); Firewheel (*Gaillardia aristata*); Summer Poppy (*Papaver rheas*); Blackfoot Daisy (*Melampodium cinereum*); Chocolate Flower (*Berlandiera lyrata*); Sacred Datura (*Datura meteloides*); Red Amaranth (*Amaranthus cruentus*).
- **Partners:** Owl Cover (*Orthocarpus purpurascens*) and Bladderpod (*Lesquerella gordonii*); Plains Coreopsis (*Coreopsis tinctoria*) and Blanketflower (*Gaillardia spp.*); Scarlet Gilia (*Gilia aggregata*) and Daisy (*Chrysanthemum leucanthemum*); Desert Senna (*Cassia covesii*) and Blanketflower (*Gaillardia spp.*); Pineleaf Penstemon (*Penstemon pinifloous*) and Prairie Zinnia (*Zinnia grandiflora*); Mexican Evening Primrose (*Oenothera berlandieri (speciosa)*) and Chocolate Flower (*Berlandiera lyrata*); California Poppy (*Eschscholzia mexicana*) and Lupines (*Lupinus succulentus*); Indian Paintbrush and blue grama grass.

Wildflower Combinations to Consider:

- **For Spring:** Penstemon (*Penstemon spp.*); Bladderpod (*Lesquerella gordonii*); Owl Clover (*Orthocarpus purpurascens*); California Poppy (*Eschscholzia mexicana*); Globemallow (*Sphaeralcea laxa* or *ambigua*); Bluedicks (*Dichelostemma pulchellum*); Tidy Tips (*Layia platyglossa*); Chia

Wildflower Conservation Guidelines

Let all your acts reflect your respect for wild plants as integral parts of natural landscapes. Remember that every time you pick a flower or disturb a patch of wildflowers, your action affects the natural world and that the cumulative effect of the actions of many people can be particularly harmful.

When photographing wildflowers or inspecting them closely, take care not to disturb the surrounding vegetation. Trampling can damage nearby seedlings or roots.

Report unlawful collection of plants to proper authorities (Arizona State Department of Agriculture at 602-542-3292) and when necessary, remind others that collecting plants or disturbing natural areas is illegal. **DO NOT** dig or take cuttings from native plants in the wild except as part of a project to rescue plants from sites where they would otherwise be destroyed. Remember to have the landowner's consent and the proper permits. No plants should be removed from parts of a site that will be left undisturbed.

Before obtaining plants or seeds of wild species for your home landscape, learn enough about their cultural requirement to be sure you can provide a suitable habitat. If you collect seeds from the wild, collect a few seeds from each of many plants and only from common species that are locally abundant. Collect only the seeds or fruits without harming the rest of the plant. Always leave sufficient seed numbers for the plant population to reseed itself. Buy seeds only from companies that collect responsibly. Buy plants of native species only from organizations or individuals that propagate their own plants or that purchase from those who propagate them. Ask the seller about the origin of the plants. If the seller is unable to tell you a plant's origin, don't purchase it.

If you pick wildflowers, dried seed stalks, or greens for home decoration, use only common species that are abundant at the site. Leave enough flowers or seeds to allow the plant population to reseed itself. Do not pick herbaceous perennials that need to retain their vegetative parts to store energy for next year's development. Do not cut slow-growing plants for Christmas wreaths or other decorations.

Because it is important to protect information about the location of rare species, should you discover a plant species that you know or suspect is rare, report the site to responsible conservation officials as soon as possible.

Source of Seeds:

- **Applewood Seed Co.**, 5380 Vivian St., Arvada, CO 80002, (303) 431-7333, <http://www.applewoodseed.com>. Quality seed with 98% purity with no noxious weeds. All mixtures contain a high percentage of perennials to annuals and are blended to give the widest possible range of colors and blooming periods. Has wildflower sod; each carpet is 10'X20" of densely packed 3" high hardy perennial wildflower plants with no annuals or grasses included.
- **Granite Seed**, 1697 W. 2100 North, Lehi, UT 84043, (801) 768-4422; <http://www.graniteseed.com>. Offers a diverse selection of native and domesticated grasses, turf grasses, wildflowers and shrubs, including obscure and hard-to-find species. Specialty of custom blending seed mixes to customer's specifications.
- **Native Seeds/SEARCH** -- Non-profit, seed bank of traditional domesticated crops and their wild and weedy relatives native to the U.S. Southwest and Northwest Mexico. The Native Seeds/SEARCH encourages farmers and gardeners to continue to plant and use the traditional crops within the region to which they are native and to foster habitat protection of wild useful plants. Members in the organization receive a quarterly newsletter which contains recipes, previews workshops and other special events, gardening tips, book reviews, and feature articles on Native American farmers and crops. Members also receive a 10% discount on all items sold. Associate membership starts at \$25/year. To become a member or to order a seed catalog (\$1.00) contact the organization at 526 N. 4th Ave, Tucson, AZ 85705, (520) 622-5561.
- **S & S Seeds**, P.O. Box 1275, Carpinteria, CA 93014-1275, (805) 684-0436; <http://www.ssseeds.com>. Has production fields and extensive collections of native plant seed; offers more than 900 plant species including wildflowers, native and reclamation grasses, trees, shrubs, and native plants; can design particular seed mixes; specializes in California native seeds; wholesale company.
- **Seed Savers Exchange**, 3094 N. Winn Road, Decorah, Iowa 52101, (563) 382-5990; <http://www.seedsavers.org>. Good source of heirloom varieties and an exchange for seed savers (members write directly to each other). Membership (\$35) includes availability of more than 11,000 rare varieties of vegetables, fruits and grains. Flower and Herb membership also available (\$10).

- **Seeds Blum**, Contact Victory Seed So, P.O. Box 192, Molalla, Oregon 97038, 503-829-3126; <http://www.victoryseeds.com>. Heirloom varieties plus good information on seed collection.
- **Wild Seed** is a collaboration of individuals and the Southwest plant kingdom dedicated to providing quality native seed for trees, shrubs, grasses, succulents, and wildflowers. Wild Seed offers over 250 species of seed throughout the world to promote the use of native seed. Wild Seed can be reached at PO Box 27751, Tempe, AZ 85285, (602) 345-0669.
- **Wildflowers International, Inc.**, 918-B Enterprise Way, Napa, CA 94558, (707) 253-0570. Wholesale; specializes in custom-designed seed mixtures native to a particular region but also supplies individual varieties and standard mixtures. In developing custom mixtures they consider climate and soil conditions; blooming patterns; annuals and perennials; and various color/height combinations.

For More Information:

The New Seed Starter's Handbook, Nancy Bubel, 1988. How to start and grow seedlings in great detail of more than 200 plants. A whole chapter on seed saving; source lists for seeds and gardening supplies. \$18.95 (paper)

Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners, Suzanne Ashworth, 1991. Seed Savers Exchange bible of seed-saving techniques, edited by Kent Whealy and illustrated with black and white photos by David Cavagnaro. \$24.95 (paper).

Saving Seeds: The Gardener's Guide to Growing and Storing Vegetable and Flower Seeds, Marc Rogers, 1990. An easy to understand text on seed saving and growing vegetables and flowers from seed. Includes an overview of basic concepts and a species-by-species account of what to do. \$12.95 (paper).



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<http://cals.arizona.edu/yavapai>

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