



The view out the window of the Washington Monument shows the White House and land managed by the National Park Service.

## A CAPITAL IDEA

The National Park Service isn't limited to vast expanses of Yosemite and Yellowstone. In the nation's capital, the park service captures nature's highlights in limited spaces through design and management.

by Heide Aungst, managing editor

It was all perfect. The building of the Vietnam Memorial went like clockwork. The site was newly sodded. The turf was watered and primed for the dedication: November 11, 1984.

Only one thing went wrong: 400,000 people showed up. An overwhelming number, which no one had planned on.

Within less than eight hours, it was mud. No turf remained. Just mud.

"The big fallacy was that we sodded just two weeks before dedica-

tion," says Jim Patterson, research agronomist with the National Park Service (NPS).

Because of the projected wheelchair traffic, the NPS laid the sod with Enkamat on top of the existing soil mixed with sewage compost. "The soil was tightly compacted into the matrix of the Enkamat," says John Short, NPS soil scientist.

The memorial is now the number-one visited park in the country. Traffic to the monument can still be as high as 13,000 people a day. But walkways

have been gradually expanded. After researching the problem, the park service renovated the soil to a  $\frac{3}{4}$  construction sand  $\frac{1}{4}$  soil mix. The area was re-sodded with more wear-tolerant bluegrass.

Solving problems such as turf management around the monuments is a big part of the NPS employees' job.

### A monumental job

Mel Oldle has worked for the park service for 30 years and has been chief of grounds and trees for the past



**Landscape manager Mel Oldle oversees tree pruning in front of the Washington Monument.**

seven. Oldle oversees 98 people to manage 104 acres of monument grounds and 46 acres on Capital Mall. In fact, 23 percent of the land within Washington D.C. is in park service jurisdiction.

To be more exact, the park service in the National Capitol Region oversees 62,000 acres of park land, 447 miles of roadways, 846 acres of roadsides and 717 miles of trails.

Oldle says the hardest part of his job is keeping the turf cut and picking up trash left by more than 26 million visitors each year.

That kind of traffic on the grounds causes severe compaction problems. To help alleviate the problem, the crew aerates four times a year, twice in the fall, twice in the spring, in two directions.

Constant traffic on the turf also makes the area ideal to test wear tolerance of turf varieties. A trained eye looking out of the Washington Monument will notice turf plots on the monument grounds for the National Bluegrass tests.

The crew mows an average of once a week at 2½ inches. In the heat of the summer, Oldle cuts back to every other week and raises the height of cut to three inches.

Much of the monument grounds is not irrigated, although future plans call for the installation of a quick-coupler system.

Although Oldle says his landscape management job isn't out of the ordinary, the sheer quantity of products used is rare.

In 1986, the National Capital Region park service used 23 tons of dry fertilizer, most of it a 16-8-8 mix, and 10,125 gallons of liquid fertilizer. They used 200 cubic yards of topsoil, 600

### *A trained eye looking out of the Washington Monument will notice turf plots on the monument grounds for the National Bluegrass tests.*

cubic yards of mulch and 10½ tons of lime. They used 3,000 square yards of sod and 27,700 pounds of turfseed. Most of the seed used, 9,000 pounds to be exact, is K-31 tall fescue, which Patterson says "has been our workforce for 20 years." Other varieties used include Monopoly, A-34 and Merit Kentucky bluegrass; Palmer and Regal perennial ryegrass; and Falcon tall fescue.

The park service plants an average of 143,720 tulip bulbs; 22,228

daffodils; and 71,369 annuals. In 1986, they planted 235 trees and removed 42; they planted 2,449 shrubs, while removing 2,199 shrubs.

But Washington's landscape is more involved than just the complex management of it. Much relies on the original design.

### **Modern plans**

NPS designers and landscape architects review all documents before altering any part of the Washington landscape under park service jurisdiction.

"The first thing I do is file research," says Mike Donnelly, regional planning coordinator. "I try to understand the evolution this part of the grounds has gone through over time."

Donnelly has been involved in re-designing the Washington Monument grounds. "You have to ask what did the original designers have in mind? And, what's going on out there now?" Donnelly says. "None of the original designers recognized the Washington Monument as part of the Mall."

One re-design plan was approved in 1982; with that, two sidewalks were built to eliminate turf traffic. But by 1986, some of the plans had been disapproved, taking Donnelly back to square one.

### **Design management**

While Donnelly is responsible for large-scale design plans, NPS landscape architects design specific areas and work closely with landscape managers. Areas around the national capital region are divided into natural, cultural and historic development zones.

"In natural areas, it's established policy that only native and local plant material can be used," says landscape architect Darwina Neal. Some historic parks can only use plant materials which were available at the time of construction; no improved varieties can be used.

Once an area is designed, Neal may turn to researchers for advice on varieties to use. The park service's Center For Urban Ecology houses researchers in agronomy, soil, entomology and related fields.

### **Tackling the problems**

One of the biggest problems in the National Capital Region, Short says, is the soil. He has giant core samples mounted on the walls of his laboratory, much of it looking more like a dump than a park soil. But the key to his job and that of other researchers at the center is to find solutions.

"With some sites we'll use what exists, some we'll modify and some

we'll replace," Short says. "For whatever the landscape architect deems necessary, we try to engineer a soil system site by site."

Engineering a soil system may mean adding lightweight aggregate such as Turface.

In 1986, the National Capital Region used 46 tons of Turface, and had used 178 tons the year before. But while the National Park Service continues to purchase large quantities of some products, one thing they've cut back on is pesticides.

In 1979, the National Capitol Region implemented an integrated pest management (IPM) program. "Nothing gets sprayed just in case, anymore," says Carol DiSalvo, IPM specialist/entomologist. "You have to prove (insect infestation) is at a level that's intolerable."

IPM is a system of monitoring and controlling pest populations whether it's insects, weeds or disease. To control beetle infestation in elms, DiSalvo has set 99 traps on trees throughout the capital region. The traps are sheets of paper coated with a substance containing pheromone bait. They are put on trees other than elm, to draw the disease-



Entomologist Carol DiSalvo checks a beetle trap as part of the park service's I.P.M. program.

carrying *Scolytus multistriatus* beetle away from the elms.

Every elm has been numbered and has a history on file to monitor closely for Dutch Elm Disease. If the disease is found, the tree will be treated with a fungicide, or cut down if it might spread. The park service has found a nursery which will supply American elms and is confident that with the IPM program, they will be able to plant more elms.

Besides elms, the park service has started an ornamental cherry tree donation program called "Blossoms in Our Future." They estimate only 500 of the current 3,000 cherry trees are from the original planting. In 1987, 66 new cherries were donated.

"The biggest change I've seen is the increase in cherry trees," Oldle says. "The number of trees has almost doubled in the past 15 years."

The trees, along with design and management programs, keeps the nation's capital a beautiful place to live or visit.

"I travel to a lot of other cities," Patterson says, "but I still think Washington is the most beautiful city. And a lot of the credit belongs to Mel Oldle and the other people who work here." **LM**

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