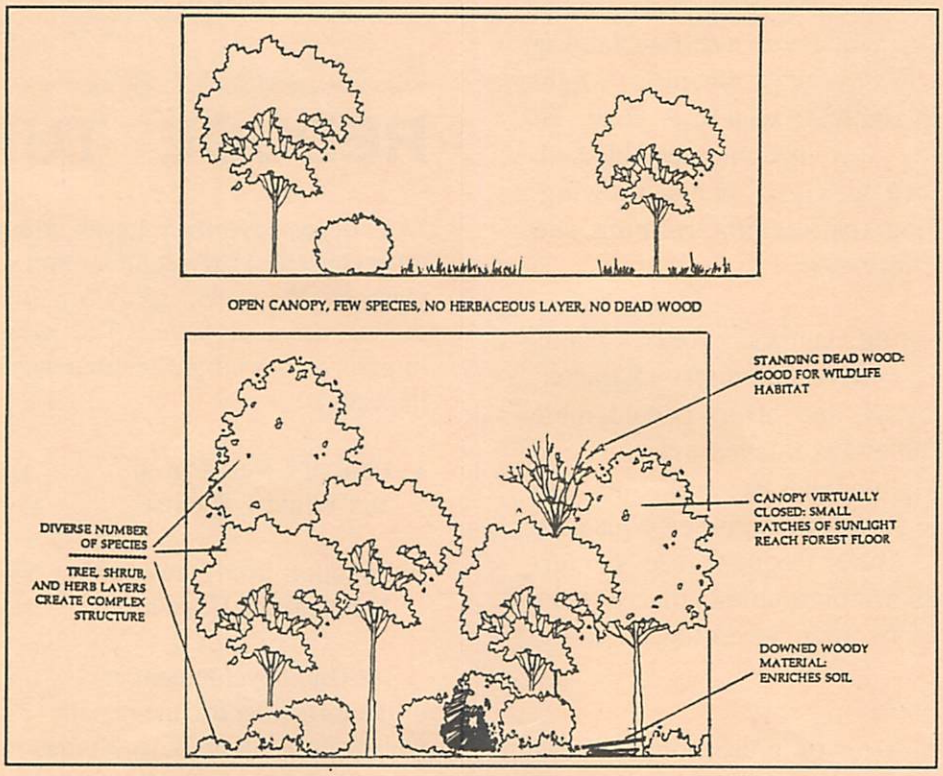
turf also requires burning fossil fuels to power lawnmowers, and increases the volume of waste (clippings) sent to landfills.

Clearing or grading for the installation of turf and landscape plants destroys the existing plants and damages the remaining trees. Removing leaves and other fallen debris that comprise the forest "duff layer" interrupts the natural cycling of nutrients and water. Digging or tilling under trees [for the removal of understory and installation of turf or other plants,] can damage tree roots and causes a decline in tree health. Soil stockpiled under trees or added to help drainage whether (temporarily or permanently), can interrupt the balance of oxygen, moisture, and nutrient absorption to the tree's root system, and may result in tree decline and/or death. Select areas away from trees being preserved to stockpile soil and use natural or existing drainage contours to direct runoff.




## Ground Covers

The ecology of forests is comprised of many integral components, including flora and wildlife habitat. It is important to consider the entire ecosystem for forest management planning. ***The best ground cover*** around trees and in forests is the type which most closely resembles the naturally occurring conditions. In general, our forests are characterized by a layered canopy structure consisting of large (overstory trees), smaller (understory trees), shrubs, and natural ground covers. The most prominent natural ground cover is leaf mulch. In deciduous forests, it is composed of deciduous leaves, in evergreen forests, it is primarily needles. Rainfall seldom creates runoff beneath a natural forest canopy due in part to high soil absorption rates, favorable soil conditions, and large amounts of water which are "sponged" or soaked up by the leaf mulch layers.

The best plants to grow under mature trees are species found in the natural leaf-mulch or "duff layer" of the forest floor. The horticultural industry is becoming increasingly successful at commercially producing more of the naturally occurring or native plants for enhancing natural landscapes. Ferns, woodland species wildflowers, understory shrubs, sedges, and mosses are now available through many nursery suppliers.

Unlike grass, very few *native* ground covers form dense blankets on the forest floor. Under normal circumstances, native ground covers tend to be randomly distributed, loosely arranged, overlapping patches of plant communities. Under moderate cultivation, some of these native plants will flourish and form a dense, uniform patch of vegetation.

Our forests have an understory comprised of mountain laurel, american holly, and other broad-leaved evergreens highly valued for spring blossoms, berries, screening, wildlife food and cover. There are also plants valued for their low to moderate growth habit and spring blossoms, such as wild azaleas, sweet-bay magnolia, flowering dogwood, redbud, and wildflowers. There are species of grasses, sedges, and ferns which also flourish in these undisturbed areas.

It is not necessary to limit ground cover selection to native plants. There are many introduced species which can add color, texture, and form. ***However, these introduced species need to be carefully scrutinized*** to avoid those with a tendency to take over or become "invasive." Some introduced species may offer the

opportunity to create a blanket effect without requiring excessive maintenance or containing invasive characteristics. Wildlife benefits of non-native species are typically less than native species.

## Benefits of Natural Ground Cover

Maintaining diversity in plant communities is important because it provides balance and reduces the potential for any individual species to dominate the landscape.

Careful selection of alternative ground cover plantings will lead to reduced maintenance. Matching plant requirements to site characteristics to determine the ground cover selection will create a self-sustaining forest ecosystem. Occasional weeding, light fertilization, and supplemental watering may be required until the area has become established. Intensive turf maintenance activities such as mowing, pest treatment, dethatching, overseeding, aerating, and irrigation will also be eliminated.

Retaining the existing natural forest plants maintains the existing environmental character, enhances neighboring areas, and offers considerable environmental and financial advantages over turf and other ground covers. Maintenance requirements will reduce substantially over time for a properly planned and managed forest. More frequent use of turf alternatives will increase as communities discover the maintenance benefits and their importance to the environment.

Communities should focus on preserving as many components of the natural ecosystem as possible and consider the establishment of ground cover in terms of environmental enhancement through stewardship.

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For more information on CFN, call (202) 962-3393.

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COMMUNITY FORESTRY NETWORK

# Forest vs. Lawns (Lawn Alternatives)

INFORMATION BULLETIN

# REDUCE TURF AREA

"Americans love their lawns with a passion rarely seen in other countries; fifty-eight million Americans enthusiastically plant, weed, water, spray and mow an estimated twenty million acres of lawn." The passion for lawns has many impacts on our urban/suburban environments. Some of these impacts are:

- Loss of Forest Cover and Wildlife Habitat
- Air Pollution from Gasoline Powered Engines
- Pollution from Lawn Maintenance Chemicals
- Stress on the Municipal Water Supply

As land development carves up the landscape, fragments of the former landscape remain. Frequently, these fragments which consist of trees, shrubs and plants, are transformed into a grove of trees meeting a manicured lawn.

It is the goal of this Urban Forestry Information Bulletin to discuss how to best preserve these forest fragments in developed areas and present some environmentally sound and low cost/maintenance alternatives to grass or turf.

## Impacts of Turf

Turf and other ground covers require maintenance which is generally incompatible with the needs of a forest ecosystem. Turf offers little or no wildlife habitat compared to the diversity of plants found in an existing forest.

Growing grass or turf management contributes to nonpoint source pollution by the residues of lawn fertilizer insecticides and herbicides applied to the lawn. Maintaining