

# Exotic Plant Management Teams

*10-Year Program Evaluation*

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A reference document also has been provided to the National Park Service. It contains: 1) survey questions and complete quantitative data results from the survey; 2) a summary of written comments in response to survey questions; and 3) summaries of field review and other liaison and liaison supervisor interviews. A copy may be obtained by contacting Rita Beard at [Rita\\_Beard@nps.gov](mailto:Rita_Beard@nps.gov).



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## Executive Summary

Invasive species are non-native plants, animals, and microorganisms that cause economic or environmental harm, or harm to human health<sup>1</sup>. The National Park Service (NPS) currently has 16 Exotic Plant Management Teams (EPMTs) that work to control invasive plants. Since their initiation in 2000, many of the conditions and challenges that the teams face have changed. As a result, EPMT Program Managers requested an independent evaluation of the EPMT Program prior to the evaluation of individual teams. Hence this report. It provides background information about the Program, a description of the process used to gather information, and findings and recommendations. The findings and recommendations are based on survey results from over 400 respondents, site visits to two EPMTs, interviews with over 60 personnel involved with EPMTs, and the opinion of a panel of experts (Appendix 3.) including NPS and National Invasive Species Council staff and a non-federal advisor. The findings and recommendations herein are not an evaluation of any single person or EPMT, but rather the Program as a whole.

The overarching finding of this review is that the EPMT Program has been very effective in assisting parks with significant invasive plant issues. A small core investment has resulted in large gains, as EPMTs have been able to leverage their funding, increasing NPS capacity to protect resources beyond what would have been possible using EPMT base funding alone. The teams have an excellent environmental and worker safety record. They also are highly regarded by the parks they serve and by NPS partners. As a result of the Program, NPS is recognized as a leader in controlling invasive species. The evaluation also established that the variation in EPMT structure and function is warranted and that there is no need to impose a single model on all of the teams.

While the review panel did not see the need for significant reorganization at this time, they did identify several areas for potential improvement. Funding has eroded, many parks are not served by the Program, and a long-term vision and roadmap to address these issues are missing. In addition there is inadequate landscape-level planning, coordination, and strategic action targeting fully articulated priorities; the perception by some in the field of waning support for the Program; insufficient communication of support to teams by parks, as well as varying park abilities and commitment to fully partner with the EPMTs that serve them; variation in regional office engagement in the EPMT Program; the difficulty of one staffer to simultaneously oversee the EPMT Program and be the Washington Office (WASO) point person for all invasive plant issues; challenges due to travel ceilings and hiring, and other administrative difficulties; and insufficient attention to data management issues.

The first recommendation is to develop a strategic vision and plan for an EPMT network that would serve all parks and that would be the basis for future funding requests. In addition, several structural improvements are recommended including adding a national advisory group,

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<sup>1</sup> Executive Order 13112 of February 3, 1999 on Invasive Species

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developing charters and advisory groups for each current EPMT, restoring EPMT service to the Southwest, providing clearer supervision for liaisons, and strengthening regional involvement. Recommendations for operational improvements include: providing assistance for the WASO Invasive Plant Species Coordinator; improving communication in a number of areas; and increasing attention to database issues, administrative challenges and travel ceilings. Also recommended are the promotion of technical assistance for parks not served by an EPMT and the pursuit of opportunities to pool resources and partner with other Federal agencies, cooperative weed management areas, and others.

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### Background

The first Exotic Plant Management Teams (EPMTs) were funded in FY 2000 as part of the Natural Resource Challenge (Challenge). Currently, there are 16 EPMTs, though two of these teams are not fully active at this time. Teams vary in their structure and composition. However, all teams use or fund highly trained personnel to control invasive plants with the most efficient and effective methods available. Their efforts are focused on priority invasive plant populations that have been identified by the parks they serve. Each team serves several national parks. However, not all national park units are served by an EPMT.

As of this review, the EPMT Program has run for approximately 10 years, and in that time, many conditions and challenges have changed. In response to these changes, EPMT Program Managers requested an extensive independent evaluation to help guide the continued development of the Program prior to the evaluation of individual teams.

### The History of the EPMT Program

In the 1990s, Departmental and National Park Service (NPS) reorganizations emphasized physical science programs in the NPS Washington Office (WASO) Natural Resource Stewardship and Science (NRSS) directorate (located largely in Fort Collins and Denver, Colorado). In 2000, the Challenge initiative provided the first line-item funding for servicewide guidance, expertise, and direction on biological resource issues, resulting in establishment of the Biological Resources Management Division (BRMD). The initiation of EPMTs was part of this process. Initial EPMT funding was part of an increase of \$3.449 million for biological resources management generally at the Washington level and provided funding for four EPMTs. It was initially envisioned that teams would be evaluated every five years for effectiveness and progress to determine whether or not they should be moved to another location.

Funding increases to the EPMT Program in FY 2002 and 2003 allowed for the addition of 12 more EPMTs for a total of 16 teams (Figure 1). Parks served by these teams are indicated in Appendix 1. These teams were selected from among competing proposals and were funded at approximately \$300,000 per EPMT per year (the Alaska team received less due to the perception at the time that their need was smaller). Increases received in FY 2007 funded some EPMT Program expenses and provided additional funding for EPMTs in the Great Plains, the Southwest, and the Florida/Caribbean area. Until FY 2010, the teams did not receive cost-of-living increases, contributing to a steady decline in buying power. Although some resources were provided to the parks involved, two teams (Chihuahuan Desert/Southern Shortgrass Prairie and Colorado Plateau EPMT's) recently became inactive and have vacancies in their leadership positions. Decisions about these vacancies are pending completion of this review and related personnel actions.

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Biological Resource Management Division  
Exotic Plant Management Teams

National Park Service  
U.S. Department of the Interior

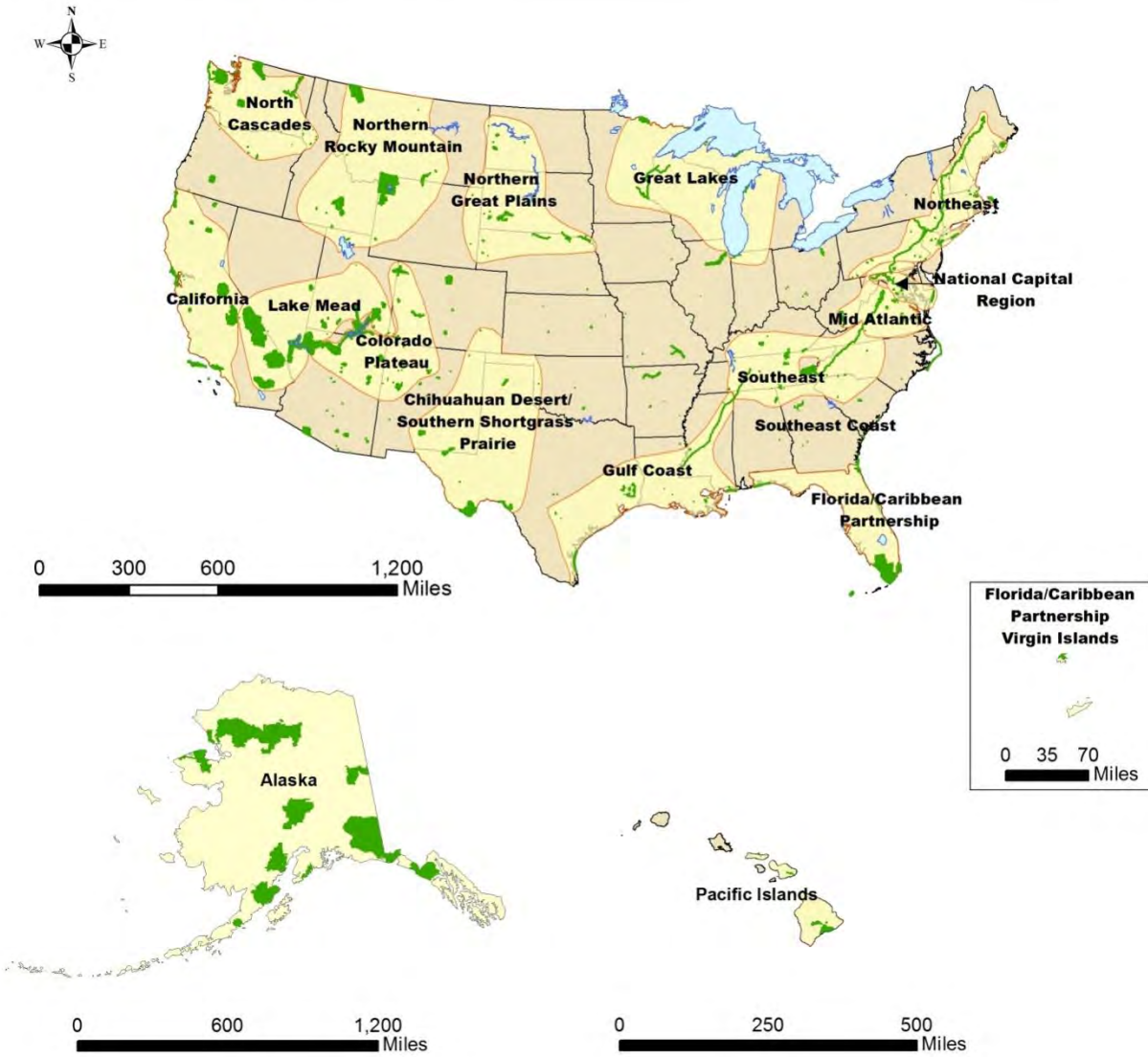


Figure 1. Map of EPMTs



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The EPMTs are not all structured the same way. Each has a liaison responsible for working with the parks to identify priorities and to develop the overall plan for the parks served by their team. The liaison is the primary technical resource for the EPMT and most parks that they serve, as well as the coordinator for invasive plant management activities. For some EPMTs, funds beyond the liaison's salary are used for contracts and/or cooperative agreements for invasive plant control in parks. A few EPMTs transfer some of their funds to parks to support park invasive plant control by seasonal employees. Other EPMTs hire one or more crews stationed at a host park or satellite parks that are then supervised by permanent employee crew leaders. Supervisory arrangements vary from EPMT to EPMT with supervisors-of-record coming from host parks, regional offices, or in some instances the BRMD (Appendix 2). Data concerning invasive plants and other aspects of the work are managed in several ways. Some EPMTs rely largely on crew leaders, others have dedicated data managers, and in other cases liaisons do much of the data work.

The leadership of the EPMT Program is housed within BRMD. A single person, the NPS WASO Invasive Plant Coordinator, serves as the NPS invasive plant authority and also as WASO EPMT coordinator, overseeing the work of the EPMTs. This individual develops policy and guidance for NPS, represents NPS on a wide range of invasive plant issues outside of and within the Department of the Interior and among the Federal family of natural resource managers, and coordinates with tribal, state and local governments, even working across international borders.. Additionally, this individual contributes to Congressional and General Accountability Office requests for information and investigations.

Previously, the EPMT Program was co-managed in the Exotic Species Management and Ecological Restoration Branch with Integrated Pest Management and Restoration Programs, with the current WASO Invasive Plant Coordinator primarily running the EPMT Program. Now this position handles overall invasive plant management duties previously handled by the Exotic Species Management and Ecological Restoration Branch Chief, as well as running the EPMT Program. The EPMT Program receives some administrative assistance from the BRMD, but has no dedicated full-time staff except a data manager (a position recently filled after a long vacancy). Table 1. shows the FY 2010 funding for the Program. Table 2. shows funding for the division, as provided in reports to Congress on the Natural Resource Challenge, and gives a general indication of trends and proportionate spending, but not exactly what a program received in a given year.

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**Table 1. EPMT 2010 Budget**

|                         |                    |              |
|-------------------------|--------------------|--------------|
| Base budget             | \$5,750,000        |              |
| NRPC assessment         | -146,000           | <sup>1</sup> |
| Cost-of-living increase | 95,793             | <sup>2</sup> |
| <b>Total available</b>  | <b>\$5,699,793</b> |              |

### Team Allocations

|  |                    |
|--|--------------------|
| Alaska EPMT  | 166,600            |
| Colorado Plateau EPMT  | 255,900            |
| Chihuahuan Desert/Shortgrass Prairie EPMT                                | 257,600            |
| Northern Rocky Mountain EPMT   | 307,900            |
| Northern Great Plains EPMT   | 511,800            |
| Great Lakes EPMT   | 306,100            |
| National Capital Region EPMT   | 307,400            |
| Northeast EPMT   | 304,800            |
| Mid-Atlantic EPMT  | 307,400            |
| Pacific Islands EPMT   | 306,300            |
| North Cascades EPMT  | 308,100            |
| Lake Mead EPMT   | 308,900            |
| Gulf Coast EPMT  | 303,000            |
| California EPMT  | 305,500            |
| Florida Caribbean Partnership EPMT                                       | 804,500            |
| Southeast EPMT   | 306,400            |
| <b>Total to Teams</b>  | <b>\$5,368,200</b> |
| <b>Other Expenditures</b>  |                    |
| Staff salary/benefits (WASO Invasive Plant Coordinator and data manager) | 264,060            |
| GPS maintenance  | 5,030              |
| Meeting and professional society support                                 | 6,700              |
| Brochures  | 435                |
| Annual meeting   | 21,000             |
| EPMT Review and travel   | 32,512             |
| Miscellaneous expenses   | 1,856              |
| <b>Total EPMT Program Expenses</b>                                       | <b>\$5,699,793</b> |

<sup>1</sup> Share of maintaining BRMD computer network, etc.

<sup>2</sup> First year that cost-of-living increase was distributed to EPMTs represents share of BRMD cost-of-living increase

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**Table 2. BRMD Budget History**

| Year | Incr/Decr   | BRMD      | EPMT<br>Incr | EPMT<br>Prog | Inv<br>Plants | Inv<br>Animals | Native<br>Branch | IPM     | Ecol<br>Rest | T&E     | Veg<br>Map | Other             | Wildlife       | Avian<br>Flu | Mig<br>Bird | Projects |
|------|---|-----------|--------------|--------------|---------------|----------------|------------------|---------|--------------|---------|------------|-------------------|----------------|--------------|-------------|----------|
| FY00 | Nat/Non-Nat<br>Species 1/                                 | 3,449,000 |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
| FY01 | Recision  | -8,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Total available   | 3,441,000 |              |              |               |                |                  | 197,000 | w/<br>EPMT   | 260,000 |            |                   | 383,000        |              |             | 685,000  |
| FY02 | Uncontrollable<br>change to base                          | 6,000     |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Streamlining<br>decrease                                  | -1,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for EPMTs  | 1,850,000 | 1,850,000    |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for projects                                     | 550,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Total available   | 5,846,000 |              | 3,000,000    |               |                |                  | 625,000 | 400,000      | 522,000 |            |                   | 612,800        |              |             | 686,200  |
| FY03 | Across-the-board<br>reduction                             | -27,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Pay increase  | 13,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for EPMTs  | 2,136,000 | 2,136,000    |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Total available   | 7,930,000 |              | 5,150,000    |               |                |                  | 515,000 | 425,000      | 465,000 |            |                   | 438,800        |              |             | 935,200  |
| FY04 | Pay increase  | 9,000     |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for Chronic<br>Wasting Disease                   | 750,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Net decrease 2/   | 114,000   |              |              |               |                |                  |         |              |         |            | Wildf<br>Health   |                |              |             |          |
|      | Total available   | 8,556,000 |              | 5,055,000    |               |                |                  | 448,000 | 439,800      | 590,000 |            | 855,000           | 445,000        |              |             | 723,300  |
| FY05 | Pay increase  | 23,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Net decrease 2/   | -123,000  |              |              |               |                |                  |         |              |         |            |                   | Wildf & Health |              |             |          |
|      | Total available   | 8,475,000 |              | 5,149,000    | 295,000       | 295,000        |                  | 240,000 | 260,000      | 260,000 |            |                   | 1,100,000      |              | 445,000     | 723,300  |
| FY06 | Pay increase  | 23,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Net decrease 2/   | 134,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Total available   | 8,401,000 |              | 5,149,000    | 255,000       | 255,000        |                  | 280,000 | 275,000      | 410,000 |            |                   | 1,276,500      |              | 175,000     | 633,000  |
| FY07 | Pay increase  | 44,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Base adj. transfer<br>from I&M                            | 368,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for EPMTs<br>3/                                  | 750,000   | 750,000      |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for Highly<br>Pathogenic Avian<br>Influenza      | 375,000   |              |              |               |                |                  |         |              |         |            | Quant/<br>Biostat |                |              |             |          |
|      | Total available   | 9,938,000 |              | 5,690,000    | 280,000       | 275,000        | 175,500          | 275,000 | 275,000      | 425,000 | 250,000    | 125,000           | 949,100        | 375,000      | 175,000     | 668,400  |
| FY08 | Pay increase  | 97,000    |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Increase for Highly<br>Pathogenic Avian<br>Influenza      | 375,000   |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Net decrease 2/   | -159,000  |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Base adj. transfer to<br>NR Data &<br>Information Program | -111,000  |              |              |               |                |                  |         |              |         |            |                   |                |              |             |          |
|      | Total available   | 9,765,000 |              | 5,594,000    | 280,000       | 275,000        | 376,000          | 275,000 | 275,000      | 425,000 | 250,000    |                   | 925,000        | 332,000      |             | 583,000  |
| FY09 | Total available 4/  | 9,833,000 |              | 5,604,000    | 280,000       | 280,000        |                  | 280,000 | 275,000      | 425,000 | 250,000    | 377,000           |                | 332,000      | 377,000     | 630,000  |
| FY10 |   |           |              |              |               |                |                  |         |              |         |            |                   |                |              |             | 5/       |

Note: All funding information based on figures included in *Funding the Natural Resource Challenge* reports to Congress and includes some BRMD funds which are allocated across programs, but not necessarily spent directly on them. It gives a general indication of trends and proportionate spending, but not exactly what a program received in a given year. Footnotes are on next page.

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- 1/ Original amount from appropriation for “Exotic Plant Management and Ecological Restoration” without specific portion for EPMTs; not broken out separately in FY 2000 & FY 2001 Challenge reports.
- 2/ Across-the-board recisions, travel reductions, IT reductions, etc.
- 3/ To be spent on Northern Great Plains, Florida and Southwest teams based on species-specific initiative, plus some Ft. Collins costs
- 4/ Changes to base not explained in Challenge report in this year
- 5/ includes an increase in FY 2009 for “emergency requests”

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## Evaluation Process

### Survey

Contractor Abigail Miller was hired in November 2009 to evaluate the EPMT Program. With input from the EPMT Evaluation Panel, a group of experts (Appendix 3.) including NPS personnel, National Invasive Species Council staff, and a non-federal advisor, the contractor developed a web-based survey. Before developing the survey, the contractor interviewed several NPS personnel, including individuals in the supervisory line of the EPMT Program and in other NPS programs that interact with the EPMT Program. The contractor also consulted WASO Invasive Plant Coordinator Rita Beard and BRMD Human Dimensions Program Manager Kirsten Leong to draft survey questionnaires.

The WASO Invasive Plant Coordinator, in consultation with EPMT Liaisons, identified a broad range of individuals within the EPMT Program who should receive the survey. Memoranda and letters from the BRMD Chief and from EPMT Liaisons were sent to the identified individuals requesting their participation. An *Inside NPS* article also was used to invite interested individuals within NPS to participate. Additionally, a letter about the evaluation was sent to non-federal partners, though this yielded no responses.

Four targeted surveys were prepared. One survey was intended for EPMT personnel and their immediate supervisors (EPMT Survey). Another survey targeted individuals identified as primary NPS partners of the EPMTs, generally park personnel (Partner Survey). Drafts of these questionnaires were tested using Southeast EPMT staff and partners. A shorter general audience survey was also prepared for other interested NPS parties (General Survey). Finally, a survey was prepared for federal (non-NPS) partners (Federal Survey).

All questionnaires contained a core of common elements and a set of questions designed for the intended survey group. There were 72 survey questions. Of the 72, nine questions concerned information about the respondent and the remaining 63 questions concerned the EPMTs. Forty-six of the questions required selecting from a set of answers or entering a specific response such as a numerical rating but many also allowed for narrative comments to be added. Seventeen questions requested written responses composed by the survey respondents. Summaries of the data and written comments appear in Appendix 4..

A few incomplete responses (omitting respondent data or including only respondent data) were deleted. Overall 409 usable responses were received:

- 48% of respondents took the General Survey;
- 30% took the Partner Survey; and
- Approximately 10% each took the EPMT and Federal Surveys.

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The respondents largely indicated that they were well-experienced with the teams and believed that they, the respondents, were well-versed in invasive plant management:

- 77% reported that they had worked with or on an EPMT for more than five years;
- Only 16% had done so for less than two years;
- 96% of respondents from the surveys other than the EPMT Survey indicated that they believe they have at least a general knowledge of invasive plants and their management (it was assumed that those who took the EPMT Survey have knowledge of invasive plants and their management);
- 44% of respondents from the surveys other than the EPMT Survey self-identified themselves as experts.

### Survey Follow-up

The EPMT Evaluation Panel met in September 2010 to review the survey data summarized by the contractor, to identify preliminary findings from the survey, and to determine what needed to be explored further in the field interviews.

Two sets of field reviews were conducted by the contractor and panel members with the Northern Great Plains EPMT (stationed at Badlands and Theodore Roosevelt National Parks [NPs]) and the Northern Rocky Mountain EPMT (stationed at Yellowstone and Glacier NPs). The intent of the reviews was not to evaluate individual teams, but rather to allow the panel to visit representative work places of the teams, observe field conditions, and interact directly with team members and park representatives. Most panel members attended at least one of the field reviews.

At each field review, permanent EPMT personnel, their supervisors, and representatives of many parks served by the EPMT were present. The contractor presented general survey results and outlined issues of interest to the panel. There was a general discussion of successes and challenges faced by the team. This was followed by individual interviews. Each interview was conducted by two or more people, including a combination of the contractor and panelists. Interviewees were asked a standard set of questions and also follow-up questions. Interviewees were allowed to add any additional comments and were informed that neither they personally nor their EPMT were being evaluated specifically and that all comments would be held in confidence. The WASO Invasive Plant Coordinator was present at the location to help facilitate travel and on-the-ground logistics but was not in the room during any of the interviews.

Subsequent to these field reviews, the contractor and two panel members interviewed liaisons for teams not previously visited and most of their supervisors. The panel and contractor also interviewed the WASO Invasive Plant Coordinator and her two immediate supervisors. These interviews were conducted by telephone and addressed a subset of the issues explored in the onsite reviews. Interview summaries from the field reviews and the discussions with liaisons

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and their supervisors are included in the reference document provided to NPS; a list of those interviewed is included in Appendix 5..

### General Observations

Where there has been adequate support and partnering with parks, EPMTs and their partners have solved long-standing invasive plant problems.

Not all NPS units are served by the EPMT Program. This evaluation focused on the current Program and the parks served by that Program. Therefore, it was not possible for the panelists to fully evaluate invasive plant management servicewide, nor were they asked to do so. However, clearly there are significant deficiencies. In many cases EPMTs try to fill these gaps. EPMT Liaisons often provide technical assistance to parks that are not the direct responsibility of their EPMT. In some cases EPMTs have taken on as full members additional parks that were not in their original proposals, in one case, effectively doubling the number of parks served.

One of the key roles an EPMT Liaison plays is to advise parks on prioritizing invasive plant populations and best treatments. Not having this service available to all parks has the potential to result in inappropriate, ineffective, or counter-productive treatments being applied. In some cases, it can result in a complete lack of treatment. Gaps in park coverage by EPMTs undermine regional coordination efforts and the ability of the NPS to address larger-scale invasive plant-related priorities, such as climate change, endangered species, and wildfire. Additionally, gaps can cause parks to miss emerging problems, which left untreated, could become major problems. However, existing EPMTs could not fully address these gaps in park coverage without revisions to programmatic funding and organization.

### Specific Findings

These findings are based on the survey results, the EPMT Evaluation Panel's site visits and interviews with park officials and EPMT members, and the expert opinion of the panelists. These findings are not intended to be an evaluation of any single person or EPMT. The order in which they are presented is not significant.

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### 1. The EPMT Program is a success.

The EPMTs are very effective in assisting parks with significant invasive plant issues. The teams are working on high priority infestations identified by the parks in consultation with the EPMT Liaisons. Although many of these infestations have been brought to a point where they require only a relatively low level of continued maintenance, no team has controlled *all* of the high priority invasive plant populations in its parks to this level. Many parks are heavily dependent on the teams for all or most of their invasive plant management activities. This is especially true in smaller parks. There is no indication that it would be productive to move any of the teams and assign them to serve a new set of parks without a comprehensive long-term plan.

#### Program Accomplishments through 2010:

|                            |            |
|----------------------------|------------|
| Inventoried Acres          | 87,016,738 |
| Acres Monitored            | 690,045    |
| Gross Infested Acres       | 1,130,617  |
| Infested Acres             | 254,407    |
| Acres Treated              | 108,135    |
| Parks with EPMT activities | 244        |
| Parks in EPMT networks     | 229        |

Source: National Park Service

Figure 2. EPMT Program Accomplishments

### 2. NPS is recognized as a leader in controlling invasive species and the EPMT Program is held in high regard by parks and NPS partners.

The consistent record of success compiled by the EPMTs has increased awareness of invasive plant issues within parks and with park neighbors. In some cases, neighbors have been inspired to increase their control efforts, leading to improvement in the integrity of the shared landscape. Teams have led multi-stakeholder efforts, especially in Florida and Hawaii, to address invasive plant on regional scales. The teams and EPMT leadership are held in high regard by other federal agencies and external partners with whom they work. They demonstrate the NPS's commitment to "walking the talk" and working with conservation partners to protect shared and interconnected resources.

### 3. A small core investment has resulted in large gains.

EPMTs have used economies of scale, a high level of expertise, and leveraging and sharing of staff, equipment, and supplies to achieve major successes. The teams are known for accomplishing a lot in a short amount of time, and the EPMT Liaisons have played a vital role in advising parks on which species to target and which control techniques are most appropriate. From a small but consistent base of support, the EPMTs have also developed strategic partnerships that have greatly increased their effectiveness.



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- 4. The structures and administrative settings of the EPMTs vary widely. There is no need to impose a single model on all the teams.** EPMTs differ in their organization, physical and administrative locations, and administrative support structures. For example, teams may be located variously in a single park, more than one park, regional offices, and, in one case, with Inventory and Monitoring (I&M) Program staff. Additionally, some teams use contracts exclusively or extensively, while others use only EPMT staff to manage invasives. The duty station of the liaisons and the supervisory arrangements also vary substantially depending on whether the EPMT structure includes a host park, satellite parks, or neither and whether the regional office believes that regional office supervision is preferable. Flexibility is needed in how teams are deployed and how they accomplish their work, including the extent of contracting. This flexibility makes sense because the parks EPMTs serve differ in the nature of their infestations, their in-park capability to deal with these issues, the geographic distribution and travel times from EPMTs, and the availability of matching funds and partnerships. All EPMTs have liaisons and these positions perform essential functions for the teams and the parks, including consultation, planning and partnering, and operational functions. Roles vary by team depending on the parks served and the individual liaisons. Flexibility is useful to match roles and skills to park needs.

There is no need to impose upon the teams a single model; in fact, the ideal structure and administrative settings for each team will likely evolve. EPMT Liaisons should be encouraged to periodically review their circumstances and recommend changes as warranted.

- 5. The Program has an admirable worker and environmental safety record.** The work of EPMTs is difficult, potentially hazardous, and is accomplished under arduous and unpredictable field conditions. Team members apply or oversee application of herbicides and use powerful equipment, such as chain saws and all-terrain vehicles or utility terrain vehicles that require skill, training, and careful direct supervision. They have a professional responsibility to do this highly demanding work in a safe and responsible way that is fully compliant or exceeds all legal, policy, and worker and environmental safety requirements. The teams provide a shining example of responsible professionalism that is demonstrated by their worker and environmental safety records. They also lead by example and are a highly visible part of the parks where they work. A safety-related incident described to the panel involved inconsistency between parks and teams in how incidents are reported and records are kept rather than a lack of training, understanding, attention to detail, or failure to anticipate hazards and take mitigating steps. Critical to the continued safe and effective operation of the teams is the emphasis on training, such as Operational Leadership Training, and professional oversight.
- 6. Individual on-the-ground actions have been effective. However, there is inadequate landscape-level planning, coordination, and strategic action targeting fully-**

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**articulated priorities.** Comprehensive invasive management plans are missing for most parks and largely absent at landscape scales. Work on individual priority species and locations continues to be effective and the teams are well-led, but their work is not implemented within more comprehensive strategic plans. The need for planning and then implementing prevention, early detection/rapid response, and outreach/education actions is well understood, but finding the time is difficult when the demand to treat and maintain control of high-priority populations is ongoing.

There must also be a recognition that not all invasive plant populations can be controlled with the limited funding available, and hard choices must be made to direct EPMT efforts toward protecting the most critical natural and cultural resources in an ecological context. This must be done in a regional and sometimes national context since the scope of invasions often extends beyond park boundaries.

- 7. The current EPMT funding level is not adequate.** The teams and the parks they serve believe that EPMTs have been effective. However, the teams do not have the capacity to meet all of the needs of their parks. Many parks served by EPMTs report that they are making progress in getting some significant infestations under control and many others are moving in that direction. However, significant invasive populations have not yet been treated, and new infestations are occurring every day. In addition, many parks are not currently being served by EPMTs and do not have the capacity to effectively address their invasive plant management needs alone. This situation will only deteriorate as the buying power of EPMT base funding (largely unchanged for 10 years) continues to erode. Many EPMTs have augmented their abilities through partnerships with local or state weed management programs. In some instances, these partnerships have added over a million dollars to the annual budget of an EPMT. However, these non-NPS sources of funding are drying up or being drastically reduced. Some teams have only a fraction of the funds that they once had. If this continues, many teams will soon need to reassess how much they can hope to accomplish, restructure how they operate, and/or consider reducing the number of parks they serve.

Once brought to a level of about 95% controlled, invasive plant populations require relatively little time and resources to maintain. With favorable weather conditions and in some cases restoration actions, desired plant populations recover and further subdue invasive plants. Over time the invasive plants may nearly drop out of the system. Due to the work of the EPMTs, some NPS units are among the most invasive plant free areas<sup>2</sup>. However, a lack of control for even a short period can allow invasive plants to spread to additional areas and exponentially repopulate previously treated sites. Years of effective invasive plant management activities can be erased by one or two years of neglect. An interruption in service could require repeated applications of herbicides that otherwise

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<sup>2</sup> Chris Dionigi, Assistant Director for Domestic Policy for the National Invasive Species Council

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could be avoided. Invasive plants could reinvade and their damage be further exacerbated by other environmental stressors such as drought and climate change.

**8. A single Washington Office position cannot simultaneously supervise EPMT operations and accomplish the essential suite of servicewide responsibilities that is required of the WASO Invasive Plant Coordinator. Program continuity is at risk.**

Formerly the Program resided in a branch of BRMD that included Integrated Pest Management (IPM) personnel and a restoration ecologist. A branch chief handled IPM, restoration and invasives policy (plants and animals), and communication “up the chain.” With the growing number of EPMTs an additional position was added in 2005 to do on-the-ground team management. Following a reorganization of BRMD in 2008, the restoration ecologist and IPM position in BRMD operate as separate programs but interact on invasives as needed. Now the WASO Invasive Plant Coordinator handles the EPMT Program and the overall invasive plant management duties, much of which were previously part of the duties handled by the Branch Chief.

There are two distinct suites of responsibility for the current WASO Invasive Plant Coordinator who also functions as the EPMT coordinator. First, the coordinator must manage 16 highly diverse EPMTs spread across the U.S. and oversee their multi-million dollar budget. The coordinator must also provide EPMTs with critical decision-making, overall guidance, and timely technical support. This requires her to be at frequent field meetings with parks, teams, and stakeholders. The coordinator must also be responsive when urgent situations arise and travel with little notice to remote and widely dispersed locations.

Second, the WASO Invasive Plant Coordinator must provide overall leadership and coordination at a national level, provide guidance and expertise to parks not served by EPMTs, work with other NPS program areas to ensure invasive plant issues are fully considered in their planning and funding programs<sup>3</sup>, and coordinate with entities external to the NPS. External coordination is essential to building partnerships with public and private sector organizations across the broad landscapes impacted by invasive plants, protecting park resources from off-site invasive plant populations, and optimizing the work of the EPMTs within overall NPS management efforts. National program-to-program coordination is essential to ensuring that the work of the EPMTs is complementary to government-wide work concerning climate change, fire, wildlife, recreation, endangered species, NEPA compliance, Executive Order 13112 on Invasive Species, cultural resources, youth employment, Government Accountability Office (GAO) and Congressional information requests, visitor outreach, press relations, and

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<sup>3</sup> Examples include the fee program, burned area rehabilitation and restoration, control of certain invasive plants prior to prescribed burns, and cyclic maintenance of invasive plants associated with facilities).

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interpretation, and other priorities. This requires a detailed knowledge of invasive plant, the EPMTs, and national priorities and initiatives.

The current WASO Invasive Plant Coordinator is well regarded by EPMT members and park personnel and is considered an essential asset at the national level for her expertise and effectiveness. None faulted her and many expressed deep appreciation for her dedication. However, many respondents expressed frustration with Program administration. They cited difficulties in their ability to contact the coordinator in a timely manner. Clearly, the scope of this work is beyond what any one individual can accomplish.

The continuity of service from EPMTs is largely dependent upon the knowledge of the current WASO Invasive Plant Coordinator and a few other individuals. Therefore a loss of key personnel could disrupt the flow of services and setback hard-won gains. WASO lacks the resources to provide for Program continuity over time.

**9. EPMT personnel and others feel strongly that there is a lack of recognition and support for their work from NPS leadership above the WASO Invasive Plant Coordinator level. They feel that the sense of urgency concerning invasive plant has waned.**

One cause of concern repeatedly expressed in comments and interviews is the level of staffing in BRMD devoted to invasive plant management. It is perceived as both inadequate to the need and less than that devoted to wildlife management. Both EPMT and park personnel perceived the change in invasive species staffing from BRMD's reorganization (see The History of the EPMT Program) as another indication of less attention being paid to invasive plant issues.

There are more wildlife biologists than plant scientists stationed in BRMD in Fort Collins. However, if the EPMT Liaisons are viewed as extensions of the BRMD that serve to advise parks in a similar way as some wildlife staff in the BRMD, one could argue that the EPMT Program is better staffed. Still, in the eyes of EPMT personnel and some park staff, other functions in the BRMD and NRSS are growing and the amount of time devoted to invasive plant management by BRMD staff has diminished. Some of the perception of lack of support seems to result from comparisons with funding growth in other areas (for example, additions to other functions within BRMD and to the I&M, Ocean Stewardship, and Climate Change Programs), while the EPMT budget has remained static since FY 2007. Additionally, personnel from the teams and the parks they serve view the EPMT budget as inadequate compared to the scope of the invasive plant problem.

The absence of cost-of-living increases provided to EPMTs (prior to FY 2010) was also seen as suggesting a lack of support from NPS leaders. The four-digit team organization

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codes used in financial and position management were established in FY 2005 to allow cost-of-living increases to accrue and be distributed to EPMTs. However, in 2006 and 2008 across-the-board decreases far outweighed any pay increases, which appears to explain why no pay increases were distributed. It is unclear why no pay increases were distributed to EPMTs in 2007 and 2009. However, cost-of-living increases were provided in FY 2010.

WASO higher level managers interviewed expressed great support for the Program, pointing to its successes as a model for NPS. In terms of overall funding, the EPMT Program makes up approximately 50% of the entire BRMD budget and leadership of BRMD and NRSS view this as indicative of their support for the EPMT Program. They also pointed to other NRSS fund sources that support invasive plant projects (non-EPMT).

However, WASO managers' supportive view of the EPMT Program has not reached the field. EPMT field staff and WASO higher level managers have few opportunities for direct interaction. When there was such an opportunity at a servicewide EPMT meeting, one senior NRSS official was perceived as having a disturbing lack of knowledge of the Program and its accomplishments. Except for this meeting (which seems to have had a universal and lasting effect), most of the information that has shaped these feelings comes from what field personnel observe in budgets and hiring in other Program areas, which may have given a false impression of a lack of genuine support. But rightly or wrongly, EPMT staff, and to a lesser degree park staff interviewed (and survey commenters) have a general perception that upper management does not assign the level of urgency and priority to invasive plant management that they feel is warranted.

- 10. While park representatives indicate very strong support for the Program, this support is not always visible. Parks do not always provide feedback to their teams.** With rare exceptions, park respondents were effusive in their praise of the EPMTs who serve them, and field reviews indicated a similar appreciation for the teams. Nonetheless, several EPMT personnel indicated that parks rarely provided them with feedback. This may be due in part to the success of the teams and their outstanding safety record and a lack of problems that require feedback. However, being able to see the results of their efforts and hearing from park officials about the impacts of their work was often cited as one of the most important aspects of job satisfaction for team members. Additionally, respondents indicated that telling the story of their success would increase the teams' visibility within the NPS and with stakeholders.
- 11. There are administrative challenges, many of which are NPS-wide, but are especially problematic for EPMTs.** Most teams depend on seasonal hiring and/or contracts. They must be able to deploy workers within required timeframes, to coincide with specific stages of plant development and windows for treatment. Difficulties in

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hiring and procurement can compromise the teams' ability to carry out their basic mission. Many teams are limited by travel ceilings which can undermine their ability to work effectively. Support services are stretched throughout the NPS and the teams are especially impacted. This is made worse by some teams not wholly belonging to parks or regions, placing them at lower priority for receiving services. EPMT organization codes also are presenting administrative challenges for property management and other administrative tasks. Although not their main responsibility, many liaisons carry out much of their own administrative duties as an attempt to overcome this.

- 12. Gaps and unclear lines of supervision can result in no one taking full responsibility for ensuring teams and liaisons have the support they need** (Appendix 2.). Many of the liaisons and some crew leaders are on the BRMD roster; BRMD provides payroll support for these positions, yet they are supervised by field managers where they are located. This means that time is authorized by a BRMD supervisor at locations far from the BRMD office. At the same time, the liaisons are not benefitting from technical supervision at the BRMD level. This arrangement was initiated in response to issues with specific regions so that full time employees (FTEs) would not be "under" a region and count towards their FTE ceilings and because of issues with contract and hiring support in some regions.

Most EPMT Liaisons based in parks expressed high regard and great appreciation for the support that they received from their parks. Supervisors expressed a range of opinions. Some felt that EPMT Liaisons should be supervised by the regions. Others felt that the current BRMD supervision of EPMT Liaisons was working well. Essentially, if individuals are working together well, respondents indicated that it did not matter what supervision structure was in place. Those cases where problems have arisen seem to result more from a lack of clarity on who has what supervisory responsibilities than from the particular structure in place. Assigning all EPMT Liaison supervision to the WASO Invasive Plant Coordinator stationed far from a liaison's duty station would serve to standardize supervision, but it could also reduce the sense of ownership of the EPMTs by the regions and parks they serve.

- 13. Some regional offices do not play a very active role in the EPMT Program, and their involvement is not routinely recruited.** Some regions provide a great deal of advocacy, oversight of park-team relationships, and direct administrative support for their EPMTs. Others provide little support. Some regions take overhead from the EPMTs' budgets and others do not, and the proportion of EPMT funding taken for overhead does not necessarily reflect the level of support provided by the region.

There is no systematic communication from WASO to the regions concerning the work of EPMTs and invasive plant issues. Most communications from the WASO Invasive

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Plant Coordinator go directly to the EPMT Liaisons and do not go through Regional Directors.

- 14. Data management does not meet current EPMT Program needs.** Data management appears to have been a low priority. There is no spatial component to the EPMT database (Alien Plant Control and Monitoring or APCAM), and it is difficult to use. The teams require different data than the parks. These deficiencies in the current data system cause frustration and prevent broad-scale analyses and modeling. Although these are well-recognized problems, both EPMTs and parks expressed skepticism that promised replacement database systems will be completed.

The NRSS is in the process of upgrading and integrating its databases. Some work has been done to evaluate what is needed to upgrade APCAM and combine it with the IPM database (Pesticide Use Proposal System or PUPS). However, there is no dedicated funding for NRSS to accomplish this task, leaving programs to fund this effort directly or to seek NRSS project funding. There is also concern that continued support for PUPS may not be forthcoming.

- 15. Parks differ in their ability and commitment to sustain control over invasive plant populations brought to a maintenance control level by EPMTs.** Many parks follow-up on the work of EPMTs and continue the maintenance suppression of invasive plant populations. However, not all parks have continued treatments as specified in their original EPMT proposals. EPMT Liaisons have pressed parks to take on this responsibility, but some (particularly small parks) have limited capability to manage invasive plants even after they have been brought to a control level by the EPMT. EPMTs are designed to be mobile and conduct intensive work at several parks, and are not efficiently used in less intensive and ongoing population maintenance scenarios. Yet, if invasive plants populations are not controlled and maintained, they can return quickly.

Many parks are fully committed to controlling invasive plants. They direct their park financial and/or staff resources to this issue, and they include invasive plant control among their top priority base increase requests. However, some parks are not invested in the invasive plant management issue, do not accept ownership of the problem, and see it as an EPMT problem. Others may initially identify invasive plants as a priority, but as competing needs emerge, divert resources and begin relying more and more on their EPMT to manage the problem. On-the-ground support given to EPMTs varies from providing full ongoing partnership, to assisting when the team arrives, to no assistance at all.

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### Recommendations

Based on the findings above, the panel developed recommendations that have been grouped into four categories: long-term vision; structural improvements to the EPMT Program; operational improvements to the EPMT Program; and other actions. The order of these recommendations does not indicate any relative significance. Appendix 6. shows how the recommendations correlate to the previous findings.

### Long-term Vision

- 1. Develop a strategic long-term plan for the EPMT Program.** Teams should not be significantly reorganized at this time, but a long-term plan and budget request to serve all parks through the Program should be developed.

As previously indicated, the EPMTs were established originally through a competitive process to select teams that best met the criteria identified for the teams at the time; there was no effort to determine how all parks could be served. This differs from the approach taken in the I&M Program. There, a strategy to serve all parks with natural resources was developed; it considered ecological characteristics, regional boundaries, and workloads. The success of the current EPMTs suggests that adding new EPMTs to allow all parks to be served would be beneficial. Current funding is not sufficient to support this approach. However, NPS should initiate a process to develop a long-term strategic vision of a servicewide network of EPMTs. This would serve as a basis for future budget requests.

Long-term planning should consider following I&M network boundaries where invasive plant phenology, logistics and other considerations make this approach useful. The long-term plan should determine the most efficient grouping of parks, the type of “team” structure that would work best for each grouping (e.g. traveling crew, satellite crews, contracting, etc.), and the level of funding needed for each “team” (recognizing that the workload and logistics will vary from team to team). Current aggregations of parks served by existing EPMTs should not be disregarded, but they should be examined to determine whether there should be adjustments to current boundaries and responsibilities for logistical and administrative efficiencies.

The plan should also carefully define expectations for park responsibilities versus team responsibilities and joint responsibilities. The plan also should determine how best to deliver the administrative support needed by the teams.

The BRMD should work closely with regions where there are independently funded EPMTs. It would be desirable to have all parks included in the analysis and parks served by these EPMTs evaluated in the same fashion as the others. Any new, more systematic approach to EPMTs should include standards and SOPs to which all teams servicewide would adhere.



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A budget request based on this long-term plan should be developed and advanced when the opportunity arises.

### Structural Improvements to the EPMT Program

- 2. Establish charters and steering committees for all EPMTs.** Charters should be developed for all EPMTs. Where there are existing charters, they should be reviewed and revised if necessary. Charters should indicate how work will be made as strategic as possible and how communication between parks and teams will be accomplished with the overall goal of increasing the effectiveness of the teams. Support arrangements and expectations of parks should be included in the charter and/or renegotiated if necessary. Housing for EPMT staff especially needs to be addressed. The EPMTs' stakeholders and partners need to be involved in revisions, including the parks served and the regional offices.

The charters should be subject to approval by the superintendents of the parks served, the EPMT Liaison, the Regional Director(s) involved, and the WASO Invasive Plant Coordinator. Model charters, criteria, and priority-setting processes should be developed by the WASO Invasive Plant Coordinator in consultation with the regions and EPMT Liaisons and distributed to all the parties involved.

Although it is easier for EPMTs to agree to work on the highest priority populations identified by each park they serve, to be strategic, hard decisions should be made concerning which projects would have the most important impact on the overall goal of protecting and restoring key park resources. This may mean that an EPMT does not conduct control work in every park it serves every year. Criteria and a priority-setting process that addresses priorities among parks should be defined in the charter. Each EPMT should have an active steering committee that assists in this process and whose role is spelled out in the charter.

New charters should reiterate the need for a true partnership between the EPMT and the parks. Those parks that do not currently have the staff to take on the full job of ongoing maintenance control of their invasive plant populations should be required to contribute as much as they can toward the effort while they make base increase (OFS) requests to build their capability. For some parks with little or no natural resource staff, this may mean training someone on their maintenance crew to assist. In some cases, it may mean contributing the cost of the maintenance control work or at least herbicide to the EPMT, which will enable the EPMT to extend their crew to address invasive plants that would otherwise go untreated. If parks fail to live up to this aspect of their charter agreement, EPMT Liaisons and steering committees should be encouraged to rate work in that park as being a lower priority until the park can become a full partner. This should be

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addressed in the priority-setting process outlined in the charter and overall Program guidance.

- 3. Establish a servicewide advisory group.** NPS should establish a servicewide advisory group to assist the EPMT Program. The I&M Program has benefitted from such an advisory group. The EPMT Program advisory group should include one or two park superintendents. Consideration should be given to including external stakeholders, especially federal stakeholders, since their use would not require any of the procedural issues raised by the Federal Advisory Committee Act. While the role of the advisory group will evolve, it should assist initially in setting into motion the analyses that can be used to develop a long-term strategic plan for the Program. This group would serve as an important communication vehicle, a forum for discussing potential solutions to issues that arise, and an advocate for the EPMT Program.
- 4. Restore EPMT service to the Southwest.** Action should be taken to provide service, in some fashion, to as many of the parks as possible that were served by the two partially active teams. The panel did not assess how to do this in enough detail to recommend a particular solution. However, the approaches that should be evaluated include: 1) one liaison directing two or more satellite crews; 2) one liaison accomplishing an expanded workload through a combination of contractors and seasonal employees; and 3) adding parks from the two EPMT networks to existing teams and increasing those teams' budgets accordingly. It is likely that some combination of these may be the best solution. The evaluation should consider travel distances between parks, housing availability, which parks are willing and able to perform host park responsibilities, overlap in species to be treated, herbicides to be used, and treatment skills needed (e.g. chainsaw operation). Once the most efficient and effective organizational structure is determined and before any permanent hiring actions are completed, the parks involved should sign a new charter(s) clearly outlining their responsibilities, the role of the liaison(s), and how the team(s) will set priorities for invasive plant control projects to ensure funding is used strategically.
- 5. Clarify and strengthen supervisory relationships and regional support.** Supervision that is closer to the individual being supervised generally is best. Where possible, EPMT Liaisons and Crew Leaders should be assigned to and supervised at the park or regional level. If at the park level, the region needs to ensure that the host park recognizes the multi-park responsibilities of the team. In all cases, regions should make certain that all the EPMTs in their region are working well and have what they need. This is not being done in all cases now.

The WASO Invasive Plant Coordinator, regional offices, and host parks should all play roles in reviewing annual work plans and performance appraisals for the liaisons, but the ultimate supervisor of record should be clearly identified. These roles and lines of

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supervision should be clearly identified in position descriptions, charters, and other written agreements with regions/parks. There must be clear procedures outlined for addressing problems and resolving conflicts.

### Operational Improvements to the EPMT Program

- 6. Provide assistance to the WASO Invasive Plant Coordinator.** As discussed in the findings, the individual in the WASO Invasive Plant Coordinator position currently has responsibility for directing the EPMT Program and the overall servicewide Invasive plant Management Program, which is more than can be effectively handled by a single person. Until funding can be obtained to hire a second individual, rotating detail assignments should be offered to EPMT Liaisons to assist with some of these duties. These rotations would increase the experience base within the Program and make it less vulnerable to a loss of key personnel. It could also, in turn, open detail opportunities for EPMT Crew Leaders to serve as liaisons.

The WASO Invasive Plant Coordinator, with assistance from detailees, should work to implement the recommendations in this report, increase intra-team communication, and improve coordination with other NPS programs and external groups. A small work group representing liaisons, regions and WASO should review work elements to see which tasks can be reassigned to liaisons or other offices recognizing that liaisons are higher graded employees and can provide more leadership to reduce the workload on the WASO Invasive Plant Coordinator. They should identify opportunities for efficiencies such as moving administrative tasks including budget tracking to the regions. A clear agreement should be reached about what is expected administratively from parks and from regions.

If possible, additional WASO office support staff should be added or assigned to assist the WASO Invasive Plant Coordinator. The WASO Invasive Plant Coordinator should be given additional resources as soon as they become available, and her supervisors should work with her to define duty priorities that are within the capability of a single position.

- 7. Solve database issues.** It is urgent that the WASO Invasive Plant Coordinator work with others in BRMD and NRSS to develop and fund a servicewide data management system for invasive plant that is easier to use, has a spatial component, will facilitate broad scale analyses and modeling, and will meet the needs of both the EPMT Program and parks so all invasive plant management and pesticide use data (whether generated by EPMTs or park staffs) can be readily entered into a common database. NRSS should work with the Natural Resource Advisory Group to determine how these data management needs will be integrated into the Integration of Resource Management Applications (IRMA) database system. Field practitioners should be engaged with this work so that the outcomes are fully useful to the current and anticipated needs of the teams and the parks that they serve.

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8. **Address travel ceilings on a servicewide basis.** Travel ceilings threaten to curtail the significant gains being made by EPMTs. They provide an excellent example that could be used to demonstrate the unintentional adverse effects that are occurring as a result of the travel ceilings. As budgets are further reduced, Programs must be allowed flexibility to address their needs in the most cost-effective manner possible.
9. **Review and resolve administrative challenges.** The Program's administrative support should be decentralized to a level consistent with EPMT supervision. EPMT budgets should be allocated and tracked at the park and/or regional level, with year-end reports used to provide accountability. Engaging administrative personnel who have been carrying out administrative tasks for the teams can add great value to the process. Many problems can be addressed through decentralization, but a temporary workgroup of administrative personnel should be convened by the recommended EPMT Program advisory group to review the administrative aspects of the Program.

Some of the administrative problems experienced by the EPMT Program are caused by the special organization codes developed to serve some of the Natural Resource Challenge initiated programs (EPMTs, I&M, regional aquatic positions, and regional air resource positions). Some difficulties experienced by EPMTs appear to be less of a problem for I&M networks. This workgroup of administrative experts should explore the difficulties EPMT administrative staffs are having with the current administrative systems, how the I&M and Water Resource Programs have dealt with these issues, and how to ensure cost-of-living increases are being appropriately assigned to the EPMT Program. There should be coordination within NRSS, especially with the I&M Program, to determine best practices and to identify systemic issues common to all NPS network programs.

10. **Enhance internal and external communication, develop core messages, and establish recognition programs.** Establish more systematic communication between the EPMT Program and parks and regions in order to make them better informed and engaged as full partners in addressing the invasive plant management issue. The most immediate opportunity for such communication is the 2011 Natural Resource Advisory Group meeting. In addition, core messages should be developed to increase the visibility of the EPMTs and to foster a better understanding of the teams and their work within NPS and with NPS partners and visitors. The EPMTs should utilize a consistent set of core messages available when representing their work to parks, the public, and stakeholders. These core messages should be augmented with more site-specific information and should be kept current. Posters that highlight EPMT accomplishments should be displayed in regional offices and NRSS offices in Colorado and D.C. so the broader NPS community becomes better informed about the substantial contributions being made by EPMTs. Recognition programs could be established. These could include awards to celebrate both exemplary performances by EPMT staff and accomplishments

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of park staff in supporting exotic plant management (e.g. the rotating Weedzilla Award distributed annually by the California EPMT, which has no dollars attached, but is highly prized).

As stated in Finding #9, there is a perception by many of those interviewed that upper management does not assign the level of urgency and priority to invasive plant management that is warranted. Assuming this is a misperception, senior NRSS officials should dispel it vigorously by clearly articulating their support, appreciation, and vision for the future of the EPMT Program and the role it will play in an overall strategy to aggressively and successfully address the threat of invasive plants to the core NPS mission.

### Other Actions

- 11. Consider pooling resources and partnering with other Federal agencies, Cooperative Weed Management Areas, and others for additional support for the EPMT Program.** NPS should explore the idea of partnering with other federal agencies for additional support (funding and logistical) for the EPMT Program, while also offering those agencies the ability to tap invasive plant expertise and abilities. This pooling of resources would be particularly effective in areas where two or more federal agencies share property boundaries and manage lands in the same or adjoining ecosystems.
- 12. Promote technical assistance for parks not served by an EPMT.** The annual technical assistance call should encourage parks that are not currently served by an EPMT to request technical assistance on invasive plant management from EPMT Liaisons through the STAR (Solution for Technical Assistance Requests) program. Typically, it would be far more cost effective for an EPMT Liaison to make site visits than for BRMD program staff to make the visit. This is not a long-term solution in that it does not address the underlying problem of insufficient funding for the EPMT Program to fully serve all the NPS units that need it. But in the interim, EPMT Liaisons could play a very valuable role in helping to guide the efforts of these parks by ensuring they are well-targeted and effective.

## Appendix 1: Parks Served by EPMTs in 2010

### Parks Included in EPMTs in 2010

(Note: Chihuahuan Desert and Colorado Plateau EPMTs were not fully functional in 2010; parks received funding in lieu of EPMT assistance)

#### Alaska EPMT

Alagnak Wild River  
Aniakchak NM & Pres\*  
Bering Land Bridge NPres  
Cape Krusenstern NM  
Denali NP & Pres  
Gates of the Arctic NP & Pres  
Glacier Bay NP & Pres  
Katmai NP & Pres  
Kenai Fjords NP  
Klondike Gold Rush NHP  
Kobuk Valley NP  
Lake Clark NP & Pres  
Noatak N Pres  
Sitka NHP  
Wrangell - St Elias NP & Pres  
Yukon - Charley Rivers Pres

#### California EPMT

Cabrillo NM  
Channel Islands NP  
Devils Postpile NM  
Golden Gate NRA  
John Muir NHS  
Lassen Volcanic NP  
Pinnacles NM  
Point Reyes NS  
Redwood NP  
Santa Monica Mountains NRA  
Sequoia & Kings Canyon NPs  
Whiskeytown NRA  
Yosemite NP

#### Chihuahuan Desert/Shortgrass Prairie EPMT

Alibates Flint Quarries NM  
Amistad NRA  
Bent's Old Fort NHS  
Big Bend NP  
Capulin Volcano NM  
Carlsbad Caverns NP  
Fort Davis NHS  
Fort Union NM  
Guadalupe Mountains NP  
Lake Meredith NRA  
Sand Creek Massacre NHS  
Washita Battlefield NHS  
White Sands NM

#### Colorado Plateau EPMT

Aztec Ruins NM  
Bandelier NM  
Black Canyon of the Gunnison NP  
Canyon De Chelly NM  
Chaco Culture NHP  
Colorado NM  
Curecanti NRA  
Dinosaur NM  
El Malpais NM  
El Morro NM  
Glen Canyon NRA  
Grand Canyon NP  
Hubbell Trading Post NHS  
Mesa Verde NP  
Petrified Forest NP  
Petroglyph NM  
Rainbow Bridge NM  
Salinas Pueblo Missions NM  
Sunset Crater Volcano NM  
Walnut Canyon Colorado NM

Wupatki NM  
Yucca House NM

Florida/Caribbean Partnership EPMT

Big Cypress NPres  
Biscayne NP  
Buck Island Reef NM  
Canaveral NS  
Castillo De San Marcos NM  
Christiansted NHS  
De Soto NMem  
Dry Tortugas NP  
Everglades NP  
Fort Caroline NMem  
Fort Matanzas NM  
Salt River Bay NHS & EPres  
Timucuan E & HPres  
Virgin Islands NP

Great Lakes EPMT

Apostle Islands NL  
Ice Age NST  
Indiana Dunes NL  
Isle Royale NP  
Mississippi NRRRA  
Pictured Rocks NL  
Saint Croix NSR  
Sleeping Bear Dunes NL  
Voyageurs NP

Gulf Coast EPMT

Big Thicket NPres  
Jean Lafitte NHP & Pres  
Natchez Trace NST  
Natchez Trace Pkwy  
San Antonio Missions NHP  
Vicksburg NMP  
Gulf Islands NS  
(w/ Florida/Caribbean Partnership EPMT)

Lake Mead EPMT

Arches NP  
Bryce Canyon NP  
Canyonlands NP  
Capitol Reef NP  
Cedar Breaks NM

Death Valley NP  
Great Basin NP  
Hovenweep NM  
Joshua Tree NP  
Lake Mead NRA  
Manzanar NHS  
Mojave NPres  
Natural Bridges NM  
Parashant NM  
Pipe Spring NM  
Timpanogos Cave NM  
Zion NP

Mid-Atlantic EPMT

Appomattox Court House NHP  
Bluestone NSR  
Booker T Washington NM  
Colonial NHP  
Eisenhower NHS  
Fredericksburg & Spotsylvania NMP  
Gauley River NRA  
George Washington Birthplace NM  
Gettysburg NMP  
Hampton NHS  
Hopewell Furnace NHS  
New River Gorge NR  
Petersburg NB  
Richmond NBP  
Shenandoah NP  
Thomas Stone NHS  
Valley Forge NHP  
Appalachian NST  
(w/ Northeast & Southeast EPMTs)

National Capital Region EPMT

Antietam NB  
Assateague Island NS  
Catoctin Mountain Park  
Chesapeake & Ohio Canal NHP  
George Washington Mem Pkwy  
Harpers Ferry NHP  
Manassas NBP  
Monocacy NB  
National Capital Parks-East  
National Mall & Memorial Parks  
Prince William Forest Park

Rock Creek Park  
Wolf Trap National Park for the Performing Arts

North Cascades EPMT

Ebey's Landing NHR  
Fort Vancouver NHS  
John Day Fossil Beds NM  
Lake Chelan NRA  
Lake Roosevelt NRA  
Lewis and Clark NHP  
Mount Rainier NP  
Nez Perce NHP  
North Cascades NP  
Olympic NP  
San Juan Island NHP  
Whitman Mission NHS

Northeast EPMT

Acadia NP  
Allegheny Portage Railroad NHS  
Appalachian NST  
Boston Harbor Islands NRA  
Cape Cod NP  
Delaware Water Gap NRA  
Fire Island NS  
Fort Necessity NB  
Friendship Hill NHS  
Gateway NRA  
Johnstown Flood NMem  
Marsh-Billings-Rockefeller NHP  
Martin Van Buren NHS  
Minute Man NHS  
Morristown NHP  
Roosevelt-Vanderbilt NHSs  
Sagamore Hill NHS  
Saint-Gaudens NHS  
Saratoga NHP  
Saugus Iron Works NHS  
Steamtown NHS  
Upper Delaware SRR  
Weir Farm NHS

Northern Great Plains EPMT

Badlands NP  
Devils Tower NM

Fort Laramie NHS  
Fort Union Trading Post NHS  
Jewel Cave NM  
Knife River Indian Villages NHS  
Minuteman Missile NHS  
Missouri NRR  
Mount Rushmore NMem  
Niobrara NSR  
Scotts Bluff NM  
Theodore Roosevelt NP  
Wind Cave NP

Northern Rocky Mountain EPMT

Agate Fossil Beds NM  
Bear Paw Battlefield (Nez Perce NHP site)  
Big Hole NB  
Bighorn Canyon NRA  
City Of Rocks NRes  
Craters of the Moon NM &Pres  
Fossil Butte NM  
Glacier NP  
Golden Spike NHS  
Grand Teton NP  
Grant-Kohrs Ranch NHS  
Hagerman Fossil Beds NM  
John D Rockefeller Jr Mem Pkwy  
Little Bighorn Battlefield NM  
Minidoka Internment NM  
Yellowstone NP

Pacific Islands EPMT

Haleakala NP  
Hawaii Volcanoes NP  
Kalaupapa NHP  
Kaloko-Honokohau NHP  
Pu`uhonua O Honaunau NHP  
Pu'ukohola Heiau NHS

Southeast EPMT

Abraham Lincoln Birthplace NHS  
Big South Fork NRR  
Blue Ridge Parkway  
Carl Sandburg Home NHS  
Chickamauga & Chattanooga NMP  
Cowpens NB  
Cumberland Gap NHP



Fort Donelson NB  
Guilford Courthouse NMP  
Kings Mountain NMP  
Little River Canyon NPres  
Mammoth Cave NP  
Ninety Six NHS  
Obed WSR  
Russell Cave NM  
Shiloh NMP  
Stones River NB

\*National Park System Designations

EPres = Ecological Preserve  
HPres = Historical Preserve  
Mem = Memorial  
NB = National Battlefield  
NBP = National Battlefield Park  
NHP = National Historic Park  
NHS = National Historic Site  
NL = National Lakeshore  
NM = National Monument  
NMem = National Memorial  
NMP = National Military Park  
NP = National Park  
NRA = National Recreation Area  
NPres = National Preserve  
NRes = National Reserve  
NRR = National Recreational River  
NRRRA = National River and Recreational  
Area  
NS = National Seashore  
NSR = National Scenic River  
NST = National Scenic Trail  
Pkwy = Parkway  
Pres = Preserve  
SRR = Scenic and Recreational River  
WSR = Wild & Scenic River

## Appendix 2: EPMT Liaison Position Locations and Supervision

| <b>Team</b>                          | <b>Physical Location</b>         | <b>Supervisor of Record</b>  | <b>On-site Supervisor if Different</b>                     |
|--------------------------------------|----------------------------------|--|--|
| <b>FTE Under BRMD</b>                |                                  |  |  |
| Alaska EPMT                          | Alaska Regional Office           | EPMT Program Lead/BRMD Ft. Collins, CO                                   | Regional Office Team Manager, Natural Resource Science     |
| Gulf Coast EPMT                      | Big Thicket NPres                | EPMT Program Lead/BRMD Ft. Collins, CO                                   | Park Natural Resource Chief, Big Thicket NPres             |
| Northern Rocky Mountain EPMT         | Yellowstone NP                   | EPMT Program Lead/BRMD Ft. Collins, CO                                   | Resource Management Operations Coordinator, Yellowstone NP |
| Pacific Islands EPMT                 | Haleakala NP                     | EPMT Program Lead/BRMD Ft. Collins, CO                                   | Chief, Natural Resources, Haleakala NP                     |
| Florida & Caribbean Partnership EPMT | Everglades NP                    | Regional Office Chief of IPM, Invasives & EPMT, Atlanta, GA              |  |
| National Capital Region EPMT         | National Capital Regional Office | Regional Office/Deputy Chief, Natural Resource & Science, Washington, DC |  |
| <b>FTE Under region</b>              |                                  |  |  |
| Southeast EPMT                       | Blue Ridge Parkway               | Regional Office Chief of IPM, Invasives & EPMT, Atlanta, GA              |  |
| Northeast EPMT                       | Delaware Water Gap NRA           | Regional Office Natural Resource Specialist, State College, PA           |  |
| Mid-Atlantic EPMT                    | Shenandoah NP                    | Regional Office Natural Resource Specialist, State College, PA           | Park, Natural Resource Chief, Shenandoah NP                |
| Great Lakes EPMT                     | Great Lakes I&M Network          | Regional Office Natural Resource Program Manager, Omaha, NE              |  |
| Northern Great Plains EPMT           | Theodore Roosevelt NP            | Regional Office Natural Resource Program Manager, Omaha, NE              |  |
|                                      |                                  |  |  |
| <b>FTE Under park</b>                |                                  |  |  |
| California EPMT                      | Pt. Reyes NS                     | Park Wildlife Biologist  |  |
| Lake Mead EPMT                       | Lake Mead NRA                    | Park Chief of Natural Resources  |  |
| North Coast Cascades EPMT            | No. Cascades NP                  | Park Chief of Natural Resources  |  |



## **Appendix 3: EPMT Evaluation Panel and Contractor**

### *EPMT Evaluation Panel*

Kathy M. Davis, Superintendent, Tuzigoot and Montezuma Castle National Monuments, NPS  
Chris Dionigi, Assistant Director for Domestic Policy for the National Invasive Species Council  
Jay Goldsmith, Natural Resources and Research, Pacific West Region, NPS  
Dan Sealy, Deputy Chief, Natural Resource and Science, National Capital Region, NPS  
Brenda Waters, Assistant Chief, Natural Resources, Indiana Dunes National Lakeshore, NPS

### *Panel Advisor*

Elizabeth Galli-Noble, Director, Center for Invasive Plant Management, Montana State University

### *Contractor*

Abigail Miller, EBS Corporation, Retired, National Park Service as Deputy Associate Director, Natural Resource Stewardship and Science



## Appendix4: Summary of Key Survey Results

### Survey Preparation and Administration

As part of the evaluation of the Exotic Plant Management Team (EPMT), contractor Abigail Miller developed questionnaires to be hosted on the Internet through the service Survey Monkey. Questionnaires were prepared in consultation with NPS Invasive Plant Coordinator Rita Beard and Biological Resource Division (BRMD) Human Dimensions Program Manager Kirsten Leong. The panel established to assist in the Program evaluation, reviewed the survey questions. The surveys were field tested by the Southeast EPMT.

Four separate surveys were prepared, to reflect a range of knowledge of or experience with the EPMT Program. These were:

- The EPMT Survey, for EPMT personnel and their immediate supervisors;
- The Partner Survey for primary *internal* NPS partners in the EPMT Program (largely park personnel);
- The Federal Survey, for Federal partners (the briefest of the surveys); and
- The General Survey for other interested parties (which contained significantly fewer questions than the EPMT and Partner Surveys).

Due to OMB approval considerations, non-federal partners were not surveyed, but were informed of the survey and invited to comment (none did).

A core set of seven questions were common across all surveys. Some questions and/or topic areas were not relevant for certain audiences and were excluded from those surveys. This resulted in 52 questions common to the EPMT and Partner Surveys and 26 in common across all three NPS Surveys (i.e., all except the Federal Survey). Questions were asked about the following topic areas:

- Overall effectiveness of the EPMT Program
- Administration and Funding
- Use of Contractors and Youth Programs
- Program Implementation
- Internal Coordination and Support
- Planning and Preparation
- Steering Committee
- Emphasis and Priorities
- Formal Priority-Setting Criteria
- Guidance
- Other Aspects of the Program
- Future Sustainability of the EPMT Program
- Performance-related Data
- Questions for EPMT Staff (regarding job satisfaction, career paths, and ability to keep up-to-date on weed science)

- Questions for supervisors (regarding supervision)

Most questions were closed-ended, although there were opportunities for open-ended comments in each topic area. In addition, there were 17 questions that were completely open-ended.

Survey participation was invited through memoranda from the Chief of the Biological Resources Management Division, requests to participate from EPMT Liaisons, and direct email requests with survey links (largely sent through Survey Monkey, but some sent directly by the WASO Invasive Plant Coordinator). In addition, an article on the Park Service internal website publication, *Inside NPS*, included a web link to the General Survey. The direct email requests with survey links were sent to EPMT Liaisons and crew leaders and to park, regional, and Washington Office personnel, and Federal partners who worked in some capacity with EPMTs, as identified by EPMT Liaisons and the Invasive Plant Coordinator (N=716). The surveys were open for response between June 2, 2010 and June 30, 2010.

| Surveys                 | No. direct email invitations through Survey Monkey | No. direct email invitations, less duplicates or uncorrected bad addresses <sup>1</sup> | No. Respondents | Response rate as a function of Survey Monkey emailed links only <sup>3</sup> |
|-------------------------|--|---|-----------------|--|
| EPMT-specific survey    | 64   | 60  | 42              | 70%  |
| Primary partner survey  | 204  | 195   | 123             | 63%  |
| General audience survey | 388  | 382   | 197             | NA <sup>2</sup>  |
| Federal partner survey  | 82   | 79  | 47              | 59%  |
|                         |  | 716   | 409             |  |

<sup>1</sup> Does not include direct email links that may have been sent by the WASO Invasive Plant Coordinator

<sup>2</sup> Not determined because response rate greatly affected by other opportunities to take this survey, including a link that appeared on NPS website *Inside NPS*.

<sup>3</sup> Of the 13 current liaisons, only 8 responded to the EPMT Survey through the email link; one responded to the General Survey through an email link. Others may have responded to a survey using a Internet link.

### Who took the surveys?

Usable responses were received from 409 individuals. Usable responses were those that included respondent information, that contained at least some of the questions in addition to respondent information, and that were from unique individuals (one person began one survey, abandoned it, and took a different survey). Many respondents did not answer all the questions. A few answered only a handful, such as two general evaluative questions about the Program near the beginning of the survey. These were all retained. Of the total:

- Almost half of respondents took the General Survey;
- 30% took the Partner Survey, and
- Approximately 10% each took the EPMT and Federal Surveys.

Respondents were well experienced with teams; 77% reported that they had worked with or on an EPMT for more than 5 years. Those who took the Partner and General Surveys were fairly well balanced in terms of the EPMTs with which they have experience, except that the Northern Great Plains EPMT was over-represented with 45 respondents (compared to 12-32 for others, except Pacific Islands, which had only 3). Federal partners were asked only which NPS regions they were in (or state, if they did not know, so they could be matched with a region). There were no federal partner respondents from the Alaska or Northeast Regions, so that experience of federal partners with EPMTs in those regions is lacking. About three-quarters of the respondents from parks served by EPMTs were from parks not hosting teams, while a quarter were from host parks. There also was a good balance in the size of parks where park respondents were stationed (27% said they were from large parks; 33% small parks; and 40% medium-sized parks).

## **Analysis**

The contractor analyzed the data, with the BRMD Human Dimensions Program Manager providing advice on analyses as requested. The analyses were largely restricted to frequency of responses. The frequency data provided reflects the proportion of those expressing an opinion, excluding those who did not answer or answered that they did not know, unless otherwise stated.

In addition to analyzing the quantitative data, all of the written comments were downloaded from Survey Monkey and converted to text files. These narrative answers and comments ranged from one or two words or a phrase to hundreds of words in response to a single question. Extensive efforts were made to capture and synthesize all of these comments. The quantitative data and comment synthesis were provided to the panel and discussed by them with the contractor prior to conducting field reviews and developing finding and recommendations.

## **Results**

Key results, those deemed most useful to the Program evaluation, are described below. These have been grouped according to categories derived from analysis of results.

### **Survey results identified many things that are working well**

The survey yielded considerable positive results from respondents, reflecting experiences with their own teams and their views about the Program:

- Over 80% of respondents to all surveys said the EPMT Program is at least moderately effective in managing invasive plants and in reducing the impacts of invasive plants in parks.
- A small majority (56%) of respondents to all surveys think the EPMT Program is at least moderately effective in reducing impacts on ecosystems and cultural landscapes, as well.
- 75% of those asked agreed or strongly agreed that the combined park and team approach includes both short- and long-term invasive plant management activities (asked in all except General Survey).
- 78% of those asked agreed or strongly agreed that their team(s)'s decisions about priorities, treatments, and other activities are guided by the latest information in weed and other relevant science (respondents to EPMT, Partner and Federal Surveys).



- 63% of those asked agreed or strongly agreed that outside experts are consulted regarding long-term park invasive plant species plans and priorities (EPMT and Partner Surveys).
- 75% or more of those asked (varying by survey) think that team activities in parks, priorities for treatment, and information to guide park decisions are moderately or well-coordinated between teams and parks (respondents to EPMT, Partner, and General Surveys).
- 50% or more (varying by survey) think that herbicide use and storage and safety issues other than herbicides are moderately or well-coordinated between teams and parks (respondents to EPMT, Partner, and General Surveys).
- 85-95% of EPMT, Partner, and General Survey respondents (depending on the survey) agree or strongly agree that teams and parks are supportive of each other.
- 67% of EPMT and Partner Survey respondents say their park (or the parks they serve) understands team expectations.
- At least two-thirds of those responding in the EPMT, Partner, and General Surveys (varying by survey) indicated that their steering committee provides at least somewhat helpful advice.
- 86% of EPMT and Partner Survey respondents say parks are contributing at least the originally expected level of support; however, based on comments, this was likely not always interpreted to include management actions on invasives as opposed to logistical support.
- Nearly three-quarters of EPMT, Partner, and Federal Survey respondents agreed or strongly agreed that teams persistently pursued opportunities to leverage funds.
- 66% of the EPMT Survey respondents agreed or strongly agreed that their team(s)'s annual budget allocations to different activities and purchases were on target as planned and spending proceeded smoothly with most major purchases made well before the year ended; only 12% disagreed or disagreed strongly (the balance were neutral).

In addition to positive quantitative results, there were a lot of very positive comments about teams and the Program. Examples include:

- –The help of the EPMTs has been very beneficial to many parks. EPMTs provide an additional tool to parks in the effort to control invasives – one that is substantially different than in-park seasonals, volunteers, and other tools. Please continue to support the EPMT Program.”
- –We are grateful for the help provided by the EPMT. Figuring out how to help so many with so little is an immense challenge. Thank you.”

Comments suggest that what makes teams work well are:

- Communication
- Leadership
- Ability to respond when there are leadership/personnel issues
- Liaison
- Crew expertise/retention/reduction in time lost to hiring
- Team focus or a strategy that is perceived to work well

## **Roles and functions in the EPMT Program**

There were several questions about the current and desired roles in a variety of functions that involve, affect, or are affected by EPMTs, including those in administration, treatment, inventory

and monitoring (exclusive of those carried out by the Inventory and Monitoring Program), training and education, planning, collaboration and coordination, and priority-setting. Respondents were not always familiar with current roles and declined to answer that set of questions, but the question related to desired roles. For those who commented on both the current and desired role (characterizing each as none, limited, substantial, primary), answers were compared to determine the extent to which respondents believed that the current roles should change.

Percentages shown are for the respondents of the surveys in which the questions were included:

- Administrative roles – EPMT Survey only
- Treatment, inventory and monitoring, planning, and priority-setting – EPMT and Partner Surveys
- Training and education – EPMT, Partner, and General Surveys
- Collaboration and coordination – all surveys, except that sub-question on coordination regarding I&M Program excluded from Federal Survey

There was little unanimity about most roles, although there were exceptions. For example,

- 100% and 97%, respectively, believed that the current EPMT roles in team annual work plans and team budget oversight should remain as they are.
- 84% believe that the current park role in park General Management Plans and Resource Management or Resource Stewardship Plans should stay the same.
- 85% and 82%, respectively, believed that the current roles for EPMT and parks in treatment selection should remain the same.

There were only a few topics for which respondents indicated current roles had higher levels of involvement than they should. The largest percentage (35%) indicated that the park role in small purchases should be decreased. Slightly fewer (23% each) indicated that park roles in contracting and large purchases and in property management should be reduced, and 21% indicated the EPMT role in follow-up treatment should be reduced..

There were a few places where half or more of respondents believed that responsibilities should be increased. These were:

- 52% wanted BRMD to have a greater role in administrative training (41% thought the EPMT should also play a larger role in this function).
- 51% wanted EPMTs to have a greater role in invasive plant education and awareness programs for park staff, including prevention practices.
- 50% wanted a greater role for the EPMT in park General Management Plans and Resource Management or Resource Stewardship Plans (which 95% now characterize as having a limited or no role).

There were also substantial minorities (between 36% and 48%) calling for greater roles in many functions. Substantial minorities wanted:

- A greater EPMT role in administrative training, early detection monitoring; park invasive plant management long-term and annual plans; and coordination with I&M Programs.

- A greater park role in effectiveness monitoring; participation in regional and state invasive plant groups, interagency groups and organizations; and coordination with local universities and professional organizations.
- Greater roles for both EPMTs and parks in systematic park-wide surveys, invasive plant education and awareness programs for the public and park visitors; invasive plant education and awareness programs for park staff; pesticide education programs for park staff; local and regional coordinated invasive plant management plans; participation in local Cooperative Weed Management Areas invasive plant groups; and coordination with adjacent landowners/managers.

Written comments tended to focus on where there was a need for increased responsibilities. Many of those commenting on the most needed treatment-related changes focused on more park involvement, especially in follow-up treatments. Many comments also acknowledged variations among parks so that the roles of EPMTs versus parks varied. Some acknowledged problems with park staffing and funding, while others stated that the parks need to put a priority on these issues. Similarly, others stated that most planning activities are appropriately park roles, but that small parks need more help from the EPMTs. Several believe that the EPMTs are not being utilized as much as they could be for contributing to plans, although others stated that funding is needed for this. In most cases, respondents pointed to small parks as relying on EPMTs. Comments on planning also pointed to the poor state of planning in NPS generally and the inadequacy of current compliance. Comments from both the EPMT and Partner Surveys indicated that early detection and follow-up effectiveness monitoring are the greatest needs related to inventory and monitoring. Many of the EPMT Survey comments focused on the need for these activities to be undertaken by parks, noting distances from where the team was stationed to parks make it impractical for teams to do this and/or stated that effectiveness monitoring needed to be done by those in the park who were intimately familiar with their resources—that EPMTs need to stay focused on treatment. The function questions generated a number of other comments about needs. For example, many acknowledged the lack of funding and/or applicable staff, some saying the biggest need is for more funding. These comments were reiterated in response to other questions as well.

### **Survey results identified some things that are not working so well**

In addition to identifying many successes, the survey results also identified areas where there could be improvements. These largely fell into three categories:

- Administrative issues
- Planning and decision-making about team activities and priorities
- WASO leadership

#### ***Administrative issues***

- On the EPMT, Partner, and General Surveys, respondents were asked to rate various administrative functions on the extent to which they are successful in being performed efficiently and effectively. A majority (63% to 85%, depending on the function) rated administrative functions as being moderately or very successful in being performed

efficiently and effectively, with hiring receiving the lowest rating. However, those who took the EPMT Survey rated hiring as less successful—less than 40% said hiring is being performed moderately or very successfully.

- All of the NPS surveys asked respondents to describe the most important changes that need to be made to administrative functions. Those who chose to comment most often mentioned hiring, contracting/large purchases, and travel inefficiencies and travel ceilings. Property management was also mentioned. A few commenters pointed out the difficulty crew members have paying for travel and getting reimbursed, rather than having access to credit cards. A number of suggestions were related to travel, including centralized administration and ceilings set by WASO.
- Presently, administrative functions vary by teams, for a variety of reasons. Those taking the EPMT, Partner, and General Surveys were asked whether they believe it is appropriate to vary administrative functions by teams to reflect individual situations or whether it would be better to have consistency. A majority of these respondents (51% to 70% depending on function) believe it would be better to have consistency among teams in:
  - Contracting and large purchasing
  - Team budget oversight
  - Administrative and safety training
- Less than a majority of these same respondents (40% to 46% depending on function), *but a majority of EPMT Survey takers* (54% to 65% depending on function) indicated that there should be consistency in:
  - Personnel services for crew leaders and liaisons
  - Supervision of liaisons
  - Oversight of team work plans
  - Property management
- A bare majority of EPMT and Partner Survey respondents (51%) did not think centralizing administrative functions in BRMD would be financially efficient.
- Position management and supervision were commented upon frequently. While there were a couple of comments suggesting park-level supervision of liaisons, most comments focused on problems with supervision (esp. crew leaders), the lack of ability to address personnel not adequately handling a job, and the appropriate role for liaisons. A few comments suggested that the liaison position is not required after a team is established and that funding for the position could be better used. Finally, although not pervasive in the comments on administrative functions, communication was cited as an issue.

### ***Planning and decision-making about team activities and priorities***

As noted above, half of all respondents who answered the question thought that there should be a greater role for EPMTs in park plans (RMP, GMPs, etc.), and a large minority also wanted a greater role for EPMTs developing in-park invasive plant management plans. Also previously noted, many commented on the poor state of planning in NPS generally and the inadequacy of current compliance. Key results of other questions and comments that addressed planning and priority-setting (including priority activities for teams) follow:

- Only 35% and 48% of EPMT and Partner Survey respondents, respectively, agree or strongly agreed that the combined park and team approach includes restoration and monitoring. The lack of restoration and the lack of monitoring were raised as concern in comments.

- In ranking percent of time that teams now spend on various activities and the percent of that they should spend on those activities, the largest proportional deficit was time spent on prevention (currently 3%; should be 6%, according to EPMT and Partner Survey respondents).
- Concerns were expressed by two individuals that teams are too driven by performance measures, focusing on getting credit for acres treated, rather than treating acres that make a difference to resources. There also were many other comments about the need to focus more on areas where treatment will make a difference to high value resources.
- Only 37% of EPMT and Partner Survey respondents indicated that written criteria incorporated into materials shared with parks are used to set priorities for their teams.
- 75% of EPMT Survey respondents agreed or strongly agreed that parks understand the team(s)'s priorities, but only 60% on the Partner Survey said the same.
- 51% of EPMT, Partner, and General Survey respondents didn't know if their team used a steering committee. Many believed a committee would be useful and some suggested that their steering committees have not functioned, due to apathy, or because the team did not use the committee.

Some who commented on priority-setting indicated that there is a current lack of priorities but a clear need for there to be priorities other than just visiting each park. There were calls for more priorities based on ecoregion, set jointly with parks and EPMTs, and for national priorities. Several believe that parks need to set their own priorities for EPMTs to implement, but many of these also suggested that EPMT help would be desirable. The need for flexibility was noted by several. The need for priorities for other than initially treating large infestations was also expressed. Others indicated that there were problems with the efficacy of some treatments but that the team was hamstrung by park priorities or that the team could not get information from parks regarding efficacy of previous treatments in order to make better decisions for the future. In response to a request to summarize the most important changes that should be made to the Program under a static or declining budget, the most frequent comment (and there were many of them) dealt with prioritization—the need for it and how it should be done. Most focused on targeting parks with the most significant natural resources (biodiversity, threatened and endangered species, etc. were mentioned). One suggested that each EPMT come up with a plan and that these be evaluated in Washington, with the EPMTs with most strategic and best plans funded. Some focused on prioritizing functions, but there was not as much unanimity about these.

### ***WASO Leadership***

- When asked about NPS Washington Office (WASO) support (specified as ~~not~~ just the program staff?), only 31% of EPMT, Partner and General Survey respondents agreed or strongly agreed that the NPS Washington Office is highly supportive of the EPMT Program. Some indicated that they believe there is generally less interest and concern for exotic species compared to when the Program began. In a related comment on a different question, two respondents noted that too little support for EPMT Program staff resulted in unresponsiveness. Other comments compared the tailing off of funding for EPMTs with continued increases for the I&M Program.
- EPMT Survey participants were asked about the adequacy of WASO guidance (BRMD and others). A majority of respondents either agreed or strongly agreed only that guidance on safety and reporting are adequate. A large percent were neutral, selecting ~~neither agree nor disagree~~ (24% to 41%

depending on category of guidance). If neutral respondents are excluded, a majority believe most guidance is adequate, but 45% and 47% respectively agree or strongly agree that guidance on compliance and restoration is adequate. Respondents on Washington guidance stated that the EPMT Program needs to do much more to provide regularly updated guidance, stating that the handbook needs updating. The EPMT database, APCAM, received several comments, stating it is too cumbersome and subjective and/or the guidance is out of date. There were requests for protocols for the North American Weed Management Association standards. With respect to other guidance needs, a national herbicide certification program and model agreements were suggested.

### ***Budget Strategies***

One of the concerns identified by Program managers is the sustainability of the Program with current funding. To evaluate this, the surveys contained several questions about current leveraging and cost effectiveness and questions about the future with static or declining budgets. Key results were:

- 65%-70% of EPMT and Partner respondents (depending on the treatment type) indicated that contractors are suitable for manual, mechanical, and large-scale infestations, and aerial applications; 57% thought them cost effective for aerial treatments. However, considerable comments were made about contracting. Treatments in many parks are not felt to be suitable or, in many cases, cost-effective, for contracting. Reasons cited include parks not trusting contractors to work close to sensitive resources, jobs that are too small to attract contractors, that labor-intensive and/or remote area treatments are too expensive to contract, or in some cases that there is insufficient EPMT funding for large herbicide treatments and aerial applications. (Although not a contracting issue, comments on the contracting question indicated that many park respondents do not use herbicides or want them used in their parks—and there appears to be friction about this in some cases.) Respondents also noted that availability and quality of contractors varies geographically.
- In a static or decreasing funding situation, 81% of EPMT, Partner, and General Survey respondents chose options other than maintaining the current EPMTs, without changes in location and parks served. Many comments related to this question indicated a need to reduce travel costs.
- EPMT, Partner, and General Survey respondents were asked to rank factors that should be used to determine parks to be served by EPMTs—if declining budgets required reconfiguring parks served or if new funding allowed consideration of adding parks to be served. Of the eight factors listed, plus “other”, the following received the highest rankings (in order):
  - Parks facing threats
  - Where teams could have greatest ability to reduce threats
  - Parks making greatest commitment of their own resources
  - Parks with least ability to manage invasives
  - Parks where the most leveraging is available (partnerships)
  - There is support for considering interagency teams
- There were frequent comments on the need for prioritization on a Program level, i.e. a well-articulated strategy. For many, the strategy should place a priority on treating areas that would make the biggest difference.

### ***Anything else?***

Survey respondents were given an opportunity at the end of the survey to add any further comments. Many took the opportunity to provide kudos to their team and/or the EPMT Program. A few commented on the survey, some saying it was too long or complex and others saying they appreciated the opportunity to take the survey. Many reiterated their previous comments. The comment topics most reiterated were:

- The need for funding and/or that the teams are spread too thinly;

- Appropriate park roles and/or that parks need to do more, especially in treatment follow-up;
- The importance of good communication, citing both problems and examples of excellent communication and stating how important it is for the liaisons to communicate frequently with parks and vice versa;
- Program focus, with somewhat opposing views, either calling for the Program to stay focused on treatment or calling for adding more activities, especially early detection and effectiveness monitoring;
- The possibility of interagency teams (six for; one against);
- The need for more standards and guidance, especially regarding data and compliance;
- Program performance measures and problems with them, especially that the measures do not adequately reflect performance and/or that they drive treatment of more acres rather than treatment of acres that would make the most difference to resource;
- The Washington Office—helpfulness of administrative support, the need for perspectives and tools from Washington, and the lack of responsiveness and capacity in Washington.

## Appendix 5: Interviews Conducted by Panel

The following individuals were interviewed in person or by telephone by the consultant and at least one panel member.

### EPMT Liaisons Interviewed

James Åkerson, Mid-Atlantic EPMT  
Carmen Chapin, Great Lakes EPMT  
Curt Deuser, Lake Mead EPMT  
Nancy Fraley, Southeast EPMT  
Jeremy Gooding, Pacific Islands EPMT  
Betsy Lyman, Northeast EPMT  
Bonnie Million, Alaska EPMT  
Todd Neal, North Coast/Cascade Network EPMT  
Tony Pernas, Florida Caribbean Partnership EPMT  
Chad Prosser, Northern Great Plains EPMT  
Sue Salmons, Northern Rocky Mountain EPMT  
Bobbi Simpson, California, EPMT  
Eric Worsham, Gulf Coast EPMT

### Other EPMT Personnel Interviewed

Frank Archuleta, National Capital Region EPMT (crew leader; liaison vacant)  
Gary Ludwig, Northern Rocky Mountain EPMT crew leader  
Taryn Preston, Data Manager/acting EPMT Liaison, Northern Great Plains  
Mark Slovek, Biological Technician, Badlands National Park/EPMT crew lead

### Liaison Supervisors Interviewed

Chris Furqueron, Southeast Regional Office  
Natalie Gates, Point Reyes National Seashore  
Chris Holbeck, Natural Resource Program Manager, Midwest Region/EPMT supervisor  
Wayne Millington, Northeast Regional Office  
Jack Oelfke, North Cascades National Park  
Dan Reinhart, Resource Management Operations Coordinator (and liaison on-site supervisor),  
Yellowstone National Park  
Dave Reynolds, Northeast Regional Office  
Dave Roemer, Big Thicket National Recreation Area  
Kent Turner, Lake Mead National Recreation Area

### Park Personnel Interviewed

Eileen Andes, Chief, Interpretation, Theodore Roosevelt National Park  
John Apel, Chief of Resources Management, Craters of the Moon National Monument  
Tammy Benson, Chief of Operations, Golden Spike National Historical Site  
Beth Burkhart, Botanist, Wind Cave National Park  
Ryan Felkins, Biological Technician, Bighorn Canyon National Recreation Area  
Lynn Heiser, Chief, Maintenance, Theodore Roosevelt National Park



James Hill, Superintendent, Agate Fossil Beds National Monument  
Jannis Jocius, Natural Resource Specialist, Nez Perce National Historical Park  
Brian Kenner, Chief Resources Management, Badlands National Park  
Dawn LaFleur, Supervisory Biologist (IPM), Glacier National Park  
Montana Lindstrom, Budget Assistant, Yellowstone National Park  
Jason Lyon, Integrated Resources Program Manager, Nez Perce National Historical Park  
Bob Manasek, Resource Management, Scotts Bluff National Monument  
John Moeykens, Chief, Law Enforcement and Resource Management, Knife River National  
Historic Site  
Valerie Naylor, Superintendent, Theodore Roosevelt National Park  
Lisa Nielsen, Administrative Officer, Theodore Roosevelt National Park  
Chris Overbaugh, Biological Science Technician, Yellowstone National Park (former EPMT  
crew leader)  
Laura Rotegard, Superintendent, Grant-Kohrs Ranch National Historical Park  
Meg Schwartz, Budget Analyst, Theodore Roosevelt National Park  
Laniece Sawevell – Administrative Clerk, Badlands National Park  
Jason Smith, Natural Resource Specialist, Grant-Kohrs Ranch National Historical Park  
Pam Sprenkle, Resource Management Specials, Niobrara and Missouri National Riverways  
Jimmer Stevenson, Biological Seasonal Maintenance Worker, Big Hole National Battlefield  
Melana Stichman, Biological Technician, Little Bighorn Battlefield National Monument  
Bill Whitworth, Chief, Natural Resources, Theodore Roosevelt National Park

#### Other Persons Interviewed

Myron Chase, Natural Resource Specialist, Intermountain Region  
Kara Paintner, Inventory & Monitoring Coordinator, Northern Great Plains  
Peter Rice, Professor, Montana State University  
Dan Swanson, Fire Ecologist, Northern Great Plains

## Appendix 6: Findings and Recommendations Cross-Reference

| Recommendation Number (starting on page 20) | Recommendation Topic   | Related Findings (starting on page 12) |
|---|--|--|
| 1   | Develop a strategic long-term plan for the EPMT Program  | 7 (plus general observation)           |
| 2   | Establish charters and steering committees for all EPMTs   | 6, 12, 13, 15                          |
| 3   | Establish a servicewide advisory group   | 13                                     |
| 4   | Restore EPMT service to the Southwest  | 1                                      |
| 5   | Clarify and strengthen supervisory relationships and regional support  | 4                                      |
| 6   | Provide assistance to the WASO Invasive Plant Coordinator  | 13                                     |
| 7   | Solve database issues  | 14                                     |
| 8   | Address travel ceilings on a servicewide basis   | 11, 7                                  |
| 9   | Review and resolve administrative challenges   | 11                                     |
| 10  | Enhance internal and external communication, develop core messages, and establish recognition programs   | 9, 10, 13                              |
| 11  | Consider pooling resources and partnering with other federal agencies, Cooperative Weed Management Areas, and others for additional support for the EPMT Program | 7                                      |
| 12  | Promote technical assistance for parks not served by EPMTs   | General observation                    |