



Planting Green Ideas

Sustainable landscaping practices add beauty and maintain a sense of place while helping to protect park resources, restore native habitat, eliminate pollutants, and conserve water and energy. Such environmentally beneficial plantings require fewer fertilizers and chemicals, minimize mowing, weeding and watering, and reduce equipment use and labor compared to conventional landscaping.

The National Park Service is a proven leader in landscaping with native plants and accurately restoring landscapes to historic conditions. Such environmental commitment works to ensure successful stewardship of the nation's most important natural and cultural resources for present and future generations.

Native landscaping at Zion National Park



Select plants that are native or adapted to the site.



Sandstone Visitor Center landscaping features soil contours that collect runoff.

New River Gorge National River: Sandstone Visitor Center

Located east of Beckley, West Virginia, the Sandstone Visitor Center is a showcase for green design principles that extend beyond the building to the surrounding environs.

Construction of the new visitor center occurred on the site of a former rock quarry, leaving other parklands undisturbed. Restoration of the quarry was the foundation of the project, linking the site to the conservation and interpretation of the

park. The quarry site was regraded, creating drainage swales to capture runoff from the parking lot. Well-planned contours now retain stormwater and clean the water before it reaches the river, creating small wetland habitats for wildlife along the way.

Landscaping with native plants ensured that less water, fertilizer, and pesticide would be necessary in the future, while providing more suitable habitat for native species.

Educational signs feature explanations of water- and energy-efficient technologies that are utilized throughout the site. A sound investment in natural habitat restoration, the project also included cultivation of native plants by a local nursery. Park staff then recreated three old-field successional stages (stages between bare ground and forest) where woody plants will begin to take over. The only maintenance required is mowing a small area once each year.

Native Plants Beat Weeds

Native plant materials not only enhance the character of a site, they conserve water, improve wildlife habitat, and reduce maintenance. Native plant groupings occur in combinations unique to an area where they are adapted to local weather and soil conditions. Careful selection of such plantings and implementation of water-conserving "Xeriscape" principles can eliminate the need for fertilizers and pest control chemicals while reducing replacement plant costs.

National parks work to restore native plant populations and minimize human impacts on native species and the processes that sustain them. On-site propagation of plants from local seed sources can help maintain local genetic composition and biodiversity that is threatened by invasive plants. Some invasives produce significant changes to vegetation composition, structure, or ecosystem function. With few or no natural enemies to limit their reproduction and distribution, non-native invasives such as purple loosestrife and tamarisk rob water and nutrients from natural habitat, leaving vulnerable species struggling to survive. Techniques to prevent invasions include crowding areas with native plants (shading), reducing soil disturbance, and using "dry" landscaping methods to inhibit germination of invasive plants.



On-site plant propagation in greenhouses or other confined park areas can support restoration efforts.

Green Maintenance



Volunteers remove invasive iceplant to protect native species at Point Reyes National Seashore.

Green landscape maintenance includes conserving water and energy while avoiding or reducing the use of herbicides, pesticides, and fertilizers to minimize impacts on the natural environment and human health. National parks that preserve historic or cultural legacies present special landscaping challenges. Plantings at these sites include those native to the park as well as species historically appropriate for the period or event commemorated. In these cases, park managers must balance maintaining historic views and vegetation patterns with a wide variety of conservation priorities.

Irrigation to maintain non-native plantings is avoided in national parks unless it is necessary for park objectives and adequate water supplies are available. Parks practice low water use with drip irrigation and appropriate timing of water applications. Where national park objectives require lawn maintenance, park staff avoid overwatering and work to plant grasses that require less water. "Grasscycling"—leaving lawn clippings in place while mowing—reduces water and fertilizer requirements, mowing time, and disposal costs. As grass clippings decompose, they return nutrients to the soil and reduce evaporation. Leaving mowed clippings in place saves time, money, and landfill space.

Fertilizers or amendments are applied with consideration to the physical, chemical, or biological characteristics of the soil, biological community, and surface or groundwater. As staff work to maintain and restore park landscapes, they must also address drainage problems, stabilize eroded areas, reduce stormwater runoff, and conduct water audits. Ensuring that all surfaces are permeable can slow and direct surface water runoff into planted areas and encourage groundwater recharge. Natural mulches including local rocks, leaf litter, and pine bark (rather than fine hardwood mulches and plastic films) enhance park conservation objectives. Park landscaping that includes mulches, hoses, edging, timbers, posts, and compost with recycled content also provides practical examples to the public.

National parks also use an Integrated Pest Management (IPM) Program to address pest issues. This method coordinates knowledge of pest biology, the environment, and technology to prevent pest damage, while minimizing risk to natural systems.

Note: The word "Xeriscape," used here with permission, was developed by the Denver Water Department in 1981 to help make water-conserving landscaping an easily recognized concept. The word is a combination of "landscape" and the Greek word "xeros," which means "dry."

Find Out More

- Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds: <http://govinfo.library.unt.edu/npr/library/direct/memos/25f2.html>
- Green Seal: www.greenseal.org
- Natural Landscaping for Public Officials: www.epa.gov/glnpo/greenacres/toolkit/



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