

PROPOSAL TO CREATE A NORTHERN ROCKY MOUNTAIN EXOTIC PLANT MANAGEMENT TEAM Montana, Wyoming, Eastern Idaho, Northern Utah

SUMMARY

Exotic plant invasions pose one of the most serious threats to the integrity of natural areas and cultural resources in national parks in the northern Rocky Mountains. Strategies to aggressively prevent, document, and control invasive non-native plants have become a critical resource concern. To address this concern, we propose to organize a cooperative, multi-year weed management team operating in 14 parks. This approach uses an established concept of partnerships with ecologically similar park units in the region. The creation of a mobile central team, led by an inter-park liaison and augmented by key individuals in each park would be an improvement over stand-alone efforts. The integrated team will provide a coordinated strike force for critical weed infestations that would otherwise be considered insurmountable by staff in some park units.

This collaborative partnership between parks would support the use of the best integrated management strategies, advance employee training, and enhance program monitoring. A northern Rocky Mountain team would fill a large geographic void that would complement the four existing NPS weed teams. Furthermore, it would foster cooperation with local public and private weed management programs and complement existing NPS programs with weed management components including the interagency fire management program and national inventory and monitoring efforts. This combined effort would lead to a reduction of impacts from invasive exotic plants that threaten national park units in the northern Rockies. Yellowstone National Park will serve as the host park for the Northern Rocky Mountain Exotic Plant Management Team (EPMT). The 14 partner parks are located in Montana, western Wyoming, eastern Idaho, and northern Utah, all within a day's drive of the host park. Nine of the parks are in the Intermountain Region and five are in the Pacific West Region. The 14 NPS partner park units are:

<u>Park</u>	<u>State</u>
• Yellowstone National Park	WY, MT, ID
• Grand Teton National Park	WY
• John D. Rockefeller Jr. Memorial Parkway	WY
• Fossil Butte National Monument	WY
• Bighorn Canyon National Recreation Area	WY, MT
• Glacier National Park	MT
• Little Bighorn Battlefield National Monument	MT
• Grant-Kohrs Ranch National Historic Site	MT
• Big Hole National Battlefield	MT
• Bear Paw Battlefield	MT
• Golden Spike National Historic Site	UT
• Craters of the Moon National Monument	ID
• Hagerman Fossil Beds National Monument	ID
• City of Rocks National Reservation	ID

RESOURCES AT RISK

Perhaps the most significant scientific feature of the northern Rocky Mountain region is the diversity of its landscape. Vegetation cover consists of grasslands, pine or woodland savannahs, sagebrush steppes, lodgepole pine forests, bottomland forests, ponderosa pine/Douglas fir forests, western red cedar/western hemlock forests, spruce/fir forests, and alpine communities. The biological diversity of the native plants is a significant resource value of National Park Service units within the region. Due to wide variations in elevation, climate, and soil, these diverse habitats sustain diverse plant and animal populations. Integral to addressing plant communities is the recognition that within some of these communities there can be rare plant species that are at risk. The northern Rockies harbor globally rare plant species and also many other rare plants that are widely disjunct or at the edge of their distribution.

The diversity of plant communities provides habitat for more than 300 terrestrial vertebrates, including several endangered or threatened birds and mammals and many rare species. Glacier NP and Yellowstone NP are two of the few places in the contiguous 48 states that continue to support populations of all the historic indigenous carnivores and most of their prey species. There are six threatened or endangered wildlife species in Yellowstone and/or Glacier. They are the threatened bald eagle, grizzly bear, lynx, and bull trout and the endangered gray wolf and whooping crane. These species provide outstanding opportunities for ecological management and research in two of the largest temperate areas where natural processes predominate. As a result, both parks have been designated as a biosphere reserves and world heritage sites.

Scenic and recreational opportunities abound throughout the region. Grand Teton NP, John D. Rockefeller Jr. Parkway, and Bighorn Canyon NRA combine opportunities for scenic and recreational activities, including climbing, fishing, hiking and boating, in addition to enjoying natural and cultural resources.

Fossil Butte NM, Hagerman Fossil Beds NM, Craters of the Moon NM, and City of Rocks NR each help display the geological history of the earth, and provide a window into the forces that shaped the earth and landscape. These parks provide laboratories to study ancient life, climate, and succession.

Cultural resources at Little Bighorn Battlefield NM, Grant-Kohrs Ranch NHS, Big Hole National Battlefield, Bear Paw Battlefield, and Golden Spike NHS chronicle segments of the region's history of human activities, indicating that people have long placed high value on the areas' natural features. American Indians had a strong spiritual connection with the landscape long before its designation as parts of the national park system. Many of the lands now designated as park units have spiritual value for humans, as places to nurture, replenish, and restore themselves. Cultural landscapes are a significant part of historic scenes, and native bunchgrass grasslands present a landscape that has been closely tied to the lifestyle of Native Americans for centuries.

A major threat to the integrity of plant communities within the region is the invasion, establishment, and spread of non-native (exotic) plants. Some visitors' enjoyment of being in the outdoors is diminished in areas dominated by noxious weeds in river corridors, along trails, and in meadows where the invaders have displaced native vegetation. Exotic plant species pose a barrier to understanding the natural processes of plant and animal succession in these special habitats. For some users, the loss of wildlife habitat also decreases value of park lands. Native vegetation is a critical component of many cultural landscapes, upon which the presence of non-native noxious weeds may be an intrusion. Manipulation of vegetation can contribute to or detract from the theme being preserved.

The flora of the northern Rocky Mountain region includes about 15 noxious weed species that are of common concern among the park units of this region. A number of these species are increasing in

quantity, area, and density and are threatening native plant communities. They inhibit the perpetuation of native plant communities and hence threaten park ecosystems. The most vulnerable habitats to exotic invasion are grasslands, sagebrush steppes, riparian areas, pine or woodland savannahs, and dry coniferous forests.

SEVERITY OF THREAT

Exotic plants are spreading from developed areas and invading grasslands, sagebrush steppes, riparian zones, and wetlands throughout the northern Rocky Mountain region. Many biologists consider exotic plant establishment to be the largest threat to the integrity of native plant communities of natural, historic, and recreation areas. As a result, land managers are combining efforts to coordinate a common battle against "weeds" throughout the region. Priorities are focused on noxious weeds such as knapweeds, thistles, toadflaxes, hawkweeds, dyers woad, and leafy spurge within grasslands and sagebrush steppes; and leafy spurge, Canada thistle, purple loosestrife, and salt cedar in riparian zones. Manager concerns are with rapid spread of established noxious weeds from developed areas into natural zones, and invasion of new noxious weeds within the region such as yellow starthistle, rush skeletonweed, and common crupina.

Noxious weeds are expanding in the park units at an alarming rate. For example, biologists in Glacier NP have documented 1,340 acres of high-priority weeds, and the number of exotic species has been increasing over time from 66 known in 1979 to 86 in 1985, 114 in 1996, and 130 by 2000. The number of documented exotic plant species in Yellowstone NP has similarly increased, from 85 known in 1986 to more than 190 by 2000.

The threat of exotic plants is extensive, persistent, and, in some cases, irreversible. Delaying implementation of a more aggressive exotic plant management program is likely to result in significant resource degradation at the majority of parks, including the smaller units with few resources to commit to the problem. Delay in treatment results in increased risk to non-target resource values, as the weeds spread to new areas and invade sensitive riparian, sagebrush steppe, or grassland communities. Noxious weeds are difficult to control once they are established.

Non-native plants have been demonstrated to negatively impact ecosystem structure and function by altering soil properties and related processes, plant community dynamics, and related disturbance regimes. In a research study at Glacier NP, spotted knapweed reduced the frequency of six native species and totally eliminated seven other rare and uncommon native species in a three year period. Weeds are a particular threat to native fescue grasslands in the park, with spotted knapweed in east-side meadows, and leafy spurge in the North Fork of the Flathead River drainage. Managers at Little Bighorn Battlefield are concerned about St. Johnswort displacing the native prairie grasslands and changing the historic landscape, particularly in recently burned areas. The geothermal habitats unique to Yellowstone have been altered by exotic plants, potentially compromising the long-term persistence of populations of Ross' bentgrass (*Agrostis rossiae*), an endemic plant found only in a few geothermal environments within the park. Staff at Fossil Butte NM are concerned with the deleterious effects of spotted knapweed and Canada thistle on the surface fossil topography and preservation of an ancient ecosystem.

Exotic plants can also alter hydrologic cycles, sediment deposition, erosion, and other ecosystem processes. Invasive weed species such as purple loosestrife and leafy spurge can be extremely competitive in riparian settings, crowding out valuable native species. Salt cedar, which has invaded wetlands and areas along streams within the region, lowers water tables, reduces surface water, and displaces native vegetation. It has altered the shape, habitat, ecological carrying capacity, and flooding cycle along waterways. In wetlands, invasions of purple loosestrife, leafy spurge, and salt cedar degrade habitat for both mammals and waterfowl.

Dense infestations of noxious weeds reduce wildlife forage and alter thermal and escape cover, the distribution, foraging activity, and abundance of native ungulates and other mammals. Areas dominated by leafy spurge receive three times less use by deer and four times less by bison, compared with similar uninfested areas. On native bunchgrass sites in Montana, dense spotted knapweed populations reduce available winter forage for elk by 50 to 90 percent. Elk use increased about four times after controlling knapweed infestations on these sites. Changes in bird species distribution and abundance have been reported on sites dominated by nonnative weed species such as leafy spurge. Russian knapweed has been shown to reduce abundance and distribution of small mammal populations.

Aesthetics of cultural landscapes and historic districts within NPS units have been altered by the establishment of exotic plant species. Managers at Grant-Kohrs Ranch NHS are concerned about weeds threatening native grasslands and riparian areas, as well as cultural landscapes of pastures and hayfields. The historic vistas represented by the native grasslands at Little Bighorn, Big Hole, and Bear Paw battlefields and Golden Spike are also threatened.

Noxious weeds are a serious problem on lands managed for wildland values. When weeds invade and expand into a backcountry wilderness environment, the naturalness of the area is degraded and scientific values of once biologically diverse landscapes are impaired. Examples include leafy spurge along waterways and spotted knapweed in most grasslands of park units. In Glacier NP, weed infestations have moved from the developed areas into 510 acres of the backcountry which is proposed wilderness. There is also concern with weed invasion into recent burn areas in seven parks including: Glacier NP, Yellowstone NP, City of Rocks NR, Little Bighorn Battlefield NM, Grand Teton NP, John D. Rockefeller Jr. MP and Golden Spike NHS.

Another concern is that some exotic plants are migrating off-site from NPS units onto adjacent lands. For example, dalmation toadflax, which was first recorded in the park in 1940s at Mammoth Hot Springs in Yellowstone NP, has escaped into backcountry areas north of the park boundary. It currently affects approximately 10,000 acres and is migrating into the Gallatin National Forest. Both park and forest lands provide critical wildlife habitat for ungulates and associated animals on the northern Yellowstone winter range. In another example, Grant-Kohrs Ranch has the only infestation of leafy spurge in the area. While this infestation has not yet migrated off-site, adjacent landowners are concerned about this possibility. Glacier has the only infestation of leafy spurge in the North Fork of the Flathead River drainage; the invasion threatens to spread downstream along the national wild and scenic Flathead River.

READINESS

Life histories of and successful control methods for most noxious weed species within the Rocky Mountain region are well known, thanks to many years of work by extension weed scientists in Montana, Wyoming, Idaho and Utah, as well as work by local, state, and federal weed managers. Well-accepted methods of assessing and controlling these plants are based on variables of plant communities, vulnerability of lands to invasion, and biology of the exotics, and are applied through proven techniques. Weed species have been prioritized for several of the partner parks using the methods outlined in Hiebert and Stubbendieck, in consultation with state weed extension scientists. Understanding the noxious weed control laws within the region is key to implementing an effective weed management program. State noxious weed laws help managers set criteria for management of noxious weeds within the region. Coordination with local weed districts and other state and federal agencies can help parks develop effective weed management practices. Although control actions are primarily directed towards listed species, control can be directed at other species as needed, especially newly invading aggressive species (i.e., purple loosestrife, salt cedar).

Active and supportive cooperative efforts are key components of this proposal. If this proposal is funded, Idaho Department of Agriculture in cooperation with local county, state, and federal weed managers adjacent to the partnering Idaho NPS units and the Greater Yellowstone Coordinating Committee (GYCC), a consortium of national park and forest managers in the greater Yellowstone area, will consider funding preparation efforts in FY01 for the EPMT program in FY02. These monies would be directed towards planning, strengthening cooperative efforts, augmenting survey and early detection, and focused control of high priority species in the early stages of invasion.

Knowledge of Control Technology: Many of the partner parks have strong integrated weed management programs in place. Control technology on the high-priority species is well known. In Yellowstone, for example, a combination of mechanical and chemical control has been successfully used to eradicate small patches of leafy spurge, dyer's woad, meadow knapweed, sulfur cinquefoil, and to contain large patches of spotted knapweed. Park staff would assist the EPMT in best control methods and in applying for herbicide approval. Strong regional partnerships, most notably with Montana State University, the University of Montana, and the University of Wyoming, have enabled park staff to learn the latest methods for controlling the herbaceous exotics found in the partner parks.

Glacier has considerable experience with established and operational programs in exotic plant management, native plant restoration, native plant propagation, and weed and restoration monitoring. Action plans are prepared annually to implement integrated pest management (IPM) strategies. Control strategies are assessed by monitoring and research investigations at selected sites, and documented in annual reports. Glacier has a permanent staff of biologists and seasonal technicians that work directly and in support of the IPM program.

The vast majority of the partner parks have trained staff who are already participating in some aspect of exotic plant management. The EPMT can augment that training as members gain in-depth expertise in exotic plant management in this region. Particularly in the smaller parks, some effort needs to be made to augment the exotic plant program for the long-term. The pervasive exotic plant species that threaten the northern Rocky Mountains parks require long-term effort to maintain effective control.

Adequacy of Park Infrastructure to Support the Team: Yellowstone National Park is the proposed EPMT host park, primarily due to its relatively central location in relation to the 14 other partnering park units. Yellowstone has staff and infrastructure that can provide critical administrative support needed to host the EPMT including telephone, radio, computer, purchasing and travel management support. In addition, park staff specialists in IPM, botany, GIS/GPS, computer software, statistics, cultural resources and various resource specialists are available for program consultation. Space is available for offices, training, secure storage of equipment and herbicides, and equipment maintenance.

Housing is the most challenging support need. Several options are being pursued including: use of surplus U.S. Forest Service quarters as they become available near Gardiner, Montana; purchasing travel trailers for use as stationary housing; exploring the donation of travel trailers with the assistance of the Yellowstone Park Foundation; and Bighorn Canyon NRA providing the use of a travel trailer for use by the EPMT, if needed.

During the past seven years, Yellowstone staff have assessed and managed exotics plants in ten of the proposed partner parks. Assessment, prevention, early detection, control, and monitoring techniques for the herbaceous exotic plants in this region are well known and have been successfully implemented within many of the partner parks. The EPMT will be based on these already successful model programs. Many of the partner parks have adequate infrastructure to support the EPMT; however, the team would be equipped to work independently when adequate infrastructure is not available.

Existing Databases: Yellowstone, Glacier, Grand Teton, John D. Rockefeller Jr., Grant-Kohrs Ranch and Fossil Butte have existing databases (in Microsoft Access that link to ArcView). These databases allow park staff to document location and extent of weed infestations, track weed infestations, and evaluate treatment success. These databases could be standardized and applied to all parks in the region and beyond through coordination with efforts by the North American Weed Management Association and the NPS's Biological Resource Management Division (BRMD). Since 1993, Yellowstone has maintained a parkwide weed database and produced GIS weed distribution maps. Glacier's mapping protocols involve systematic survey of existing and potential weed sites to address prevention and early detection. Both of these systems interact with and complement the University of Montana regionally based Invaders Database. This system helps direct priorities for weed control efforts and provides a basis for analysis of each species and/or specific geographic area that includes acres, cover, density, distribution.

Compliance: Compliance with National Environmental Policy Act and other legislation has been completed or started in Glacier, Yellowstone, and Grand Teton national parks. Other parks have on-going programs based on project statements in resource management plans. However, compliance documents need to be updated in all park units within the northern Rocky Mountain area. The EPMT team liaison and team leader will assist partner parks in gathering information needed for future compliance. Yellowstone's staff is in the process of re-writing and updating an *Exotic Vegetation Management Plan* with an accompanying environmental assessment. A similar plan for Glacier was completed in 1991 following extensive planning and public involvement. This conceptual plan outlined a strategy for the management of exotic plant species utilizing IPM, which included surveys, prevention, education, control, and post treatment evaluation. Two environmental assessments were also completed; these are scheduled to be updated in 2001.

PROGRAM DESIGN

Team Goals: The goal of the project is to preserve biological diversity of native flora by reducing and containing noxious weeds, and preventing their spread. Using IPM principles, the goals of the plan are to:

- In conjunction with the NPS's national inventory and monitoring program, survey and map occurrences of selected exotic plants using a regional database format;
- Utilize existing and localized research to determine effects of alien plants on natural resources, with an emphasis on grassland ecology, biology of potential invaders, and vulnerability of communities;
- Inform the staff and the public with environmental education programs and public involvement;
- Utilize existing regional information programs;
- Prevent further introduction and spread of exotic plants with equipment inspection, noxious weed-free hay and revegetation with native plants; and
- Control exotics using mechanical, cultural, biological, and chemical methods.

A combination of treatments will be used in a holistic approach to vegetation management. Herbicide and manual control treatments have been selected to reduce and contain targeted noxious weeds within a timeframe of five years. Revegetation is included due to re-invasion potential of exotics where the presence of native plants is minimal. Biological control agents could be integrated into the treatments as a

long-term strategy because there are some areas that are inaccessible or which are not appropriate to treat chemically or mechanically.

In pursuit of these goals, the northern rocky mountain EPMT would support existing exotic plant management operations in each of the park units. Prior to receiving EPMT assistance, all participating parks will have an annual exotic plant management work plan in place, including species-specific IPM plans. Parks with species that threaten critical resources will be considered first, especially if the exotic species of concern are in the early stages of establishment and can be more easily eradicated. Smaller parks with limited resource management staff will receive preferential consideration. Team assignments will be scheduled to maximize effectiveness of control efforts on prioritized targeted species, taking into consideration plant phenology and optimum treatment recommendations. Variations in species being treated, latitude, and elevation should aid in effective scheduling among parks.

Role and Function of Host Park: Yellowstone NP is in a central location to provide a cost efficient base of operations for the northern rocky mountain EPMT. As a result of 35 years of experience in managing exotic plants, the staff has the practical and technical expertise to provide needed program support and coordination. They have developed a multi-disciplinary management team composed of staff from all divisions that is available to assist the EPMT and partner parks with all aspects of program management. Yellowstone would provide the necessary logistical support to insure program success. Also, the park would provide an experienced exotic plant program manager for FY02; he has already worked in eleven of the fourteen parks. His role would be to serve as the liaison officer during the especially critical first year of operations.

Roles and Responsibilities of Partner Parks: Partnering parks will provide on-site supervision and coordination of control efforts; assist in planning, training and education, prevention, survey and problem assessment, control, revegetation (if deemed appropriate), monitoring, and evaluation. In addition, partnering parks will assist the host park and the EPMT with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. Support costs will be absorbed by the partnering parks.

Within budgetary constraints, the partnering parks agree to cooperatively develop and implement an annual work plan that will include all components of a scientifically based IPM approach. Furthermore, the parks will promote communications and cooperation with surrounding private, local, state, and federal land managers involved with exotic plant management.

Team Makeup, Roles and Responsibilities:

- The team liaison, a GS-401-11 natural resources program manager. The liaison position will be temporarily filled during FY02 by a Yellowstone management biologist who has experience working in most of the partner parks. The liaison is ultimately responsible for the successful implementation of the program, including administration, supervision, coordination with host parks, and logistics. The liaison, working closely with the team leader, will work with weed specialists in each of the host parks to assess the problem and to negotiate terms of work for the team. The liaison will not normally be working with the team on a day-to-day basis, but will be coordinating with partner parks.
- The team leader, a GS-401-9/11 permanent, full-time WASO employee duty-stationed in Yellowstone, will work with the temporary team liaison during FY02 and transition into the permanent full-time liaison position in FY03. The team leader will oversee the coordination of the team's day-to-day activities, schedule work assignments and ensure that they are completed in a timely

and safe manner, and will, when appropriate, assist with control efforts. The team leader will be a state certified pesticide applicator.

- The crew will consist of two GS-404-07 crew leaders and six seasonal GS-404-05 crew members. The seasons will be approximately 13 pay periods. Each of the biological technicians will become proficient in exotic plant identification, control techniques, including chemical control, and monitoring protocols. The two crew leaders will be state certified pesticide applicators.

Strategy: Using a dedicated Exotic Plant Management Team to assist parks with control and management of high priority exotic plants is an approach that has parallels in other resource management areas, with wildland fire being the most notable. A dedicated crew approach is used successfully to manage exotic plants within many parks or park networks. Advantages of a team approach include developing and using well-trained crews which specialize in exotic plant management. They would be able to focus on a range of similar high-priority species found regionally in a number of park areas. Equipment and supplies could be purchased and used to benefit the needs in a number of parks. A dedicated team would be especially helpful to smaller park units that may not have resource management specialists or optimum equipment to support program needs. Some small park units have significant exotic plant threats, but on relatively few acres. In these cases it may be more efficient, safer, and effective to use a specialized crew such as an EPMT, local county weed crew, or contractor especially if the recommended treatment involves the use of herbicides. All EPMT program efforts would be prioritized and directed by a designated steering committee.

Optimum timing of plant treatments, especially herbicide treatments, are critical to a successful program. Effective herbicide treatments should coincide with acceptable weather conditions and plant phenology. Variation in elevation gradients, aspect, and annual weather patterns would be used to schedule crews in partner parks at appropriate times. Since parks are threatened by a variety of invading herbaceous exotic plant species, scheduling would be focused towards addressing the most serious exotic species in a given park. This approach requires a park commitment to manage some species at periods when the team is not available and to perform follow-up treatments to insure program success.

EPMT efforts would focus on manual and chemical control of invasive species with assistance to the parks on surveying, developing prevention strategy, staff education, and program evaluation, as needed. When possible, control treatments would begin as early as April and continue through October. All control activities would be documented using a common database agreed to by the partnering parks and the BRMD. Program data would be entered daily by the EPMT and stored in a Microsoft Access computer database which would be imported into ArcView GIS for mapping and analysis. Program results would be evaluated using the database and a monitoring protocol developed by the park, EPMT, regional support office, and BRMD.

During the winter months, the liaison will validate the database and produce a summary report of program activities, including significant staff observations and recommendations for future management. As time permits, the liaison would assist partner parks with developing or updating compliance documents, education and prevention strategies, training, and research species biology and control strategies.

Although all management efforts will be coordinated and implemented by the partner parks and the EPMT, the EPMT would be capable of implementing program plans independent of park staff and equipment. This would be important if the partner park staff and their equipment became unavailable through some unforeseen circumstance.

Training and Certification: The team liaison, team leader and crew leaders will be certified pesticide applicators in Montana, Wyoming, Idaho and Utah. Certification can be obtained in one state; each of the other states will reciprocate with minimal additional requirements. The Montana, Wyoming, Utah and Idaho certification tests may be challenged at any time. Certification courses (non-mandatory) are annually available in Lewistown, MT and Laramie, WY.

During the first year, and prior to hiring the team leader, a pilot 40-hour training program will be developed in consultation with the BRMD for crew member training. Training will include exotic plant identification, impacts, and problem assessment (8 hours classroom); control methods, sprayer calibration, herbicide mixing and storage (8 hours classroom); safety, including traffic safety, ORV safety, safe herbicide use (8 hours classroom); and two full 8-hour field days to practice techniques learned in the classroom. The liaison and team leader can modify the training program if necessary and time permits. Other training that will be scheduled for the team members include Hazardous Material Communication (8 hrs), Defensive Driving (8 hrs), First Aid and CPR (16 hrs). Each week, the team would undertake a tailgate safety training session.

Prevention and Early Detection: Prevention and early detection strategies are a basic component in a successful management program. Strategies will be evaluated, developed, and implemented as appropriate. Annual surveys will be targeted for high priority invasion areas including: roads, developed areas, trails, backcountry campsites, and high risk river corridors. Prevention efforts may include: inspection protocols for soil and gravel proposed for importation into the park for construction projects; required cleaning and inspection of all construction equipment; noxious weed seed free hay and forage inspection for livestock use; and topsoil conservation with revegetation using native plants at disturbed sites where soil and plants were removed by construction or visitor use.

Integration with Wildlands Fire Program: All approved prescribed fire programs have an associated monitoring and evaluation program, most commonly using the Western Region's *Fire Monitoring Handbook* (FMH). EPMT team leaders and liaisons will coordinate with park natural resource and fire management staff. Fire management staff are responsible for monitoring burns. If a weed issue arises, fire management staff will confer with park biologists/ecologists and weed management staff. Together they will develop a plan for management of the situation, including restoration if needed and follow-up evaluation.

Restoration: Experience demonstrates that reintroduction of native species after exotic control will contribute to continued suppression of the target species by preventing possible reinfestation. Glacier has 15 years of experience with native plant restoration including nursery and greenhouse operations, and revegetation. Staff would be available to provide guidance in site preparation, plant materials selection, and collection and revegetation implementation.

Evaluation: Yellowstone, Grand Teton, and Glacier have monitoring programs in place; however, these programs cannot answer all of the questions posed by exotic plant managers. If these proposals are successful, the model developed by this program can be used and expanded to other park units by the EPMT.

Public Awareness and Education: The education efforts of the EPMT will focus on educating park staff and assisting in developing visitor education materials and programs using existing models available from

partnering parks, the Montana noxious weed education and awareness campaign, and other local state and federal education efforts.

Coordination with Surrounding Landowners, Agencies and Stakeholders: Other partners include the USGS-BRD Northern Rocky Mountain Science Center units in Bozeman and Glacier NP, the NPS's Cooperative Ecosystem Studies Unit (CESU) at the University of Montana, the National Invasive Species Center at Montana State University, extension weed scientists at the University of Wyoming, Montana State University, University of Idaho, and Utah State University, and the state advisory weed teams in Wyoming, Montana, and Idaho.

The greater Yellowstone area (GYA) serves as an excellent model for exotic plant partnerships. Following the development of the "*Guidelines for Coordinated Management of Noxious Weeds in the Greater Yellowstone Area*" (1991), Yellowstone initiated the creation of the first weed management area (WMA) in the GYA in 1993, the Henry's Fork WMA. Yellowstone staff currently participate in four WMAs that transcend management jurisdictions; Grand Teton participates in one of these WMAs. Yellowstone staff have also worked with other parks in the region to help with weed assessment and control efforts. Several of the parks have a strong track record of working cooperatively with adjacent jurisdictions on exotic plant control projects, particularly with local county weed supervisors, extension service employees, and other federal land managers. The EPMT will augment these cooperative efforts. During the past decade, the creation of WMAs has promoted communication and cooperation among private, local, state and federal land managers and weed specialists in Wyoming, Montana, Idaho, and Utah. Other GYA cooperative efforts include sponsoring an annual exotic plant training program for the past five years involving state weed extension specialists and resource staff from surrounding counties, forests, wildlife refuges, and parks.

Some past cooperative efforts in the GYA have focused on assisting other park units. Beginning in 1992, YELL park staff assisted in cooperative weed management projects in Grand Teton, John D. Rockefeller Jr., Glacier, Bighorn Canyon, Craters of the Moon, and Little Bighorn Battlefield. In 1999, funding from the Washington Office allowed the park to assist seven other park units with weed management. The following parks were included: Grand Teton, John D. Rockefeller Jr., Fossil Butte, Golden Spike, Grant-Kohrs Ranch, Little Bighorn Battlefield, and Bighorn Canyon. In addition, Yellowstone staff have successfully completed five projects with WMAs including: the Henry's Fork WMA—three projects; Upper Madison WMA—one project; Southfork WMA—one project. These efforts have promoted good interagency working relationships, increased program effectiveness, and contributed to staff education and program awareness. In addition, park staff have been active in Montana weed management initiatives including education and training. Glacier's location presents opportunities to participate in a northern area regional approach to weed management. Glacier has implemented cooperative efforts with the Flathead National Forest, Flathead County Weed District, Glacier County Weed District, Blackfeet Indian Nation, the Bureau of Indian Affairs, and Waterton National Park.

Safety: An example of a safety plan and job safety analysis is included in the appendix. The action plan for each park will have a safety plan as a component of field operations. The focus will be on behavior based safety from a prevention perspective. Refer to Appendices E and F for specific examples.

Budget, FY2002

Personnel

1 team liaison, GS-401-11 (part-time, 4pp)	\$0(YELL)
1 team leader, GS-401-9/11 (March-Sept., 14pp)	\$26,492
2 crew leaders, GS-401-7 (seasonal April-Sept., 11.5pp)	\$30,172
6-bio-technicians, GS-05 (seasonal April-Sept., 11pp)	\$70,055
4-park support, GS-05 staff at 3 pp each (\$3000 ea)	\$12,000
Sunday differential and overtime	\$3,000
<u>YELL timekeeper costs, 1 GS-05 part-time for 3 pp</u>	<u>\$ 4,000</u>
SUB-TOTAL, PERSONNEL	\$145,719

Travel (per diem and lodging - 360 nights @ \$70.00/person) **\$25,200**

Vehicles

2 crew cab pickups	\$51,500
1 GSA crew cab pickup	\$2,500
<u>Gas, maintenance for vehicles</u>	<u>\$2,500</u>
SUB-TOTAL, VEHICLES	\$56,500

Housing

<u>2/3-person travel trailer</u>	<u>\$20,000</u>
SUB-TOTAL, HOUSING UNITS	\$20,000

Equipment and Supplies

2-ATVs, trailers, computers, radios, GPS units, spray units, etc.	\$30,331
<u>Herbicides, protective and safety equipment, storage, etc.</u>	<u>\$22,250</u>
SUB-TOTAL, EQUIPMENT and SUPPLIES	\$52,581

TOTAL, FY2002 **\$300,000**

TOTAL BUDGET, FY 2002-2006

	<u>FY002</u>	<u>FY003</u>	<u>FY004</u>	<u>FY005</u>	<u>FY006</u>
Staff	\$145,719	\$179,280	\$185,555	\$192,050	\$198,772
Travel	\$25,200	\$30,000	\$29,500	\$30,975	\$32,524
Vehicles	\$53,750	\$31,500	\$7,000	\$7,000	\$7,000
Housing	\$20,000	\$20,000	\$20,000	\$0	\$0
Equipment	\$30,331	\$7,500	\$5,000	\$5,000	\$5,000
Supplies	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Contracts	\$0	\$5,000	\$5,000	\$5,000	\$5,000
TOTAL:	\$300,000	\$298,280	\$277,055	\$265,025	\$273,296

TOTAL BUDGET: FY 2002-2006 **\$1,413,656**

Annual Budget, FY2002-2006 (assumes 3.5% increase in salaries)

Partner Parks:		PDs*	%	Staff/PP/\$
Yellowstone (host park)	2,219,790 acres	235	25%	
Glacier	1,013,154	160	17	
Craters of the Moon (PWR)	463,952	50	5	
Grand Teton/JDR	331,397	105	11	
Bighorn Canyon	68,491	80	8+	
City of Rocks (PWR)	9,184	25	3	
Fossil Butte	8,198	80	8+	1/3/3000
Hagerman Fossil Beds (PWR)	3,842	25	3	
Golden Spike	2,735	40	4	1/3/3000
Grant-Kohrs	1491	50	5	
Little Bighorn National Battlefield	765	40	4	1/3/3000
Big Hole National Battlefield (PWR)	655	40	4	1/3/3000
Bear Paw Battlefield (PWR)	190	<u>20</u>	<u>2</u>	
		950	100%	
Training/Admin/reports		<u>60</u>		
		1010 PDs		

*Proposed person days of EPMT resources in FY02

In-kind support from the partnering parks include:

- Team Liaison - 4 PP @ GS-11 (FY 02) - YELL
- Housing – YELL, GLAC, BICA
- Supervision and misc. admin. support – YELL, GLAC
- Office space – YELL, plus space as needed at partner parks
- Crew transportation for local use – YELL
- Computer support - YELL
- Botanical, revegetation, planning, compliance, monitoring, GIS, and data management support – YELL, GLAC, GRTE
- Park staff needed during EPMT operations and for follow-up treatment/monitoring (wildland fire staff in YELL, GLAC, and GRTE will assist when exotic plant populations are fire related) – all parks
- Staff training – YELL, GLAC
- Additional equipment and supplies as needed – all parks
- Herbicides – all parks
- Equipment and herbicide storage – YELL, plus space as needed at partner parks

APPENDIX A – Literature Cited

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APPENDIX B – Tables

Table 1. Northern Rocky Mountain EPMT Target Species

SPECIES	YELL	GLAC	GRTE *	BICA	GRKO	FOBU	LIBI	GOSP	BIHO	CIRO	CRMO	HAFB	BPBA
LEAFY SPURGE	✓	✓	✓	✓	✓				✓		✓		
SPOTTED KNAPWEED	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
RUSSIAN KNAPWEED	✓		✓	✓	✓								
DIFFUSE KNAPWEED	✓		✓	✓				✓			✓		✓
FIELD BINDWEED	✓	✓	✓	✓	✓	✓	✓		✓	✓			
TOADFLAX (SPP.)	✓	✓	✓				✓						
OXEYE DAISY	✓	✓	✓										
HOUNDSTONGUE	✓	✓	✓	✓		✓							
ST. JOHNSWORT	✓	✓	✓				✓						
THISTLE SPP.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
HAWKWEED (SPP.)	✓	✓	✓										
TAMARISK	✓			✓						✓			
WHITETOP	✓		✓	✓		✓	✓		✓				
DYER'S WOAD	✓		✓			✓		✓				✓	
SULFUR CINQUEFOIL	✓	✓	✓										

Table 2. Profile of the Northern Rocky Mountain EPMT Partners

	YELL	GLAC	GRTE *	BICA	GRKO	FOBU	LIBI	GOSP	BIHO	CIRO	CRMO	HAFB	BEPA
PARK ACRES (000)	2221	1013	309	56	1.5	8	765	3	.6	15	464	44	.2
ACRES TREATED	678	235	500	20	10	30	15	5	40	15	75	5	5
PARK FUNDING	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
RMP	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
GPRA GOAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
GIS	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
GPS	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y
FTE-WEEDS	4	4	3.5	.5	.25	.1	.05	.05	.1	.05	.1	.05	.05
PROGRAM YEARS	35	10+	9	12+	12	5+	2+	1	8	11	35	3	8
VOLUNTEER USE	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y
NEPA	N	Y	N	N	N	N	N	N	N	N	N	N	N
IPM- CHEMICAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IPM- MECHANICAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IPM- BIOLOGICAL	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
PARTNERS	71	5	15	2	2	1	2	1	1	2	1	1	1

*including JDR Parkway

APPENDIX C – Partner Park Overviews

Yellowstone National Park was established as the world's first national park by an act of congress on March 1, 1872. The park has international significance and has been recognized as a United Nations biosphere reserve and a world heritage site. Yellowstone is at the center of 12 million acres now commonly called the greater Yellowstone area. These lands are managed by four different federal agencies, three different states, and numerous private landholders. Components of Yellowstone's natural system include unique geologic formations, and free-ranging herbivore and carnivore populations. Threatened or endangered species currently listed for Yellowstone are the grizzly bear, bald eagle, whooping crane, Canada lynx, and the once-extirpated, then reintroduced, gray wolf.

In Yellowstone, populations of about 30 herbaceous species, primarily those listed as noxious in Wyoming, Montana, and Idaho, are controlled on approximately 678 acres annually. Although 20 species are targeted, most of the effort goes into ten of these species. An integrated weed management approach has been adopted with regard to exotic vegetation, emphasizing prevention, education, early detection, eradication, control, and monitoring. The program involves more than 100 park staff with program expenditures averaging approximately \$190,000 annually. This program is guided by the Yellowstone National Park *Exotic Vegetation Management Plan* (YNP 1986). The park's *Resource Management Plan* (YNP1998) lists exotic plants as one of the major threats to natural resources.

Glacier National Park, created in 1910, provides more than one million acres of pristine habitat and protection for a wide variety of wildlife and plants. Glacier is recognized as one of the world's most significant natural areas, and represents a component of the northern Rocky Mountain ecosystem. The park is located at the center of one of the largest wild ecosystems of the Rocky Mountain chain—an internationally significant location from the standpoint of scientific, aesthetic, and conservation values. Glacier is one of the few places in the contiguous 48 states that continue to support natural populations of all indigenous carnivores and most of their prey species. As a result, the park has been designated as a world biosphere reserve and Waterton–Glacier International Peace Park has been designated as a world heritage site.

Glacier National Park also follows an integrated strategy as outlined in the park's *Exotic Vegetation Management Plan* (GNP 1991). Exotic plant management is listed as one of the top six natural resources threats in the park's resource management plan. High priority species include spotted knapweed, leafy spurge, St. Johnswort, hawkweed, and sulfur cinquefoil. Program funding is approximately \$150,000 annually with about 566 acres treated. The *Glacier Exotic Vegetation Management Plan* is supported by an environmental assessment. Glacier also has strong monitoring and revegetation programs. The park has a complex restoration program; this including a native plant nursery operation and a restoration monitoring program. This program prevents extensive weed invasion along road corridors, which are major avenues for weed expansion. Restoration, nursery, and monitoring expertise could be shared with all of the EPMT parks and more extensively applied after weed control in all park units. Glacier could add to the EPMT:

- Assistance with database design and training in data entry;
- Assistance with restoration plans and consultation on revegetation methods and techniques;
- Consultation and assistance with native plant materials that are successful for restoration and consultation on native plant propagation;
- Assistance with monitoring plans and design;
- Training in monitoring methods; and
- Expertise in weed control methods.

Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway: The rise of the Teton Range as well as the erosion caused by eons of glaciation have created conditions that allow several plant communities to thrive. The wide range of plant communities creates habitat for a wide variety of animals, from the smallest insects, to fish, birds, and large and small mammals. Humans have taken advantage of the mountain setting and its abundant resources for approximately 11,000 years. Beginning in the late 1800s, homesteaders, cattle ranchers, and later, dude ranchers moved into the valley. With the establishment of Grand Teton National Park in 1929, and later additions in 1950, culminating in today's park, a wide variety of resources are protected for future generations.

Grand Teton National Park and the John D. Rockefeller Jr. Memorial Parkway have followed an integrated exotic plant management strategy for about ten years. Funding for the program is about \$80,000 annually with a two- to three-person weed crew and additional volunteer labor. About 500 acres of exotic plants are treated annually. High priority species include musk thistle, Canada thistle, spotted knapweed, dyer's woad, houndstongue, yellow sweetclover, common mullein, and toadflax species. Grand Teton's staff is currently writing an exotic plant management plan.

Fossil Butte National Monument: This 50-million-year-old lake bed is one of the richest fossil localities in the world. Recorded in limestone are dynamic and complete paleoecosystems that span two million years. Preservation is so complete that it allows for detailed study of climate change and its effects on biological communities. Visitors discover that this resource displays the interrelationships of plants, insects, fishes, reptiles, and mammals like few other known fossil sites. The relevance and challenge of study and preservation of this ancient ecosystem are equal to those of a modern ecosystem. The surface topography of Fossil Butte is now covered by a high cold desert. Sagebrush is the dominant vegetation at the lower elevations, while limber pine and aspen occur on the slopes. Pronghorn, mule deer, and a variety of birds are commonly seen. Moose, elk, and beaver are sometimes observed. The monument preserves 8,198 acres and receives annual visitation of 25,000.

Fossil Butte National Monument has more than 100 species of exotic plants; these account for about 30% of the vascular plant species in the unit. Funding for exotic plant management has ranged from \$2500-\$5000 annually for the last five to six years. Exotic plants are listed as one of the threats to resources in the monument's resource management plan. About 36 acres are controlled each year; high priority species include Canada thistle, musk thistle, spotted knapweed, hoary cress, perennial sow thistle, and yellow sweetclover.

Little Bighorn Battlefield National Monument is the site of the June 25, 1876 battle between the U.S. Army's seventh cavalry and several bands of Lakota Sioux, Cheyenne, and Arapaho. Visitation averages 2500 persons per day, with peak visitation of 4000 per day during the two-day anniversary of the battle (June 25-26). Annual visitation is 370,000 (1998). Little Bighorn NM is on the National Register of Historic Properties.

During the past several years, Little Bighorn NM increased efforts to control exotic plants. In 1999, about \$1000 was allocated to treat 15 acres. High priority species included St. Johnswort, spotted knapweed, dalmation toadflax, houndstongue, and Canada thistle.

Golden Spike National Historic Site: Completion of the world's first transcontinental railroad was celebrated here when the Central Pacific and Union Pacific Railroads met on May 10, 1869. Golden Spike was designated as a national historic site in non-federal ownership on April 2, 1957, and authorized

for federal ownership and administration by an act of Congress on July 30, 1957. Total acreage is 2,703.28 (Federal: 2,203.20, Nonfederal: 532.08). Visitation is between 46,000 and 64,000 annually.

Most exotic plant control at Golden Spike NHS involves mechanical control by volunteer groups. In 1999, about \$1000 was allocated for exotic plant control and about five acres were treated. About 500 acres are affected by exotic vegetation. Known exotic species include dyer's woad, musk thistle, and Scotch thistle. The need for exotic plant control is supported by the "Golden Spike Resource Management Plan".

Bighorn Canyon National Recreation Area was established by an act of Congress on October 15, 1966, following the construction of the Yellowtail Dam by the Bureau of Reclamation. This dam harnessed the waters of the Big Horn River and turned this river into a magnificent lake. Bighorn Lake extends 71 miles through Montana and Wyoming, 55 miles of which are held within spectacular Bighorn Canyon. The recreation area is composed of 70,000+ acres and has two visitor centers and other developed facilities in Ft. Smith, Montana and near Lovell, Wyoming. The Afterbay Lake below the Yellowtail Dam is a good spot for trout fishing and wildlife viewing for ducks, geese, and other animals. The Bighorn River below the Afterbay Dam is a world class trout fishing area. Bighorn Canyon NRA boasts breath-taking scenery, countless varieties of wildlife, and abundant recreational opportunities, such as boating, fishing, ice fishing, camping, and hiking.

The exotic plant management program at Bighorn Canyon NRA involves one or two seasonal staff during the summer supervised by the natural resources specialist; the Fee Demonstration Program has provided funding for this crew. The program has been active for at least 12 years. High priority species include saltcedar, Russian knapweed, whitetop, Canada thistle, and Swainson pea. The program is supported by a project statement in the unit's resource management plan.

Grant-Kohrs Ranch National Historic Site: Established by Canadian fur trader John Grant, and expanded by cattle baron Conrad Kohrs, this park commemorates the western cattle industry from its 1850s inception through recent times. The park was enacted in 1972 and embraces 1,500 acres and 90 structures. The site is maintained today as a working ranch. It is listed as a national historic landmark because of its significance as a cultural resource.

Grant-Kohrs Ranch NHS spent about \$3000 on exotic plant control in 1999; the program has been ongoing for over 12 years. Exotic plant management is listed as a priority in the park's resource management plan. Priority species include spotted knapweed, Russian knapweed, bull thistle, field bindweed, and leafy spurge.

Big Hole National Battlefield is the site of the tragic battle between the Nez Perce Indians and the United States Army that marked the turning point in what has come to be known as the Nez Perce War of 1877. The site was established as a national monument in 1910, re-designated as a national battlefield in 1963, and became a unit of Nez Perce National Historical Park in 1992. The battlefield preserves 655 acres and receives annual visitation of 75,000. The vegetation consists of mixed conifer forest, sagebrush, and grassland slopes, and a willow riparian area adjacent to the North Fork of the Big Hole River. A wide variety of wildlife occur on the site with moose, elk, beaver, coyotes, and hawks being common.

During the past several years, Big Hole National Battlefield has worked with the Beaverhead-Deerlodge National Forest in efforts to control exotic plants. In 2000, hand pulling of exotic species and limited applications of herbicides were used to fight about 40 acres of spotted knapweed, and isolated occurrences of leafy spurge and bull thistle. Funding for exotic plant management has ranged from \$1500-\$3000 annually for the last four to five years, but has not been adequate.

Bear Paw Battlefield, a national historic landmark, is the site of the final battle between the Nez Perce Indians and the United States Army in the Nez Perce War of 1877. The site became a unit of Nez Perce National Historical Park in 1992. The battlefield preserves 190 acres of National Park Service-managed land and receives an annual visitation of 4,500. The park lies in the transition zone between short- and tall-grass prairie and is dominated by blue grama, needle-and-thread grass, and bluebunch wheat grasses. Wildlife includes deer, ground squirrels, and a wide variety of birds.

Although surrounded by agricultural land, Bear Paw Battlefield has remained relatively untouched by intrusions of non-native species. Intrusions have included field bindweed, introduced grasses, and yellow sweet clover. Control efforts have consisted of hand pulling of exotic species. Funding for weed management has been less than \$300 annually.

Craters of the Moon National Monument: Initially established in 1924, Craters of the Moon National Monument was recently expanded to include an additional 661,287 acres of the Great Rift. The expanded monument now includes 464,000 acres administered by the National Park Service (NPS) and 250,000 acres administered by the Bureau of Land Management. Prominent geologic features include expansive lava flows, cinder cones, fissure cracks, vents, spatter cones, and lava tube caves. These recent land forms support a surprising diversity of flora ranging from stands of Douglas fir and aspen trees to sagebrush steppe communities and seemingly barren lava flows. The recent proclamation expanding the monument recognizes the importance of the isolated pockets of vegetation surrounded by lava fields

"These tracts of relict vegetation are remarkable benchmarks that aid in the scientific study of changes to vegetative communities from recent human activity as well as the role of natural fire in the sagebrush steppe ecosystem." Presidential proclamation, November 9, 2000

More than 30 exotic plant species have been recorded within CRMO. Varying levels of effort to control invasive weeds have been undertaken at the monument since the 1960s. Since the mid-1990s, NPS weed control efforts have focused on five high priority species: spotted knapweed *, diffuse knapweed *, Canada thistle *, bull thistle, and mullein (*Idaho noxious weed). Recent additions to the monument include lands with leafy spurge infestations. The program has involved 0.1 FTE of park staff and two or three full-time volunteers from June to August, with program expenditures averaging approximately \$9,000 annually. The *Resource Management Plan* (Craters of the Moon 1996) lists exotic plants as one of the major threats to natural resources. The park's GPRA goal 1a1B addresses containment of exotic vegetation on 60 targeted acres. An invasive weed management plan is currently in development.

City of Rocks National Reserve was established by an act of Congress in 1988; it contains 14,407 acres. Earlier, the City of Rocks was designated a national natural landmark (1964) and a national historic landmark (1974). At City of Rocks, a unique combination of rock types and geological weathering forces resulted in some of the oldest rock in the United States being juxtaposed with others that are billions of years younger. The geographic corridor through the City of Rocks encouraged a continuum of use by a variety of overland travelers and was a major landmark and stopping area along the California Trail. City of Rocks has a long history of livestock grazing by a variety of groups of people from the Shoshone native Americans to present day ranchers. City of Rocks is situated at the northern edge of the Great Basin and at the southern edge of the Snake River plains. This location and unique geology form a unique natural setting, containing many microhabitats and a wide variety of plant and animal species. The habitat of the reserve supports a large variety of sensitive and rare species, such as golden eagles,

ferruginous hawks, cliff chipmunks, and Townsend's big-eared bats. To date, approximately 600 different plant species have been identified in the reserve area.

City of Rocks has eight exotic plant species that are listed as noxious weeds in Idaho that we have targeted. Due to our limited ability, our effort has been directed at seven of these species. Canada thistle is so widespread, that we are not able to address this species at this time. Our present approach to exotic weed management is early detection and eradication of small infestations and control and post-treatment monitoring of larger infestations. The program involves all of our park staff for detection, but the remainder of the labor is provided by volunteers and youth programs with expenditures averaging \$1300 annually.

Hagerman Fossil Beds National Monument Park History and Purpose: On November 18, 1988, Hagerman Fossil Beds National Monument was "established by Congress to: 1) preserve for the benefit and enjoyment of present and future generations the outstanding paleontological sites known as the Hagerman Valley fossil sites, 2) to provide a center for continuing paleontological research, and 3) to provide for the display and interpretation of the scientific specimens uncovered at such sites."

Hagerman Fossil Beds NM contains the largest concentration of Hagerman Horse fossils in North America. The Monument is internationally significant because it protects the world's richest known fossil deposits from the late Pliocene epoch, 3.5 million years ago. These plants and animals represent the last glimpse of time that existed before the Ice Age, and the earliest appearances of modern flora and fauna. It is also one of three National Park Service (NPS) units that has Oregon Trail wagon ruts. The park also preserves pre-history and historical settlement resources.

Non-native plant species known to be present include: Russian olive, Russian thistle, quackgrass, cheatgrass, blue mustard, tansy mustard, tumble-mustard, spotted knapweed, rush skeletonweed, and medusa head. These and other non-native species likely to be present impair the monument's native plant communities and ecosystem processes.

APPENDIX D - Example of a Safety Plan and Job Safety Analysis – Glacier NP

The general safety objectives for the Glacier National Park Exotic Vegetation Management Program are as follows:

- Provide a safe and healthful working environment for park employees.
- Provide and require the use of personal protective gear to protect employees where other control methods are not practical.
- Ensure that employees are trained to recognize and protect themselves against known occupational hazards.
- Comply with regulations and policies set forth by OSHA, ANSI, the Departmental Manual, the National Park Service, executive orders and other applicable standards.

Guidelines for Operations: Carrying out exotic vegetation control includes *National Park Service Management Policies* (1988), *Natural Resource Management Guidelines NPS-77* (1991), *Exotic Vegetation Management Plan for Glacier National Park* (1986), *Environmental Assessments for Exotic Plant Control* (1991, 1993). The *Guide for the Safe Storage, Handling, and Application Of Pesticides* and the *Weed Sprayer's Handbook* are two operational guides to assist employees comply with established procedures. A technical library is maintained at Quarters 2 with references, handbooks, manuals and pamphlets. Skills and techniques are provided in training sessions and workshops such as National Park Service IPM workshop, pesticide applicator license certification, Montana Weed Control Association meetings, Montana State University short course on exotic plant management.

Supervision: The natural resource specialist is the program manager for the Vegetation Unit. He provides direction and priority setting that includes administration, planning, organization, implementation, and safety. The IPM biologist coordinates field implementation, and supervises an IPM crew of six seasonal forestry technicians. She implements the behavior based safety initiatives, and insures procedures are followed. There is a three-person crew on each side of the park, with a leader for each crew. Employees are expected to incorporate this safety analysis into their project work, and to offer feedback and ideas to the supervisor as to how the work can be done as safely as possible.

Safety Procedures:

1. The IPM biologist and the two seasonal field leaders are certified applicators through the Montana Department of Agriculture.
2. Reference materials are filed in the IPM biologist's office in Quarters #2 that are available to crew members for training and education.
3. Pesticide labels are kept in a three ring notebook and the material safety data sheets are posted for ready reference in Quarters #2.
4. Personal protective clothing is required to be worn and maintained in order to prevent herbicides from entering the body. As a minimum, any applicator will wear: coveralls, gloves, hat, boots, and eye protection. Rubber boots will be required unless their use on steep terrain presents a greater safety hazard due to unstable footing.
5. The use of respiratory protection equipment will be consistent with the procedures defined in the Standard Operating Procedures for Respiratory Protection for Glacier National Park, and the OSHA regulations (Standards - 29 CFR), Respiratory Protection - 1910.134. In addition, the use of respirators will be required if stipulated on the pesticide label, if the IPM biologist feels that conditions warrant the use of a respirator, or if the employee requests to use a respirator.
6. Roadway signs must be posted on each side of the project when working on roadsides. When the spray truck is in a lane of travel, the crew is responsible for controlling vehicle traffic. This will include flag-persons when curves in the road make it dangerous for other vehicles to pass the spray truck. Red vests will be worn during roadside spraying.
7. The IPM biologist will try to schedule application of herbicide during the shoulder seasons to minimize exposure to visitors and employees. If this is not possible, the area to be treated will be posted before application and for 24 hours thereafter. Direct communication is preferred.
8. Crews will avoid application of herbicide when the wind is over 3mph or when temperatures exceed 80 degrees.
9. Each spray crew will have a safety tailgate discussion before daily operations begin, that will include emergency operations, the use of the spill kit, and established procedures.
10. For further detail of safety and standard operating procedures refer to the Job Safety Analysis and the Herbicide Application Handbook.

APPENDIX E - Job Safety Analysis – Glacier NP

JOB TITLE: Herbicide Handling
 DIVISION: Resources Management
 UNIT: Field Resources, Vegetation
 DATE: April 19, 2000
 ANALYSIS BY: Dave Lange
 REVIEWED BY:

KEY STEPS	POTENTIAL HAZARD	SAFETY PROCEDURES	RESPONSIBILITY
Pesticide storage	Spill of pesticide	Store in hazardous material cabinet	IPM Specialist Warehouse Superv.
	Exposure to people	Maintain security of cabinet	
	Unauthorized use	Cleanup items are in immediate location	
		Pesticides are stored in original container	
		Inventory of pesticides is updated	
Mixing and loading pesticides	Accidental spill	Keep people out of mixing area	Employee
	Exposure to handler	Don't mix alone	
	Environmental contamination	Use protective clothing and equipment, ie label	
		Read label each time before opening container	
		Do not tear open paper container	
		Keep pesticide and container below eye level	
		Mix with wind to back	
Transportation of pesticides		Close container after each use	Employee
	Accidental spill	Secure containers	
	Motor vehicle accident	keep pesticides away from food, feed, passengers	
		Transport pesticide in labeled containers	
		Do not leave pesticide unattended at site	
Pesticide application		Clean up spills using emergency spill plan	Employee
	Exposure to eyes, skin, lungs	Wear personal protective equipment	
	Motor vehicle accident	Do not eat, drink, smoke or chew while using pesticides; wash hands first	

	Exposure to visitors	Choose equipment, formulation and additives that will minimize drift and runoff Do not apply during or before wind is greater than 7mph, or before/during rain. Choose application techniques, equipment, formulation that minimizes exposure to persons and non-target plants and animals Check equipment for leaking hoses, pumps, connections, nozzles. Calibrate equipment Use all pesticide in tank Keep drift to minimum by choice of nozzle and drift control agent; apply as large droplet, low pressure spray; keep spray boom low to ground; apply no more than 20 gal/acre; use no more than 30lb spray pressure Sign application area 24hr before and 24hr after application Place roadway signs on both sides of treatment area when using truck mounted spray application; use flag person when there is inadequate visibility; applicators will wear warning vests when working on roadsides. When respirators are required, comply with respirator Program Guidelines	
Cleanup of Pesticide Spills	Contamination of Environment Exposure of pesticide to people	Have a written emergency spill plan Have equipment readily at hand to contain and cleanup the spilled herbicide. Minor spill: close area; stay at site; wash off person if exposed; confine with spill kit; dike with sand/gravel; soak up with absorbent; shovel into container; don't spray down area. Major spill: keep people away give first aid, confine spill; call state pesticide authority or chemtrec at 800-424-9300; report to state pesticide authority and park communication center and haz mat	IPM Specialist Employees

		specialists. Prepare EMTs for emergency spill and medical care.	
Cleaning Equipment	Leaking herbicide on people and the ground Herbicide spill and exposure to people and environment	Never leave pesticide equipment at application site unsecured. Mixing and loading and application equipment should be cleaned after each job; wear protective equipment during cleaning. Steam clean or use water and detergent. Identify area for cleaning, such as wash rack or area with a contained sump; keep drainage out of water and aquatic areas.	Employees
Disposal of pesticide	Contamination of environment	Consult label and local authorities before disposal Mix only an amount you plan to apply. Use up any excess as per label instructions Consult with EPA and local landfill authorities, or local recycling centers.	IPM Specialist Employee

APPENDIX F: National Park Partners (87)

<u>Counties</u>	<u>Partnership</u>
Idaho	
Fremont	HFWMA
Cassia	CIRO
Blaine	CRMO
Butte	CRMO
Twin Falls	HAFO
Montana	
Park	GYA
Gallatin	UMWMA, UGWMA
Madison	UMWMA
Big Horn	LIBI
Flathead	GLAC
Glacier	GLAC
Powell	GRKO
Wyoming	
Park	BBEWC
Teton	HFWMA, JHWMA
Washikie	BBEWC
Hot Springs	BBEWC
Fremont	BBEWC
Lincoln	JHWMA
Big Horn	BBEWC
Lincoln	FOBU
Utah	
Box Elder	GOSP

National Parks

Yellowstone NP (YELL)	GYA, HFWMA, BBEWC, JHWMA, UMWMA, UGWMA
GrandTeton NP (GRTE)	JHWMA, NPS
JDR Mem Parkway (JDRO)	JHWMA, NPS
Bighorn Canyon NRA (BICA)	BBEWC, NPS
Little Bighorn Battlefield NHS (LIBI)	NPS
Grant-Kohrs Ranch NHS (GRKO)	NPS
Glacier NP (GLAC)	NPS
Bighole Battlefield NHS (BIHO)	NPS
Craters of the Moon NM (CRMO)	NPS, LRCWMA
Golden Spike NHS (GOSP)	NPS
Fossil Butte NM (FOBU)	NPS
City of Rocks NR (CIRO)	NPS
Bear Paw Battlefield (BEPA)	NPS
Hagerman Fossil Beds NM (HAFO)	NPS
Waterton NP (Canada)	GLAC

National Forests

Targhee-Caribou	HFWMA, JHWMA
Beaverhead	UMWMA, BIHO
Gallatin	UMWMA, UGWMA
Custer	GYA

Shoshone	BBEWC
Bridger-Teton	HWMA
Bighorn	BBEWC
Flathead	GLAC

Bureau of Land Management

Worland, WY District	BBEWC
Pinedale, WY District	JHWMA
Dillon, MT District	UMWMA, UGWMA
Upper Snake River District	HFWMA

Other Federal Partners

APHIS-PPQ (WY, MT)	BBEWC
ARS	GYA
BIA	BBEWC, GLAC, LIBI
BOR (Burley, Jackson)	HFWMA, JHWMA
USF&W (National Elk Refuge)	JHWMA
NRCS	JHWMA
DOE (Bonneville Power Admin)	JHWMA
USGS-BRD	

Tribal Partners

Crow Agency	LIBI
Blackfeet Indian Nation	GLAC

State Partners

Idaho	
Dept of Agriculture	HFWMA
Parks and Recreation	HFWMA
Dept of Transportation	HFWMA
Dept of Lands	HFWMA
Dept of Game and Fish	HFWMA
Wyoming	
Dept of Game and Fish	JHWMA, BICA
Dept of Transportation	JHWMA
Dept of State Lands	JHWMA
Dept of Agriculture	GYA
Montana	
Dept. of Agriculture	GYA
Fish, Wildlife and Parks	UMWMA
Dept of Transportation	GYA

Universities

University of Wyoming	HFWMA, JHWMA, BBEWC
University of Montana	GYA
Montana State University	HFWMA
University of Idaho	HFWMA
Utah State University	GOSP

Miscellaneous Partners

Wyoming Weed and Pest Council	GYA
Montana Weed Control Association	GYA
N.A. Weed Management Assoc.	GYA
Henry's Fork Watershed Council	HFWMA
The Nature Conservancy (ID)	HFWMA
Jackson Hole Land Trust	JHWMA
Teton County R,C & D	JHWMA
Teton Conservation District	JHWMA
National Fish and Wildlife Found.	HFWMA
Public Lands Corps	GYA
Dow AgroSciences	GYA
Monsanto	GYA

Abbreviations:

HFWMA	Henry's Fork Weed Management Area (WMA)
UMWMA	Upper Madison WMA
UGWMA	Upper Gallatin WMA
JHWMA	Jackson Hole WMA
BBEWC	Bighorn Basin Weed Committee
GYA	Greater Yellowstone Area
NPS	National Park Service
LRCWMA	Lost River Cooperative WMA



**Wyoming
Dept. of Agriculture**

**Jim Geringer, Governor
Ron Micheli, Director**

2219 Carey Ave, Cheyenne, WY 82002 ☐ Phone (307) 777-7321 FAX: (307) 777-6593 ☐ E-Mail

wda@missc.state.wy.us

Date: December 11, 2000

To: National Park Service
From: Roy Reichenbach
Weed and Pest Coordinator

Subject: Establish of Exotic Plant Management Team, Northern Rockies.

The establishment of an Exotic Plant Management Team (EPMT) in the Northern Rocky Mountains, particularly headquartered in Yellowstone National Park, would be a great benefit to the region. Currently Yellowstone is involved with several weed management areas in three states surrounding the park. These cooperative weed management areas allow for excellent management opportunities in and around the park. The EPMT can take the experiences they have learned from participating in these efforts to other parks in the Northern Rockies and use them to help develop similar programs surrounding those parks. This experience would be a tremendous asset to those parks and surrounding counties.

Additionally, there could be some benefit to surrounding counties from the EPMT in that they could provide some eradication direction to those counties that may have newly discovered, incipient infestations, which have the potential to threaten the Park.

This concept may also be useful as a model to states, which are considering developing rapid response teams for newly discovered incipient infestations. Having a model to observe could be a great benefit to Northern Rockies states.

Your favorable consideration of this proposal would be appreciated.

cc Ron Micheli, Director
Jim Schwartz, Deputy Director
Grant Stumbough, Nat. Res. Mngr.
Bobby Spellman, President, Wyoming Weed and Pest Council
John Hester, Chairman, Board of Agriculture

December 14, 2000

Mr. Craig McClure
Box 86
Yellowstone National Park, WY 82190

RE: Northern Rocky Mountain Exotic Plant Management Team

Dear Craig,

I have reviewed your proposal for establishment of the Northern Rocky Mountain Exotic Plant Management Team (EPMT) to combat noxious weeds in and around national parks and monuments in Idaho and surrounding states. The idea for creating a mobile team is sound in light of the limited resources available for controlling and managing invasive weeds. Idaho has much to gain from the funding of this proposal and we whole-heartedly support it. The National Park Service (NPS) is a crucial Idaho partner in our drive to implement *Idaho's Strategic Plan for Managing Noxious Weeds*.

The centerpiece of the Strategic Plan is the formation of locally led Cooperative Weed Management Areas (CWMA) and the employment of integrated weed management strategies to turn the tide on this most pervasive environmental and economic problem. All of parks and monuments in Idaho are a part of, or adjacent to, functioning CWMA's. We are hopeful that when the EPMT proposal is funded that the NPS will make every effort to work cooperatively with these local CWMA groups. All of them have capable and professional people who could certainly help the EPMT to accomplish their seasonal work in the various units throughout Idaho.

As we have discussed, the Idaho State Department of Agriculture, through its noxious weed cost share program, is willing to consider an NPS proposal for funding a part of the start-up costs for FY 2001. I invite you to prepare a brief proposal outlining those start-up costs and bring it for discussion at the next meeting of the Idaho Weed Coordinating Committee meeting which will likely be scheduled sometime in mid to late January. In the meantime, I look forward to continuing discussions with you about the EPMT concept.

Sincerely,

Glen Secrist
State Noxious Weed Program Coordinator
Idaho Department of Agriculture

December 7, 2000

Craig McClure
Box 86
Yellowstone National Park, WY 82190

RE: Northern Rocky Mountain Exotic Plant Management Team [EPMT]

Dear Craig:

I would like to express the support of the Montana Dept of Agriculture for the proposed Northern Rocky Mountain Exotic Plant Management Team [EPMT]. The EMPT concept of having crew readily available throughout a growing season to fight weeds will help support the long-term management weed plan currently being developed in Montana. We are encouraging rapid response, especially to new invaders and new infestations.

I have reviewed the proposal and appreciate that it covers all National Park lands within Montana. This also supports the rationale of the Montana Weed Management Plan that encourages long-term planning between all agencies and landowners. The funding of your proposal would be of great benefit to Montana as we continue the fight against invading exotic plant species.

Sincerely,

Barbra Mullin
Weed Coordinator



United States Department of the Interior

NATIONAL PARK SERVICE
GOLDEN SPIKE NATIONAL HISTORIC SITE
P.O. Box 897
Brigham City, UT 84302

(GOSP)

December 8, 2000

To: Craig McClure, Yellowstone National Park

From: Bruce M. Powell, Superintendent, Golden Spike National Historic Site.

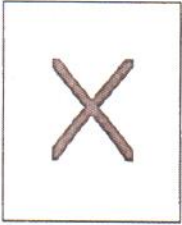
Subject: Letter of Support, Northern Rocky Mountain Exotic Plant Management Team

Golden Spike National Historic Site strongly agrees and supports the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species.

In FY 2000, Golden Spike National Historic Site benefited from two visits from the cooperative weed team based out of Yellowstone National Park. These visits included exotic plant control work and valuable training and consultation. These visits assisted this park getting an exotic weed control program initiated, and such assistance in the future will enhance our readiness and continued program implementation.

Golden Spike National Historic Site agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff will assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the host park and the EPMT with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. These support costs will be absorbed by Golden Spike National Historic Site.

Within budgetary constraints, Golden Spike National Historic Site agrees to cooperatively develop and implement an annual work plan which will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.



United States Department of the Interior

NATIONAL PARK SERVICE

Little Bighorn Battlefield National Monument

Post Office Box 39

Crow Agency, Montana 59022-0039

N1617 (LIBI)

December 11, 2000

MEMORANDUM

To: Craig McClure, Yellowstone National Park

From: Neil C. Mangum, Superintendent, Little Bighorn Battlefield National Monument

Subject: Support of Northern Rocky Mountain Exotic Plant Management Team

Little Bighorn Battlefield supports the proposal for the creation of a northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years to assist participating parks in controlling exotic plant species. Little Bighorn will provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff would propose to assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the EPMT with on-site administrative and logistical support within our staffing and funding capabilities.

Little Bighorn Battlefield will cooperatively develop and implement an annual work plan, which will reflect our annual commitment and include all components of a scientifically based integrated pest management (IPM) approach. We will continue to promote communications and cooperation with surrounding private, local, state, and federal land managers involved in exotic plant management and believe the implementation of the proposal will be helpful in achieving our collective objectives.

In the past two years, Little Bighorn has received assistance from Yellowstone in managing our own recent critical growth of exotic plants. The joint effort has improved our own vegetation management and control of noxious weeds. This current proposed support would be consistent with past efforts to control exotic plant species by our staff and Yellowstone.

/s/ Neil C. Mangum



United States Department of the Interior

NATIONAL PARK SERVICE
Grant-Kohrs Ranch National Historic Site
210 Missouri Avenue
P.O. Box 790
Deer Lodge, Montana 59722

IN REPLY REFER TO:

N50

December 12, 2000

Mr. Michael Finley
Superintendent
Yellowstone National Park
PO Box 168
Yellowstone, WY 82190

Dear Mr. Finley:

Grant Kohrs Ranch National Historic Site (GRKO) agrees to support the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. Grant Kohrs NHS agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff will assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the host park and the EPMT with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. These support costs will be absorbed by GRKO.

Within budgetary constraints, GRKO agrees to cooperatively develop and implement an annual work plan, which will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.

Our point of contact for this effort will be Anita Arends, Natural Resource Management Specialist. Her telephone number is 406/846-2070.

Sincerely,

Darlene Koontz
Superintendent

Cc: Craig McClure

December 11, 2000

Memorandum

To: Northern Rocky Mountain Exotic Plant Management Team
Attn: Team Coordinators
Craig McClure, YELL
Tamara Naumann, DINO
From: Superintendent, Fossil Butte National Monument
Subject: Letter of Support for Exotic Plant Management Teams

Fossil Butte National Monument agrees to support the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. This will also be done in coordination with and for the Colorado Plateau Exotic Plant management Team. The park is on the geographic border of the two EPMT's boundary and because of having our climate, elevation and some species more in common with one team than the other,

Fossil Butte agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison of both teams. Park staff will assist in management efforts including planning, compliance, scheduling, training and education, prevention, survey, control, revegetation, monitoring and evaluation. In addition, we will assist the host-park and the EPMTs with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. These support costs will be absorbed by Fossil Butte.

Within budgetary constraints, Fossil Butte agrees to cooperatively develop and implement annual work plans that will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.

David McGinnis
Superintendent

December 11, 2000

Memorandum

To: Superintendent, Yellowstone National Park

From: Superintendent, Glacier National Park

Subject: Support for Exotic Plant Management Team

Glacier National Park agrees to support the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. Glacier National Park agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff will assist in management efforts including: planning (compliance, scheduling , etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the Host Park and the EPMT with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. These support costs will be absorbed by Glacier National Park.

Within budgetary constraints, Glacier National Park agrees to cooperatively develop and implement an annual work plan which will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state, tribal and federal land managers involved with exotic plant management.

/s/ by Larry W. Frederick for Suzanne Lewis

Suzanne Lewis

A38 (GRTE)

December 12, 2000

Memorandum

To: Superintendent, Yellowstone National Park

From: Acting Superintendent, Grand Teton National Park

Subject: Letter of Support for Northern Rocky Mountain Exotic Plant Management Team

Grand Teton National Park agrees to support the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. Grand Teton National Park agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park Staff will assist in management efforts including planning (compliance, scheduling, etc.) training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the EPMT with on-site administrative and logistical support within our staffing and funding capabilities.

Within budgetary constraints, Grand Teton National Park agrees to cooperatively develop and implement an annual work plan that will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.

Timely involvement of the cooperative Yellowstone cooperative weed team during 2000 provided a labor pool to search for and destroy a new invader (dyers woad) in Grand Teton National Park, thus reducing future costs of controlling this species. With careful scheduling the EPMT will be a significant addition to Grand Teton National Park Exotic Plant Control Program.

Signed by:
Steven F. Iobst

Authenticated by:
Cyndy M. Holda

United States Department of the Interior

National Park Service

Bighorn Canyon National Recreation Area

P. O. Box 7458

Fort Smith, Montana 59035

406-666-2412

In Reply Refer To:

Subject: **SUPPORT LETTER, EXOTIC PLANT MANAGEMENT TEAM**

Bighorn Canyon National Recreation Area supports the proposal for the creation of a northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years to assist participating parks in controlling exotic plant species. BICA's support will include, but not be limited to:

- On-site supervision and coordination of control efforts in cooperation with the EPMT Liaison.
- Assistance to the EPMT with on-site administrative and logistical support within our staffing and funding capabilities.
- Participation in an annual review of the EPMT's scheduling and overall effectiveness.
- Development and implementation of an annual work plan.

We will continue to promote communications and cooperation with surrounding private, local, state, and federal land managers involved in exotic plant management and believe the implementation of the proposal will be helpful in achieving our collective objectives.

/S/ Darrell J. Cook
Superintendent

N16 (CRMO-RMD)

December 7, 2000

Memorandum

To: Whom it May Concern

From: Superintendent, Craters of the Moon National Monument

Subject: Endorsement of the Northern Rocky Mountain Exotic Plant Management Team Proposal

Craters of the Moon National Monument supports the proposal for the creation of a northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years to assist participating parks in controlling exotic plant species. On November 9, 2000 Craters of the Moon National Monument (CRMO) was expanded by Presidential Proclamation to include an additional 661,287 acres. The expanded monument now includes almost 464,000 acres administered by the National Park Service (NPS) and 250,000 acres administered by the Bureau of Land Management. With this expansion the scope of the NPS's invasive exotic weed responsibility has increased dramatically. While the NPS and BLM will share resources, it is important that the NPS establish credibility by contributing towards the overall exotic weed control program for the monument. The efforts of the EPMT would be a valuable contribution towards that objective.

CRMO will provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff would propose to assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (when appropriate), monitoring and evaluation. In addition, we will assist the EPMT with on-site administrative and logistical support within our staffing and funding capabilities.

CRMO will cooperatively develop and implement an annual work plan, which will reflect our annual commitment and include all components of a scientifically based integrated pest management (IPM) approach. We will continue to promote communications and cooperation with surrounding private, local, state, and federal land managers involved in exotic plant management and believe the implementation of the proposal will be helpful in achieving our collective objectives. Exotic weed control at CRMO has benefited from past cooperative efforts with Yellowstone and Grand Teton National Parks in the form of direct staff assistance in control programs and training opportunities for CRMO staff.

James A. Morris



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
NEZ PERCE NATIONAL HISTORICAL PARK
RT. 1, BOX 100
SPALDING, IDAHO 83540

N50

December 7, 2000

To Whom It May Concern:

Nez Perce National Historical Park and Big Hole National Battlefield support the proposal for the creation of a northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years to assist participating parks in controlling exotic plant species. Nez Perce National Historical Park and Big Hole National Battlefield will provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff would propose to assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the EPMT with on-site administrative and logistical support within our staffing and funding capabilities.

Nez Perce National Historical Park and Big Hole National Battlefield will cooperatively develop and implement an annual work plan, which will reflect our annual commitment and include all components of a scientifically based integrated pest management (IPM) approach. We will continue to promote communications and cooperation with surrounding private, local, state, and federal land managers involved in exotic plant management and believe the implementation of the proposal will be helpful in achieving our collective objectives.

Sincerely,

Douglas E. Eury,
Superintendent

EPMT Superintendent's support

Hagerman Fossil Beds National Monument agrees to support the fourteen park Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. Hagerman Fossil Beds National Monument agrees to provide on-site supervision and coordination of control efforts in cooperation with the EPMT Liaison. Park staff will assist in management efforts including planning (compliance, scheduling, etc), training and education, prevention, survey, control, revegetation (if deemed appropriate), monitoring and evaluation. In addition, we will assist the host park and the EPMT with on-site related administrative and logistical support, which may include computer support, telephone support, office and storage space, purchasing, equipment maintenance and housing, if available. These support costs will be absorbed by Hagerman Fossil Beds National Monument

Within budgetary constraints, Hagerman Fossil Beds National Monument agrees to cooperatively develop and implement an annual work plan that will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.

_____/s/ Neil King_____
Neil King, Superintendent

12/08/2000
Date

MEMORANDUM

DATE: December 13, 2000

TO: Craig McClure

FROM: Ned R. Jackson

SUBJECT: Letter of Support

City of Rocks National Reserve supports the creation of a Northern Rocky Mountain Exotic Plant Management Team (EPMT) for the next five years in their efforts to assist participating parks in controlling exotic plant species. We will assist the host park and EPMT with on site related administrative and logistical support if available.

Within budgetary constraints, City of Rocks National Reserve agrees to cooperatively develop and implement an annual work plan which will include all components of a scientifically based integrated pest management (IPM) approach. Furthermore, we will promote communications and cooperation with surrounding private, local, state and federal land managers involved with exotic plant management.

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