

Establishing Wildflower Meadows in New Jersey Detention Basins

The vegetative management of existing storm water detention basins generally falls into one of two categories. Either they are intensively manicured as turf, or they become overgrown with weeds and non-native grasses and ultimately evolve into shrubs or forest. The first management strategy is costly, as it requires frequent mowing and chemical applications to maintain the manicured appearance often desired by adjacent residents. The second vegetation management strategy can be characterized as nothing more than *benign neglect*.

A third vegetation management approach has recently been promoted by the Mercer County Soil Conservation District in New Jersey. They advocate the establishment of wildflower meadows in dry detention ponds, to create a more attractive appearance without the need for frequent mowing. Ten detention basins were planted in 1991 and various establishment techniques subsequently evaluated. The meadows were established with both annual and perennial wildflowers at relatively low cost (from 1/2 to one cent more per square foot compared to conventional hydroseeding of fescue with topsoil amendments).

Soils in most detention ponds are poor, so up to five inches of topsoil was initially added. A nurse crop of Sheep Fescue was established, seeded at a rate of 20 lbs/acre along with conventional seeding or hydroseeding of commercial wildflower mixes at about 10 to 12 lbs/acre. "Clean" straw mulch (i.e., relatively weed-free wheat or barley straw) was applied at 1,000 to 1,500/lbs/acre for initial erosion control and weed suppression.

First year establishment of a wildflower meadow was attained at most sites, as determined by visual surveys. Poor establishment was observed in detention ponds that were subject to frequent inundation (i.e., experiencing more than 48 hours of inundation five or more times during the growing season). This finding suggests that wildflower meadows will be hard to establish in extended detention basins. Seed mixes are available for these wet areas, but they are more costly.

Fertilization did not have a positive effect on wildflower establishment, and may have actually benefited competing weeds and grasses. Annual mowing is required, either in the fall (for maximum seed dispersal) or in the late winter (for maximum winter wildlife cover). Ideally, mowing equipment should be used that cuts at

four inches high, but this equipment is seldom commercially available. Overseeding of annual wildflowers in the spring or perennial wildflowers in the fall is needed to maintain diversity in the meadows over time. Experience has shown that perennial wildflower meadows will become dominated by a few species in three or four years if they are not annually overseeded (Brash, pers. comm.).

Best results were obtained when the meadow was established soon after the construction of the pond. To prevent erosion during pond construction, it may be advisable to use oats or sheep fescue to achieve rapid, temporary vegetative cover during construction (avoiding the more aggressive tall fescues mixtures that are commonly used for this purpose).

For existing detention ponds, it may be necessary to use Roundup® or other herbicides to kill the aggressive grasses and permit the development of the slower-growing wildflower species. A more expensive but non-chemical approach, would be to scrape the top three inches of soil, and replace it with topsoil.

The wildflower meadow approach appears to be an attractive vegetation management option for the drier portions of many stormwater ponds, as long as annual mowing and overseeding are performed.

—TRS

Reference

- Brash, W., C. Halbower, A. Hryncyszyn and L. Ennis. 1992. *Establishment of Wildflower Cover in Stormwater Basins*. Prepared by Mercer County Soil Conservation District. Hamilton Square, N.J. 27 pp.