

Pest Management: The IPM Approach

By Michael Ruggiero and Gary Johnston

A commitment to sound pest management with a minimal use of chemical pesticides has long existed as an NPS management policy, if not always followed in actual practice. In the past few years the Service has reaffirmed this commitment by implementing the principles and practices of "integrated pest management" (IPM). These principles, based on sound ecological theory and prescribe methods of pest management, seek to maximize the use of natural controls while minimizing the use of short term chemical treatments. In practice, IPM incorporates monitoring, injury levels, and treatment strategies into an overall decision making process tailored to a particular pest problem at a particular site.

Probably the most important component of a sound IPM program is monitoring. The mere presence of a pest organism does not in itself constitute a pest *problem*. Only through frequent surveys can one determine those pest population densities that may be injurious. The specified injury levels may vary in magnitude with regard to specific management goals. For instance, a park manager may wish to prevent an exotic weed population from establishing new colonies, or reduce burrowing rodent populations to prevent damage to historic structures. Treatment actions generally are taken to restore, preserve, or supplement the checks and balances in the system, not necessarily to eliminate the pest species. Treatment actions should be selected after a thorough review of

existing remedies; they should be effective, have minimal environmental impact, and be least threatening to humans. Treatments using preventive, mechanical, cultural, sociological, biological, or chemical means can be used singly or in combination. Monitoring should continue after treatments to determine their effectiveness. The entire process should be evaluated periodically and "fine tuned" as necessary.

Since 1980 the Service has made substantial progress in implementing IPM including: 1) incorporation of IPM principles into Draft Pest Management Guidelines, 2) a more in-depth review of pesticide use proposals at the park, Region and Washington office levels, 3) development of information files on 300 pests and 200 pesticides which are available to the Regions and field, 4) development of a plan for Pesticide Applicator Training and Certification for NPS personnel, 5) completion of a three year pilot project demonstrating IPM principles and practices in the National Capital Region, 6) development of a 40-hour course in Integrated Pest Management for NPS personnel, and 7) completion of workshops on Service-wide pest problems such as, mosquitoes, gypsy moths, urban pests, and agricultural pests.

Reported annual pesticide use declined by approximately 80 percent between 1975 and 1982 (based upon a 1975 figure of 100,000 lbs. used). Although the number of pesticide projects remained constant, the amount of pesticides used per project decreased.

The proportionate use of less toxic pesticides (e.g., microbial insecticides, petroleum oil, soap, and boric acid) accounted for 11 percent of the 1982 projects compared to 4 percent in 1979.

The IPM program continues to receive strong NPS support and future plans include increased emphasis on training, the development of IPM information packages, and use of automated equipment to provide the field with easy access to IPM information. One goal for next year is to automate the pesticide approval and reporting process.

Training activities will focus on three areas, the implementation of a 40-hour IPM training course, development of a Pesticide Applicator Certification Training Course, and the scheduling of several workshops on selected Servicewide pest problems. A pilot run of the 40-hour IPM course is scheduled for February 1984 with a second presentation anticipated for July 1984. The Department's Pesticide Applicator Certification Training Course (PACT) has received preliminary review by EPA and is now receiving public comment prior to final action. The target date for full implementation of PACT is 1986, enabling the Service to train and certify its own Pesticide Applicators. Topics of the 1984 workshops include meadow management, structural pest management, exotic/noxious weed management, gypsy moths, and general pest management.

In 1984, a series of IPM informational packages on approximately 20 pests will be prepared. Each package will include information on biology, damage caused by the pest, identification, methods of control, NPS recommended approach to control, professional contacts, and references. This is a continuation of a project initiated in 1983, in which 29 IPM information packages are being prepared and recorded on floppy disks. Electronic copies will be available to the field via telephone/modem. Hard copies of the packages will be available by mail to personnel that do not have access to automated equipment. By 1985 WASO plans to have a completed set of these IPM packages in every park.

Automating the pesticide approval process already has begun on a voluntary basis. Regions that have microprocessing equipment with a modem now are able electronically to transmit the standard "10-21A" pesticide use proposals directly to WASO. Parks with compatible equipment can communicate similarly with the Regions. This procedure can shorten processing time by up to 2 weeks and eliminate the need for costly typing and duplicating services. To date, the WASO CPT microprocessor has successfully interfaced with other CPT, Apple, IBM, and TRS systems, and is thought to be compatible with most microprocessing equipment.

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