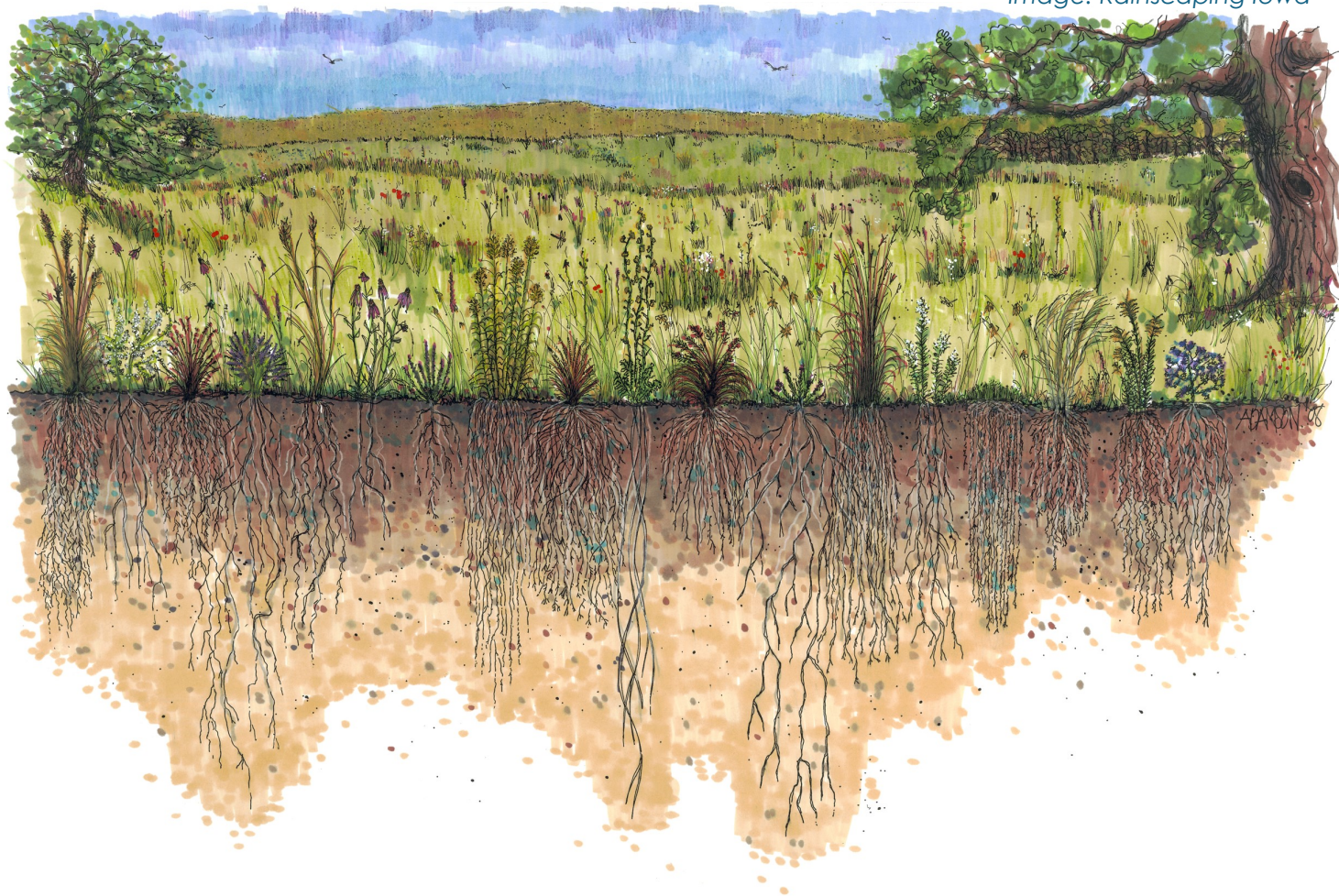




# Native Plants for School and Community Projects

## Volunteer Growing Program

Image: Rainscaping Iowa



## A Volunteer's Guide to Growing Native Plants

# Why Native Plants?

Information compiled from [www.blue-thumb.org](http://www.blue-thumb.org); [www.rainscapingiowa.org](http://www.rainscapingiowa.org); and [www.pollinator.org](http://www.pollinator.org)

Hundreds of years ago, before modern settlement disturbed its natural habitat, Wisconsin was covered in native grasses, flowers, and trees indigenous to our region, that over time, have developed complex relationships with the local organisms and ecosystems. Losing one species in this complex web can have huge impacts on the other species and the local environment. While much has been lost, we can help replenish species diversity by incorporating native plants into our parks, yards, schools and other urban and rural landscapes.

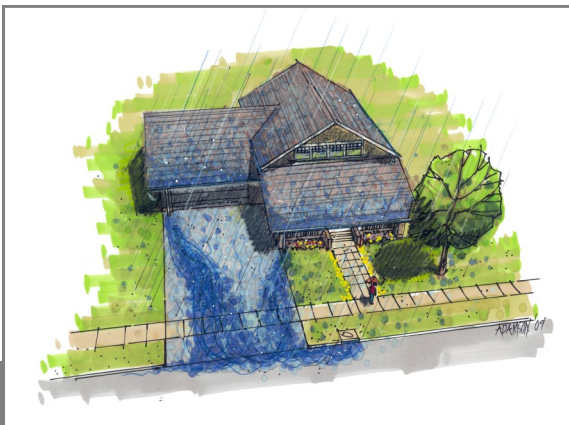
Native plants are adapted to the local climate and soils, are drought tolerant and disease resistant, and have deep root systems that help infiltrate rain water. Once established, native plants are aesthetically pleasing and require little watering, fertilizing and mowing. The reduced maintenance can lead to significant cost savings when compared to labor-intensive turf grass. They also provide important ecosystem services such as improved water quality and habitat and food for local wildlife, including numerous pollinator species.



Image: [Rainscaping Iowa](http://RainscapingIowa.org)

## Impacts on Water Quality

In natural, native plant-covered landscapes, rain soaks into the ground gradually. However, today much of the land is covered by impervious surfaces – such as streets, parking lots, roofs, compacted turf grass, and heavily tilled agricultural fields – where the water cannot soak into the ground. Instead, water runoff flows over the land, picking up pollutants, sediment, and nutrients along the way and transports them to streams, rivers, and lakes.



**Stormwater runs off of impervious surfaces and into stormdrains.**

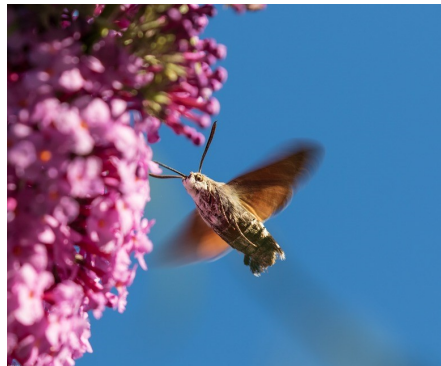
Image: [Rainscaping Iowa](http://RainscapingIowa.org)

One of the nutrients transported with runoff is phosphorous, which can cause excessive algae growth in water bodies. Algal blooms are unsightly, pungent, and potentially dangerous. People often do not want to swim, boat, or fish in this water, which is detrimental to local economies that rely on tourism. The algae can also produce toxins that may cause skin rashes, respiratory infections, stomach problems, paralysis, and (in worst cases) death of humans and animals. The deep root systems of native plants help decrease soil compaction and infiltrate water back into the ground, reducing stormwater runoff and the transport of excess nutrients and pollutants to nearby water bodies.

## Impacts on Pollinators

In their 1996 book, *The Forgotten Pollinators*, Buchmann and Nabhan estimated that animal pollinators are needed for the reproduction of 90% of flowering plants and one third of human food crops. Each of us depends on these industrious pollinators in a practical way to provide us with the wide range of foods we eat. In addition, pollinators are part of the intricate web that supports the biological diversity in the natural ecosystems that help sustain our quality of life.

Unfortunately, the numbers of both native pollinators and domesticated bee populations are declining. They are threatened by habitat loss, disease, and the excessive and inappropriate use of pesticides. Planting native plants and reducing pesticide applications that often accompany the traditional residential lawn maintenance regime can provide important food sources and habitat for the pollinators upon which we so heavily rely.



## How Will the Plants be Used?

The plants you grow will go to schools and organizations within Dane County that apply for plants through this program. Applications that demonstrate high water quality and educational benefits will be given priority. Plants will be matched with groups according to their project needs (raingarden, pollinator garden, etc) . Plant recipients will receive planting and care instructions and must sign a document stating their commitment to planting, watering and caring for the plants for the first two years after planting.



Photo: Catholic Multicultural Center

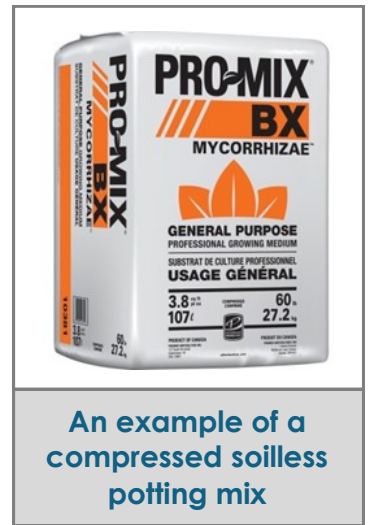


Photo: Lisa Eiche

# Backyard Growing Steps

## Supplies Needed

- Seeds\*
  - Milk jugs
  - Box cutter
  - Phillips screwdriver
  - Soilless potting mix
  - Bucket
  - Trowel
  - Duct tape
  - Pots and Trays\*
  - Plant labels\*
  - Pencil
  - Garden marker\*
  - Spray bottle
- (Items with a \* will be supplied to volunteers)*



An example of a compressed soilless potting mix

## Soilless Potting Mix

It is possible to sprout seedlings using soil right from your garden but for this program we ask volunteers to use a soilless potting mix for several reasons:

- When using soil from your garden, you don't know what else might be in the soil, such as disease spores, bacteria, weed seeds, jumping worms, or other unwanted materials.
- Soilless mix has better drainage and provides a less compact material which helps with the seedling's root development.
- Soilless mix is not as heavy as soil making the trays easier to transport and move around.

Many of the local home and garden stores sell a soilless potting mix. Call ahead to make sure they have it in stock to save yourself a trip. Some of these mixes are compressed and give you a large amount of material.

## Obtain Seed

For this volunteer program, Dane County will be providing you with all the seeds you need. You will have the choice as to how many different varieties you want to grow. Please only use seed provided by Dane County for this program. If you would like to learn to collect your own seed, please see the section titled "Collecting Your Own Seed".

## Winter Sowing

*Information compiled from Prairie Moon Nursery*

The seeds of many native plants have built-in dormancy mechanisms which protect them from germinating before killing frosts or in times of drought. In the wild, seeds will lie dormant until the proper conditions for growth occur, and we will need to simulate these natural conditions in order to have successful germination. Most prairie species first require a period of cold, moist conditions (winter) in order to germinate; this is referred to as stratification.

To stratify the seeds, we will use a method called winter sowing, which utilizes two things: mini greenhouses (recycled milk jugs) and Mother Nature. Essentially you will plant the seeds in late fall or early winter, put them outside for the winter, and they will germinate and sprout in the spring. Easy! Follow the "Winter Sowing Steps" on the next page to walk yourself through the process.

# Winter Sowing Steps

1



Use a box cutter to cut your milk jug starting at the base of the handle (approximately 4 inches from the bottom of the jug). Cut around the jug leaving a couple inches of plastic near the handle area, so the jug can flip open.

2



Punch drain holes in the bottom of the jug using a Phillips screwdriver, drill (approx. 1/4 inch drill bit) or other pointy object (a corn cob holder works well); 10-15 holes should be sufficient for adequate drainage.

3



Add some of your soilless potting mix to a bucket, add some water, and stir until the moisture is well distributed. Keep adding water until the potting mix starts to clump together but don't let it get overly wet.

4



Fill the base of the jug up (approximately 1 inch from the top) with the pre-moistened potting mix. Pat this down gently so you have a flat surface to place your seeds on.

**5**

Spread one species of seed over the potting mix and cover with a light layer of the dry potting mix. Larger seeds can be covered with up to ¼ inch. Smaller seeds should have a thinner layer; and very tiny seeds should not be covered at all.

The seed packets might have more seeds than you need – you don't need to use them all. Try putting less seed in each jug or even using a few jugs for each species so they have more room to spread out.

**6**

Use a spray bottle to moisten the top of the seed bed. Using a spray bottle ensures the seeds are not disturbed.

**7**

Add a plant label to the inside of the container with the name of the species.

**8**

Use a piece of duct tape a few inches long to tape the jug shut. There is no need to tape all the way around the jug; you want gaps where air and rain/snow can get it. Leave the cap off the jug. Write the species name on the jug. This can wear off over the winter which is why we also added a plant label to the inside of the container.

Place the jug outside in a sunny location for the winter. To **prevent the spread of jumping worms**, do not place the jugs directly on soil or grass. Place them on a hard surface (concrete, patio, etc), on a tarp or raised off the ground on a table or shelf. It is fine if they get covered by snow.

## Overwintering Tips

- Make sure to plant the seeds giving them enough time to overwinter outside in the cold. Each species has a germination code that says how long of a cold period they need (e.g. C 60 = 60 days of cold).
- Store the milk jugs somewhere where they will get some snow or shovel snow on them if they are under an overhang. If it is a very dry winter, you can use a spray bottle to water them lightly if they look dry. Many of the species need a cold, moist period so the snow helps add moisture to the containers. If the jugs feel really light, they are probably too dry.

## Spring Sprouting

In early to mid-March, move the jugs to a sunnier location (if they are in the shade) and give them some water if they are not moist. If the spring is dry and they aren't getting rain water, you should keep doing this as the weather warms so the soil is consistently moist. Once plants start to emerge (usually early April) you can pull the tape off the jug and flip open the top on warm days (above 50 degrees). Keep the top on the jug until the threat of freezing temperatures and frost are gone (mid-May); that way you can flip the jug closed again if there is a frost/freeze danger. After that you can cut off the top off the milk carton. As the seedlings are growing, keep the soilless potting mix moist and remove any weeds that emerge.

## Transplanting

Once the plants have at least two sets of true leaves, you can begin to transplant them into the pots. Don't wait too long to transplant. If the jugs have a lot of seedlings, the seedlings might not grow very large until they are transplanted. Keep them out of really intense, direct sunlight for a week or so after transplanting to reduce the shock.

## Transplanting Steps

1



Add some of your soilless potting mix to a bucket, add some water, and stir until the moisture is well distributed. Keep adding water until the potting mix starts to clump together but don't let it get overly wet.

2



Fill the pots with the potting mix and gently press down with your fingers.

# 3



Use a pencil to make a hole in the middle of each pot so that there is space for the plant roots.

# 4



Use a trowel or spoon to loosen the soilless potting mix around seedlings in the milk jug. Gently dig out a plant and separate its roots from the surrounding plants. If they are very tangled, soaking the roots briefly in water can help loosen them.

*Note: As you separate the plants, please be on the lookout for jumping worms in the containers. If jumping worms are present, you may see soils that resembles coffee grounds. If you think jumping worms may be present, contact us.*

# 5



Insert the plant into the hole in the pot and gently move and press the soil around the roots so they are covered. Try to plant at the same depth as it was growing in the jug. The part of the stem that was exposed in the milk jug should stay above the surface of the soil.

Make a plant label (or reuse the one from your milk jug). Only one label per species per tray is needed. You **do not** need to label each individual pot.

# 6



Water gently. A good way to do this is to poke a hole in the top of a water bottle so you have a very light stream of water. Water around the edges of the plug cell so you don't accidentally wash the soilless potting mix off the roots.

Place the tray with the seedlings outside in a sunny location.

Make sure to water the plants diligently over the summer (trays will require daily watering in the heat of the summer) to make sure the potting mix doesn't dry out.



## Transplant Care

### **Light and Water**

Familiarize yourself with the light and water requirements of the species that you are growing. If one of your species needs shade or dry soil, take care not to place it in a spot that is always sunny or overwater it. Shade cloth can be used to artificially create shade if needed. Ideally, you should select species to grow that fit the conditions you have in your growing area (e.g., shady deck vs sunny patio).

Once plants get really large, they will probably need to be watered daily. Moving them out of a very sunny location into a partial sun location can help them from drying out as quickly. Large plants that have filled their pots with roots can be hard to water because the water doesn't soak in very effectively. Placing a tray underneath and filling it with some water allows the plant to suck water up from underneath.

Make sure if you are going on vacation you have a backup person for watering! We don't have the capacity to come and water your plants or ask another volunteer to take that on, so please plan ahead.

### **Nutrients**

You do not need to add fertilizer or additional nutrients when you transplant the seedlings; however, over the summer you may start to see signs of nutrient deficiency as the plants grow. If this happens you can add a small amount of diluted fertilizer (a weak solution of water-soluble fertilizer like Miracle-Gro; fish-emulsion, seaweed, or compost products are good organic alternatives) to provide additional nutrients for the seedlings.

### **Weeds**

You may start to see weeds sprout in your plug trays or pots. These should look different from the rest of your plants and be easily identifiable. Remove weeds from trays so they don't take nutrients away from your native plants.

### **Flowers**

Some species grow more quickly than others. If your seedlings start to get large or develop flowers, you can pinch or clip them back. This will cause them to put more energy into root development instead of producing flowers. Be sure not to pinch or clip below the first set of true leaves of the seedling.



## Returning your Plants

We will schedule a date in late summer/early fall for you to bring the plants back to us so we can combine them with plants from other volunteers and distribute them to the community partners.

The county will give all of the community partners planting and care instructions. You are welcome to offer to help them with their planting activity if you would like – I am sure many would appreciate it! Please let us know if you would like to volunteer to help with a planting project and we can help put you in touch with the groups.

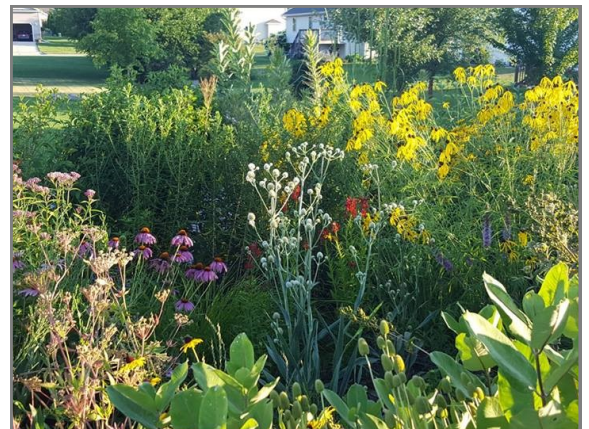
## Gardening with Native Plants

*Includes information from: [www.tallgrassprairiecenter.org](http://www.tallgrassprairiecenter.org)*

*(Volunteer growers are welcome to purchase their own tray and transplant any remaining seedlings they may have for their own use.)*

Adding native plants to your own landscaping is a great idea. Native plants will bring beauty and abundant wildlife to your yard (or schoolyard) and bring you great enjoyment.

There are several ways you can introduce natives into your yard. First, if you have existing landscaping, you could add in some native plants in what might be a more formal or planned setting. Even if you are able to incorporate only some natives into your existing landscaping, you will be providing much needed food and habitat for the local fauna. If you have more space to work with, you could create a larger native garden, or prairie area. Again, this could be done in a more formal manner by planning out where each plant will go and grouping plants together in an aesthetically pleasing way; or you could plant things randomly for a more wild or natural look. Finally, if you have an area that could be used to temporarily collect and store rain water runoff from paved areas or rooftops, you could create a rain garden using your native plants. Rain gardens are shallow depressions, often planted with native plants because of their deep root system and tolerance to temporary flooding, that collects water so that it can soak into the ground rather than flowing across the landscape carrying nutrients and pollutants to nearby water bodies. There are many great publications that can help you start a rain garden (see the publications section on page 12).



**A native garden infiltrates more water than turf grass and attracts pollinators**

*Photo: Theresa Nelson*



**A rain garden infiltrates rain water, reducing stormwater runoff.**

No matter how you choose to incorporate native plants into your landscaping, you want to keep a few things in mind:

1. Understand your sun exposure. Many native plants, such as your typical prairie plants, like lots of sun. Planting natives that prefer sun in a shady site may lead to disappointment if they fail to flourish in a less-than-ideal location. The same goes for plants that need shade.
2. Understand your soil conditions. Certain plants do better on dry sites; some do better in wetter areas. You will often see the following terms used to describe soil moisture conditions:
  - W (Wet) – soils that are soggy or wet most of the growing season
  - WM (Wet Mesic) – soils that are wet in spring and winter after rainfall but dry out during the summer
  - M (Mesic) – soils that remain moist during the growing season
  - DM (Dry Mesic) – soils that dry out between rainstorms
  - D (Dry) – soils that remain excessively dry for most of the growing season
3. Understand how big (tall & wide) your plants will likely get. This can be somewhat tricky as the size of most plants depends on the light, soil, and moisture conditions. Generally, most native plants do not require special soil amendments, like compost or fertilizer. If you plant your plants in the appropriate light/soil/moisture conditions, they will likely grow to the sizes shown in literature. If you are looking to do a more formal planting design, you will want to pay attention to the ultimate heights of your plants. Generally you will want to put shorter plants at the front of your planting and taller ones towards the back or center, depending on viewing orientation. You will also want to give your plants enough space to grow. Most plants need to be spaced at least one foot apart; larger plants may need more space.
4. Understand the bloom time of your plants. Decide whether you would like plants with similar bloom periods to be adjacent to each other or scattered about your planting. Choosing a variety of plants with bloom times that span the growing season will ensure continuous floral beauty for you and a continuous nectar and pollen source for insects and pollinators.



Photo: Theresa Nelson

Native plants can be planted into the ground at almost any time of the year with the exception of late fall and winter. Ideal planting time is early spring, as this gives the plants roots all summer to get established before winter; but any time throughout the summer up until about mid-September are still good times to plant. Remember if planting outdoors in the heat of the summer, your plants will require diligent watering to keep them from drying out.

Here are some tips and guidelines for planting your native plants:

1. Water your plants in the tray thoroughly before planting. This will make them easier to remove from the planting trays.
2. Dig a hole about two to three times the size of your plug. A three inch drill-powered planting auger can make quick work of the job if you have a lot of plants to put in.
3. Remove the plant by gently squeezing the pot sides. Be careful not to pull or pinch the stem of the plant. Gently tease apart the roots if they are tightly bound together.
4. Hold the plug in the hole so the level of the surrounding soil is the same as the soil around the plant. Fill in soil around the plug and press firmly around the base of the plant; again, be careful not to pinch the stem.
5. Water the plant gently and thoroughly to settle the soil around the plant roots. Continue to water in between rain events for the first year of your planting. After your plants are established, supplemental watering may only be necessary during prolonged drought periods.

## **Collecting Your Own Seed**

*Includes information from: [www.tallgrassprairiecenter.org](http://www.tallgrassprairiecenter.org)*

*Make sure you get the proper permission before collecting seeds on public or private property.*

Familiarize yourself with the native plants in your local areas and their life cycles. Understanding when flowering, seed formation and seed maturity will occur, as well as how the seeds are dispersed, will help you during the collection process. It can help to scope out an area while the plants are flowering so you can more easily identify them when in seed.

There are references that list approximate times when seeds for various species are ready to harvest. These are good guides, but timing can vary by several weeks depending on the weather and conditions. One way to tell for many native plants is to look for dry seedheads. The former flower, now seedhead, will be dry along with a portion of the stalk immediately below it. Others that disperse by wind will appear dry and fuzzy at maturity (i.e., milkweeds, asters, and others) and should be harvested right at this stage or else Mother Nature will carry them away and plant them herself. Generally, look for seeds that are dry, hard, and dark in color; and do not collect during wet conditions.

Collecting seed by hand can be done a number of ways, depending on the plant. Some plants hold their seeds in upright “pods” (i.e., columbine, foxglove, etc.). These can either be turned over and dumped into a collection bag, or clipped off and the entire pod collected. Prickly seedheads are best collected by clipping the entire seedhead off the stalk and cleaning the seeds out of the seedhead at a later time, once it has dried a bit more. Grass seeds can usually be hand stripped, or stripped off the stalk using a common plastic comb.

For all these methods, gloves and shears will make the process much easier. Brown paper bags are good for seed collection because they are breathable and allow the seeds to continue to dry once collected. Be sure to label the bag with species name, location, and date collected. In order to ensure some genetic diversity, seeds should be collected from several different plants within a plant community. It is advisable to limit the amount of seed taken from any one given plant. Taking one third (or less) of the seed ensures that the plant will sustain itself for future enjoyment and harvest.

Dane County offers a number of seed collection opportunities in September and October. We will share those dates with all volunteer growers so that you can attend and learn how to collect seed if that is of interest to you. All collected seed is used on Dane County properties to help restore and improve our landscapes.

## **Cleaning and Storing**

*Information compiled from Tallgrass Prairie Center*

Drying seeds immediately after collection will help prevent mold and mildew. Seeds can be placed in paper bags or spread out on newspaper in a cool, dry place with good air circulation. If using paper bags, leave tops open and turn the contents once or twice daily and don't pack the seeds in too tightly or air won't be able to circulate.

Once dry, you can move on to cleaning: the process of separating the seed from the rest of the seedhead. If you collected your own seeds, much of the bulk material that you collected may be non-seed floral parts, leaves or stems. Some species are more challenging to clean than others, and others may not require cleaning at all. Seeds contained in seed pods may only need to be dumped out of the pod; while species like purple coneflower make take a bit more work to remove the seeds from the seedhead. “The Prairie in Seed” by Dave Williams is a great reference and gives information regarding dormant plant identification, seed description, and advice on harvesting and cleaning seed for many of the common native prairie plants.

After you have separated the seed from the rest of the plant material, the seed can be stored in an airtight container under refrigeration (33–38°F) or in an open container in a cool, dry, rodent-proof place for up to a year. If stored appropriately, seeds can remain viable for several years.

## Publications

### Native Plants

Wildflowers of Wisconsin and the Great Lakes Region: A Comprehensive Field Guide by Merel R. Black and Emmet J. Judziewicz.

Prairie Plants of the University of Wisconsin-Madison Arboretum by Theodore S. Cochrane

### Seed Collection

The Tallgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest by Dave Williams

The Prairie in Seed: Identifying Seed-Bearing Prairie Plants in the Upper Midwest by Dave Williams

**Additional web resources have been compiled in an online folder:**

<http://tinyurl.com/DaneNativePlants>

## Volunteer Time Tracking

Please record your volunteer hours using the sheet below. This helps the Land & Water Resources Department track the cumulative impact of water-related volunteer activities in Dane County. We will contact you for this information at the end of each calendar year.

Date	Hours	Notes (optional)