

Final Report for:

## **Service Quality Assessment for the National Park Service IPM Program**

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The purpose of this project was to conduct a needs assessment for the National Park Service Integrated Pest Management (IPM) Program. The assessment was carried out in order to develop recommendations on how the IPM program can improve service to the parks and regions. The needs assessment will determine the needs for IPM expertise and services at the park, region, and national levels and should cover natural resources, cultural resources, visitor and resource protection, and facilities management. The review was conducted at the Washington Office, region and park levels. The survey instrument was developed by Dr. Jerry Johnson, Associate Professor of Political Science at Montana State University - Bozeman with input from resource managers at Biological Resource Management Division; Park Superintendents; resource managers at park and regional levels; and park, regional and Washington IPM coordinators.

The stated objectives of the assessment were to:

1. Determine the programmatic needs for Integrated Pest Management services and expertise in parks, regions, and national levels.
2. Compare the NPS IPM program structure to that of other federal agencies.
3. Provide recommendations to reduce weaknesses and enhance strengths of the NPS IPM Program.

### **Background**

The National Park Service IPM Program was initiated in 1979. Since then the program has worked toward the implementation of a science based a nationwide Integrated Pest Management Program to reduce risk from pests and pest management related activities, affecting the public, employees, park resources and the environment. IPM is a risk reduction process which coordinates the use of pest biology, environmental information and available technology to prevent unacceptable levels of pest damage by the most economical means while posing the least possible risk to people, property, resources and the environment.

The IPM Program addresses pest issues from all divisions at the park, regional, and national level. Natural and cultural resource management, maintenance, concessions, and public health are all affected by the IPM Program. IPM Coordinators work cooperatively with other NPS divisions, federal, state, local and academic experts to ensure that pest

management is effective and presents the least risk to humans and park resources. Review programs exist for pesticide use and, if pesticide use is approved, the IPM Program provides technical guidance and track pesticide use through the NPS PUPS (Pesticide Use Proposal System).

The IPM Program is currently staffed by 2 National IPM coordinators, a part-time university cooperator and 9 regional (or field based) IPM Coordinators. All National and Regional IPM Coordinators have technical skills in pest management and extensive experience in the NPS.

The IPM Program is available to provide technical assistance and guidance in all pest management arenas including vegetation management in natural, cultural and developed areas, public health pests, structural pests and agricultural pest issues. Assistance is also available for preparing urgent management strategies and long term IPM Plans. Most of the 388 parks designate a part-time IPM coordinator who is responsible for reviewing pest management issues at the park and elevating them to the regional IPM Coordinator for review and guidance.

### **IPM Program Assessment**

The difficulty for the NPS IPM program as a service provider within the Park Service is that excellence in service provision is problematic if there is not a clear linkage between budget expenditures and continued agency IPM service provision.

The needs assessment survey forms the first phase of a two part review of the IPM. Following the completion and assimilation of the survey, BRMD will convene a review panel composed of managers and subject matter specialist to examine these results and recommend options for improving the NPS IPM program.

The survey instrument was based initially on the SERVQUAL or Service Quality instrument designed in 1988 by the market research team of Berry, Parasuraman and Zithaml. SERVQUAL is intended to measure, compare, and plan service provision across a wide range of applications. It was later determined that the SERVQUAL instrument would be too lengthy for use in the IPM assessment. However, dimensions of the instrument were used to frame the survey. The five dimensions of service include:

1. TANGIBLES - appearance of physical facilities, equipment, personnel and communication materials;
2. RELIABILITY - ability to perform the promised service dependably and accurately;
3. RESPONSIVENESS - willingness to help customers and provide prompt service;
4. ASSURANCE - knowledge and courtesy of employees and their ability to convey trust and confidence;
5. EMPATHY - the caring, individualized attention the firm provides its customers.

Survey questions were designed and modified to reflect some, but not all, of the service dimensions. Several iterations of the survey circulated until it was agreed that 1) all relevant aspects of the service component of the IPM Program were contained in the survey and 2) there was agreement on the demographic descriptors of the respondents.

Several open-ended questions were included to ensure adequate feedback on exploratory questions was solicited and collected.

Early on it was determined that data collection would be web based. This ensured that low cost, high speed response could be successfully collected. Potential respondents received an introductory email via a listserve provided by the Biological Resource Management Division. The initial contact explained the assessment project and informed members of the listserve that a link to the survey would be forthcoming. Several days later another email was sent that included the URL link to the survey. The survey was left operational for several weeks. Completion of the survey required 10-15 minutes to complete.

Another decision made early in the assessment process was to try to census the members of the listserve rather than sample the population. This decision was based on the minimal marginal cost of sending the survey to everyone electronically. In effect there is not additional cost involved in sending an electronic survey to 500 than sending to 100 potential respondents. The only “cost” in conducting a census is that one cannot be sure which, if any, cohorts of the NPS organization failed to respond to the survey and may be underrepresented in the database; only the results of the census can be reported.

The HTM version of the survey (with numerical and percentage results for each question) is found in the back of the report as Attachment One.

The following tables display the results for each question in the survey. Frequency of response are provided.

Two items should be noted in the results below. First, the Likert scale for all questions is the same and is as follows:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not Applicable or Can Not Respond
1	2	3	4	5	6

Respondents were directed to check a circle on the survey that corresponded to the response they chose and did not see the number, it is presented here for presentation purposes. Second, respondents were required to provide an answer to all quantitative questions in the survey. This was to avoid unintentional skipping of questions. As a result, N/A was used where the respondent either could not or chose to not answer the question. In instances where the N/A response is above 10% of the total the percentage is

reported in the relevant charts below. In several questions where N/A was not relevant that option was not provided. There seems to be a structural no response rate of approximately five to six percent for most questions.

The first page of questions queried respondents to answer quantitative questions of quality of service provision, IPM practices, IPM role in protection of park resources, and issues of quality. The second set of questions solicited demographic data including years with the NPS, the respondent's primary functional responsibility, level in the park service bureaucracy, role in the NPS, and IPM training. The final set of four qualitative questions explores concerns and perceptions of the efficacy of the IPM program. Responses to several questions are out of order so as to provide a coherent examination of the theme of several related questions.

Overall, responses were favorable and show remarkable acceptance and support for the IPM program. The program is perceived to be doing important work and providing IPM services in a high quality manner. The IPM program is seen as relevant to most other functions within Park management.

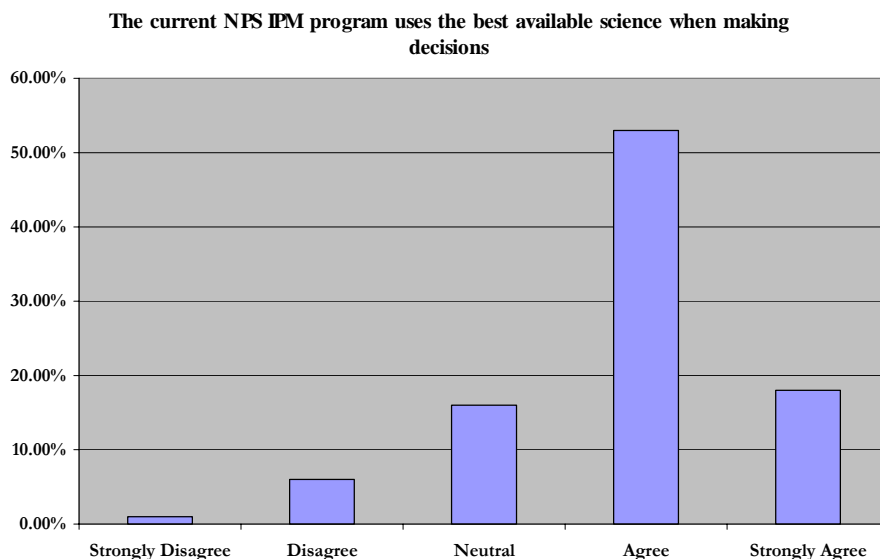
## Part I: Results of Service Quality Questions

### Service, Management, and Information in the IPM Program.

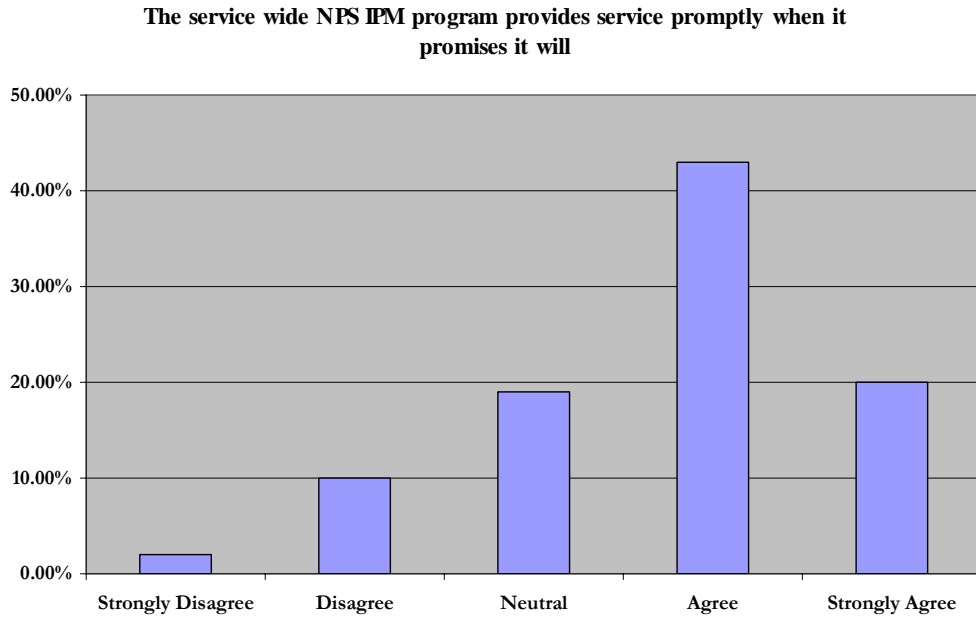
Results are presented as bar charts reporting percentages for each response. For most questions the N/A response was insignificant but where it was greater than 10% it was included in the results. Means are also noted.

The first set of five questions center on the quality of service provided to NPS personnel by the IPM program.

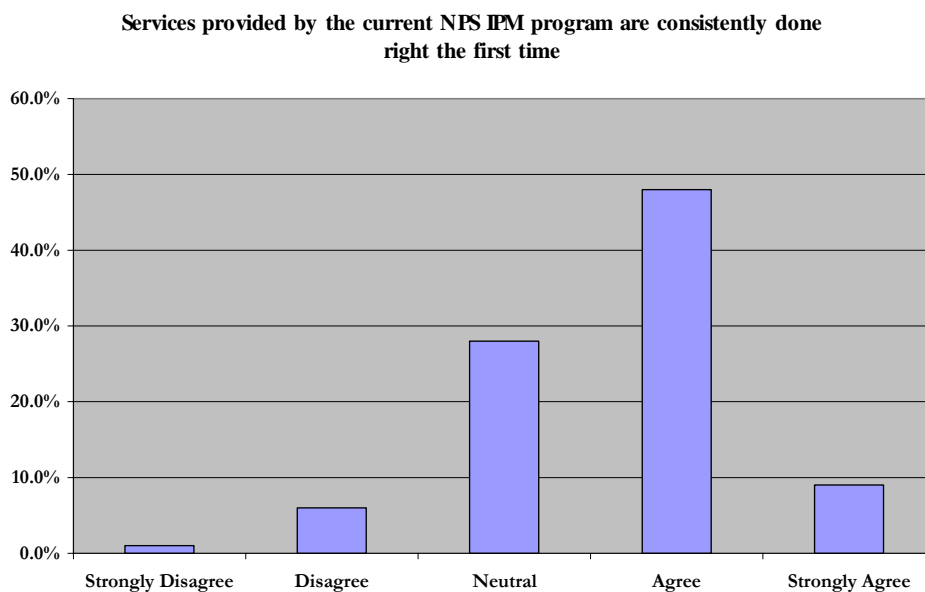
Question one displays the typical pattern for this set of questions where respondents felt that the current IPM program uses good quality science for decision making (mean = 3.87).



Question two specifically queries respondents about the quality of service provision to IPM participants:

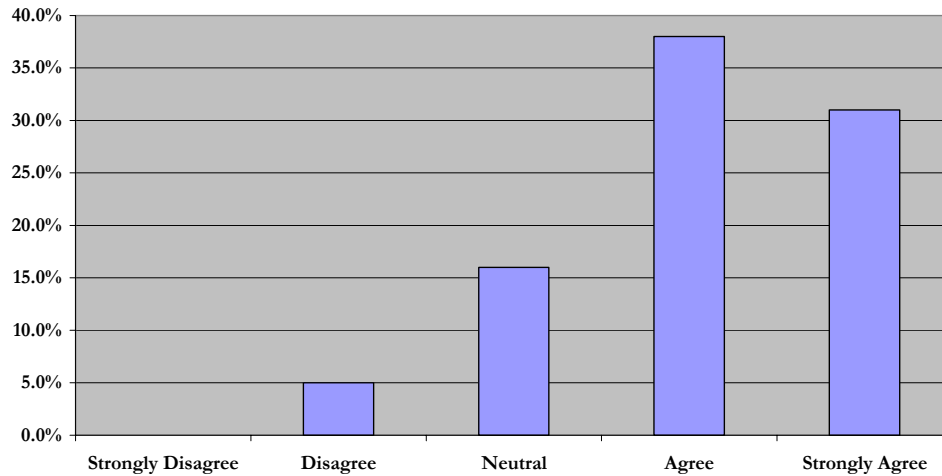


Again, there is strong agreement that service wide support is prompt (mean = 3.74) and as the results from question three below indicate, it is done right the first time thereby indicating high quality of service provision (mean = 3.64):

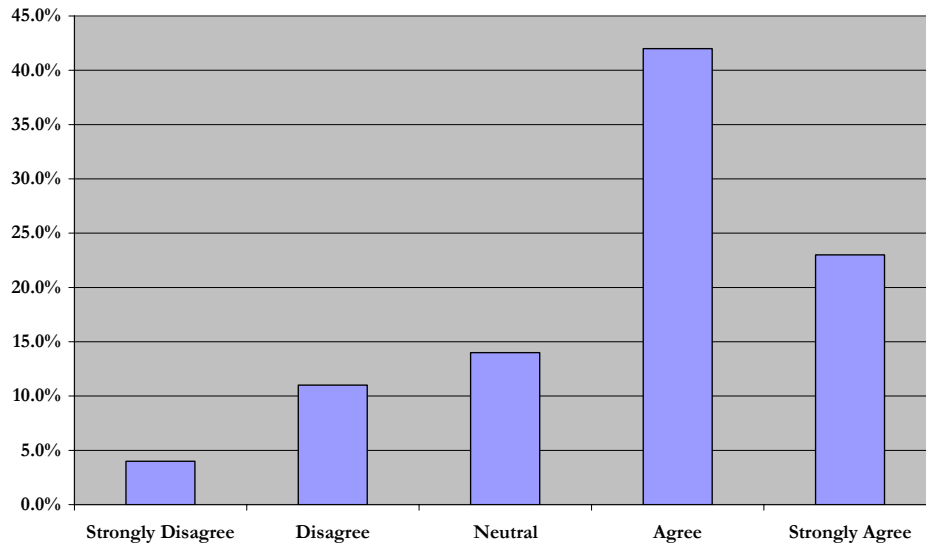


Responses to questions four and five exhibit an even stronger consensus of service quality and provision as the service wide IPM program helps coordinators carry out their IPM duties and responds to requests from coordinators (mean = 4.05, 3.74 respectively):

**The service wide NPS IPM program is willing and eager to help coordinators in their IPM duties**

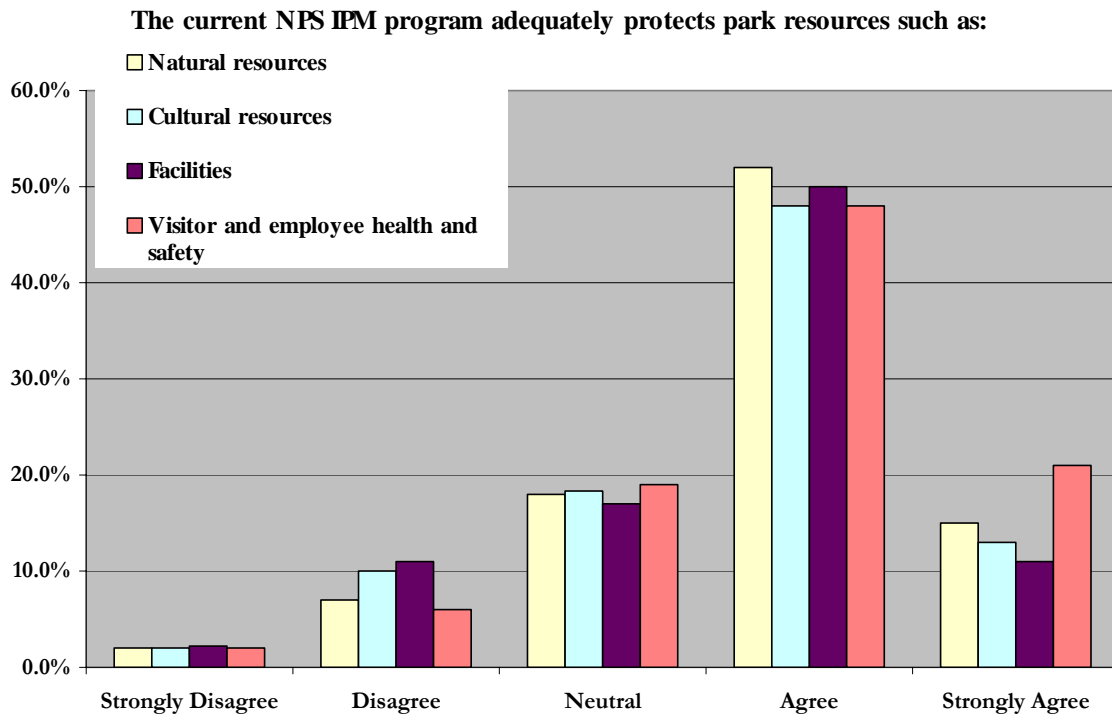


**The NPS IPM program responds to requests quickly**



There is a pattern of overwhelming agreement among respondents that in all respects the service component of the IPM program is working effectively.

The next set of four questions asked about the role the IPM program plays in the protection of park resources:

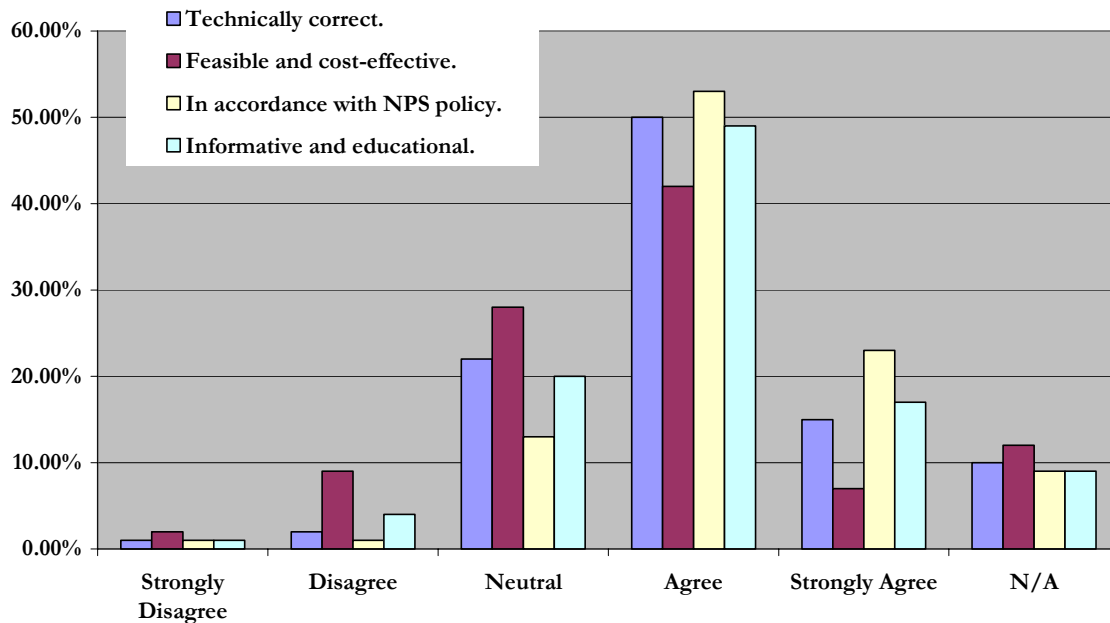


It was stated by most respondents that the IPM program does provide adequate protection of resources. One category (cultural resources) had a 9% “no response” rate probably reflecting slightly less relevance of IPM to cultural assets compared to other resources. The table below depicts the mean response for each question:

<b>The current NPS IPM program adequately protects park resources such as:</b>	Mean Response
Natural resources	3.76
Cultural resources	3.64
Facilities	3.63
Visitor and employee health and safety	3.85

The nature of statements and reports provided by the IPM program was the subject of the next set of four questions and several related questions. The pattern of agreement with the statements continued for all four features. Two features – technically correct reports and the feasibility/cost effectiveness, display over ten percent “no response”, the other two features

**The NPS IPM program provides statements reports and information that are:**



had a 9% no response rate. This is probably due to the lack of relevance to a small number (approximately 25) of the 246 respondents. The table below depicts the mean response for each question:

<b>The NPS IPM program provides statements reports and information that are:</b>	Mean Response
Technically correct.	3.86
Feasible and cost-effective.	3.49
In accordance with NPS policy.	4.06
Informative and educational.	3.84

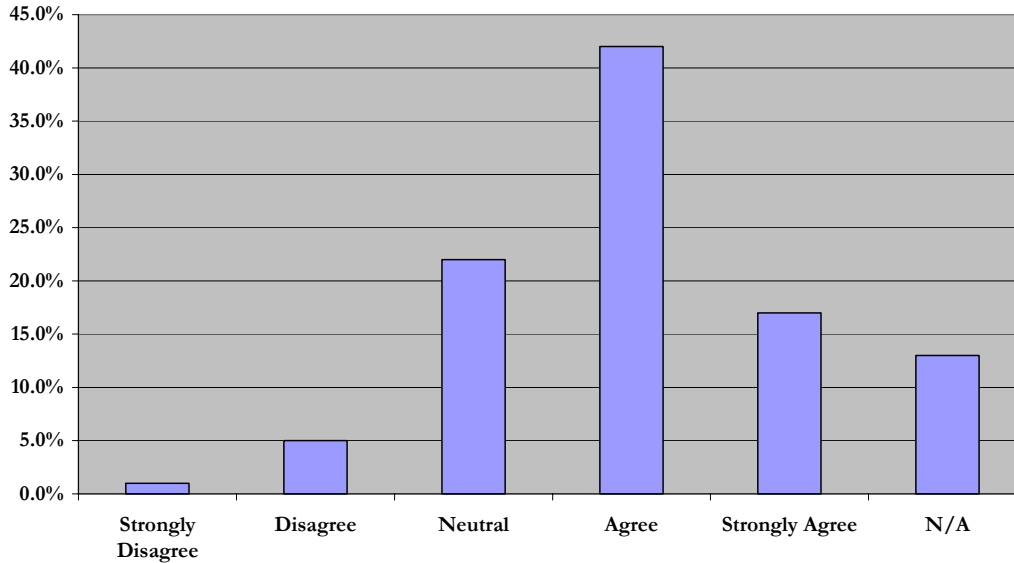
Two related questions referred to the availability of staff people in the IPM program. Questions 15 and 16 asked about the ease of contact via telephone and email. As the table below indicates both were equally effective means of communication:

<b>In the NPS IPM program it is easy to reach the appropriate staff person:</b>					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
By telephone	2.00%	9.00%	17.00%	47.00%	17.00%
By e-mail	2.0%	9.0%	13.0%	48.0%	24.0%



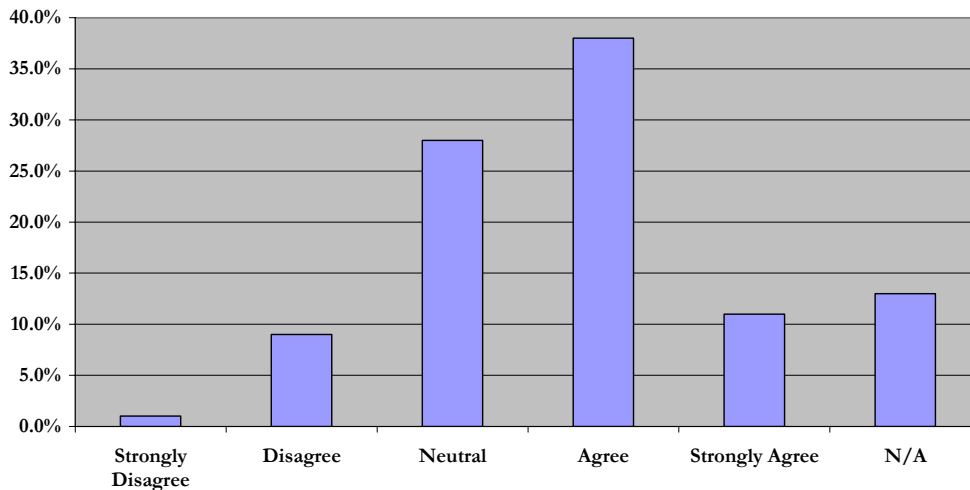
Question seventeen asked about the NPS IPM program reputation. A total of 59% agreed that the reputation of the program is positive.

**The NPS IPM program has a good reputation within the agency and among its partners**

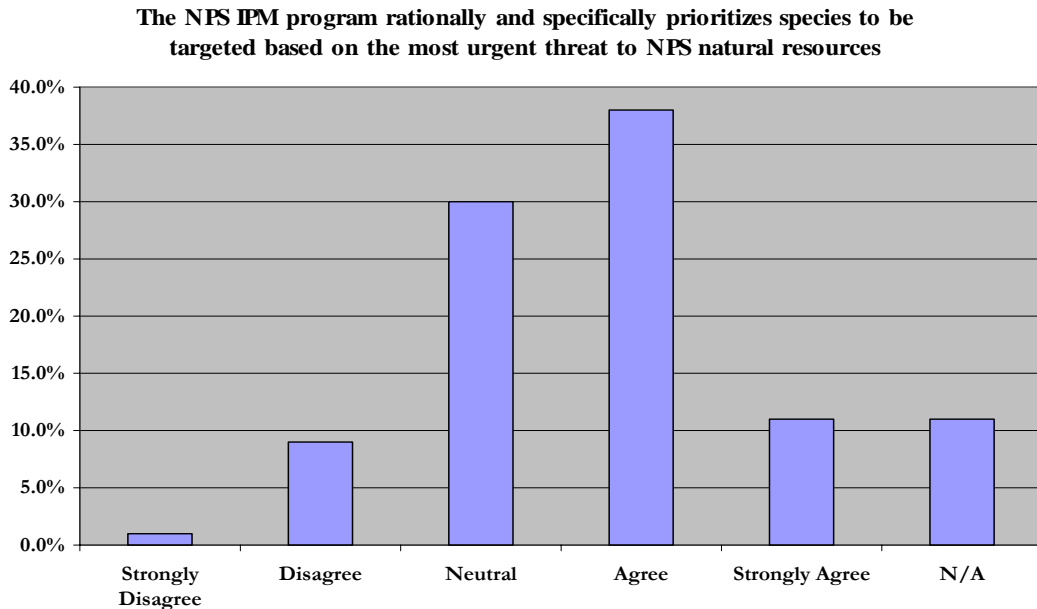


Finally, question twenty-one investigated the success of cooperation with other programs within the NPS. While 28% were neutral, 49% agreed that the IPM program works cooperatively to provide an integrated approach to resource protection.

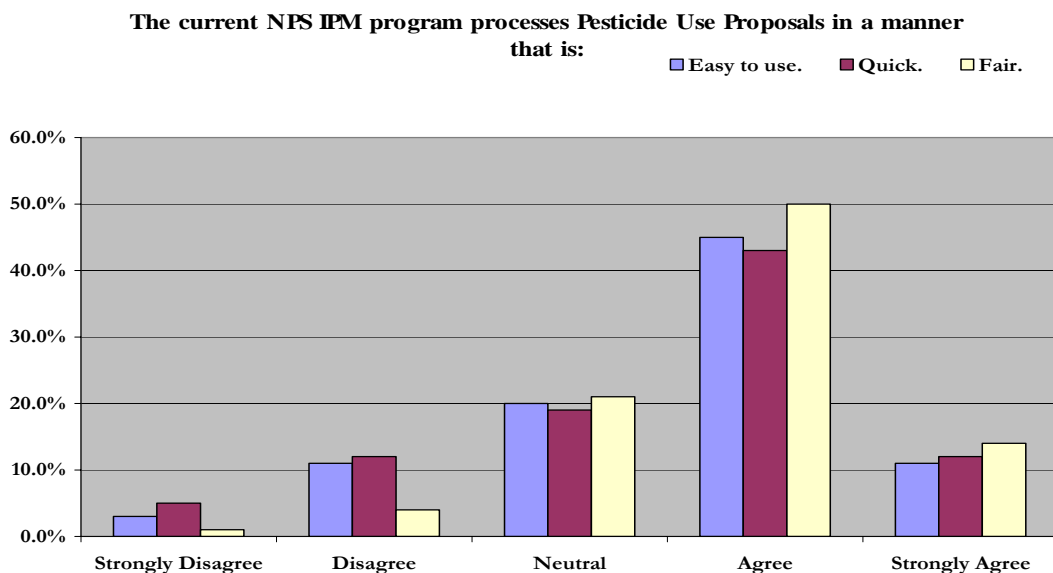
**The current IPM program works cooperatively with other programs to provide integrated policy technical assistance and resource protection**



Question fourteen queried respondents about the rationality of species targeted by IPM efforts. Most (49%) agreed with the statement but 30% were neutral suggesting some equivocation of response. Ten percent disagreed or strongly disagreed with the statement. Clearly some IPM practitioners feel there could be at least marginal improvements or further explanation in how and why IPM targeted species could be determined.



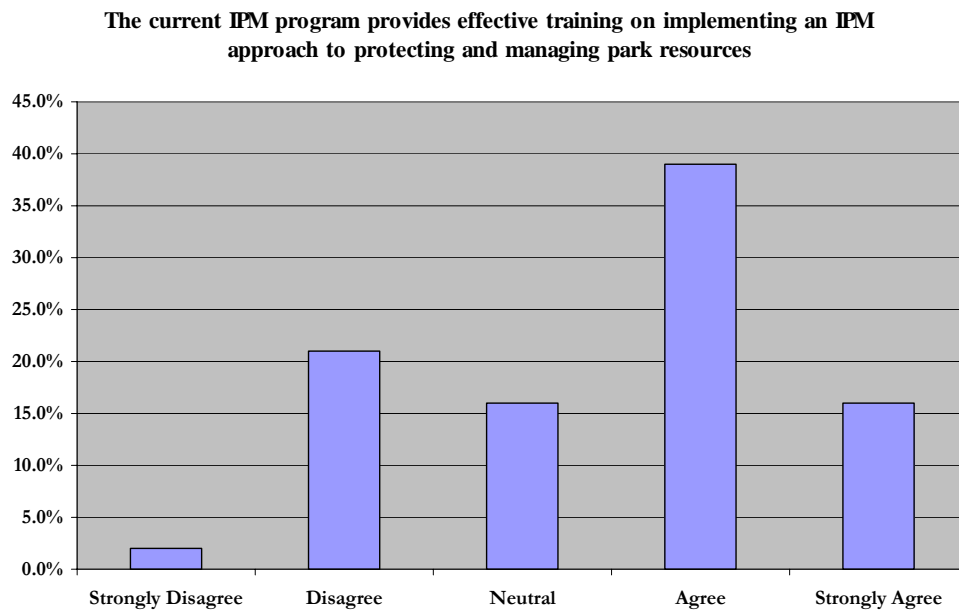
An integral part of IPM is the use of pesticides and other chemical controls. If a pesticide is proposed as part of an IPM program the IPM Coordinators review the proposal (approve or deny it) and provide additional technical guidance, and track pesticide use through the NPS PUPS (Pesticide Use Proposal System). A set of related questions (18,19,20) ask about the implementation of Pesticide Use Proposals.



Most respondents agreed that the PUPs are processed quickly, fair and easily. There is a very marginal difference with respect to the speed of processing; it is rates slightly lower than the other two features. Likely, there is not a statistically significant difference in responses.

### Training and Expertise in the IPM Program.

Questions 22 – 44 address issues of agency expertise, training, quality. Number twenty-two asked specifically about the effectiveness of training for implementing the IPM program:

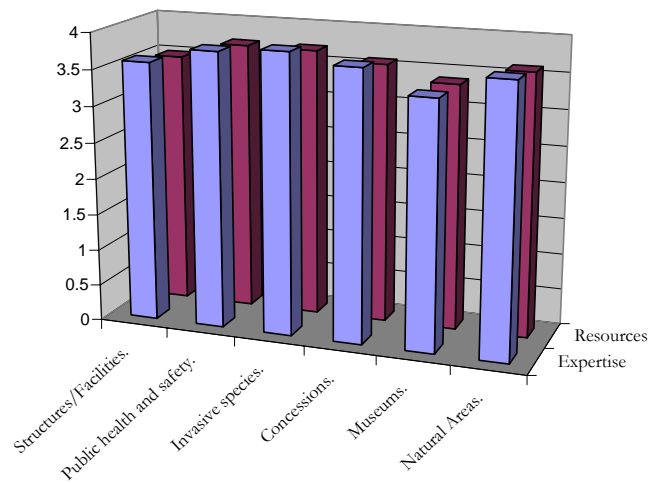


This was one of the few bifurcated set of responses; while a total of 55 percent agreed with that current training was effective, 23% disagreed. The nature of the data does not allow for further investigation of these responses but discussion could be pursued within focus groups at a later date. In the open-ended responses only a few mention the lack of adequate training.

The next twelve questions investigate the quality of expertise to several general features of park management and then ask about the adequacy of resources for that management. The data is presented the data in a slightly different format to allow for easy comparisons between expertise and funding. One would expect that differences might exist between the resources inherent in the IPM program (i.e. expertise) and resources that allow the expertise to deliver their service (i.e. funding). This does not seem to be the case.

The most common response for the twelve questions is “agree” in every case. The range of “agree” responses is between 32% and 52% for expertise and 35% and 48% for resources. As can be seen in the chart and associated table below the means for expertise and resources are very close and mirror each other in response pattern. These results indicate that respondents perceive a close fit between the current activity of the IPM program and the resources applied to the program. It is not to suggest that more resources are not needed or desired by respondents, instead, it suggests that the NPS is “getting what it pays for”.

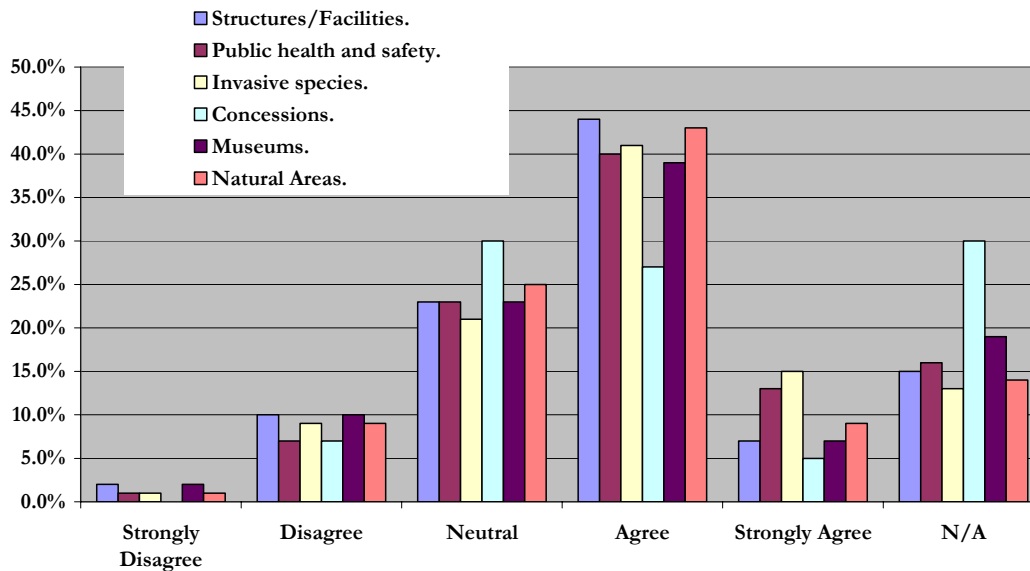
**Mean Responses Comparing Expertise and Available Resources for IPM Related Park Management Features**



	Structures/Facilities.	Public health and safety.	Invasive species.	Concessions.	Museums.	Natural Areas.
Expertise	3.59	3.8	3.86	3.72	3.4	3.7
Resources	3.49	3.71	3.7	3.58	3.38	3.61

The next set of six questions asks about the appropriateness of technical and legal guidelines from the IPM program to other park management issues.

**The current NPS IPM program provides the appropriate amount of technical and legal guidance needed to address issues associated with:**



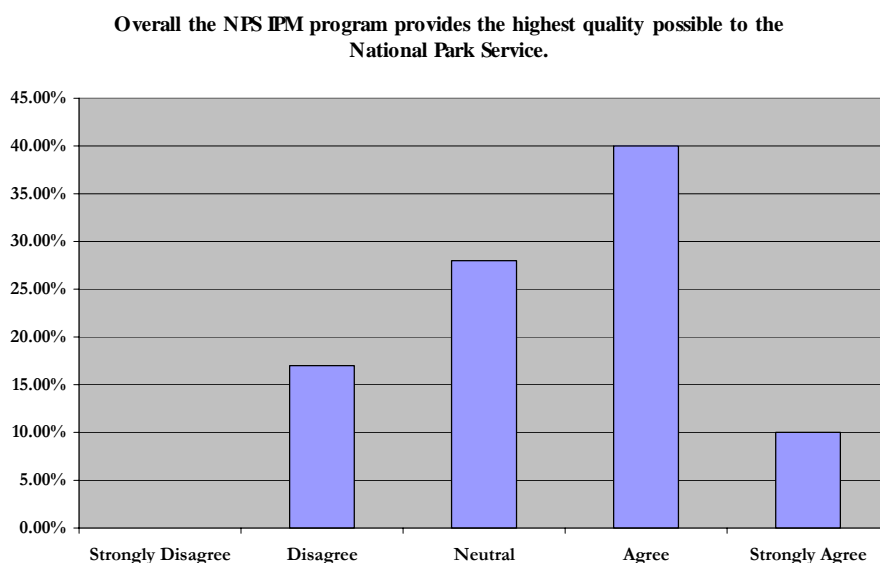
With the exception of IPM's association with "concessions" most respondents agree that the IPM program provides appropriate technical and legal guidelines. In the case of "concessions", 30% of the respondents were neutral or marked "N/A". This likely implies that IPM has little influence of concession management. "Museums" also attained responses that suggest IPM's relevance to that facet of park management.

The last set of four questions sought to ascertain the level of IPM expertise at several levels within the NPS: the park level, "vital signs monitoring networks", regionally, and nationally. Forty three percent of respondents agree that the IPM program provides high quality expertise at the park level, 26% were neutral. Fifty eight percent and 56% agreed with the statement at the regional and national level respectively.

Thirty six percent of respondents were neutral toward the statement with respect to the "vital signs monitoring networks" level; and additional 24% marked N/A. Only 26% agreed with the statement. The intent of park vital signs monitoring is to track a subset of physical, chemical, and biological elements and processes of park ecosystems that are selected to represent the overall health or condition of park resources and relate directly to the "unimpaired for future generations" part of the NPS mission. There are 32 such networks in the NPS. IPM could easily be considered integral to vital signs monitoring. That many respondents do not find the IPM program beneficial to the vital signs monitoring program suggests that 1) they do not understand the nature and linkage between the two programs or 2) it (IPM) is not doing a good job of providing those involved with the vital signs monitoring program with appropriate expertise.

Based on the overwhelmingly positive orientation of most respondents to the IPM program and all its facets, it is very likely that there is a level of detachment between IPM practitioners and vital signs participants. This seems even more likely when one understands that the fundamental goals of the vital signs program are focused on data management, inventories, and long-term monitoring. These goals seem somewhat removed from daily IPM efforts. Perhaps the relevance of IPM efforts to vital signs monitoring could be more effectively related in future IPM documents.

The final question asked respondents to consider the overall quality of the IPM program:

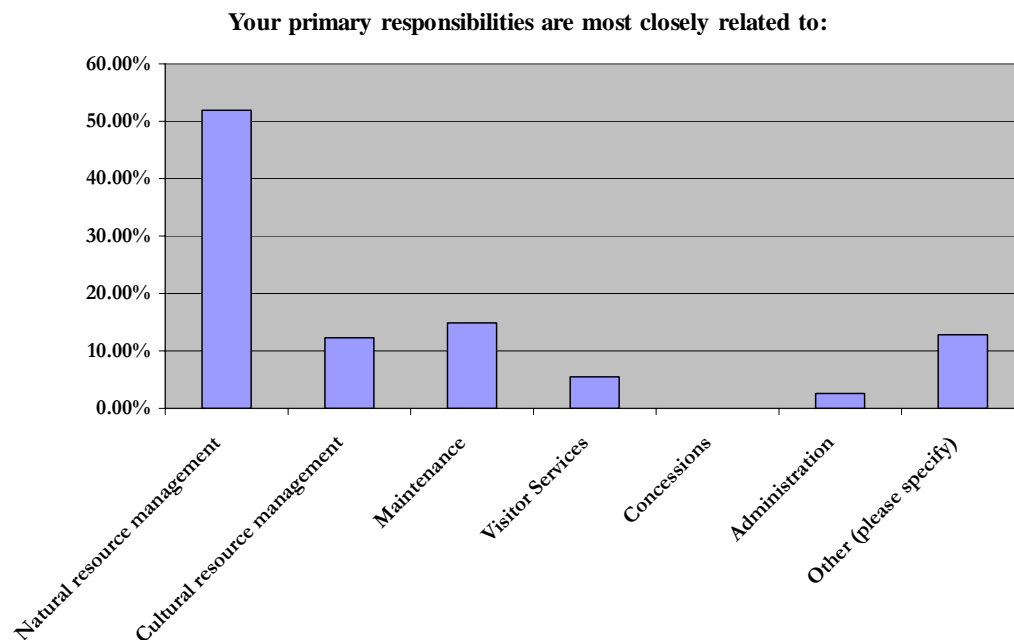


One half of all respondents agreed that the IPM program provides the highest quality possible to the NPS. Twenty-eight were neutral and 17% disagreed with the statement. This set of responses mirrors closely the trends from the other 44 questions in the survey; in general, respondents are favorably disposed toward the program. The open ended responses provide more insight to this overall perception.

## Part II: Survey Demographics

The second part of the survey collected data on the survey respondents. They were asked about their service and role in the NPS and their management priorities with respect to ecological management of park resources.

The average years of service to the NPS by the 247 survey respondents is sixteen and 90% work at the park level. The regional or support offices account for an additional 6% while 2% are at the WASO level. The primary responsibility of respondents is in natural resource management followed by maintenance and cultural resource management:

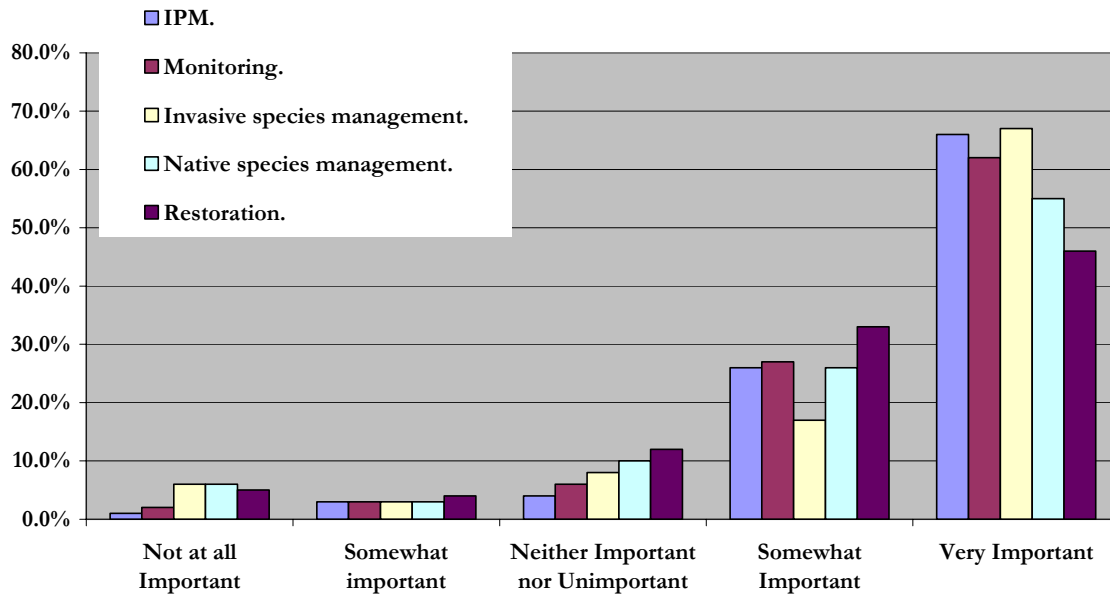


Respondents were asked about the importance of several natural resource management issues to their area of primary responsibility; all were ranked as “very important”. This expected congruence between natural resource managers and natural resource management programs is fully expected.

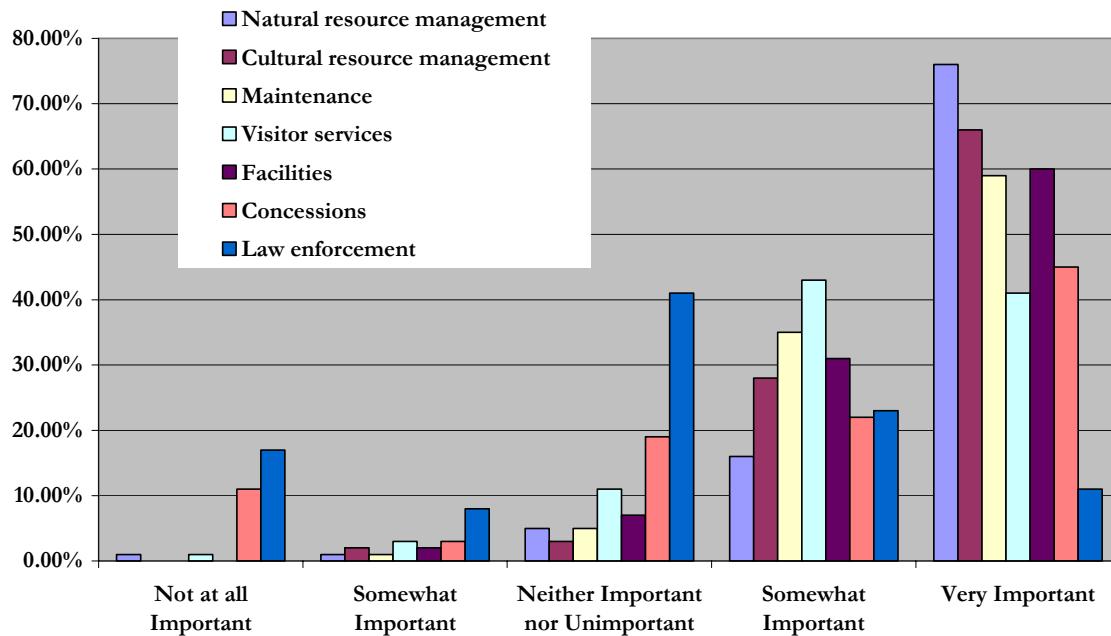
Conversely, respondents were asked to rank the importance of IPM to several broad areas of park management and again, findings are congruent with natural resource management

functions and less so with activities seemingly unrelated to natural resource management (i.e. law enforcement. The charts for these two sets of questions appear below:

**Rank the importance of the following programs to being successful in your working area of primary responsibility.**

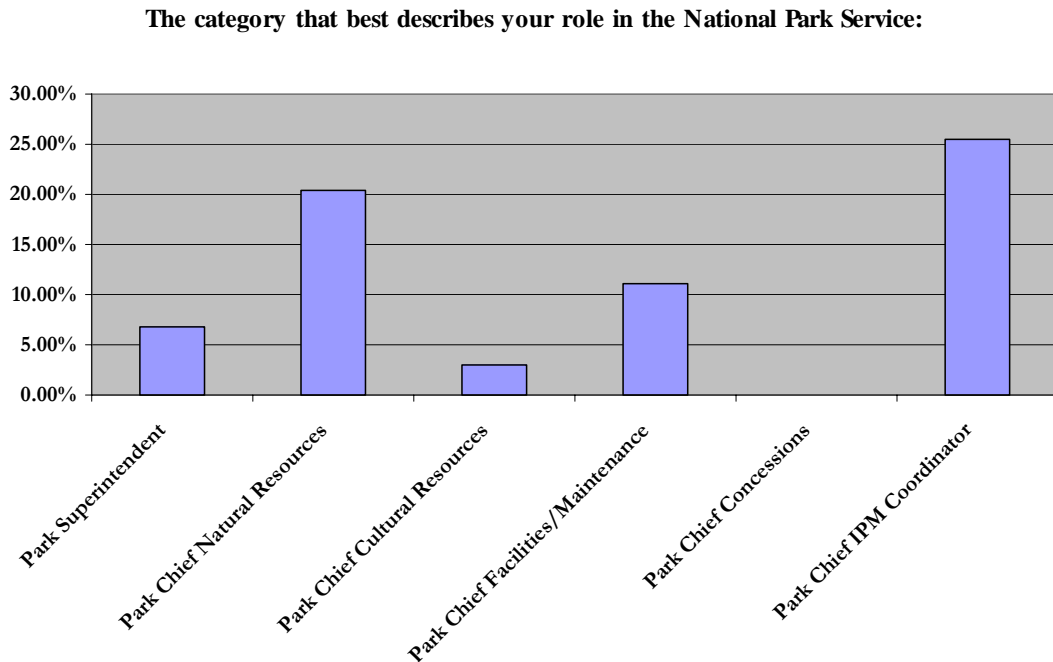


**Rank the importance of IPM to the following areas:**



With the exception of law enforcement, IPM is perceived to be relevant and important to most park functions.

Most (66%) respondents to the survey reside at the Park level and positions within the parks were well represented:



IPM coordinators had more professional interest in returning the survey reflecting the higher rate of return from that group. There is no way to know the relative percentages of each role represented in the potential pool of respondents so there is no way to assess the response rate of each category of respondent.

The final question in the second part of the survey was where respondents received their IPM training. Most (40%) took government courses while an additional 25% received their pesticide use certification. Thirteen percent received their IPM training from some other source and 23% had received no training in IPM. This is not a surprising number given that 10% of respondents have little to no direct involvement in IPM (i.e. superintendents and cultural management).



## Open Ended Questions

Four questions were asked of all respondents to elicit open ended responses. They were:

1. What would be the consequences to the activities you perform of discontinuing the NPS IPM effort?
2. How could a Service-wide NPS IPM steering committee improve the use of IPM in NPS?
3. What are your top five (5) concerns regarding pest management in the NPS
4. What other perceptions of the NPS IPM would you like to share?

### **What would be the consequences to the activities you perform of discontinuing the NPS IPM effort?**

This question is essentially a zero based budgeting approach to program design; it asks about the impact on the program in the event of reduced or eliminated funding. Comments were categorized into four basic issues or concerns. The description and summary of the comments are in the table below, the comments for the first two questions appear with the results. The last question simply elicited any comment the respondent wished to make. Those appear as an attachment at the end of the report.

#### Summary of Open Ended Question One (13 total comments)

No Effect – a change in funding level or discontinuing the IPM program would have no appreciable effect. Twelve respondents expressed this sentiment:

1. Negligible effect. IPM is an accepted best management practice by private and public sector
2. Negligible. We're a small historic park with no IPM program at the time.
3. None.
4. I don't feel that they are supporting our operation in my Park.
5. Virtually none. We use the IPM program very little at this time. Our internal expertise relative to issues at the park exceeds that of regional expertise.
6. Almost none. We use very little chemicals where I work and larger issue like spraying for mosquito-borne diseases go above my head anyway.
7. The only IPM we would perform would be emergency pest control & that would have to be contracted out.
8. This basically does not apply as our project owns and manages no land or resources either natural or cultural.
9. IPM program in the park would continue without the NPS support.
10. Generally little consequence.
11. Thing would continue to be taken care of with out the appropriate oversight.
12. As a new cultural resources focused park, we have no IPM program in place. Our primary need will be control of pests in historic structures, and eventually for control of pests in museum collections (way down the road).
13. I feel that our park would continue to implement our activities following IPM protocol. I would still utilize the IPM process by doing the necessary research for solving or working on a problem.

Generally Negative Impact – a nonspecific comment that simply says the program would fail to perform as it does now, 65 respondents:

1. Invasive plant species would continue to displace native plant species
2. The park would be ignoring the single biggest threat to our native flora and fauna.
3. Mouse infestations, insects in collections and displays, health and safety (insect transmitted diseases).
4. Pests would no longer be controlled, or improper use of pesticides in the park
5. Historic Structures and Landscapes would be damaged and visitor services would be impaired and at potential safety risk.
6. Resource management programs within the NPS would definitely be negatively impacted. IPM is an important component of the assistance provided by regional/national expertise. The program provides up-to-date technical expertise that park staff doesn't have time to maintain.
7. Bad. Historic structures and museum collections would not be adequately protected.
8. There would be many more law suits involving pesticide use, the park would lose credibility in sustainability and pest management efforts. There would also be a huge loss of resources to tap for information and guidance.
9. I consider myself careful in choosing herbicides to control exotic vegetation even though the regional office can and does offer suggestions. This is the only time I use the regional IPM coordinator. However, if an issue other than exotic vegetation did arise I would probably be lost and need assistance from the regional IPM coordinator.
10. Increased non-native plant invasion, and increased rodent problems.
11. Loss of technical support to provide procedures for dealing with pest problems
12. We would lose ground and have more invasive species.
13. Invasive species would dominate the resources and cultural resource artifacts would be severely damaged.
14. Structures would experience drastic and catastrophic damage due to invasive pests.
15. We would lose a resource for recommendations of rodent proofing structures.
16. All the ornamental trees and shrubs in the Rose Family on all three small properties I maintain would slowly decline and we would lose the historic plants to rust and other diseases. The historic hemlocks would die in three years, the American elms would need branches cut out each year until nothing was left. Rodents would dig up the lawn and move into the museum basements.
17. >lack of approval for application of pesticides in exotic species removal >less effective natural resource restoration >less information easily available for cultural resource management
18. The parks would be left further in the dark without a coherent program. The lack of consistent IPM training for all branches of the park reduces IPM anyway.
19. Safety-human health issues, degradation of cultural and natural resources
20. If ending the program means no more monitoring or control of pests, this would be a disaster.
21. Just last week, I have taken the role of overseeing the Park IPM, I need some training, and need to share a lot of information with other Parks that may have information, that will help me with better understanding of IPM.

22. I am the park's IPM coordinator. However, because that is only a part of what I do, I do not have much time for researching pest problems and their solutions. If I did not have an expert to contact in this regard, the other aspects of my job would suffer, and our pest problems would go much longer unsolved resulting in much more damage to park resources, etc.
23. Best management practices may not be implemented.
24. Reduced effectively in preserving natural and cultural resources
25. There would be structural and public health ramifications and exotic plants would proliferate.
26. Degradation of facilities and increased maintenance costs.
27. Drastic
28. It would greatly alter our invasive plant control efforts at this park, especially for shrub honeysuckle. Increased hours will be needed to conduct constant surveillance of areas impacted by invasive plants, as mechanical disturbance may not cause systemic impact to the plants.
29. We may lose more storage facilities to rats and mice.
30. The IPM program provides support to the park level in implementing management of invasive and native pest species. It also acts as a hammer that can be lowered on parks and individuals who are acting unilaterally to apply pesticides that are neither approved nor applied following the label. It is a very useful program, but could be improved with more training to park staff.
31. If this question is, what consequences would discontinuing the IPM effort have on the activities I perform, my reply would be as follows: I'm a regional IPM coordinator and have other responsibilities as well. We do not directly do IPM in this building. My activities are at a level at which the IPM effort indirectly impacts or not at all. Of course, the part of my responsibilities that deal with IPM would cease if the program were discontinued.
32. IPM is an ongoing, perpetual activity, one which should not be funded only periodically. We currently host an Exotic Plant Mgt Team. We also have a modest amount of expertise on staff, for exotic plants. If current staff were to move on, we would be more dependent upon Regional or WASO level expertise.
33. An increase in health and safety concern if the problems are not resolved when dealing with animals and insects. An increase use of toxic chemicals if not monitoring and minimizing the use of harsh chemicals.
34. It could primarily have a significant effect on the life, health and safety of park employees both on the job and in the housing area. Lack of viable program would also effect natural resources in the housing areas of parks. IPM is also useful for the museum collections, historic buildings, and cultural sites.
35. Maintenance would increase due to the damage caused by uncontrolled invasion of pests inclusive of insects, exotic plants and some animals.
36. Deterioration of historic fabric would increase.
37. Catastrophic. Not only does the IPM program regulate the amount and type of pesticides used in parks, but it also ensures that pesticides remain an option, which must be the case if we are to effectively deal with invasive species.
38. Current activities would not be hindered too much, because what little activities we have, the methods are in place and equipment is acquired by the park without regional assistance. However, no support from the IPM group would prohibit further work on newly encountered species and there would be no access to newer,

- safer pesticides. Overall, discontinuing this program would clearly mark the doom of exotic plant and insect pest management in the parks - the two most critical issues in resources management, facility maintenance, and visitor satisfaction/safety.
39. The discontinuing of the program would have a devastating impact on the park.
  40. The health and safety of visitors and park staff alike would be highly affected. Building facilities, cultural resources, museums and grounds would be strongly effected as well.
  41. Unrestricted use of pesticides on lawns. Unabated invasion by exotic plants - loss of habitat for native plants and animals
  42. Without the IPM program we would not be able to effectively protect cultural resources in the museum collection and in restored/refurnished historic structures, effectively remove invasive, exotic plant/animal species and restore disturbed habitat, or provide safe and healthy environment for visitors and staff.
  43. Invasive species of plants would become more pervasive. Would save the park a lot of money. The use of unapproved products may cause injury to the environment.
  44. If discontinuing NPS IPM resulted in reducing the types of tools we can use to manage, it would be devastating. If discontinuing NPS IPM meant that decision making went to the parks, we would not be greatly affected at this park.
  45. I think it would be a disaster. On the cultural side: We work very hard at FOSM to exclude pests from facilities in general and museum spaces in particular. On the natural side we try to keep the grounds, parking area and natural spaces safe from invasive plants as well as pests that damage not only the natural areas but the sub surface cultural resources. I receive a tremendous amount of support and guidance from the MWRO IPM coordinator as well as the WASO coordinator while doing my IPM duties. I find them helpful and easy to discuss problems with. I believe if the IPM effort were to be discontinued the resources would suffer and the park visitors as well as park staff would not have as safe an environment. I believe overall it would diminish the NPS as a leader in preservation of cultural and natural resources.
  46. Decline in visitor and employee safety. Loss of native habitat to exotics. Facilities deterioration due to pest presence. Cultural landscape features compromised.
  47. All previous activities would be wasted.
  48. It would be a heavy blow. We rely upon the IPM program for technical support in exotic plant and pest animal species control. We often call upon the SERP IPM Coordinator.
  49. Cultural landscapes would be obliterated, which would make it more difficult to interpret the park resources. More money would be spent on pest control contractors, which would limit funding other projects.
  50. Disastrous
  51. failure to meet natural resource conservation mandates, both short-term and long-term; deterioration in relationships with local counties; failure to meet environmental protection and public health protection standards
  52. Complete loss of native vegetation with a potential loss of native fauna as well. Noxious weeds play an integral role in our management here.
  53. Big problems!
  54. It will destroy the artifacts at the site. Without it, it will definitely deteriorate the artifacts and the structure!

55. Invasive exotic plant species would reclaim the cultural landscape and special globally rare communities. The cultural landscape of our historic park would be devastated by invasive exotic insect pests. Museum collections would experience degradation.
56. Unable to fulfill NPS mission
57. Many more problem mice, squirrels, raccoons, deer and fox. This could eventually lead to both visitor and staff injuries and health problems(hantavirus, rabies)
58. It is the glue that holds much of what we do in NPS RM together. The integrated part of RM which includes IPM would no longer make sense. When NPS undertakes a long term restoration project, say restoring an island ecosystem and a big part of that project is to remove exotic plant and animals, IPM is critical to that process. The same for historic buildings. NPS is charged with maintaining those structures already 200+yr old while fighting off termites, beetles, etc and not introducing harmful chemicals to the people visiting the sites. Remember when the park benches and handrails were treated with arsenic. I definitely don't think we ever want to go back there! IPM has made the parks better and smarter. It is part of the park culture -- it is the way we do things.
59. If the NPS dropped its IPM program, our park practices would continue unchanged.
60. Resources will be lost.
61. Reduction of Natural Resource preservation activities.
62. Disastrous
63. It would fall upon the parks to adhere to sound IPM principles. It is likely that IPM practices would suffer as a result.
64. Disastrous. IPM is an essential partner.
65. Drastic. We pride ourselves in being leaders in IPM and our IPM specialist provides daily on-going technical assistance to all divisions in the park, other parks in the network and region, as well as other agencies and land managers in the area. He receives excellent support from WASO IPM.

Need for More Outside Consultation and Resources – these comments speak to the need to go to university or consultant resources for knowledge or actual work. There is some perception that such consultation may result in loss of NPS sensitivity, control, or logistical problems. There were 34 comments in this category:

1. We don't have the expertise here to find answers to occasional questions and problems. We would have to spend more time researching through other sources. And we can get the benefit or other parks' experience.
2. I would need to get advice from outside the NPS including commercial sources and local sources that do not have NPS resource sensitivity in mind.
3. I would no longer have quick and easy access to the wealth of information that I have now, both at the regional and national level. I believe that this would make my job more difficult and time consuming.
4. Necessary expertise would be much more difficult to obtain.
5. Lack of experienced personnel to consult with regarding both IPM principles and best management practices. Lack of coordination of different realms of IPM program (i.e. natural resources, cultural resources, facilities, and maintenance). Lack of proper training for pesticide discretion and use.
6. My job would be a nightmare. My educational background is wildlife, but as the IPM coordinator I must deal with cultural issues, vegetation issues, and facility

- management. Having advisors like Terry Cacek and Carol DiSalvo make my life/job doable. They give much guidance and if they don't know the answer they point me in the right direction.
7. Information would have to be obtained through other means--internet, etc.
  8. Continual damage to cultural and natural resources, greater maintenance backlog of work to correct, restore the resources damaged by rodents, bats, etc. It would make getting critical and timely information difficult and cumbersome.
  9. I would lose my first-line source of technical expertise and advice.
  10. It is important to have a second review on resource management decisions that are not routine or standard. It is also good to have a resource to call upon when dealing with a pest that is new. These are important function for the NPS IPM.
  11. I would have to find other experts (e.g. Universities, Ag. Ext.) to get advice and information from. However, these experts would not have the NPS policy and operational background.
  12. No formal tracking of pesticide use and no centralized reporting.
  13. 1) Coordinating with other parks' regarding what works with IPM issues. 2) Easy access to various IPM records from numerous park's 3) Having a main park service IPM monitoring program to assure quality control
  14. loss of primary resources, i.e., voucher specimens, under my care, and non-secure storage facilities
  15. We would lack scientific credibility.
  16. I would have to spend more time gathering information from a variety of sources to make informed IPM decisions. An important source of expertise would be missing.
  17. I would continue to use IPM principals but would have no expert advice. I would have less work to do, no Pesticide Use Requests, No pesticide use reporting.
  18. Without the NPS-IPM effort we would not get the needed professional review of our proposals. We don't have the expertise to evaluate pesticides, so rely on local advice. I appreciate a review by someone with more experience.
  19. Loss of technical expertise for difficult problems.
  20. Loss of resources available to answer questions and find the best solutions.
  21. Increased time in research and information gathering. Loss of NPS expertise in IPM techniques. Loss of guidance on IPM applications and NPS policy. Increased time in IPM.
  22. We would have to take up the slack at the park level. We have issues with IPM in Nat. Resource, Cult. Resources and facilities in the park. It would take up more of our time and effort to research and develop strategies to deal with the problems rather than call on the IPM folks for help.
  23. The reliance on the regional IPM specialist is critical to parks. Without regional and national level support, there is simply not enough expertise in the park to proceed with many IPM decisions.
  24. The wording of this question (and others above) could result in misleading information, because if you take it literally, my roles as IPM Coordinator and NEPA Compliance Coordinator are mostly unrelated, so there would be little effect on NEPA compliance if I no longer performed IPM. However, if the park did not have an IPM coordinator or an IPM Program there could be adverse effects on park resources as well as visitor and staff protection. Consequences could include inadequate or inappropriate treatment of pests, lack of coordination between park divisions or the park and neighbors in dealing with pest problems, direct adverse

- effects on park resources (both natural and cultural) and lack of public service (responding to inquiries from the public, for example) regarding pest management.
25. Lack of information resource when needed
  26. It is vital that the parks have technical backup to IPM issues. Without it there would be a regular reinventing of the wheel to solve problems.
  27. I would not be able to count on some of the technical expertise available at the national level.
  28. The IPM program provides uniformity and accountability, as well as technical assistance. If the NPS IPM effort didn't exist, the park would still utilize an IPM approach to pest management (which is small at this park).
  29. I would lose a subject matter expert with an understanding of NPS processes.
  30. It is essential that park staff have a resource available to them who can provide guidance when dealing with IPM issues. Obviously, in this day, it is impossible for employees to be experts in every field for which they are responsible. Having the IPM program and coordinators definitely facilitates our ability to do our job in the field.
  31. Support would be limited or unavailable for current management challenges. Also, getting to the information needed to meet a specific challenge would be difficult without the assistance of IPM coordinators.
  32. If the park IPM program was discontinued, park staff would use any familiar method to control pests and 'perceived' pests without proper identification, control, and monitoring. Pesticide usage would most likely increase within park boundaries and native plants and animals would be incorrectly targeted.
  33. Public health and safety would be compromised. Natural areas would be in jeopardy of exotic vegetation infestation.
  34. I provide a lot of technical information to the parks and a parks trust me with the information I give them. There is also a lot of interest in the parks to use IPM and, if we don't support it, a consequence will be that the parks will have to go elsewhere for IPM and pesticide-use information. There is a lot of junk, fear-based, and inaccurate info about pests, pesticide, etc. on the web that parks may think is legitimate. Since many parks do not know where to go to get information that may be specific to their needs, I fear that the information they receive may end up doing more harm than good. Ending the NPS IPM effort will require parks spend more time searching for good information and takes out the personal touch that someone who is familiar with the park, their issues, and NPS policies is able to provide.

Negative Impact on Pesticide Control and Application – these comments focus on the concerns respondents have toward chemical treatment and control (38 comments).

1. There would be no control of toxic chemicals to the environment and individuals working in the park.
2. I wouldn't have to deal with an overly-cumbersome, nearly non-functional on-line pesticide use application system. I would lose an important source of information, which would mean more of my time would be spent researching IPM topics.
3. Selection of appropriate chemical agents would receive less attention and more harmful (to both staff and environment) chemical may be used.
4. Introduction of non-approved herbicides and pesticides into the workplace.

5. There is so much marketing of products we could never keep up with what is good or bad environmentally
6. No oversight to pesticide applications and IPM interactions with the various disciplines and resource types. Local responsibility and knowledge may be adequate in some parks but lacking or misjudged in others.
7. Without WASO IPM Program oversight on a Service wide basis continuity would be lost and with it , the best management strategies that have been developed for NPS pest issues. NPS is an unusual organization with unique rules and policy. It is not easy for external pest control operators to provide effective pest management at our parks unless a trained IPM employees is working with them. We have original historical artifacts, wooden items that need special handling and care, some items cannot be handled at all. NPS and its resources and it's pest situations are unique and need to be managed as such. Many statutes, laws also play a role in pest management in the NPS, the WASO office provides oversight to these situations: management of nuisance birds on historic structures will likely involve the Migratory Bird Treaty Act a facet that private pest managers will not be aware of, but WASO IPM provides contact and updates to regional IPM staff on many technical and legal areas of IPM on NPS lands. If WASO IPM were eliminated, pest management would be managed on a regional basis for a short while if regional directors funded the IPM staff. Once that deteriorated, IPM might function on a park by park basis with reduced continuity. This would affect pest management decisions immensely. With no oversight or WASO policy in place park s might manage pest the best way they see fit- unfortunately they are not IPM experts and the resources will suffer. Many sensitive pest management decisions, by policy, require a second level of review (first being regional and second being WASO level review); this process provides a fresh look from the 'removed' WASO IPM Coordinator to examine the situation with a fresh perspective, weigh the facts review past similar decisions, and the political aspects. If only regional review was required, unbiased decisions would be difficult as superintendents have a closer relationship with regional staff and may attempt to sway decisions. It has been very helpful in the past for regional IPM coordinators to have to go to WASO to make the 'unpopular' final decision especially when a policy determination is involved which park staff may not agree with. Service wide IPM policy may not be followed to the letter if the WASO position were removed risking increased lawsuits and non-compliance. Without WASO IPM, the IPM function might be absorbed into separate division/programs and implemented differently in each as the interpretation of IPM would not be consistent on a Service wide basis. I would predict that the use of higher risk, 'quick fix' pest management strategies would be pursued and that if the WASO IPM training program ceased, it would result in new employees managing pests according to university and private pest control standards (which usually present higher risks to the applicator, site occupants, resource and environment). The NPS has been the lead federal agency in the field of IPM as published in the book 'Pest Management at The Crossroads', Consumers Union 1996. Allowing an effective program to fade at the WASO level will eventually affect the park resources and visiting public in an adverse manner. NSP might may go back to the spray can for quick fixes which treat symptoms rather than the IPM approach which solves problems, changes human behavior, and improves resource protection. With no WASO IPM oversight the recent West Nile Virus situation would have resulted in massive and unnecessary broad cast adulticide



- and larvicide applications on NPS lands for 'mosquito infestations'. The WASO IPM Program has ensured that NPS maintained a presence at the interagency table to discuss these types of issues with Centers for Disease Control and the state governments to remind them of the NPS Mission- that all pest situations are reviewed on a case by case basis, and management decisions are based on scientific monitoring rather than emotional decisions. Our WASO IPM presence has helped to install monitoring, cost sharing and cooperation between many states and national park sights
8. How would the Service document and monitor park use of chemicals?
  9. We would have to follow state recommendations for chemical usage, and I feel they are often not targeted for specific use, nor do they look at diverse means of action.
  10. It would be much more difficult to identify and communicate with technical experts regarding pest management e.g. the appropriate use of pesticides, to identify IPM related issues in the planning stages of a project/undertaking.
  11. Unrestricted use of chemicals by facilities management. Little change in current natural resource applications. Loss of expertise if/when future unknown problems arose.
  12. We would not have the technical information or the pesticide approval process in place to help us make choices about what we use. I believe that the parks would revert to using mostly chemical means of pest reduction/elimination.
  13. Park staffs would begin using noxious and inappropriate poisons to solve any and all perceived pest problems.
  14. Discontinuing IPM practices would result in increased pesticide use throughout the park and in particular by the maintenance staff and park farmers that lease NPS lands.
  15. I think we would see a much higher level of pesticide and herbicide use in the park with all the consequent impacts to natural resources.
  16. Current structure of NPS IPM program, through use of the PUPS, ensures products used are safe for public areas. Without this, it might be more difficult to direct the use of products by maintenance staff, resulting in use of more hazardous materials.
  17. rampant and inappropriate pesticide use; no sensitivity in identifying the root cause of pest issues
  18. In the days of DDT and Agent Orange, NPS parks used these products without regard to impacts to natural resources and human health and safety. The NPS IPM effort is a safeguard in preventing that from happening again. You take the program away and issues like DDT and Agent Orange will happen again. The NPS IPM program is the best in the federal government. No other agency has as good a program and the high quality of IPM coordinators. Don't take it away, because it would be a horrible mistake.
  19. Uncontrolled use of chemicals on animals and plants
  20. A agency that is supposed to be based in an environmental ethic would revert to use of more chemicals and toxics. Short term satisfaction in some operational areas would be overshadowed by long term environmental damage in areas of national significance.
  21. Too much pesticides not properly applied. Damage to the resources and a threat to public health and safety.
  22. The park would become overrun with invasive plants and employees, as well as visitors, would be screaming about pest animals such as rats.

23. Access to information for identifying and using the correct and safest products would cease to exist. Parks do not have the expertise and the job of IPM is usually a collateral duty placed on an already full head of hats.
24. My staff and I would have to spend much more time researching problems, chemicals, and solutions.
25. It would free up some time spent reporting and requesting use proposals. It would probably also ultimately lead to a free for all with respect to park use of pesticides. There would be no accountability and lots of unlicensed applications, with all that that implies.
26. Inappropriate methods used or increased property losses and increased public and employee safety concerns.
27. Difficult to answer. Do you mean we could purchase any off-the-shelf pesticide? In terms of managing well, it would be detrimental to lose the IPM program.
28. The results would be that park employees would use whatever product they wanted, whenever they thought they needed it, for whatever problem they thought they had, regardless if it would be effective or not, and without regard to health and human safety and to park cultural and natural resources
29. Advice and training on treatment methods would be much more difficult, if not impossible to obtain. Control of invasive species would suffer.
30. There would be a lack of oversight regarding IPM practices. At the park level, discontinuing the NPS IPM effort would be construed as the program no longer being important resulting in confusion regarding who does IPM, what practices are used and record keeping standards.
31. The out sourcing of pest management would be required.
32. I would have to rely more heavily on state and university resources.
33. The park would suffer from such discontinuation in that we would lose the ground we gained in the control and management of exotics. The information and technical assistance that is made available through the program is invaluable to the park, especially because we are a small park and do not have adequate staffing to always independently work on projects.
34. We could possibly end up using pesticides and herbicides without going through the approval and review process. We could possibly take actions without knowing the consequences of our actions, and could possibly jeopardize employee and/or visitor health and safety.
35. Not being able to protect the health and safety of employees and visitors, and inappropriate or misguided use of pesticides throughout the park.
36. If the park IPM program was discontinued, park staff would use any familiar method to control pests and 'perceived' pests without proper identification, control, and monitoring. Pesticide usage would most likely increase within park boundaries and native plants and animals would be incorrectly targeted.
37. I provide a lot of technical information to the parks and a parks trust me with the information I give them. There is also a lot of interest in the parks to use IPM and, if we don't support it, a consequence will be that the parks will have to go elsewhere for IPM and pesticide-use information. There is a lot of junk, fear-based, and inaccurate info about pests, pesticide, etc. on the web that parks may think is legitimate. Since many parks do not know where to go to get information that may be specific to their needs, I fear that the information they receive may end up doing more harm than good. Ending the NPS IPM effort will require parks spend more

time searching for good information and takes out the personal touch that someone who is familiar with the park, their issues, and NPS policies is able to provide.

38. Public health and safety would be compromised. Natural areas would be in jeopardy of exotic vegetation infestation.

## **How could a Service-wide NPS IPM steering committee improve the use of IPM in NPS?**

The second open-ended question asks for input on an administrative steering committee to improve agency wide coordination of the IPM program. Three general categories of responses are represented:

### No Need/Don't Know (47 comments):

1. Do not see the need for a steering committee
2. It would not. What is needed is more funding for park IMP programs and more training for employees involved in IPM, especially maintenance workers and facility managers.
3. Don't know. The greatest problem we face here I believe is our own ability (staffing, training, funding) to address IPM issues. Very time consuming and it has been, frankly, one of the things that has been neglected out of triage necessity.
4. Not certain.
5. Not at all - another layer in the bureaucracy
6. I don't know.
7. I don't believe you need a steering committee, you need to get more IPM into the field, train more staff members, be more aggressive with pest management practices and provide uniform guidance for regionally common pest problems (for example fire ants in the south east area)and get a better management awareness to provide program commitments and support funding
8. I don't believe it would. Funding must be made available to train staff in using IPM and for development of specific pest control plans- more than what has been developed in the past.
9. Don't know.
10. Maybe - but my general feeling on national committees is that they handle problems at a generic level and IPM issues really are site specific. The general stuff we already know...what I need is more guidance on the nuisances...
11. I'm not sure if a steering committee could provide any improvement.
12. Not sure.
13. Don't know.
14. Not sure
15. I don't know. From my somewhat limited experience the IPM program seems to be functioning on a service-wide basis already.
16. I don't know, since I really don't know what they do or could/should do.
17. I'm not sure.
18. I am not sure. Periodic tel-net training might improve IPM practices in the park.
19. Probably very little. I'd prefer to see Regional efforts.
20. I have no comment.
21. I can never really understand what those committees do that is really worthwhile. It seems that lots of money is spent and then nothing changes at the park level except that we have to fill out a new form or something. If you have money, how about paying us for the overtime we put in trying to get the PUPS done in addition to our regular work? Also, I can never get the regional IPM person to even look at our PUPS, so the whole thing often feels like a joke to me.

22. Don't know.
23. I'm not convinced that it could. If it's just another level of over-arching bureaucracy, I don't see the need. The regional IPM coordinators seem to do a very good job of executing the IPM program, at least in the 2 regions I've worked in. (They might be the ones to more fully address this question.)
24. I do not know.
25. No Opinion
26. At my level I do not see a need for a steering committee.
27. Not sure.
28. No comment
29. I am not aware of a need for improved use at this time.
30. Unknown
31. I'm not sure how a steering committee could improve IPM in the NPS. I feel that the IPM Program has traditionally been one of the most effective NPS resource-related programs because it is well organized, has more staffing than other resource programs, has provided more training to park employees, and the central staff (WASO and regional) has been responsive to park needs by providing professional guidance in a timely manner. It also has an advantage of long-established procedures for acquiring approvals for pesticide use, monitoring pest management activities, and some level of accountability. My experience is that this far exceeds the support that is available for other natural resource programs. If you really want to improve the IPM Program, I would suggest that you supplement the program in the field: That is, you provide additional staff and funding for pest management at the park level.
32. I don't know.
33. no comment
34. I have no idea. Being at a low level in the NPS I rarely see any accomplishments from steering committees.
35. Not sure.
36. Please no steering committees, I have seen too many programs become irrelevant this way. There are simple answers. 1. Fund IPM at All Levels 2 Staff IPM at All Levels. 3. Improve communications at all levels.
37. I'm not sure. Maybe it could come up with training or directives to help other park managers who are unfamiliar with IPM as to what it can do for them.
38. Not necessarily.
39. I'm not sure it could unless it would make sure ALL Regions were meeting current standards.
40. It can't, unless it provides a direct link to the needs of the people in the trenches and their needs for real technical assistance. I don't need another web site or email-box-clogging gray literature--I need someone to draft a weed management plan, or write a site-specific seeding plan, or get a cooperative weed management area agreement template approved that an NPS unit can sign off on . . . .
41. Unsure
42. Not sure.
43. I doubt it could. NPS has enough chiefs in the IPM division. We don't need another committee. If we had one it would probably involve mostly the same people that are doing it now.
44. I'm not sure another committee would help.
45. Off-hand, I don't see how a steering committee would improve the IPM program.

46. No comment
47. I think that the current system of the national, regional and park tiered system work well. I think that a Steering Committee would just be redundant.
48. Not convinced a Service-wide committee would be of much help

Training and Standards – there is a feeling among some respondents that agency wide standards of practice might improve the IPM effort and that an economy of scale might be achieved in training current and future IPM participants (72 comments) :

1. A steering committee maybe able to gather input from the regional coordinators and establish needs or policies. I for one don't know how much communication there is between regional IPM Coordinators.
2. Make sure there is more IPM training available in a wide variety of categories, they would also be able to help publicize the IPM resources that are presently available.
3. More interpark sharing of knowledge and resources, including human resources.
4. By ensuring consistency in the provision of information and services. Also by providing support to overtaxed IPM personnel.
5. Come up with a better plan.
6. We are not sure, but perhaps it would provide better coordination at the national level.
7. Create on line training and interactive technical help. For example, if someone has a mouse problem they could go to the web site and answer a series of questions and the system would provide recommended treatments options, tips and where to obtain more information.
8. It would reduce individual biases towards certain treatment methods and make the practices more uniform from region to region.
9. A Service wide steering committee, if composed of knowledgeable IPM members and members intimately linked to the park resources as well as individuals engaged in interdivisional (cultural, natural, public health, maintenance, landscapes, etc) projects concerning IPM , could provide excellent guidance to the NPS IPM Program. Conversely, a steering committee composed of appointed individuals of selected rank, with little or no interest or understanding of IPM would be detrimental to the NPS IPM Program and to park resources. Steering committee members should be present with one goal in mind- doing what is best for the resource under the NPS Mission.
10. The only contact that I have ever had with IPM is at NPS conferences. It would be good to see these folks in the parks - making recommendations specific to individual park needs.
11. Spot checks in the field are helpful to review our procedures and discuss new ideas. Or, occasionally reviewing the IPM plan and giving some suggestions or new ideas, rather than just reviewing the pesticide use each year. Updates on new products or safety equipment are helpful. Funds for training are helpful.
12. Train NR, CR, Mtc, Supts, and visitor services in IPM parkwide so that the park all works as a team.
13. It could insure park-level IPM coordinators would act on the best available information rather than, as is sometimes the case, opinion.
14. It would make treatment approaches more consistent. As it is now, there are sometimes conflicting methods of treatment when dealing with animal related

- problems. Sometimes it seems that removing an animal is less important than dealing with the damage they cause to cultural resources.
15. Evaluate weaknesses and strengths of the national and regional programs. Address issues common to resource types with memoranda, web pages, special directives, DO's or RM chapters. Foster a relationship between CESU's and university/college research and academic programs focusing on IPM or research mitigation of specific pests.
  16. Perhaps to better define direction through refinement of goals and objectives.
  17. Approaches may be more consistent & results oriented
  18. Decrease costs associated with training by increasing use of web based or interactive training. With NPS budgets so limited, travel dollars are rare and are only used for the highest priority needs, and IPM is not routinely viewed as a high priority.
  19. Give direction to eradicate or control on a more system wide effort.
  20. Help to coordinators with already too many collateral duties.
  21. More training for staff at the parks. Most employees seem to think that IPM is there to approve the use of pesticides. It is difficult to convey that it is a practice to look for the best available alternative to deal with pest issues. It is similar to NEPA in this regard.
  22. Establish comprehensible policy.
  23. It can identify and publicize the strong points and weak points of the system to everyone involved in making the system successful. That includes all employees of the NPS and others who visit or work in the NPS system.
  24. It may help to associate the IPM Coordinators with the work being done on the ground.
  25. It might help the NPS prioritize and offer more information/training on the critical IPM issues that need to be focused on. However, the NPS IPM program seems to be on track to me.
  26. Be more proactive. Right now parks come to IPM on problems that we recognize. It would be nice to see initiatives or focused programs on elements IPM thinks are important.
  27. A steering committee could take a comparative look at what is being addressed now and compare it to the past problems at individual park locations, regionally. Species that could or may have become tolerant to herbicides as well as insects could be compared. This may lead to a larger list of products to address each individual concern.
  28. Help answer questions and recommend treatments.
    - 1) provide better training opportunities
    - 2) provide group access to problem solving
    - 3) have to ability to observe other park IPM programs
    - 4) to start the program again, and let each Park know who's the contact person, or coordinator for the area in region.
    - 5) to up date all the staff that is coordinator for the Park, and have training for them.
    - 6) hope this is something that will help each Park, as over all of the each region.
  29. Park-level problems may get greater recognition. Representatives from other agencies should be included to facilitate sharing of information.
  30. Training, communications, awareness raising.

31. The parks could be more in touch and involved with the program rather than having all of this work on one man who is responsible for an entire region.
32. This would depend on the role and function of the steering committee. If it served to reduce the work-load of the IPM folks and improve communications it could be a positive thing. However, if we are adding oversight to a program that has not demonstrated the need for additional oversight then what is the point? How much additional work, time and effort would creating a steering committee generate not just for the IPM staff but for the committee members as well.
33. Ensure training for all IPM Coordinators- not just those whose park can afford to send them. Mandate that management makes IPM a priority.
34. I was unaware of the technical guidance and training offered. Training on Tel-net would be valuable, from basic weed spraying to more detailed subjects.
35. Sometimes I have the sense that national level program supervisors have limited field experience, so if the steering committee included people from the parks that are running the program I believe the program would more realistically address park needs.
36. Issue current/new guidance in a timely manner, with individual park level input in order to ensure that guidance is applicable and capable of being done at the field level. On-site inspections once every five (5) years would help considerably with the program.
37. BE more reasonable in allowing a wider use of herbicide in control of exotic species.
38. A steering committee could address service-wide problems and concerns, provide a forum for discussion, and provide direction for regional and park coordinators.
39. GREATLY, would allow a focus in areas of greatest importance to the parks.
40. Could help prioritize training needs for IPM.
41. The use of IPM is not embraced by all park divisions. In fact, it is sometimes portrayed as a 'roadblock' to getting work done. Perhaps the committee could improve the image.
42. From the perspective of a small park where IPM activities are shared among various divisions (maintenance, resource management, ranger activities and interpretation), the current system is sufficient to our needs.
43. One example that comes to mind is biocontrol introductions to control invasive exotic plants and animals. Biocontrol releases comes with risks to native plants and animals and some mistakes have occurred with devastating long-term impacts. A steering committee could be used to ensure these mistakes don't happen. Another example is altering genetic strains of plants and animals that is suppose to be a benefit. For example genetically altered bent grass for golf courses. This may be good for golf courses but will be an environmental disaster for NPS Units where the bent grass may significantly impact native grasses. A steering committee would help in preventing such an environmental disaster from happening.
44. Could develop a program to improve the program
45. We need a lot more intensive LABOR to control invasive plants in our park!
46. More education for employees and more importantly management. Emphasis on the repercussions of misuse of pesticides on the resources and health and safety. Educate the public to have more tolerance of 'managed pest'. Beauty is in the eye of the beholder. Dandelions are beautiful too!
47. Perhaps as an information clearinghouse.



48. Standardized policy and products. Training programs in preparation for state approved certifications.
49. depends on the make-up of the committee- coordination and communication would be an essential function inter-agency work and coordination with the private sector/universities would be good
50. Improve the electronic program-nearly impossible for dial-up parks to print from Not enough regional staff to process requests quickly at times. Not enough localized or on-line training for park IPM coordinators. In small parks, the same person wears many hats and going to IPM training is usually near the bottom of the list.
51. Come up with some brochures for employees restating the importance of IPM practices, following guidelines and keeping proper records and documents for future reference.
52. Assure information is disseminated in a timely manner and is easily accessible.
53. Educate authorities at the WASO level the significance of the problem and the cost associated with solving the problem.
54. Possibly to address some of the sticky questions regarding control of native species (such as raccoon depredation of sea turtle eggs) and adherence to NPS guidelines.
55. Park Managers (especially curators and maintenance chiefs) need to understand the importance of IPM strategies.
56. Insure top priorities of parks are being addressed. Assist with strategic planning.
57. Provide training throughout the service. Not just to managers and supervisors. But to employees in the field. This would drive home the importance of the IPM programs to our staff.
58. Perhaps would be able to improve availability of training and provide more specific training where needed. The program has been stream-lined and works much better than in the past.
59. I would like to see that the NPS IPM be handed out to all of the NPS employees who are responsible for the IPM in his/her parks. It appears that the NPS IPM has only gone to the parks' coordinator but never to those who are responsible for the IPM program at his/her have sites. It had looks like you revised your current IPM program, however, I have never seen it.
60. Maybe provide technical assistance to the park on a more personal level (as in sending a person to the park to assess various needs and providing guidance. This person could be the park's mentor and consultant.
61. Be more responsible and consistent in support for identifying, developing, and implementing best IPM practices at ALL NPS levels
62. It's always helpful to have field staff in national parks advise the policy makers, so the policies and procedures are based in reality. The steering committee could provide guidance to the overall program. Members of the committee might also discover the latest information on IPM and assist busy park staff with knowing what options exist.
63. Communication with administrations and prioritizing issues to be used at a Park level.
64. A steering committee would evaluate the current NPS IPM program and recommend positive ways to make the program more effective and efficient. IPM can be improved if NPS adopts one or more of the steering committee's recommendations.

65. Provide a integrated training to park general staff on how IPM is part of the park everyday life. We do it now in bits and pieces but I think an excellent video could be created (and may already exist) and I could see using this type of tool to bring IPM more into focus for the entire park. IPM is already an integral part of both natural and cultural resource management.
66. Developing information that supports IPM practices across Divisional boundaries. I.e. getting buy in from other programs that should be using IPM practices. A good example is the Architecture or Facilities Division: when designing structures, incorporate features or practices such as using treated lumber, relocating outdoor lighting from exterior doors, not planting shrubs up against the foundation, improving drainage, installing screens and door sweeps, etc. These would reduce pest conditions.
67. Make record keeping easier and online databases more user friendly. Make training more available/closer.
68. NPS IPM Standards need to be strengthened. Below are some areas I feel need work: Training- Research and develop appropriate training for ALL staff involved in the IPM Program. Some training should be mandatory by NPS each year. Pesticides Handling - Request that ALL staff that is involved with handling pesticides get a pesticide certification license. This will help a great deal with safety of visitors, the environment and staff. Standards - Standard are not clear. It appears that there is too much freedom in regards to how each park run there program. We need stronger and clear standards. Follow-up and Inspections - I that random inspection of park pesticides storage facilities and pesticide use logs will help park stay in compliance with local and national laws and regulations.
69. It would be an opportunity to increase service wide standardization and pool expertise.
70. It may improve coordination of activities between the field and IPM personnel at the region and WASO level. It could serve as a sounding board for IPM issues of concern in the parks.
71. Increased collaboration and coordination. Increase strategic decisions about priorities, gaps, and coordinated advice.
72. The pesticide request and annual reporting process do not include the Division Chief responsible for IPM or the park Superintendent- those ultimately accountable for IPM and pesticide use in the park. We are concerned about increasing use of pesticides but find it difficult to track trends in use without a role in the approval and reporting process. We have established our own internal request and review process to make it more transparent. Nearly all pesticide use occurs without adequate NEPA compliance- usually cat ex'ed or part of routine maintenance practices. More direction, assistance, framework/templates are needed to prepare actual IPM plans with associated EAs and Section 7 compliance- perhaps this could be done at some higher level than the park. The work load to prepare plans and do real NEPA compliance is overwhelming and would stall or negate the incredible successes we're having. However, it seems NPS is vulnerable on this and tendency is to look the other way and get the work done.

Resources – wider coordination might result in more resources being targeted toward IPM efforts including more training, special projects, and IPM in general (6 comments):

1. Provide adequate funding for field personnel.
2. Justify increase in funds and evaluate IPM programs after an action.
3. Perhaps a service-wide panel could figure out how to get funding for both small and large park IPM coordinators-stationed in the park with continuing funding. I would like to see small parks in the intermountain Region clustered together with a base-funded IPM position-such as Hubbell, CACH, NAV, MEVE and CHACO. Larger parks such as GRCA must have a base funded IPM program.
4. Provide more funding for the program, thereby providing more training.
5. Perhaps they could focus on a few concerns with service wide appeal and lobby for funds and/or develop strategies that could be 'rolled out' to parks for their use.
6. By providing funding for products needing to be purchased Funding standard IPM guidelines (a universal IPM plan) for controlling common pests, i.e. 'this is how the NPS controls carpet beetles in historic fabrics...'

## **What are your top five (5) concerns regarding pest management in the NPS**

Five general categories of comments were reported:

### Restoration and Ecosystem Maintenance (61 comments)

Themes expressed in this category included concern for the environment with respect to individual species being controlled (site specific), how control might affect the “preserve and protect” clause of the NPS mission, “spillover” effects resulting from various control measures, and the “big picture” of IPM on park resources.

Examples of these themes include the following quotes from comments:

- Having a complete biological inventory database of the parks helps to determine the proper IPM management needs.
- The majority of Regional and WASO staff are stretched thin and are also responsible for regional/WASO GPRA, Threatened and Endangered Species, Exotic Plant Management Programs, Fire Management Programs. Their time to address IPM responsibilities is constantly diminishing. This further increases risks to people, resources. IPM is a fulltime position if done correctly.
- Need more research on a landscape level
- Need more work on aquatic species
- Recognition of the importance of integrating IPM practices into all NPS field activities, including resource protection, visitor serves, concession operations, facility management, and so on.

### Budget and Resources (57 comments)

Clearly, budgetary resources are a constant issue of concern for most public agencies and the IPM program is no different. Most respondents tempered the need for more funds by suggesting where they might be targeted (i.e. training, monitoring, etc). Resources identified as being in short supply was time – either the respondent’s or someone they needed to contact regarding a pesticide application or further information. In several instances it was felt that supervisory time did not give due attention to IPM requests.

Examples from this category include the following comments:

- Timely funding to implement pest management actions
- Money for park level IPM projects
- IPM is an unfunded mandate. Other federal have funded IPM programs with funds specifically designated for IPM Projects. WASO IPM funds should fund Regional IPM Coordinator positions as is done with EPMT's.
- Park no longer pays the annual State fees for pesticide applicator's permit because they consider it a professional license.
- Assistance in getting funding to correct pest-related matters

- Sufficient funding designated and available at the National, Regional, and Park Unit levels to institute all aspects of a high quality IPM program. Funding is presently only at the National office level and for training programs.

#### Training and Standards (45 comments)

Many respondents wanted more professional training for what is, in fact, a part time duty. They felt unprepared for emergent issues that IPM must address. Another issue in this category is the need for clear standards of both professional practice and program achievement. Frequently, these two issues are found concurrently in comments:

- Lack of trained and or certified field staff
- inconsistent treatment standards
- inadequate training in the identification of natural and cultural resource pests
- Non-resource park personnel need more training to think proactively about IPM.
- That park staff is not sufficiently trained in basic pest maintenance (i.e. how to control ants,)
- Current IPM staff at WASO and regional levels are approaching retirement; with lack of funding and decreasing budgets it is unlikely that vacated IPM Coordinator positions will be re-filled. The Park IPM Coordinator role is typically given to a new employee who does not have adequate IPM training and often leaves the position in order to obtain a higher grade. An IPM Career ladder concept would be a great idea to investigate for NPS!
- Training -Curatorial IPM , Natural IPM and Archeological Site IPM, are not the same as mice, cockroaches, termites and ants and no one at the park level is trained and in more than one aspect mentioned.
- The region/national training or mandates has not been fully funded or implemented
- That the training available won't prepare us to handle the new problems facing us in IPM.
- If a huge issue comes up like West Nile, I am not the person that has enough expertise to handle that.

#### Information and Communication (43 comments)

Many people wished there were better resources for them to draw on easily and quickly. The IPM website was a target of several comments. Others desire better educational materials for both IPM practitioners and the visiting public; public education and safety emerged as a sub theme in this category. Improved communication between units and bureaucratic levels was also targeted for comment:

- The U.S. public is unaware of the serious threat that exotic pests pose to their environment and health
- lack of communication between park IPM coordinators
- The PUP and reporting system is good enough, but it never is completely accurate because the park IPM coordinator can't know what everyone is really doing.
- Receive quick approval of IPM requests.

- I would like a website that provided information on pesticides used for different species (if you go the IPM pesticide application page I can see several chemicals being used to fight a single pest. I don't know why different chemicals were chosen -- instead of the same one. It would be great to have them prioritized -- use this one first...or given these circumstances use this, but in a different scenario use this...
- I would like more references (or at least a single NPS website that points you to a compilation of reference sites) for Pest management issues. Right now the most difficult thing is that I feel like I am 'bothering' the regional and national people -- who are really busy, and I would like to lighten their workload by having a site that answers most of the IPM coordinator questions without having to pick up the phone.
- Like other NPS employees, I do not have unlimited time to do mountains of research, I have already called my county extension agent and read the MSDS and sample label - do not expect me to spend hours that I do not have, to find an alternative chemical product.
- Not enough current cutting edge materials put out (we get a lot of email on IPM related topics but it is so generic it is hard to figure out how it applies to your situation which in turn places the burden back on the park to chase down whether the topic is relevant to you or not).
- There never seems to be enough money/funds to afford the best available remedies for IPM problems. There's never enough hired help to perform treatment activities (this relates back to the above). We're always begging for volunteer help, and then you get into liability issues and fear of lawsuits and you still don't have the help to get the job done because you won't let them do what you really need them to do because you're afraid to. Tunnel vision. You hire a bunch of SCA's or seasonals, then teach them kill, kill, kill, but they're not sensitive to the big picture.  
Information/data/results entered into the online NPS IPM system just doesn't seem to have been posted in a timely manner. I've waited 9 months to find that what I entered the last FY was still not there. What's that all about?

#### Pesticide Issues (27 comments)

Issues that emerged around this topic included better understanding of the proper pesticide to use for specific applications, the ecological effects of pesticide use on park resources and pesticide approval process – usually it was perceived to be too slow or cumbersome.

The following comments provide examples:

- Pesticides being too readily prescribed when other less 'toxic' options potentially exist.
- IPM needs to be responsive to immediate requests to combat an invasion of a pest, such as ants, allowing us to use commercially available and EPA approved pesticides that do not harm the environment.
- Pesticide methods are sometimes costly and we may not be able to do the full recommended treatment due to cost.
- Unsafe/ecologically insensitive use of pesticides/herbicides

- There is a concern that EPMTs may be too reliant on chemical applications for control. In small parks with limited invasive plant problems, less hazardous mechanical or cultural methods may be sufficient for control.
- Control of herbicide use.
- Excessive use of pesticides, possibly more than necessary.

### **What other perceptions of the NPS IPM would you like to share?**

Several themes emerged from the last open-ended question. Most comments reiterated those from the other three questions. These included visitor protection, communication, information flow, and the importance of the IPM program. The most common comment was simply that the program is doing good work, the people are dedicated and to not diminish the program in the future.

Several particularly insightful comments are worth reproducing here:

- The IPM program is not given the credit it deserves when they are responding to so many problems and specially with new problems (Such as West Nile Virus, Sudden Oak Death) constantly arising.
- I have worked for many years with the WASO IPM Coordinator-Ms. Di Salvo is excellent. The problem is funding programs within the park. These positions need to be base funded. A Regional or Cluster Coordinator is not adequate to address issues within parks. Programs in parks must be based upon sound science-should be housed in resource divisions-not as a subset of simply a Maint. Division.
- I have been involved about ten or twelve years with the IPM program as a regional staff, and so I have considerable experience and knowledge about IPM in the National Park Service. I know both its successes and shortcomings. Some of both are very much related to the nature of the NPS. The organization attracts many highly qualified, conscientious, and motivated people. That has helped a lot. The IPM program has also been helped by retaining for a number of years a group of people who serve as Washington-level and Region-level IPM who are experienced, knowledgeable, and work well together. This has happened more by luck than by design. It would be better to do it by design than by luck.
- I have been very please with IPM regional and national coordinators. They provide a good service to the NPS and are knowledgeable on NPS policies and guidelines and the cost in comparison to the private sector is very cost effective. I am quite worried that outsourcing these positions to the private sector will not serve the same needs for the NPS and the private sector lacks the sensitivity and understanding of the NPS.
- The IPM team from WASO to the parks is always there to help. Provide ideas and help get the project funded and accomplished. Our park started a project in 1960s and finally in 2001 it was completed and only with the support of driven and intelligent IPM folks in the field, region and WASO.
- IPM is a vital and important partner, responsive to our requests for discussion, with impressive expertise and experience. The necessity of close cooperation between our two groups in order to protect visitor health is of utmost importance.

Other comments:

1. Again, our own in-park ability to address issues is the challenge. Support and expertise seem readily available and competent.
2. Visitor protection, structures and concessions would be worthy focus for IPM as budgets are reduced. These areas on concentration would most serve parks and the NPS.
3. I would like to see the NPS place more emphasis on exotic plant and animal management. -Expand the Exotic Plant Management Teams (SWAT Teams) to help meet the IPM control needs of all parks, especially small parks with serious pest problems.
4. The primary role of the Regional IPM coordinators appears to be dissemination of information found at internet websites. Much of this information is not relevant to my work and is deleted without being opened. The information I need I can locate myself on the internet. The primary function of the Regional IPM Coordinator appears to be the pesticide approval process. It is important to have requests reviewed, but otherwise, the Coordinator does not supply me with much useful information.
5. The IPM program is not given the credit it deserves when they are responding to so many problems and especially with new problems (Such as West Nile Virus, Sudden Oak Death) constantly arising.
6. Our regional and national folks do a great job. You are lucky that a member of our museum staff forwarded this to me or you would not have gotten a response. Next time you may want to check who the IPM Coordinators are.
7. The website is not user friendly in the area of searches and printing screens.
8. Would like to see links between pesticides and MSDS sheets.
9. Training and implementation of the IPM program do not take into account the time constraints, collateral status, and limited funds that exist at the park level. WASO serves up and tries to implement a program that is to be applied in a perfect world but, we don't live in that world at the park level and it is just overwhelming.
10. IPM seems to be lacking in advancement in the maintenance/cultural resource end. We are often told to take costly alternatives that are often hazardous to the resources due to mechanical intervention than the more responsive use of chemical alternatives would mitigate.
11. The IPM Program is positioned under the Directorate of Natural Resources Stewardship and Science due to the risks that may occur from chemical or biological pest management actions. The IPM Program has recently been placed in the 'Biological Resources Management Division, under the Invasive Species Management Branch'. The IPM Program addresses all types of pests immediate/non-immediate, native and non-native species in all divisions of the NPS. Its current location is obscured, cumbersome for decision making purposes, difficult to locate. It would be more effective if it were located as a separate program either in Biological Resources Management Division or in the Environmental Quality Division where it resided and flourished prior to the reorganization. The IPM Program crosses all divisions protecting people, resources and the environment and linking the natural resources program to



cultural, public health, concessions, facility management divisions. IPM Should be more visible, easily accessible for all employees. Current websites are deep within the system and difficult to locate. The IPM Program has had 25 years of excellent accomplishments- a program review of this type would be incomplete without a written summary of the program's history. I suggest this be considered and the WASO and Regional Coordinators be requested to assist in compiling this summary.

12. We go to local training courses and receive excellent training but we do not always have time to implement the monitoring program. We have lost personnel in our maintenance division due to retirement and illness and death. The park is trying to address the problem by contracting out some work and hiring seasonal laborers.
13. I have worked for many years with the WASO IPM Coordinator-Ms. Di Salvo is excellent. The problem is funding programs within the park. These positions need to be base funded. A Regional or Cluster Coordinator is not adequate to address issues within parks. Programs in parks must be based upon sound science-should be housed in resource divisions-not as a subset of simply a Maint. division.
14. It has gotten harder to find the 'NPS line' on control of pests and associated background information.
15. It seems like a lot of people working in parks don't know what it is, or why it's important.
16. The Park Service one-week training that is offered is very good and is where I learned the most about IPM.
17. The NPS has an opportunity to be a lead agency once again on IPM issues. The NPS deals with pest issues on 388 parks with varied resources (natural areas, cultural landscapes, historic structures, orchards, agriculture, populations) . We could be a role model for other private and public groups for pest management issues. Cooperation with academic institutions, cooperative extension service are important.
18. Carol DiSalvo is terrific - but Carol and the IPM program in general are two very different things. Also, I feel like this survey isn't going to get at what you need to know. The questions were very redundant and didn't really ask anything. You can't generalize over the entire NPS IPM program - I've worked in 10 parks and they are widely divergent in their management.
19. Low priority at the park level, mainly due to lack of staff and funding.
20. Initial training is excellent but follow-ups are rare.
21. The program is pretty good, but it could use a shot in the arm to make it better. This would require more funding to the parks to better implement the program, and to develop an IPM budget at park level.
22. I don't know enough about what they do and the services they provide.
23. I deal with a cultural landscape. The IPM program does not seem to have this area in the radar.
24. I have been involved about ten or twelve years with the IPM program as a regional staff, and so I have considerable experience and knowledge about IPM in the National Park Service. I know both its successes and shortcomings. Some of both are very much related to the nature of the NPS. The organization attracts many highly qualified, conscientious, and motivated

people. That has helped a lot. The IPM program has also been helped by retaining for a number of years a group of people who serve as Washington-level and Region-level IPM who are experienced, knowledgeable, and work well together. This has happened more by luck than by design. It would be better to do it by design than by luck.

25. I think the NPS IPM is an important program and needs to be continued.
26. At my current position of superintendent I am less aware and less in contact with Regional and WASO level IPM staff than I was previously as a Supervisory Ranger over Resources and other park activities, so am probably not fully aware of the work and services provided currently at that level.
27. IPM is very beneficial to the NPS-Agency, and to preserve and conserve the resources, it is important to maintain what is within the park.
28. Gerald McCrea is a National Treasure for the IPM program. He is a wealth of information about insect pests and how to control them. If he does not know he will find out. He is prompt in his responses and helpful in his advice.
29. I hope with all this information coming in, from all other Parks can help to restart the program.
30. Overall, I'd have to admit that IPM is not a very bright spot on my 'Radar screen'.
31. When it works in conjunction with the EPMT program, it provides for one of the most effective efforts the NPS has for enhancing biodiversity on its lands, in an environmentally sensitive manner.
32. The IPM request/reporting website is a pain to use, although it is much better than previous versions and vastly better than filling out paper forms. The Citrix interface used with the IPM site is a pain in the ass. Last time I tried to print a report my computer froze. I print things from other web sites all the time. It is very straightforward and crashes are infrequent. This year, as in past years, I submitted a Pesticide use request for herbicide for alien plant control. That was over six months ago. I can not enter the summer's use of herbicide (yes, we did not skip an entire season of alien plant control because nobody looked at our request) because my request has not even been looked at yet. When I can go for six months without anyone even reviewing my Pesticide Use Request It makes me wonder if anyone is actually taking the system seriously.
33. All I know of them is when I get a pesticide approved.
34. I suppose our needs are pretty simple and straightforward, but I think the program works pretty well right now.
35. Does it exist other than to approve/disapprove my pesticide use? I currently use the internet or other NPS managers to get suggestions on exotic plant management and/or control. I get very little from NPS IPM currently. The NPS IPM Information Manual (2nd Edition, September 1994) is so limited in scope in regard to invasive plant species as to be (almost) completely useless.
36. The regional and national level IPM positions are highly competent and very helpful. At times they are spread so thin timely response to park issues is simply not possible. Assistance through CESUs and tie ins to extension services through cooperative agreements could provide additional assistance.

37. Different regions deal with IPM so differently. Regional IPM Coordinators run the gamut of being very accessible or non-existent. Their other duties may stand in the way of IPM help that they can give the park. Our NPS IPM training is extremely good and valuable. Carol DiSalvo and Terri Carlstrom are very dedicated and helpful. They are willing to deal with individual park challenges and problems.
38. Again, my perception is that the IPM Program is well organized and staffed at the national and regional levels. Where it fails is in the ability of the parks to implement the program because of lack of support from upper managers, inadequate staffing and funding, and competing responsibilities. If you want a professional-level IPM Program, you must have professionals staffing the program at the park level as well as at central offices. These professionals must be given adequate time and support (budget, access to information, etc.) to do their job, and time and funding for continued professional development and training.
39. Carol DiSalvo is one of the most helpful NPS staff persons I have ever dealt with. She is extremely responsive to park needs.
40. Re-approving pesticides/herbicides on an annual basis is a cumbersome process.
41. Has anyone done a study of how much parks used to spend on pest control before IPM and how much they spend now?
42. Organically-approved products and methods are used as much as possible within our park unit. The IPM program has responded well when such products are entered into PUPS.
43. The basic training is considered poor by most attendees. That results in management deciding that staff should not go to training, because when money is tight, only the best training is attended.
44. I have been very please with IPM regional and national coordinators. They provide a good service to the NPS and are knowledgeable on NPS policies and guidelines and the cost in comparison to the private sector is very cost effective. I am quite worried that outsourcing these positions to the private sector will not serve the same needs for the NPS and the private sector lacks the sensitivity and understanding of the NPS.
45. There is a definite lack of broad knowledge at the regional level. Certain IPM issues seem to be valued more, and concentrated on more, than others. Regional personnel also don't seem to strive to receive training, and develop expertise, on issues they might not be as familiar with. The PUPS system only works for parks when regional personnel choose to check and review proposals - and sometimes that doesn't necessarily ensure an expeditious response.
46. Any interaction with IPM personnel either MWRO or WASO has been completely positive and helpful to me in my job as Park Coordinator.
47. I have worked with in former positions directly with IPM programs, managed IPM programs on park levels so I see it as the proper philosophy. But philosophy don't feed the bulldog.
48. Everyone I have ever met or dealt with in the IPM field are very dedicated individuals always willing to help in any way that I have asked. It would be

devastating to discontinue IPM. It has come a long way but still has a long way to go. We must make it a way of life.

49. The information the IPM program provides to park managers is great. The support from region and national level is good to excellent. The hardest part is getting other park managers and concessions to use IPM and pay for it themselves. They sometimes expect the Park IPM managers to have a budget for this work.
50. Again, a good program giving out good advice, yet there is not always emphasis and cooperation at the park level, nor is there funding many times to address the problem(s).
51. Working in a small park with limited staffing I am concerned about being required to have the same requirements as a large multi-divisional park. I need a place to go for the answers instead of being expected to be the on-site expert. I want to do it right but between fire, EMS and law enforcement requirements and certifications I'm running out of desk space.
52. Overall a good program that stresses finding where problems originate and treating it there rather than going in to a building and spraying chemicals willy-nilly or taking some other ill-conceived action.
53. I have been very impressed with both the SERO IPM Coordinator and the Coordinator of the Florida Exotic Plant Management Team. They have been very supportive and helpful.
54. Need to make the pesticide reporting system more user friendly. God bless Dr. DiSalvo!
55. Been involved with it since 1978 and it works!!!
56. Nice people, mean well, not enough of them to help us get a meaningful jump on the problem before it outruns us all.
57. Be careful how you use the term 'restoration' when communicating with cultural resources managers -- the term has an entirely different meaning under the Secretary of the Interior's Standards for Historic Preservation.
58. In general - Good IPM info. and treatment recommendations are abundant and available on almost any IPM topic. Application and implementation should be the focus of improvement.
59. The current budget situation makes it difficult to properly manage an IPM program. Decisions must be based on funds available instead of science. IPM should be a year around program, however funding is more like April to August.
60. I would like to see what's the difference between those who are in the field of natural resources and cultural resources. Both of them have their differences. It would be nice to see what we can learn and share from each other. What we agree or disagree...
61. Considering my limited knowledge, I feel the NPS strives to make informed decisions and act accordingly. The folks I have worked with and have provided me with assistance have been great. The major problem seems that most parks are overwhelmed with work and do not have the time and perhaps in-house expertise to get the job done.
62. The only one that comes to mind right now is that when I took the training at NCTC (West Virginia) last spring (2003), the focus was extremely broad, covering ALL aspects of IPM. Perhaps this course should be broken into

- more manageable parts, i.e., natural resource IPM management, cultural resource IPM management, maintenance/structural IPM management, etc.
63. I love the opportunity to serve the public and our employees regarding their health and safety
  64. Very vague, and not effective.
  65. The IPM team from WASO to the parks is always there to help. Provide ideas and help get the project funded and accomplished. Our park started a project in 1960s and finally in 2001 it was completed and only with the support of driven and intelligent IPM folks in the field, region and WASO.
  66. Technical advice is excellent at regional level, available, respond quickly. Attitudes toward bio-controls and chemical use good. Setting realistic threshold goals is difficult considering how diverse our 'customer' values are.
  67. There is a lot of information that is send out of the internet. I don't know that this is the most effect way to education people.
  68. I've received high quality guidance from regional and national IPM staff regarding implementation of IPM program at my park
  69. Overall, I believe that the NPS IPM program is very professionally run and serves as a model for other agencies/organizations.
  70. IPM is a vital and important partner, responsive to our requests for discussion, with impressive expertise and experience. The necessity of close cooperation between our two groups in order to protect visitor health, is of utmost importance.

## **Summary of Findings**

Findings of the survey are generally very positive toward the IPM program and effort. There were few no responses in the survey results suggesting that respondents who took the time to complete the survey were experienced, knowledgeable, and interested enough to answer the questions. This suggests that the validity of the results is robust. With almost 250 respondents spread over the most relevant functional areas related to IPM, I feel the sample is of relatively high quality.

Two general topics were investigated in the survey:

### **Service, Management, and Information in the IPM Program**

There is overwhelming agreement that in all respects the service function of the IPM program works satisfactorily. The open ended responses reinforce those findings. The program does a generally good job of responding to requests for information and provides timely and quality help; a few comments expressed concern about the speed with which the bureaucracy responds however. Overall quality of the IPM effort and services is perceived to be high

The IPM program protects park resources and comments reflect the professional concern of those resources. Preservation of ecosystem function a priority for practitioners and most agree that IPM effort provide adequate protection.

Finally, the reports and quality of information generated by IPM achieve high standards. They are technically correct and in accordance with NPS policy and mission. The implementation of the Pesticide Use Proposals is reported to be efficient and fair.

### **Training and Expertise in the IPM Program**

Findings related to training and expertise in the program exhibit a generally positive orientation but respondents expressed some concern over the opportunity for continued training and expanded expertise. The most important aspect is the level of training on implementing IPM. Clearly reflected in the quantitative survey as well as the open ended comments where issues related to ongoing training. Clearly, many of those who chose to provide open ended comments felt that more effort could be expended to provide them with more information in an area where knowledge about, for example, chemical treatments and pesticides, change frequently. Better website, more in-person training opportunity, and better Park Service publications were suggested as ways to enhance training of IPM participants. The survey data indicated that more technical guidance is needed.

The other notable example of weakness in generating IPM expertise was in the context of the “vital signs monitoring network”. Only 26% of respondents expressed agreement that the “vital signs” program provided a high level of expertise to the Park Service. For many it is clear that the “vital signs” program is irrelevant to their work in a particular park. Where IPM could and should be considered an important part of the vital signs network, that message is not being understood by respondents to the survey. There seems to be a feeling that they are not part of the “big picture” ecologically in the park system.

Finally, according to one half of respondents, IPM is perceived to be a program that is providing the highest quality possible to the NPS.

This survey was administered to assess the quality of the National Park Service Integrated Pest Management Program. It was done so with the intent to help develop recommendations on how the IPM program can improve service to the parks and regions. I find strong support for the program among respondents. Areas for improvement include:

- The speed and efficiency of the pesticide use proposals. Perhaps better use can be made of the internet with an interactive web site and generally faster turnaround of the request.
- Training, especially for the use of chemical and nonchemical controls, could be improved. The internet can be an efficient means of communicating recent changes in protocols and chemical treatments. Comments from respondents suggest that the web site they currently use is confusing and difficult to use. Perhaps there are subscription services that more effectively track changes in the IPM industry.
- Better contextual communication could be encouraged. By this I mean that IPM could be placed in the context of the Park Service mission more effectively. This should be done periodically for IPM personnel, supervisory positions, resource managers, and the visiting public. For many respondents IPM efforts are critical to successful park management and should be more effectively disseminated. The result may be greater buy in from current IPM practitioners, incentive for future IPM participants, and enhanced supervisory support. Visitors may find some IPM educational materials interesting thereby enhancing their park visitation experience.
- More resources are requested for IPM efforts. Based on my interpretation of the comments, it appears that the most effective use of enhanced resource allocation would be for training efforts both in person and via other means (internet, special publications, conferences). Many respondents already use outside experts – notably university researchers. Programs that institutionalize those relationships might be productive means of both training and professional development. This might include attendance to seminars, invitations to speak at park service meetings, or subsidized classroom training where feasible.