Results of the Exotic Plant Management Team Survey

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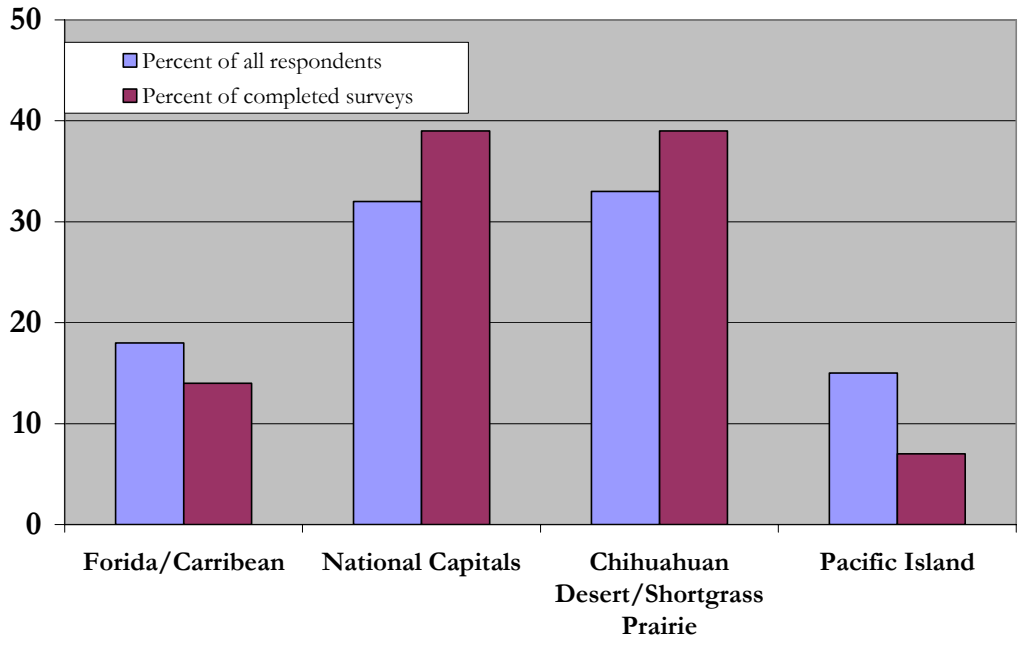
Note: The survey for the EPMT assessment was written by an original contractor but due to circumstances he could not complete the project. I agreed to administer the survey during summer 2004.

The telephone survey was conducted during July/August 2004. The sample frame was provided by the NPS Biological Resources Management division and included 65 people to be contacted. An electronic letter explaining the survey and the forthcoming telephone call was sent to each potential respondent by the Biological Resource Management Division in early July. A total of five calls were placed to each potential respondent and we were able to complete surveys from 28 (response rate = 43%). At the time of the last call the email of the principle investigator was left with instructions to contact him directly to receive a survey online. Only one survey was requested and completed.

While the response rate might appear somewhat low it is higher than the literature would suggest for telephone surveys however, considering that all were notified and that the survey was directly related to their work the level of response is disappointing.

Several reasons might explain the low response rate. In several cases the employee on the call list no longer worked for the NPS or at the location provided in the call list, several did not want to be involved in the survey citing an inability to answer the questions, and in some cases there was never an answer to the calls. Given the small number of potential respondents the abovementioned possibilities add up very quickly. Given a larger sample pool these random events would be mitigated. On a positive note, the distribution of completed surveys mirror closely the distribution of potential respondents. This suggests that no region is significantly unrepresented in the survey results.

Comparison of Sample and Completed Surveys



The first part of the survey consisted of thirty two questions scaled using a Likert response:

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't Know
5	4	3	2	1	(6)

All answers were coded for analysis as the response given (e.g. 5=5, 4=4…) In the case of a "Don't Know" response, the answer was coded as a "6".

Each respondent answered questions as they were read from a script and scores were recorded on individual copies of the survey. The scaling questions were followed up with four open ended questions and answers or comments were recorded *verbatim*. Several scaling questions also asked for examples or elucidation and these comments were also recorded. The survey took approximately 15-20 minutes to complete.

The following tables display the results of each question. Frequency and percentage of response are provided. In some cases a crosstabs analysis was conducted to investigate regional differences in response.

Three items should be noted in the results below. First, the scale for two questions (3 and 10) is reversed in order to elicit a consistent set of responses. For example, where a respondent is consistently favorable toward the EPMT program and a following question asks for the opinion of a negative statement the scale is reversed. These reversals are noted where they occur. Second, some questions asked for detail or further elucidation of the answer. Very few respondents provided this input but where applicable a list or narrative of answers is included. Finally, there was a printing error in the original survey and there is no number four (4) question. In order to maintain congruence with the survey I have skipped the number four and began to renumber at five on page four of this report.

The first set of questions tend to focus on the appropriateness of the EPMT program, the scope of the problem(s) and threat to NPS resources:

1. **The EPMT is targeting species which are an urgent threat to national park service natural resources.**

Finding: Respondents agreed overwhelmingly (92.8%) with the statement. This would indicate that the IPM program is correctly identifying and targeting resources.

Response		Frequency	Percent
	3.00	1	3.6
	4.00	6	21.4
	5.00	20	71.4
	6.00	1	3.6
	Total	28	100.0

2. **The targeted infestations are extensive and widespread among the national park service units in the cluster being treated.**

Finding: Again, the majority of respondents agree with the statement (82%) and suggests the perceived extent of the infestation problem.

Response		Frequency	Percent
	2	1	3.6
	3	2	7.1
	4	7	25.0
	5	16	57.1
	6	2	7.1
	Total	28	100.0

3. **The targeted infestations are temporary or reversible.**

Finding: This question was reversed coded meaning that a "strongly agree" concurred with the statement that the infestations were reversible. There was some amount of variation in response to this question; 67% of respondents agreed with the statement while and additional 21.5% disagreed with it. Seven percent were neutral and three people (10.7%) didn't know. Results of this question might vary depending on location of the respondent so I performed a crosstab analysis to determine how the results might be skewed by location. In fact, location three (Chihuahuan Desert) overwhelmed the responses with seven of their fourteen respondents marking "2=agree". Clearly, for them, infestations are perceived to be either temporary or manageable.

Response		Frequency	Percent
	1	3	10.7
	2	14	50.0
	3	2	7.1
	4	5	17.9
	5	1	3.6
	6	3	10.7
	Total	28	100.0

Crosstabs Location with Question Three:

		loc				Total
Question Three		1	2	3	4	
Response	1	0	**2**	1	0	3
	2	3	3	**7**	1	14
	3	1	0	0	1	2
	4	0	2	**3**	0	5
	5	0	1	0	0	1
	6	0	**3**	0	0	3

This question also asked respondents to list infestations they see as manageable or temporary. Responses included:

Tamarisk	Russian Thistle	Mullen
Japanese Honeysuckle	Cheat Grass	Knapweed
Japanese Barberry	African Root	Russian Olive
Tree of Heaven	Bufflegrass	

NO QUESTION FOUR

5. **The EPMT effort is focused on infestations that are complex and persistent.**

Finding: This question was intended to retest the findings on the previous question. Results show that 93% disagreed that the infestations are persistent suggesting that they are of manageable nature as suggested in the question three.

Response		Frequency	Percent
	4	11	39.3
	5	15	53.6
	6	2	7.1
	Total	28	100.0

6. **The natural resources being threatened by invasive plants are crucial elements of national park service ecosystems.**

Finding: Virtually all respondents disagreed with the statement. The responses suggest that the "crucial elements" of ecosystems are not perceived to be at risk.

Response		Frequency	Percent
	4	8	28.6
	5	20	71.4
	Total	28	100.0

7. **The resources at risk are unique.**

Finding: Of the park resources that are perceived to be at risk 82% feel that they are unique resources.

Response		Frequency	Percent
	3	3	10.7
	4	11	39.3
	5	12	42.9
	6	2	7.1
	Total	28	100.0

8. **The resources being threatened are mentioned in the enabling national park service legislation for the parks being treated by the EPMT.**

Finding: There is some consensus from respondents with respect to this question and 57% agreed that the resources are mentioned while almost 18% disagreed. Notably, four people didn't know if the resource they were protecting were part of the enabling legislation for their park. One third of respondents were neutral to this question.

Response		Frequency	Percent
	2	5	17.9
	3	3	10.7
	4	10	35.7
	5	6	21.4
	6	4	14.3
	Total	28	100.0

9. **The resources being threatened are given a high priority in park Resource Management Plans.**

Finding: Most (82%) of respondents agreed that threatened resources are given a high priority in RMPs. This would suggest that the resource planning is congruent with what respondents feel are important with respect to EPMT efforts.

Response		Frequency	Percent
	2	1	3.6
	3	2	7.1
	4	14	50.0
	5	9	32.1
	6	2	7.1
	Total	28	100.0

10. **Few threatened or endangered species are at risk in the parks being treated by the EPMT.**

Finding: This reverse coded question asked about the relationship between EPMT activities and T&E species. Most (50%) of respondents agree that few T&E species are at risk; others (35%) suggested that their EPMT efforts are aiming at protecting T&E species (Oracle Geardia (sp?), Ginseng, sea turtles and crocodiles).

Response		Frequency	Percent
	1	4	14.3
	2	10	35.7
	4	7	25.0
	5	3	10.7
	6	4	14.3
	Total	28	100.0

Section Conclusions: Respondents are pleased with the general direction of the EPMT effort. They agree that while there are some areas of concern with respect to exotic plant management, these issues are not insurmountable to the protection of park resources or T&E species. Further, the results suggest that with proper exotic species management the issues of concern to park resources are temporary and not likely to be persistent problems in the park units.

The next set of questions investigates the management of the EPMT effort with respect to methods, knowledge, training, safety, outreach, future management, and administrative support.

11. **The EPMT is knowledgeable regarding the biology, distribution, and control technology affecting the management of exotic plants.**

Finding: Overwhelmingly (88%) respondents feel there is adequate biological education and knowledge about the distribution and control of exotic plants for the EPMT effort to be successful. This suggests that from the point of view of personnel they are prepared to achieve the goals of the program.

Response		Frequency	Percent
	2.00	1	3.6
	3.00	2	7.1
	4.00	10	35.7
	5.00	15	53.6
	Total	28	100.0

12. **The EPMT management work plan rationally and specifically prioritizes the exotic species to be targeted.**

Finding: The work plan of the EPMT effort is perceived to be rational and correctly prioritizes targets (75% agree).

Response		Frequency	Percent
	3	3	10.7
	4	10	35.7
	5	11	39.3
	6	4	14.3
	Total	28	100.0

13. **The host park adequately supports the EPMT.**

Finding: While most (72%) respondents agree there is adequate park level support for the EPMT effort, some (10.5%) disagreed with the statement. Crosstabs analysis revealed not pattern by location of the dissenting responses.

Response		Frequency	Percent
	2	2	7.1
	3	1	3.6
	4	14	50.0
	5	9	32.1
	6	2	7.1
	Total	28	100.0

14. **The EPMT is conducting outreach to national park service employees and the public.**

Finding: Fourteen percent of respondents report no outreach of the EPMT effort; 64% report some level of outreach. Four respondents don't know. One respondent stated that they didn't know they were supposed to conduct outreach and another stated that "it was not something that was practiced".

Response		Frequency	Percent
	2	4	14.3
	3	2	7.1
	4	14	50.0
	5	4	14.3
	6	4	14.3
	Total	28	100.0

15. **The EPMT is adequately trained in safety, health, and first aid.**

Finding: Again, a large majority (71%) of respondents feel adequately trained in EPMT safety and health issues. However, five of the 28 respondents (17%) did not if they were adequately trained. If this pattern held up for all EPMT personnel there might be a need for some form of health and safety training in order to avoid unfortunate accidents.

Response		Frequency	Percent
	3	3	10.7
	4	11	39.3
	5	9	32.1
	6	5	17.9
	Total	28	100.0

16. **EPMT methods are suitable to the situation e.g. Technologically sound, realistic, comprehensive.**

Finding: Eighty-nine percent (89%) of respondents feel the present EPMT methods are appropriate, etc.

Response		Frequency	Percent
	3	2	7.1
	4	14	50.0
	5	11	39.3
	6	1	3.6
	Total	28	100.0

17. **The EPMT addresses prevention and early detection.**

Finding: While 57% of the respondents agree that the EPMT program addresses prevention and early detection, another 14% (4 respondents) disagreed with the statement. Six respondents were neutral on the question. Crosstab analysis reveals that all four negative statements originated in location three (Chihuahuan Desert) suggesting that the EPMT effort may be largely reactionary (i.e. tamarisk).

Response		Frequency	Percent
	1	1	3.6
	2	3	10.7
	3	6	21.4
	4	14	50.0
	5	2	7.1
	6	2	7.1
	Total	28	100.0

Section Conclusions: Like the previous section, respondents are mostly positive toward issues of methods, knowledge, training, safety, outreach, future management, and administrative support. Respondents to the survey feel that the management of the EPMT effort is adequate.

The final set of questions asks about post EPMT efforts, EPMT evaluation, as well as staffing and funding levels.

18. **Targeted areas can be restored or maintained by partner parks after the team control effort is completed.**

Finding: Responses to this question display a striking division of opinion. For one group (28%) agree with the statement while for another, larger, group (53%) there is not agreement that partner parks can take over the EPMT effort. Crosstabs analysis show that region three (Chihuahuan Desert) holds a disproportionate disagreement with the statement and region two is equally split with respect to the statement (five positive and five negative).

Response		Frequency	Percent
	1	1	3.6
	2	7	25.0
	3	3	10.7
	4	13	46.4
	5	2	7.1
	6	2	7.1
	Total	28	100.0

Loc		Restore				
	1	2	3	4	5	6
1	1	1	0	2	0	0
2	0	5	0	5	0	1
3	0	1	1	6	2	1
4	0	0	2	0	0	0

19. **The projects and the overall team effort are being evaluated.**

Finding: Evaluation is being carried out according to 75% of respondents. Four respondents didn't know or were possibly unaware of ongoing evaluation efforts. An additional 10% did not agree that evaluation was taking place.

Response		Frequency	Percent
	2	2	7.1
	3	1	3.6
	4	15	53.6
	5	6	21.4
	6	4	14.3
	Total	28	100.0

20. The EPMT activities dovetail nicely with the federal wild lands fire program.

Finding: EPMT efforts work with wild lands fire programs according to 39% with 10% state the efforts are not working together. Notably, almost one third (32%) did not know enough to state an opinion to the question.

Response		Frequency	Percent
	1	1	3.6
	2	2	7.1
	3	5	17.9
	4	7	25.0
	5	4	14.3
	6	9	32.1
	Total	28	100.0

21. The team will meet government performance results act exotic species goals.

Finding: Seventy percent of respondents agree that current EPMT efforts will meet the government exotic species goals although five respondents did not know the answer to the question.

Response		Frequency	Percent
	3	3	10.7
	4	12	42.9
	5	8	28.6
	6	5	17.9
	Total	28	100.0

22. The work plan coordinates with the activities of surrounding landowners.

Finding: Working with private and public landowners would seem to be an important aspect of a successful EPMT program and over half of respondents (57%) agreed that work plans coordinate with adjacent landowners. Five respondents did not agree with the statement and an additional five did not know.

Response		Frequency	Percent
	2	5	17.9
	3	2	7.1
	4	11	39.3
	5	5	17.9
	6	5	17.9
	Total	28	100.0

23. The work plan has mechanisms for coordinating with the inventory and monitoring network.

Finding: The majority of respondents (64%) agreed that EPMT work plans coordinate the requisite aspects of the program. However, a significant percent (28%) did not know enough to answer the question.

Response		Frequency	Percent
	2.00	1	3.6
	3.00	1	3.6
	4.00	14	50.0
	5.00	4	14.3
	6.00	8	28.6
	Total	28	100.0

24. The alien plant control and monitoring database meets EPMT needs and is used by the team to record accomplishments.

Finding: Fifty three percent said the control and monitoring database meets the needs of the EPMT program. Again, a significant portion of respondents (32%) did not know enough to answer the question.

Response		Frequency	Percent
	3.00	4	14.3
	4.00	10	35.7
	5.00	5	17.9
	6.00	9	32.1
	Total	28	100.0

25. The alien plant control and monitoring database is suitable to the park's needs.

Finding: With respect to the database meeting the park's needs slightly fewer (42%) agreed with the statement. Eight people could not answer the question.

Response		Frequency	Percent
	2.00	1	3.6
	3.00	7	25.0
	4.00	9	32.1
	5.00	3	10.7
	6.00	8	28.6
	Total	28	100.0

26. The EPMT has a steering committee which provides useful guidance to the team.

Finding: The steering committee is perceived to provide a valuable function to the EPMT team (64% agree) and judging from the comments they are a much appreciated feature. Comments that received to the query "in what way or why?

To prioritize – 3
To teach/share information – 4
Communication – 3
Peer review/evaluation – 8
What Steering Committee? - 1

Response		Frequency	Percent
	3.00	1	3.6
	4.00	13	46.4
	5.00	5	17.9
	6.00	9	32.1
	Total	28	100.0

27. Safety procedures provide a safe work environment for the team and are followed by team members.

Finding: Only three respondents could not answer the question, virtually all others agreed that safety procedures are effective and utilized by team members.

Response		Frequency	Percent
	4.00	16	57.1
	5.00	9	32.1
	6.00	3	10.7
	Total	28	100.0

28. The EPMT needs additional funding in order to meet the goals of the initial proposal.

Finding: Sixty seven percent of respondents claim the EPMT program needs additional funding. Five respondents were not sure or didn't know and two disagreed with the statement. When "probed" for more information about how much and where the funding would be used several respondents provided suggestions below.

Response		Frequency	Percent
	2.00	2	7.1
	3.00	2	7.1
	4.00	10	35.7
	5.00	9	32.1
	6.00	5	17.9
	Total	28	100.0

Comments to the query "How much, Where?:

Funding – 5 (from several hundred thousand to 5 million)
More staff visits – 1
Prevention – 1
Monitoring – 2
Staff – 3
Train more students – 1
Retreatment program – 1
Detection - 2

29. In kind partnership and financial resources are being leveraged inside national park service.

Finding: There was moderate agreement with the statement as evidenced by the 57% that marked "4" on the survey and only an additional 10% (three respondents) that marked "5". Very few (13%) thought there was little to leverage of funds.

Response		Frequency	Percent
	1.00	1	3.6
	2.00	3	10.7
	3.00	1	3.6
	4.00	16	57.1
	5.00	3	10.7
	6.00	4	14.3
	Total	28	100.0

30. In kind partnership and financial resources are being leveraged outside national park service.

Finding: With respect to leverage of funds from outside the NPS one third of respondents could not answer the question. 14% disagreed with the statement but 43% agreed that funds are successfully leveraged outside the Park Service.

Response		Frequency	Percent
	2.00	4	14.3
	3.00	2	7.1
	4.00	7	25.0
	5.00	5	17.9
	6.00	10	35.7
	Total	28	100.0

31. **The work plan shows a favorable ratio of overhead and supervisory costs to operational costs.**

Finding: Almost one third could not answer this question but over 60% agreed with the statement comparing overhead vs. operational costs.

Response		Frequency	Percent
	3.00	2	7.1
	4.00	13	46.4
	5.00	4	14.3
	6.00	9	32.1
	Total	28	100.0

32. **Funding for partner parks to conduct routine maintenance of EPMT sites is adequate.**

Finding: No respondent strongly agreed with this statement although 7% did and thought funding was adequate. At the same time over 67% thought funding was inadequate and six respondents could not answer. We also prompted respondents to explain what they might use additional funding for. Thirteen respondents stated simply that more money was needed to conduct the EPMT program. Five requested more staff, one requested more training, one commented that long term funding is a priority.

Response		Frequency	Percent
	1.00	6	21.4
	2.00	13	46.4
	3.00	1	3.6
	4.00	2	7.1
	6.00	6	21.4
	Total	28	100.0

Section Conclusions: Like the previous sections, respondents are mostly positive toward issues of management and administration of the EPMT program. Not surprisingly funding for the program is an issue of concern for most. Notable in this section is the relatively large number of people not able to answer the questions. Most likely this is because field people may be somewhat disengaged from the issues of outside funding and budgets.

Findings of the open-ended questions:

What would be the consequences of discontinuing the EPMT effort?

- Lose critical momentum and progress
- Loss of park memory
- Work wouldn't get done
- Invasive species would take over/multiply with concurrent decline of native plants
- Lose natural resources to exotics
- It would add to the workload of the already small field staff
- Little control of exotic species
- Loss of money and staff investment by parks
- Moral would decline
- Weeds would return
- Future week management costs would be higher
- Impairment of other park resources
- Would not address any EPMT issues
- Lose valuable habitat
- Lose endangered species
- Wouldn't keep up with the law
- No followup control
- Lose control
- EPMT program provides continuity of practice between parks
- Would lose park experts and expertise in EPMT – no one else is as effective
- Would never regain funding for EPMT
- End of program would be a big waste of past effort

What would be the EPMT's be doing five years from now?

- More of the same
- Evaluations of previous efforts
- Expanding program with follow up study
- Monitoring
- New procedures adnd techniques
- More of the same because projects are long term
- Expanded teams/Larger teams
- Maintenance
- Non-competitive funding for each park
- New programs/control programs
- Support for new prevention programs
- Increase coordination of effort on adjacent lands
- More activity in backcountry sites/survey remote sites
- More education and supervision
- Each park would have its own team
- More partnering with other agencies and organizations
- No need for retreatment
- Some projects would be finished
- Ecosystem based strategies rather than stopping at park boundary
- Better inventory
- More public outreach
- Restoration, prevention, tracking, monitoring

Is there a role for a service-wide EPMT steering committee?

- Yes – coordination with the IPM program
- Yes, need nationwide perspective
- Yes, for cumulative effect of working together
- Yes, native species are under threat everywhere
- It provides accountability
- They are a link to adjacent landowners/managers
- It might produce increased knowledge
- Regional representation
- People from natural resources, weed scientists, ground water specialists, ecologists, and public affairs need to talk
- Not at this time, regional or cluster groups are working well
- No, because each area is unique
- No, but organize groups to represent specific areas

What other perceptions of the EPMT would you like to share?

- Staff is hard working and well trained
- Professional staff
- Dedicated
- Keep up the good work, EPMT is greatly appreciated
- Need to take more of a lead to get projects done
- EPMT is a tremendous asset to the parks
- Need money for aircraft
- Leader of our staff is very good
- EPMT is an important program
- Need the team year around
- Need a team for other parks
- There is a huge lack of funding
- Need a more stable staff with less turnover
- Evolution of the teams needs to continue
- The program is gaining a lot of ground
- They are very helpful to the small staff
- Need more evaluation from supervisors
- Staff is helpful
- Best thing the park does
- Need to branch out to water, animals, etc.
- More training is needed
- Need more understanding of the "big picture"
- Public education
- Keep the effort funded

Synthesis: Respondents to the survey, while small in number, display substantial consensus on issues that relate to the management goals and implementation of the EPMT program. This suggests that even with a larger sample the basic patterns would still emerge. Several questions exhibited some geographical variance but it appears related to specific management issues associated with, for example, the control of tamarisk in region three or loss of native species in region four.

The most important aspect of this survey is the overwhelming sense of optimism in both the quantitative and qualitative responses. The personnel involved in the EPMT program are convinced that they are doing important work and making progress. This is particularly evident in question three (The targeted infestations are temporary or reversible). In addition, they feel it is a program administered both efficiently and effectively. Work plans are rational and relate to park goals and missions. There is a perception that coordination is taking place and that the program works well with other parks, adjacent landowners, and other agencies. The program adequately trains its employees both scientifically and in terms of health and safety. That said, virtually all respondents seek to make an argument for enhanced future funding. Overall, the results of the survey suggest that the EPMT effort is an efficient and effective program.

What don't we know?

In several areas of inquiry respondents who could not answer the questions so I attempted to determine if there was a pattern of "no response". Because we did not code the surveys with respect to the position held by each respondent I could not do a cross tab analysis to investigate if a higher "no response" was marked by supervisors or field personnel. I went back to the original surveys and call list to try to determine a pattern. It would appear supervisory personnel or those that seem to hold positions <u>not</u> in the field are not able to respond to questions that seek to assess issues related to program effectiveness as well as field level respondents. On the other hand, field level respondents are not as able to answer questions regarding budget allocation or funding strategy. These findings are based on my qualitative observations and may not represent a larger pattern for all EPMT participants. I would suggest that future surveys should query respondents about their position. A suggested format for the questions might be:

At what level in the Park Service do you primarily work?
Park
Regional or Support Office
WASO

Your primary responsibilities are most closely related to:
Natural resource management
Cultural resource management
Maintenance
Visitor Services
Concessions
Administration
Other _____

In order to best define who is responding to the survey please mark the one category that best describes your role in the National Park Service:

Parks	**Regions**	**Service-wide coordinator for the following:**
Superintendent	Chief, Natural Resources	IPM
Chief, Natural Resources	Chief, Cultural Resources	EPMT
Chief, Cultural Resources	Chief, Facilities/Maintenance	Public Health
Chief, Facilities/Maintenance	Chief, Concessions	Museums
Chief, Concessions	IPM Coordinator	Natural Resources
IPM Coordinator		Visitor Services
		Concessions
		Others

Answers for these questions would allow for determination of who can answer both programmatic and budgetary questions and to whom more information should be directed.

Several questions in the survey asked respondents to assess progress toward goals set out in the workplans for each team. However, there was no question that asked respondents about their knowledge of the workplan, if they had read it, if they understood the goals, or if they had reviewed the goals prior to answering the survey. As a result, we don't know the quality of the response to those questions.

We don't know the progress toward the goals described in the workplan because no question asked respondents to measures progress. The reason that might be important is that perceptions of the respondents might be contingent on the implementation of the workplan and at what stage it is being implemented.

Finally, it seems clear that all information is not reaching all EPMT participants equally. The EPMT program may want to post a website that requires each new participant to complete a short interactive teaching/learning module on the EPMT program. These sites are relatively easy to administer and inexpensive to design and maintain.