



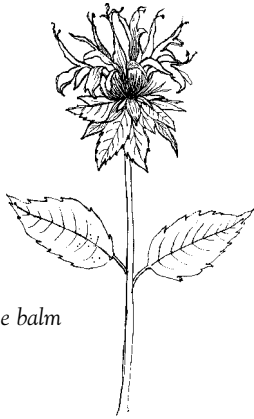
# WILD ABOUT



# WILDFLOWERS

# Wild about Wildflowers

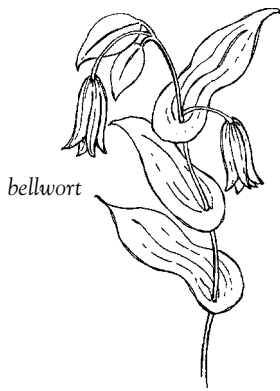
Thomas G. Barnes, Extension Wildlife Specialist



bee balm

They are all around us and thrive in roadsides, forests, meadows, wetlands, and, it seems, almost anywhere you travel across the state. They begin their colorful display as early as February or March in the woodlands with hepatica and purple cress and enrich the landscape until the frosts of autumn when the gentians flower in the woodlands. There is no time during the growing season that one of Kentucky's more than 2,000 wildflowers is not blooming.

The purpose of this publication is to provide information about native Kentucky wildflowers and their conservation in the wild. If you choose to develop a garden to attract wildlife or a garden based on native plant materials, the information and ideas contained in this publication will allow you to make a more informed choice about plant material. The gardening portion of this publication recommends using bare-root or container-grown plants because creating a prairie meadow or a "wildflower meadow" from seed requires specific information that will be provided in a future publication. If you plan to create one of these habitats in your landscape, consult a qualified individual who understands how to develop this type of environment.



bellwort

## What is a Wildflower?

There are numerous definitions of the term wildflower. If you want to garden with wildflowers, you may develop your own definition based on how you intend to use these plants in the landscape. Gardening with wildflowers offers a continuum of uses. Wildflowers can be used in formal gardens with high maintenance, in less formal gardens with a "wildflower look," or in a native plant garden that mimics natural landscapes. If you want only a "wildflower look" in your garden, you may choose common cultivated plants, packaged seed mixes, or fiber mats because they will be easier to grow.

Wildflowers with the purpose of attracting wildlife or creating a native plant garden follow a more ecological definition. A wildflower is a native, herbaceous flowering plant growing without the aid of human cultivation or domestication that can include grasses as well as grass-like and aquatic plants. Wildflowers growing in one area or country may not be wildflowers in another area. For example, the orange daylilies found growing along our roadsides are wildflowers in Asia but are exotic plants that have escaped cultivation in Kentucky. **Herbaceous** is defined as not having a woody stem; also, the plant dies back to the ground during the dormant season. **Native** (or indigenous) means the plant has occurred in a natural habitat and geographic region for thousands of years. A **cultivar** of a wildflower is a plant that has been propagated and selected for specific characteristics such as flower size, disease resistance, blooming period, etc. Examples of cultivars of native species include black-eyed Susan 'Goldsturm' and purple coneflower 'White Swan' or 'Magnus'. If you are gardening to attract butterflies or wildlife, it is important that you use true wild stocks (obtained from a nursery specializing in native plants) for two reasons. Many cultivars of native plants sold by large nurseries and department stores may not be attractive to wildlife because they have been selected for traits like bloom size, bloom period, or disease resistance and not for nectar or seed production. Second, wildlife have adapted to using



black-eyed Susan



these wild stocks over thousands of years. If you desire to create a more natural habitat garden, you will want to use the same types of plants.

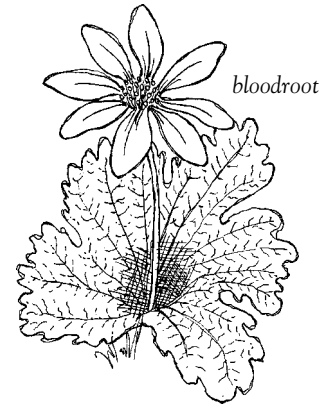
An **introduced** or **exotic** plant has been introduced either accidentally or intentionally from outside its natural geographic range (often from Europe or Asia). Some exotic plants escape cultivation or spread from their point of introduction and become established and persist in the environment without the assistance of human activities. These plants are said to have become **naturalized** as part of the plant life of the area. Many people think of these plants as wildflowers, but they are not. Common examples of naturalized plants include Queen Anne’s lace, chicory, ox-eye daisy, orange daylily, blackberry lily, star-of-Bethlehem, dayflower, yellow wood-sorrel, mock strawberry, common cinquefoil, common chickweed, deptford pink, corncockle, dame’s rocket, bird’s-foot trefoil, crown vetch, purple loosestrife, butter-and-eggs, moth mullein, rocket larkspur, dandelion, and yarrow.

An **invasive exotic plant** is a plant that has escaped cultivation or has spread from its point of introduction. It has increased its numbers explosively and expanded its geographic range into locations where it previously was not found. Examples of invasive exotic plants include purple loosestrife; poison hemlock; garlic mustard; Queen Anne’s lace; tall fescue; nodding, bull, and Canada thistle; vinca major and vinca minor; ground ivy; Kobe, Korean, and sericea lespedeza; Dutch white clover, red clover, white and yellow sweet clover; leafy spurge; kudzu; common chickweed; speedwell; wild teasel; dame’s rocket; crown vetch, and many others. The U.S. Congress has documented that 15 exotic plants, excluding most agricultural weeds, cost the U.S. economy more than \$600 million dollars annually, and the potential worst-case economic losses could be more than \$4.5 billion from melaleuca, purple loosestrife, and witchweed. It has also been well documented that these plants have significantly affected many of our national parks and other wildland resources. John Randall of The Nature Conservancy has found that exotic plants affect wildlands in five ways (Table 1).

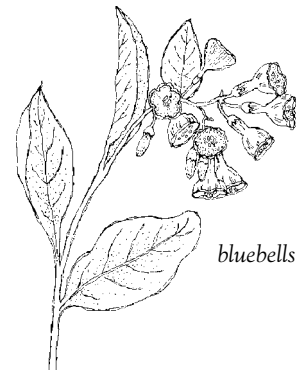
Your own conservation ethics regarding the use of naturalized and invasive exotic plants will determine if and how you use them in the garden. For example, Queen Anne’s lace is an excellent cut flower that is hardy, easy to grow, and relatively disease resistant, and

it blooms for an extended period of time. If you want to have a native wildflower garden, it does not belong. In this situation, it is considered an invasive, exotic plant. If you are interested in creating a garden with the “wildflower look” and enjoy the plant as a cut flower, it could be used in the garden as long as you are aware of its invasive characteristics and its significant impact on natural environments. It is your choice. If you determine you want the “wildflower look,” you need to be aware that many of the seed mixes contain a large percentage of nonnative annuals (not perennials), including some invasive species that may or may not reseed themselves to provide an annual burst of color.

What is a weed? Just like the definition of a wildflower, the term weed has numerous definitions. A gardener would define a weed as a plant out of place or growing where it is not wanted. Ecologists define weeds by their ecological adaptations that allow them to exploit disturbed habitats. These plants often possess (from a human value perspective)



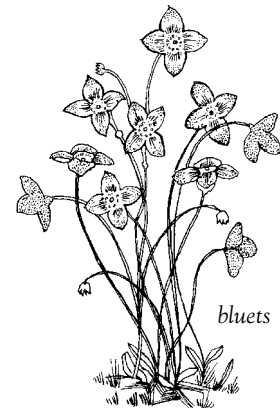
*bloodroot*



*bluebells*

**Table 1. Effects of exotic plants on wildlands reported by John Randall, The Nature Conservancy.**

1. Alteration of ecosystem processes
2. Displacement of native species
3. Support of nonnative animals, fungi, or microbes
4. Hybridization with native organisms
5. Alteration of gene pools



*bluebells*

butterfly weed



undesirable qualities like an unaesthetic growth form, spines, etc. Ecologically, a weed is a plant that produces a large quantity of seeds which disperse (move) easily across the landscape. They generally have high seed germination rates and can colonize and dominate a variety of habitats. Examples of native and nonnative weeds include ragweed, poison hemlock, thistles, cocklebur, etc. Many wildflowers have weed as part of their common name, but they are not weeds at all from the viewpoint of a wildflower, butterfly, or wildlife enthusiast. Examples include ironweed, joe-pye-weed, butterfly weed, star chickweed, jewelweed, sneezeweed, rosinweed, and the milkweeds. The following example will illustrate the difficulty in defining the term weed. Ironweed is a showy, native Kentucky wildflower that is considered a weed by the livestock industry because livestock do not eat the plant and the plant spreads aggressively through pastures. If you are a butterfly aficionado, you will want milkweeds and joe-pye-weeds in the garden because they are some of the best butterfly nectar plants around.

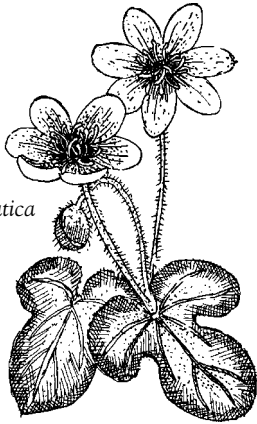
Weeds present an interesting dilemma for the gardener. Gardeners essentially create disturbed sites, and “weedy” plants will naturally invade the site. Hence, the removal of unwanted plants, based on the gardener’s decision on what is an appropriate or inappropriate plant, is important in getting wildflowers established.

fringed orchid



Wildflowers are often referred to by two names, a common name and a scientific name. If you are going to garden with wildflowers, you will likely have to learn some scientific or botanical names of plants. Don’t let the difficult Latin or arcane language of botanical nomenclature keep you from enjoying wildflowers. However, you will need to use the botanical name when ordering plants to ensure that you are getting what you want. Plants often have numerous common names that vary from place to place. Often a common plant name is shared by two or more species. For example, black-eyed Susans in the horticultural trade are referred to as *Rudbeckia fulgida* with varieties ‘Fulgida’, ‘Goldsturm’, or ‘Sullivantii’. In fact, these are not black-eyed Susans (*Rudbeckia hirta*) but are known by plant experts as orange coneflowers. Furthermore, there are several additional *Rudbeckia* species referred to as black-eyed Susans; these include sweet Susan (*R. subtomentosa*), brown-eyed Susan (*R. triloba*), and wild goldenglow or tall coneflower (*R. laciniata*). Each of these species is quite different, with different blooming periods and leaf and flower shapes. This example should serve to clarify why botanists, horticulturalists, and wildflower enthusiasts use botanical names to communicate clearly about the plant in question. This example also shows how you can use different species of the same plant genus to achieve a long bloom period.

hepatica



### Why Grow Native Wildflowers in the Garden?

If you are a wildflower enthusiast, naturalist, or someone interested in wildlife, you might ask the question, “Why would anyone want to use native wildflowers when garden centers, nurseries, and mail-order companies offer lots of big, blooming, bright, lovely, and colorful exotics?” The rewards for using these plants in the landscape are numerous, including conserving native biodiversity, attracting wildlife and butterflies, medicinal uses, aesthetic and intellectual stimulation, education and enlightenment about nature, and a sense of having something “different” from other gardeners in the neighborhood. There are also numerous photographic opportunities.

Other reasons to grow native wildflowers include an array of species that have big, colorful blooms. As a further incentive for using native wildflowers, there are species that can

be used and adapted to virtually any landscape with problem areas: poor soil, little soil (e.g., rock gardens), heavy clay soils, shady places under the walnut tree, wet areas, and even good loamy soil.

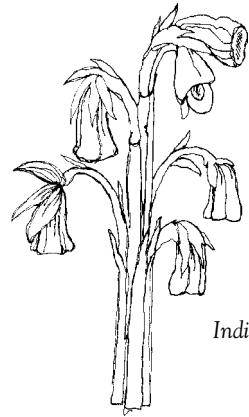
When properly established, wildflowers may require little care and no fertilization or water. They may become almost maintenance free. This is a great advantage for those who have little time for gardening and still want to enjoy the benefits of flowers in the yard. Most of the species are perennials and need to be planted about 12 inches apart. Don't overplant, and let nature allow the individual plants the opportunity to fill in the space. However, it takes a great deal of knowledge, expertise, and time to create a functioning native plant garden. Until the garden is fully established, you will need to take care of the plants through vigilant weeding and watering.

What are the disadvantages of gardening with wildflowers? There are several, including understanding some basic ecology about how these plants grow and the environment they must live in. It may take many years to develop a native woodland garden that has the right mix of species to achieve the look you are interested in. Don't let this discourage you because this information can be obtained by reading one of the numerous books on gardening with wildflowers and by trial and error. Much of the excitement of wildflower gardening is the constant observation of plant growth and the search for more information on how the plants work in nature. Second, most wildflowers need to be planted in a cluster along with later-blooming species to achieve the desired splash of color. For example, the trout lily (dog tooth violet, adder tongue) is a very early-blooming species that has interesting mottled green leaves. It may take dozens of these plants to make a visual impact. In addition, because it is one of the first flowers to bloom, it should be interplanted with ferns or later-blooming woodland flowers like celandine or wood poppy. But this scenario can be expensive. Most woodland species do not spread readily, and the planting could become expensive when plants are purchased at \$4 to \$6 apiece. Third, not every species of wildflower you want in the garden will be available at nurseries.

Another potential disadvantage is finding suitable planting stock. In general, many wildflowers have aesthetic appeal, but they are difficult to propagate or are slow-growing, or they require more special care than common exotic landscape plants. The best source of plant material comes from a nursery that specializes in native wildflowers. Because some wildflowers are difficult to mass produce, nurseries have not been able to meet the increasing demand for native wildflowers, and they often run out of stock or may not have the species you are looking for. The best advice is to order early to ensure that you get the species you want. Some of the most common eastern North American wildflowers can be purchased from large mail-order nurseries (Table 2). Contact your local Extension office for a listing of plant nurseries that specialize in native wildflowers found in the eastern United States.

### *Conservation of Wildflowers*

Perhaps one of the reasons for the popularity of gardening with wildflowers is that many of our favorite locations that once harbored wildflowers no longer exist and people want to recreate those memories in the garden. While there is still a great store of wildflower wealth in Kentucky, many species are rare, and others are simply not as abundant as they once were. Just like animals, plants have habitat needs, and we destroy habitat at an astonishing pace. Kentucky is losing more than 100 acres of rural land every day to suburban development. Other factors,



*Indian pipe*



*showy orchid*



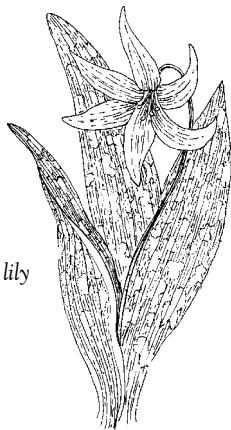
*St. John's wort*

including modern road construction, conversion of wild lands to agricultural or industrial development property, and collecting by unscrupulous people (and nurseries), have had an effect on this decline. Avoid the temptation of digging and removing wildflowers from their natural habitats unless the site is scheduled for development or destruction. Contact the Kentucky Native Plant Society or a local Wild Ones Chapter in Frankfort or Louisville for information on wildflower rescues.

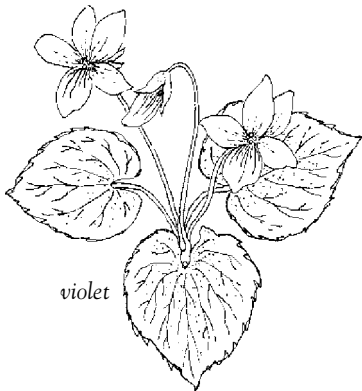
Collecting wildflowers from their native habitat is harmful in two ways. First, it eliminates those plants from their natural habitat and impoverishes the local plant community. This will increase the potential for nonnative plants to invade the site. Second, there are no assurances the plants will live, let alone thrive, if you bring them into the garden. For example, most orchids have a special relationship with fungi in the soil in their native habitat. When you dig those plants and bring them into the garden, they will perish rather quickly unless these fungi are present in the soil. Other plants have exacting soil, pH, or other requirements that your backyard may not have.



sticky aster



trout lily



violet

**Table 2. Native Kentucky North American wildflowers that can be ordered from large mail-order nurseries.**

Common Name	Scientific Name	Light Requirement	Flower Color	Bloom Time
Purple Coneflower	<i>Echinacea purpurea</i>	Sun	Pink	June/July
Orange Coneflower	<i>Rudbeckia fulgida</i>	Sun	Yellow	July
Dense Blazingstar	<i>Liatris spicata</i>	Sun	Pink/purple	July
Butterfly Milkweed	<i>Asclepias tuberosa</i>	Sun	Orange	July/August
Red Milkweed	<i>Asclepias incarnata</i>	Sun	Pink	August
False Dragonhead	<i>Physostegia virginiana</i>	Sun	Pink	August/Sept.
Turtlehead	<i>Chelone glabra</i>	Sun	Pink	September
Blue False Indigo	<i>Baptisia australis</i>	Sun	Blue	June
Bee Balm	<i>Monarda didyma</i>	Sun	Red	June
Meadow Phlox	<i>Phlox maculata</i>	Sun	Pink	July/August
Creeping Phlox	<i>Phlox subulata</i>	Sun	Blue/pink	May
Spiderwort	<i>Tradescantia virginiana</i> or <i>ohiensis</i>	Sun	Blue	June
Missouri Primrose	<i>Oenothera missouriensis</i>	Sun	Yellow	June/July
Showy Primrose	<i>Oenothera speciosa</i>	Sun	Pink	May
Smooth Beard-tongue	<i>Penstemon digitalis</i>	Sun	White	May
Common Sunflower	<i>Helianthus annuus</i>	Sun	Yellow	July-Sept.
American Lotus	<i>Nelumbo lutea</i>	Sun/water garden	Yellow	July
Fragrant Water-lily	<i>Nymphaea odorata</i>	Sun/water garden	White	July-Sept.
Blue Phlox	<i>Phlox divaricata</i>	Shade	Blue	April
Virginia Bluebells	<i>Mertensia virginica</i>	Shade	Blue	April
Wild Geranium	<i>Geranium maculatum</i>	Shade	Pink	April-May
Goat's Beard	<i>Aruncus dioicus</i>	Shade	White	June
Crested Dwarf Iris	<i>Iris cristata</i>	Shade	Blue	April
Black Cohosh	<i>Cimicifuga racemosa</i>	Shade	White	July
Foamflower	<i>Tiarella cordifolia</i>	Shade	White	April-May
Cardinal Flower	<i>Lobelia cardinalis</i>	Sun/shade	Red	July-Sept.

For example, native azaleas and rhododendrons require a sandy, well-drained, acid soil. These plants will not live in the limestone regions unless you dramatically modify the soil environment to meet their needs. Additionally, by adding wildflowers or other plants that were collected from the wild into your yard, you can bring in diseases, fungi, and other pathogens that potentially could harm other plants in the landscape.

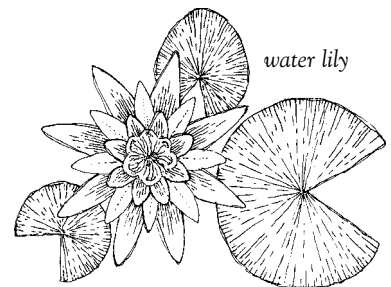
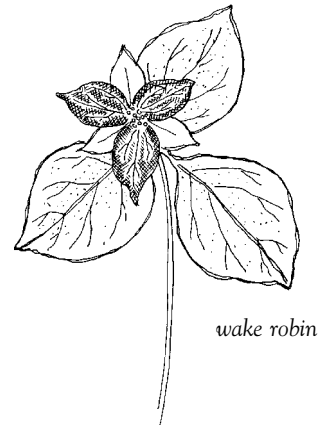
One question native plant nursery professionals encounter is “Why don’t you sell orchids and trillium?” The answer has to do with conservation ethics, botany, and economics. There are five primary reasons why reputable native plant nurseries sell only nursery-propagated plants. The first reason is the increasing destruction of wild lands (natural areas) and collection by diggers that are causing some species of wildflowers to decline in their natural habitats. Reputable nurseries do not contribute to this decline. Second, many wild collected plants are illegally dug from private property. Why would a reputable nursery sell stolen goods? The third reason has to do with botany and ecology. We know that many plants are inter-dependent on one another and the physical environment. Remember the orchid example. Why would a reputable nursery deal in plants that are ultimately doomed to die? Many woodland wildflowers are dug when they are easy to find (in bloom). This is the absolute worst time to transplant these plants, even under the best of conditions. Finally, time is money. Many commonly dug woodland wildflowers are slow or difficult to propagate (and slower to grow to maturity). For example, Jack-in-the-pulpit, hepatica, and others take three years to reach a salable size. Trillium generally won’t flower until the fifth or sixth year. After three to six years of nursery care, these plants would naturally have to be expensive. Be sure to deal with a reputable nursery whose plants are “nursery-grown” rather than collected from the wild and kept in nursery holding areas for weeks or months.

## Gardening with Wildflowers

There are many myths about gardening with bare-root or container-grown wildflowers that should be dispelled.

**Myth Number One:** *Wildflowers grow in the woods and bloom in the spring.* This is not entirely true because numerous prairie and old-field species will grow in full sun during the long Kentucky growing season. Dozens of native species that have varying requirements are worthy of a spot in the garden. One of the keys to successfully gardening with wildflowers is to understand the sun, soil, and moisture requirement of that particular species, just as you would do for any perennial horticultural flower. Most native plant nursery catalogs have a wealth of information about these requirements.

**Myth Number Two:** *Wildflowers are carefree, require no maintenance, and naturalize readily.* This is not entirely true. After establishment, wildflower gardens may require little care except some weeding. However, during the establishment period, gardening with wildflowers is no different from gardening with any other garden perennial. During the first two years, the flower bed must be watered, mulched, and weeded. Thereafter, some plants may move by self-seeding to another location in the garden and would need to be moved, while others will simply mature in size. Be aware that some native species of plants are aggressive (like our native asters or Jerusalem artichoke) and can take over a perennial flower bed. Contact the native plant nursery or a respected botanist for advice about which species are aggressive.



**Myth Number Three:** *A wildflower's natural habitat must be duplicated for successful establishment.* This is not entirely true. A species' natural habitat should be used as a guide, but many species are quite adaptable. Woodland plants like filtered shade, but, depending on the species, they can be grown in bright or full shade. A species that requires light shade can do well in full sun if it is grown in good, loamy, well-drained soil. Full sun plants need at least six hours of sunlight daily. Pay particular attention to soil type. Plants that need a well-drained, humus-rich soil in their natural woodland habitat need it in the garden as well. In most urban and suburban settings, this means you will have to amend the highly compacted clay soil left after building, or put them in a raised bed. Most prairie plants will do fairly well in unamended clay soils.

**Myth Number Four:** *Wildflowers take years to establish.* This also is not entirely true. If you plant a prairie meadow from seed, it can take up to five years for the meadow to become fully established. However, most homeowners should use potted or bare-root seedlings that will flower the first or second growing season. When planting them, treat these plants just like any other perennial flower. Bare-root seedlings (particularly woodland species) must be planted during the dormant season (late fall through early spring). Potted plants can be transplanted any time, but the best time is spring and fall. Fall planting usually means the plant will flower the next growing season. It is critical to water the plants for the first couple of months after transplanting. You must also practice vigorous weed control, particularly in woodland plantings for several years until the garden becomes established.

Follow these general guidelines to successfully establish a wildflower garden using bare-root or container-grown plants:

- Examine your landscape to determine the amount of sun or shade the plantings will get. Take a soil test to determine the soil pH, and consider this when selecting plants or appropriate soil amendments.
- Choose a natural model to follow. Visit various nearby woodlands or meadows to get an idea of which plants will do best for your yard conditions.
- Select local native species. Try to match species with your local growing conditions. No need to worry about using the USDA hardiness map.
- Purchase plants from a reputable, local nursery. These plants will not have to suffer transplant shock and are more adaptable to local growing conditions. Ask the nursery for the planting stock source to determine if the plants were collected from the wild.
- Create a favorable growing environment. Prepare a good garden site. Remove existing vegetation, till to 6 inches deep, and prepare for planting.
- Plant following guidelines provided with the planting stock. Water well during the first two months and during major droughts for the first two years.
- Maintain the plantings by weeding and light mulching with organic matter (composted leaves, etc.) during the first two years.

If you follow these simple guidelines, you should be successful in establishing wildflowers in your garden. For more information on creating a natural habitat garden, visit your local bookstore or library, and gather more specific information depending on the type of garden you wish to have in your yard. You may also wish to visit your local county Extension office where they have access to several instructional videotapes on wildflower gardening.

*This publication was sponsored by grants from the Garden Clubs of Kentucky, Inc., Shell Oil, monies supplied by the Robinson Trust through the Department of Forestry, University of Kentucky, and Renewable Resources Extension Act Funding, USDA.*