



## **Overview of Vol.1, No.3 - Urban and Residential Landscapes**

### **Environmental Integrity vs. Public Perceptions the Challenge of Restoring Nature in the Urban Environment**

**Steve Roos**

The history of urbanization has shown anything but an enlightened approach by humans toward the surrounding natural ecosystem. The human tendency has been to extract the wealth of the Earth to meet the needs and aspirations of our advancing society. Traditionally, little regard was paid to the natural systems that support our very existence. Woodlands were cleared, wetlands were drained, plant and animal populations were decimated -- all yielding to the needs of urban expansion. Even today, in a self-defined 'enlightened' society, the drive for urban expansion continues to consume vast tracts of natural, or at least naturalistic, ecosystems.

Fortunately, however, awareness is growing. An understanding and appreciation for the value of natural systems is beginning to temper the drive for expansion. The social benefits of natural settings in the urban environment were first identified in the mid-1800s. Landscape and park designers, in particular, Frederick Law Olmsted, perceived the value of a healthy, natural, open environment that allows city dwellers to escape from the stressed, crowded and polluted urban environment. Since then, increasing knowledge of the dynamic functions within natural systems has led to a broader level of concerns. Today, natural ecosystems are recognized as fundamentally important components in maintaining the health of the environment as a whole. This recognition has placed a new emphasis on the restoration of natural ecosystems within our urban environments.

The papers in this chapter all deal with the topic of ecological restoration in the urban environment. The authors have identified several issues specifically related to urban restoration projects. However, one stands out as a fundamental problem with the definition of restoration. This issue revolves around the public's perception of nature versus the reality of a functionally sustainable natural system. Originally driven by self preservation, humanity has always attempted to exercise control over the environment. In a modern context, the desire for a controlled nature stems from a concern for safety. Whether the concern involves fire in a restored prairie, deep water in a wetland setting or thick undergrowth in a restored woodland, every restoration project in an urban setting will eventually need to deal with the issue of public safety.

The public's perception of safety is directly linked to a sense of control over the environment. A sense of control is best expressed through the aesthetic treatment of a project. In her review of the prairie gardens and

restoration at the corporate headquarters of St. Jude Medical, Virginia Gaynor describes the need to create a landscape which evokes an image of care, intent and responsibility as a primary design goal. Landscape architect Jim Hagstrom, designer for the project, says "the overriding issue of this project became one of perception." Hagstrom combined native plants with traditional design techniques to "make nature acceptable" to his client. The need for social acceptance, framed within culturally driven aesthetic expectations, is often identified as a crucial goal of urban restoration projects. The design team for the Phalen Wetland Park, reviewed by Tanya Olson-Kase, recognized that acceptance of the wetland hinged on creating a sense of unmistakable human intention by framing the "messy", uncontrolled natural parts of the park with "neat", controlled borders.

Society's perceptions of aesthetic value and safety can often lead to conflict with the needs of ecologically sound restoration, at both a site specific and landscape level. The conflict generally results in reduced ecosystem quality. The impact of urban infrastructure reduces the opportunity to re-establish predevelopment natural systems, for example, site hydrology. In his review of the Greening the Great River Park Project in St. Paul, Andy Sudbrock acknowledges this problem, "True restoration of most of the project area to presettlement conditions is both impossible and impractical as the site formerly consisted of wetlands, wet prairies and floodplain forest but is now highly urbanized and no longer receives periodic flooding."

It can be argued, however, that the true value of urban projects lies not in the restoration of accurate and functioning natural systems but, rather, in their role as educational facilities. Every project reviewed in this chapter was deliberately designed with a strong educational component to their mission. Developing a social, and ultimately, a cultural appreciation for natural ecosystems is essential to acquiring protection for our remaining wilderness areas and to inspiring the determination needed to attempt ecologically sound restoration projects where feasible. As part of the Phalen Chain of Lakes Watershed Project mentioned earlier, a sod farm within a highly urbanized area is specifically being restored as a wetland educational facility. Amy Bower, reviewing the project, has identified the opportunities defined by the project's design team. The project will educate the community about wetlands and restoration efforts, provide recreational opportunities and begin to create regional connections and wildlife corridors. The designers intend to demonstrate the project's value in storm water cleaning and increasing the local bio-diversity. Every opportunity identified involves educating the public about the intrinsic value of wetlands or their value as amenities to the community. Education in the urban environment, where the greatest number of people can be reached, is likely to be the key to gaining the necessary public support for far-reaching and extensive restoration projects in the future.

In conclusion, it is obvious that many concerns exist relating to

ecological restoration projects within the urban environment. Ecosystem quality is likely to be compromised by several factors: -- The potential exists to limit maximum water levels in the Sod Farm wetland restoration project due to the possibility of flooding in neighboring basements (Bower, A. this volume). Limitations like this indicate the impact the urban infrastructure can have on the level of ecosystem quality that can be achieved as well as the sustainability of a natural system. -- The public perception of what a "natural ecosystem" is will likely limit the range of ecosystem types attempted as restoration projects. The design and ecosystem model for the Phalen Watershed Park were deliberately molded to create a positive perception of the park by its neighbors (Olson-Kase, T. this volume). -- Landowner concerns over what the project would look like prompted the design team of the Big Sandy Lake project to acknowledge the "people factor" early in the design process (McFadden, K. this volume). Worried about long-term success without property owner support, the designers recognized that the public concern over aesthetic qualities could possibly impose further restrictions on the types and quality of ecosystems that can be sustained.

However, the success of urban restoration projects should not be judged solely on the basis of the ecological quality achieved. Within a highly degraded urban environment, it is arguable that any improvement in ecological quality can be considered a success. A much more meaningful and far-reaching measure would be the extent to which these projects succeed in educating the public as to the value of natural ecosystems. Public appreciation for and acceptance of nature in all its forms are fundamental prerequisites for the success of all future restoration work.