

**FY 2006 Manager's Update
NLCS Accomplishment Report**

GRAND CANYON-PARASHANT NATIONAL MOUNUMENT

Primary Mission: *Protect, assess and interpret scientific, biological and historic objects in a vast, remote ecologically diverse landscape.*

1. Physical Condition of Cultural and Natural Resources

a. Describe what percent of the unit has been assessed using the fundamentals of land health and what percent is meeting the standards.

Approximately 79% of the GC-Parashant National Monuments grazing allotments have been assessed using the Fundamentals of Rangeland Health. Of the allotments that have been assessed, 42% are meeting Standards 1 & 3 for Rangeland Health. The remaining 58% are progressing towards meeting Standards.

b. Describe the annual accomplishments towards meeting standards.

- Fire rehabilitation has been initiated on over 40,000 acres to accelerate achievement of Desired Plant Community (DPC) objectives.
- Allotment management plans have been developed.
- Habitat improvement treatments have been or are being implemented.
- Cooperative wildlife/livestock water developments have been completed.

c. Indication of overall natural resource and heritage condition trend.

Natural Resource Condition Trend

Based on recent vegetation monitoring data and rangeland health evaluations our lands are static to trending upward. This is encouraging given the past six years of drought the southwest has experienced. Many of the vegetation communities damaged by the drought, such as grass and shrub lands, responded to the increased precipitation of 2004-5, and appear to be trending upward.

Heritage Condition Trend

Arizona State Parks Site Stewards monitored 38 sites, principally on BLM lands. Without a significant sample of the heritage resources, it is difficult to address this status with much accuracy. The condition trend seems fairly flat with only a minor decrease in the condition due to wildfire, fire rehabilitation efforts, forestry restoration activities, fuels management activities, vandalism, and adverse impacts due to natural phenomena such as erosion and weathering.

d. What has been done to improve natural and cultural baseline data?

Natural Resource Baseline Data

Spring Inventory

The Monument has initiated an effort to find and inventory springs and related spring resources on the Monument. Accomplishments to date include:

- Development of an accurate spring resource spatial, relational data base
- GIS layer of springs locations created
- Spring and associated riparian dependant resources inventory initiated

Cave Inventory

The Baseline Ecological Cave Inventory was completed for all known caves (24) and two newly discovered caves on the Monument. Development of accurate digital cave maps was completed. Geological, hydrological, paleontological, cultural, and biological resources, as well as recreation/human use was inventoried. One new species of beetle, one new species of springtail, two new species of cave (Camel) cricket, and one new Genus of cave cricket were discovered.

The ancient presence of bear in a cave on the Monument was discovered. The bear scat is ~1100 years old. In the same cave a very large cultural site was also discovered. The site contains pots, metates, monos, digging sticks and whole baskets ranging from 1100 to 5000 years.

Vascular Plant Inventory

Botanical survey of the Shivwits Plateau area of the Grand Canyon-Parashant, Arizona Strip, and various other locations throughout Lake Mead National Recreation Area were conducted.

Arizona Breeding Bird Atlas (ABBA) Inventory

Mapped the current distribution and determined the relative abundance, breeding phenology, and habitat associations of each of the 280+ species of breeding birds in Arizona.

Relict Area Inventory

Vegetation data was collected on an inaccessible plateau above the Colorado River (Lone Mountain). This area provides an opportunity to determine ecological status and productivity of an area not previously grazed for comparison with other similar areas exposed to various land uses. Vegetation data, soil samples, vascular plants and lichens, and soil cryptobiotic crust samples were collected. Wildlife observations were also noted.

Lichen Inventory

A study was initiated to identify the radionuclides and heavy metal deposition found in lichens on the Monument. This information will serve as a baseline for future air pollution and lichen studies. Thirty eight species were reported in the Monument. In the State of Arizona, the second observation of the lichen *Letharia vulpine* was recorded.

Pleistocene and Holocene Animal and Plant Communities

Data collection in select regions and canyons was conducted in the Monument to provide an overview assessment of Quaternary fossils.

Fossil Resource Potential

Compilation of all geological formations on the Colorado Plateau portion of the Monument and assess each member of each formation for known fossil content from the stratigraphic profile.

Cultural Resource Baseline Data

Pre-historic

Contractors, field schools, and NPS and BLM archeologists on both BLM and NPS lands on the Monument conducted Field archeological survey work. Surveys of 960 acres, conducted by or under the direction of the BLM archeologist, yielded 145 newly documented sites of which 122 are potentially eligible for listing on the National Register. Dr. Paul Buck (Desert Research Institute-Las Vegas, NV) and Nevada State College conducted a six-week summer field school which included inventory, site mapping, and limited testing around various BLM sites in the Mt. Trumbull vicinity.

Historic

Oral history interviews of Individuals who were important contributors to the history of the Monument area were conducted. Twenty-seven individuals were interviewed, including several that passed away shortly thereafter. The oral history tapes are currently being transcribed.

2. Condition of Recreation Facilities, Roads and Trails

a. Statement on condition of the physical facilities including roads and if annual maintenance work is meeting the needs of the BLM and users.

Mt. Trumbull Administrative Site

The 30 year old 4,500-gallon water tank was removed. Two new 20,000-gallon fiberglass storage tanks, along with associated water lines, were installed. This increase in capacity will provide a source of dependable water for the facilities when the flow at Nixon Spring drops during the summer months. Future plans include a new installation of a new water treatment method and replacement of the old metal collection box and perforated pipe at the spring source.

Mt. Dellenbaugh Administrative Site

Upgrades to an existing solar energy collection system included doubling the storage capacity, adding a charge controller, battery storage box with a ventilation system, and an inverter chip upgrade. Additionally, a kilowatt meter and trimetric meter was installed for system monitoring and usage. A water meter was installed for monitoring and low-flow showerheads were installed for water conservation.

Wilderness Boundaries

Vehicle access barriers were maintained along the Paiute, Mount Trumbull, Mount Logan and Grand Wash Cliffs wilderness boundaries where vehicle violations were occurring.

Trails

The Mount Trumbull Summit Trail was reconstructed using a grant from the state of Arizona Recreational Trails Program. Bureau of Land Management, National Park Service, Northern Arizona University and Arizona Strip Interpretive Association all contributed to the necessary match for the reconstruction of this trail. Coconino Rural Environmental Corp crews completed tread, grade, and water bar features on the trail. Arizona State Trails System provided the means for installing a trail registration at the Mount Trumbull trailhead in order to collect visitor use data for use by both the BLM and State of Arizona.

Signing and maintenance of trailhead and site facilities at Nampawear; Sawmill/Uinkaret Pueblo; Mount Trumbull Summit Trailhead; Mount Logan lookout, camping area and trailhead; Mount Dellenbaugh Trailhead; and Grand Wash Bench Trailhead were also completed.

Roads

All roads on the Monument are dirt roads and most are very rough. Depending on the time of year, some may not be passable due to mud, snow, or flooding from storms. Road maintenance is conducted according to an approved schedule. As part of the land use planning process, roads and routes were inventoried and documented.

b. Describe the change in the backlog of deferred maintenance.

A condition assessment has been made on all roads and facilities in the Monument. Five to ten percent of the backlog has been eliminated. Most of our daily maintenance work is focused on critical projects that are emergencies and must be taken care off.

c. Are portal signs installed and up to standard. Has a sign plan been initiated?

Information kiosks were installed at important public access portals into the Monument, along with way-finding 'locator' panels at major intersections. Monument portal signs were maintained, repaired, and replaced as needed. A sign plan has been initiated and will be completed by the end of fiscal year 2006.

d. Status of any new construction.

Four vehicle access barriers were constructed (including signing and boundary posting), along the Mount Logan and Grand Wash Cliffs Wilderness boundaries, where vehicle violations had been detected.

3. Environmental Education and Resource Interpretation

a. Contact with visiting public and local public through printed media, web, facilities, etc. Include total visitation to unit. Describe participation in your interpretative program (not including volunteers.)

Visitation

Total visitation to the Monument in FY 2006 was 44,048 visitors.

Web Sites

Wilderness access information, on-line maps, and links to the BLM and NPS portions of the external website were developed. The web site also includes up-to-date information and links to "Leave No Trace" and "Tread Lightly" websites.

"Views" an interactive computer program designed to share the splendor of the Monument with handicapped visitors and visitors that do not have the time or appropriately equipped vehicle to drive into the Monument, has been developed.

Interpretive Participation

The Monument staff co-sponsored the 2005 Society of American Foresters Joint South West/Intermountain Spring meeting. The meeting, entitled "Ecological Restoration of Southwest Ponderosa Pine and Pinyon-Juniper Ecosystems" included multiple technical presentations and a field tour of the Mt. Trumbull Restoration Project.

The Monument staff also sponsored a two day workshop focused on the management and research/monitoring of pinyon-juniper woodlands. The workshop brought together agency and research personnel working on this issue to exchange ideas and become informed about what is happening with pinyon-juniper woodlands in the area. Attendees included folks from Arizona Game & Fish Department, Arizona State Lands Department, Bureau of Indian Affairs, Bureau of Land Management, Forest Service, National Park Service, Northern Arizona University/Ecological Restoration Institute, the Paiute Tribe, and the US Geological Survey.

Monument staff used the Mt. Trumbull restoration research project as a field classroom to further the understanding of ecological processes and the resources it takes to restore those processes when they have been degraded. Groups which have benefited from on-site presentations, education, and interpretation include:

- Professor Joe Feller and students in Environmental Law at Arizona State University – each year in May for last five years.

- Society of American Foresters Sectional Workshop (Arizona and New Mexico), May 2005.
- Local and regional Boy Scout Troops: Annually for last three years.
- Arizona BLM State Resource Advisory Council, April 2004.
- The Forest Restoration and Community Capacity Building Working Group: Newly developed partnership to promote jobs in the woods and forest manufacturing infrastructure.
- General public participated in restoration activities as well as environmental education and interpretation in Sept., 2004.

Monument staff presented on-site interpretive programs on caves and cave conservation, a cave conservation/management program to Southern Utah University students, cave conservation programs to Boy Scouts, and published a short article on the Monument cave management program in *Inside Earth News*.

A National Park Service tri-fold brochure for the Monument is under development and initial proofs have been reviewed and edited. The effort is a collaboration of Monument staff and NPS Harpers Ferry Design Center.

b. Briefly describe the main messages being delivered.

- Safety
- Cultural Resource Stewardship and Appreciation
- Environmental Stewardship
- The Monument as an Outdoor Research Laboratory
- Tread Lightly
- Leave No Trace
- Ecological Conservation and Management
- Forest Conservation and Management
- Cave Conservation and Management

c. Describe environmental education offered offsite or onsite for local K-12 educational institutions.

The Arizona Strip Interpretive Association (ASIA) assists its BLM and NPS partners in initiating education projects that promote interpretation and preservation of the history, natural resources, and recreation opportunities of the Arizona Strip. Activities include school programs, (both off-site and in office) for elementary and junior high students, and a teacher information day.

d. Describe other outreach efforts.

Grand Circle Field School is a non-profit association under MOU with the Grand Canyon-Parashant National Monument, Vermillion Cliffs National Monument, and Glen Canyon National Recreation Area. The classes they provide feature “hands-on” experience in the field, followed by lectures, presentations and discussions at camp.

4. Status of Science Program

a. Number of ongoing/completed science research projects.

I. Mojave Desert Tortoise Habitat Restoration

USGS: Esque, DeFalco

Because very little is known about how to restore burned Mojave desert vegetation associations, the BLM, in cooperation with the USGS and FWS, has initiated a Mojave tortoise habitat restoration research project on eight separate fires in the Pakoon Basin. Each fire includes a full set of four treatments:

1. Aerially seed with native spp. at 10 lbs of seed per acre,
2. Aerially seed and then incorporate the seed,
3. No seeding, fenced only, and
4. No seeding, no fencing.

The treatments will be replicated eight times (once in each of the fires). All treated areas will be fenced to exclude grazing, except the no fencing treatment. Data collection will begin Spring of 2007. The impacts to existing management practices will not be known until data has been collected for at least three years, analyzed, and the differences between the treatments determined.

II. Pakoon Springs Restoration

Grand Canyon Wildlands Council

The BLM has acquired a grant from the Arizona Water Protection Fund to determine the feasibility and logistics of restoring the complex of springs at Pakoon Springs Ranch. The BLM has entered into a Cooperative Agreement with the Grand Canyon Wildlands Council to develop the Feasibility Study and Restoration Plan, determine the methods, and to implement a pilot study as the initiation of the Pakoon Springs complex restoration.

III. Mt. Trumbull Research Project

NAU – W. Covington, et. al.

From 1994 to the present and continuing, this project investigates effects of restoring a ponderosa pine forest to pre-settlement conditions. Treatments consist of removing mostly small trees on approx. 3000 forested acres following a defined treatment prescription. AZ Game and Fish is tracking the wildlife response.

III.a. Hantavirus in Rodent Populations...

NAU – C. Chambers

From 1997 to the present Hantavirus research is continuing. Objectives are to describe small mammal densities in ponderosa pine forests prior to restoration and to determine levels of Hantavirus, effects of restoration on rodent host/hantavirus associations, rodent species involved, etc. This research is part of the larger Mt. Trumbull Ecosystem Restoration Project.

IV. Impact of Fire on Mojave Vegetation

USGS – T. Esque

From 1997 to the impact of fire in the Mohave desert is increasing. Plant and animal response burned and unburned 20 X 20 meter plots in the Pakoon Basin, AZ. Plots also

have treatment combinations of ants and rodents not excluded, both excluded, just ants excluded, and just rodents excluded.

V. California Condor Restoration Project

The Peregrine Fund – B. Heinrich

From 1996 to present, the Condor reintroduction is continuing. The Peregrine Fund conducts the condor releases and does daily monitoring of condor behavior, movements, feeding, mortality, condor courtship and egg laying, nesting, etc. Nearly all the activity occurs in the Vermilion National Monument, but occasionally Condors venture into the Parashant National Monument.

VI. Evaluating Re-vegetation Following a Catastrophic Fire

USGS – T. Esque

From 2000 to present, evaluations of catastrophic fire and re-vegetation efforts are continuing. Evaluation of the cost and benefits of BLM re-vegetation efforts in a burned pinyon/juniper community relative to plant diversity, overall above-ground production, and cheat grass abundance is of prim interest.

VII. Little Springs Volcanology & Archaeology Project Desert Archaeology, Inc., M. Elson, et al

The Little Springs Volcanology and Archaeology Project began in the Autumn 2002. It Investigated both the nature of the Little Springs Volcano and the effects its eruption had on the surrounding human settlement. Analytical methods from the fields of volcanology, archaeology, and geomorphology are used in this multidisciplinary effort to model the eruption and resulting human impacts.

VIII. Creating Sustainable Recreation Environments: Determining Social Indicators for Management Planning

NAU – Dr. P. Foti

From September of 2002 to April of 2003, NAU conducted surveys for recreation use in the Monument to determine social indicators for populations in the Grand Canyon-Parashant National Monument. Indicators were determined through primary data collection from three distinct populations: (1) on-site users; (2) interested parties randomly selected from previous scoping meetings; and (3) regional respondents from larger mailing list that are either users or non-users.

XIV. Mechanics of Deformation Associated with Continental Normal Faults, Western Grand Canyon, Arizona

Stanford University – D. Pollard, P. Resor

From October of 2001 to June 2003 mapping of fault surfaces and hanging wall and footwall structures associated with the Froggy Fault exposed in the vicinity of Lone Mountain occurred. Build a high-resolution 3-dimensional map of the fault and associated structures. The results of this field study will improve our understanding of deformation associated with normal faults and is important in evaluating seismic hazards in actively extending regions, predicting the occurrence of hydrocarbon traps, and increasing our knowledge of fault mechanics.

X. Remotely Sensed Cave Detection on Earth and Mars

The cave detection study is a project in coordination with NPS, USGS and NASA and is an attempt to locate caves on Earth and Mars via thermographic satellite technology.

The project consists of placing data loggers in selected caves to record the temperature and relative humidity of the cave. The location of the caves is determined and the thermographic satellite pictures are taken. The information from this data will be used by NASA to design a satellite and/or rover that will use thermographic imaging to look for caves.

b. Describe application of research/scientific studies in management practices and how those practices have been affected, reinforced, or changed.

Information gained from a Pinyon/Juniper research demonstration lead to the development of "Photographic Guide to Pinyon and Juniper Tree Maturity Classes, Scott E. Sink, ERI, 2003." This guide was used to write pinyon/juniper restoration prescriptions on 502 acres in the Death Valley watershed, May 2005, and will be used to guide future treatments in pinyon/juniper.

c. Explain how the results of research studies have been made available to the local and scientific communities, and BLM.

The Mt. Trumbull restoration research project is used as a field classroom to further the understanding of ecological processes and the resources it takes to restore those processes when they have been degraded. Groups which have benefited from on-site presentations, education, and interpretation include:

- Professor Joe Feller and students in Environmental Law at Arizona State University – each year in May for last five years.
- Society of American Foresters Sectional Workshop (AZ & NM), May 2005.
- Local and regional Boy Scout Troops: Annually for last three years.
- Arizona BLM State Resource Advisory Council, April 2004.
- The Forest Restoration and Community Capacity Building Working Group: Newly developed partnership to promote jobs in the woods and forest manufacturing infrastructure.
- General public participated in restoration activities as well as environmental education and interpretation in September 2004.

5. Cooperative Conservation

a. Success in establishing unit Friends groups(s).

No Friends groups have been established.

b. Advisory Committees' achievements

The Monument does not have an Advisory Committee

c. Accomplishments of Natural History Associations

The Arizona Strip Interpretive Association (ASIA) enhances our visitors' understanding of the Monument and the rest of the Arizona Strip by operating the Interagency Visitor Center in St. George, providing a wide range of materials and services to assist the public, including hosting environmental education programs, answering questions about the local area, and issuing permits - mineral, woodcutting, and Christmas trees. They also maintain a sales area that offers a variety of maps and publications on local history and resources, and gifts.

Sales Items Available

- National Park Posters
- Local and Regional Maps
- Natural And Human History Books
- Post Cards
- Online Catalog

Educational Programs

- Brown Bag Lunch Lectures for Adults
- Student Conservation Crew
- Paria Wilderness Hiking Information
- Paria Permit Site

d. Collaborative efforts with Local government

Monument managers worked closely with cooperating agencies with special expertise to provide assistance in various forms to the land use/resource management planning effort. Cooperating Agencies include: Arizona Game and Fish Department, Mohave County, Coconino County, Kane County, Washington County, Hopi Tribe, Kaibab Paiute Tribe, City of Fredonia, Town of Colorado City

e. Describe local non-profit organizations, their mission, accomplishments and the extent of our cooperation with them.

The mission of the Grand Canyon Wildlands Council, a non-profit organization, is to create and apply a dynamic conservation area network that ensures the existence, health, and sustainability of all native species and natural ecosystems in the Grand Canyon ecoregion. This mission is both visionary and scientific. They accomplish their mission through effective and efficient conduct and assessment of scientific research and by offering creative, science-based solutions to land stewards, public citizens, and other conservation groups, through respectful communication in a spirit of good will.

The GCWC is working to preserve the diversity of life in Arizona's Mogollon Rim based on surveying the ecology of riparian areas: identifying the presence and distribution of important native plants, animals, and insects as well as their protection and restoration needs. Project sites include East Clear Creek, West Clear Creek, Wet Beaver Creek, Chevelon Canyon, and others.

The BLM has a cooperative agreement with the Grand Canyon Wildlands Council. This agreement makes use of resources and expertise from both entities as well as funds from the Arizona Water Protection Fund. The agreement addresses the responsibilities of each entity in managing finances and project implementation of the AWPf Grant (WPF0323) to restore Pakoon Springs.

Grand Circle Field School is a non-profit association under MOU with the Grand Canyon-Parashant National Monument, Vermillion Cliffs National Monument, and Glen Canyon National Recreation Area. The classes they provide feature “hands-on” experience in the field, followed by presentations, lectures, and discussions at camp.

The Monument works closely with volunteers and Regional Coordinators from the Arizona Site Steward Program. Site Stewards and Coordinators assist the Monument archaeologist in locating, recording, and monitoring cultural resource sites.

f. Volunteer activities and accomplishments.

A total of nearly 1300 hours of volunteer service were provided, outlined in the graph below:

Program Area	Volunteer Hrs.
Recreation	264
Biological Resources	239
Wilderness/WSA	78
Ecosystem Management	477
Range	150
Facilities Maintenance	70
Total	1278
Funds Expended	\$8,750.00
Value of Work@ \$17.55 per hr.	\$65,812.00

National Public Lands Day *Pakoon Springs Ranch Clean-Up*: Monument staff transported, fed, worked with and provided historic information to approximately 100 volunteers. Nearly three tons of trash and ranching debris was removed.

6. Business Practices

a. Total annual expenditures and total number of work years from BLM.

The Parashant has a base budget of approximately 1.8 million dollars, one million coming from BLM funds and 800,000 from NPS. Approximately 75% of these funds are for salaries. These dollars do not represent the only funds used to manage the Monument. All fire suppression work, fuels reduction work, and allot of administrative support comes from the Arizona Strip District Office and to a lesser extent support is also provided by the Lake Mead National Recreation Area Office.

In addition to these funds, the Monument has received “one time” funding from various sources, including emergency fire stabilization/rehab funds and grants and project funds from NPS.

b. Acres of lands acquired (if applicable).

Since designation 640 acres of private land has been acquired within the Monument boundary.

c. Receipts from recreation and other activities and their associated uses.

We have no designated fee areas within the Monument.

d. Contributed funds from all sources and associated uses of those funds.

Arizona Water Protection Fund grant (\$260,000 total grant)	\$52,000 in FY06
Arizona Game and Fish Dept., water catchment maintenance	\$ 5,000

e. Cost recovery from all sources and associated uses of those funds.

We have had no cost recovery projects within the Monument.

7. Other Discussion Items from the Unit Manager

I. Historic Preservation

Stabilization work was conducted on the main house at Tassi Ranch in 2004. Vegetation/fuels management around principle structures at Tassi Ranch was conducted on several occasions for fire protection throughout 2005.

Cultural landscape reports were submitted to the Arizona State Historic Preservation Office for Waring and Tassi Ranches. This resulted in the Determination of Eligibility to the National Register of Historic Places, as cultural landscapes, for both sites.

II. Relict Leopard Frog Introduction at Tassi Springs

The species is being managed under a Conservation Agreement among federal and State agencies in lieu of providing protection to the relict leopard frog by listing it under the Endangered Species Act. The Conservation Agreement and a Plan were formulated to stabilize the populations of the species and evaluate reintroduction opportunities.

The species was first described in 1875 from specimens collected near the Virgin River in Washington County, Utah. Subsequent records and research has shown that the relict leopard frog has a restricted range along portions of the Virgin, Muddy and Colorado Rivers, particularly in small springs feeding into these rivers.

Tassi Spring was selected as a site due to its protected status on the Monument and high condition of the habitat around the spring, which has been protected from grazing. August 2006 175 individual sub-adult relict leopard frogs were released at Tassi Spring. The population will likely be supplemented over the next several years to establish a sustainable population. The Conservation Agreement and Plan include an active monitoring program to track population status and trends.

III. Noxious Weed Management

The Exotic Plant Management Team based at Lake Mead NRA provided continued treatment of known and new exotic plant infestations at critical areas on the Monument. The Team uses various containment and control techniques involving mechanical and chemical treatments.

IV. Pakoon Springs Rehabilitation

Pakoon Springs is one of the most important spring complexes and riparian habitats on the Arizona Strip, and the most promising for restoration. Located in the Mojave Desert, Pakoon Springs is one of the few large springs on the Arizona Strip and is the largest in the Grand Canyon-Parashant National Monument (GCPNM). For at least the last century, the Pakoon Springs have been developed and modified to provide water for livestock, agricultural irrigation, and domestic use.

The rehabilitation project will include channel reconstruction, removal of non-native species (flora and fauna), restoration of native vegetation, and introduction or re-introduction of native species, and could potentially include introduction of special status species. This pilot installation will be used as a learning tool, to increase efficiencies in costs and resource use in an adaptive management framework.

The project has been initiated and will take approximately three years to accomplish the first several critical steps of the restoration process. At the completion of this project a portion of the site will have been rehabilitated and evaluated. A Restoration Plan will be in place to outline the future direction and necessary steps of the restoration effort.

V. Emergency Fire Stabilization and Rehabilitation Projects - 2005 & 2006 Fire Seasons

Emergency Stabilization (ES): "Planned actions to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life and property resulting from the effects of a fire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Emergency Stabilization actions must be taken within one year following containment of a wildland fire."

Rehabilitation (R): "Efforts undertaken within three years of containment of a wildland fire to repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by fire."

Acres Burned During 2005 Fire Season:

Pakoon Basin = 89,444 acres

2005 Fires	Issues	E S	R	Acres Burned	Acres to be Treated	Treated To Date	Treatment (Cultural clearances & NEPA completed)	Total Funding
Mt. Bangs	Wilderness, Tortoise Habitat	X	X	29,593	6,149	6,149 ac seeded	Aerial seeding, repairs, new fence construction	\$834,200
Cow	Tortoise Habitat	X	X	44,707	4,382	4,388 ac seeded	Aerial seeding, repairs, new fence construction	\$794,800
Tank	Tortoise Habitat	X	X	23,101	3,564	3,564 ac seeded	Aerial seeding, repairs	\$303,900
Twist	None		X	2,125	0	0	Repairs	\$24,400
Tweedy	Tortoise Habitat	X	X	35,639	19,998	19,998 ac seeded	Aerial seeding, repairs,	\$1,163,400
Brumley*	Tortoise Habitat	X	X	587	35	Under Contract	* Mojave desert tortoise habitat. Treatments incl. a combination of aerial seeding, seeding with seed incorporation, no treatment, new fence construction, and fence repair. Section 7 Consultation, cultural clearances and NEPA are complete.	\$206,800
Cedar Wash*	Tortoise Habitat	X	X	552	125	Under Contract		\$395,100
Cockscomb*	Tortoise Habitat	X	X	183	109	Under Contract		\$151,000
Jacob*	Tortoise Habitat	X	X	2,480	1,043	Under Contract		\$1,225,600
Nevershine*	Tortoise Habitat	X	X	750	161	Under Contract		\$452,700

- Repairs include repairing or replacing facilities damaged by the fire (fences, corrals, cattle guards, water catchments, signs). Repairs are approx. 50% complete.
- Seed was applied to Bangs, Cow, Tank, and Tweedy Feb., '06. Seed will be applied to Brumley, Cedar Wash, Cockscomb, Jacob, and Nevershine Oct., '06.
- New fence will be constructed and cattle guards installed to protect seeded areas from grazing pressure for a minimum of two years. Fence contract for all fires above will be awarded Sept., '06.
- All projects will be monitored to determine if and when objectives have been met. Tortoise fires will be monitored in cooperation with the U. S. Geological Survey as treatments will be installed in a full factorial design.

Acres Burned During 2006 Fire Season (to date):

Pakoon Basin = Approx. 14,500 acres

2006 Fires	Acres Burned	Issues	ES & R Plans Submitted/ Funding Requested	Treatment
Summit	1,471	Monument	No	None
Paiute	802	Monument, Wilderness	No	None
Birthday	1,113	Monument, Wilderness, Tortoise Habitat	No	None
Wells	55	Wilderness	No	None
Bang	Unknown	Wilderness, Monument	No	None
Gulch	Unknown	Monument	No	None
Hobble	45	Monument	No	None
First Fifty	141	Monument	No	None
Dry Canyon	118	Monument	No	None
Sand 2	25	Monument	No	None
Snap 2	726	Monument, Tortoise Habitat	No	None
Whitney Point	64	Monument	No	None
Mud North	118	Monument, '06 Fire	No	None
Mud South	143	Monument, '06 Fire	No	None
Buckle	16	Monument	No	None
Rattlesnake	186	Monument	No	None
Olaf	73	Monument, Wilderness, Tortoise Habitat		
Hungry*	809	Tortoise Habitat	Yes \$191,933	*Treatments will include a combination of aerial seeding, aerial seeding with seed incorporation, no treatment, and new fence construction. Seed will be applied Oct., '06.
Jacob '06*	3,339	Tortoise Habitat	Yes \$384,790	
Cottonwood*	5,332	Tortoise Habitat	Yes, In progress > \$900,000	

Compiled by: Dennis Curtis, Manager, Grand Canyon-Parashant National Monument,
October 2006