

Summer 1984

Volume 28/Number 3



*Cool temperature—preferring annual phlox fill flower beds at Disney World.*

## Coloring The Park

by Ann Reilly

At the Milwaukee County Park, flower beds are filled with a bright mixture of ageratum, marigolds, coleus, zinnias and other annuals. At a relatively new downtown park, Seattle Center, the opposite design approach is used in some of the beds by creating a solid mass of color with the planting of all the same variety of marigold (although any annual will give the same effect depending on your color scheme). At Cypress Gardens in Florida, bright begonias or impatiens are chosen

for the shade areas under the palms and cycads. At Disney World, cool temperature-preferring annual phlox fill flower beds in the spring and are replaced by more heat tolerant annuals such as vinca, zinnia or petunias when summer comes.

All of these parks are treating their annual flower selection in a different, yet perfectly correct way. They are choosing plants based on their preferences for color and design *and* for their special circumstances such as hot or cool; wet or dry; sun or shade. There are many considerations to be made when designing an

annual flower bed—location color and color harmony; plant height; contour of the bed; style; shape of the plant; flower and leaf texture; and accents. In addition to all of these, plant selection is critical. If you don't choose annuals suitable to your growing conditions, all of your design efforts will be for naught.

Even if Mother Nature doesn't cooperate with much rain and you have no irrigation system, annuals can still color up the park provided you choose the right types. For a touch of blue, violet or white in a low growing plant suitable for small areas or

*(Continued on page 26)*



## Grist

### A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director  
National Park Service

John H. Davis, Executive Director  
National Recreation and Park Association

### EDITORIAL STAFF

National Park Service  
U. S. Department of the Interior

Kathleen A. Pleasant, Managing Editor

### NRPA PRINTING STAFF

Albert H. Ziegenfuss, Manager

The Park Practice Program includes *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is \$105, annual renewal is \$45. A separate subscription to *Grist* is \$20 initially and \$12 upon renewal. Subscription applications and fees, and membership incomes should be sent only to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, National Park Service, Washington, D.C. 20240.

### For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

as an edging to larger plants, select the tiny and fluffy flowered ageratum. One of the best annuals for ease of maintenance, ageratum will bloom non-stop in sun or light shade without having to have its faded flowers removed. Growing 6 to 12 inches high, it is an excellent complement to another drought tolerant annual, the zinnia, which is available in almost any color of the rainbow except true blue. While drought tolerant, ageratum does not like excessive southern heat. Try the varieties Blue Blazer, Blue Puffs, North Sea, Blue Danube or white Spindrift.

## Zinnias

Zinnias are a world unto themselves. There are single, double cactus and pom-pom flowers available in solid multi or zoned colors that bloom in full sun from early summer through frost. Faded flowers will need to be removed, however, to keep bloom at its maximum, so you would not choose zinnia if maintenance causes problems.

Clip stems as blooms open and zinnias make perfect and long lasting cut flowers for the office or reception area. Different varieties of zinnias grow anywhere from 6-inches to 3½ feet tall, so are useful as edgings, in massed beds, or as backgrounds. Best among the lower growing zinnias are the Peter Pan, Pulcino, Short Stuff or Thumbelina series.

One precaution must be taken when thinking of zinnias; make sure the location being considered has good air circulation as zinnias are very susceptible to powdery mildew. Don't plant them at the bottom of a hill! A spritz of Tersan 1001 onto the zinnias when the turf is being treated will assist in alleviating this problem.

## Petunias

Think of dry, sandy soil and hot, sunny summers and one annual immediately springs to mind—the petunia. Select the large flowered grandiflora or the smaller (but more of them) flowered multiflora petunia for an easy to grow massed or edging effect. Where conditions of poor and alkaline soil also exist, choose single rather than double flowered varieties, and if your weather conditions are extremely adverse, take the multifloras over the grandifloras. Multifloras would also be better where beds are irrigated overhead since they recover more quickly from the water and are more botrytis resistant. Try the new variety of multiflora 'Summer Madness' which is a unique reddish pink for non-stop color all summer. Outstanding grandifloras are the many colored members of the cascade, Flash, Cloud Sails or Magic Series.

## Verbena

An excellent companion to petunias is the heat-resistant verbena. Its colors cover the rainbow, so it is easy to choose a variety to complement one of the many solids, stripes or picotees of the petunia. A relatively new variety of verbena called 'Sangria' is a deep wine red and a good choice for dry spots with red, white or blue petunias. Verbena can also be effectively used alone in beds, borders or planters, especially where soil is poor. For heat and drought resistance and minimal care, portulaca is another excellent choice.

## Celosia

For a touch of the bizarre and a bolt of strong color in a dry, sunny location, the celosia is the answer. Available in either plumbed or crested varieties, celosia withstands poor soil and has a variety of uses in annual beds.

# Safety

## Life-Saving Jugs

Hundreds of people drown each year as onlookers who either can't swim or are afraid to risk their own lives at the hands of a panic-stricken victim stand by helplessly. Many could have been saved if there had been some type of throwable floatable object available.

The Cumberland Basin Water Safety Council has developed a simple and inexpensive way to provide a handy device for this purpose. Two one-gallon plastic jugs are tied together with four feet of nylon cord with a loop in the center and weighted with just enough sand, water or gravel to make them easy to toss to a drowning person. The tops to the jugs are then glued on with rubber cement or silicone.

Two sets of the jugs are hung on posts placed at intervals along swimming beaches. A metal sign on the post explains their purpose and cautions people not to use them as playthings.

The life-saving idea had such obvious merit that a local dairy volunteered to supply all of the jugs needed to install such devices on the ten Corps of Engineers' lakes in the Cumberland Basin and to put water safety slogans on all their jugs going to retail outlets.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.



*Editor's Note: Untrained persons are cautioned not to enter the water and attempt a rescue. Such rescues require special training and practical*

*skills. Otherwise, the would-be rescuer places himself or herself in serious jeopardy.*

## Roadside Cleanup Warning Sign

Roadside cleanup crews in the Lake Mead National Recreation Area (Nevada-Arizona) normally cover many miles of roadway in one day. As a safety precaution they normally set out signs that read "Roadside Cleanup Ahead," to forewarn motorists passing by.

When a motorist passes the sign, he or she is alert for the upcoming workers for a short distance. However, the workers could be many miles further down the road and the warning sign is often forgotten by the time a motorist reaches them.

Maintenance Man Steve Cottrell at Lake Mead solved this potentially dangerous problem by designing this roadside cleanup warning sign. The sign pinpoints the exact distance a motorist must be on the alert for the workers and considerably adds to the safety of both the motorist and the workers.



## Power Tool Safety Switch Cover

Boat Mechanic Bill Jean of the Lake Mead National Recreation Area (Ariz-Nev) designed this power tool safety switch cover.

It is fabricated from a piece of 3/32" x 1" flat stock that was pre-drilled and then bent in a vise. One-quarter-inch aluminum drive rivets were used to attach the cover. With the cover over the switch, an object, such as a pencil or nail, must be pushed through the hole to turn the tool on.

In the past there were several accidental starts of their radial arm saw but since Jean's new safety cover was installed (for over a year now), there have been no problems.

Jean adds a note of caution: The cover must be removed from the electrical box for installation of the switch cover and it must be insured that the fasteners used to attach the switch cover cannot contact electrical components.



*Editor's Note: This safety switch cover has possible application on other power tools.*

## Portable Water Safety Program

The increasing number of boating accidents and drowning fatalities is often directly related to the lack of training or instruction received by victims.

Dan Hendrickson, a Corps of Engineers Park Technician on Lake Barkley in western Kentucky suggested the implementation of a portable boating and water safety demonstration unit, consisting of small boats and water safety equipment. The unit is transported in a small two-wheel trailer towed by a medium size car or truck to campgrounds and day-use areas for on-site water safety instruction.

Program topics include Boating Operations, Personal Floatation Devices, First Aid, Navigation Aids, CPR, and Knots. The highlight of the program is a "Hands On Demonstration" using a small (39" wide x 84" long)



fiberglass boat. Powered by a fisherman's trolling motor, this craft safely introduces trainees to actual on-the-water boating procedures, boat-handling exercises, and boating safety requirements.

This portable unit allows an instructor to reach large numbers of people who are actively using

water recreation facilities.

Hendrickson received a \$75 Department of the Army Award for his suggestion.

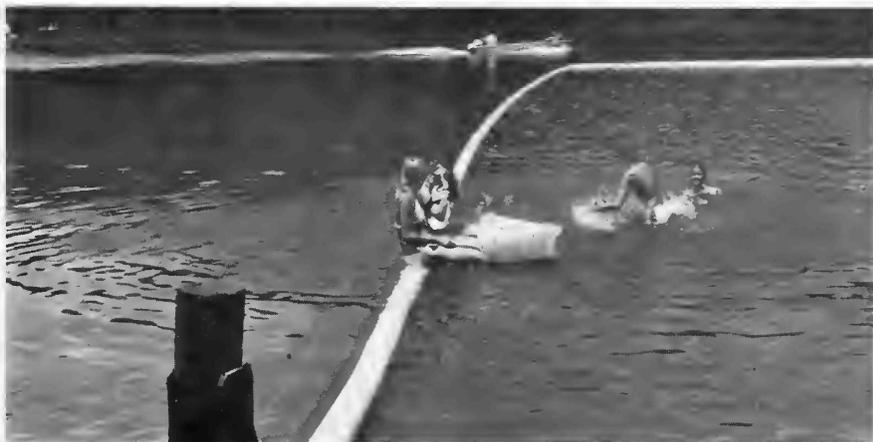
This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

## Better Beach Marker

A hazard is often created at lake and river swimming beaches by boaters who either cross the buoy/cable line into the swimming area or tie the bow of their boat to the cable, which usually causes the rear end of the boat to swing over the line.

Accidents to swimmers and damages to the cable and the boats have resulted when inattentive boaters have started their engines in this dangerous zone.

Todd Yann, Corps of Engineers' Ranger on Lake Barkley in western Kentucky, suggested that swimming areas be marked off with 12-to-20-foot sections of six-or eight-inch PVC pipe filled with foam and capped on each end. The foam adds strength, water-tightness and floatation.



Each cap has an eye bolt, which is linked to other sections by the use of a swivel. The line is secured to the shoreline by steel shackles that allow it to fluctuate with the water level.

This formidable barrier effectively prohibits the intrusion of boats into the swimming area, while also serving as a psychological barrier to keep swimmers and bathers on air

mattresses from venturing out too far. Higher initial costs are offset by significant savings in the long term, and a safer recreational experience is provided for swimmers.

Our thanks to Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers for sharing this idea with GRIST subscribers and readers.

# Integrated Pest Management—Essential Elements for a Successful Program

by James L. Sherald, Ph.D.

Environmentally sound and effective pest management presents a formidable challenge to park managers. Park systems are often complex designs of diverse vegetation and recreational features requiring high quality maintenance. Inherent in the diversity of park resources is a wide array of insect, pathogen, weed, and vertebrate pests. These pests impinge upon the park directly by attack and indirectly by requiring the expenditure of maintenance resources for their control.

Most pests have traditionally been "managed" by the application of pesticides on a routine calendar schedule, or as an emergency, "knee jerk," response to an infestation long out of control. Although pesticides, when properly applied, are usually effective, routine use is costly and seldom provides permanent control.

The potential for pesticide exposure is a public health concern in heavily used urban park and recreational facilities. Even when pesticides are applied properly, posing little or no threat to the environment or the visitor, the anxiety created by their use may diminish the visitor's park experience.

The real and perceived environmental threat of conventional chemical pest control as well as its expense and short-term effectiveness should stimulate managers to reevaluate conventional approaches to pest management and consider an alternative.



Integrated Pest Management, (IPM), is an alternative which minimizes pesticide use and emphasizes tactics more likely to provide long term control. IPM is most simply defined as a "decision making process"<sup>1</sup> that helps a manager to decide: if there is a real or potential problem requiring treatment, where the treatment should be focused within the site/pest complex, when action should take place, and what mix of strategies and tactics - biological, mechanical, chemical, and educational - should be used. A full discussion of the principles of IPM and procedures for introducing IPM into park systems is presented in "Integrated Pest Management for Park Managers A Training Manual."<sup>1</sup>

The National Park Service's National Capital Region (NCR) embarked upon a transition to IPM in 1979. NCR is largely an urban region with an array of pest problems typical of urban East Coast parks. Pest management prior to 1979 was primarily a conventional chemical approach. To assist NCR in its tran-

sition to IPM, the John Muir Institute's Center for the Integration of the Applied Sciences (JMI/CIAS), a pioneer in urban IPM, was retained with funding from EPA's Office of Pesticide Programs and the NPS's (Washington Office) Division of Biological Resources.

The JMI/CIAS IPM project was part of a larger urban ecology program pursued by NCR's Ecological Services Laboratory. The purpose of the IPM initiative was to develop IPM case studies for some of the major pest problems affecting the Region. An IPM Binder Series was developed for four major pests: mosquitoes, rats, yellowjackets, and azalea lace bugs. The IPM binders were developed as a self-help tool for park managers. (A limited number of IPM binders and IPM Training Manuals are available upon request through the Regional Integrated Pest Management Coordinator, NCR Ecological Services Laboratory, Washington, DC 20242 or the Servicewide Integrated Pest Management Coordinator, Division of Biological Resources, National Park Service, Washington, DC 20240.)

The major objective of NCR's IPM initiative was to demonstrate how the IPM transition could be made and sustained. The program illustrated that several key elements are essential for a successful program.

Transition to IPM should be initiated with a comprehensive analysis of procedures, costs,

(Continued on page 31)

(Continued from page 30)

efficacy, and necessity of current pest management projects. Frank discussions with employees at all levels, particularly field personnel, will provide an accurate description of current efforts. All projects should be evaluated, particularly long-standing projects that may have more of an historical or traditional basis for existence rather than a real need. Pesticide applications keyed to a calendar rather than a monitoring program are often applied when the pest isn't present or is present at levels unnecessary for control. For example, in NCR's assessment of pest management programs it was found that a fungicide treatment was applied annually to hundreds of hollies for a disease that was not a problem. This traditional annual treatment emanated from fear of a pest rather than a real need determined through monitoring.

Prioritization of pest problems will help in directing the transition to IPM. A careful analysis of current pest management activities will help managers to rank pest problems in relation to the threats they pose to the resource and the investment entailed in their management. In NCR, Dutch elm disease is the most significant pest management problem. Control of the beetle vector required annual applications of methoxychlor accounting for the majority of the Regions's pesticide use. A comprehensive IPM plan has been developed which emphasizes sanitation as the tactic for beetle



control and limits use of methoxychlor to spot treatments.<sup>2</sup>

The analysis will also reveal pest problems that can be easily and permanently solved with a minimum of effort. A serious yellowjacket infestation in a picnic area causing as many as 57 stings in one year was reduced to 2 by simply providing lids for trash receptacles and lids for beverage containers. The immediate success of a simple solution such as this demonstrates the logical, common sense nature of IPM and stimulates the pursuit of IPM strategies for other pests.

Pest problem analyses can be a valuable exercise not only in providing solutions to pest problems, but also in addressing other management issues as well. Pests should always be considered as possible indicators or warnings that some aspect of the resource and/or its management has gone astray. For example, a rat infestation in an urban park is a good indicator of poor waste management and an abundance of rat habitat. Poisoning may reduce the rat population, a symptom of a larger problem, but

poisoning will only provide temporary relief. If management can direct its efforts to improve sanitation and reduce habitat the rats will be permanently controlled and other problems such as litter and high pigeon populations may also be reduced.

All efforts at alternative management require a full understanding of the pest's biology and its relationship to the resource. A serious infestation of carpet beetles in one of NCR's curatorial facilities appeared to require immediate pesticide treatment. With first consideration of the pest as a "problem indicator" a quick analysis of the pest's life history revealed that it can live on decaying bird remains. Site managers, directed to examine an enclosed chimney in the facility, found over 100 dead bird carcasses. Space spray treatments may have provided temporary control, but elimination of the beetle habitat provided a permanent solution. The full understanding of the pest's habitat and biology enabled managers to use the pest as an indicator of a more significant maintenance problem.

When possible, the appropriate response should be directed at the cause of the problem to achieve long term control, rather than the symptom which provides only temporary relief.

Professional analysis of pest problems at the site is often critical in developing a management strategy. The level of expertise required cannot always be provided by park staff. However,

(Continued on page 32)

(Continued from page 31)

assistance may be readily available through consulting or regional staff professionals. NCR's Ecological Services Laboratory has added an IPM Assistant to work with the Regional Pest Management Coordinator. NCR's pest management team has made over 80 site visits in 1983, most at park request. Site visits commonly show that many "pests" do not warrant control. Unnecessary treatments and anxieties created by the mere presence of a suspected "pest" can be overcome with information and simple reassurance from a professional.

Frequently, site visits also reveal problems entirely different from those suspected by staff personnel. For example, staff concern over a suspected cockroach problem in an interpretive exhibit in NCR was actually diagnosed by the regional pest management team as saw-toothed grain beetles. By removing a box of corn meal, used as part of the exhibit, the problem was solved.

IPM places emphasis on preventative pest management. Pest problems analyses often show that many successful site/pest relationships are inadvertently designed into the system and could have been prevented at the planning and design stage. A mass planting of disease-susceptible crabapples commits a manager to several annual fungicide applications throughout the life of the planting. By selecting a disease-



resistant cultivar the same landscape effect can be achieved without costly and potentially environmentally unsound maintenance.

Azaleas are understory plants in their native habitat. When planted in full sun they are extremely susceptible to azalea lace bug. By recognizing the azaleas natural habitat and simulating it in the landscape, the lace bug, which may require two to three insecticide applications per season, can be avoided. Brick and stone walkways and plazas laid in sand rather than mortar present a major management problem when weeds develop in the joints. Mechanical weeding is laborious and leaves unsightly brown plant debris. The installation cost is more expensive if mortar is used, however, considering the cost of perpetual weed management, the additional installation cost is justified.

In short, conventional pest "control" often involves no more than remedial pesticide applications to suppress a problem introduced and sustained by design. The most effective IPM strategy is to circumvent these problems at the design stage. The old adage "you can pay me now or pay me later" is quite appropriate. To pay later is to

pay more - monetarily and environmentally.

Within NCR critical reviews of plans for new parks and new plantings in existing parks are performed by the Tree Advisory Committee. The Committee is composed of horticulturists, landscape architects, and pest managers. Potential pest problems are a significant committee concern requiring review of species susceptibility to pests, species adaptability to the site, procedures for site preparation and planting and other factors that may directly or indirectly affect the health of the plant and its vulnerability to pests.

Although plan review and alterations cannot possibly anticipate and correct all potential problems, a comprehensive review by a multidisciplinary team may circumvent many costly and potentially disastrous situations. As the experience and persistence of such a committee increases it can become a prime force in an IPM program.

Once the transition to IPM has been made it cannot be left static. The multifaceted, progressive nature of the IPM approach requires constant reevaluation and

(Continued on page 33)

# Maintenance

(Continued from page 32)

change as new information and technology become available. A staff specialist, qualified in IPM, should be allowed time and resources to assist park managers in identifying and evaluating problems, obtaining information, evaluating new tactics, and performing the oversight and reevaluation each project warrants. Left on its own, without constant evaluation and stimulation, IPM can easily revert to conventional chemical "control."

<sup>1</sup>Olkowski, William and Helga Olkowski. 1983. *Integrated Pest Management for Park Managers; A Training Manual*. National Capital Region, National Park Service. pp. 90.

<sup>2</sup>Management Program for the Perpetuation of the American Elm Tree in the Nation's Capital. *Save-the-Elms Task Force*. National Capital Planning Commission. December, 1983. pp.17.

James L. Sherald, Ph.D., is Plant Pathologist/Integrated Pest Management Coordinator for the National Park Service's National Capital Region.



## Movable Lantern Holders

Are lantern burns scarring the trees in your campgrounds? The unsightly catface scars caused by lantern burns weaken the tree, provide entry places for insects and disease, and lessen the aesthetics of a wooden campsite.

Movable lantern holders are being used with success at campgrounds operated by the Nashville District, Corps of Engineers on J. Percy Priest Lake and Old Hickory Lake. People generally don't hang lanterns on trees if a more convenient holder is available. The disadvantage of a permanently fixed lantern holder is that a camper may want light in other places. The movable lantern holder allows

campers to place a holder in the most convenient place.

The movable lantern holders are made with the manufactured lantern posts set in concrete inside an old tire. A board is placed under the tire when the concrete is poured. The finished product is a durable holder that can be rolled and put where the camper wants to use it.

This article was submitted by Carolyn Bauer, National Resources Management Branch, Nashville District, U.S. Army Corps of Engineers.

## Heavy Duty Picnic Tables

In an effort to reduce vandalism and theft of picnic tables in recreation areas, the Nashville District Corps of Engineers' has begun using heavy-duty picnic tables.

The tables are constructed of treated pine boards 4" thick and 6" to 10" wide. Weighing between 350 to 500 pounds, the tables are too heavy for most thieves. They can be moved somewhat, however, by campers and picnickers, who are seldom satisfied with a permanently attached table. The tables can also be moved without destroying



them if they need to be relocated to another site or used in a group for special events. But the weight of the tables also eliminates a lighter table's potential for tilting and falling when two people are seated on one side.

Costs of the material needed to build a table of this type averages between \$90 and \$175 . . . a

reasonable figure considering that only one such table placed at four different lakes in the Nashville District has been destroyed or stolen in the past three years.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

## Vocational Schools Can Help

Budget restraints and limited training funds often handicap the construction of needed new facilities and the development of additional job skills. Corps of Engineers Resource Managers on Lake Cumberland in Kentucky and Dale Hollow Lake in Tennessee have been able to overcome this handicap, however, by using the capabilities of their state's vocational schools. The Clinton County Vocational School in Albany, Kentucky, built five Visitor Entrance Stations on Lake Cumberland that saved an estimated \$1000 in labor costs. The Corps supplied the plan and materials for construction of the hexagonal booths, which have five windows and one door. The unusual design of the structure presented a technical challenge that the



school was happy to tackle.

The Vocational Technical School in Livingston, Tennessee, has rebuilt machines and automotive parts, constructed picnic tables, and trained Dale Hollow employees in the use of

computers . . . all at fractions of costs prevailing in the private sector.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

(Continued from page 26)

Use celosia with care and discretion as it is very bright, and don't plant it outside until spring weather is reliably stable or it will bolt to seed and not bloom. Apricot Brandy is a good variety whose color seems to blend better than other celosia's.

Where sunny "hot spots" exist, shy away from geraniums and marigolds and instead try spider flower (*Cleome*) or gazania. Kochia is another annual that is useful as a hedge and background that tolerates extreme heat and dry soil, but it is rather nondescript until fall when its lacy foliage turns brilliant red. Flowers are all but invisible. For a low growing ground hugging annual in shades of white and pink, particularly where air pollution is high, plant vinca, especially where summer conditions are hot.

## Salvia

Although many plants that tolerate heat are also drought resistant, salvia prefers a rich, moist soil. Used as an edging, massing or background plant, salvia has spikes of red, white or purple that do equally well in full sun or part shade. Use red salvia with caution as too much of it will be distracting to the overall design. When selecting varieties, try the Carabinieres, Red Hot Sally or St. John's Fire among the lower growers and Red Pillar, America, Bonfire or Splendens Tall where tall plants are needed. There's also a new coral salvia



Marigolds in Seattle Center Park.

this year called Champagne.

## Marigold

Where flower beds are "normal," regularly watered and not overly fertilized, one of the favorite annual choices for sun is the marigold. Shades of cream, yellow, orange, bronze and red cover plants anywhere from 6 inches to 3 feet high from early summer to frost, especially if faded flowers are picked off. Don't be surprised if the tall "American" marigolds don't bloom until late summer, for they are photoperiodic and need short nights. It would be best to pick another annual than the American marigold as a tall background to a marigold planting for season-long bloom. Lower growing French marigolds are excellent for borders and beds and bloom almost non-stop as do the triploids which are a cross between American and French.

The fragrant white, pink and purple blooms of the sweet alyssum are a good selection for edging marigold beds as they have the same soil, light and water requirements. They're bet-

ter than marigolds in one respect—faded flowers fall off cleanly and don't need to be removed manually, thus lowering maintenance. They can also be used alone where a low growing spreading plant is needed and are good near benches because of their sweet scent. Select Carpet of Snow (white), violet Royal Carpet or lavender Rosie O'Day.

## Nicotiana

The flowering tobacco (*nicotiana*), especially the recently introduced "Nicki" series that comes in a variety of colors, fits well in massed beds or borders in sun or light shade where watering is a regular activity as it prefers moist soil. *Nicotiana* grows easily from seed that drops from the flower; if you're lucky some of these plants will live through the winter and give you a head start on next year's flowers.

If you can provide frequent watering and fertilizing, deadheading of faded flowers and enjoy full sun, warm days and cool nights, geraniums can be used effectively. They're often best left for container accents although some of the new hybrid types grown from seed make effective bedding plants. If you use them near the office, public buildings or parking lot, choose white or pink varieties as they show up better at night.

## Shade Annuals

Shade is a problem in many situations where dense and

(Continued on page 36)



Flower beds at Milwaukee County Park.

(Continued from page 35)

mature trees block out the light, but is one successfully overcome with the right choice of annuals. Wax begonias in tones of white, pink, or red are one of the best of the shade annuals because they are more drought tolerant than the others, plus their faded flowers drop cleanly. Their neat, mounded appearance is desirable in formal borders and beds. Where heat and humidity are high, choose bronze leaved ones over the types with green foliage.

The impatiens is one of the favorite shade annuals for its ease of care. Where soil is dry or the sun hits the beds for long periods of time, impatiens will need watering to prevent wilt. Be cautious when choosing impatiens varieties as there are some with strong orange, coral or fuchsia hues that do not blend well with other colors.

For something different in the darker shaded areas, try the bright foliage markings and variegations of coleus. As flower spikes form in late summer, they

should be pinched off to keep the plant from going to seed and dying.

Where do you plant to color the park? It depends, naturally, on your budget and maintenance capabilities how much you can add to the park landscape, but even the leanest budget can afford low-care flowers along areas most frequented by the public—near parking lots, rest rooms, information buildings, and shelters. If you are not experienced in planning flower beds, keep your first efforts simple, with one main color and one or two complementary colors. In time you'll learn what looks and grows best together.

If space is a deterring factor, a few container plantings or hanging baskets will add interest and accent, and brighten up the setting anywhere in the park. If you have a patio area for picnicking or snacks, this would be a perfect spot for pots of flowers. Choose a potting mix of half peat moss and half perlite and/or vermiculite for good drainage and water retention.

Bedding Plants Inc., a non-profit association dedicated to increased use and appreciation of bedding plants, offers free tip sheets to assist you in planning and planting annual flowers beds and container gardens. Send a self addressed, stamped envelope to Flowering Annuals and/or Container Gardens (please include either or both in the address), Bedding Plants Inc., 210 Cartwright Blvd., Massapequa Park, NY 11762.