

Prairie Blazing Star

Liatis pycnostachya



PLANT NOTES

A variety of bees, butterflies, moths, and skippers utilize the nectar.

Upright, clump-forming plant. Distinct flowers open top to bottom on the spikes. 3/4" wide flower heads, typically numbering 5 to 60 appear on a dense spike. Blooms late summer to early fall months.

Photos: Shutterstock



Chapter 8

Maintaining a Rain Garden



Make a Plan for Maintenance

Routine inspection and maintenance are crucial for the lasting function and appearance of a rain garden. Maintenance protects the owner's financial investment of installing a rain garden and prevents costly rehabilitation.

Typical maintenance includes pulling weeds, pruning plants, replanting, mulching, and removing sediment and debris. This chapter includes guidance for important points of inspection and maintenance tasks that will need to be performed in order to keep the rain garden functioning properly and looking great. A maintenance checklist is provided in Appendix J of this guide. Consider the following quick tips:

Photo: Elizabeth Bella, AECCOM



Quackgrass is a weed that can appear in rain gardens.

- **Get familiarized with your rain garden plants.** When plants are young, take photos and make your own plant ID book for your garden. Throughout the year, take photos at different points of maturity for reference so that you can easily distinguish your rain garden plants from weeds.
- **Monitor the rain garden for standing water after 24 hours of a rainfall event.** If rainwater is still standing after 24 hours, it may be an indicator that the rain garden is not functioning properly.
- **Supplement plantings as needed.** Be prepared to replant or replace some plants over the course of the first two to three years. Some species may not survive due to extreme weather conditions or may spread too rapidly.
- **Be prepared to manage leaves.** Excess leaves could clog the delivery of rainfall runoff to the garden, smother plants, and impact infiltration.
- **Gutters should be cleaned out regularly.** Any downspouts or drainpipes that deliver rainwater to the rain garden should be cleaned out to avoid backups.



Protecting Newly Established Plants

Rain gardens are designed to pond water for a short period of time. However, ponded water can be harmful to newly established plants after construction of the rain garden is complete. For that reason, some rain gardens are kept "offline", which means that rainwater is temporarily redirected away from the rain garden. Downspouts designed to direct rainwater to the rain garden are not connected to the rain garden temporarily. If the rain garden is designed to take street runoff, cut curbs after plants are established.

Photo: Polk SWCD



Downspout disconnected to temporarily have rain garden "offline".

Photo: Polk SWCD



This rain garden is online with downspouts connected to underground drain pipe.

Keeping rain gardens "offline" prevents young plants from receiving too much water if heavy rainstorms occur. However, during the first few months be prepared to water a rain garden if timely rainfall does not occur. Water at least once a week if it does not rain at least one inch per week. Monitor rainfall using a simple rain gauge and observe how much rainwater is reaching the rain garden during rainfall events.

In general, rain gardens featuring plants native to Iowa should not require extensive maintenance once plants are fully established. This typically takes three or four years. Reducing long-term maintenance can be minimized if weeds are diligently pulled during the first few years. This is because weeds will not compete well against vigorous, deep-rooted native species.

"Is that a native plant or a weed?"

To assist homeowners with plant and weed identification for rain gardens installed with native species, the Iowa Stormwater Education Partnership (ISWEP) has created a pocket-size field guide for quick reference. Contact ISWEP to inquire about ordering hard copies. A free, complimentary mobile application is also available for download in the Google Play Store and the Apple App Store. Scan the QR code to download today! More detailed information can be found on www.iowaStormwater.org. Other mobile apps are available, too, that can identify a plant by taking a photo of it.





Inspection Points and Maintenance Tasks

Inlet and Pre-Treatment Area (If Installed).

Once a month during the growing season and after major storm events, inspect the area for excessive deposition of sediment and debris and signs of erosion and scouring. Checking these areas is especially important during the spring and fall.

- Remove litter, trash, debris, and sediment to prevent water from bypassing designated inlets and pre-treatment areas.
- Sod or native pre-vegetated mats can be installed on larger projects to prevent erosion in pre-treatment areas. They can also save on labor for weeding.

Base of Rain Garden. Check for ponded water 24 hours after a rainfall event. Ponded water for extended periods of time is an indicator that soils may have become plugged with sediment or heavily compacted due to human, animal, or vehicle traffic. This will prevent rainwater from effectively draining.

Check for fallen leaves and debris during the growing season and after major storms. Inspect distribution of mulch inside the rain garden and along slopes. Mulch and debris can smother plants and restrict growth if it becomes too concentrated.

- Remove litter, trash, leaves, and debris from the base of the rain garden.
- Spread shredded hardwood mulch evenly throughout the entire rain garden area. Mulch should be two to three inches thick.
- Clean out any debris and recheck drainage. If standing water is still present after 24 hours, the soils in the base of the garden may have to be replaced with amended soils. For this process, excavate and remove six or more inches of soil and replace with amended soil. In some cases, punching a few holes in the base of the rain garden with a post hole digger will suffice. Fill the holes with topsoil and cover with mulch.

Photo: ISWEP



Grass filter strip used for pre-treatment area.

Photo: Polk SWCD



Rain garden showing temporary ponding after a rainfall event.

Photo: Polk SWCD



Ensure rain gardens drain within 24 hours.

Newly Established / Young Plants and Trees. Young plants may be impacted if too much water or not enough water is entering the rain garden. Wilting of leaves is a good indicator of issues.

- Check for at least 75 percent vegetative cover upon establishment of new plants at the end of the first growing season. A healthy rain garden should have complete vegetative cover after the end of the third growing season.
- Remove dead vegetation during the spring or fall. Replant as needed to maintain desired vegetative cover in the rain garden. It is recommended during a fall cutback that some plants remain as winter habitat for pollinators. Some plants can also remain over winter based on personal aesthetic preferences.

Photo: Polk SWCD



Plugs recently planted in an enhanced rain garden.

- Pull weeds monthly during the first three years after installation. Reducing weed competition early and getting plants well established is needed to reduce maintenance over time.

Established / Mature Plants and Trees. Inspect older plants if they appear “leggy” or floppy or portions are dead. Inspect the base of mature plants and trees for undesired saplings.

Photo: Polk SWCD



Well established enhanced rain garden.

- Mature non-native plants may be “deadheaded”, which is the act of cutting off the old flower heads after a plant is done blooming. Deadheading can be used for most flowering plants and some perennials.

- Pruning of mature trees and shrubs should be completed in the fall or early winter. If plants are getting overgrown, some plants can be easily split and placed elsewhere in the rain garden to fill in bare spots. However, native plants have long roots, so transplanting may not be an option.

Photo: ISWEP



Removing unwanted tree saplings.

- Replace diseased or dead plants. Remove basal shoots, root suckers, and volunteer trees close to the ground. Herbicide treatment may also be necessary. If volunteer trees are a big problem, stump killer can be put on cut tree stumps to restrict growth.

Overflow Structure (Enhanced Rain Gardens Only). Inspect the overflow structure and grate for obstructions preventing flow into the pipe. Inspect where the structure daylights to ensure the animal guard is in place and clear of debris.

- Remove debris and trash from the grate or within the overflow pipe as needed.

Berm and Retaining Wall. Check on the notch in the downslope berm for overflow from large events. Look for evidence of scour there as well as on the discharge area. These areas may have to be revegetated or reinforced with rocks. Eroded sections of berms can also allow water to enter or exit the rain garden at unintended points that are not stabilized adequately.

- Rebuild and compact berms that have sunk from erosion or natural settling.
- For failing retaining walls, remove bricks or rock and level the trench area. Place bricks on paver sand or pea gravel and re-level. A drainage pipe may be needed behind taller retaining walls to prevent bricks from dislodging, which can be caused by drainage issues.

A Note on Wildlife

Just like a typical flower or vegetable garden, rain gardens can attract birds, deer, and rabbits. Plugs and small plants are especially vulnerable and will need protection until they mature. In the first few years after installation, a fence or other barrier may be needed to keep wildlife out of the rain garden. Where this may be a continuous issue, homeowners should consider selecting plants that aren't preferred by wildlife.



Final Considerations

The most common mistake identified by owners of rain gardens is insufficiently weeding the first year after installation. Annual weeds that are not pulled will re-seed rapidly, creating an unkept looking rain garden. In the end, rain gardens are a functional stormwater practice that also provides aesthetic appeal. If routine maintenance is an obstacle, a rain garden may not be the appropriate practice. Consider other practices such as soil quality restoration that has limited maintenance requirements.

The installation of one rain garden by one homeowner will not have major impacts on reducing hydrologic instability and water quality problems that are present in Iowa. However, the cumulative effect of individual actions can create tangible improvements in local water quality, localized flooding, and streambank stability.