Native Plant Gardens *at* Shaw Nature Reserve

KARA ROGGENKAMP AND SCOTT WOODBURY

(Top Left) An accessible concrete path winds through wild sweet william (*Phlox divaricata*) and blue-eyed Mary (*Collinsia verna*), and flowering trees in the upper woodland.

(Top Right) A copper-roofed garden structure provides a focal point and place to sit in the upper woodland.

Shaw Nature Reserve, a sister institution of the Missouri Botanical Garden, has twenty-five hundred acres of natural and restored landscapes and managed plant collections. At the heart of the Reserve, the Whitmire Wildflower Garden offers approximately twenty-five acres of interpreted gardens and landscapes, including five plant community areas (woodland, wetland, glade, savanna, and prairie) and a home gardening area. Over eight hundred Missouri native plant species are on display.

History of Shaw Nature Reserve and the Whitmire Wildflower Garden

Shaw Nature Reserve was founded by the Missouri Botanical Garden in 1925. In its early years, the Reserve was viewed primarily as a botanical research and environmental education facility. In the late 1980s the Reserve decided to commission MTR Landscape Architects to assist with developing a Master Plan for the property.

During the master planning process it became apparent that the Reserve's strength was its beautiful natural areas, but its expansiveness made it difficult for visitors, particularly those with limited time or mobility, to experience it fully. A key recommendation of the Master Plan was to develop a core area where visitors could be introduced to the variety of the Reserve's natural beauty, even if they were not able to explore the full acreage.

While the Master Plan was in progress, Director John Behrer was approached by Blanton Whitmire, the founder of Whitmire Research Laboratories, about potentially funding a wildflower garden in the core area as a birthday present for his wife Peg. As discussions with Mr. Whitmire and Reserve staff continued, the concept for the Garden eventually expanded to include small-scale recreations of natural environments from all over Missouri, as well as a home gardening area using native plants in various settings. The proposed garden would open new avenues for the Reserve's educational and interpretive programs. With the enthusiastic and generous support of the Whitmires, the Whitmire Wildflower Garden opened in 1993 and has been growing ever since.

Design of the Wildflower Garden

A visit to the Whitmire Garden begins at the Joseph H. Bascom House, a historic brick mansion surrounded by a gently sloping pastoral landscape of huge oak trees and lawns. Working with Reserve staff, MTR designed the garden to place the more intensive garden areas closest to the house. Visitors follow an ADA-accessible pathway into the home gardening demonstration area, which includes a native groundcover walk, rain garden, perennial border, patio garden, prairie garden, water garden, and woodland garden.

Architectural elements such as small garden structures, sculptures, wide tidy

paths, and neatly maintained edges indicate that this is a designed landscape. In the upper woodland, an elegant copper-roofed gazebo nestles among towering oak trees, providing a focal point ahead as visitors wind through swaths of blooming wildflowers. In another area, a low retaining wall of natural stones along the path's edge defines a raised bed of sun-loving perennials. The exuberance of the miniature prairie garden is held in check by a rustic fence and a border of low-growing prairie dropseed grass. These kinds of elements serve as what landscape architect and researcher Joan Nassauer has termed "cues to care" that set designed landscapes apart from wild ones for many people.

The overall goal of the design is to have the visitor's eye move purposefully as he explores the scene, and to give the sense that there is more to see just around the next bend. The whole garden cannot be seen from one spot, and focal points such as architectural features, masses of bloom, or particularly fine specimen plants draw you through the landscape.

The goal of the Whitmire Garden's planting design is to show a wide variety of native plants to present them in a way that is appealing to gardeners. These goals can be at odds, since one of the easiest ways to make a landscape appear more formal is to limit the number of different plants on display. One of the key domesticating factors in the planting design is to group plants of the same species together, at times in solid blocks and at other times slightly interwoven with the adjacent group. Contrasting textures enliven the planting, with combinations such as the coarse-textured prickly pear cactus (*Opuntia humifusa*) next to fine-textured plants such as prairie dropseed (*Sporobolus heterolepsis*). When plantings are more mixed, such as in the woodland garden where seedlings are encouraged to disperse, frequent repetition of a few plants with particularly showy blooms, such as *Phlox divaricata* and *P. paniculata*, unifies the design. Plants are also displayed in familiar residential settings, as in the patio garden, where natives are used in containers and as mass plantings along the edge of a brick terrace.

Most of the plants are available in the trade, although some are new plants being evaluated. One of the most common misconceptions about native plants is that they require less maintenance than exotic ornamentals. Although they may require less water, fertilizer and pesticide, in most cases native gardens still need periodic upkeep such as mulching, weeding, and pruning. For this reason, the Reserve sees great promise in one of its newest demonstration gardens, the native groundcover display. This garden showcases many species of native alumroots, anemones, and sedges, to name just a few. Each is selected for four-season interest and requires very little upkeep yet still has a neat and tidy appearance. Several of the species in this garden are new to horticulture.

Spreading the Word

Nearly twenty years after the first plantings were installed, the Whitmire Wildflower Garden has become the outdoor classroom and inspiration for a host of native gardening programs and partnerships, both for home gardeners and green professionals.

(Bottom Left) A rustic gazebo overlooks the woodland pond in the Whitmire Garden, with native hydrangea in the foreground.

(Bottom Right) Missouri evening primrose, rose verbena, and prickly pear cactus are three groundcovers in the home landscaping demonstration.

Patio garden with shining bluestar (*Amsonia illustris*) and rose verbena (*Verbena canadensis)* and "wetland" containers filled with scouring rush and sedges.

For the past three years, the Reserve has held the Native Plant School, a series of intensive workshops with separate offerings for homeowners and professionals. The homeowner series brings participants to the Whitmire Garden for three to nine hours of training on such topics as deer-resistant perennials, prairie and savanna establishment, and small flowering trees and shrubs. In addition, the Reserve's web site has a host of resources for gardeners seeking to use native plants, from landscape maintenance guides to plant databases and lists of nursery sources for native plants. Many of these efforts are funded through the Missouri Department of Conservation's Grow Native! program.

The Native Plant School: Professional Series is held at the corporate headquarters of Alberici Enterprises, a locally based construction company that developed a relationship with the Reserve when they worked together on planning native landscaping for Alberici's LEED-Platinum Certified building. These workshops focus particularly on native plants for commercial landscapes and for stormwater facilities.

As the Wildflower Garden matures, the Reserve has moved into a phase of sharing lessons learned with the larger region, working extensively with the Metropolitan St. Louis Sewer District (MSD) to develop regulations and required plant lists for "green" stormwater best management practices such as bioretention. As these requirements have become more widely implemented, the region has seen a rise in the demand for certain native plants. On one occasion the Reserve even let a local grower divide the plants in their patch of copper iris in order to get enough plants for a stormwater project installation.

Looking to the Future

What can other public gardens learn from Shaw Nature Reserve's experience with native plant gardening displays and programs? The Whitmire Wildflower Garden has successfully introduced home gardeners to native plants partly because it displays them in a wide variety of ways in a relatively small area. Gardeners with sunny and shady spots, wet or dry soils, and relaxed or formal aesthetic sensibilities alike will find something to which they can relate. The architectural elements and purposeful plant groupings continually engage the visitor's interest, showing that native plants can be used intentionally and not look like a garden gone wild.

Shaw Nature Reserve is not the only place that the Missouri Botanical Garden has developed native plant gardens. MTR designed landscapes for the Garden's herbarium (now seeking LEED for Existing Buildings certification) and its Commerce Bank Education Building, both of which make significant use of native perennials, trees, and grasses (although some non-natives were included). These landscapes are more stylized and feature a more restrained palette of plants, with greater use of mass plantings. The landscapes are distinctive but are in keeping with the corporate context of downtown St. Louis. Large plantings of prairie dropseed "lawn" are particularly successful at both locations.

The Garden is about to break ground on a retrofit of its existing parking lots that will include porous paving and a bioretention area, meeting MSD landscaping requirements for native plants. The planting design makes use of grassy-textured plants such as *Carex* spp., *Juncus* spp., and *Iris fulva* to give it a neat and unified look. The Garden is developing programming for visitors using the parking lot landscape as a demonstration area.

Shaw Nature Reserve's greatest influence on the use of native plants in the St. Louis area may turn out to be through its work with MSD on developing regulatory requirements for stormwater management facilities, which came about as a result of long-term use of Missouri native plants at the Whitmire Garden. These requirements are generating demand for native plants. The Reserve has seen an increased need for its expertise and growing attendance at the Native Plant School. The growth of the LEED green building certification, which offers a credit for native landscaping, is also likely to drive up demand for native plant knowledge, particularly as it relates to corporate landscapes.

Nearly twenty years after breaking ground on the Whitmire Garden, Shaw Nature Reserve is having a growing influence on the use of native plants in local landscapes.

Kara A. Roggenkamp is an associate with M·T·R Landscape Architects, a firm specializing in botanical garden design. Her work at M·T·R includes developing sustainability strategies for parking lot renovations at the Missouri Botanical Garden and at Fallingwater.

Scott Woodbury is the curator of the Whitmire Wildflower Garden at Shaw Nature Reserve, where he has been developing the garden for eighteen years. He serves on the board of Wild Ones, a non-profit organization dedicated to promoting native plant gardening.