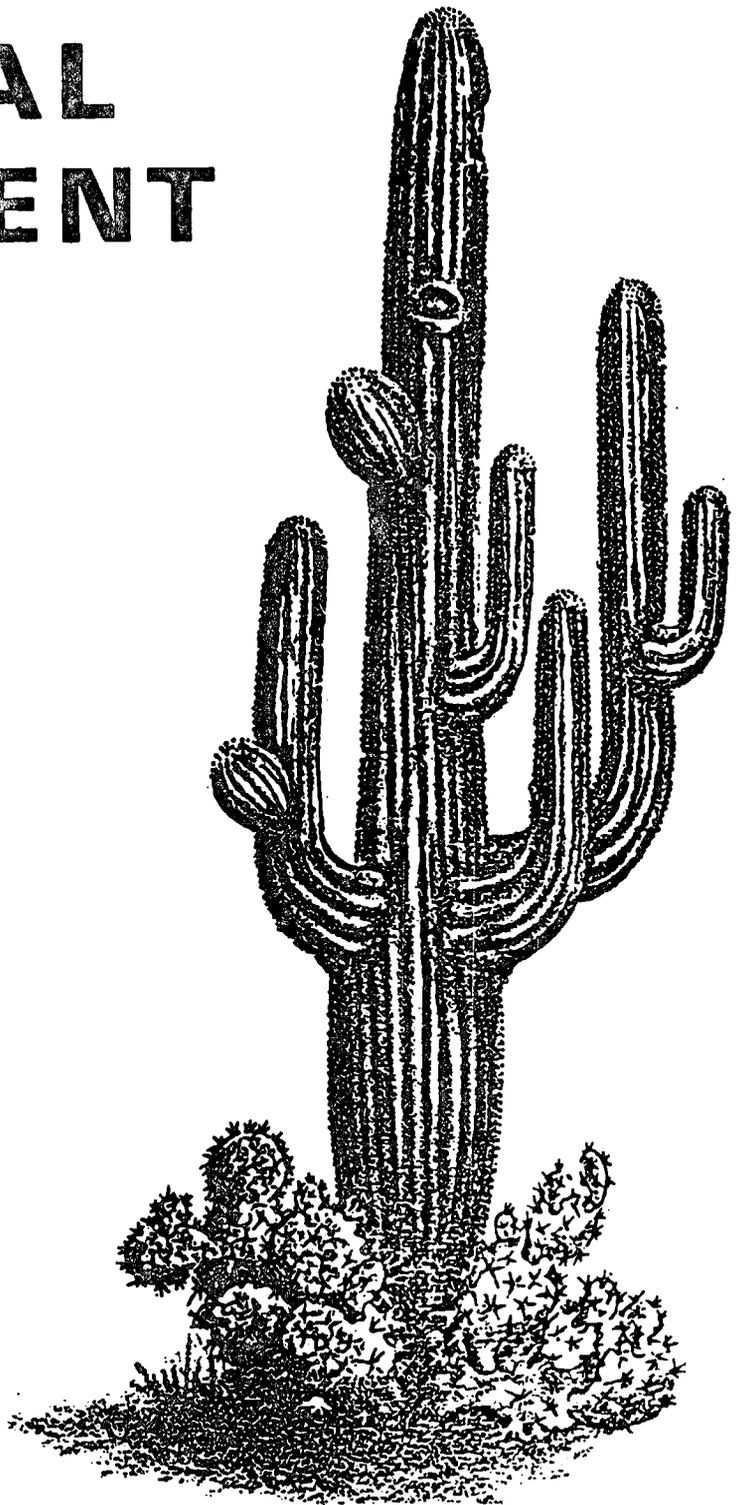


# SAGUARO NATIONAL MONUMENT

TUCSON MOUNTAIN UNIT

INTERIM INTERPRETIVE PLAN

JANUARY 1981



NATIONAL PARK SERVICE

WESTERN REGION

CONCEPT APPROVAL  
AND  
CULTURAL RESOURCES COMPLIANCE

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Date March 6, 1981

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Date March 16, 1981

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Date April 20, 1981

CULTURAL RESOURCES LEGISLATIVE COMPLIANCE

All actions proposed in this plan must comply with the provisions of Section 106 of the 1966 Historic Preservation Act and Executive Order 11593 as codified in the Procedures of the Advisory Council on Historic Preservation (36 CFR Part 800). Prior to a decision to implement any provisions of this plan, these procedures require that all cultural resources in or near the project area must be identified and evaluated in terms of the National Register Criteria of Eligibility. The evaluation must be done by appropriate professionals for the Regional Director in consultation with the State Historic Preservation Officer. Additionally, the Criteria of Effect and the Criteria of Adverse Effect (36 CFR Part 800.8 and 800.9) must be applied by appropriate professionals for the Regional Director in consultation with the State Historic Preservation Officer and the Advisory Council Procedures completed as appropriate.

INTERIM INTERPRETIVE PLAN

TUCSON MOUNTAIN UNIT

SAGUARO NATIONAL MONUMENT

Southern Arizona Group Headquarters

National Park Service

January 1981

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I N T R O D U C T I O N

## INTRODUCTION

This interim interpretive plan has been developed to provide improved visitor information/orientation and interpretive services for Tucson Mountain Unit prior to development of a new General Management Plan for the entire Saguaro National Monument. It provides a framework for coordinated interpretive planning with a central interpretive theme. Since effective interpretation, as well as effective preservation, of this remarkable stand of giant saguaros was specified as an essential reason for the addition of the Tucson Mountain Unit to Saguaro National Monument, this plan is particularly pertinent. Its implementation should take place over the next three to five years.

It is with sincere pleasure that we acknowledge Park Naturalist Hal Coss' key contribution of formulating and refining the statement of the central interpretive theme of this plan.

Proposals are simple and straightforward and relatively inexpensive. They will make no major impact on unimpacted, undisturbed park resources. Most proposals pertain to modifications of existing facilities.

It should be noted that parts of some projects identified by the planning team have already been accomplished by the park staff at Tucson Mountain Unit.

### Interim Interpretive Planning Team

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B A C K G R O U N D

SAGUARO NATIONAL MONUMENT AND  
TUCSON MOUNTAIN UNIT

President Herbert C. Hoover established the original unit of Saguaro National Monument, located 17 miles east of downtown Tucson, by Presidential Proclamation #2032, dated March 1, 1933. At the principal urging of Frank Hitchcock, editor of the Tucson Daily Citizen, President Hoover proclaimed the monument to preserve and protect these lands and "the exceptional growth thereon of various species of cacti," including the so-called giant cactus.

Twenty-eight years later on November 15, 1961, President John F. Kennedy signed Presidential Proclamation #3439 adding the non-contiguous 15,360 acre Tucson Mountain Unit, located 17 miles west of Tucson, to the existing monument. In the wake of two years of mounting pressure to reopen this outstanding natural area to mineral entry, President Kennedy set aside

certain lands lying within what is known as the Tucson Mountain Park which contain a remarkable display of relatively undisturbed lower Sonoran desert vegetation, including a saguaro stand which equals or surpasses saguaro stands elsewhere in the Nation.

The proclamation further specified that "the addition of these lands to the monument appears essential for their effective preservation and interpretation and for the implementation of the purposes of the Saguaro National Monument." (Underlining added by author for emphasis.)

The lands now within Tucson Mountain Unit had been the scene of mining activity from the mid-1890's to World War I, but were withdrawn from further mineral entry in 1929 under provisions of

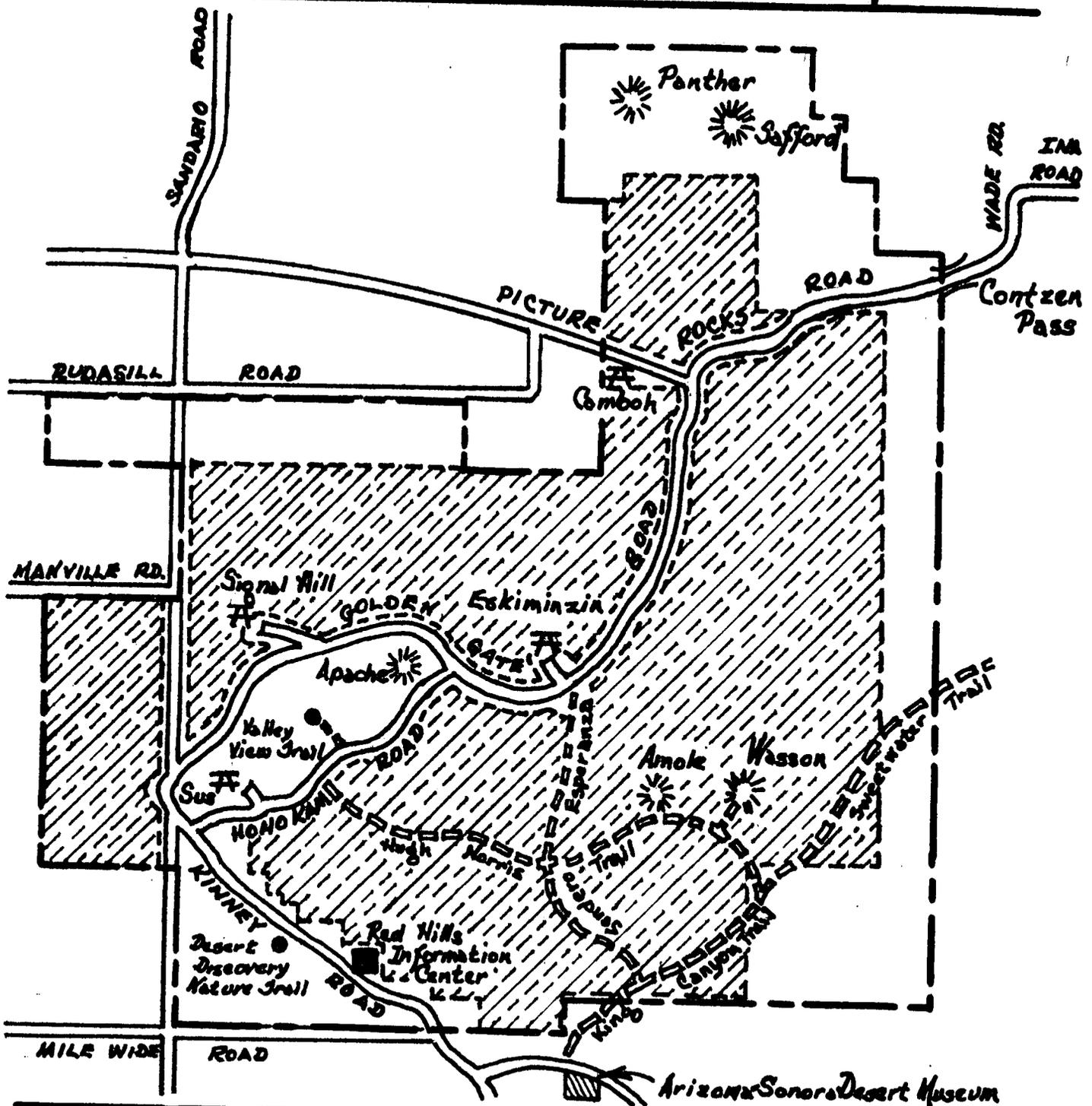
the Park and Public Purpose Act of 1929. The Gould and Mile-Wide Mines were worked as late as the World War II period. From 1929 to 1961, the Pima County Parks and Recreation Department administered the land as a part of Tucson Mountain Park. In the 1930's the Civilian Conservation Corps established a resident camp, called Rancho de Esperanza, on what is now monument land just south of Rudasill Road and just west of Sandario Road. The camp's resident corpsmen developed the park by building roads, trails, picnic areas and check dams.

On October 20, 1976, over 13,000 acres of Tucson Mountain Unit's roadless backcountry were set aside as a part of Saguaro National Monument's 71,400-acre designated wilderness area (National Park System-Wilderness Act P.L. 94-567). (See Figure 1, Orientation Map, Tucson Mountain Unit.)

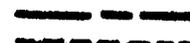
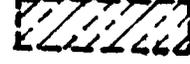
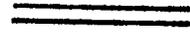
The next day (October 21, 1976) President Ford signed the National Park System Appropriation Limitations Act (P.L. 94-578) which included a 5,378-acre "buffer zone" to protect this prime saguaro forest and this outstanding portion of the Tucson Mountains including the rugged Panther/Safford Peaks area north of Picture Rocks Road, from encroaching residential development from the east.

The unit ranges in elevation from 2,200 feet in the outwash plain of the bajada near the northwest corner of the unit, to 4,687 feet atop Wasson Peak near the unit's southeast corner. The unit lies deep within the Arizona uplands subdivision of the Sonoran Desert and contains more luxuriant plant communities than the Rincon Mountain Unit.

# Figure 1: Orientation Map ~ Tucson Mountain Unit, Saguaro National Monument

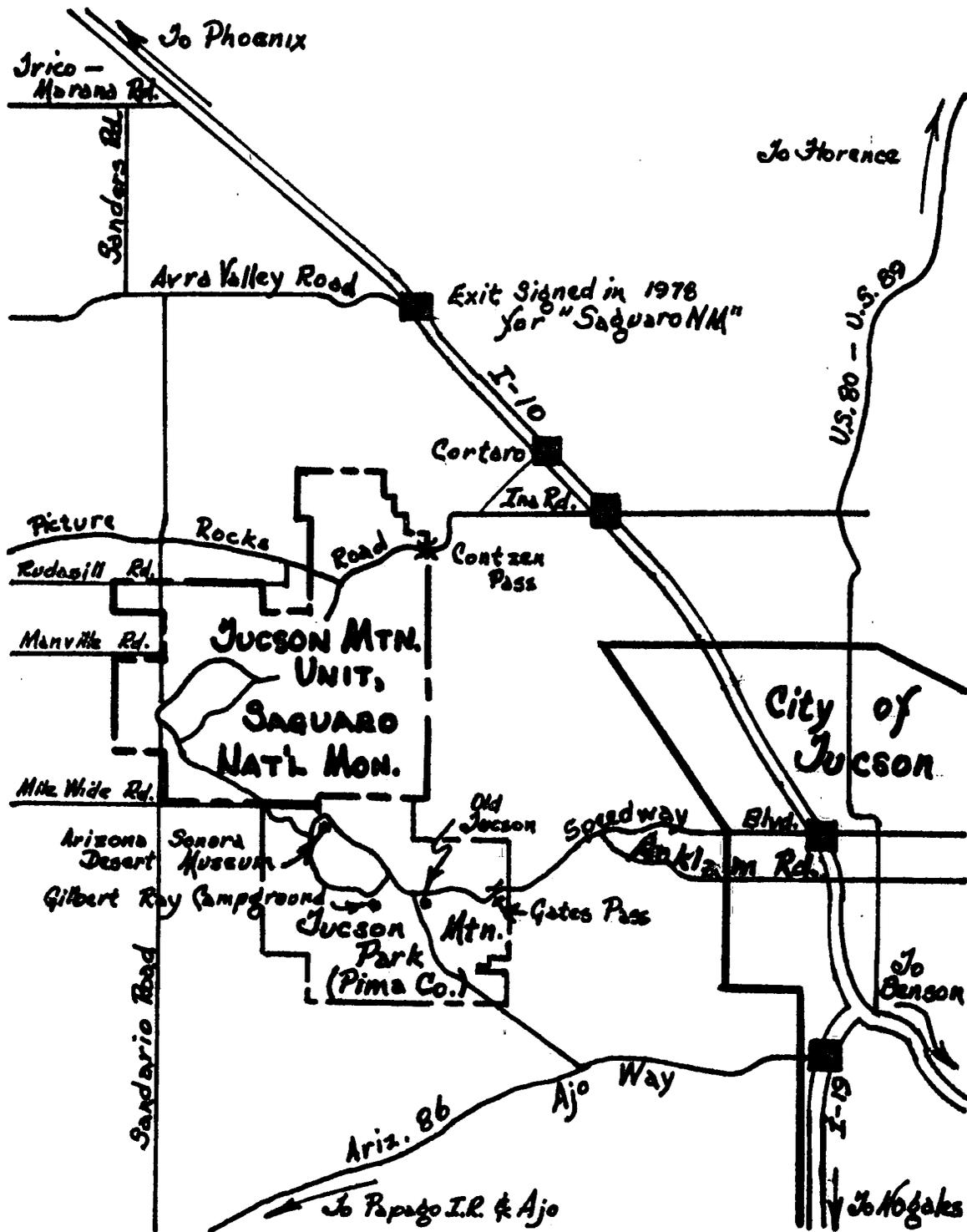


## ~ Key ~

- |   |   |   |                 |
|---|---|---|-----------------|
|  | - Monument Boundary                       |  | - Mountain Peak |
|  | - Designated Wilderness ~<br>13,300 acres |  | - Picnic Area   |
|  | - Road                                    |   |                 |
|  | - Hiking Trail                            |   |                 |

Tucson visitors may use any of four different Interstate 10 and 19 exits to reach the Tucson Mountain Unit (See Figure 2, Vicinity Map, West Side of Tucson Metro Area): from the north at Avra Valley Road Exit of I-10 via Avra Valley and Sandario Roads; from the east at Speedway Boulevard Exit of I-10 via Speedway Boulevard, Gates Pass, and Kinney Road; from the south at Ajo Way Exit of I-19 via Ajo Way and Kinney Road; and from the north-east at Ina Road Exit of I-10 via Ina, Wade and Picture Rocks Road through Contzen Pass (the least used and most complex of four entrance routes).

Figure 2: Vicinity Map, West Side of the Tucson Metropolitan Area

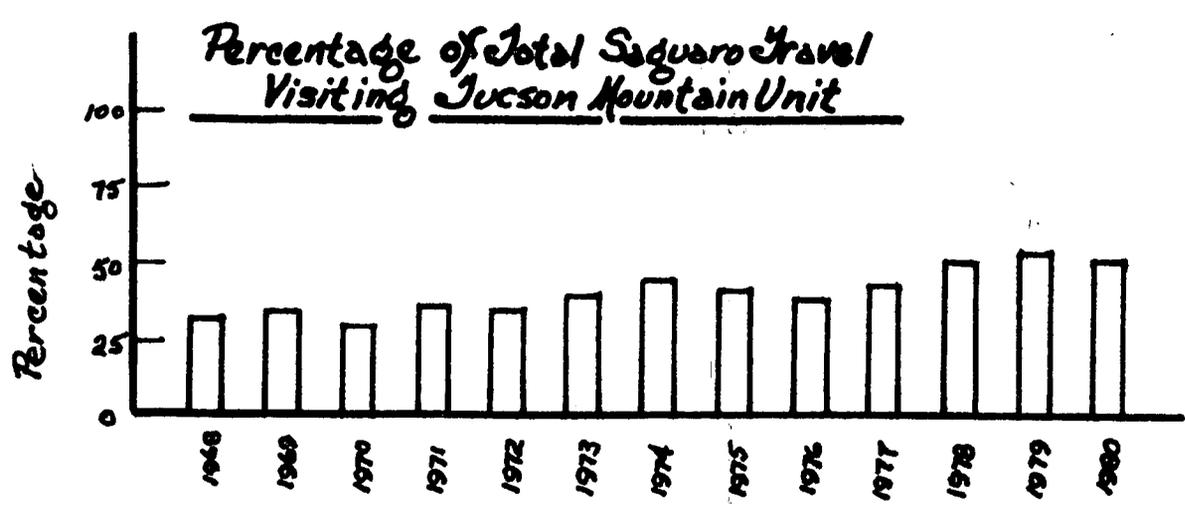
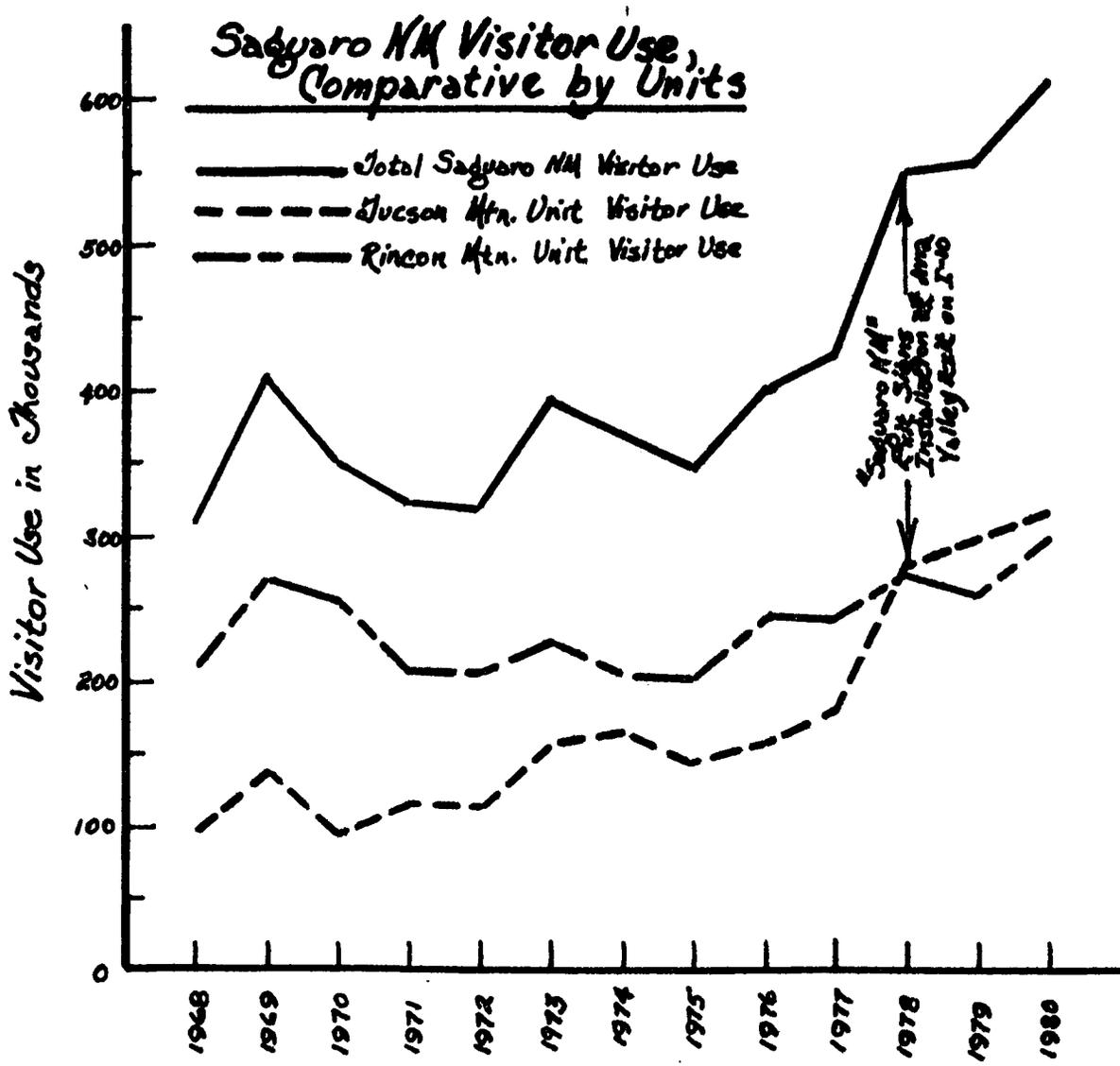


## THE VISITOR

In the past two years, Tucson Mountain Unit of Saguaro National Monument (hereafter abbreviated TMU) has become the most heavily visited single unit of the National Park System in southern Arizona, exceeding even the travel at the Monument's Rincon Mountain Unit. As such, it definitely has to be considered one of southern Arizona's primary visitor attractions. (See Figure 3, Comparative Visitor Use, Tucson Mountain Unit vs. Total Saguaro National Monument, 1968 - 1980). During 1980, TMU hosted over 310,000 visitors compared with less than 145,000 as late as 1975.

The installation of Saguaro National Monument exit signs at the Avra Valley Road exit on Interstate 10 in the summer of 1978, in addition to the extraordinary stand of giant saguaros and the unit's proximity to the neighboring Arizona Sonora Desert Museum, caused a phenomenally sharp 54% travel increase for the calendar year 1978. In addition to this increased recreational use traffic along Sandario and Kinney Roads, the unit is experiencing heavy non-recreational use traffic along Picture Rocks Road, by daily commuters living in the Avra Valley west of TMU and working in Tucson. Present indicators show an average of 700 cars per day, and an average of at least two persons per car, which calculates at about 400,000 commuters per year. Both of these travel figures are expected to continue increasing in the future in spite of higher gasoline prices and/or gasoline shortage because of TMU's location along the west edge of the rapidly growing Metropolitan Tucson area. The 1980 census lists the population

Figure 3: Comparative Visitor Use ~  
Jucson Mountain Unit VS. Total Saguaro NM - 1968-1980



of the City of Tucson at 331,506 and that of eastern Pima County at 508,000, increases of 36.1% and 51.1% respectively over the 1970 census figures. The Pima County Planning and Zoning Department is projecting a 40% increase to 744,800 in Pima County's population by 2000. During the same 20 years, they expect the Tucson Metro area to increase 50% to 669,500.

The significant shift in the visitor's entry point into TMU caused by the erection of new exit signs for Saguaro National Monument at Avra Valley Road has also raised doubts among the unit's staff of the validity of the current, long-standing visitor use computation formula. Prior to mid-1978, an overwhelming majority of TMU visitors both entered and exited the unit using Kinney Road to the South; thus, their visitor use computation formula compensated for the double crossing of the traffic counter on Kinney Road at Red Hills Information Center. Since the summer of 1978, a significant number of visitors enter from the north along Sandario Road and exit southbound on Kinney Road, crossing the traffic counter at the Information Center only once. Thus the unit manager strongly suspects that current travel figures are significantly deflated. A systematic study aimed at developing necessary modifications seems indicated.

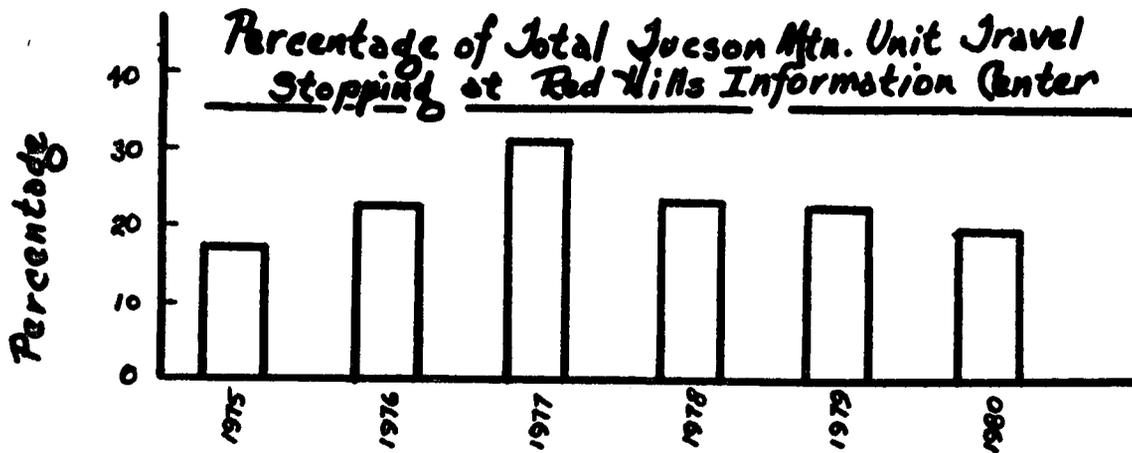
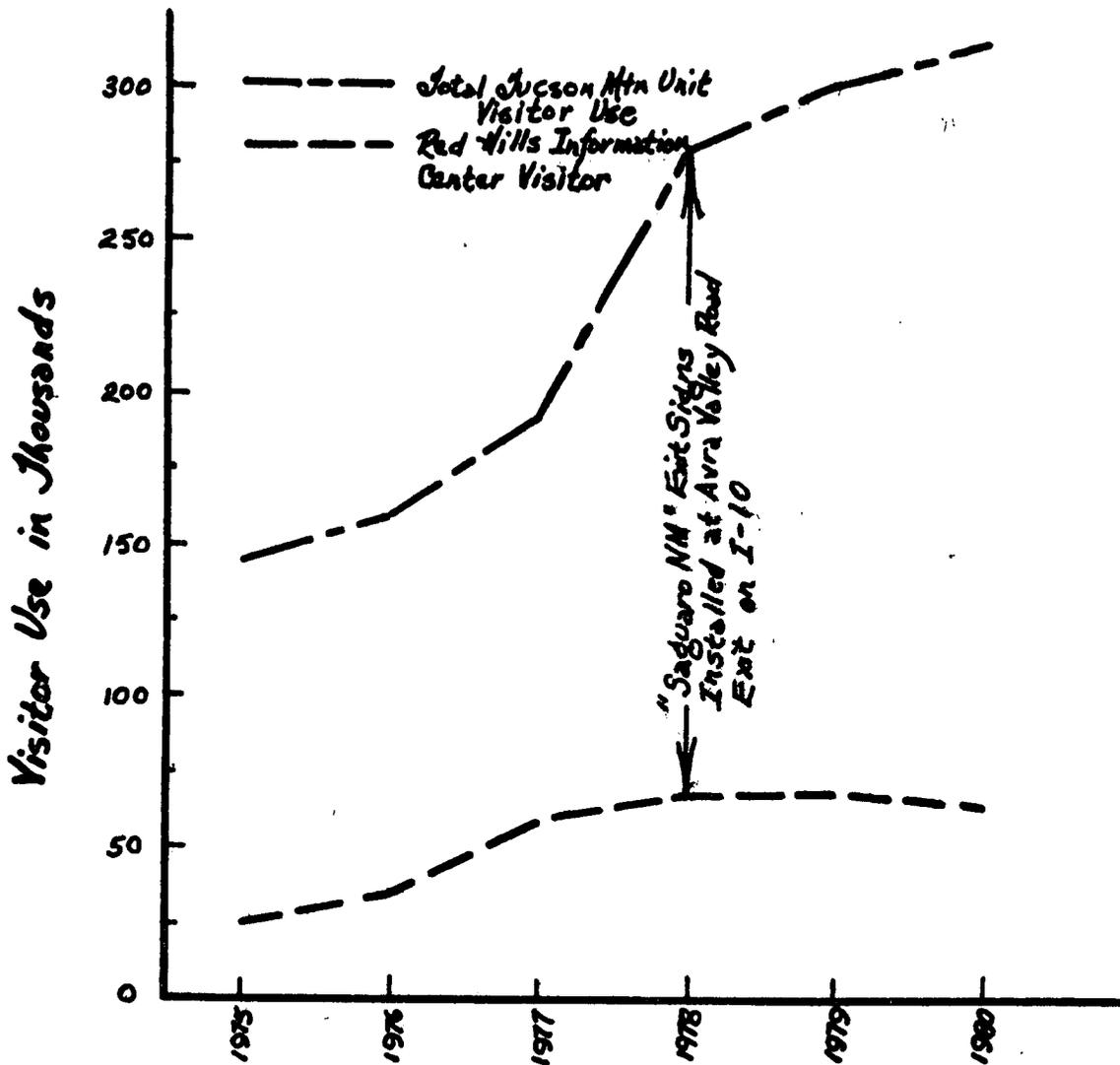
Tucson Mountain Unit is entirely a day use area with heavy weekend picnic area use during the winter/spring seasons. Most travelers find overnight accommodations within the Metro Tucson area, although some campers stay at the 120-site Gilbert Ray Campground, operated by Pima County Parks and Recreation Department located 4.3 miles from unit headquarters within the adjacent Tucson Mountain Park.

The extreme heat of this Sonoran Desert region during summer and early fall months, as well as the desert's extremely mild winter/spring climate causes wide fluctuations in seasonal visitor use. For example, in 1979, the monthly average visitor use was 24,770. The visitor use during the months of February and March exceeded that average by more than 10,000 visitors while the months of July, August, and September each fell more than 5,000 visitors below that average.

Precious little is really known about the average visitor to Tucson Mountain Unit, even though the unit staff has maintained as many records as time and regulations allow. We feel the unit definitely needs some type of a visitor profile analysis, such as the Park Visitation Census, recently recommended by the Denver Service Center Team drafting the Task Analysis for the new Saguaro National Monument General Management Plan. It might help explain decreasing use of the Red Hills Information Center in light of rapidly increasing visitor use of the entire TMU. (See Figure 4, Comparative Visitor Use - Red Hills Information Center vs. Total Tucson Mountain Unit, 1975 - 1980.) Perhaps it is, as we suspect, a "fait accompli" attitude on the part of a large number of visitors who enter from the north via Avra Valley and Sandario Roads. Perhaps they assume they have just driven through the park, they have seen most of it, and a stop at a mere information center could be of little value to them.

Those records that have been kept for the Red Hills Information Center show that Saturdays and Sundays are the heaviest used days during the week, no matter what season of the year, giving a strong

**Figure 4: Comparative Visitor Use ~ 1975-1980**  
**Red Hills Information Center VS. Total Tucson Mtn. Unit.**



indication of broad-based, year-around local visitation. In 1978 daily fluctuations ranged from a high of 317 on Sundays to a low of 228 on Mondays during the winter/spring season, and from a high of 179 on Sundays to a low of 123 on Thursdays during the summer/fall months. Records kept during 1978 also show that peak hourly visitation at the information centers occurred between 11:00 a.m. and 3:00 p.m. during the winter/spring season and between 11:00 a.m. and 1:00 p.m. during the summer/fall months.

## MANAGEMENT OBJECTIVES

### Natural and Cultural Resources Management

- To protect and perpetuate the monument's natural ecosystems with special emphasis on the survival and perpetuation of the saguaro.
  - a. Assist the natural healing processes on lands disturbed by mining, grazing and road building.
  - b. Eliminate through appropriate means those adverse land uses which remain (grazing and stray cattle).
  - c. Complete a Resources Basic Inventory.
  - d. Continue ongoing research on the saguaro.
  - e. Complete boundary fencing on both units of the monument.
  - f. Seek ownership in fee of all remaining nonfederal lands.
- To identify, evaluate, and preserve the historic and prehistoric features that trace human use of the Tucson Basin in a manner consistent with the preservation of natural values.
  - a. Complete the archeological survey and associated national registry forms.
  - b. Prepare a Historic Structures Report.
  - c. Remove destructive uses from cultural sites.

### Interpretation and Visitor Use Management

- To foster appreciation for and understanding of the natural ecosystems and cultural resources by making available quality interpretive opportunities through the most appropriate means available.
  - a. Prepare a General Management Plan together with appropriate Development Concept Plans.

- To cooperate with government agencies and public and private interests in planning for management and use of resources which affect scenic, natural and cultural values in and near the park.
  - a. Cooperate with other agencies in the development of a coordinated environmental education program.
  - b. Seek public input on all aspects of park management on a continuing basis.
  - c. Provide input to the public and other agencies on the potential effects of land use outside the boundaries
- To monitor and assess resource response to use in order to develop management strategies that will minimize adverse effects of visitor use and provide long-term resource perpetuation.
  - a. Develop a resource monitoring system.
  - b. Define and implement use capacities based on both resource perpetuation and physical facility capacity.
  - c. Surface all roads in the Tucson Mountain Unit.
- To reduce hazards to visitors and employees through management techniques that allow for compatible use and enjoyment of the monument's resources.
  - a. Permanently secure all mine shafts and adits.
  - b. Consummate a cooperative agreement with the Pima County Sheriff's Department for search and rescue operations.

## INTERPRETIVE CONCERNS

1. At present, interpretive programs at Tucson Mountain Unit have developed on an almost random, fragmented basis at best. An approved central interpretive theme with specifically designated programs and services is needed to correct this deficiency.
2. Because of that random development, omissions as well as redundancies exist in the interpretive services now offered to Tucson Mountain Unit's visitors.
3. The staff is acutely aware of those portions of TMU's interpretive story which remain either untold or inadequately told, as well as those parts which are told too often. They hesitate to initiate changes without benefit of an approved central interpretive theme, because of a concern that such efforts might contribute more to the problem than to the solution.
4. With the installation of the "Saguaro National Monument" exit signs at Avra Valley Exit in 1978, significantly large numbers of visitors are now entering this park unit from the north and traveling across most of the park without benefit of either information or interpretation (available only at the Information Center).
5. The percentage increase of hikers in the unit's backcountry is keeping pace with the unit's increase in travel; yet, hikers arriving at the unit's four trailheads receive little, if anything, concerning trail distance, orientation, and hiker-safety information.

6. Tucson Mountain Unit. like most other National Park System units, has been subjected to numerous new "get-on-the-band wagon" type interpretive programs and services without benefit of an adequate "measuring stick" (an established interpretive theme) to determine applicability for TMU, i.e., Environmental Living Programs.
7. After hours visitors received limited information and interpretation, and much of that is uncoordinated and fragmentary.
8. The staff at TMU has absolutely no foreign language, informational/interpretive materials about this unit of Saguaro National Monument to assist the significantly increasing numbers of German, French, and Japanese-speaking visitors touring TMU; the need is greatest for German-language materials.
9. At the time of the team's on-site visit, visitors with mobility handicaps were limited to viewing the park via the Bajada Loop Drive Motor Nature Trail without the opportunity to leave the car and either visit the Information Center or "get close to nature." Since that time, the Information Center, with its restrooms and its Cactus Garden interpretive trail have become accessible, yet information for distribution about "full-spectrum" accessibility of facilities and programs is still needed.
10. Visitors use the four road-accessible picnic areas to capacity and beyond during the winter and spring months. This presents a fine opportunity to communicate both essential information and some interpretation to visitors who might not be contacted in any other manner. Yet because of vandalism to previously installed waysides, little information and interpretation is currently available in the picnic areas.

## CONSTRAINTS AND REALITIES AFFECTING INTERPRETATION

1. The intense, extended periods of exposure to direct sunlight causes premature fading for numerous types of signing medias. Ideally, any medium used should have a demonstrated better-than-average resistance to fading.
2. Probably because of its proximity to the large, growing Tucson Metropolitan area, the unit has experienced moderate to severe vandalism in the past. We expect the incidences of vandalism to at least remain constant if not increase as the Tucson Metro area grows. The early evening curfew at Tucson Mountain Park in picnic areas may cause increased night use of TMU's picnic areas, and with it, possible increased vandalism.
3. Personal services for the information and interpretation function are quite limited and will continue to be limited, even when augmented with VIP's. Therefore, most, if not all, proposals for improving the interpretive services must be of the non-personal variety -- publications, signs, etc..
4. Because of rough terrain, not all interpretive trails, particularly Valley View Trail, could be made "full-spectrum" accessible without major trail construction (including cuts, fills, and grading) impacting the natural scene which may well be adverse and environmentally undesirable.
5. Sharp dips, narrow road widths and stretches of exposed bed-rock road surfaces (which cannot be graded) on the existing motor nature trail road, severely limit the feasibility of reversing traffic flow on the existing one-way loop. Large motor homes and vehicles towing trailers especially would

experience difficulties trying to travel such a route.

6. Although it may seem desirable to interpret the seasonal Papago saguaro fruit harvest, perhaps by participatory interpretation, realities of such things as applicable health and sanitation regulations place sharp restraints on such considerations.

## CURRENT INTERPRETIVE STAFFING FOR TUCSON MOUNTAIN UNIT

The unit operated on a combined interpretation and Resources Management Concept, with all members of the public contact staff providing at least some of the interpretive and informational services. However, a park technician has key responsibilities providing and directing the unit's information and interpretive services -- spending approximately 70% of duty time in interpretation.

The remainder of the interpretive and informational services are provided by a 40-hour per week seasonal Park Aid (October - April); a weekend intermittent seasonal Park Aid; up to 15 Volunteers-in-Parks; and, a permanent Park Technician who spends 20% to 25% of duty time staffing the information desk, even though that person primarily handles the unit's law enforcement responsibilities.

## EXISTING INTERPRETIVE SERVICES AT TUCSON MOUNTAIN UNIT

As has been previously related, the interpretive experience of the park visitor is somewhat limited, is fragmentary at times, and with the exception of visits to the Information Center and a few specially arranged talks and tours, consists solely of non-personal interpretive mediums.

At the Red Hills Information Center, the visitors receive: personal information/interpretive services, a park folder, mimeographed and printed "special-area-of-interest" handouts as warranted at the information desk; view a limited number of interpretive exhibits; may view the wildlife at the water hole just east of the Information Center; and may purchase theme-related publications from the sales outlet operated by Southwest Parks and Monuments Association. They can also tour the adjacent Cactus Garden via a hard-surfaced, "full-spectrum" access trail just outside the Information Center, even though it is currently equipped with only plant identification labels.

Out in the unit, visitors can follow the Bajada Loop Drive Motor Nature Trail using a self-guiding pamphlet. The staff ran out of the offset printed version in July 1980, and is now supplying visitors with mimeographed copies. They may also stop and walk the self-guiding Desert Discovery Nature Trail (located about 1.0 miles west of the Information Center just off the south edge of Kinney Road) using a mimeographed self-guiding leaflet. The bilingual (Spanish-English) self-guiding trail booklet published as a 1976 bicentennial project, is now out of print, and the mimeographed leaflet is printed only in English.

Interpretive waysides which once graced three of the unit's picnic areas are now gone. Irresponsible persons have stolen the sign from Signal Hill Picnic Area and so heavily vandalized the waysides at Sus and Eskiminzin Picnic Areas that the staff has been forced to remove them until suitable replacements are developed and installed.

Two seasons ago (1978-79) the staff presented a once-a-week evening program on the approach walk to the Red Hills Information Center (average attendance per week 50 persons+). However, staff limitations precluded such a program last year. With the addition of Volunteers-in-Parks, this winter/spring visitation season, they hope to offer some form of expanded personal services interpretation.

T H E P L A N

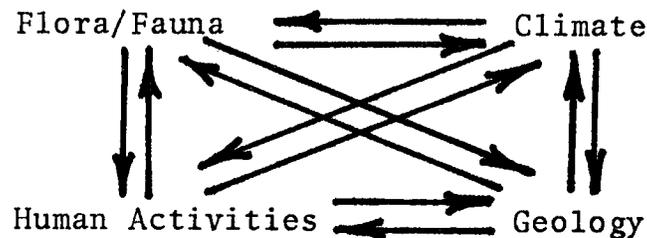
## OBJECTIVES OF THIS INTERIM INTERPRETIVE PLAN

- To reorient Tucson Mountain Unit's random-theme interpretive activities to a coordinated interpretive effort based on a central interpretive theme.
- To "flesh out" that central interpretive theme with facilities programs and services.
- To present all major component parts of the central interpretive theme somewhere within the unit's total visitor experience.
- To assure variety in the interpretive program; and to avoid duplication, except where it is purposefully used for particular emphasis and reinforcement.
- To establish a control factor --- a central interpretive theme, to determine the thematic suitability of all future interpretive programs and services.
- To accommodate after-hours visitor use by providing basic information and interpretation.
- To provide basic informational/interpretive materials for German, French, and Japanese-speaking visitors.
- To provide at least basic barrier-free interpretive services and facilities for mobility-handicapped visitors, and information about their availability.

## INTERPRETIVE THEME OF THE PLAN

### Central Interpretive Theme:

The relationships and response of an Arizona Upland biotic community to environmental influences, specified as follows: Flora/Fauna; Geology; Climate; and Human Activities. Inter-relationships of each influence to every other influence is specifically implied; as is demonstrated by the following diagram:



### Subdivisions of Environmental Influences:

(Note: In essence, these will be treated as if they are sub-themes, and will often be referred to by their "Letter/numeral" identifier codes, i.e., an interpretive treatment based on historic human activities would be referred to by the identifier code "D2".

#### A. Flora/Fauna

1. Life Cycle of a Saguaro
2. Saguaro Communities (including faunal inhabitants)
  - a. Past
  - b. Present
  - c. Future

B. Geology

1. Processes
2. Soils
3. Influences of Land Forms

C. Climate

1. Microclimate
2. Macroclimate

D. Human Activities

1. Prehistoric
2. Historic
3. Contemporary
4. Prospects for the Future

## RECOMMENDED SPECIFIC TREATMENTS

### UNIT IN GENERAL

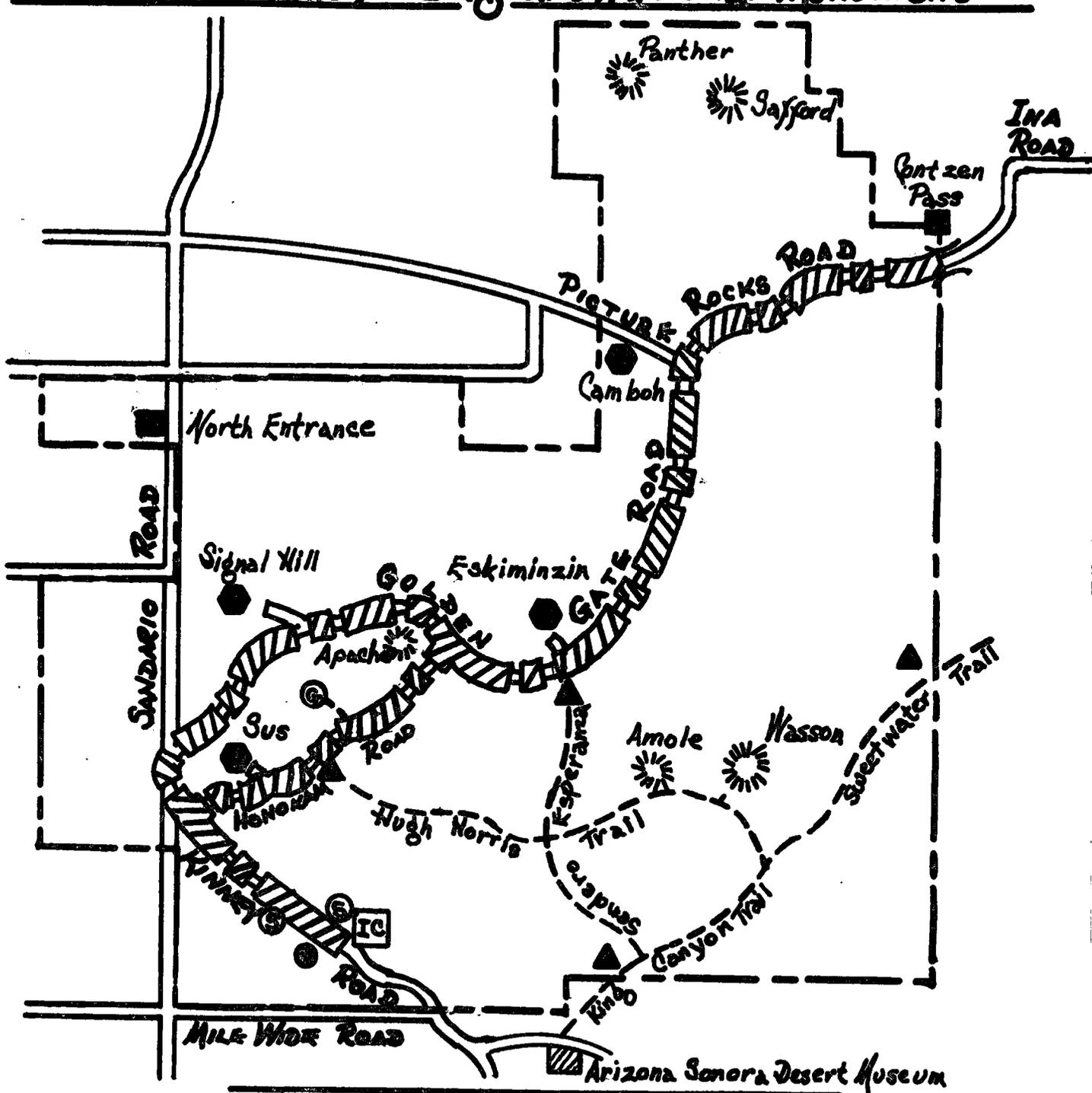
All segments of this plan need to be reviewed by a representative cross section of citizens with special user needs, i.e., the mobility impaired; the visually impaired; and the hearing impaired. Such a review should assure the adequacy of programs and services for visitors with special needs and compliance with barrier-free mandates before the implementation of any provision of this plan.

### MOTOR NATURE TRAIL

Replace the current mimeographed Bajada Loop Drive self-guiding leaflet with a well-written, well-designed motor trail guide to be published by Southwest Parks and Monuments Association as a sales item. This guide will be regarded as the primary interpretive device for the Tucson Mountain Unit of Saguaro National Monument and should communicate the entire central interpretive theme by addressing itself to most, if not all, of the subthemes.

The scope and road distance covered by the motor nature trail will be extended from the present Bajada Loop Drive, using parts of Kinney and Golden Gate Roads and all of Hohokam Road, to also include optional routes. These optional routes would include the remainder of Golden Gate Road (between its intersections with Hohokam and Picture Rocks Roads) and that portion of Picture Rocks Road between its intersection with Golden Gate Road and the east boundary of this unit of the monument (See Figure 5, Location of Recommended Interpretive Projects, Tucson Mountain Unit, Saguaro National Monument).

Figure 5: Location of Recommended Interpretive Projects, Tucson Mountain Unit, Saguaro National Monument



~ Key ~

- |  |  |
|--|--|
| ■ - Entrance Info/Orient Wayside           | - Portion of Road System included in Motor Vehicle Trail Guide |
| ▲ - Trail Head Info/Orient Wayside         | IC - Information Center  |
| ⬡ - Picnic Area Info/Orient/Interp Wayside | ⊙ - Interpretive Trail - Signs                                 |
| ● - RSA/Wildlife Blind Area                | ⊙ - Interpretive Trail - Guide Book                            |
| ☀ - Mountain Peak                          |  |

After much consideration, it was decided the written guide for the Valley View Interpretive Walking Trail should be an integral part of the Motor Nature Trail Guide. Geology would be the specific subtheme for this walking trail, and its inclusion in the guide would assure the proper inclusion of that subtheme. This also solves another problem. It eliminates the need for another booklet dispenser in an unattended area subject to vandalism.

Since the entire interpretive Motor Nature Trail lies atop a large bajada land form and even though the self-guiding interpretive drive would be extended beyond just a loop, we strongly recommend that the term "Bajada" be retained in the Motor Nature Trail's title.

A "numbered stake" system should be considered for stops along the route, although other feasible alternatives need to be explored. If the former is used, the stops along the Motor Nature Trail route would be keyed to numbered stakes, each marked with a tour route logo of a stylized nature saguaro within a circle, i.e., , as used elsewhere in the monument.

To reduce the opportunities for further incidents of vandalism, dispensing points for this guide should be limited to the Red Hills Information Center and a roadside location along Hohokam Road near its junction with Kinney Road. However, some secure means of making the guidebook available after hours should be explored seriously. For example, perhaps an actual vending machine mounted on the exterior wall of the Information Center or at least a dispensing box with a coin drop, whose holding box is located inside the Information Center.

Since this guidebook will become the medium carrying the major interpretive experience for visitors to the Tucson Mountain Unit of Saguaro National Monument, it needs to be written and designed by persons outside the park staff. The unit staff should work closely with both Interpretive Specialist Ed Pilley of the Western Regional Office's Division of Interpretation and the Southwest Parks and Monuments Headquarters staff to seek out the necessary qualified professionals.

This guidebook needs to be of a size that is easily and conveniently used both in an auto and while walking along the breezy ridgeline of Valley View Trail. It should contain an orientation map and illustrations as needed, as well as some means of separating logistical directions from the remainder of the text, such as the use of italics, bold face type, or a box around the directions. Because many TMU visitors are senior citizens, consideration must also be made for the special user needs of such citizens, i.e., large readable, adequately spaced type faces, sizes and layouts; and high contrast designs.

A formal "Request to Publish" this new Motor Nature Trail Guide will need to be drafted and submitted through proper channels to Southwest Parks and Monuments Association. Obviously the unit staff will need to furnish basic information to the writer at the outset and then provide support, liaison and review as the writing proceeds. Southern Arizona Group Interpretive Specialist Tom White will assist as needed.

Target date for on-site delivery of the guidebook should be January, 1982. The staff at TMU estimates an initial printing of 20,000 for a two year supply.

## INTERPRETIVE SERVICES ASSOCIATED WITH THE MOTOR NATURE TRAIL

Three interpretive activities, one existent and two yet to be established, would further enhance the experience of visitors using the interpretive Motor Nature Trail -- a combination Wildlife Observation Blind and Environmental Study Area, the Desert Discovery Nature Trail, and the Valley View Interpretive Trail. Although each of the first two could be used separately from the Motor Nature Trail, we believe most people will use them as another feature along the tour route.

Wildlife Viewing Area/Environmental Study Area. Shortly after beginning the Motor Nature Trail at the Red Hills Information Center (0.4 miles) the visitor finds a left turn which, until recently, led to an area of complete environmental liability -- an old road which formerly led to a temporary residential site and a maintenance "boneyard." Late in 1978 the unit staff with concerted assistance of YACC enrollees cleaned up the area, scarified the road, built a trail over a portion of it, constructed a wildlife observation blind of native materials at the end of the trail near a man-made wildlife water hole, and planted the remainder of the old road alignment with desert plantings salvaged from a road construction area. Unfortunately, an arson-caused fire burned the blind completely in the summer of 1979.

The area contains potential for both the renewing of the wildlife observation area by rebuilding a blind and the development of an Environmental Study Area (hereafter abbreviated ESA). Both interpretive developments would satisfy specific needs of

visitors which would be difficult, if not impossible to meet, elsewhere in the unit. The former would provide a wildlife observation in a quiet setting, with a minimum of distractions, while the latter would provide a worthwhile experience for school classes whose teachers are looking for additional meaningful activity after visiting the nearby Arizona-Sonora Desert Museum. The staff has had a significant number of such requests in the past. Obviously, simultaneous use of both the ESA and the blind would require a large measure of sensitive use-management by the unit staff.

Both of these interpretive developments would use a common interpretive theme which cuts across all four subthemes -- the vital role of water in the desert. Additionally, the wildlife observation blind should also treat the topic of specific bird and mammal identification.

Concerning logistics: (1) both facilities can and should be made fully accessible to all visitors; (2) the blind should be rebuilt of native materials, but with a lower total profile than the first and with an observation window at wheelchair observation height; (3) a guide to the ESA will need to be written and care should be exercised to assure that the use of the area by school classes does not unduly create excess noise and disturb the tranquility so essential to wildlife observation; and, (4) introduction of the trail to the blind and the ESA will be provided only in the Motor Nature Trail Guide and the ESA Guide to partially manage trail use and still maintain some semblance of tranquility in the wildlife observation area.

Perhaps the blind could be rebuilt by YACC enrollees; the unit's staff could provide pertinent and suitable wildlife identification illustrations from existent sources; and the staff should work closely with Southern Arizona Group Headquarters Environmental/Education Specialist Dave Todd to develop the ESA and its guidebook.

Desert Discovery Nature Trail. This trail, located 1.1 miles west of the Information Center, would give the visitor opportunity to sample much of the wide variety of flora of this Arizona upland biotic community and its ecology, especially the giant saguaro. Its theme, biotic adaptations to the arid conditions of the Sonoran Desert, would differ from that of the Cactus Garden Trail adjacent to the unit headquarters information center, which interprets the ethnobotanical uses of these desert plants.

Because of its prominent location along heavily traveled Kinney Road, the area unfortunately has experienced considerable vandalism -- damage to the publication dispenser and actual removal of identified desert plants. The selection of the most suitable interpretive media largely becomes a determination of the lesser of two temptations to vandal-prone visitors. Any publication doing justice to the trail would need to be a sales item and the necessary coin drop would most likely pose the greatest temptation to would-be vandals. We believe a series of acrylic-imbedded interpretive signs (i.e., Modulite) to possibly be the best suited to this development. These signs can be produced in quantity at a relatively inexpensive cost per set after initial production.

Valley View Interpretive Trail. As was described in the discussion about Motor Nature Trail (see page 31) the interpretive walking trail (whose trailhead is located about 0.9 miles northeast of Sus Picnic Area on Hohokam Road) is included as an integral part of the Motor Nature Trail Guide.

However, because the trail ends -- as the name implies -- at a panoramic overlook of the Avra Valley, we propose a couple of further developments to aid the visitor. First would be an interpretive/informational device at the terminal overlook with a compass rose to help orient the visitor to the sprawling, developing scene below. Next would be installation of a "puffing bench" at the overlook, and perhaps one or two strategically and sensitively placed along the trail. The interpretive theme for this trail treated in the Motor Nature Trail sales publication should concern itself with geology, particularly B1, Processes, and B3, Influences of Land Forms, with some emphasis on Soils, B2. The treatment at the overlook should interpret contemporary Human Activity, D3, causing change and development in the Avra Valley below.

To alleviate the less than desirable situation of geological interpretation only for a fee, we suggest that a free condensed, non-illustrated "use-and-return" version of this trail guide be made available at a trailside dispenser near the trailhead. However, development of this guide should have a low priority among these interpretive proposals; then results use should be closely monitored for evidences of vandalism and loss. The dispenser and/or the guide should clearly state that it is duplicating the material in the Motor Nature Trail Guide, albeit a condensed version.

Concerning the logistics of development: (1) this interpretive trail should be marked, and even outlined if need be, but major trail construction should be held to a minimum and resorted to only when trail safety dictates; (2) Southern Arizona Group Interpretive Specialist Tom White will work with the park staff to develop the overlook interpretive device with the identifier compass rose; and, (3) the unit's maintenance and/or YACC enrollees could make and install the "puffing bench(es)."

## FOREIGN LANGUAGE INFORMATION/INTERPRETATION LEAFLETS

Significantly larger numbers of foreign language speaking visitors are visiting our parks each year. Tucson Mountain Unit is experiencing its share of that increase, particularly with German-speaking visitors, but also to a lesser extent with French and Japanese-speaking guests.

Even though most foreign visitors possess at least the rudiments of the English language, almost without exception these guests are much more at ease with at least an abbreviated version of the park story in their native language. Initial efforts to interpret the technical story of ecology to these foreign visitors should be directed at developing such a publication. It should take the form of a brief handout but should be a translation of ideas, rather than a verbatim translation, and as true as possible to accepted usage of that language. Present need is still limited enough to preclude printing in quantity as a sales publication -- thus a free handout is the only initial alternative. Considering the priorities set forth later in this plan, a German language handout should be developed and made available. Then as need for French, Italian, and Japanese language interpretation increases, additional handouts in those languages should be developed and printed. We suggest a limited printing of 500 of each language be printed, and its use monitored to determine quantities needed for future multiyear printings.

Beyond that, a foreign language sales publication, such as a condensed edition of the Bajada Loop Drive with pertinent additions, might be warranted. This publication, too, should be a flowing translation of ideas and concepts, not a verbatim translation.

Undoubtedly, the Department of Modern Languages at the University of Arizona remains the best source for foreign language translations. The unit's staff first will need to develop a summary of the parks features and natural history as a basic document for translation. Once the translation is in hand, Southwest Parks and Monuments Association should be approached to provide the handouts as a donation to the interpretive program.

## FULL SPECTRUM USE INFORMATION HANDOUT

The unit has spent, and will continue to spend, considerable time, effort and expense modifying existing facilities and building new facilities to accommodate as much "full-spectrum" visitor use as possible. However, many special users lack specific information about the availability of such facilities and possibilities of interpretive experiences.

We propose a one-page handout, to be distributed at the Information Center, containing accessibility information until a future revision of the park's folder can incorporate such information. Like the foreign language folders, we suggest a limited printing of about 500, with a monitoring of use to determine quantities needed for future multiyear printings, if needed.

Most likely the central feature of the handout would be a map of TMU using universal symbols. If the unit budget is too limited to provide such a handout, Southwest Parks and Monuments Association should be approached via the donation request process.

## AREAS OF CONCERN ADDRESSED BUT NO TREATMENT RECOMMENDED

We believe that it is appropriate to briefly discuss two areas of concern which the team initially considered and then decided to omit from the plan.

Outreach Interpretation for Horseback Riders. In an initial effort to consider ways of reaching all types of monument visitors, the unit staff suggested considering those who enter the park on horseback as a part of organized trail rides originating at neighboring guest ranches. After discussing such things as specially prepared folders placed in each of the guest quarters at the ranches, we decided the number of visitors entering the unit through this activity was so limited that value received by potential visitors was not worth the effort at this time. However, should significantly larger increases in this activity occur, reconsideration of interpretation to reach these visitors may be necessary.

Interpreting the Annual Saguaro Fruit Harvest by Papagos. In recognition of the historic tradition of saguaro fruit gathering by the Papago Indians, a Memorandum of Understanding with the Papago Tribe provides for the issuance of permits to the Papagos for annual saguaro fruit picking for personal consumption and use. The activity traditionally takes place at a site located due west of the Red Hills Information Center (in Section 36) accessible from Sandario Road.

At first consideration, this might seem to be a golden opportunity to interpret an "on-going" native lifeway, with perhaps even an invitation to taste the fruit and its products. However, neighboring Arizona Sonora Desert Museum is already

interpreting that harvest with on-site demonstrations by Papago Indians during the harvest time. Also, any NPS interpretation would have to address questions of applicable health and sanitation regulations and perhaps developing conflicts with the "harvest for personal use and consumption only" provisions of the permits.

Therefore, it seems best to simply allow the status quo on-site and let the existing exhibit in the Information Center (proposed for upgrade revision) carry the Service's interpretation of this activity.

UNIT HEADQUARTERS AREA

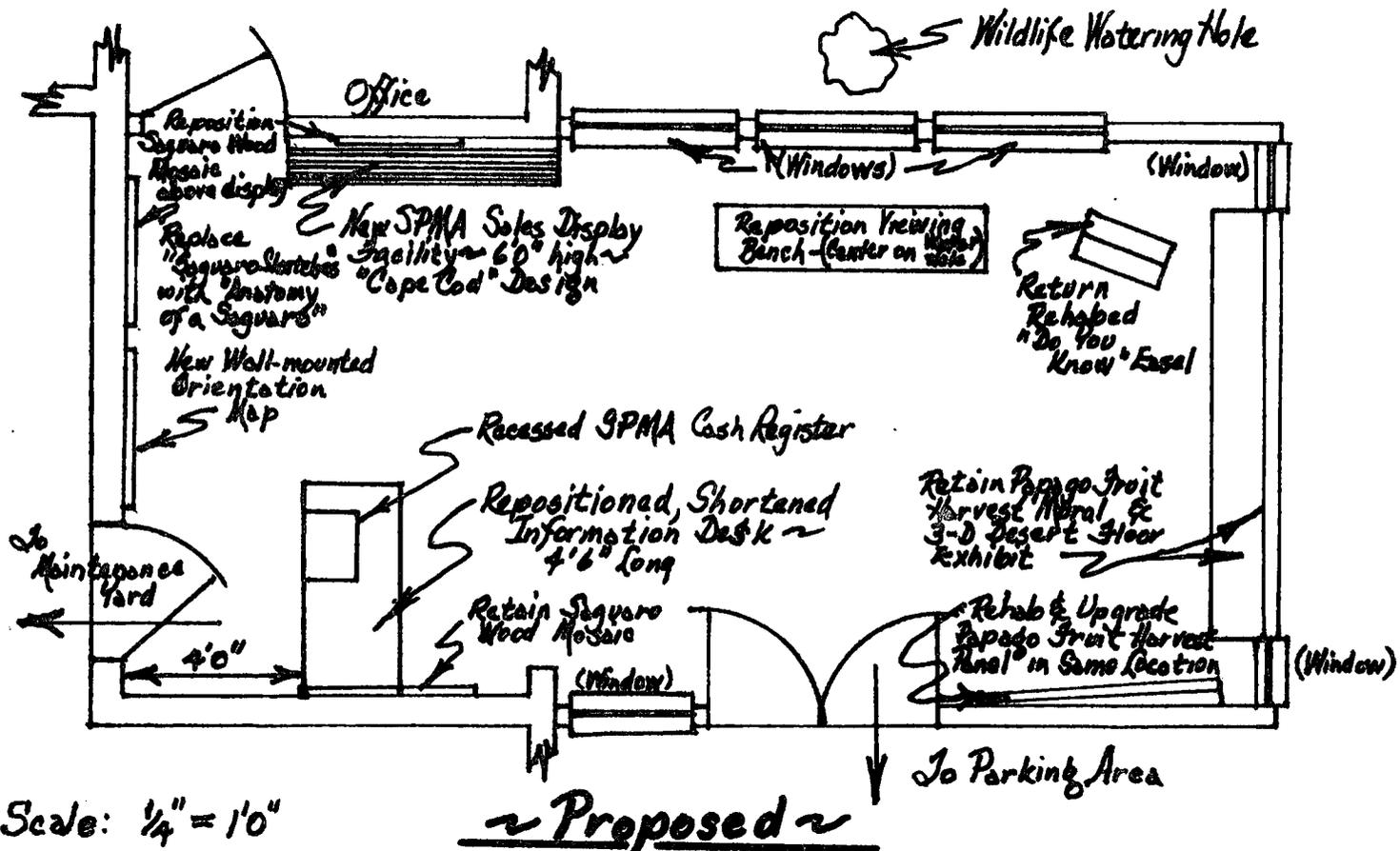
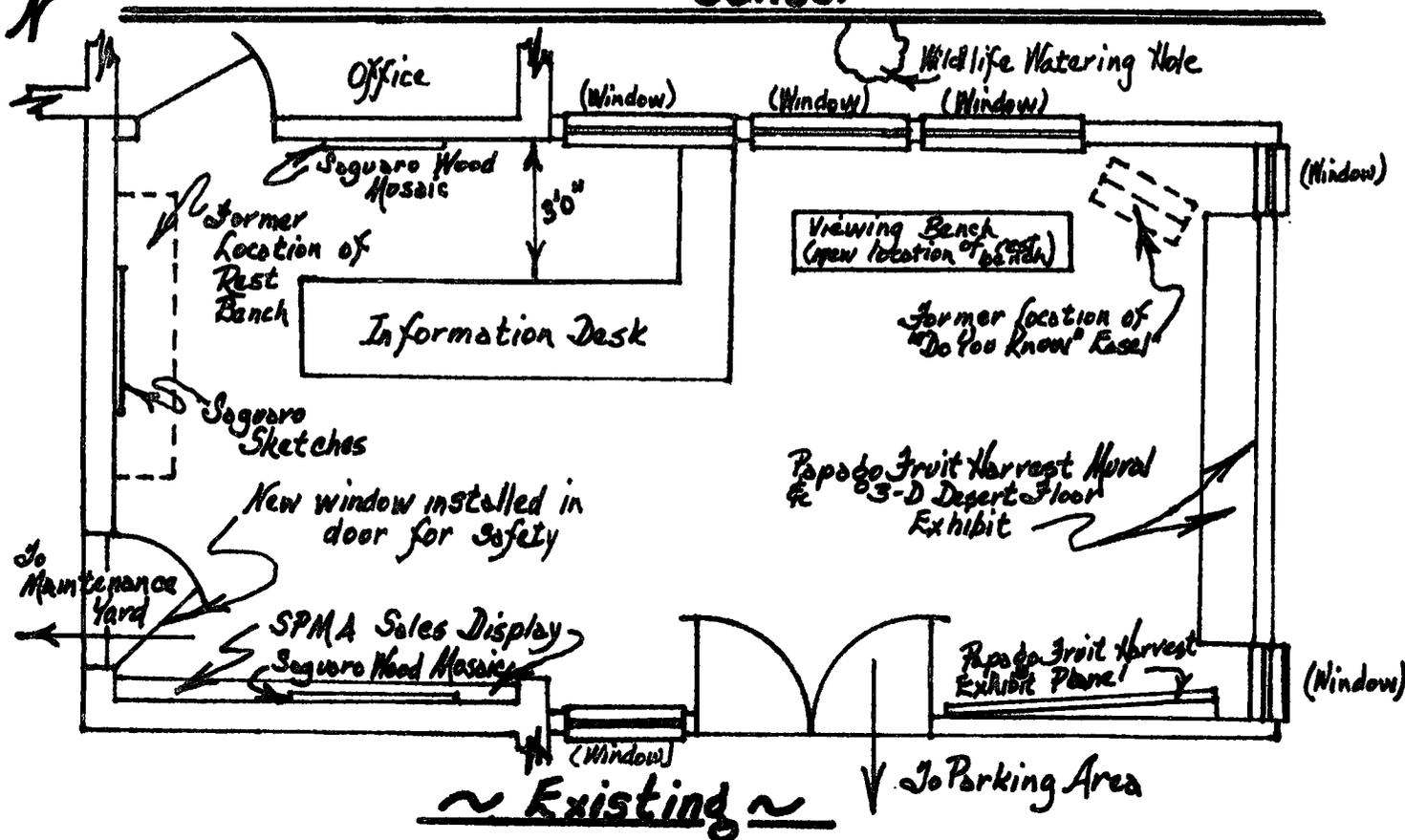
RED HILLS INFORMATION CENTER

As Tucson Mountain Unit experiences the growing pains of rapidly increasing visitation, the visitor use pressures on the limited interior space of the Information Center become more and more acute. The need for as much visitor circulation room as is possible, along with the general need to upgrade several exhibits developed and produced on-site, is very apparent. Relocation of the Southwest Parks and Monuments Association (SPMA) sales facility, to provide access for children and the handicapped, as well as more convenient access to all visitors, is also necessary.

To open up visitor flow space within the single room Information Center, we suggest shortening the length of the information desk to about 4-1/2 feet and moving it to about the west wall of the room, paralleling the north wall, as shown in Figure 6, "Sketch of Modification of Facilities and Exhibits at Red Hills Information Center." The reserve stock of handout materials, as well as some of the lesser-used reference materials which would no longer fit in the shortened desk, can be stored in the office just off the northeast corner of the Information Center. A telephone extension also needs to be installed behind the relocated information desk to continue prompt, efficient service to the public. A wall-mounted orientation map, located just to the right of the maintenance yard door, would serve the same function as do maps currently mounted on the top of the desk.

A new SPMA sales display facility should be built and installed on the east wall between the windows and the office door. Jim Murfin, WASO Cooperating Associations Coordinator, suggests the "Cape Cod" design, and can supply plans and specs. The display rack should be designed for multiple-copy display. The top of the shortened desk should be modified to recess the SPMA cash register.

# Figure 6: Sketch of Modification of Facilities and Exhibits at the Red Hills Information Center



Scale: 1/4" = 1'0"

The need to move the sitting bench from the north end of the room to a position in front of the east window as suggested by the team has already been accomplished. That bench now serves visitors who opt to sit and view birds and small animals using the observation water hole just east of the Information Center.

The Papago Fruit Harvest Exhibit located to the left of the entrance should continue to interpret Human Activities (Subthemes D1, D1, D3) but needs redesigning. Such a redesign needs to include replacement of the black-and-white photos with color; clarification of the text; inclusion of a contrast between traditional and modern implements; and since this tells a process story, a closer coordination between the text and the color photographs.

The "Saguaro Sketches" poster mounted on the north wall has proven to be too technically detailed to interest most visitors. A similar-sized exhibit illustrating the "Anatomy of a Saguaro," including cutaway view showing the internal rib structure, would have much greater value as an interpretive tool for staff operating the information station. The exhibit would, of course, retain the theme and subtheme: Flora: Life Cycle of a Saguaro. Perhaps special arrangements could be made to have Keith Hoofnagle, the original artist, do this replacement, which should be suitably framed or dry mounted.

Until fairly recently, the unit's public contact personnel used an easel in the Information Center with a short series of posters entitled "Do You Know?" previously developed by a former Park Technician featuring some of the monument's animals.

Specifically, they illustrated lesser-known features about animals which helped visitors understand some important details about the monument's ecosystem. Lack of space and lack of variety in posters caused staff to remove them from public view. The opened-up circulation space in the lobby area should allow space to revive this participatory exhibit. We recommend it include both plants and animals of the Sonoran desert, using ideas suggested by subject matter specialists such as Scotti Steenbergh or staff curators at Arizona Sonora Desert Museum.

On-site staff will be able to make some of these modifications, but they will need assistance by others on a number of areas.

Tucson Mountain Unit's maintenance staff may be able to handle the relocation and modifications of the information desk. However, in relocating the SPMA sales facility they need to work with Ed Pilley for design assistance and with Southwest Parks And Monuments Association for counsel and funding assistance.

The staff plans to have Bob and Joan Tweit, a husband-and wife team of VIP's, photograph the Papago's saguaro fruit harvest sequence in color and rewrite and clarify the text. Yet they will need outside design assistance; perhaps the services of Bill Bolton, Coronado National Memorial, or Dave Forgang, Western Regional Office, could be made available for this brief design project.

Services of one or more technical illustrators will be needed to produce the new "Do You Know?" series as well as the "Anatomy of a Saguaro" poster exhibit. The resources of the U of A's

Department of Scientific Illustration should be explored for both projects. Donation assistance from Southwest Parks and Monuments Association may well be necessary for both of these exhibits as well as for the Papago Fruit Harvest Exhibit.

#### OBSERVATION WATER HOLE

Little change need be made in the interpretive use of the wildlife observation water hole located just east of the Information Center. The relocation of the sitting bench in front of the east-facing windows provides greater convenience for those visitors observing wildlife.

The park staff on duty should continue to provide personal identification of birds and small animals. The staff should use this facility to also interpret the vital role of water in the desert for all life forms as well as the geologic processes.

#### CACTUS GARDEN TRAIL

We recommend that this trail, located immediately west of the Information Center, be further developed as a self-guiding nature trail fully accessible to all visitors. The texts of the interpretive signs along the trail should provide both plant identification and limited ethnobotanical interpretation. This system of interpretive signs should be designed to suit the needs of a wide variety of visitors, i.e., the handicapped, the visitor with limited time on-site, the summer visitor whose activities may be sharply curtailed by extreme heat, as well as visitors who have the time, ability, desire and favorable weather conditions to experience the monument more fully.

The recommendation that trail tread be asphalt-surfaced has already been accomplished by the park staff. As previously

mentioned in "Constraints and Realities Affecting Interpretation" section, selection of a material for the trail's interpretive signs must consider resistance to extreme heat, prolonged periods of direct sunlight exposure, and moderate to severe incidences of vandalism. Acrylic-embedded signs (produced under such product names as "Modulite" and "Fibrex") offer one possibility of meeting such exacting criteria.

We suggest the staff do the initial work (i.e., which plants and gathering basic data on ethnobotanical uses). With the ground work laid, they should then work with others to perfect, design, and install the system -- botanical specialists for technical data review and suggestions; those with design expertise, perhaps Dave Hughes (WRO) for signing material and design assistance; and Southern Arizona Group Interpretive Specialist Tom White for text editing, sources of necessary illustrations, and general logistical support.

## ENTRANCE INFORMATION/ORIENTATION WAYSIDES

As previously detailed, this unit of the monument has experienced a significant alteration of its visitor approach patterns, caused by the erection of Saguaro National Monument exit signs at the Avra Valley Interchange of I-10 and increased use of Picture Rocks Road by bona fide visitors as well as local commuters. These changed visitor use patterns obligate us to provide basic orientation and information about this unit to the visitor. It should be provided at locations as close to their entry into the monument as land use, physical developments and traffic patterns will responsibly and safely allow.

North Entrance - Sandario Road. A small multi-functional, unattended entrance development should be designed and installed along the west side of Sandario Road just south of Rudasill Road. This entrance development should specifically include an orientation wayside exhibit shelter with accompanying roadside pull-off, a prominent park entrance sign, and a small parking area for horse-trailer use. As a result of our inspection of several possible locations, we recommend a previously disturbed site located near the southeast corner of the southern half section of Section 9 south about 0.5 miles south of Rudasill Road.

The wayside exhibit shelter design should accommodate two exhibit panels as follows: Panel 1 - an orientation map, general park information, and park rules and regulations; Panel 2 - desert safety information, and an interpretive message encapsulating the unit's main interpretive theme, including some graphics illustrating common plants along park roadsides. All material in the wayside should be easily readable from a vehicle.

The orientation map should include distances and locate primary visitor use facilities (i.e., the information station, picnic area, trails and trailheads, and handicapped access information). The interpretive panel must feature the Motor Nature Trail and enticingly invite the visitor to use it. Vandalism precludes use of an unattended booklet dispenser in the wayside.

The park entrance sign should be prominent yet designed to fit compatibly with the setting.

The layout of this entrance development, the exhibit wayside and exhibit panels need to be designed by the same person. The site layout should provide parking for at least three pickup/horse trailer combination units separate from the roadside pull-out for the exhibit shelter. Adequate but discrete directional signing for horse trailer parking will probably be necessary. Perhaps Dave Hughes (WRO) could design this facility.

East Entrance - Contzen Pass. To date, relatively few visitors enter the park from the east along Picture Rocks Road, but a large number of those who do are quite confused and disoriented.

A modest orientation wayside should be developed and installed at a roadside pullout at Contzen Pass, where Picture Rocks Road intersects with the east boundary of Tucson Mountain Unit. Functionally it would serve as both an orientation device and a park entrance marker. Focal feature of the wayside would be an orientation map, although it also needs to include rudimentary park information including the availability of the Motor Nature Trail Guide at the Information Center and desert safety tips.

As with other waysides, exhibit materials for this wayside should possess at least a moderate amount of sunfade, vandal and heat-exposure resistance.

Although it is not imperative, it would be best if this wayside, the unattended north entrance exhibit wayside, and perhaps the picnic area and trailhead waysides be designed by the same person (perhaps Dave Hughes, Western Regional Office) as a compatible system. Such a compatibility factor would contribute greatly to a significant sense of continuity of the unit's entire information/interpretation program.

## PICNIC AREA INTERPRETATION/INFORMATION/ORIENTATION WAYSIDES

As previously mentioned in item 10 of the "Interpretive Concerns" section, the unit's four road-accessible picnic areas offer a fine opportunity and perhaps our only opportunity to reach a significant segment of the park's visitors -- weekend visitors who use only the picnic area.

A durable elements-resistant, vandal-resistant wayside should be installed in each of the four picnic areas -- Sus, Signal Hill, Eskiminzin and Camboh.

The interpretive text and supportive graphics should communicate something of the native American inhabitants of the area during historic times and of the origins of the picnic area's name; similar to the signs located until recently in the Sus and Eskiminzin picnic areas. These exhibit structures must also accommodate a moderate-sized orientation map and adequate space to post park rules and regulations and desert safety information.

We suggest the park staff work with Tom White, Southern Arizona Group, to draft texts, arrange for graphics, and determine the amount of space needed for posting rules and regulations, etc.. Wayside design should be compatible with entrance and trailhead waysides. Perhaps Dave Hughes, WRO, could design these waysides, too.

Care should be used during on-site positioning of these waysides. The useful life of this or any sign in the area could be prolonged by avoiding direct southern exposures whenever possible. Signs with southerly exposures suffer from the most intense, deterioration-causing rays of the sun.

## HIKING TRAILS ORIENTATION/INFORMATION WAYSIDES

To remedy the problem stated in item 5 of the "Interpretive Concerns" section, we propose the design, fabrication and installation of an orientation information wayside at each of the park's four trailheads -- gateways to backcountry hiking trails.

Trailheads -- Hugh Norris, Sendero Esperanza and Sweetwater Trails. Identically designed orientation/information waysides need to be developed and installed at the trailheads of each of the following three trails: Hugh Norris; Sendero Esperanza, and Sweetwater. Locations of these trailheads are as follows: Hugh Norris - on Hohokam Road 0.36 miles northeast of the Sus Picnic Area; Sendero Esperanza - on Golden Gate Road opposite the entrance to Eskiminzin Picnic Area; and, Sweetwater - a remote trailhead on the east boundary of the unit accessibly only by a 0.2 mile walk from the terminus of a dead-end dirt road.

Each wayside would include an orientation map prominently showing trails and trail distances. The brief text accompanying the map would supply pertinent climate and safety information including cautions about avoiding dehydration and heat exhaustion. The only difference in the sign for each trailhead would be a "YOU ARE HERE" location identifier.

The signing material for these signs must also be extremely durable, fade and vandal resistant, and easily and relatively inexpensively replaced -- again, an acrylic-embedded material such as "Modulite" or "Fibrex" might be the best materials.

These waysides should be mounted at an angle ("easel-style") with as low a profile as is possible and yet be convenient and practical for hikers. Like the picnic area waysides, the same

cautions about positioning these waysides apply here. We should avoid the south facing exposures of sign faces because they receive the greatest amount of the sun's rays that cause deterioration and fading.

King Canyon and Mam-A-Gah Picnic Area. We recommend only two projects for this area of Tucson Mountain Unit: (1) the installation of a trailhead wayside at the gate closing off the abandoned road leading up King Canyon (of identical design to the other three trailhead waysides); and, (2) replacement of the existing sign at the hike-in Mam-A-Gah Picnic Area made of more durable material but retaining the existing text.

## SUMMARY OF RECOMMENDATIONS

### PUBLICATIONS

1. Motor Nature Trail Guide, sales publication, to be written and designed by persons outside the park staff and published by Southwest Parks and Monuments Association. (Unit staff to work closely with Tom White, Southern Arizona Group, and Ed Pilley, Western Regional Office, to locate writer and develop quantity and cost estimates. Unit staff to provide basic data.)
2. Develop and publish or reproduce Environmental Study Area Guide. (Unit staff to work closely with Dave Todd, Southern Arizona Group.)
3. Develop and publish or reproduce a Full-Spectrum Use Information Handout for use by persons with special needs. (Responsibility: The staff.)
4. German Language Information/Interpretation Handout. (Responsibility: Unit staff to prepare summary of park features and natural history; staff should contact the University of Arizona, Department of Modern Languages to do a translation of ideas -- not verbatim translation.)

### RED HILLS INFORMATION CENTER INTERIOR MODIFICATION

1. Relocate Information Desk and SPMA Sales Facility. (Responsibility: Unit staff with SPMA support.)
2. Redesign of "Papago Fruit Harvest" Exhibit. (Responsibility: Photography and Text Revision - VIP's Bob and Joan Tweit; Possible design assistance from Bill Bolton, Coronado NMem.)

3. Develop "Anatomy of a Saguaro" Exhibit to replace "Saguaro Sketches.": (Responsibility: Unit staff work with a source of technical illustration, such as Keith Hoofnagle or the University of Arizona Department of Scientific Illustration.)
4. Expand the "DO YOU KNOW" Exhibit. (Responsibility: Unit staff glean ideas from subject matter specialists such as the Curators at Arizona Sonora Desert Museum; then work with technical illustrators - see item 3 above.)

#### WAYSIDES

1. Wildlife Observation Blind/ESA - Bird and Mammal Identification Guide Exhibits. (Responsibility: Unit staff with assistance and advice from specialists in the techniques of interpretation for visitors with special use needs.)
2. Desert Discovery Nature Trail - develop and install a series of interpretive signs. (Responsibility: Unit staff working closely with Tom White, Southern Arizona Group.)
3. Valley View Nature Trail - develop and install an interpretive/informational wayside-type device at terminal overlook. (Responsibility: Unit staff working closely with Tom White, Southern Arizona Group.)
4. Cactus Garden Trail - develop and install a series of interpretive signs. (Responsibility: Unit staff working closely with Tom White, Southern Arizona Group, and perhaps Dave Hughes, Western Regional Office.)

5. North Entrance Unattended Wayside Shelter and Park Entrance Sign. (Responsibility: Design could be done by Dave Hughes, Western Regional Office, with raw data input by Unit staff. Construction possibly by park, and support and assistance by Tom White, Southern Arizona Group. Estimated Cost: \$6,000.00)
6. Contzen Pass (East Entrance) Orientation/Information Wayside. (Responsibility: Design could be done by Dave Hughes, Western Regional Office, with raw data input by Unit staff; logistical support and assistance by Tom White, Southern Arizona Group.)
7. Picnic Area Interpretive/Information/Orientation Waysides. Develop and install four (4) such waysides; one each at Sus; Signal Hill; Eskiminzin; and, Camboh Picnic Areas. Replace existing interpretive sign at Mam-a-Gah Hike-in Picnic Area. (Responsibility: Content to be developed by Unit staff and Tom White, Southern Arizona Group. Possible design assistance from Dave Hughes, Western Regional Office.)
8. Trailhead Orientation Waysides. Develop and install four (4) such waysides of common content and design at trailheads for each of the following trails: Hugh Norris; Sendero Esperanza; Sweetwater and King Canyon. (Responsibility: Content to be developed by Unit staff. Possible design assistance from Dave Hughes, Western Regional Office.)

PRIORITY OF RECOMMENDED PROJECTS

1. Motor Nature Trail Guide (Sales Publication)
2. North Entrance Unattended Wayside Shelter and Park Entrance Sign
3. Full-Spectrum Use Information Handout
4. Red Hills Information Center Interior Modification
5. Cactus Garden Trail Sign System
6. Desert Discovery Nature Trail Sign System
7. Four (4) Trailhead Orientation Waysides
8. Five (5) Picnic Area Interpretive/Information/Orientation Waysides
9. Valley View Nature Trail - Interpretive/Informational Overlook Wayside
10. Wildlife Observation Blind and ESA Guide
11. Contzen Pass (East Entrance) Orientation Wayside
12. German Language Information/Interpretation Handout

A P P E N D I C E S

APPENDIX I

RAW DATA SUPPORTING FIGURE 3

COMPARATIVE VISITOR USE

TUCSON MOUNTAIN UNIT VS. TOTAL SAGUARO NATIONAL MONUMENT 1968 - 1980

<u>YEAR</u>	<u>TOTAL SAGUARO NM</u>	<u>RINCON MTN.UNIT</u>	<u>TUCSON MTN.UNIT</u>	<u>% OF TOTAL/TMU</u>
1968	307,100	207,719	99,381	32.4
1969	409,000	269,094	139,906	34.2
1970	351,800	253,292	98,508	28.0
1971	323,300	206,758	116,542	36.1
1972	319,100	206,744	112,356	35.2
1973	390,765	237,277	153,488	39.3
1974	367,193	202,369	164,824	44.9
1975	345,093	201,807	143,286	41.5
1976	400,969	241,908	159,061	39.7
1977	422,498	241,777	180,721	42.8
1978	549,112	270,904	278,208	50.7
1979	556,486	259,247	297,239	53.4
1980	611,317	292,784	318,533	52.1

APPENDIX II

RAW DATA SUPPORTING FIGURE 4

COMPARATIVE VISITOR USE

RED HILLS INFORMATION CENTER VS. TOTAL TUCSON MOUNTAIN UNIT 1975 - 1980

<u>YEAR</u>	<u>TUCSON MTN. UNIT VISITOR USE</u>	<u>RED HILLS INFORMATION CENTER TOTAL USE</u>	<u>% OF TOTAL AT RED HILLS I.C.</u>
1975	143,286	24,038	16.8
1976	159,061	35,992	22.6
1977	180,721	57,734	31.9
1978	278,208	66,302	23.8
1979	297,239	66,264	22.3
1980	318,533	61,900	19.5

(First 9 months % of Total at Red Hills I.C.)

1978 - 24.5%

1979 - 23.3%