Curb-Cut Rain Garden Research
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Methods

In 2015 several curb-cut rain gardens were installed in the Alger Heights neighborhood. These gardens receive stormwater runoff from the street gutters through a cut in the curb (Fig 1). We assessed the success of 11 of these gardens, as well as the success of individual species planted within them after 1 year of growth.

Project Description

Objectives

- Identify which gardens are the most successful
- Identify variables that influence garden success
- Evaluate survivorship of native species
- Evaluate performance of native species

Garden Assessment

Between June 7 and 13 we evaluated the gardens by recording growth variables for each species (height, number of leaves, number of stalks, number of buds, clamp width). We also scored each species with a ‘performance’ rating from 1-10, 10 being a species that had filled in well and was seeding in new plants, 1 being a plant that had survived but had grown very little (Figure 3). Garden performance values were generated by taking the mean performance value for each species within a garden.

Species Assessment

To quantify the relative success of species, we measured a random sample of 5 individuals of each species in every garden. We averaged data across all gardens and compared mean values using a Chi-squared test of significance. This allowed for an evaluation of the relative success of each native species that was planted in these urban, curb-cut rain gardens.

Results

Evaluate performance of native species

Hairy Beardtongue (left) has no flowering stalks, no buds, and has spread received a performance value of 1; Liatris (right) has grown wider and taller, is flowering profusely and received a performance value of 10.

Garden by Garden

Garden success was strongly influenced by the addition of compost. Composted gardens had higher performance ratings and survivorship than non-composted rain gardens. Other variables, including amount of care provided by homeowners, volume of water entering the curb-cut, amount of shade or sun, etc., are also likely contributors and should be assessed in future studies.

Species

The best species to use in these urban curb-cut rain gardens are Wild bergamot, Ohio spiderwort, and Pennsylvania sedge, although several others did well too. The species that struggled the most were Butterfly weed and Wild Lupine. Given the popularity of these two species in particular, learning how best to improve their performance should be a priority.

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