



Managed Meadows and Grassland Habitats in the City of Alexandria, Virginia

The natural vegetation throughout much of the eastern U.S. is deciduous forest, therefore cleared or open grassy areas that are not maintained as such will eventually revert back to forest. Once an area is left unmowed for a length of time, the process of ecological succession begins with an increasing diversity of grasses and grass-like plants (graminoids); numerous wildflowers such as Goldenrods, Asters, and Milkweeds; Sumacs (*Rhus* spp.) and other shrubs; and Eastern Red Cedar (*Juniperus virginiana*), Virginia Pine (*Pinus virginiana*), and other pioneer trees (Fig. 1). This natural succession to forest is what separates open grassy areas in the east from the true meadows, prairies, and grasslands of the west.



Fig. 1. Variability of shapes and forms of Eastern Red Cedar in meadow in Pendleton County, West Virginia. Photo by R.H. Simmons.

Meadows and glades are extremely important habitats for wildlife and also serve as important preserves for native plants that were once common along woodland edges, open areas, and roadsides but are now increasingly rare (Fig. 2). Meadows and open grassy areas are also important natural buffers in protecting waterways, wetlands, and water resources. As meadows and open areas continue to disappear throughout the east, many plant and wildlife species dependent on open conditions are also declining.



Fig. 2. Tiger Swallowtail and Field Thistle (*Cirsium discolor*), an important native meadow wildflower that was once abundant in Alexandria. Photo by R.H. Simmons.

There are many types of meadows, glades, and open grassy areas, each of which can evolve into a fairly low maintenance, complex ecosystem that supports an abundance of wildlife and native plants. With ecosystem management and the preservation of Alexandria's natural resources and biodiversity the primary goals, natural resource management staff with Alexandria's Dept. Recreation, Parks, and Cultural Activities (RPCA) greatly expanded its Managed Meadows and "No-Mow" Areas program in the spring of 2010.

Under this program, the City amended its mowing schedules at certain sites from a regular schedule during the growing season to a regimen consisting of annual or infrequent mowings, as determined by natural resource management staff. Monitoring sites for invasive exotic plants and accompanying control efforts, if necessary, are integral components of the program. The combination of annual or infrequent mowings and control of invasive exotic plants is usually sufficient to maintain meadows and glades in an open, healthy condition.



Fig. 3. City of Alexandria “no-mow” sign at Fort Ward Park. Photo by R.H. Simmons.

Examples of natural and semi-natural, open to partly-shaded areas dominated by grasses and herbaceous vegetation in Alexandria include low-lying, seasonally-flooded wet meadows along the Potomac River, such as at Daingerfield Island, Hooff’s Run, and along the George Washington Memorial Parkway (Fig. 5); wet meadows and glades along open stream banks; woodland edges and glades, including sandy-gravelly barrens; artificially maintained open areas along railroad tracks; open grassy areas along roadways and highways; and areas of formerly maintained turf grass where mowing was gradually reduced to a low-maintenance level, allowing the re-emergence of native species.

Currently, the City of Alexandria has eight designated managed meadow and “no-mow” areas: former Virginia Native Plant Society, Potowmack Chapter, native wildflower site on the south bank of Four Mile Run near U.S. Rt. 1; eastern end of Mt. Jefferson Park and W&OD Greenway; Upland Park; Telegraph and Duke Meadow (two adjoining areas at the interchange of Telegraph Rd. and Duke St.; Fig. 4); Beatley Library Meadow; woodland glade at Timber Branch Park; extensive grassy areas and swales at Fort Ward Park; and Hammond School Meadow (Fig. 7). Each site is marked with standardized signage designating the area (Fig. 3).

Maintenance programs will vary with differing site conditions, but the preservation of meadow habitats and the overarching concept of “do no harm” are centrally important to what activities are planned.

Best Management Practices for Meadows, Glades, and “No-Mow” Areas

In general, meadows are mowed once annually in late winter or early spring so as not to disturb nesting birds, wildlife, and emerging or flowering plants. Occasionally, meadows may need to be mowed more frequently and during other times of the year.

Creating a regularly mowed buffer around the perimeter of large open meadows is also important in providing easy access to a site while preventing the need to walk into protected areas (Fig. 4).



Fig. 4. Three-acre managed meadow at Telegraph Road and Duke Street intersection, City of Alexandria, Virginia. Photo by R.H. Simmons.

No mowing certainly does not mean no maintenance. All managed meadows and maintained open areas need to be regularly monitored for invasive exotic plants that may become established once regular mowing has ceased. These areas will be overseen and managed by RPCA natural resource management and horticultural staff and included in the overall invasive exotic plant control program. If not actively managed, invasive exotic plants will eventually replace the existing native vegetation and destroy the ecological and aesthetic values of the meadow (see *Inventory and Analysis of Grow-Zone Effectiveness on PRCR and W&OD Public Properties* at <http://alexandriava.gov/48838>).

In some cases, rampant or unwanted growth of valuable native plants, such as Poison Ivy (*Toxicodendron radicans*), Blackberry (*Rubus* spp.), Black Cherry (*Prunus serotina*), etc., may need to be thinned or controlled if maintaining an open condition is desired.

To protect against soil compaction, disturbance, and the spread of invasive exotic plants, sites should not be mowed when the ground is wet (Fig. 5). Wet grassy glades, meadows, and trails along streams and lowlands should not be mowed, except selectively with hand trimmers if needed. To prevent erosion and stream bank destabilization, vegetation along stream banks and steep slopes should never be mowed or cleared non-selectively.



Fig. 5. Wet swale along the George Washington Memorial Parkway near the entrance to Daingerfield Island that is managed as a “no-mow” area by the National Park Service. Photo by R.H. Simmons.

When mowing woodland glades, care should also be taken not to damage tree roots and bark, as well as saplings, shrubs, and other native plants (Fig. 6). Invasive exotic plants also spread and become established in wooded environments through soil and habitat disturbance.

It is the practice of RPCA staff to use an absolute minimum of herbicides and instead employ the principles of Integrated Pest Management (IPM). Indiscriminate or blanket spraying of herbicides is not recommended as a control strategy for any reason.



Fig. 6. Woodland glade at Tarleton Park with extensive colonies of Spring Beauty (*Claytonia virginica*) and other native spring wildflowers that is mowed infrequently. Photo by R.H. Simmons.

Native plants are those that occur locally and naturally, without direct or indirect human intervention. On the rare occasion when seeding or planting is required, only appropriate native species should be used. Planting or overseeding with wildflower “meadow mixes” and exotic wildflower and grass seed should not be considered. For a checklist of plant species native to Alexandria, see <http://alexandriava.gov/22560>.

To effectively preserve natural resources, it is important to differentiate between natural sites and artificial or cultural landscapes and to allow existing seed banks of native plants to grow and sites to naturally re-vegetate (Fig. 7). With the passing years, different plants may dominate but the overall landscape will remain beautiful and interesting.

Reintroducing and re-establishing native meadow plants that were historically known from the City or are rare or in serious decline is an important land management practice by RPCA natural resource management staff that helps maintain biological diversity throughout the landscape. This involves responsibly collecting seed or rescued material from local natural sources (primarily in Fairfax and Arlington counties) and planting in appropriately-matched habitats in Alexandria. Plant reintroduction should never be considered a viable substitute for protecting or properly managing existing rare plant populations.

Prior to establishing a meadow area, a vegetation analysis should be conducted to determine if a site is suitable and if initial invasive exotic plant removal efforts are necessary.



Fig. 7. Diverse meadow on steep, gravelly slope behind Hammond School with warm-season native grasses, such as Purple Love Grass (*Eragrostis spectabilis*) – pink/purple grass in flower – Rosette Grass (*Dichanthelium acuminatum*), Broomsedge (*Andropogon virginicus*), Purpletop (*Tridens flavus*), Poverty Grasses (*Aristida* spp.), etc., and wildflowers. All of the species within this site are naturally occurring and have been gradually “released” from the seed bank once regular mowing ceased. Several species found at this site, including Purple Sneezeweed (*Helenium flexuosum*), Green Milkweed (*Asclepias viridiflora*), and Slender Ladies-tresses Orchid (*Spiranthes gracilis*) are regionally uncommon to rare and are the only known occurrences in the City of Alexandria. Photo by R.H. Simmons.

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