

The National Park Service  
U.S. Department of the Interior

Biological Resource Management Division

---



# **EXOTIC PLANT MANAGEMENT TEAM ANNUAL REPORT FY 2001**



# INTRODUCTION



*Native Bluebonnets at Big Bend NP*

The national parks are home to complex native communities of plants and animals that have developed over millions of years. This natural heritage is threatened by the invasion of exotic plants and animals and other disturbances. The Ecological Society of America notes that invasive species are at least partly responsible for the demise of 35-46% of all species listed as threatened and endangered. Today exotic plants alone infest about 2.6 million acres in the national parks. Control of exotic species is one of most significant land management issues facing national parks and is an emerging global problem. A recent Cornell University study estimates that invasive plants and animals cost Americans \$137 billion annually. However, the NPS is successfully addressing the impacts of exotic species by way of projects developed through the Natural Resource Challenge. New innovative resource management tools such as Exotic Plant Management Teams (EPMT's) and ecological restoration are working to safeguard our natural heritage.

Four tactical EPMT's completed their first full operational year in Fiscal Year (FY) 2001. These EPMT's have been lauded for their success in controlling nuisance exotic plants.

As a result of this success, four additional mobile EPMT's and an expansion of the Florida Partnership will be on the ground in FY 2002.

Modeled after the approach used to fight wildfires, EPMT's are designed to provide highly trained, mobile strike forces of plant management specialists to assist parks in the control of exotic plants. These field- or park-based teams are located as follows: (1) Florida (based at Everglades NP, Florida), (2) National Capital Region (based at Rock Creek Park, Washington, DC), (3) Chihuahuan Desert/Southern Shortgrass Prairie (based at Carlsbad Caverns NP, New Mexico), and (4) Pacific Islands (based at Haleakala NP, Hawaii). Each serves parks over a broad geographic area, and works with multiple parks through steering committees to identify, develop, conduct, and evaluate exotic species removal projects and undertake appropriate native species restoration efforts. Each of the four established teams has developed site-specific strategies for combating exotic plants that reflect the needs and resources of the more than 41 parks they serve.

## ACCOMPLISHMENTS

• Acres Treated	5,812
• Acres Retreated	192
• Acres Inventoried	8,215
• Acres Monitored	3,304
• Acres Restored	2
• Species Eradicated	6
• Lost-time Injuries	0

The EPMT's have treated over 100 high-priority exotic species on 5,812 acres. Thousands of these acres are found on isolated, rough terrain. Several harmful exotic species have been completely eliminated from parklands. Haleakala NP is now free of damaging silk oak and thatchinggrass. Loggerhead Key in Dry Tortugas NP is exotic-species-free for the first time in recent history. The EPMT's have



monitored over 3,304 acres to ensure that new invasions do not become severe and expensive management problems. This strategic monitoring and targeted treatment has contributed to the National Park Service exceeding its legislated goal to contain exotic species for FY 2001.

Additionally, the EPMT's are building technical capacity in natural-area exotic weed management to assist parks and other governmental and private partners to meet growing demand. This technical capacity includes development of a web-based data system that tracks progress of each project site and a corresponding Geographic Information System (GIS) map. This database is being developed collaboratively with the Inventory and Monitoring Program and illustrates the active link between monitoring and management (Appendix A, B). An EPMT web site (<http://www.nature.nps.gov/epmt>) has been developed and is on line to facilitate information transfer to the public and land management agencies, and to publicize EPMT activities and accomplishments. An EPMT Handbook has been developed for use by new



*Annual Performance Goal – By September 30<sup>th</sup> 2002, 4.0% (8,900 acres) of targeted parklands; disturbed by development or agriculture, as of 1999, are restored; and exotic vegetation on 2.5% (66,400 acres) of targeted parkland is contained.*

EPMT's that will be established in the future by NPS or others.

As a result of the success of the first four EPMT's in FY2001, five new teams and an expansion of the Florida Partnership are being established in FY 2002. These new teams (California, Lake Mead, Gulf Coast, Northern Great Plains and Columbia Cascades [Appendix C]) were chosen from 14 very competitive proposals. These proposals were reviewed and ranked by a highly qualified and diverse panel of NPS and Forest Service experts in January 2001. Criteria for reviewing the proposals included significance of resources at risk, severity of threats to resources, readiness, program design, and cost effectiveness. The new EPMT's are in the process of recruiting employees and will be controlling exotic plants in FY 2002. The new teams will increase the number of parks served to 152.

Finally and most important, the EPMT's are building private and public partnerships to efficiently prevent and manage damaging exotic species now and in the future. These species do not recognize boundary signs and cooperative efforts are critical to addressing invasive species and protecting our natural heritage. For example, the NPS Florida EPMT is involved with over 100 state, federal, and local partners in the Florida Department of Environmental Protection's (DEP) Upland Invasive Management Program and is initiating more including the South Biscayne Bay Exotic Plant Management Working Group. One third of all National Capital Region EPMT work was supported by partnerships with the Nature Conservancy, Americorps, the Student Conservation Association, and the Youth Conservation Corps. The NPS Pacific Islands EPMT protection of park resources hinges on effective partnerships including the Maui Invasive Species Committee (MISC). MISC maintains and responds to a prioritized hit list of the most potentially invasive habitat altering plants and animals that threaten Maui, including parklands.



# PACIFIC ISLANDS EPMT

*Partner Parks: Haleakala NP, Hawaii Volcanoes NP, Kaloka-Honokohau NHP, Kalaupapa NHP, Puukohola Heiau NHS, and Pu'uhonua O Honaunau NHP*

The war on weeds on the island of Maui is fought on extremely rugged and dangerous terrain. Helicopters are an essential, and very expensive, means of transport. The team purchased 40 hours of helicopter time and, through very careful planning, managed to squeeze out 14 spot spray and reconnaissance missions. In all, the EPMT treated well over 4,000 acres and monitored another 3,300 acres. Two species of weeds, silk oak and an exotic thatchinggrass, were eradicated from Haleakala National Park.

## ACCOMPLISHMENTS

• Acres Treated	4,085
• Acres Retreated	96
• Acres Inventoried	50
• Acres Monitored	3,304
• Acres Restored	0
• Species Eradicated	2



*Helicopter work at Haleakala NP*

In this island ecosystem, the only boundaries recognized by weeds are the shorelines. The most cost-effective way to keep weeds out of the parks is to control them throughout the island. Therefore, most of the EPMT's efforts were committed to partnerships directed by the Maui Invasive Species Committee (MISC) federal-state-private partnership. This

partnership coalesced to bring about joint action to prevent, contain, or eradicate the most serious incipient plant and animal invasions using the 728-square-mile island of Maui as a Weed Management Area (WMA).

The organizations involved in the partnership have been working together successfully to battle alien invasions. Partners include Haleakala National Park (NPS), US Geological Survey-Biological Resources Division (USGS/BRD), USDA Forest Service (FS), US Fish and Wildlife Service (FWS), Hawaii Army National Guard, The National Fish and Wildlife Foundation, USDA Tri-Isle Resource Conservation and Development Council, Inc., Hawaii Department of Land and Natural Resources (DLNR), Hawaii Department of Agriculture (HDOA), University of Hawaii, Maui County Office of Economic Development, Maui County Board of Water Supply, The Nature Conservancy of Hawaii (TNC), Maui Land & Pineapple Co. (ML&P), and Community Development Block Grant Program. Participation by the Maui Association of Landscape Professionals, Hawaii Nurseryman's Association, Maui County Farm Bureau, Maui Chamber of Commerce, Maui Hotel Association, Maui Visitors Bureau, and similar industry associations, businesses, and trade groups is encouraged. Public education and publicizing success stories are crucial ingredients of the anti-invasive species strategy.

## SELECTED WEED SPECIES

Miconia  
Australian tree fern  
Fountaingrass  
Cane tibouchina  
Brazilian pepper  
Thatchinggrass  
Faya tree  
Stawberry guava  
Kosters curse

# FLORIDA PARTNERSHIP EPMT

*Partner parks and states: Big Cypress NP, FL; Biscayne NP, FL; Everglades NP, FL, Canaveral NS, FL; Castillo de San Marcos NM, FL; DeSoto NMem, FL; Dry Tortugas NP, FL, Fort Caroline NMem, FL; Fort Caroline NMem, FL; Fort Mananzas NM, FL; Gulf Islands, FL, MS; and Timucun Eco & HPres, FL*

While some EPMT's utilize in-house crews, the efforts in Florida reflect the flexibility of the EPMT concept. All work in Florida is accomplished through a partnership with the State of Florida Department of Environmental Protection (DEP) Upland Invasive Plant Management Program, which matches every NPS "direct control" dollar with a state dollar. Work is accomplished through contracted crews. More than 1,000 acres were treated, including initial treatment of the entire acreage of DeSoto National Monument and Loggerhead Key in the Dry Tortugas. These efforts involved volunteers from national park staffs as well as 50 volunteers from Pillsbury Inc. Community support through volunteerism is a significant part of management and control of exotic plant species in Florida National Parks.

## ACCOMPLISHMENTS

- Acres Treated 1,100
- Acres Retreated 20
- Acres Inventoried 4,694
- Species Eradicated 4

To increase efficiency and encourage broad support for exotic plant control, the EPMT initiated two agreements with the South Florida Water Management District--one on exotic plant monitoring and one that will allow District contractors to treat weeds within Everglades National Park. The EPMT helped organize a new organization, the South Biscayne Bay Exotic Plant Management Working Group (SBBEPWG), which anticipates production of an exotic



*Melaleuca control at Everglades NP*

plant management plan in 2002. SBBEPWG includes representatives from Biscayne NP, Miami-Dade County, the Nature Conservancy, Florida Power and Light, and the State of Florida. Finally, the EPMT prepared a successful proposal to the US Army Corps of Engineers on behalf of Everglades National Park. As a result, The Corps will provide \$700,000 over five years for treatment of exotic plants in Cape Sable seaside sparrow--a federally list endangered species-habitat.

## SELECTED WEED SPECIES

Melaleuca  
Schinus  
Australian pine  
Colubrina  
Chinese tallow  
Cogongrass  
Old World climbing fern  
Eurasian watermilfoil  
Water hyacinth  
Brazilian pepper



# NATIONAL CAPITAL REGION EPMT

*Partner parks and states: Antietam NB, MD; Catoctin Mountain Park, MD; C&O Canal NHP, MD; George Washington MPKWY, VA; Harpers Ferry, NHP, WV, Manassas NBP, VA; Monocacy NM, MD; Prince William Forest Park, VA; Wolf Trap Farm Park, VA; National Capital parks east, DC; and Rock Creek Park, DC*

The National Capital Region EPMT completed survey and control work in ten parks. Surveys revealed 3,471 acres infested with exotic, invasive weeds. The EPMT treated 480.5 acres, or 14 percent of the infested area, using manual, mechanical, and chemical methods. More than 80 acres were retreated to control re-growth of weeds.

## ACCOMPLISHMENTS

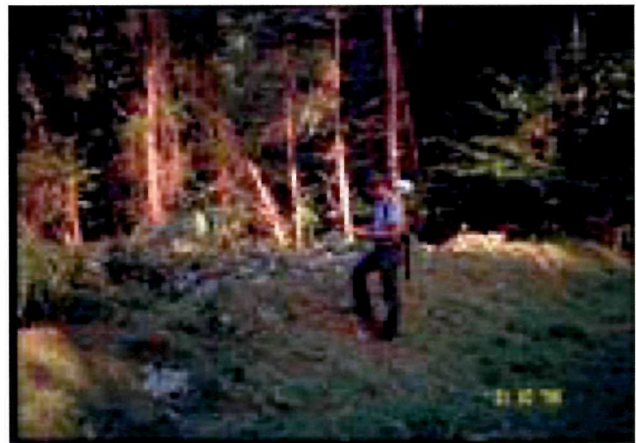
- Acres Treated 481
- Acres Retreated 85
- Acres Inventoried 3,471



*Controlling invasive weeds*

More than half the days spent on site involved coordination of private and public partners, cooperating park staffs and volunteers from the Youth Conservation Corps, Student Conservation Association, Americorps, and The Nature Conservancy. The EPMT provided 25 days of assistance to park staffs in the form of research, training, planning and assistance with environmental compliance

issues. More than a dozen presentations were made to school and youth groups, non-government environmental organizations, state and federal legislators, other federal agencies, and Park Service audiences.



*NCR Team identifying weed sites*

## SELECTED WEED SPECIES

Multiflora rose  
Japanes barberry  
Bittersweet  
Wineberry  
Chinese wisteria  
Japanese wisteria  
Tree-of-Heaven  
Princess tree  
Privet  
Japanese honeysuckle

# CHIHUAHUAN DESERT/SOUTHERN SHORTGRASS PRAIRIE EPMT

*Partner Parks and states: Bent's Old Fort NHS, CO; White Sands NM, NM, Carlsbad Caverns NP, NM; Washita Battlefield NHS, OK; Big Bend NP, TX; Amistad NRA, TX; Alibates Flint Quarries NM; Capulin Volcano NM, NM; Fort Davis NHS, TX, Lake Meredith NRA, TX; and Guadalupe Mountains NP, TX, NM*

The Chihuahuan Desert Team served 11 parks spread across an area 400 miles in diameter, with a focus on exotic saltcedar. An acre of exotic saltcedar in the southwest uses four acre-feet of water every year (approximately 1,300,000 gallons of water). Therefore its removal is paramount to restoring native systems. These tree-sized weeds must be chain-sawed stem by stem, which is slow, arduous work. Nevertheless, the Chihuahuan Desert Team enthusiastically treated over 100 acres in eight parks. To increase productivity, the EPMT experimented with the use of a tractor-mounted tree shear. This proved effective, but use of the equipment is limited by terrain and soil types.



*Eradicating Saltcedar seedlings at Carlsbad Caverns NP*

## ACCOMPLISHMENTS

- Acres Treated 129
- Acres Inventoried 100
- Acres Restored 2

The Chihuahuan Desert EPMT provides the core staff for an effort to restore Rattlesnake Springs in Carlsbad Caverns National Park. Each year for five years, the EPMT will remove one fifth of the Russian olive trees, then work with the park staff and volunteers to plant native willows. These efforts will enhance wildlife habitat for an important bird-watching and research site and will safeguard the domestic water supply for the park.

EPMT members made six presentations, reaching nearly 1,200 students, citizens and professionals.

## SELECTED WEED SPECIES

Saltcedar  
Buffelgrass  
Russian olive  
Johnsongrass  
Bermudagrass  
Tree-of-Heaven  
White horehound  
Puncturevine  
African rue  
Malta starhistle

# **APPENDICES**



# APPENDIX A

The screenshot displays the APCAM database interface, which is organized into several sections. The top section, titled 'LocationID', contains tabs for General, Geographic, Accuracy, Basic, Abiotic, Coordinates, Contacts, Disturbances, and Values At Risk. Below these tabs are various input fields, including \*LocationID, AssocPark, InPark?, General Location, Location Description, \*Date LocationID Created, \*Initial of LocID Creator, \*Associate Contact, \*Associate Email, \*Associate Phone, and \*Program. A large purple 'Where' label is overlaid on this section. To the right of the LocationID section is a 'Find an existing LocationID...' box with search criteria (by LocationID, by Date, by Taxon, Change LocID) and buttons for Find, Refresh, and Reset. A red 'Find' label is overlaid on this box. Below the LocationID section is an 'EventID' section with tabs for Date/Time, Weather, Other, and Trip Report. It includes fields for \*EventID, \*Date (Start), and \*Date (End). A large blue 'When' label is overlaid on this section. The bottom section, titled 'APCAM', has tabs for General, Area, Herbicide, Other Chems, Population, Basic Database, Crew/Hours, Other, and Photos. It contains fields for \*LocationID, \*EventID, \*Date, \*Taxon, \*Taxon Loc, \*Site Management, and \*Survey Type. A large green 'What/How' label is overlaid on this section. A legend at the bottom right indicates that an asterisk (\*) denotes a required field.

*The Alien Plant Control and Monitoring Database (APCAM) was designed in collaboration with the Exotic Plant Management Teams for the purpose of inventory and monitoring of exotic plants. This standardization allows for easy data transfer between the teams and drastically simplifies the reporting process to the Biological Resources Management Division.*

Microsoft Access - [APLAM]

File Edit View Insert Format Records Tools Window Help

### LocationID

General Geographic Accuracy Regional Coordinates REX Contacts PQDC Contact

\*LocationID:  \*Date LocationID Created:

\*AssocPark:  \*Protocol of LocID Creator:

InPark:  Site marked in the field?

General Location:  \*GeohowCurrent:

Location Description:  GeohowDesired:

\*Team:

**Find an existing LocationID...** PS to Refresh List

by LocationID by Date by Taxon Change LocID

...in APCAM  Find

...NOT in APCAM  Find

Reset

\* = Required

### EventID

Date/Time Weather Assoc Species Restoration Plants Collected Extincted Species Disturbances Values At Risk Biote Abiotic Trip Report Photos

\*Date (Start) \*Year Date (End) \*Start Time End Time

7:30:00 AM

### APCAM

Current Taxon:

General Area Equipment Herbicide Other Chems Population Height Basal Diameter Crew/Hours Other Photos

LocationID:  Site Management:

EventID:  Survey Type:

Date:  Contact# (NPS):

Taxon:  Contact# (State):

+ -

**Add a New LocationID**

Record: 14 of 1

### EventID

Date/Time Weather Assoc Species Restoration Plants Collected Extincted Species Disturbances Values At Risk Biote Abiotic Trip Report Photos

\*Date (Start) \*Year Date (End) \*Start Time End Time

7:30:00 AM

### APCAM

Current Taxon:

General Area Equipment Herbicide Other Chems Population Height Basal Diameter Crew/Hours Other Photos

LocationID:  Site Management:

EventID:  Survey Type:

Date:  Contact# (NPS):

Taxon:  Contact# (State):

Exact Location:  Contact# (Other):

+ -

**Add a New APCAM record for the current LocationID/EventID**

Record: 14 of 1

**Add a New EventID for the current LocationID**

Record: 14 of 1

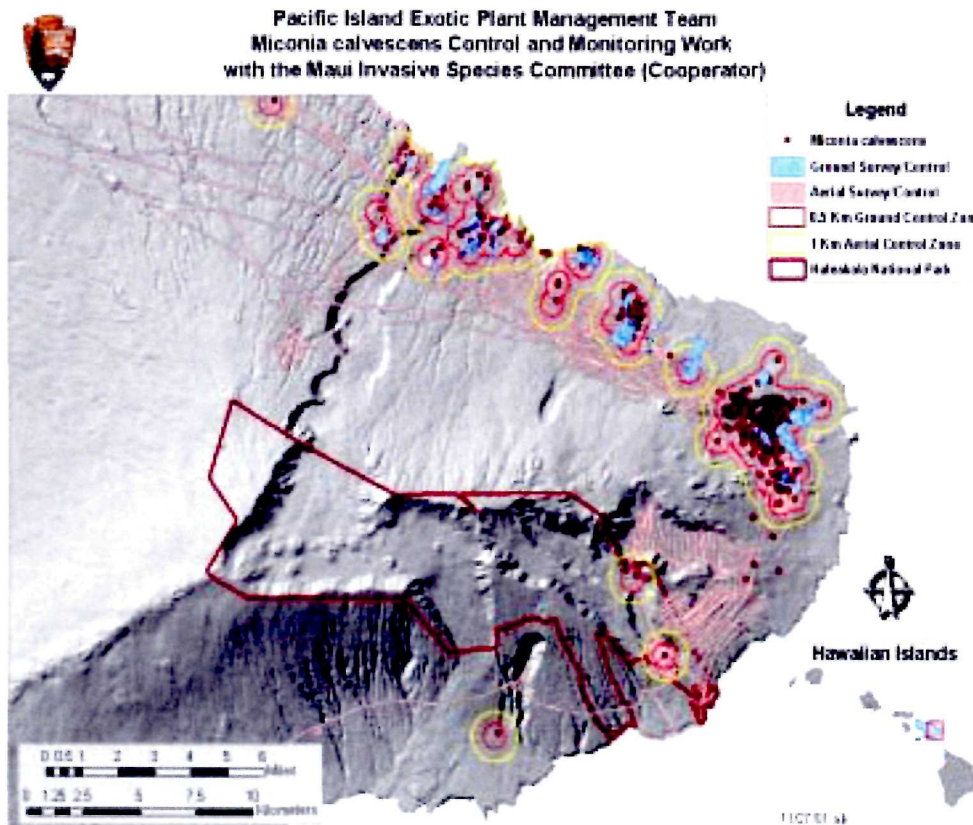
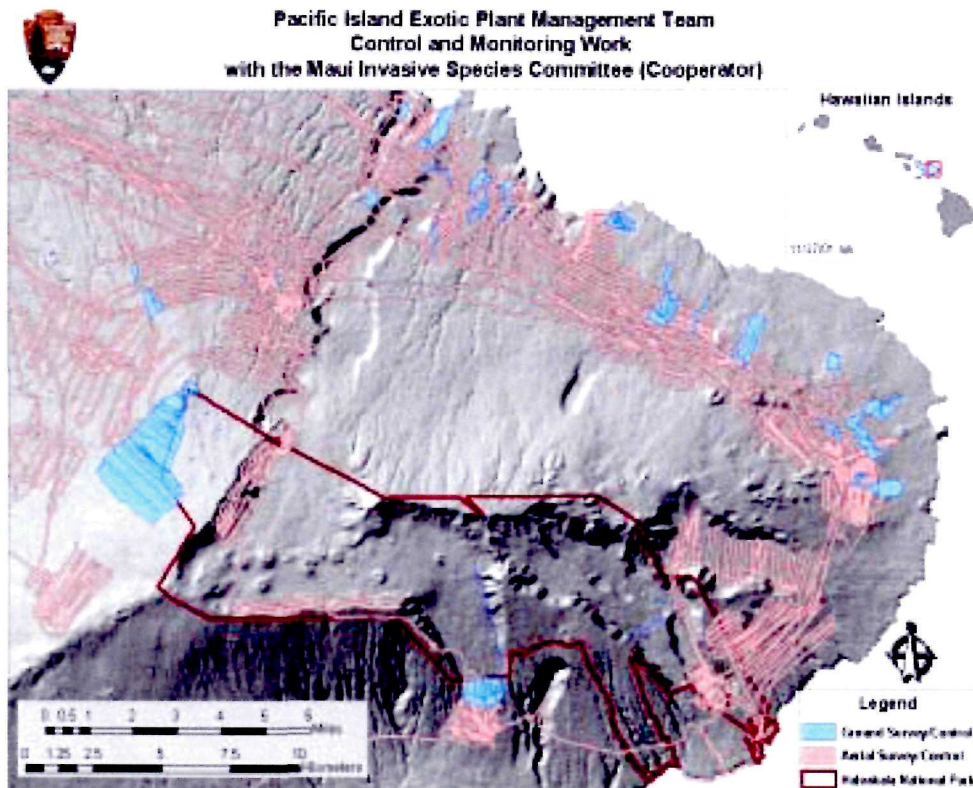
**Add a New LocationID**

Record: 14 of 1

Print View



# APPENDIX B



# APPENDIX C

