Native plants vs. turf lawn: sustainability made profitable

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What do record-breaking heat, rising fuel prices, and increasing costs of mowing, irrigation, fertilizer and pesticides have in common? They all contribute, along with ever-present labor expenses, to a soaring price tag just to maintain mowed turf lawns in our parks and along our roadways.

We aren't telling you anything new. No one appreciates this perennial headache better than public works staff—the same people who are often on the receiving end of complaints about brown lawns and weeds.

It would seem this is the price we must pay to maintain an attractive landscape...

...or, is it?

Maybe it's time to consider naturalization of strategic portions of park lands and roadsides. Naturalization is the process by which high-maintenance, non-native turf grasses are replaced by low-maintenance, hardy native plants. Natives add color and diversity to the landscape, and they excel at attracting birds, butterflies, and other wildlife. They provide park visitors, or travelers along a road, with aesthetic refreshment and enhanced interactions with nature.

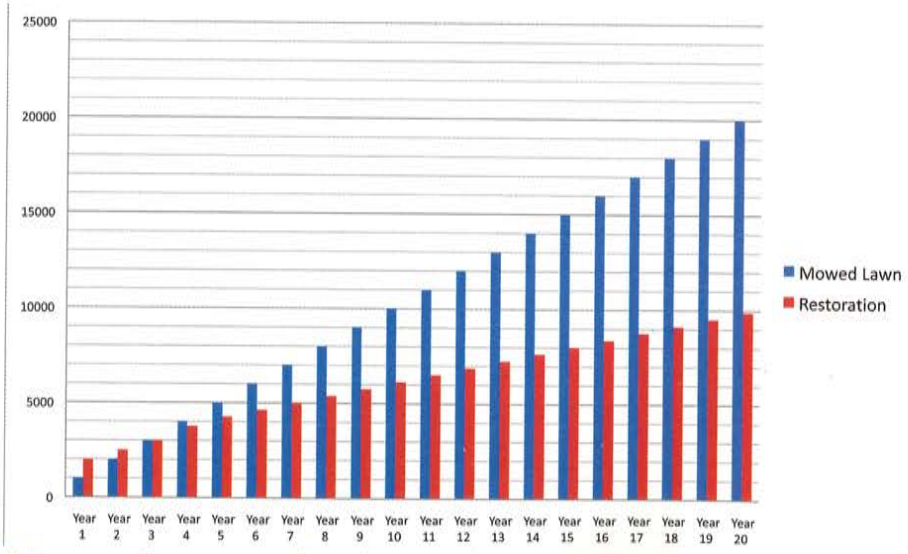
And, perhaps most compellingly, with naturalization you can actually save money on a per-acre basis in the not-too-long-term, according to Troy Anderson, Director of Construction for Applied Ecological Services of Brodhead, Wisconsin.

Using costs calculated from hundreds of AES projects combined with maintenance costs from several Midwestern municipal parks ($750 to $1000 per acre), Anderson has compared the installation and annual maintenance cost of native prairie plantings to those of simply maintaining turf lawn.

"The cost of native prairie can vary widely, depending on the diversity of species in the seed mix," Anderson said. "With a medium diversity, the break-even point occurs by Year 3 and this doesn't even include the costs of installing and fertilizing lawn, or installing irrigation systems."

Thus, in just three to four years after converting to native plantings, there are savings over traditional lawn maintenance. Those savings continue to rise as time goes on (see graph).

Songbirds, such as this Indigo Bunting, are quick to recognize habitat created by naturalization. (Photo by Elizabeth Tiller, Applied Ecological Services)



Using a medium-cost, medium-diversity native seed mix, the break-even point for installing and maintaining native plantings vs. turf grass occurs in Year 3. If a higher diversity mix is used at a higher cost, the break-even point occurs in Year 7 or 8. (Analysis and graph by Troy Anderson, Applied Ecological Services)

Once mowed turf lawn, this portion of a municipal park is now an aesthetically pleasing butterfly garden situated along a well-used recreational trail and offset by a rail fence. (Photo by Troy Anderson, Applied Ecological Services)

"In just a few years," said Anderson, "you can begin to realize a substantial return on your initial investment."

It isn't just a matter of tearing up sod and scattering a commercial "wildflower" mix on exposed earth—a common mistake that always disappoints. Naturalizing a lawn is an effort of ecological restoration. It involves identifying and restoring plant species that are native to the region and matched to a particular site's soil and moisture conditions.

The degree of success in naturalization depends heavily on making sure the work is done by professionals who have demonstrated ecological know-how, who have access to appropriate seed sources, and who possess expertise and experience in installation and maintenance of restored ecosystems.

In fact, this experience is so critical to a successful outcome that a trade organization has been formed to foster the discipline. Ecological contracting has become a distinct contracting specialty, complete with standards, through the formation of the National Ecological Contractors Association (www.ecologicalcontractors.org).
If you engage in a naturalization project, you should understand that the public will need some educational outreach to be brought on board, helping them understand just what is being done and why. A little bit of community relations goes a long way towards defusing complaints about the "field of weeds."

Most importantly, everyone involved needs to realize that it will take a few years before there are visual payoffs. Prairie plants used in restoration devote their first few years into growth underground. This delays the blooming and thus the onset of their colorful flowers. Patience is key. The results, however, are well worth the wait.

There is a startup cost to naturalization, of course. In this, it is not unlike investing in improved

built infrastructure with the goal of saving money in the long run. To get the process moving, consider starting with "low-hanging fruit."

You may, for example, target areas that present real and current maintenance challenges. How about that steep hillside that poses a mowing safety risk? Perhaps you can add in the area under those trees where exposed roots wreak havoc with your mowers.

And then there is that sandy hillside that washes into the road with every hard rain. Don't forget the wet swale where your employees have buried the riding mower up to its axles more than once. Before you know it, you have a pattern of naturalized patches laid out within a park.

When money is a concern, consider a phased approach over time, rolling over maintenance cost-savings from one restoration to fund the next phase. There may also be sources of money available through grants (government or private foundations), particularly if your plans address flood control, climate mitigation and adaptation, or water quality improvement. Perhaps a local business would be willing to adopt a newly restored butterfly garden with appropriate acknowledgment. Park neighbors may also be marshaled to assist with funds or maintenance labor.

Once the public is convinced, you can move toward the more ambitious projects—like converting the abandoned ball field to a prairie, complete with interpretive trail. Consider defining the restored area with an attractive feature such as a rail or stone fence and signage. This helps the public understand what is happening and forestalls complaints.

In short, no matter the park's size or configuration, there are opportunities for naturalization that do not conflict with current or projected park uses. Mowed lawn no longer need be the default condition of park lands and roadsides.

Reevaluate the functions of your mowed lawn spaces and then envision potentials to create a mosaic of natural and groomed patches. This could easily fit well into your scheduled revision of a long-term recreation or facilities plan.

Finally, but perhaps most significantly to those charged with public works, naturalized areas save significant money by increasing the quantity and quality of ecosystem

services—the free life-support processes of nature.

"Ecosystem services represent the hidden, yet real, cost savings of naturalization," said Anderson. Native plantings perform functions such as water purification, flood control, urban heat absorption, and noise buffering. They are invaluable components of a dispersed natural stormwater management system.

Stormwater services can be further multiplied when native plantings are used as part of a designed Stormwater Treatment Train™ system. This approach to stormwater management uses a sequential arrangement of nature features and plantings specifically engineered to remove particulates and pollutants and reduce runoff volume.

An approach such as this greatly reduces capital, operations, and maintenance expenses of built infrastructure by enabling green infrastructure to support or take over many of its functions.

This sounds a lot like sustainability—natural ecosystems providing vital services in perpetuity, with minimal input from outside cost (read, your budget!). Who knew that a sustainability initiative could be so eminently doable, in both concept and implementation?

And, a sustainability initiative with demonstrable cost savings within three to four years, to boot! As they say, "What's not to like?"

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A native bumblebee visits cup-plant, a showy and robust prairie perennial. (Photo by Elizabeth Tiller, Applied Ecological Services)