

Save the Rainwater!

--Dave Stack Rain gardens are a great way for both the do-it-yourself homeowner and the large corporation to help reduce, or nearly eliminate, rainwater runoff from their property. Reducing urban runoff improves water quality in lakes, creeks, rivers and oceans. Rain gardens, large or small, also help recharge groundwater, reduce flooding, and add precious green space to cities. Planting with various native species provides an oasis of natural habitats for butterflies, birds and other friends. Sometimes called infiltration basins by civil engineers, rain gardens are simply perennial gardens in slight depressions or swales where rainwater can be captured to soak naturally into the soil. Try to locate your rain garden where runoff water from the roof, driveway, or other hard surface can be directed into it. I have seen small swales and buried tubing used to convey water to the rain garden. Our urban landscape has a large amount of human-made surfaces, such as buildings, streets, and parking lots that greatly increase runoff and significantly reduce soil infiltration. Noted rain garden expert Fred Rozumalski has stated that a study of a native forest area on the East coast showed approximately 10% rain runoff, 50% infiltration and 40% evaporation. Fred went on to say that these results are probably quite similar in Minnesota. Maintaining this natural rainwater infiltration rate along with groundwater recharge helps insure flow at springs such as the wonderful Camp Coldwater Springs in Minneapolis. Depending upon the soil type, groundwater may flow only an inch or two per year in tight clays, or flow several feet or more per year in sandy soils. Some of this infiltrated rain groundwater will eventually move down into deep underground aquifers. Some of this groundwater will move horizontally and eventually become part of the steady base-flow seepage into surface waters such as springs, creeks, wetlands and lakes. A property owner can undertake a large-scale construction project, or can work in small, easy increments. I have chosen to increase my rain gardens slowly and incrementally, adding one or two square feet at a time as new plants are added. My home rain gardens are only a couple of inches deep; however, there are many larger projects that are a foot or more in depth. Excess soil, removed during the creation of the lowered bed rain garden, can often be used beneficially elsewhere in the yard. If the ground surface around the house is flat, the extra soil may improve the drainage slope away from the foundation. If the chosen rain garden area is sloped, extra soil can be packed along the downhill side, thus increasing bed depth with less digging. The yard may gain an interesting feature by building a small hummock, raised terrace, or raised bed garden with the excess soil. Note that you may want to keep good topsoil separate, and then return it as the upper soil layer after excavation. Many people worry about rain gardens causing mosquitoes. This is not a problem because rain gardens do not retain water long enough for mosquito reproduction. Standing water almost always soaks away within a few hours and usually within a matter of minutes. Mosquitoes require a number of days in standing water for reproduction. If water does remain for a matter of days in your rain garden, then your soil is possibly very clayey and/or very compacted. You may be able to remedy this problem by loosening and adding humus in the upper 6 to 18 inches. Some people think that a rain garden will cause basement water problems. One rule of thumb is to place the rain garden at least ten feet from the house. However, soil and groundwater conditions vary greatly from one location to the next. If no moisture problems occur, then you may be able to safely expand the rain garden closer. If basement moisture problems do occur, then you will want to move the rain garden farther away. Some homeowners may be able to get away with literally letting their garden grow wild. But many of us probably have to worry about a city yard inspector who may write a citation for what is thought to be an unkempt weed bed. In this case, one may want to consider such ideas as neat borders, orderly species grouping and placement, regular weeding, decorative fences, walls, walkways and ornamental structures, and neatly maintained adjacent lawn areas. A variety of native wildflowers, grasses, shrubs and trees thrive in the moist soil of the urban yard rain garden. These native plants should get by quite well without the use of chemical fertilizers or pesticides. Environments similar to rain gardens have existed for thousands of years in Minnesota in such areas as flood plains, pond and stream edges, and wet meadows. For the last 200 years, modern human development has not been kind to wetlands. Fortunately, more people every year are appreciating the subtle beauty and usefulness of

various types of moist and wet lands, whether they be permanent or periodic. Following are some native Minnesota plants that do well in a rain garden with full sun: Turtlehead, Boneset, Great Blue Lobelia, Joe Pye Weed, Riddell's Goldenrod, Prairie Blazing Star, Sneezeweed, Queen of the Prairie, Swamp Aster, Blue Vervain, Swamp Milkweed, Obedient Plant and Blue Joint Grass. Sweet Flag does well in partial sun. Marsh Marigold, Wild Geranium, Maidenhair Fern, Sensitive Fern and Wild Blue Phlox will grow in full sun, or partial, or full shade. These native Minnesota plants are among those that do well in a rain garden with full or partial sun: New England Aster, Wild Iris, Purple Coneflower, Cardinal Flower, Fireweed, Yellow Coneflower, Sweet Black Eyed Susan, Golden Alexander, Purple Giant Hyssop, Tussock Sedge, Smooth Blue Aster, Culver's Root, and Mountain Mint. Rain gardens with partial or full shade can have native plants such as: Yellow Trout Lily, Zig Zag Goldenrod, Blue Cohosh, Virginia Bluebells, Wild Violet, Jack in the Pulpit, Bottlebrush Grass, Interrupted Fern, Lady Fern, Hairy Wood Mint and Bellwort. Some Minnesota natives that prefer full shade are: Wild Ginger, Toothwort, Wild Leek, Dutchman's Breeches, Sharp-lobed Hepatica and Sweet Cicely . Meadow Sweet, Steeplebush and Buttonbush are some rain garden shrubs that prefer full sun. Some shrubs that can grow in shade or sun are Black Chokecherry, Red Osier Dogwood, Dwarfbush Honeysuckle, Highbush Cranberry , and Pussy Willow .Red Maple, River Birch, Paper Birch, Tamarack and White Cedar are some trees suited for the rain garden. See Also: Arts: Rain Barrel Arts: Watersheds

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