

**Biological Assessment of the Impacts of Trail Work Planned
for Saguaro National Park (2001 – 2005)**

October 23, 2000

National Park Service
Saguaro National Park
3693 South Old Spanish Trail
Tucson, AZ 85749

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This Biological Assessment was written to supplement Saguaro National Park's General Management Plan and Amendments and trails plans for its Rincon and Tucson Mountain Districts (NPS 1988, 1990, 1997, 1999). It is also meant to assist Saguaro National Park with planning and implementing its trail management program, and to provide the Arizona Ecological Services Field Office staff of the U.S. Fish & Wildlife Service (USF&WS) with assessments of how trail work proposed for the next five years is expected to affect federally threatened and endangered species.

Purpose and Need for the Proposed Action

The mandate of the National Park Service, of which Saguaro National Park is a unit, is stated in the agency's Organic Act of 1916 as preserving and protecting natural and cultural resources in ways that leave them unimpaired for the enjoyment of future generations. Key to preserving natural and cultural resources while providing access to them, is an appropriate trail system, particularly in the backcountry of the park.

Local residents and other park visitors have long used the park for hiking and horseback riding. In the late 1980s, the park realized that there was a growing proliferation of often redundant social trails, and the park undertook two trail planning efforts. The Trails Management Plan for the Cactus Forest section of the Rincon Mountain District (NPS 1991) reduced the total trails in that area from more than 100 miles to 45 miles. The Trails Management Plan for the Tucson Mountain District (NPS 1997) eliminated many miles of social trails and established a designated trail network of 51 miles.

These plans also established regulations for trail use, and suggestions for appropriate group sizes on wilderness trails and for hiking off-trail. No horse use is allowed off of designated trails anywhere in the park. In the Rincon Mountain District there is no off-trail hiking use in the Cactus Forest, but sandy washes have been designated as appropriate for use by horses and hikers. Group size is limited to 15 stock or 18 hikers (Coronado National Forest and Saguaro National Monument 1992). In the Tucson Mountain District, only established trails and specific designated washes may be used by horses. Group size is limited to 15 stock or 18 hikers on trails, and 10 hikers for off-trail travel (Saguaro National Park 1999). Mountain bicycles are allowed on a few designated trails that were formerly roads.

Each of the trail management plans calls for routine maintenance of trails (clearing brush that has grown into the trail), rehabilitation of existing trails (improving trail tread surfaces to stop erosion), and in only a few situations, new trail construction. Routine maintenance is conducted by volunteers and occasionally by seasonal trail crews. Trail rehabilitation and construction are conducted by seasonal trail crews under the direction of the Park's Trails Foreman. Trail rehab and construction are funded through project dollars, which generally provide for three or four projects per year totaling between 2,000 and 4,000 linear feet (3/8 to 3/4 mile). Due to the intense heat of desert summers, trail work below 4,000' elevation occurs between October and April. Funding determines the size of a crew (five to ten people) and the duration of time they will work at a site.

In 1999, the park documented use on this trail system at about 30,000 hikers in each district, and 25,000 horse users in the Rincon Mountain District. Horse use in the Tucson Mountain District was not documented, but park staff believes it to be somewhat less than use in the Rincon Mountain District. This level of use, concentrated on weekends during months when the weather is most comfortable, leads to severe erosion and down-cutting of trail treads, especially on steep slopes where trails enter and exit washes. When down-cutting and tread condition get especially severe, trail users frequently establish alternate routes or braided trails, which are also steep, and lead in turn to even more erosion. The soils in this area are sandy and highly erodible, presenting a significant challenge to prevent erosion on steep slopes, given the high level of trail use. Intense summer thunderstorms can drop a lot of rain in a short time, which makes trails very prone to damage if they are not constructed properly.

To mitigate existing damage and minimize erosion in the future, the park is committed to a standard of trail work that stabilizes the soils and stops the movement of soil down-slope. This is achieved through the use of stone erosion controlling structures, and work is prioritized to cover the worst stretches of commonly used trails first. This intensive work is needed to create a hardened trail surface that allows for easier visitor access, keeps visitor impacts to the trail system, narrows the trail surfaces where multiple trails have occurred, and ultimately defines a finite network of trails that requires minimal maintenance.

Description of the Proposed Action

Saguaro Park staff has developed a list of all trail rehabilitation and new trail construction projects proposed for the next five years. Table 1 summarizes the 26 trails projects planned for 2001 – 2005; the locations of these projects are shown in Figures 1 and 2.

Trail rehabilitation projects at Saguaro National Park consist of installing stone erosion-controlling structures (“stairs” and water-bars) in existing trail locations to slow soil erosion. Soil erosion, which is accelerated on trails due to the removal of vegetation and soil compaction, is the primary threat to resources from trails. Well-constructed trails, which dramatically reduce erosion, protect surrounding resources in other ways, too. They consolidate “duplicate” routes, narrow them to a two-foot width, and bring trail grades back to the level of the surrounding terrain.

Construction of these stone trail structures requires a masonry crew (5 to 10 workers), power tools, and commercial building stone. Most of these trails traverse areas where native stone does not exist or where it is not suitable for building. Up to sixty cubic yards of stone per project is hand-selected from commercial sources and imported to project sites using motorized wheelbarrows following existing trails or sandy washes. This process may take up to two weeks, and depending on the project, the trail work itself may last an additional four to eight weeks. Stones are shaped with the use of gasoline-powered masonry saws and jackhammers, and a variety of hand tools are used for other aspects of construction. The use of motorized equipment can be quite noisy during the actual trail work.

TABLE 1. T & E TRAIL COMPLIANCE PLANNING CHART

PROJECT NAME	RMD or TMD	PRI- ORITY	NEW or REHAB	PROJECT TIMING		PROJECT COMPLIANCE				SUGGESTED MITIGATION / NOTES
				YR(S)	MO(S)	SPECIES	SURVEYS		NEC. DOC.	
							YEARS	SEASONS		
Freeman Homestead I	R	I	R	2000	Nov – January	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Wentworth I	R	I	R	2001	Jan – Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Squeeze Pen I	R	I	R	2001	Jan – Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Camboh	T	I	R	2001	Jan – Feb	CFPO	Parkwide Inventory	Spring	BA	Formal Consultation
King's Canyon	T	I	R	2001	Feb – March	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Manning Camp I	R	I	R	2001	March, April	None	N/A	N/A	N/A	N/A
Broadway Trailhead	R	II	N	2001	After April	CFPO	2000 2001	Spring	BA	Construction to be Contracted out
Freeman Homestead II	R	II	R	2001	Nov – January	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Hugh Norris	T	II	R	2001	Nov – Feb.	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Squeeze Pen II	R	II	R	2002	Jan – Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation
Crescent	T	II	N	2002	Feb – March	CFPO	2001 2002	Spring	BA	Formal Consultation
North Hope Camp Trail I	R	I	N	2002	March, April	CFPO	2001 2002	Spring	BA	Formal Consultation
Sendero Esperanza Trailhead	T	I	R	2002	After April	CFPO	Parkwide inventory	Spring	BA	Constuction to be Contracted out
Manning Camp II	R	II	R	2002	March - May	None	N/A	N/A	N/A	N/A
Tortoise	T	II	R	2002	Nov – January	CFPO	Parkwide inventory	Spring	BA	Formal Consultation

TABLE 1. (CON'T.) T & E TRAIL COMPLIANCE PLANNING CHART

PROJECT NAME	RMD or TMD	Pri - ority	NEW or REHAB	PROJECT TIMING		PROJECT COMPLIANCE					SUGGESTED MITIGATION / NOTES
				YR(S)	MO(S)	SURVEYS			NEC. DOC.		
						SPECIES	YEARS	SEASONS			
Freight Wagon I	R	II	R	2003	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
Wildhorse Trailhead	R	III	R	2003	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
Stock Bypass	R	III	R	2003	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
Three Tanks	R	II	R	2003	Feb - March	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
North Hope Camp Trail II	R	II	N	2003	March, April	CFPO	2002 2003	Spring	BA	Formal Consultation	
Freight Wagon II	R	III	R	2004	Jan - Feb	CFPO	Parkwide Inventory	Spring	BA	Formal Consultation	
Wagon Spur	R	III	R	2004	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
North Hope Camp Trail III	R	II	N	2004	March, April	CFPO	2003 2004	Spring	BA	Formal Consultation	
Freight Wagon III	R	III	R	2005	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
Palo Verde	R	III	R	2005	Jan - Feb	CFPO	Parkwide inventory	Spring	BA	Formal Consultation	
Wentworth II	R	III	R	2005	Jan - Feb	CFPO	Parkwide Inventory	Spring	BA	Formal Consultation	

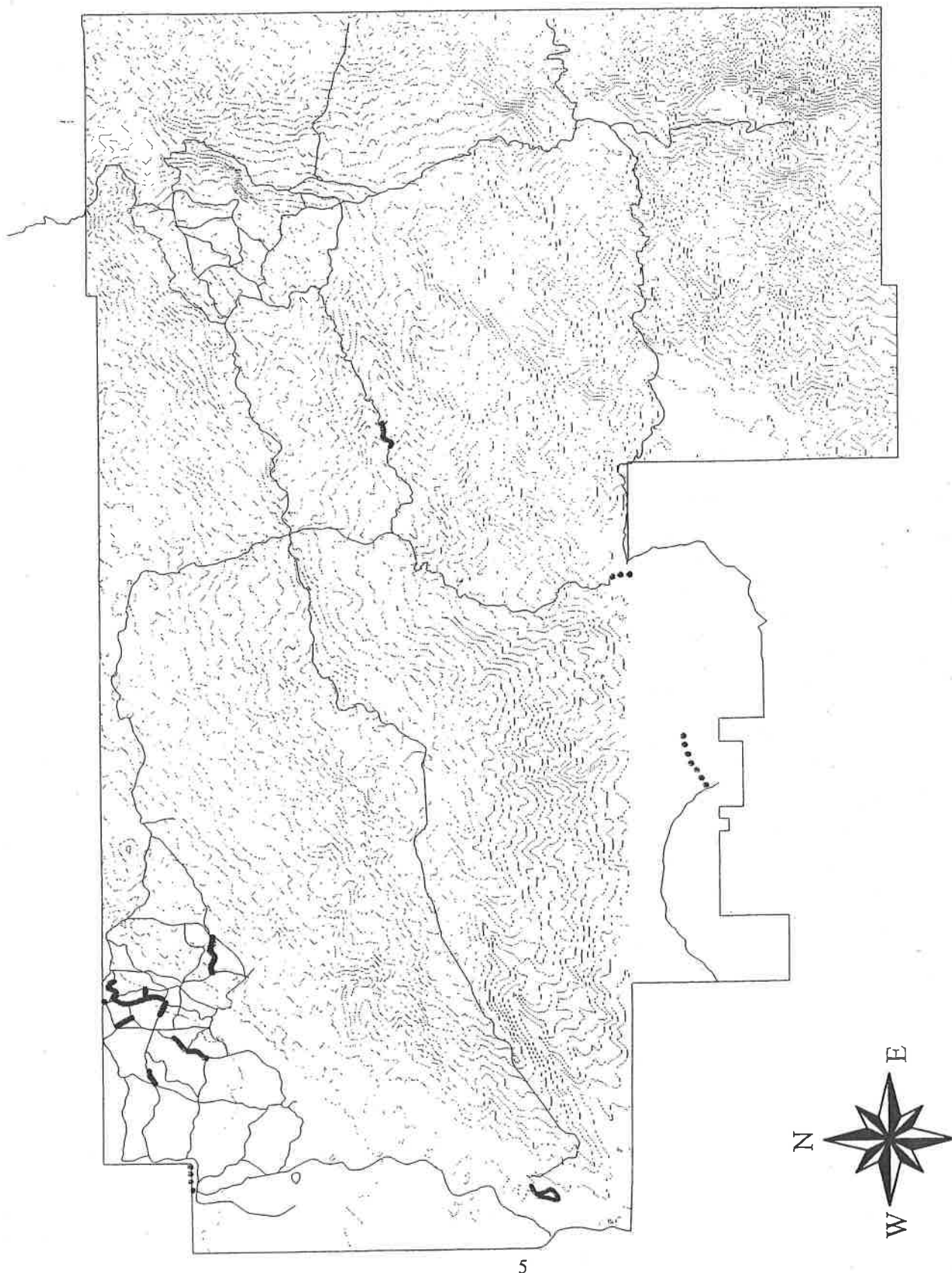


Figure 1. Map of the Rincon Mountain District of Saguaro National Park showing locations of trail rehabilitation (emboldened areas on existing routes) and construction (dotted lines) planned for 2001 - 2005. (Scale: 5/8" = 1 mile)

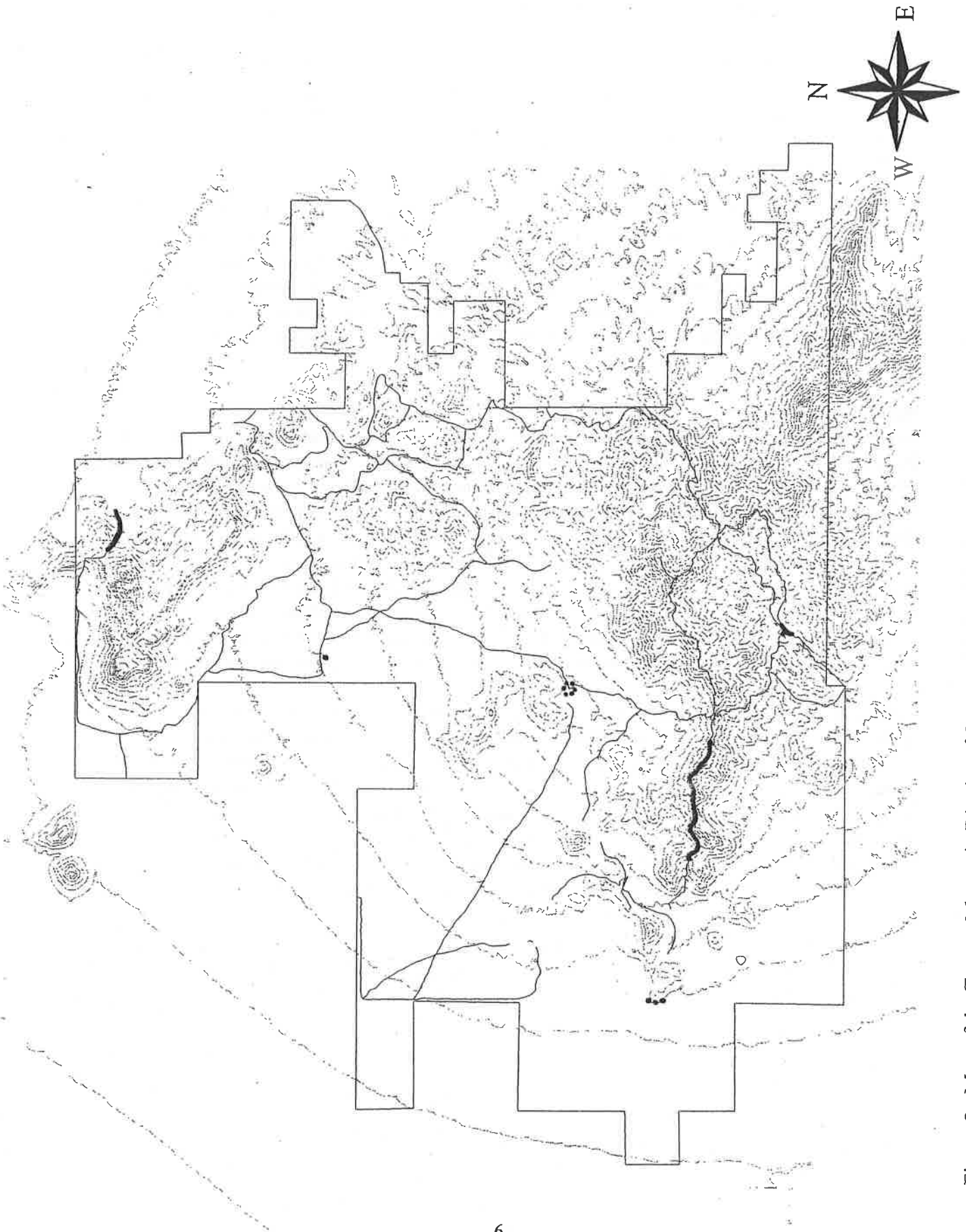


Figure 2. Map of the Tucson Mountain District of Saguaro National Park showing locations of trail rehabilitation, (emboldened areas on existing routes) and construction (dotted lines) planned for 2001 - 2005. (Scale: $\frac{3}{4}$ " equals about 1 mile)

Impacts from trail rehabilitation projects are limited to the existing trail corridor, with the exception of some nearby soil excavation as needed. Such soil "borrow" pits are usually excavated in areas that are clear of vegetation and where future rainfall will silt the sites back in. Native vegetation (mainly cactus) is planted along newly rehabilitated trails to define trail boundaries and to rehabilitate adjacent bare areas. Previous trail projects constructed to these standards have required no maintenance other than brushing the trail corridor.

New trail construction projects are built to the same standards as trail rehabilitation projects; however, it is usually necessary to remove some native vegetation before building a new trail. Every effort is made to minimize the number of trees (palo verdes, mesquites, acacias and ironwoods) and saguaros that must be removed to construct a new trail. Saguaro are transplanted wherever possible, and new tree seedlings (propagated from seed collected at the site) are used to revegetate newly constructed trail segments.

Species Accounts

According to the U.S. Fish & Wildlife Service's "Listed, Proposed and Candidate Species for Pima County" dated April 1998, there are 19 federally listed threatened or endangered species in Pima County, Arizona. This list includes four species that have likely been extirpated in Arizona, or whose presence in Arizona is considered unlikely, unconfirmed or hypothetical (Mexican gray wolf, jaguarundi, ocelot, and jaguar). The list also includes ten species known to occur in Pima County, but that are typically found in habitats not present in or around Saguaro National Park (Huachuca water umbel, Kearney's blue star, Nichol's turk's head cactus, Pima pineapple cactus, Sonoran pronghorn, desert pupfish, bald eagle, masked bobwhite, southwestern willow flycatcher, and San Xavier talussnail). For this reason the proposed action is determined to have no effect on those species without providing species accounts in this document.

The endangered Gila topminnow (*Poeciliopsis occidentalis occidentalis*) is considered extirpated in the Park (Weedman and Young 1995). However, the one site at which they were known to occur through an undocumented stocking is listed as recommended for potential "additional management action or restocking" (correspondence from U.S. F&WS, Arizona Ecological Services Field Office dated August 7, 1997). This site is on the north slope of the Tanque Verde Ridge in the Rincon Mountain District. The proposed projects would have no impact on this watershed or affect the potential to reintroduce this fish; therefore, we determine these actions have no effect on the Gila topminnow or its habitat; again, without providing a species account.

The remaining four species on the list (cactus ferruginous pygmy-owl, American peregrine falcon, Mexican spotted owl and lesser long-nosed bat) are known to occur or potentially occur in or adjacent to the Park. Below are full accounts and effects determinations for these species.

Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*)

The cactus ferruginous pygmy owl (cfpo) is a small (about 6.5" long), long-tailed, earless owl federally listed as endangered due to a dramatic decline in its abundance and distribution in the U.S. in the last 50 years (Abbate et al. 1996). Loss of habitat is

suspected as the major cause of its decreased numbers (USFWS 1993). The cfpo is the northernmost subspecies of the wide ranging, but tropically based ferruginous pygmy owl (Phillips et al. 1964). Although historic accounts associated this subspecies with riparian woodlands and mesquite bosques in Arizona (Phillips et al. 1964, USFWS 1993), recent sightings of cfpos in the state have generally been in the Arizona upland subdivision of the Sonoran desertscrub and in the paloverde cacti mixed scrub series (Abbate et al. 1996). Both districts of Saguaro National Park contain potential habitat for cfpo - virtually all of the TMD, and the RMD below 4,000' (some 40,000 acres total). However, only the Tucson Mountain District of Saguaro National Park contains a small amount of designated critical habitat for cactus ferruginous pygmy-owls (about 600 acres in the southeast corner of the district).

Unconfirmed records from the past twenty years indicate that these owls inhabit(ed) both districts of Saguaro National Park (Saguaro National Park files). From 1994 to the present, Park staff, AGFD biologists, private contractors and volunteers have surveyed for cfpo within and nearby the Park (Figures 3 & 4). These surveys (about 50 in the RMD and 50 in the TMD) have been about equally divided between inventory efforts and clearance surveys. All of these surveys followed protocols specified by AGFD and the USF&WS at the time. To date there has been only one cfpo detection in the Park resulting from these surveys; it occurred on October 12, 1995 in the Rincon Mountain District's Box Canyon.

Consultation

Informal consultation for the current project began with the U.S. Fish & Wildlife Service during a brief discussion between Natasha Kline and Mike Wrigley at the cactus ferruginous pygmy-owl survey protocol training session at the Arizona Sonora Desert Museum on January 26, 2000. On June 14, 2000 Mike Wrigley and Thetis Gamberg of the USF&WS's Ecological Service's Office conducted a site visit to the Wildhorse Trailhead in the Rincon Mountain District's Cactus Forest. After touring this representative site and discussing what was entailed in the trail work, the F&WS biologists recommended formal consultation should be initiated to address the inherent schedule conflicts created by spring clearance surveys and the trail work (see minutes from that meeting in Appendix A). Both F&WS representatives agreed that a programmatic strategy that included annual spring and fall surveys in the Cactus Forest trail system could be implemented that could allow for concurrent trail and cfpo survey work in the spring. Unfortunately, subsequent attempts to schedule trail crews to work on cleared sites outside of the Cactus Forest Trail system were unsuccessful. Again, the inherent conflict in the window of opportunity for both cfpo surveys (January - June) and

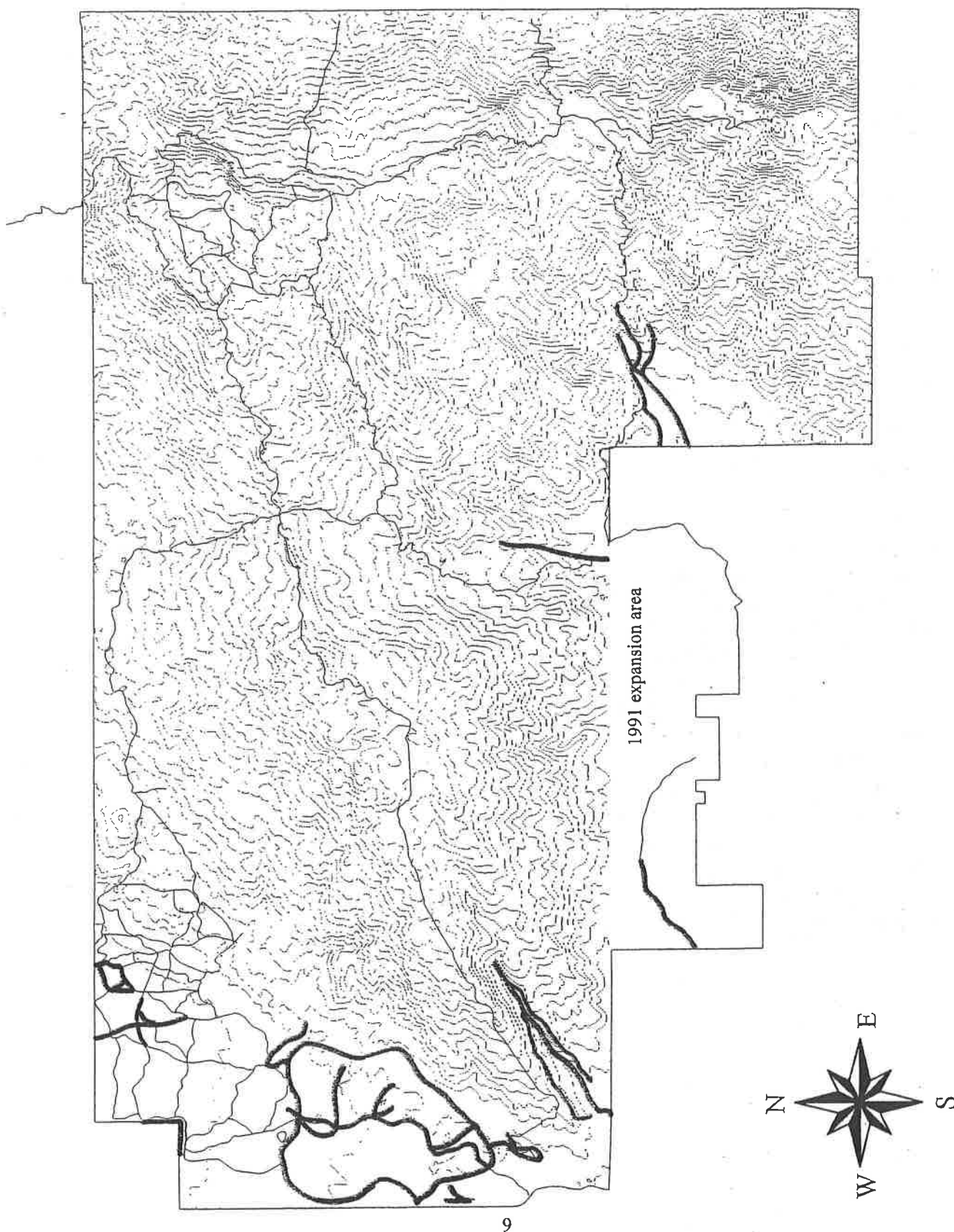


Figure 3. Map of the Rincon Mountain District of Saguaro National Park showing locations of past (1994 - 2000) cactus ferruginous pygmy-owl surveys. (Scale: 5/8" = 1 mile)

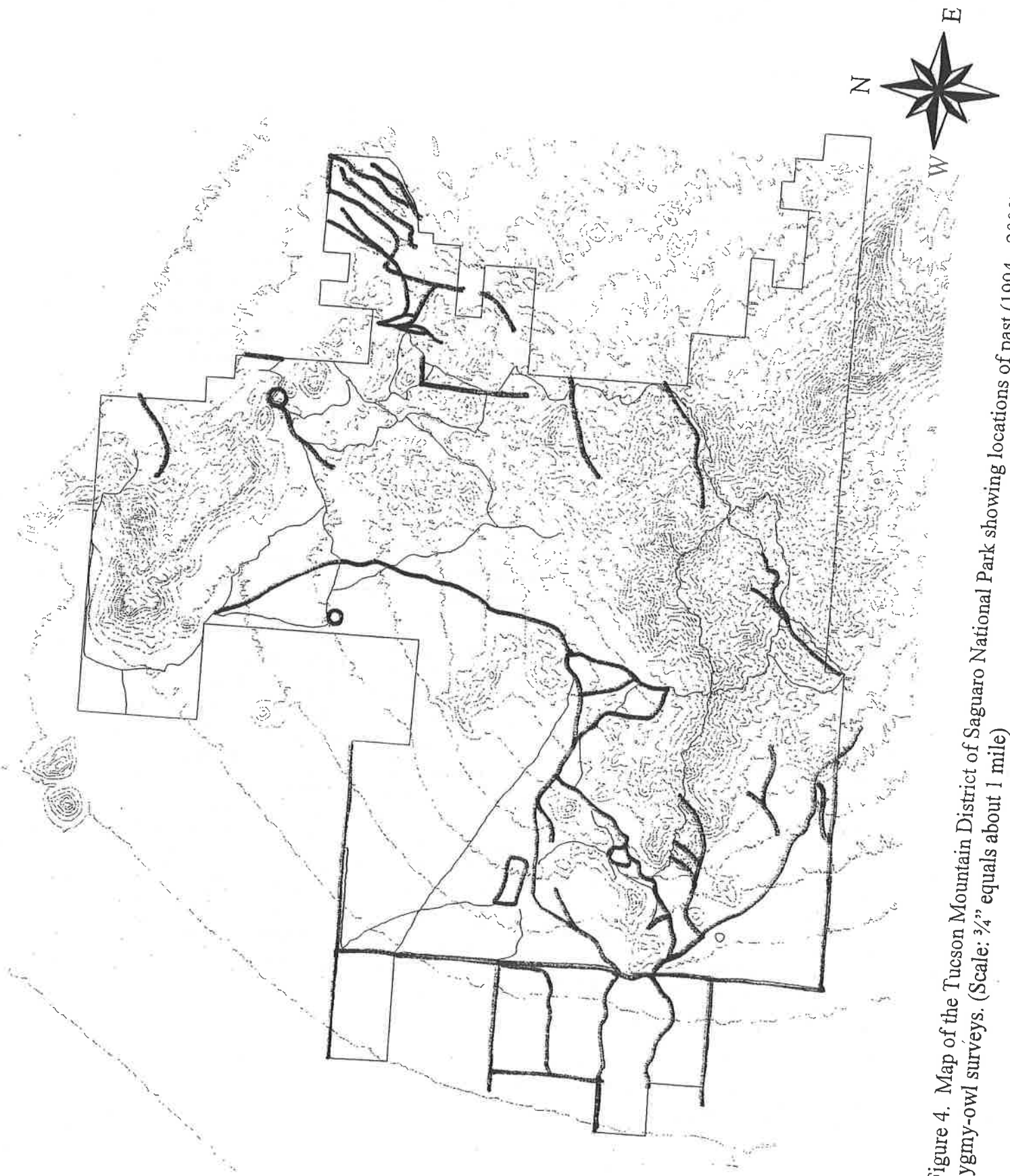


Figure 4. Map of the Tucson Mountain District of Saguaro National Park showing locations of past (1994 - 2000) cactus ferruginous pygmy-owl surveys. (Scale: $\frac{3}{4}$ " equals about 1 mile)

trail work (November – March) precluded feasible trail crew schedules for work on cleared trails, even outside of the Cactus Forest trail network.

Proposed cfpo compliance strategy

I. Surveys

Cactus ferruginous pygmy-owl (cfpo) surveys are incompatible with annual trail work at Saguaro National Park since the owl's survey/breeding period coincides with the only feasible time of the year to hire and use trail crews (due to weather and funding constraints). In addition, conducting clearance surveys is not the best strategy for determining the status of cfpo in the park, since they focus on areas where projects are going to occur, not necessarily the most likely places to find owls. Therefore, in order to allow necessary work to be done on trails in the Park, and to optimize the limited time and personnel available for cfpo survey work in a given year, *we propose that the Park initiate a comprehensive cfpo inventory effort in lieu of cfpo clearance surveys for trail rehabilitation projects only.* New trail construction projects would still require two years of spring cfpo surveys as specified by the AGFD and USF&WS (2000) protocols for project clearance surveys. Trail maintenance (i.e., brushing) would be "no effects". Table 1 provides an outline of proposed trail work and cfpo surveys according to this strategy.

We believe that foregoing clearance surveys for trail rehabilitation in the Park is compatible with cfpo protection and recovery for several reasons. Primarily, a temporary disturbance, such as a typical two week long trail rehab project, in the context of a large national park is relatively insignificant. Admittedly, timing is crucial, and even such a short-term project could conceivably disrupt breeding in an individual pair in a given year. However, in terms of long-term cfpo population viability, it is not an issue, particularly in an area where cfpo have not been detected in the past five years. Much more important is the long-term preservation of large tracts of suitable cfpo habitat. That is something the Park does uniquely, whilst providing recreational opportunities for people. Trails are crucial in that precarious interface between providing the public access to, and protecting, natural resources. Trail construction and rehabilitation, when thoughtfully carried out, can tip the scales in managing these two, often conflicting, goals. In addition, trail rehab projects by definition occur in areas that are already moderately impacted, both by the trail itself, and the continuous, albeit intermittent, recreational use of the route by people. If human activity is a significant factor in habitat selection, then areas near trails will probably not be considered optimum cfpo habitat. It follows then that in an area like the Park, which is apparently well below carrying capacity in terms of cfpo populations, these areas would not be as likely to support owls. Since cfpo protection and recovery depend on accurate information on their abundance and distribution, we would prefer to invest our resources into surveying for owls in places we deem most likely to support them, not necessarily in clearance efforts for minor disturbances.

To develop a park-wide survey strategy, park biologists, Natasha Kline and Pamela Anning; met with Aaron Flesch, a University of Arizona graduate student working on his

MS degree in Biology on cfpo abundance and distribution in Sonora, Mexico; and Brian Powell, a USGS/BRD ornithologist developing avian inventory and monitoring protocols for southern Arizona national parks. First, we established criteria for identifying the best cfpo habitat in the Park. We did this based on the literature (Abbatte et al. 1996, Phillips et al. 1964, and AGFD and USFWS 2000), Flesch's personal experience conducting many cfpo surveys in southern Arizona and Sonora, Mexico, and Kline and Anning's knowledge of the Park. Although cfpo habitat is difficult to quantify, we defined it as most likely in mesic to semi-mesic areas with riparian/xeroriparian/bosque components, areas where desert woodland meets dense columnar cactus stands, and bajada areas where many drainages came together. De-emphasized were rocky upland slopes and steeper areas. At Saguaro this meant focusing on the drainages of larger canyons, and the transition (flatter) areas below bajadas. We agreed that taking a watershed approach was most ecologically appropriate and logistically efficient. Locations identified as the best potential habitat in the Rincon Mountain District are: Monument Wash, a major drainage from Tanque Verde Ridge to Tanque Verde Creek; Box Canyon; Rincon Creek; the existing Hope Camp trail in the expansion area, including a side route that goes through a mesquite bosque; and two forks of an unnamed drainage off of Rincon Peak south of Rincon Creek (Figure 5). Locations identified as the best potential habitat in the Tucson Mountain District are: Four 'o clock Wash, which drains the southeast side of Safford Peak; Box Canyon; sections of Picture Rocks Wash; Javelina Wash, behind the Red Hills Visitor Center; and Kings Canyon (Figure 6).

Next, a survey strategy was devised which included both annual surveys in these "very best potential habitats" in the Park, and a stratified survey design for the rest of the Park. The stratified design is based on identifying two cfpo habitat categories below 4,000' in the Park. Category 1 includes the bajadas and below, which are believed to have a much higher probability of supporting cfpo than Category 2, the steeper slopes of the mountains above the bajadas, but below 4,000'. We decided to concentrate our initial efforts in Category 1 habitat. Thus, every year ten routes covering areas deemed the very best potential habitat in the Park will be surveyed (these are the annual or long-term routes). Five of these routes are in the Rincon Mountain District and five are in the Tucson Mountain District. In addition, in 2001, surveys will occur throughout Category 1 habitat on 23 pre-designated routes (9 in the RMD and 14 in the TMD) in washes or on trails (see Figures 5 & 6). The group concurred that cumulatively these routes represented the best survey opportunities in this strata. In 2002, these surveys will be repeated per AGFD and USF&WS (2000) protocols.

Surveys will follow large area inventory (research) protocols promulgated by the AGFD and USF&WS (2000), and will be conducted by certified and permitted cfpo surveyors. Survey routes will follow roads, trails and/or washes to facilitate access into the backcountry, and that cover the best potential cfpo habitat. All routes and calling stations will be GPSed for input into the Park's GIS database. Table 2 shows the number of proposed surveys (all spring) for 2001 - 2005. Funding for the surveys outlined below will come from the Park's base account; additional surveys will be added as funding is granted. Potential funding sources include: the Friends of Saguaro National Park, NPS's

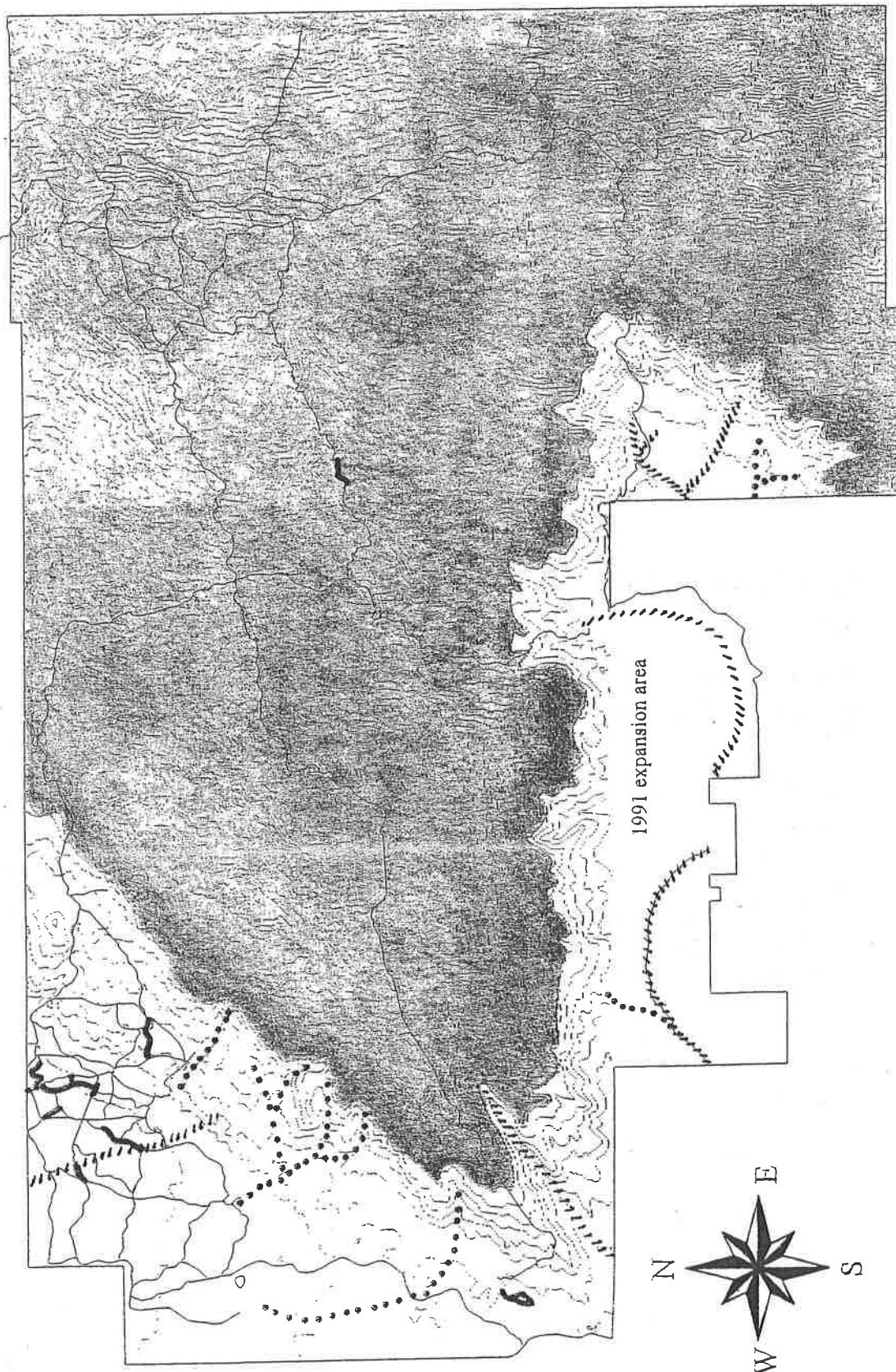


Figure 5. Map of the Rincon Mountain District of Saguaro National Park showing sites of trail *rehabilitation* planned for 2001 - 2005 and cfpo inventory surveys planned for 2001 - 2002. (Above the 4,000' contour line is shaded; proposed trail rehabilitation is shown in bold; long-term annual cfpo survey routes are crosshatched, and cfpo survey routes for 2001 and 2002 are dotted). (Scale: 5/8" = 1 mile)

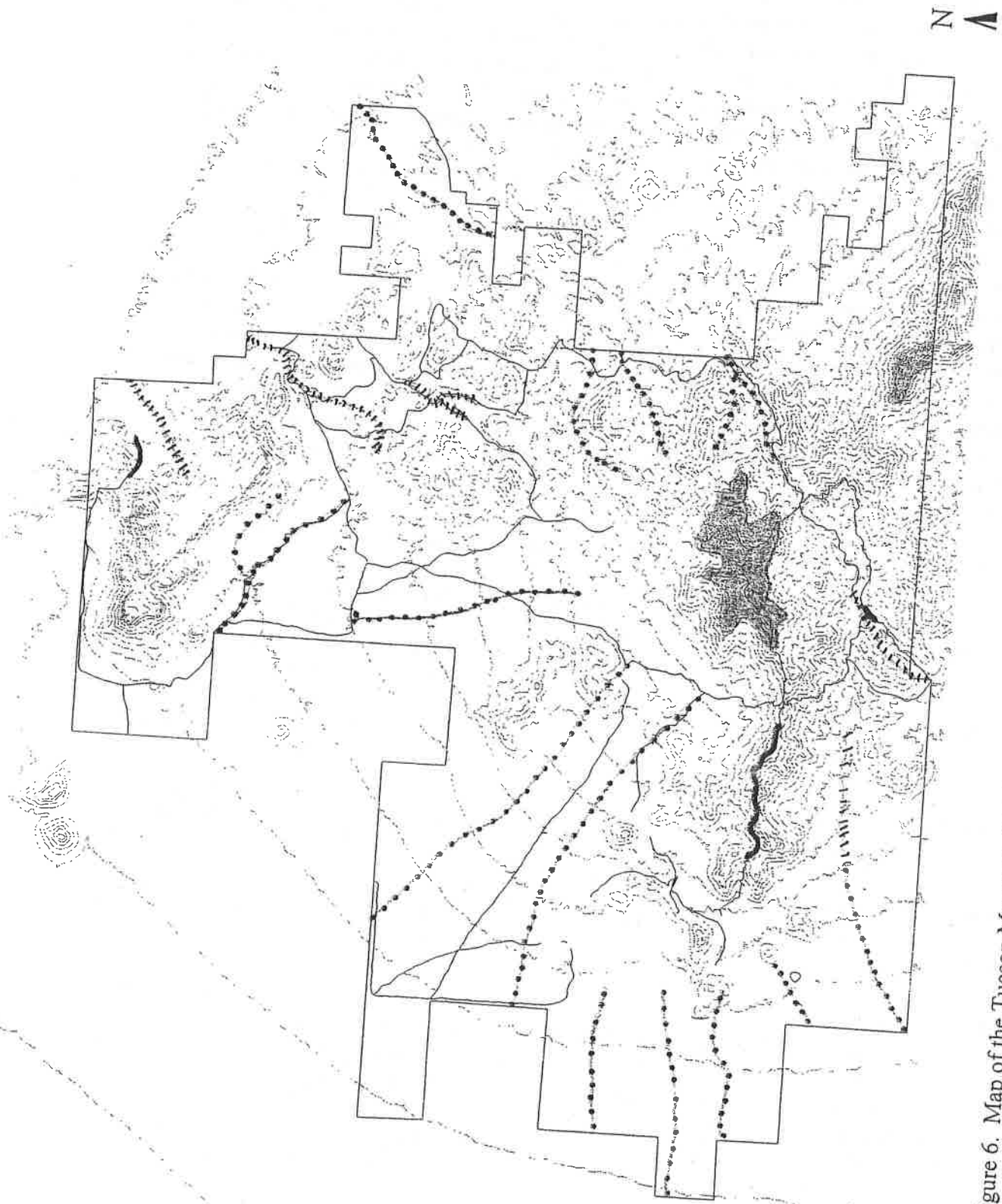


Figure 6. Map of the Tucson Mountain District of Saguaro National Park showing sites of trail *rehabilitation* planned for 2001 - 2005 and cfpo inventory surveys planned for 2001 - 2002. (Above the 4,000' contour line is shaded; proposed trail rehabilitation is shown in bold; long-term annual cfpo survey routes are crosshatched, and cfpo survey routes for 2001 and 2002 are dotted). (Scale: 5/8" = 1 mile)

regional natural resource program, and the Southwestern Parks and Monuments Association.

We feel this method gives good coverage of the whole park, by concentrating efforts in the areas which, based on vegetation and topography, represent the best cfpo potential habitat and thus offer the most likely potential for detecting resident owls. We preferred this strategy, at least for the first few years, over the systematic grid recommended in the AGFD and F&WS (2000) protocols for several reasons. First, the Park is so big (some 40,000 acres of potential cfpo habitat) that it would take years to systematically survey the entire area of the Park below 4,000', particularly if each area was surveyed for two consecutive years. As with conducting clearance surveys, this method would not maximize the likelihood of detecting cfpo in the Park, nor would it be cost-effective. However, recognizing that our chosen strategy of "high-grading" habitat is biased, especially since we have not yet fully identified the crucial components of cfpo habitat, a random survey strategy would probably be appropriate in the future. Thus, we plan to re-evaluate our survey strategy after our spring surveys in 2002, and revise it as necessary based on current information (from within and outside of the Park). A representative from the F&WS's Ecological Services Office and other cfpo biologists will be invited to participate in this process. At that time, we will consider various options, including surveying in the "best" potential category 2 habitat, switching to annual random surveys throughout the Park below 4,000', or beginning systematic coverage of the entire Park (these options in addition to the ten permanent routes).

Table 2. Proposed cfpo survey schedule at Saguaro National Park from 2001-2005.

YEAR	SITE	# SPRING SURVEYS PLANNED			
		Annual (long-term)	Category 1	New Trail Clearance	Total
2001	RMD	5	9	2	16
	TMD	5	14	1	20
	Parkwide	10	23	3	36
2002	RMD	5	9	2	16
	TMD	5	14	1	20
	Parkwide	10	23	3	36
2003 - 2005	RMD	5	>10	3	>18
	TMD	5	>10	0	>15
	Parkwide	10	>20	3	>33

II. Mitigation

For trail rehabilitation projects no cfpo habitat will be significantly impacted or destroyed. Impacts are limited to short-term (mainly noise) disturbance; therefore, no specific mitigation measures are deemed necessary. Trail construction projects are inherently more destructive to natural resources; however, since park trails are generally routed around saguaros or trees large enough to contain cavities, impacts to these primary components of cfpo habitat will still be minimal. Specific mitigation measures for

potential impacts to cfpo habitat will include: avoiding and/or minimizing destruction of all perennial vegetation wherever possible, particularly trees and saguaros; salvaging and transplanting and/or replacing on-site *all* trees and saguaros that are impacted; and the park's ongoing restoration and revegetation program for rehabilitating large tracts of previously impacted areas (NPS 1997, NPS 1999).

Determination

The proposed trail projects will occur in potential cfpo habitat throughout both the Rincon and Tucson Mountain Districts of Saguaro National Park. However, given the short-term nature of the impact of trail *rehabilitation* work, and the overall context of the park (which contains some 40,000 acres of potential cfpo habitat to be managed as protected natural habitat in perpetuity), park biologists propose conducting annual inventory surveys to determine locations of cfpo in the park in lieu of project clearance surveys for these projects only. Any new trail *construction* would still require two years of spring surveys to meet established cfpo compliance requirements in the Park (AGFD and USF&WS 2000). Inventory surveys (large area search/research surveys), and project clearance surveys would follow the protocols established by the USF&WS in 2000. Rationale for prioritizing inventory survey sites is described below, and a schedule for these surveys is shown in Table 1. Inventory surveys will be conducted so as to maximize the likelihood of locating any resident cfpo in the park. If cfpo are detected, the USF&WS will be notified immediately, and appropriate protective measures will be implemented.

Due to the low impact techniques employed by NPS trail crews, little if any cfpo habitat will be impacted or lost to trail rehab or construction (Robert Marek, trails foreman, pers. com.). Furthermore, any such impacts will be mitigated by clearance surveys for trail construction projects; on-site transplant or replacement of any trees and saguaros lost or impacted; and ongoing revegetation projects in degraded areas of the Park. Thus, we believe the potential impacts to cactus ferruginous pygmy-owls are minor and that these trail projects may affect individual owls or owl pairs temporarily, but are not likely to adversely affect cactus ferruginous pygmy-owl populations or their (critical) habitat. Acknowledging this potential for temporary and minor disturbance to individual cactus ferruginous pygmy-owls or an owl pair, we request that a take permit be issued to cover us for this proposed compromise strategy.

American peregrine falcon (*Falco peregrinus anatum*)

The American peregrine falcon was delisted from endangered status by the USF&WS in 1999; however, this designation calls for federal agencies to monitor peregrine populations for the next five years (Thetis Gamberg pers. com.). This large, striking falcon is primarily a hunter of small to medium-sized birds often associated with water (e.g. waterfowl, shorebirds, swallows, etc.). Along with a proximity to water, the most important habitat feature needed by this species is tall cliffs where they nest on ledges, potholes, or in small caves that are relatively inaccessible to mammalian predators and that also provide protection from weather extremes.

Within Saguaro National Park, peregrines are known to nest at four locations in the Rincon Mountains, all of which are at least a mile from any of the proposed trail work sites (Berner and Mannan 1992). Two of these sites (on Mica Mountain) are regularly monitored (in 2000 one pair fledged four young in late June, and the other pair was unsuccessful). Peregrine falcons in the Rincons breed, and almost certainly forage, at elevations above 6,000'. However, numerous winter sightings of peregrine falcons at the lower elevations of the RMD and vicinity suggest that these areas may be used by resident birds in the non-breeding season, or by dispersing juveniles or other wintering peregrines. In southern Arizona it is likely that avian prey is more abundant/available at lower elevations during the winter.

Determination

American peregrine falcons are known to breed in the Rincon Mountains, though at least a mile from the closest site of the proposed trail work (Manning Camp Trail); and they may use/forage around any of these areas in the wintertime. However, no nest sites (or nesting habitat) are found at these sites, and the proposed action would not be expected to have adverse impacts on peregrine falcons or their prey species' populations, particularly in the winter. Therefore, we determine that this action will have no effect on peregrine falcons or their habitat.

Mexican spotted owl (*Strix occidentalis lucida*)

The Mexican spotted owl is one of three spotted owl subspecies, and is listed as threatened by the USF&WS. Spotted owls are large (relative to other North American owls), dark-eyed owls that lack ear tufts; and they are generally brown with heavy white to beige spotting. The Mexican subspecies is disjunctly distributed from southern Mexico, northward into southern Utah and central Colorado (USFWS 1995a). Mexican spotted owls occupy a variety of habitat types ranging from dense mixed conifer forests to steep-walled, rocky canyons (USFWS 1995a). In southern Arizona they typically occur in mixed-conifer, Madrean pine-oak and Arizona cypress forests, encinal oak woodlands, and riparian forests (USFWS 1995a). Nest sites are generally located in closed-canopy forests or steep-walled canyons. Occupied forest habitats generally contain mature old-growth stands and uneven-aged stands that are vertically complex with dense canopies (USFWS 1995a). Little published data exists concerning foraging habitat for Mexican spotted owls; however, it appears that foraging habitats generally have big logs, dense canopies, and large, densely distributed trees and snags (USFWS 1995a). Prey species for Mexican spotted owls vary across the subspecies range, but small- to medium-sized rodents (woodrats, peromyscid mice and microtine voles) generally account for the bulk of the species diet (USFWS 1995a).

Several surveys for Mexican spotted owls (MSO) have been conducted in SNP since 1992 (Berner and Mannan 1992, Bailey 1993, Kline 1994, Willey 1997). Five active MSO territories have been documented in the Rincon Mountains within the Park, one of which is about a mile east of the closest site (Manning Camp Trail) for proposed trail work (Willey 1997). At least one member of four of these pairs was radio-tracked from March - October in 1996 and in 1997. In two years of radio-tracking, resident owls were rarely (<5x) located below 7,000' between March and October (we do not have non-breeding locations for these owls). Reproductive success of resident owls appears to compare favorably to other, presumably stable, spotted owl populations (Willey pers. com.). In July 2000, portions of the Rincon Mountains were included

in critical habitat proposed by the U.S. Fish & Wildlife Service; including much of Saguaro's Rincon Mountain District trail system. However, most of this area is well below 7,000' and is rarely, if ever, used by Mexican spotted owls.

Determination

The proposed action will occur well below the habitat/elevations used regularly by Mexican spotted owls and will have minimal, if any, impacts to habitat; therefore, we determine it may affect, but is not likely to adversely effect Mexican spotted owls or their (critical) habitat.

Lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*)

The lesser long-nosed bat is a nectar feeding bat that migrates between its wintering grounds in the drier parts of Mexico, and its breeding/summering grounds in northern Mexico, including Baja California, and southern Arizona and New Mexico in the United States (USF&WS 1995b). Lesser long-nosed bat migrations coincide with the availability of the pollen and fruit of columnar cactus (cardon and saguaros) and the nectar and pollen of blooming agaves. In its summer range the species usually forms large maternity colonies of females where they give birth to their young; these maternity roosts are typically in caves or abandoned mines. These roosts are found in "lower elevations near concentrations of flowering columnar cacti" (USF&WS 1995b). The bat was listed by the U.S. Fish & Wildlife Service as federally endangered, primarily due to loss of roosting habitat and vulnerability to disturbance of maternity colonies and other roosting sites (Shull 1988).

No lesser long-nosed bats roost at or near any of the sites of the proposed trail work. Bat surveys in Saguaro National Park have confirmed a small (<5 since 1991, when they were discovered) colony of lesser long-nosed bats in the Rincon Mountain District (RMD) of the Park (Sidner 1991, Sidner & Davis 1994). This colony is located over a mile southeast of the Freeman Homestead Trail, which is the closest trail to the roost. We presume this species is foraging in the dense saguaro stands of the RMD early in the summer, and perhaps using agave flowers (*Agave palmeri*) found at higher elevations in this district (3,000 - 7,000'; Bowers and McLaughlin 1987) later in the year. Neither of these plants will be disturbed by the proposed action.

Determination

During the summer, lesser long-nosed bats are known to roost in the Rincon Mountain District of Saguaro National Park, and they likely forage in the dense stands of saguaros found in and around the Park (Sidner 1991, Dr. G. Dalton, pers. com.). Later in the summer and early fall, they probably forage on agaves in the Park as well. The proposed action will not directly impact any lesser long-nosed bat roosts. Furthermore, any saguaros or agaves within the project area will be left alone; thus there will be no loss of lesser long-nosed bat foraging habitat. Therefore, we determine that this action will have no effect on lesser long-nosed bats or their habitat.

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Consultation and Coordination

The following persons/agencies contributed to and/or were consulted in the writing of this document.

Aaron Flesch, Graduate Student in Biology, University of Arizona

Thetis Gamberg, Biologist, Fish & Wildlife Service

Mark Holden, Biologist, Saguaro National Park

Greg Johnson, Chief of Maintenance, Saguaro National Park

Robert Marek, Trails Foreman, Saguaro National Park

Paula Nasiatka, Chief Ranger, Saguaro National Park

Brian Powell, Biologist, USGS- BRD

Franklin C. Walker, Superintendent, Saguaro National Park

Meg Weesner, Chief of Science and Resource Management, Saguaro National Park

Mike Wrigley, Biologist, Fish & Wildlife Service

Signatures

Prepared by:

Natasha C. Kline
Biologist
Saguaro National Park

Date

Approved by:

Franklin C. Walker
Superintendent
Saguaro National Park

Date

Appendix A

Minutes From Informal Consultation with USF&WS
(June 16, 2000)

Memo

June 16, 2000

To: Thetis Gamberg, Biologist, Ecological Services, U.S. Fish & Wildlife Service
Mike Wrigley, Biologist, Ecological Services, U.S. Fish & Wildlife Service
Greg Johnson, Facility Manager, Saguaro National Park
Robert Marek, Trails Foreman, Saguaro National Park

From: Natasha Kline, Biologist, Saguaro National Park

Re: Summary/minutes of NPS/F&WS cfpo compliance meeting on 14 June

At 0900 Natasha met with Thetis and Mike and outlined the Park's cactus ferruginous pygmy-owl (cfpo) compliance issues. After this brief introduction, we all went on site to the Wildhorse Trailhead and walked out to the junction of the Wildhorse and Stock Bypass trails. Robert described what was entailed in trail rehabilitation in the Cactus Forest trail system at Saguaro, and why. Noise from the trail work, which Robert described as both loud and constant while crews were at the site, appeared to be the biggest disturbance issue for the owls. From this location we were also able to get an overview of the habitat (we also looked at Monument Wash from Speedway Boulevard on the return trip). Although surveys the Park has conducted in this area to date ($n = 16$, since 1995) have not turned up any cfpo detections, the area appears suitable for cfpo breeding and foraging. Local habitat is upland Sonoran desertscrub mainly of the saguaro/palo verde association, and some mesquite bosques. There are numerous mature saguaros throughout this area.

The biggest difficulty that Saguaro faces in terms of accomplishing both the cfpo compliance work and the trail work is the inherent overlap of cfpo survey timing and the window of opportunity for conducting the trail work. Trail crews work from November through April and cfpo surveys must be conducted between January and March 15. It was decided that in order to address this conflict, formal consultation would need to be initiated in order to outline a strategy that would integrate the two (survey and construction) efforts. This strategy would be based on the Park conducting annual cfpo surveys both in the spring (between January 1 and March 15) and fall (September and October) on routes that will cover the sites of any proposed trail construction for the following that year and the next January through March. The idea behind this strategy is that through regular surveys of this relatively small area, Park biologists will have a good sense of whether or not it is being utilized by pygmy-owls, and some discretion can be used in the timing of projects in less optimum habitat. For example, a project in a more open, creosote-dominated area may be worked on in January or February based on a lack of cfpo detection the previous spring and fall. More sensitive areas (in lush washes) will be worked on in November and/or December or only after spring survey clearance. Because the trail construction sites in the Cactus Forest Trail system for the next five years are fairly clustered, one survey route will cover the overall area. This route would

begin at the junction of Wildhorse and Freight Wagon trails and follow Freight Wagon Trail south (0.7 mile), veer west on the Wentworth Trail (0.3 mile), and finally follow the Squeeze Pen trail (0.5 mile) south to its intersection with Monument Wash. This route is a total of 1.5 miles and would have about seven calling stations (with less than 400m between them).

Author: Thetis_Gamberg@fws.gov at np--internet
Date: 8/1/00 8:14 AM
Normal

TO: Natasha Kline at NP-SAGU Subject: Re: minutes----- Message Contents

Natasha: Mike has not been able to review this (he's on Annual) but it seems correct from my feeble memory. Consider it good enough; and yes, a BE and a cover letter from the Super. asking for formal will start the ball rolling. :-)

Thetis A. Gamberg
USFWS
520-670-4619

Natasha_Kline

@nps.gov

(Natasha

Kline)

To: Mike_Wrigley@fws.gov,

thetis_gamberg@fws.gov

cc:

Subject: minutes

07/31/00

06:01 AM

Hi Mike and Thetis,

I sent this out a while back and haven't hear anything back. I am hoping no news is good news (that is, the minutes sound about right). However, since we are going formal on this, I'd rather not make any assumptions! Please respond to me either with comments/corrections, or with a concurrence as soon as possible. I am now writing a BE to initiate the formal consultation process on our trailwork.

Thanks alot!

Natasha

Forward Header

Subject: minutes
Author: Natasha Kline at NP-SAGU
Date: 6/16/00 11:00 AM

Mike, Thetis, Greg, Robert,

Thanks for meeting the other day, especially Mike, who came all the way from Phoenix! Attached (should be) what I came up for with minutes for our June 14 meeting. Please review and get back to me

with comments, corrections, etc... or let me know if that looks about right.

Then how do we proceed with a formal consultation? Just a letter to initiate it from the Superintendent?

Thanks,

Natasha

(See attached file: trailcom.doc)



United States Department of the Interior

NATIONAL PARK SERVICE

Saguaro National Park
3693 S. Old Spanish Trail
Tucson, Arizona 85730



IN REPLY REFER TO:
2-21-01-F-014
N1621

December 6, 2004

Steve Spangle
Field Supervisor
Phoenix Field Office
United States Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021

Dear Mr. Spangle,

Saguaro National Park is proposing an amendment to the 2000 BA (Biological Assessment of the Impacts of Trail Work Planned for Saguaro National Park 2001-2005) concerning trail work and its effect on cactus ferruginous pygmy-owls (consultation number 2-21-01-F-014).

Enclosed are our proposed changes. We request an evaluation of these changes and the need to reinstitute formal consultation. We would like the plan and its amendment to be in effect through the 2007 breeding season, at which time, the plan would be re-evaluated by NPS staff and USFWS.

Sincerely,

Sarah Craighead
Superintendent
Saguaro National Park

Cc: Scott Richardson, Arizona Ecological Services, USFWS, 201 North Bonita Ave., Suite 141,
Tucson AZ 85745

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Amendment to "Biological Assessment of the Impacts of Trail Work Planned for Saguaro National Park (2001-2005)"

Consultation history (consultation number 2-21-01-F-014)

The Biological Assessment of the Impacts of Trail Work Planned for Saguaro National Park (2001-2005) was submitted to USFWS October, 2000. A biological opinion by USFWS was returned to the Park in January, 2001. It approved the Park's plan to use annual large-area surveys, in lieu of clearance surveys, for cactus ferruginous pygmy-owls as compliance for maintenance and reconstruction of existing trails. Projects involving new trail construction would require two years of project clearance owl surveys.

On July 30, 2002, Scott Richardson of USFWS met with staff in the park to review the program. There had been no confirmed owl detections, although 225 surveys were conducted. It was agreed that the Park would continue the annual large area surveys (i.e. 15 per year, six at RMD and 9 at TMD) on specified routes in areas with most potential to support owls.

On September 24, 2004, Scott Richardson met with Natasha Kline and Sandy Wolf to review the program. Park staff had conducted surveys along 19 routes each year in 2003 and 2004, but there had been no detections of owls in the Park since his last visit in 2002. Based on this information, Scott recommended that the Park submit a request for an extension of the agreement, along with a few proposed changes.

Clarification of terms

1. Trail reconstruction- work stays within the existing corridor except for sections of realignment. The use and character of the trail do not change.
2. Trail maintenance involves brushing the trail, cleaning water bars, and removing built-up berm.

Proposed changes

The Park has recently changed its methods for how to rehabilitate trails to repair damage caused by erosion and prevent damage in the future. Previously, stone staircases were built along steep grades. These are well-built structures designed to permanently solve erosion problems. However, these structures do not blend into the environment or reflect wilderness character, and are difficult for hikers and equestrians to use. The Park is adopting a philosophy that will reduce the number of these structures, and build trails that will blend in with wilderness character of an area. One result is that more trail realignment will be necessary during trail maintenance and rehabilitation in order to reduce the number of structures and still prevent erosion problems. Nevertheless, realignments will be kept to a minimum and mitigations for realignments will be implemented. To the extent possible, no vegetation will be removed. Habitat features important to the CFPO, such as trees and saguaros over two meters tall will not be removed. Impacted bare areas, such as the old trail section that is being realigned, will be revegetated and restored.

Mitigations

Mitigations in the original BA will continue to be implemented, including:

- No work will occur during crepuscular hours.
- If an owl or nest is located within 600 meters of a project site, all work will halt immediately and the Park will contact USFWS.
- There are now 19 large-area surveys being conducted every year by Park staff. This effort will continue through the proposed sunset date of 2007.

The Tucson Mountain District has been designated as proposed Critical Habitat since the original BO in January, 2001. However, habitat elements important to CFPO will not be disturbed in trail rehabilitation work and stabilizing trails to prevent erosion will, in the long term, benefit vegetation and owl habitat.

We are proposing the original 2001 agreement, with these amendments, to be in effect through the 2007 breeding season, when the agreement will be re-evaluated by NPS staff and USFWS.

Prepared by:

Sandy Wolf
Sandy Wolf
Biologist
Saguaro National Park

Date: 11/29/04

Approved by:

Sarah Craighead
Sarah Craighead
Superintendent
Saguaro National Park

Date: 11/29/04

Kline



United States Department of the Interior

NATIONAL PARK SERVICE

Saguaro National Park
3693 S. Old Spanish Trail
Tucson, Arizona 85730



IN REPLY REFER TO:

N1621

02-21-01-F-014

November 21, 2005

Mr. Steve Spangle
Field Supervisor
Phoenix Field Office
Arizona Ecological Services
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021-4951

Dear Mr. Spangle,

Saguaro National Park is proposing changes to the 2004 amendment to our "Biological Assessment of the Impacts of Trail Work Planned for Saguaro National Park 2001-2005," concerning trail work and its effect on cactus ferruginous pygmy-owls (cfpo; consultation number 02-21-01-F-014). These changes have been discussed with Mr. Scott Richardson of your Tucson Field Office (on September 22, 2005), and he has agreed that the proposed changes to the project description will not result in any additional effects to the cfpo or proposed critical habitat. Attached is the proposed second amendment to the original Biological Assessment, including a summary of the consultation history of the Park's Trails Program, the proposed changes to the current agreement, and the conservation measures the Park has committed to.

We request that this amendment replace the 2004 amendment, and be in effect through the 2007 cfpo breeding season. At that time the Park's 2007 Trails Plan, which will include a programmatic biological assessment for all T&E species, will be in place. Please provide an evaluation of these changes and the need to reinstate formal consultation, preferably before the beginning of the next cfpo breeding season. If you or your staff has any questions regarding park trail work or this amendment, please contact Natasha Kline, Wildlife Biologist, at 520.733.5171. Thank you for your prompt attention to this matter.

Sincerely,

Margaret W. Weesner
Acting Superintendent



2005 AMENDMENT TO THE "BIOLOGICAL ASSESSMENT OF THE IMPACTS OF TRAIL WORK PLANNED FOR SAGUARO NATIONAL PARK (2001-2005)"

Consultation History (Consultation #02-21-01-F-014)

2000

The Park's "Biological Assessment of the Impacts of Trail Work Planned for Saguaro National Park (2001-2005)" was submitted to the U.S. Fish & Wildlife Service's Arizona Ecological Services office in October, 2000. That document presented a strategy for addressing cactus ferruginous pygmy-owl (cfpo) compliance for the Park's Trails program, based on discussions between park and USF&WS biologists and cfpo researchers, and incorporated their recommendations. To alleviate scheduling conflicts with trail and cfpo survey work, the park proposed a mitigation strategy for "a comprehensive cfpo inventory effort in lieu of cfpo clearance surveys for trail rehabilitation projects only." [Note: *trail rehabilitation* in this BA was defined as "installing stone erosion-controlling structures (stairs and water bars) in existing trail locations", and required a 5-6 member masonry crew, and power tools, including a motorized wheelbarrow, masonry saws and jackhammers accessing the site for 6-8 weeks. Impacts occurred along the trail corridor, and in the "borrow" pits used to gather stone. *Trail maintenance* is defined as brushing the trail, cleaning water bars, and removing built up berms, and is considered a "no effect" to cfpo.] This strategy translated to conducting large-area cfpo surveys on 33 designated routes, in lieu of clearance surveys, in 2000-2005, for trail rehabilitation projects only. Projects involving new *trail construction* (establishing a trail where no designated trail existed before) would require two years of project clearance owl surveys per the Arizona Game and Fish Department and U.S. Fish & Wildlife Service protocols established in 2000. The BA also called for a review of the process/survey results after two years.

The F&WS approved this plan in a Biological Opinion, returned to the Park in January, 2001.

2002

Per the 2000 BA, on July 30, 2002, Scott Richardson of USFWS met with park staff to review Saguaro National Park's cactus ferruginous pygmy-owl compliance program. The meeting included a review of the latest information on cfpos, the status of the CFPO Recovery Plan, the Park's 2000 Biological Assessment, and results of cfpo surveys in the park; and discussion of a proposal for a cfpo compliance strategy for Saguaro National Park for the next three years. Some salient points follow.

When Scott summarized the latest information on the status of the owl and the Recovery Plan, he explained that the Tucson Mountain District of the Park had been identified as having high strategic potential to assist with cfpo recovery in the long term.

Out of the 225 cfpo surveys conducted in the Park in 2001 and 2002, only one possible and two probable detections were documented; neither bird was detected in subsequent attempts to locate them. Overall, in the past eight years the Park, which has conducted well over 300 cfpo surveys throughout its 40,000 acres of "potential" cfpo habitat, only one non-breeding bird has been confirmed.

Given the time and expense of the cfpo surveys conducted in the park in the previous two years, the lack of confirmed pygmy-owl detections, and the low potential for impact to cfpo from trail rehabilitation, it was agreed that Saguaro could scale back to 15 (large area) surveys/year to cover *trail rehabilitation compliance*. General locations for these routes were established by Scott and

the park biologists (Natasha Kline and Sandy Wolf), in areas with the most potential to support owls. Six of these routes were in the Rincon Mountain District and nine were in the Tucson Mountain District of the Park. All other projects, including new trail, were still subject to the protocols established by the Arizona Game & Fish Department and U.S. Fish & Wildlife Service in 2000.

2004

On September 24, 2004, Scott Richardson met with park biologists, Natasha Kline and Sandy Wolf, again to review the Park's cfpo compliance program. Park biologists wanted to propose some changes in survey protocols because the Park had recently modified its trail building standards, and trail maintenance and rehabilitation techniques; and discuss future compliance since only one more year was covered under the 2000 BA.

Per the 2000 BA, Park policy had been to build/rehabilitate trails with stone work and build stone "staircases" where trails occurred on steep grades. These well-built structures were designed to permanently solve erosion problems; however, they required the use of motorized equipment to haul and quarry rocks, did not blend into the environment or reflect the Wilderness character of the area, and proved to be unpopular with hikers and equestrians. In 2004 the Park adopted a policy that would greatly reduce the number of these structures, and be more compatible with Wilderness values. This meant that trail work would become much less intense in terms of number of crew needed, time spent at the site, and noise and other impacts (e.g., no more motorized equipment would be used). These new methods were also predicted to require the realignment of more trail in order to prevent erosion problems. Nevertheless, realignments were to be kept to a minimum and the following conservation measures implemented: 1) To the extent possible, no vegetation would be removed. 2) Habitat features important to the CFPO, such as trees and saguaros over two meters tall would not be removed. 3) Impacted bare areas, such as the old trail section that is being realigned, would be revegetated and restored. 4) No work would occur during crepuscular hours. 5) If an owl or nest was located within 600 meters of a project site, all work would halt immediately and the Park would contact the USFWS. 6) The Park would continue surveying the 15 large-area surveys through the proposed sunset date of 2007.

In 2002, the Tucson Mountain District had been proposed as Critical Habitat for cfpo; however, habitat elements important to CFPO would not be disturbed in trail rehabilitation work. Furthermore, stabilizing trails to prevent erosion will, in the long term, benefit vegetation and cfpo habitat. Furthermore, no cfpo had been detected since 2002, despite Park staff conducting large area cfpo surveys along 19 routes (some of the 15 routes proposed in 2002 had to be divided into two or three surveys) in both 2003 and 2004, and several other clearance surveys. Based on all this information, Scott supported the Park's proposed changes, and the extension of this agreement (until 2007) in the 2004 amendment to the original BA.

Changes Proposed for 2006

On October 22, 2005, Scott Richardson and Natasha Kline met to discuss the need for continued large area cfpo surveys at Saguaro National Park in 2006 and 2007. In the last five years (2001-2005) the Park had conducted 369 large scale (and over 50 compliance) cfpo surveys without a single confirmed cfpo detection. In 2004, trail rehabilitation techniques had been modified to further reduce the potential for impacts to cfpo. Park managers and biologists felt that with these new trail rehabilitation techniques, and the Park's conservation measures (see 1-5 above) in place, the likelihood of impacts to cfpo from our trail maintenance program was so negligible that it no longer warranted the time and expense to continue large area (mitigation) surveys.

To summarize, due to the following proposed conservation measures, Saguaro National Park submits that our trail maintenance/rehabilitation program has no effect on cfpo or their proposed critical habitat.

Proposed Conservation Measures

- 1) Since 2004, the Park has implemented low impact, Wilderness-compatible techniques and tools (i.e., hand tools) to conduct all trail maintenance and rehabilitation work.
- 2) Removal or impact to native vegetation is minimized as much as possible.
- 3) Habitat features important to the cfpo, such as trees and saguaros over two meters tall, are not removed unless absolutely necessary. A threshold of ten such features each year shall not be surpassed without consulting with the U.S. F&WS. (Although we do not expect to ever approach this threshold, both the NPS and the U.S. F&WS felt it was important to quantify the level at which we need to consult.)
- 4) Impacted bare areas (i.e., old trail sections that have been realigned, impacted areas along the trail corridor) will be revegetated.
- 5) No trail work will occur during crepuscular hours.
- 6) A park biologist will provide trail crews with an orientation/briefing that will appraise them of and sensitize them to cfpo issues.
- 7) If an owl or nest is located within 600 meters of a project site, all work will halt immediately and the Park will contact the USFWS.
- 8) Trail construction, or any trail project that exceeds the threshold of impacts to cfpo habitat elements stated above, will require clearance protocols established by the Arizona Game & Fish Department and U.S. Fish & Wildlife Service in 2000.

Therefore, the park proposes to implement the above conservation measures, and conduct clearance surveys for cfpo only for projects that have the potential for impact above the threshold established above. This amendment is to be valid until the Biological Assessment for the Park's new Trails Plan is finalized in 2007.

