



South Dakota

Soil Health Coalition

Backyard Pollinator Gardens

There are many reasons why pollinators are important for our own health and why healthy soil and pollinators are connected. Pollinators help contribute to a diverse plant community which in-turn increases the health of your soil. Listed below are a few interesting facts about the need for pollinators.

- ▶ **More than 100 crops in North America need pollinators.**
- ▶ **One out of every three bites of food is dependent on pollinators.**
- ▶ **More than 75% of flowering plants depend on pollinators.**
- ▶ **More than \$200 billion per year impact on the global economy.**

Pollinators

Bees are one of the most important pollinators in the world. There are over 4,000 species of bees in North America and hundreds of species in South Dakota. Over 90% of the bees are solitary, but some are communal or social bees like honey bees and some bumblebees. About 30% of solitary bees use locations like abandoned beetle tunnels in old logs for nesting and 70% nest in the ground.

Butterflies are another important pollinator in South Dakota and habitat provided for either will benefit both and also benefit your garden.

Garden location and maintenance

The best location for a pollinator garden has a mix of full and partial sun. Provide a place for butterflies to rest and bask in the sun. Butterflies need sun for orientation and to warm their wings for flight. Flat stones placed in a sunny part of the garden provide butterflies with an area to enjoy the sun. Butterflies often congregate on wet sand and mud to partake in “puddling,” drinking water and extracting minerals from damp puddles. Place coarse sand in a shallow pan and then insert the pan in the soil of your habitat. Make sure to keep the sand moist.

Provide an area of bare or nearly bare soil that is undisturbed for ground nesting bees. Mulching your garden is a good idea for moisture retention, weed suppression, and soil health but many ground nesting bees require an area of well-drained bare ground. The area does not need to be large or exposed to the wind, a small area about 12 inches square will be sufficient.

Avoid areas with a strong history of noxious weeds and try to locate the garden in an area with good soils that are not too wet. A garden near other existing habitat is better than an isolated island of habitat.

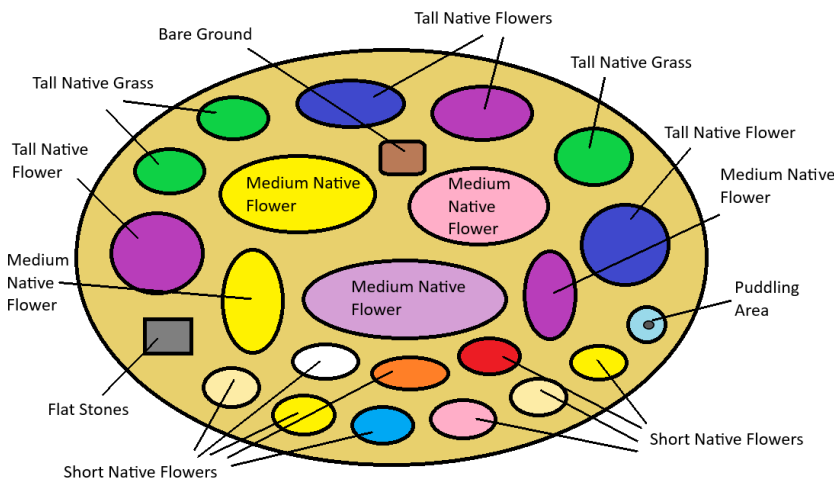
Leave residual vegetation (dead stems) in the garden until warm weather arrives in the spring. Many cavity nesting pollinators use dead hollow stems for nesting. Beds can be cleaned once the weather has warmed in the spring and any extra stems or leaves that are not left as mulch can be added to a compost pile.

Plant good nectar sources in the sun. Your key butterfly nectar source plants should receive full sun from mid-morning to mid-afternoon. Butterfly adults generally feed only in the sun. If sunshine is limited in your landscape, try adding butterfly nectar sources to the vegetable garden.

Garden design

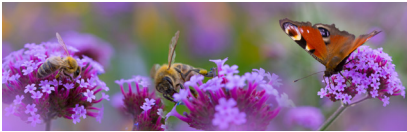
- Place taller flowering plants and native grasses towards the back of the flower bed and shorter plants towards the front. This allows better growth and more sun to reach the flowers.
- Use bloom date guide included in this document and have at least one species blooming during all seasons, from April to October.
- Place clusters of each species (4-6 plants) rather than random scattered plants. Pollinators are more attracted to a cluster of plants that are blooming at the same time.
- Use the bloom color guide to select several different colors of flowers rather than all one color such as yellow or purple.
- Cover the garden area with a thick layer of mulch after planting (if using plugs or potted plants) or wait until seedlings have developed before mulching if using seed. Make sure to leave at least one bare ground area for ground nesting bees.





Remember

- In large plantings, as many species that are available should be the goal.
- In smaller gardens, at least one species should be in bloom all season long.
- Seeds are best in large plantings – plugs or potted plants work well in smaller plantings.
- Plant native species when possible. They require less water, produce better nectar and are a better pollen source.
- Plant species that bloom from April to October.
- Include 10-20% native grasses in large plantings.
- Create clusters of the same species in small plantings.
- Some species require special conditions for germination.



This information was compiled from sources including the U.S. Department of Agriculture Forest Service, North Dakota Game and Fish, U.S. Department of Agriculture, the Minnesota Board of Water and Soil Resources, USDA Natural Resources Conservation Service, the Pollinator Partnership, and the Xerxes Society.

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The South Dakota Soil Health Coalition is a producer-led, non-profit, membership organization that was created in the spring of 2015. The Coalition is governed by a nine-member board of farmers and ranchers from across the state and includes several staff members. Staff and board members strive to carry out the Coalition's mission to "Promote improved Soil Health" through education and research.

Blooming Month and Color							
Common Name	APR	MAY	JUN	JUL	AUG	SEP	OCT
Heart-leaf Alexander	Yellow	Yellow					
Pasque	Purple	Purple					
Golden Alexander	Yellow	Yellow					
Large Beardtongue		Purple	Purple				
Prairie Smoke		Purple	Purple				
Scarlet Globemallow		Red	Red				
Downy Paintbrush		Yellow	Yellow				
Narrow-leaved Coneflower			Pink	Pink			
Wild Licorice			Yellow	Yellow			
Prairie Rose			Pink	Pink			
Swamp Milkweed					Pink		
Butterfly Milkweed			Orange	Orange	Orange		
Common Milkweed			Pink	Pink	Pink		
Leadplant			Purple	Purple	Purple		
Scarlet Gaura			Pink	Pink	Pink		
Blanketflower			Red	Red	Red		
Showy Milkweed			Pink	Pink	Pink		
Silverleaf Scurfpea			Blue	Blue	Blue		
Purple Prairie Clover			Purple	Purple	Purple		
Anise Hysop			Blue	Blue	Blue	Blue	
Common Yarrow			Yellow	Yellow	Yellow	Yellow	
False Sunflower			Yellow	Yellow	Yellow	Yellow	
Hoary Vervain			Blue	Blue	Blue	Blue	
Wild Bergamot			Purple	Purple	Purple	Purple	
Plains Coreopsis			Yellow	Yellow	Yellow	Yellow	
White Prairie Clover			Yellow	Yellow	Yellow	Yellow	
Black-eyed Susan			Yellow	Yellow	Yellow	Yellow	
Blue Vervain			Blue	Blue	Blue	Blue	
Dotted Blazing Star			Purple	Purple	Purple	Purple	
Grayheaded Coneflower			Yellow	Yellow	Yellow	Yellow	
Ironweed			Purple	Purple	Purple	Purple	
Joe Pye Weed			Purple	Purple	Purple	Purple	
Maxmillian Sunflower			Yellow	Yellow	Yellow	Yellow	
Prairie Blazing Star			Purple	Purple	Purple	Purple	
Rocky Mountain Bee Plant			Purple	Purple	Purple	Purple	
Missouri Goldenrod			Yellow	Yellow	Yellow	Yellow	
Whorled Milkweed			Yellow	Yellow	Yellow	Yellow	
Stiff Sunflower			Yellow	Yellow	Yellow	Yellow	
Meadow Blazing Star			Purple	Purple	Purple	Purple	
New England Aster			Blue	Blue	Blue	Blue	Blue
Showy Goldenrod			Yellow	Yellow	Yellow	Yellow	Yellow
Smooth Blue Aster			Blue	Blue	Blue	Blue	Blue
Stiff Goldenrod			Yellow	Yellow	Yellow	Yellow	Yellow
White Heath Aster			Yellow	Yellow	Yellow	Yellow	Yellow