

# **Sequoia and Kings Canyon National Parks Cave Management Plan**

**Approved 1998**

## **I. INTRODUCTION**

### A. Legislative History

1. The National Park Service recognizes the scientific, recreational, aesthetic values and the often delicate, nonrenewable nature of the cave and karst resources of Sequoia and Kings Canyon National Parks. This management plan has been developed to provide maximum resource protection, while allowing safe and controlled public use and enjoyment of the caves in these Parks.
  2. Congress has directed the National Park Service to manage the parks "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations." (The NPS Organic Act of 1916 - PL 64-235)
  3. The mandate to protect caves is further defined in the National Park Service Management Policies Handbook, (1988) which states that "The National Park Service will manage caves for the perpetuation of their natural, geological and ecological conditions, and historical association ... Caves, or portions of caves, may be closed to public use ... when such actions are required for human safety and the protection of cave resources."
  4. Further, the "Federal Cave Resources Protection Act of 1988" lists two purposes:
    - a) To secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment and benefit of all people; b) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, educational, or recreational purposes.
- To achieve these purposes, the Act instructs Federal agencies to take action including (but not limited to):
- a) Identification of significant caves on Federal land; b) regulation or restriction of use of significant caves, as appropriate; c) entering into volunteer management agreements with persons of the scientific and recreational caving community; d) appointment of appropriate advisory committees.
5. Finally, in a statement directed at the Freedom of Information Act, the Cave Resources Act states, in Section

5, Confidentiality of Information:

"Information concerning the specific location of any significant cave may not be made available to the public under section 552 of title 5, United States Code, unless the Secretary determines that disclosure of such information would further the purposes of this Act and would not create a substantial risk of harm, theft, or destruction of such cave."

B. Cave Resources in Sequoia and Kings Canyon

1. In the Park Service Natural Resources Management Guideline, NPS-77, a cave is defined as any naturally occurring void, cavity, or system of interconnected passageways beneath the surface of the earth that is large enough to be traversed by people or other biota, that extends into total darkness, and that may or may not have an opening in the earth's surface, or have at least 50 feet of passageway. Types of caves include lava tubes, limestone, marble and gypsum caves, tectonic fractures (earth cracks), littoral (sea) caves, ice caves, and talus caves.

2. The Parks also contain springs, sinkholes, sinking streams and swallets, collapsed caves, and surface deposits of calcite, travertine and tufa, and shallow pits or dolines, which are related to caves. These features are components of karst topography, defined as a area of limestone or marble affected by chemical as well as mechanical erosion in which the above mentioned features exist. Shallow overhangs or rockshelters will not be managed as caves unless they contain significant historical, archeological, mineralogical or other cave-related resources.

3. With a growing inventory that presently exceeds 190 caves, Sequoia and Kings Canyon National Parks represent a significant national resource in cave systems and karst geology.

4. One of the most popular commercial caves in the Western United States is Crystal Cave, which in a five-month summer season is toured by about 65,000 park visitors. Visitation at other commercial caves (1992 numbers) in California and Nevada includes:

Mitchell Caverns, San Bernadino County	10,000 per year
Moaning Caverns, Calaveras County	47,000 per year
Boyden Caverns, Fresno County	27,000 per year
Oregon Caves National Monument	72,000 per year (park total)
Lehman Cave, Great Basin National Park	40,000 per year
Lava Beds National Monument	100,000 per year (park total)

5. A research station has been maintained in Redwood Canyon, in cooperation with the Cave Research Foundation. The focus of this station is Lilburn Cave and research there since 1977 has produced more than 75 technical reports, 20 published articles, and three theses. Cartographic studies at Lilburn have documented 15 miles of cave passage, more than has been recorded in any other cave west of the Continental Divide in North

America. The Lilburn Cave System is a complex, three-dimensional maze; it contains excellent examples of blue- and white-banded marble and many unusual minerals. The hydrology includes numerous sumps, siphons and an ebb-and-flow spring; the sedimentology is a sensitive record of the region's natural history.

6. Other important cave resources include multi-level Lost Soldiers Cave, Clough Cave, which is a bat roost, Palmer Cave, the alpine karst and caves of White Chief Cirque, Franklin Lakes, Panorama Bowl and Timber Gap, and the newly-discovered and heavily-decorated Hurricane Crawl Cave.

### C. Strategic Planning

As a component of the Government Performance and Results Act, Sequoia and Kings Canyon National Parks are creating a revised Strategic Plan to act as road map to our ensure future success in managing these National Parks. Included below are key components of the Parks' Draft Strategic Plan that apply to cave management and the future activities of the Parks' Cave Management Program.

### **THE NATIONAL PARK SERVICE MISSION**

"...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (1916 Organic Act)

"The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established..." (1978 Redwood Act amending the Organic Act)

### **MISSION OF SEQUOIA AND KINGS CANYON NATIONAL PARKS**

The mission of Sequoia and Kings Canyon National Parks is to protect forever the greater Sierran ecosystem, including the sequoia groves and high Sierra regions of the park and its natural evolution, and to provide appropriate opportunities to present and future generations to experience and understand park resources and values.

### **PARK PURPOSE**

! To protect forever the greater Sierran ecosystem, including the sequoia groves and high Sierra regions of the park and its natural evolution;

! To provide appropriate opportunities to present and future generations to experience and understand park resources and values;

! To protect and preserve significant cultural resources;

! To champion the values of national parks and wilderness.

## **PARK SIGNIFICANCE**

Sequoia and Kings Canyon National Parks are significant because they have:

! An extraordinary continuum of ecosystems arrayed along the greatest vertical relief (1,370 to 14,495 feet elevation) of any protected area in the 48 states.

! The highest, most rugged portion of the High Sierra, which is part of the largest contiguous alpine environment in the 48 states.

! Magnificent, deep, glacially carved canyons, including Kings Canyon, Tehipite Valley, and the Kern Canyon.

! The core of the largest area of contiguous designated wilderness in California, the second largest in the 48 states.

! The largest preserved southern Sierran foothills ecosystem.

! Almost 200 known marble caverns, many inhabited by endemic cave fauna.

! A wide spectrum of prehistoric and historic sites documenting human adaptations in their historic settings throughout the Sierran environments.

## **MISSION GOALS**

**MISSION GOAL I:** Natural and cultural resources and associated values are protected, restored, maintained in good condition and managed within their broader ecosystem and cultural context.

**MISSION GOAL II:** Legally designated and proposed Wilderness is managed to meet the standards and ideals of the Wilderness Act and as a component of a larger regional wilderness area.

**MISSION GOAL III:** Management decisions about resources and visitors are based on adequate scholarly and scientific information.

**MISSION GOAL IV:** Visitors have the opportunity to safely enjoy a variety of appropriate experiences and services.

**MISSION GOAL V:** Broad public awareness of the significance of park natural and cultural resources and values, the effect of human activities upon them, and the need for personal commitment to their protection is promoted.

**MISSION GOAL VI:** The park uses current management practices, systems, and technologies to accomplish its mission; works cooperatively with as a part of a greater National Park System organization; and increases its effectiveness with other agencies, organizations, and individuals.

## **LONG-TERM GOALS**

### **PRESERVE PARK RESOURCES**

**MISSION GOAL I:** Natural and cultural resources and associated values are protected, restored, maintained in good condition and managed within their broader ecosystem and cultural context.

#### **Long-Term Goals: By September 30, 2002**

! At least 5% of known non-significant disturbed or abandoned sites; including abandoned roads, trails, campgrounds and picnic areas, and disturbed backcountry meadow sites etc.; are restored.

! Aquatic ecosystems are restored in at least 5% of park waters and no new streams or lakes are degraded by park facilities or human abuse.

! At least 25% of the 1997 identified park populations of federally listed threatened and endangered and sensitive species with critical habitat on park lands or requiring NPS recovery actions have an improved status, and an additional 25% have stable populations.

! At least 90% of known Park caves are protected and preserved for long-term ecosystem integrity and structure, with emphasis on the extremely fragile and irreplaceable nature of the physical and biotic resources.

! Impacts of illegal and non-conforming uses on park natural and cultural resources are reduced by 25% from 1997 levels.

! 75% of the archeological sites listed on the National Register or eligible are in good condition.

**MISSION GOAL II:** Legally designated and proposed Wilderness is managed to meet the standards and ideals of the Wilderness Act and as a component of a larger regional wilderness area.

#### **Long Term Goal: By September 30, 2002**

! Wilderness visitors find solitude and little or no sign of human use in 99% of the wilderness.

**MISSION GOAL III:** Management decisions about resources and visitors are based on adequate scholarly and scientific information.

**Long Term Goals: By September 30, 2002**

! 5 selected biological and physical resources are inventoried, appropriate ecosystem indicators are monitored in at least two major life zones, and understanding of ecosystem functions has increased by 10% over 1997 levels.

**PROVIDE FOR THE PUBLIC ENJOYMENT AND VISITOR EXPERIENCE OF PARKS**

**MISSION GOAL IV:** Visitors have the opportunity to safely enjoy a variety of appropriate experiences and services.

**Long-Term Goals: By September 30, 2002**

! 80% of park visitors are satisfied with appropriate park facilities, services and experiences.

**MISSION GOAL V:** Broad public awareness of the significance of park natural and cultural resources and values, the effect of human activities upon them, and the need for personal commitment to their protection is promoted.

**Long-Term Goals: By September 30, 2002**

! 100% of the visitors have the opportunity to gain detailed knowledge about the Parks.

! The number of visitors receiving information from interpretive personnel increases by 25% over the 1997 level.

! The number of individuals reached by the Park's outreach program is increased by 50% over the 1997 level.

**D. Cave Management Goals**

1. The goals of cave management in Sequoia and Kings Canyon National Parks are:

a) To preserve, protect and maintain the natural and cultural resources, and karst processes, which are of scientific, scenic, natural, and recreational value in these caves and in areas of karst topography. These resources include, but are not limited to, mineral deposits creating cave formations and other cave features, cave passages, rooms, sediments, water-related features and exposed rock, cave life, and items of archaeological and paleontological value.

b) To provide and promote opportunities for the scientific study of cave resources and systems, thus creating a better understanding and documentation of the Park cave resource and caves in general.

c) To provide educational and recreational opportunities for Park visitors.

Progress toward these goals can be accomplished through administrative and regulatory actions involving the establishment of guidelines, regulations, a permit system, a monitoring system and a classification system for park caves, all of which are designed to insure protection of the cave resource and safety for the cave visitor. Additional opportunities to further these goals will involve members of the public. Such involvement could include participation in the Park "Trustee" program, in park approved projects sponsored by the Cave Research Foundation, the Yucca Creek Conservation Task Force.

## II. CATEGORIES OF CAVE MANAGEMENT

### A. Introduction

1. This classification system is based upon the recommended system from NPS-77, developed originally for use in Lincoln National Forest by Jerry Trout and for use in Carlsbad Caverns National Park by Ronal Kerbo.

2. The system consists of a three-element rating for each cave, which includes a) a numerical indication of management type, b) a capital letter indicating the resources in the cave, and c) a Roman numeral indicating a cave's hazard rating.

Each cave is also assigned an individual reference number based upon a karst inventory completed in 1980 by Cave Research Foundation. Caves discovered since 1980 and in future years will be assigned numbers sequentially succeeding those used in the CRF study.

A supplemental code or codes using two lower-case letters revealing additional information about a particular cave may also be present in a cave's classification designation.

3. The rating of caves is inherently subjective and all parts of a cave may not precisely fit a given category. It is possible to classify various portions of a cave differently, based upon a significant distinction in use or characteristics. A cave's rating may also vary seasonally based upon changes in the cave's condition. A cave's rating may be altered based upon newly discovered passages, changes in known passages, changes in cave use, or to reflect current management concerns.

Changes in a cave's ratings will be recommended by the Cave Specialist. Final approval of changes in cave classification will be determined by the Superintendent. (see section III, Responsibilities) Management Class assignment is based upon a cave's resource and hazard class status and the Park's management goals for the cave in question.

4. Restrictions limiting the number of people on trips and the frequency of trips for all management classes of caves may be waived upon request with the Superintendent's approval. Justification for such a waiver is limited to specific projects involving research, cartography, and restoration work, when such an allowance is **essential** to the completion of a project or research activity.

### B. Management Classes (Numerical Rating)

#### **1. Class "1" Caves**

a) Class 1 caves contain passages which are developed. There are two types of Class 1 caves. Type "a", highly-developed caves, provides an opportunity for most visitors to tour a cave without special clothing, equipment, knowledge, or skills. Developed caves are managed to provide a visitor some level of comfort and convenience

(e.g., hard-surfaced trails, handrails, electric lights, sanitation facilities) and interpretive media including tours and brochures. It fulfills the desires of most visitors and permits large numbers of people to experience the cave environment.

b) Type "b", minimally developed caves, are managed to provide relatively easy access with minimal modification of cave resources. Development may consist of a designated trail, following an easy-to-walk route or may involve a more challenging, yet safe cave experience. Cave features must be resilient and the cave's structure and nature must pose little threat to the cave's visitors. This fulfills the needs of those that wish for a more natural cave experience without requiring special skills or equipment.

## **2. Class "2" Caves**

a) Class 2 designations are caves or passages which are undeveloped, and which may be visited only with an NPS, or NPS-designated or approved trip leader, and an approved permit. Such caves contain particularly sensitive geologic or cultural features requiring the guidance of knowledgeable "trustees" to lead trips. (See the section on "Trustees" for details concerning the Park trustee program).

b) Two types of Class 2 caves have been defined. For type "a", in general only one permit every two weeks may be issued (weeks are defined as Sunday through Saturday). Specific plans for a respective Class 2 cave may define the visitation frequency differently from "one permit every two weeks". However every Class 2 cave will entail visitation frequency restrictions. Cavers visiting these caves must file a trip report (see Appendix A) with the Cave Specialist. Resources in these caves can withstand regular visitation only when the numbers of cavers and their routes and techniques are limited. Cavers must be aware of not only the fragile nature of these caves, but also of the impact wrought by "responsible" cavers on caves and their features.

c) Changes in visitation frequency limits will be recommended by the Cave Specialist.

d) For type "b", the qualifications of visitors to the respective cave is such that a guided experience is necessary and such an experience may be offered commercially with Park Service approval, as is currently the practice with the "Wild Tours" in Crystal Cave. Trip leaders must insure that all feasible precautions are taken to leave the cave unimpaired for future visitors.

e) Arrangements for recreational visits into Class 2 caves (including permit applications) must be made at least two weeks in advance. Access in class 2 caves can vary from relatively easy to quite difficult, requiring vertical rope work, extensive crawling or other challenging activities. Participants may be required to furnish their own gear or it may be provided for them upon agreement with the trip leaders in a commercial situation. Evidence of incompetence, previous cave abuse or disregard for park rules all constitute grounds for denying a permit. Permits will be issued by the Cave Specialist, the Fish and Wildlife Biologist or the Chief Ranger's Office.

## **3. Class "3" Caves**

a) Class 3 Caves are undeveloped caves that may be visited by caving groups without an N.P.S., or N.P.S.-approved guide. Two types of Class 3 designation has been created. For type "a" caves, visits require a permit and cannot occur more often than once every two weeks. Specific plans for a respective Class 3a cave may

define the visitation frequency differently from "one permit every two weeks". However every Class 3a cave will entail visitation frequency restrictions. Cavers who visit these caves must complete a "trip report" (see Appendix A) to be filed with the Cave Specialist after the trip.

b) Resources in Class 3a caves can withstand regular visitation only when the numbers of cavers and their routes and techniques are limited. Cavers must be aware of not only the fragile nature of these caves, but also of the impact wrought by "responsible" cavers on caves and their features. Class 3a caves can vary from quite easy to very difficult. Evidence of incompetence, previous cave abuse or disregard for park rules all constitute grounds for denying a permit. Permits will be issued by the Cave Specialist, the Fish and Wildlife Biologist or the Chief Ranger's Office.

c) Changes in visitation frequency limits will be recommended by the Cave Specialist.

d) Type "b" caves do not require a permit and there are no restrictions on the frequency of entry into these caves. The resources within Class 3b caves are less easily impacted than those in Class 2 or Class 3a caves and they can be enjoyed without incurring significant alteration if groups are conscientious and conservation minded. Class 3b caves vary from those which are easily accessible to challenging caves requiring ropes and or other technical gear.

#### **4. Class "4" Caves**

a) Class 4 Caves are closed to general use pending further evaluation or research. Caves are designated Class 4 automatically because they are newly-discovered and require further exploration and/or an inventory of features to evaluate how they should be managed, or they have been explored and known for years but have not been sufficiently inventoried.

Inventoried a Class 4 cave may include a biological inventory, hydrology studies, an inventory of cave features, photo documentation of cave features, geologic studies, sediment studies, cartography or any other information-gathering action deemed appropriate. Management-oriented decisions will also be made. These may involve trail routes, visitation restrictions, and any other decisions deemed to be appropriate.

b) Class 4 caves will be reclassified into another category pending a inventory of cave features. Class 4 caves are open to approved research projects and for minimum administrative, monitoring, and observational purposes. Visitation is by permit, approved project, or MOU agreement only. (see Appendix A)

#### **5. Class "5" Caves**

a) Class 5 Caves are closed to general use because they contain paleontological, archeological, geological, biological or other resources of special scientific value that would be easily altered, even by careful use of the cave. Approved research use of the cave and entry for administrative purposes are allowed. Visitation is by permit, approved project or MOU agreement only. (see Appendix A)

#### **6. Class "6" Caves**

a) Class 6 caves are closed to all use except the absolute minimum required for administrative purposes. These

caves are closed because of extreme, unavoidable hazards for even the most skilled caver, (rockfall, disease, poisoned or dangerous atmosphere, etc.) or because entering them would cause irreparable harm to a fragile resource or to an endangered species, which is threatened by use of the cave. Class 6 classification may be seasonal, based upon the activities of a sensitive species. Visitation is by permit only. (see Appendix A)

### C. Resource Classes (Capital Letter Rating)

#### **1. Class "A" Caves**

a) Class A Caves contain few or no features presently recognized to be unique. Mineral deposits would only include durable types such as flowstone and large stalactites or stalagmites. No historic or significant biological resources would be present in Class A caves. These caves can withstand frequent visitation from cavers with little or no resource degradation.

#### **2. Class "B" Caves**

a) Class B Caves contain only mildly delicate speleothems including smaller stalactites or stalagmites than Class A Caves, short soda straws and large curtains. In general speleothems are of such a size or are located where they are unlikely to be damaged by normal cave use. Biological resources are not unique and are not sensitive to the activity of people. Class B caves have no paleontological or archaeological resources.

#### **3. Class "C" Caves**

a) Class C caves may contain delicate speleothems such as rimstone dams, soda straws over 6 inches in length, narrow columns, stalagmites and stalactites, small helictites and thin curtains. In general speleothems are of such a size or are located where damage or vandalism is likely. Biological activity may include several viable interdependent species, all of which can withstand the activity of people. Paleontological and archaeological resources are limited and not significant.

#### **4. Class "D" Caves**

a) Class D Caves contain speleothems that are of unusual quality and/or are extremely delicate and susceptible to breakage, or resources of value that could be seriously disturbed or destroyed by cavers. Examples of Class D speleothems include selenite needles, aragonite crystals, gypsum flowers or hair, dog-tooth spar crystals, long (over 12 inches) soda straws, moonmilk speleothems and large helictites. Other delicate resources could include pictographs, materials of archaeological value, soft sedimentary deposits, animal remains or a sensitive species of animal.

#### **5. Class "E" Caves**

a) Class E caves contain resources of exceptional scientific value that would be seriously disturbed by frequent visits or by the visits of cavers unfamiliar with the cave's unique resources (resources may not be obvious). Such resources may be biological, geological, hydrological, archeological, ethnographical, or paleontological in nature. They may include rare or unusual speleothems.

### D. Hazard Classes (Roman Numeral Rating)

## **1. Class "I" Caves**

a) Class I Caves are commercialized and feature a paved trail, handrails, a lighted route to follow, and a minimum of stooping or narrow passages, which can be easily negotiated by the average park visitor.

## **2. Class "II" Caves**

a) Class II Caves offer only minimal hazard to the caver. Characteristics include well-defined and obvious passage or passages; no passageways less than 60 centimeters (24 inches) in diameter that are used as the main route through a cave; no sudden drops over 1 meter (3 feet) high; no danger of flooding; small risk of hypothermia based upon the cave's air temperature, air flow and the temperature and amount of water in the cave; no known loose ceiling rock and few loose, floor rocks.

b) Class II Caves should be explored by cavers in groups of no fewer than three, who observe cave safety rules and who have basic equipment including hard hats, three sources of light per person, boots with non-skid soles, and protective clothing.

## **3. Class "III" Caves**

a) Class III Caves offer some potential hazard to cavers. They are mostly horizontal in structure and do not require rope work. Their characteristics include passages which may wind, curve and interconnect, but which are straight-forward and obvious; no passageways less than 45 centimeters (18 inches) in height or diameter that are used as the main route through a cave; no sudden drops over 3 meters (10 feet) and which are easily climbable; limited risk of flooding and hypothermia on the basis of the cave's temperature, air flow and the presence of water; no known loose ceiling rock; floor materials may be loose.

b) Class III Caves should be visited by cavers in groups of no fewer than three, one of whom is an experienced caver and all of whom follow basic caving safety rules. Their equipment should include a hard hat with a mounted light, and two other sources of light per person, boots with non-skid soles and protective clothing.

## **4. Class "IV" Caves**

a) Class IV Caves contain more extensive hazards than caves in Class I, II, or, III. Their characteristics include potentially confusing passages, which may exist on more than one level; passageways as small as 30 centimeters (12 inches) in height or diameter that are used as the main route through a cave; vertical drops less than 15 meters (50 feet) in depth some of which may require rope work; potential risk of flooding and/or danger of hypothermia based upon cave temperature, air flow and quantity of water in the cave; loose ceiling rock in larger passages and potentially unstable floors.

b) Class IV caves should be visited by cavers in groups of no fewer than three, all of whom have moderate caving experience, (including vertical rope work experience) who observe caving and vertical caving safety rules. Appropriate equipment includes a hard hat with a mounted light and two other lights per person; boots with non-skid soles; a complete set of vertical descent and ascent gear each, when appropriate; clothing which can provide a great deal of warmth or water resistance when appropriate and which will not become tangled in vertical equipment while on rope. Other items, which may be appropriate in Class IV Caves include food,

water, a first-aid kit, a map of the cave, and a space blanket or garbage bags to help cavers stay warm.

### **5. Class "V" Caves**

a) Class V Caves are the most hazardous from a structural standpoint. Their characteristics may include areas of confusing maze-type passages and multiple levels; passages less than 30 centimeters (12 inches) in height or diameter along main routes; vertical drops of more than 15 meters (50 feet) requiring ropes; a risk of flooding or a strong danger of hypothermia for the unprepared due to low cave temperatures and/or strong air flow and/or the presence of water; loose ceiling rocks in small passages and crawlways.

b) The nature of Class V Caves necessitates that all members of an exploration party be experienced cavers, that minimum group size be three, and that all party members practice safe caving, vertical caving and cold-condition caving rules. Appropriate equipment would include a shock absorbent, UIAA approved hard hat with mounted light and at least two other sources of light per person; boots with non-skid soles, possibly insulated; a complete set of vertical ascent and descent gear each, as appropriate; protective clothing, possibly including wet suits, which will provide insulation and which will not become caught or snagged in vertical equipment. Other items, which may be appropriate in Class IV Caves include food, water, a first-aid kit, a map of the cave, and a space blanket or garbage bags to help cavers stay warm.

### **6. Class "VI" Caves**

a) Class VI caves contain extreme hazards due to unusual cave characteristics. This includes airborne diseases, dangerous gases, unpredictable flooding and the presence of unstable rocks of a size or in a location that is dangerous to cavers. Class VI caves should only be entered by highly skilled cavers employing specialized equipment and who have a compelling reason. Extra safety precautions such as special communications and pre-arranged rescue capabilities should be considered.

### E. Supplemental Resource Codes

1. These codes are designed to provide extra information about a particular cave's characteristics. Other codes may be created at the recommendation of the Cave Management Committee and implemented by the Cave Specialist.

- a. Bats are present on a regular basis or are consistently found in the cave at a certain time of the year - "bt".
- b. Vertebrates other than bats are seen regularly in the cave - "vb".
- c. Invertebrates inhabit the cave - "iv".
- d. The cave has an active, perennial stream - "sm".
- e. The cave has areas of pooled water - "pw"
- f. The cave has vertical drops requiring the use of ropes. Number or numbers indicates depth or depths of the drops in feet. The first numbers are closer to the entrance - "vd-44, 12".
- g. The cave's actual depth in feet. "e" indicates estimate, "s" indicates surveyed - "dp-44s".
- h The cave's actual length in feet. "e" indicates estimate, "s" indicates surveyed - "lg-1200e".
- i. Caves formed in ice, which are thus potentially seasonal and which may vary in length and depth - "ic".
- j. Caves formed in plutonic talus - "ta".

k. Caves with cultural resources - "cu"

See Appendix B for the assignment of Park caves to the respective classes and categories described above.

### III. CAVE MANAGEMENT

#### A. Cave Use

1. Caves are sensitive, potentially variable features, which are challenging to understand and assess. They are an important aspect of the Parks' resources and of significance in their own right. Caves could also present an extreme hazard to unexperienced or unskilled Park visitors who attempt to visit them.

Cave conservation is a management challenge that requires a conservative, judicious approach to the dissemination of information, an active approach to research, information gathering and data collection, and a sensitivity on the part of Park employees to the special features of Park caves and the threats to these features.

2. Recognizing that caves often contain fragile ecosystems and individual, delicate features, which may be easily and irreparably damaged, and which may present potential dangers to uninformed members of the public, public use of caves will not be publicized or encouraged with the exception of continued public tours at Crystal Cave. Any mention of other caves of Sequoia and Kings Canyon in interpretive publications or programs or in any public access information shall include a message regarding cave preservation and protection.

Interested parties seeking information on caves will be given assistance and information based upon their knowledge of caves, their experience in wild caves, the purpose of their visit and the management criteria pertinent to the cave in question.

Cave locations will not be divulged to the public at large. Revealing cave locations can be a violation of the 1988 Federal Cave Resources Protection Act. Exceptions may include researchers conducting approved projects who have demonstrated an understanding for caves, cave exploration, the fragile features of caves, cave-related cultural resources, the delicate biology of caves; and cave search and rescue operations.

3. Caves are an extension of the surface environment and are affected by the activities of humans. Activities which could have a detrimental effect on a cave's environment include road, parking lot and trail construction; the development of water sources, leach fields, septic systems, and wells; the construction of buildings and the installation of utilities; the diversion or pollution of water and all types of non-structural fires. Future developments involving these type of alterations to the surface environment, must also consider the subsurface environment.

4. Park Service- or Natural History Association-administered developed cave operations must operate under NPS-14, "Cave Radiation Safety and Occupational Health Management" guidelines.

5. Access to all Park Service managed information concerning caves (i.e. the cave files and any other information) is restricted. For employees or members of the public, access to this information may be justified only as an aspect of official Park Service-approved projects, plans or proposals.

## B. Research

1. Caves are a widely-occurring, but little known park resource. With more than 190 known caves, alpine karst, large cave systems and the unusual geochemistry of contact metamorphism, Sequoia and Kings Canyon National Parks are an outstanding area in which to conduct cave-related research. The objectives of research in caves includes the documentation of caves and their passages and features, studies of karst processes, gathering information which is relevant to making management decisions, and the analysis of any cave-related feature that improves understanding of Park caves.

2. Research, and any systematic effort to collect new data in caves must be approved in advance by the Superintendent. Currently research proposals should be submitted to the Superintendent's Office; they are processed by the Science and Resource Management Division; reviewed by the National Biological Service Park Research office, and finally approved or denied by the Superintendent. Deliverables derived from Park cave research should be directed to the Chief of Science and Natural Resource Management. Service collection policies are defined in the Code of Federal Regulations and the National Park Service Management Policies booklet. A Park management directive that addresses collections procedures and responsibilities is also being drafted.

Cave mapping and basic cave feature inventories, including photo monitoring projects need not be formally approved as Park research projects. Rather they will be documented and managed as Resource Management Proposals, and will be prepared for presentation to the Park using the format prescribed by the Western Region of the National Park Service for this purpose.

Proposals for such work are encouraged and assistance in preparing research and resource management proposals may be given by the Cave Specialist, upon request. For other information see Categories of Cave Management, and Special Regulations for Caving Activities.

3. Proposals should specify a starting date, the duration of the project, the name of the responsible individual, an explanation of why the research or study is necessary, a description of how the proposed study will benefit the Park, a clear project objective including a summary of what the research will accomplish, a description of what will be provided to the Park at the end of the project, and the methods and equipment to be used. A detailed list of requirements for proposals is available from the Cave Specialist.

4. Collection permits can be issued to representatives of academic institutions or other qualified researchers only for the purpose of documenting research activities.

All items placed in permanent collections remain the property of the National Park Service and must be documented in the NPS automated National Catalog Program.

6. Researchers entering caves in Management Classes 2, 3a, 4, 5, and 6 must have an approved cave visitation permit for the particular cave in question or must be operating under an MOU or an approved project. See Appendix A.

### C. Cave Monitoring

1. The objectives of cave monitoring are to document and understand changes occurring in caves in the parks, particularly those which are human-caused.
2. Establishing, conducting, and revising a cave monitoring program is the responsibility of the Cave Specialist. The purpose of this program will be to determine human impacts on caves in relation to the cave management objectives.
3. Using knowledge gained from monitoring, fragile resources in the caves can be protected, restored or properly maintained. If it is determined that human use is adversely affecting cave resources, the management category for that cave will be reviewed for possible change to a category that better protects the cave.
4. Monitoring will be accomplished chiefly using a combination of photo transects and cartographic techniques. Photos will be repeated precisely using cave maps, compass bearings, inclination and exposure information, and duplicate equipment, as required. Properly documenting (dating, numbering and referencing) and filing the photographs and accompanying information will be the responsibility of the Cave Specialist. Photos will be stored in the Park archives.
5. Other information will be gathered from cave permits and cave registers. Cave registers will be maintained in Lost Soldier's, Paradise and Palmer Caves by the Cave Specialist. Other registers will be placed as is necessary. For more information on registers see Special Regulations for Caving Activities. Cave permit and register records will be filed and maintained by the Cave Specialist.
6. The frequency of repeating cave-photo transects will be determined according to visitor use levels, a respective cave's fragility, or documented resource degradation as determined by the Cave Specialist.
7. Photo monitoring will not be conducted in all caves because a) in rarely visited caves the impact of monitoring may be greater than the impact of park visitors, b) rarely visited caves categorized under Management Classification 3b may show little impact over time, and c) for reasons of practicality, due to the large number of caves in the park.
8. At the entrance of each cave, a small, permanent, metallic marker will be placed. Each marker will be imprinted with the respective cave's designated reference number.

Markers will serve as an on-sight record of the documentation of a cave's presence and act as the first survey station for cartography work in the cave and on the surface, if the cave location is to be related to other surface features.

### D. Cave-related Search and Rescue



formations;

c) Crystal Sequoia

well known by the general public, many formations, and the management of the SNHA commercial operation;

d) Hurricane Crawl

the nearly pristine state of its passages, and the presence of many outstanding speleothems;

e) Clough

a history of abuse, the widespread knowledge of its location, and the presence of a sensitive species of bats.

3. These criteria used in previous gatings, the successes and failures of these gates and the unique qualities of the cave in question should be used as the basis for determining the need for gating other caves. The criteria include, mazy and confusing passages, sudden drop-offs and vertical drops, delicate and unusual formations, management needs, control of areas under scientific scrutiny, public knowledge of a cave's location, history of, or current destructive activity, biological habitat requirements, and the presence of cultural resources.

4. Future gatings will occur on a "cave by cave" basis as recommended by the Cave Specialist and approved by the Superintendent.

Internal gates limiting access to selected sections or passages of a cave may also be considered.

Biologists specializing in bat biology, will be consulted to assess any negative effects upon wildlife or other resources that gating might entail. Gating design must constitute a synthesis of management strategy for the cave in question, biological concern and potential uses in the cave including research, and search and rescue operations.

5. The design and installation of cave gates must be accomplished in a manner which will minimize impacts to the cave's natural micro climate and nutrient input mechanics, through avoiding changes in the natural flow of air or water in or out of a cave entrance or cave passage. Thus a minimal amount of the entrance space should be filled by the gate's structure and the gate's design must be carefully considered. (An exception to this would exist in the case of a dug or artificially opened entrance, where air flow was originally restricted and could be again by the structure of a gate, thus restoring natural conditions.)

Bars must be horizontal (when possible) and 5.5 inches apart to accommodate bats, yet deny access to people. Vertical bars will be at least 16 inches apart when they are used in a gate's structure. The locking mechanism, or padlock should be out of view from persons approaching the gate from the outside and should be surrounded by metal to preclude the use of boltcutters or hack saws on the hasp or other parts of the locking mechanism.

6. Gates may be retrofitted or altered to meet the above criteria or other relevant or appropriate standards, which may become known in the future.

## F. New Caves or Cave Passages

1. New caves and cave passages are a rare and special opportunity for both the cavers that discover the area and the Park, which learns of a new, untouched resource. Because of the rare opportunity that such a discovery offers, and the potential for irreversible damage in an unexplored passage restrictions and requirements have been placed on new cave and cave passage discoveries. Cavers looking for new caves or passages must keep these requirements in mind and will adhere to them.

Cave discoverers will be given first priority for participation in all activities involving mapping, and inventory- and assessment-oriented trips to the newly found cave by the Park Service. Specific inventory needs that cavers can assist with include cave mapping and photo documentation. Cavers should be qualified in these areas to participate.

2. Careful documentation and evaluation of new cave discoveries is essential. All new cave finds or significant passage discoveries in known caves must be reported to the Park immediately. The Cave Specialist or the District Ranger responsible for that particular part of the park shall be informed of the discovery.

Newly discovered caves will be assigned to Management Class 4.

3. Discoveries involving more than 75 feet of total cave passage length **or** which contain any sensitive cave feature such as delicate speleothems, delicate sediments, archaeological materials, paleontological materials or biological activity will be mapped during the first or second visit by cavers, or Park personnel to the cave. When appropriate, when requested by the cave's discoverers, or at the Park's discretion these surveys will be conducted by Park personnel.

Caves containing the above mentioned unusual features will also be photo-documented during initial trips into the cave to create a permanent record of their original appearance. When appropriate, when requested by the cave's discoverers, or at the Park's discretion these photographs will be taken by Park personnel.

4. Archaeological and paleontological items, delicate sediments and speleothems, and any cave life **must not be disturbed**. During the initial exploration, if it is impossible to proceed without damaging or altering materials, exploration of the cave must be temporarily abandoned until a proper assessment, involving photo-documentation and research, coordinated by the Cave Specialist, can be made.

Every effort will be made to allow initial exploration parties the opportunity to continue their exploration once such an assessment is completed.

5. In large or delicate passages, exploration parties are also responsible for creating and marking trails or routes of least impact to be followed by all future groups, subject to further review by the Cave Specialist. By creating such routes during initial exploration, damage to the cave and its varied resources can be kept to a minimum.

This will be done using flagging tape. String, carbide markings, and paint will not be used. Paper may be used

temporarily. Flagging tape should be thought of, and placed, as a representation of a two-dimensional barrier, which will not be crossed, even by cave photographers.

Orange tape will be placed along the sides of trails or routes. Tape designating trails, will be placed in a way which clearly delineates between areas to be protected and areas to be traveled through. This can best be accomplished by ending or beginning the line of tape at a wall or other prominent feature. Green or blue tape can be used for survey stations. White flagging will designate hazards, such as loose rocks, sudden drop-offs or other dangers.

Writing on tape with indelible markers can be used to convey information. Examples of this include the locations of "boots off" areas, the locations of low, delicate ceiling features, and in areas of confusion, information revealing, which side of a piece of orange tape the trail is on, can be helpful. Routes may be altered if a more appropriate alternative is discovered.

6. When informed of a new discovery, under recommendation of the Cave Specialist, the Park may take specific action to study the features of such a discovery. Such actions may include a biological inventory, hydrology studies, an inventory of cave features, photo documentation of cave features, geologic studies, sediment studies, cartography or any other information-gathering action deemed appropriate.

Management-oriented decisions will also be made. These may involve trail routes, visitation restrictions, and any other decisions deemed to be appropriate.

7. Caves may be named by their discoverers. Names should be descriptive of the cave and its features or the circumstances surrounding its discovery. Cave names are subject to approval by the Cave Specialist.

#### G. Cave Restoration

1. Many activities in caves in Sequoia and Kings Canyon, have caused damage to the Park's cave resources. Broken formations, muddied speleothems, graffiti, rubble from blasting during commercialization, trash, and altered microclimates are all a part of many Park caves. While much of this damage can never be repaired, it is possible to correct some of these problems. In general, clean-up and restoration activities should be conducted in a cautious manner to insure that no additional damage to cave features occurs through inadvertent actions. Particular concerns include cave biology, cultural features, and delicate speleothems and natural sediments. See Appendix G for criteria for cave restoration activities in the two Parks.

#### H. Education and Interpretation

1. The natural history interpretation of the Sequoia and Kings Canyon cave resources is an appropriate and important response to the presence of these resources. As an integral aspect of the Parks, these caves can be an excellent backdrop to quality interpretation, designed to answer the park visitors' questions concerning Park geology, biology, and cave-specific speleology.

The current focus of Park cave interpretation is the Natural History Association conducted tours of Crystal Cave. These tours and the "cave experience" are extremely popular with Park visitors.

All current and future cave-related interpretative activities will include a message on the conservation on caves and their resources.

2. The current Crystal Cave tours are an "active" form of interpretation. Other possible active forms include evening programs and childrens' campfires. Further options, involving a passive form of interpretation, include signs, brochures for the general public and cavers, and messages on permits and cave registers for cavers alone.

Proper training of natural-history interpreters working with caves will be provided.

### I. Park Trustee Program

1. The Park Trustee program is a new and evolving idea based upon the long-used, cave-management concept of trip leaders. Trustees will be Park V.I.P.s (Volunteers in Parks) and will be covered by Park liability and worker's compensation insurance. Initially, the caves with trustee programs are Lost Soldier's, Crystal Sequoia and Weisraum. Separate lists of Park approved and active trustees will be kept for each cave.

Trustees' primary responsibilities will involve the selection of cavers for trips. Trustees must insure that cavers are conservation-minded, cautious around delicate cave features at all times, follow any and all specific restrictions on activities within the cave, have the abilities appropriate for the cave in question (such as vertical proficiency for Lost Soldier's), and are experienced in moving through delicate, physically challenging caves. However, it is the responsibility of cavers interested in visiting these caves to demonstrate these skill and attitudes to a trustee.

Trustees are expected to be active contributors of ideas for conservation-oriented management of the caves with which they are involved and for other caves in the Park. They can act as a ready source of knowledge and experience for the Park Cave Management Program.

2. The maximum number of Park-approved trustees for a specific cave will be determined by the number of possible trips that can occur during a year, based on other restrictions placed on a cave. (such as a Management Class or a commercial operation)

Limits are placed on the number of Trustees to insure that the trustee programs are 1) not larger than is necessary and will not become an administrative burden on Park staff and 2) so that Trustees will have a level of responsibility which keeps them active in the program. The number of trustees for a particular cave may be changed upon recommendation of the Cave Management Committee and the approval of the Superintendent.

Trustees will be expected to participate in a small, minimum number of trips each year, the number of which will vary with the management of each cave. If people interested in visiting the particular cave are not available

for trips, which the trustee may lead, the required number of trips may be waived by the Cave Specialist.

Trustees may resign at any time and the Superintendent may remove an individual's Trustee status at any time. The length of time a person may serve as a Trustee may be limited if there is a demand for Trustee slots and will vary with the management of each cave.

3. Application for Trusteeship should be sent to the Cave Specialist's Office in letter form and should include the individual's experience with cave conservation (clean-ups, cave-gating, activity with Conservation Task Forces, etc), vertical experience (longest drops, most drops per trip, rigging ability, etc), personal caving experience (numbers of times in Lost Soldier's or Crystal Cave, recent caving trips, long caving trips, etc) other qualifications (N.S.S. membership, Grotto officer, Grotto endorsement, etc) and three references. Trustee applicants should seek positive, honest references from any NSS member or other person active in caving. Whether the person giving the reference has been active in Park cave projects and is known to Park management personnel is not essential.

Applications for trusteeship will be approved or denied by the Cave Specialist. The Cave Specialist will consider the geographical location of applicants in its recommendations for the approval of trustees to insure that there is an even distribution of Trustees across California. If more qualified applicants have applied than the number of positions available, a lottery will be held to determine who becomes a Trustee. The lottery's only restriction will be an even geographical distribution.

4. Applications for trustees will be accepted at any time.

## J. Regulations for Caving Activities

Adoption of these regulations into the Superintendent's Compendium under 36CFR is pending.

### **1. General Restrictions and Guidelines (see Appendix D)**

a. 1) An approved Permit is required to enter caves in Management Classes 2 and 3a. An approved permit, documenting specific trips, **and** an approved research agreement is required to enter caves in Management Classes 4, 5 and 6. The permit requirement for class 4 and 5 caves may be waived under a research proposal approved by the Superintendent. In all instances, only the specifically listed cave on the Permit or agreement may be entered. 2) Permits will be issued by the Cave Specialist or the Chief Ranger's Office. Research agreements will be issued through the Park Superintendent's Office. 4) Permitted caving parties must contain at least three persons, but no more than six persons. 5) Other specific restrictions may apply to certain caves based upon their management class and a specific management plan for that cave.

b. No mineral formation, cave speleothem, cave dwelling animal, plant or fungus, or other natural, historical, paleontological or archeological artifact may be handled, damaged or removed from any cave. (An exception to this is researchers with approved collection permits.)

c. 1) No solid human waste may be deposited in a cave. It is recommended that solid waste be transported in plastic bags, which can be emptied into a toilet upon reaching the surface. 2) Low energy caves (those with little water or airflow and mostly fossil passages), particularly caves undergoing heavy use by cavers, are not suitable for the deposit of liquid waste. No liquid human waste may be deposited in any cave in the drainage of the South Fork of the Kaweah River, (including Lost Soldier's) in any cave less than 1000 feet in length, and in Crystal, or Hurricane Crawl Caves. Such waste may be carried in plastic bottles, which can be emptied into a park toilet while the container itself is disposed of in a park garbage can or reused.

d. 1) All equipment, supplies, trash, clothing and other materials taken into a cave must be removed by the cavers at the end of their trip. 2) Of particular importance, is the removal of all spent carbide and spent batteries due to the toxic nature of these items. 3) Cavers are expected to be diligent in removing items which are often left behind such as fruit seeds, candle wax, small candy wrappers, crumbs from food, and wire insulation if an electrical lighting system is repaired, etc.

e. 1) Park caves are inhabited by a wide variety of living organisms. It is the responsibility of cavers not to harm these animals, fungi, or other cave life. 2) Near the entrances of many low and middle elevation caves spiders, millipedes, *Ensatina* salamanders and other creatures will be found. It is easy to step on, lay a hand or pack on, or brush against these animals, killing them or severely injuring them. These animals can also be inadvertently harmed by the "turning over" or movement of rocks leaf litter or other organic matter. **Cavers must be very careful to avoid injuring life of the twilight zone.** 3) In a few park caves, notably Clough, Hurricane, and Crystal, animals are found throughout the cave, requiring cavers to be careful at all times. 4) Some caves are also a home for bats. When a large colony is encountered **or** bats are flying, chirping, **or** hanging but awake and moving, cavers should immediately leave the area. Cavers may move past solitary bats, which are sleeping or resting on a wall or ceiling. However, while moving past the bat, all cavers should be quiet, move quickly and avoid shining lights on the animal. Lights with red filters have been shown to disturb bats less and can be used by cavers in these situations.

f. 1) Cavers should carefully select their clothing when visiting Park caves. Sweaters and other lint-producing articles should not be worn as an outer layer. In tight passages, such clothing will often leave behind small hairs and lint that are foreign to the cave environment. 2) A few caves have "boots-off" areas where delicate formations are crossed. Wool socks can cause the same problems in these areas and should not be worn as an outer layer when walking on flowstone or rimstone. 3) Sections of other caves may require the use of light-soled boots, which cavers must provide.

g. 1) Due to persistent problems, carbide, and carbide lamps and all tobacco products, including cigarettes, cigars, snuff, and chewing tobacco may not be used in Park caves. 2) Carbide lamps are being banned because of the inadvertent, yet common marking of cave walls with carbide soot, and the spilling and dumping of spent carbide. 3) Carbide lamps may be used in caves under special provisions, requested in writing, and approved by the Superintendent or lamp use may be approved as an aspect of a research proposal. Requests should be specific and will be considered on the basis of safety concerns in high-elevation, cold caves.

## **2. Other Restrictions**

a. 1) Items relating to caver safety, cave conservation or cave registers may be left in a cave with the permission of the Cave Specialist. Examples of items which will be permitted include flagging to mark trails in sensitive areas, the phone line in Lilburn Cave, a cache of emergency equipment and supplies, cave gates, and bolts. Equipment documented in research proposals need not be assessed through this permit process.

b. 1) Cave registers may be placed in a cave inside unbreakable, water-proof containers located in areas which do not flood and which otherwise are stable. 2) Permission to install a cave register may be obtained from the Cave Specialist. 3) Registers may be placed by caving organizations, with an individual or the Park Service, assuming responsibility for the register. 4) The Park Service will maintain registers in Lost Soldier's, Paradise and Palmer Caves and other caves as deemed necessary. 5) All registers must be visited for the purpose of maintaining them at least once a year. Organizations placing a register are solely responsible for maintaining it and insuring that the register and its contents do not become a litter problem in a cave. 6) A copy of all data collected must be filed with the Cave Specialist.

c. Open flames or fires and the use of gasoline or fossil fuels and the equipment powered by them, particularly internal combustion engines, are prohibited inside park caves.

d. Cavers visiting caves on the Crystal Cave Road must coordinate their activities with the Park Service and the Sequoia Natural History Association because of the locked gate on the Crystal Cave Road. 2) It is best if cavers limit their visits to this area of the park to the hours that the road is normally open.

e. Camping is not permitted in Park caves.

f. Cavers may not wash their hands, bodies or gear or do other activities, which may disturb or otherwise degrade the water quality in caves.

## **K. Special Activities**

### **1. Digging**

a. Cavers exploring new leads, or new caves, or moving through a cave in a known area are not allowed to dig or to remove debris or stones. Such an activity conducted at the time, without Park permission, will only be allowed if the digging activity is essential to the safety of travel through a specific area of a cave.

b. Recognizing that air flow or water flow through a constriction or other pertinent information about a cave may often indicate undiscovered and potentially important cave resources, permission for digging or rock removal must be approved by the Superintendent as an approved Resource Management Project. (see section B)

c. All digging in Park caves will be limited to small-scale activities using implements such as hand trowels and small pry bars. Generally digs occur in very small or tight areas allowing only a single individual to work at a

time. Progress on digs is most often very slow, and many seasons of work may be required to advance just a few feet down a partially blocked passage. Cavers typically remove small amounts of loose sand or small rocks. A minimum amount of material is removed, usually just enough for a single person to squeeze by. Digging also often involves working in awkward positions and locations. Due to the sedentary nature of the task and the increased contact with cave walls and floors associated with small passages, cavers often quickly become cold. Both of these components of digging severely limit the scope and duration of the activity. Small-scale rock and dirt removal activities can be dangerous. Cavers must use extreme caution and such activities are done purely at their own risk.

d. Dug or moved materials must be disposed of properly. Details of such disposal may be specified on the permit. In a cave, such materials may not alter air, water and nutrient flow in the cave, change the cave's natural appearance, inadvertently muddy or add silt to streams, pools or other bodies of water, and exposure to finer materials during **and after** the dig must be limited to avoid the accidental transportation of mud, clay, sand or other sediment on caver clothing, gloves or boots to areas in the cave where they may cause damage to speleothems, bodies of water or any other cave features. On the surface, dug or moved materials must be dispersed in a way that mimics the natural surroundings of the dig. Loose sediment and rock should be placed in other similar areas of sediment or stone or scattered thinly and not left in a large "pile".

e. No digging or removal of rock or debris is permitted beyond the areas described above. The use of explosives, or powered mechanical devices such as "jackhammers" and "rock splitters" will not be allowed in connection with cave exploration activities.

f. Digging and rock removal can change the airflow in a cave or suspected cave. Alterations in airflow must be avoided to protect natural cave environments and their biota. Conservation can be accomplished by covering enlarged openings when work on the dig is not being done and when digging activities are completed.

g. Digging and rock removal can be a destructive activity, potentially in conflict with the Park Service mission and the goals of Sequoia and Kings Canyon National Parks, and therefore must be kept to a minimum.

## **2. Diving**

a. Cave diving can be a dangerous activity and will be regulated through a written dive proposal approved by the Park Superintendent. The opinion of the Regional Dive Officer may also be solicited in reference to cave diving requests.

Dives into previously unexplored passages, at high elevation (defined as above 700 meters in elevation) or deep dives (defined as deeper than 40 meters at low elevations or deeper than 30 meters at high elevations) may only be attempted by persons with a full Cave Diving Certification. Persons certified with Introduction to Cave Diving may cave dive when not in violation of the above regulations or as an assistant to a person with full certification. Persons not certified as **cave** divers may not dive in park caves.

## **3. Solo Caving**

a. Solo caving is discouraged in the caves of Sequoia and Kings Canyon. Solo cavers must assume all risk and responsibility for this dangerous activity.

## **IV. RESPONSIBILITIES**

### **A. Cave Specialist**

1. Cave Specialist's responsibilities include the coordination of cave related research. This will involve recruiting, assisting and observing researchers.
2. All cave monitoring activities will be coordinated by the Cave Specialist. These activities include a) recording, documenting and compiling permit and register information; b) storing and organizing cave transect photos; c) maintaining and placing cave registers as needed; and d) the placing of small, metallic markers at cave entrances to serve as an on-sight record of the documentation of a cave's presence.
3. The Cave Specialist will participate on the Park Search and Rescue Team. He or she will be the resource advisor providing rescuers with information relating to the protecting of cave resources during cave search and rescue operations.
4. Other responsibilities are a) the documentation and management of all information involving Park caves, including information on new caves or cave passages and information in the Park G.I.S. (Geographic Information System); b) approving or denying and issuing cave permits; c) providing cavers with information on the restrictions and requirements involved with caving in the Park; d) coordinating the activities of cavers involved in volunteer efforts to restore, document, map, or assess any cave or cave-related resource in the Parks; and e) providing other Park employees with information about Park caves and caving technology as is required for their activities and responsibilities.
5. Responsibilities defined in the Management Plan include a) developing and proposing management plans for specific caves, cave classification reassignments, and cave gate proposals. b) Determining visitation frequencies, and photo-documentation frequencies for specific caves. c) Reviewing the long-term use and regulation of specific caves to evaluate the need for site-specific changes in management actions d) reviewing and approving or rejecting the applications of potential "Trustees".
6. The Cave Specialist will coordinate research efforts within Park caves. This includes identifying research needs, facilitating research projects, consultation on the approval of research projects, the preparation of Project Statements, and the storage and maintenance of data derived from research.
7. The Cave Specialist will prepare an annual report and make an annual presentation documenting the programs activities. The report and presentation will be completed in the spring for the previous year.

### **B. District Rangers**

1. District Rangers may retain a basic knowledge and secured files on the caves in their district. Such knowledge will include locations, basic information on the activities of cavers, and cave features. With the

increasing caving activity in many areas of the Park, such information will be helpful in district management, as well as necessary in the event of a search and rescue operation.

### C. Sub-District Rangers

1. Sub-District Rangers are responsible for cave search and rescue activities within their sub-districts.

### C. Trustees

1. Trustees are cavers with a great deal of caving experience and knowledge, who are respected by fellow cavers and who are willing to become involved in the Park cave management program as V.I.P.s. Such people will take an active role in the management of groups visiting Lost Soldier's and Crystal Caves by acting as trip leaders. Trustees will be Park V.I.P.s (Volunteers in Parks) and will be covered by Park liability and worker's compensation insurance.

2. Trustees' primary responsibilities will involve the selection of cavers for trips. Trustees must insure that cavers are conservation-minded, cautious around delicate cave features at all times, follow any and all specific restrictions on activities within the cave, have the abilities appropriate for the cave in question (such as vertical proficiency for Lost Soldier's), and are experienced in moving through delicate, physically challenging caves.

### D. Sequoia Natural History Association

1. The Natural History Association will be responsible for the operation of commercialized Crystal Cave, as defined in the agreement between the SNHA and the Park Service. The Association also must insure that its current operations do not adversely impact or cause further damage to the resources of Crystal Cave.

### E. Fish and Wildlife Biologist

1. The Fish and Wildlife Biologist will be involved in issues concerning cave fauna and cave-related aquatic resources. This would include consultations on threatened or endangered listed species that occur in Park caves and the monitoring of other sensitive species and oversight on water quality in Park caves.

### F. Cave Explorers

1. Cavers who discover a new cave or cave passage must report their find and its features to the Park. Cavers may not proceed past any feature, which they would damage. Any archaeological, paleontological or biological feature found must be examined by a specialist in the appropriate, respective field. Exploration will be stopped until this can be accomplished. Other features, which may be damaged, must be photographed in their original state and cavers must do their utmost to avoid doing any damage. Cavers will create trails as they proceed through new areas and they may name their discoveries. Cavers may become involved in future inventorying, surveying and documentation of their discoveries. Park personnel will also be involved in this effort.

#### G. Senior Scientist and BRD

The Parks' Senior Scientist and Members of the Biological Resources Division of the US Geological Survey will provide consultation on the approval of cave research projects. These individuals will also be involved with the coordination and storage of research data and the compilation of annual reports from Principal Investigators.

#### H. Superintendent

The Superintendent will approve or deny 1) specific plans for managing Park caves; 2) changes in the management categories for Park caves; 3) the installation of any new cave gates.