

## Landscape Design with Native Plant Species

### Overview

Many construction projects impact their site to some extent, often requiring modifications to the landscape. The landscape is an integral and highly visible part of the built environment, and as such has to be as thoughtfully designed and maintained as other aspects of the project.

An important aspect of landscape design is the use and maintenance of native, non-invasive plant species. Designers should be cognizant of the benefits of native plants and the negative effects that invasive plant species can have on a site's ecosystem.

The U.S. Department of Agriculture (USDA) defines a native plant species as *a plant that is a part of the balance of nature that has developed over hundreds or thousands of years in a particular region or ecosystem*<sup>1</sup>.

An Executive Order defines an invasive plant species as *a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health*<sup>2</sup>.

### The Impact of Invasive Species

Most invasive plant species have been introduced into ecosystems by humans, either accidentally or purposefully, from outside of the region. This frequently occurred as many invasive plants are found to be attractive or useful. Unfortunately, the presence of invasive species can be detrimental to their new ecosystem in a number of ways, including:

- Reducing native biological diversity by displacing native species.
- Diluting the genetic composition of native species through hybridization.
- Reducing food sources and habitat for native insects and animals.
- Adding to the competition for native pollinators.

The USDA has estimated that invasive species have contributed to the decline of 42% of U.S. endangered and threatened species<sup>3</sup>; as such it is important that designers are meticulous in selecting appropriate plants for a given project.

### Design with Native Species

The design of landscape with native plant species should be thoughtful and the designer should recognize of the impact of the plants on the functional aspects of a site. Some general design tenets for using native plants include:

- Avoid dense groundcover which may provide harborage for rodents.
- Avoid dense planting at building foundations which can reduce air circulation and obstruct pest management activities.
- Avoid plants which attract deer.
- Follow existing Master Plan and other guidance standards.
- Coordinate with maintenance, grounds-keeping, and other activities.

Designing with native species provides numerous benefits to a site's users, owners, and ecosystem. One of these benefits is a reduction in maintenance, because native plants have adapted to local

environmental conditions, and generally require less fertilizer, pest control, and irrigation than invasive species.

Native species vary through each region of the country and are unique to individual ecosystems. The US Fish and Wildlife Service, the Maryland Department of Natural Resources, the Maryland Native Plant Society and other resources are available to provide information about native plant species for facilities in Maryland. Site-specific information should be obtained for projects in other locations. Early consultation with local landscape architects and designers knowledgeable of native species can be beneficial for a project's development.

Figure 1: Native Plant of Maryland



Scientific Name: *Itea virginica*  
Common Name: Virginia Sweetspire

### Other Considerations

**LEED Credit:** In recognition of the environmental benefits of native species, LEED points are available for protecting or restoring a project's habitat with native species. Points may also be available for landscaping with native species which do not require irrigation.

**Green Roofs:** Sedums and other plants often used on green roofs are generally not native but are selected for their ability to live in a minimal depth of growth medium for long periods without water. Designers should recognize the impact of green roofs on the larger ecosystem and consider green roofs specifically designed to support native plant species.

### References:

<sup>1</sup>[http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ct/technical/ecosystem/invasive/?cid=nrcs142p2\\_011124](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ct/technical/ecosystem/invasive/?cid=nrcs142p2_011124)

<sup>2</sup> Presidential Executive Order 13112 (February 1999)

<sup>3</sup> <http://www.fs.fed.us/wildflowers/invasives>

### Further Reading

Maryland Department of Natural Resources

<http://dnr.maryland.gov/naturalresource/spring2005/landscaping.asp>

Maryland Native Plant Society

<http://www.mdflora.org>

North American Native Plant Society

<http://www.nanps.org>

National Park Service

[www.nps.gov/plants/pubs/nativesmd/lists.htm](http://www.nps.gov/plants/pubs/nativesmd/lists.htm)