

APPENDIX B: ENTERING LECHUGUILLA CAVE

Purpose

The reason behind developing guidelines for entering Lechuguilla Cave is to allow limited access for scientific research, exploration when in association with survey and inventory, and NPS management-related trips while minimizing impact to the cave. Of primary importance are (1) the safety of all who enter and (2) minimizing impacts to the cave while (3) performing high quality research, survey and management tasks.

There have been many problems with careless and even purposeful actions leading to damage in Lechuguilla Cave. Cave pearls have been taken from the cave. Solid wastes have been left in the cave. Batteries have been intentionally buried in a cave camp. Corrosion residues have been thoughtlessly tracked across pristine flowstone. Individuals have not complied with the liquid waste disposal requirements. These problems and many others have led to the creation of these guidelines. Carelessness and purposeful actions that negatively impact Lechuguilla Cave will not be tolerated. Individuals or groups that do not cave in a safe manner, minimize impacts to the cave and follow these guidelines will not be allowed to enter Lechuguilla Cave in the future.

Obtaining a Cave Permit

All entry into park caves except public tours led by the Interpretation and Education Division require a cave permit. Permits applications may be obtained by contacting the park Cave Resource Office.

Cave Resource Office
Carlsbad Caverns National Park
3225 National Parks Highway
Carlsbad, NM 88220

Guidelines for entry into specific caves or areas of caves can be found in:

- Appendix A - Entering Carlsbad Cavern Off-trail areas and other Park Caves
- Appendix B - Entering Lechuguilla Cave
- Appendix F - Recreational Permit Caving
- Appendix G - Ranger-Guided Trips for the Public to Unimproved Areas

Exceptions to any of the guidelines for entry into park caves must be made in advance and will be recorded on the signed cave permit.

Lechuguilla Cave Exploration, Survey and Inventory Proposals

Exploring previously unknown passages in Lechuguilla Cave provides the opportunity for NPS managers, cave researchers and the public to learn more about this world class cave resource. The knowledge gained from these discoveries is used to make more informed management decisions. This newly acquired knowledge also aids in the scientific quest for a better understanding of both past and present cave and karst processes in Lechuguilla Cave. Cave surveys are performed to acquire information about the location, shape and content of cave passages in order to produce cave maps. Cave surveys and maps produced from them are essential tools for research, management, exploration and interpretation of caves. Cave inventory is undertaken in order to identify the locations and types of general features present. The purpose of this proposal process is to select the best proposals that will produce high quality survey, inventory and quadrangle maps while minimizing impacts to Lechuguilla Cave.

Proposals

Personnel working through any approved proposals will be signed up as official NPS volunteers and will work directly with the park's Cave Resources Office to accomplish assigned tasks. To receive consideration, all proposals must be received by December 31st. The maximum allowable expedition size is twelve persons, however proposals are encouraged to include only the number of participants necessary to safely and efficiently carry out the proposed tasks while minimizing impacts to the cave. While many tasks will require cave camping, proposals that involve day trips to less remote areas are also encouraged.

Contents of Proposal: The following items must be included in proposals to receive full consideration:

- Proposed work area or areas within Lechuguilla Cave.
- Proposed survey, inventory, and exploration tasks.
- Proposed logistics to accomplish described tasks.
- Proposed team members' caving experience regarding safety, survey, inventory, cartography and exploration skills. Include any medical training of proposed team members as well.
- A description of how this proposal will further the goals of producing quadrangle maps of Lechuguilla Cave.
- A description of how this proposal will further the goal of producing high quality survey and inventory data.
- A description of how this proposal will achieve the park's goals while utilizing minimum impact caving techniques and maintaining safety as the highest priority.
- Contact information for applicants including mail address, email address and phone numbers.

The inclusion of an updated quadrangle map of the area to be worked along with a proposal will enhance the overall quality of that proposal.

Selection Criteria: Proposals will be evaluated by the Cave Resource Office based on the following three criteria:

Cartographic rank: Indicates a proposal's quality in achieving the goals of producing quadrangle maps of Lechuguilla Cave. A cartographic rank of four is achieved by including a relevant quadrangle cartographer on the trip. A rank of three is achieved by cooperating with a relevant quadrangle cartographer. A rank of two is achieved by specifying work on specific quadrangle(s). A rank of one is achieved by not listing specific areas

Participant Skill Set: Indicates a proposal's detail in listing and describing the skills and experiences of expedition personnel. A participant detail rank of four is achieved by listing and describing the skills and experiences of the entire proposed team. A rank of three is achieved by listing and describing the skills and experiences of most of the team. A rank of two is achieved by listing and describing the skills and experiences of a few members of the team. A rank of one is achieved by only listing and describing the skills and experiences of the leaders of the team.

Past Success: Indicates the quality of an expedition leader to lead and participate in previous expeditions and our best judgment as to the applicant's and their teams past efforts to conduct and participate in safe expeditions, minimize resource impacts while in Lechuguilla by following the "Guidelines for entering Lechuguilla Cave" (Appendix B of the Cave and Karst Management Plan), and to provide the park with accurate data collection sets. A rank of four indicates that the applicant has always led or contributed to successful expeditions. A rank of three indicates that the applicant has typically led or participated in successful expeditions with some minor lapses. A rank of two indicates that there have been some problems that reduced the success of past expeditions. A rank of one indicates that there have been serious problems with success on past expeditions.

Selection: Each proposal is evaluated against the above three criteria. Each criteria is assigned a rating from one to four with a rating of twelve achieving the best rating. There is no set number of overall expeditions allowed per year. The total number of recommended and approved proposals each year is based on the quality of expedition proposals, Cave Resource Office work load, and geographic and task overlap of proposals.

Proposal Submission: All proposals should be received by the Carlsbad Caverns National Park Cave Resource Office by December 31. Electronic applications should be sent to the Cave Resource Office as either a WORD or PDF attachment. Paper applications should be sent to Cave Resource Office, Carlsbad Caverns National Park, 3225 National Parks Highway, Carlsbad, NM, 88220. Applications can also be faxed to the following number: 505/785-2317. It is the goal of the Cave Resource Office to have the proposals rated and have proposal recommendations submitted to the park Superintendent by January 31 and to have approved proposals announced by early February. Once a proposal has been approved, expedition dates can be coordinated and set with the Cave Resource Office.

Requirements for Entering Lechuguilla Cave

Everyone **must** sign a permit.

Everyone must attend a pre-trip orientation to the guidelines for entering Lechuguilla Cave with Cave Resource Office staff.

Expedition leaders are ultimately responsible for the personnel on their expeditions. Expedition leaders should do their best to recruit cavers who are willing to follow the guidelines that have been established. Expedition leaders should select cavers who are physically fit, psychologically prepared and who have the proper caving skills.

Every team entering the cave will have one designated team leader. Team leaders have tremendous responsibilities. They are responsible for the safety of their team and for the actions of their team members. If a team member is acting in an unsafe manner or not being careful and causing damage to the cave, then it is the team leader's responsibility to correct that person's actions. If problems persist, then the team leader must abort the trip and have the team leave the cave. A team leader should gear team activities to the least experienced member of the team. This pertains to speed of travel as well as climbing. A team should also stay together unless an emergency requires different actions.

Everyone entering the cave is responsible for their actions while in the cave. They are also responsible for reporting to the team leader acts by other team members that are unsafe, unnecessarily impact the cave or do not comply with the Guidelines for Entering Lechuguilla Cave. It is everyone's responsibility to assure that Lechuguilla Cave remains as pristine as possible and that each team member acts in a safe manner while in the cave.

Everyone entering the cave must be experienced vertical cavers and be proficient in single rope techniques (SRT). Minimum SRT skills include tying basic knots, ascending, and descending ropes of up to 300 feet in length, changing over from ascending to descending, changing over from descending to ascending, passing knots and rebelays all while tethering heavy packs. Team leaders should be familiar with basic single rope rescue techniques. Rebelays, redirections, traverse lines and knots will be encountered in different sections of the cave.

Everyone entering the cave should be physically fit and psychologically prepared for the trip and the tasks to be undertaken. Do not enter the cave if you are sleep-deprived or sick.

The entrance to Lechuguilla Cave is at an elevation of about 4,640 feet. Cavers not used to this elevation should try to spend a couple of days at this elevation before entering the cave. The cave is 68 degrees Fahrenheit and 100% humidity. Heat exhaustion and dehydration can be a serious problem. Drink lots of water even if you are not thirsty and eat something every few hours. Those entering the cave for the first time are urged to talk to others concerning clothing to be worn.

Clothing, boots, and caving gear should be clean before entering the cave, in order to minimize the introduction of foreign biological materials into this unique ecosystem. Clean equipment will also prevent tracking and staining of clean cave surfaces.

Boots must have non-marking soles. If you are in doubt, scrape boot over white floor or limestone rocks outside the cave. Marking boots will definitely leave marks. Boots may have either white or black soles as long as they do not leave marks.

External frame packs are not allowed. Nylon or PVC packs specifically designed for cave are preferred. Non-caving packs are not designed for tethering and have extra straps that can catch on delicate formations.

Electric lights are required. No carbide lights or open-flame lights are allowed in Lechuguilla. Delicate, heat-sensitive gypsum hairs, flammable sulfur deposits and carbide disposal issues all contribute to the need for electric lights. Candles may be used in designated camps as long as all wax is contained and removed from the cave.

Everyone should be aware that histoplasmosis has been found in the entrance pit.

All teams entering Lechuguilla Cave must make the Cave Resource Office aware of their “out time.” Any team six hours late or later will have search crews initiated. In the case of multi-trip expeditions, expedition leaders should post sign-in, sign-out sheets for all trips into the cave.

Traveling Through the Cave

All teams will typically have from three to six members. Survey teams will have no more than four members on a team. Exceptions to these team numbers must be approved prior to the trip by the Cave Specialist.

When traveling through the cave, stay on established trails. Everyone and every piece of equipment should stay within the flagged trails. Do not rest outside of the flagged trails. Do not place packs, tripods or flashes outside of the trails. Do not get outside of the orange flagging unless you have permission from the Cave Resource Office. If trail flagging needs maintenance, either fix the problem immediately or notify the Cave Resource Office. Flagging use in the cave in the past has been as follows: Bright orange, for marking the trail; White with Red Stripes, denotes sensitive areas such as gypsum crust, aragonite, etc.; and Blue, is utilized for survey stations. When flagging the trail, use plenty of flagging tape and flag both sides of the trail. This helps keep the trail as narrow as possible (see Appendix M - Cave Conservation and Restoration Activities).

Do not establish a new trail in any area that has a trail. This creates two impacted areas. Don't make new trails for convenience. Use existing trails only.

When entering a designated urine dump site, wear park-provided tyvek boot covers to prevent contamination of other pristine areas. Care should be taken to remove the boot

covers before exiting the urine dump site area. All urine dump sites have clearly marked flagging indicating that boot covers should be worn beyond that point.

Use of tobacco or other similar products in the cave is prohibited.

No consumption of alcohol is allowed in the cave.

Lechuguilla Cave has numerous clays and corrosion residues. Research has indicated that the corrosion residues are related to microbes fixing iron and manganese from the bedrock. Limit your impact on these biologically important corrosion residues by keeping to single-footprint trails through corrosion residue areas and by not unnecessarily impacting any pristine corrosion residues. Be careful to avoid tracking these corrosion residues and clays throughout the cave.

The use of gloves is recommended; however, there are numerous areas in the cave that are signed “Gloves Off.” Gloves get very dirty, particularly in the corrosion residue areas. This corrosion residue must not be smeared over clean or delicate areas. Non-latex surgical gloves can be used in the “gloves off” areas to prevent skin oils from further staining the walls.

Aqua socks or other clean, non-marking shoes must be worn when crossing flowstone areas. Wearing boots or walking barefoot across these areas is not allowed. Before entering a flowstone area, remove or clean all dirty clothing, packs, helmets and other equipment. Take care when transitioning from dirty boots, clothing and gear to aqua socks to avoid contaminating the transition area with dirt. Frequently check to ensure that your aqua sock soles are clean and not tracking dirt. Wearing aqua socks as camp slippers makes them unsuitable for entering flowstone areas.

No material (minerals, speleothems, bones, etc.) may be removed from the cave without a valid, existing scientific collecting permit. Collecting for someone else who has a valid collecting permit requires permission from the permit holder and from the Cave Specialist.

No caches of food, water or other items are allowed in the cave unless an exception has been granted by the Cave Specialist.

When eating (either traveling through the cave or at camp) or preparing food, great care should be taken avoid dropping any crumbs, food particles or drink powders in the cave. Eating should take place over a plastic bag or camp ground cover.

Side trips for the purpose of “sight-seeing” are not allowed.

Human Waste

All solid wastes must be carried out of the cave. Trips of two-day duration or less must carry out all liquid waste. On longer trips, everyone is encouraged to carry out all liquid wastes. Any excess liquid waste may be dumped in only the designated urine dump site at the camp you are staying in. **Liquid waste may not be deposited anywhere else in the cave.** Be sure to take enough containers to hold all liquid wastes.

Designated Urine Dump Sites. The following sites may be used for trips of two days or more:

EASTERN BRANCH

Rusticles and Grand Guadalupe Junction

SOUTHWESTERN BRANCH

Big Sky

WESTERN BRANCH

Deep Seas

Photography

Cave photography is an important tool that can be used to document cave resources, assist with cave research and to share the beauty of Lechuguilla Cave. However, much unnecessary cave impact has been caused by cave photographers who have placed the importance of their photography above the protection of the cave.

Cave photography should not interfere with the main goals of the trip.

Side trips should not be taken to photograph areas not being visited as part of the main goals of the trip without specific permission from the Cave Specialist.

Cameras, tripods, flashes and models should all be within the designated trails unless the Cave Specialist has authorized otherwise.

No models, flashes, lights or other camera equipment will be placed in pools.

Photographers are encouraged to add to the institutional photographic database of Lechuguilla Cave by submitting copies of images taken in Lechuguilla Cave to Carlsbad Caverns National Park. When submitting images, please include information concerning the location, date, models and appropriate uses of any images.

Pools and Drinking Water

Pools in Lechuguilla have been shown to be incredibly rich in microbial life. These microbes are easily impacted by humans and our microbes. Great care must be taken in Lechuguilla to reduce human impact on pool microbes.

There will be no wading or swimming in pools to reach cave passages or leads without prior consent of the Cave Specialist. This includes the Lake Castrovalva area.

Pools must remain pristine for on-going microbiological research. Any contamination may compromise undiscovered microbes. Try to stay as far away as possible from any pools to avoid unintentional contamination.

Water quality in water supply pools may change over time. Individuals are encouraged to consider water filters or treatment prior to drinking water from the cave.

Designated drinking pools

Drinking water should be collected from designated pools utilizing the pitchers or tubing that have been placed there. Under no circumstances should anyone place their canteen, hands, or any other object into the pool itself. Always hold the container you are filling in the designated filling areas. Avoid spilling water where it can transport contaminants into pools. Do not touch the pitcher or spigot with your water bottle. The following pools may be used for obtaining drinking water:

EASTERN BRANCH

- GA7 pool (pitcher)
- Lost Pecos River (pitcher)
- Ghost Town (aqua socks, pitcher)

SOUTHWESTERN BRANCH

- Lake Chandalar (pitcher)
- Big Sky (tubing)
- Lake Marguerite (pitcher)
- Underground Atlanta (pitcher)
- Atlantis (aqua socks, pitcher)

WESTERN BRANCH

- Lake Louise (pitcher)

Water will not be withdrawn from any pool containing subaqueous helictites or from the Dilithium Crystal Pool in the Southwestern Branch of the cave. Water should also not be taken from the Pink Dot Pool in the Western Branch of the cave.

Please take a couple of minutes to read and record pool staff gauges between the Entrance and Boulder Falls and in other locations. Leave all data-loggers alone.

Rigging and Climbing

Safety lines are located throughout the cave as an aid to crossing traverses. Everyone must clip into all traverse lines. There have been several accidents directly due to failure to clip into the safety lines provided.

Everyone entering the cave is responsible for the inspection, care and protection of all ropes and rigging. Wear spots or other problems should be brought to the attention of the trip leader, who should fix the problem immediately, if necessary, or notify the Cave Resource Office of the concern. Ropes should not be re-rigged without permission from the Cave Resource Office unless an immediate threat is perceived. Please notify the Cave Resource Office of any changes or potential problems noticed. If possible, leave a note for other expedition members explaining the change in rigging and why it was necessary.

Permanently rigged rope and webbing should be white. Colored ropes and webbing can stain cave surfaces.

Aluminum carabiners should never be used for permanent rigging due to loss of strength from corrosion. Only stainless steel maillons should be used for permanent rigging.

Any bolt or bolt hanger that is to be left in place must be made from stainless steel. Permanent bolts should be at least 3/8" in diameter and 2" long.

There are numerous climbs in the cave. Many have been done and some have not. Those wishing to do climbs should clear suggested climbs with the Cave Specialist before attempting any climb.

Expansion bolts should be used sparingly. Lechuguilla Cave lies within a wilderness area and power hammer drills are not allowed for exploration purposes.

If possible, any bolt that will not be used after an initial climb should be removed.

All climbs must be surveyed.

If a climb has been completed and does not continue, a note on flagging tape should be left stating that the climb has been completed. The decision to remove ropes from a climb or not should be based on safety, future research and survey work necessary and ease of repeating the route.

If a climb has been completed and continues, a rope log must be filled out detailing rope length, age, condition, along with rigging information (see detailed rope log sheet in Appendix O – Standard Operating Procedures, Protocols, and other Supporting Documents). Rigging changes or problems should be reported to the Cave Resource Office.

Ice crampons and other technological implements must be approved by the Cave

Specialist before attempting their use in the cave.

Exploration ropes will be left in camp areas between trips unless otherwise approved by the Cave Specialist. In the past, numerous ropes were cached throughout the cave with no documentation of their location.

Resource Protection Zones

Ongoing microbe research areas have been flagged off and marked throughout the cave. Do not go beyond the flagging or disturb these areas.

The following areas, due to their sensitive nature or on-going scientific research, are off limits to all entering Lechuguilla Cave unless you have prior permission from the Cave Specialist.

ENTRANCE TO EF JUNCTION

Pool in Sugarlands – Microbial study in progress. This pool is well marked.

WESTERN BRANCH

Pellucidar/Barsoom areas - Very fragile area, subaqueous helictites found here.

Anyone climbing into the Barsoom area above Pellucidar threatens the helictites.

Little Lake of the Clouds - Microbial study in progress. Pools.

Part of the Blanca Navidad Room - The off-limits area is well-marked. Also, all pools in the room should be left alone. Drinking water may not be obtained from any of these pools.

Pink Dot Pool - Bio-hazard pool. Do not drink the water from here.

Pool Hall - Pool with microbiological research.

Tree House and Neverland - Pristine flowstone areas.

Hudson Bay - Pools.

Lake Okeechobee - Pristine pool.

Boomtown Pool - Pristine pool.

Red Lakes Passage - Very fragile with soda straws dipping down to lake level. No attempt should be made to obtain water from this pool.

Chocolate Lake in the Chocolate Factory - Another microbe study pool.

Oasis Pool - Pools and pristine flowstone.

Nativity Chamber and Promised Land - Pools, flowstone and numerous transitions from clean to dirty clothes and equipment.

SOUTHWESTERN BRANCH

Darktown - Very long, very fragile gypsum hairs hang in this room. They are hard to see and easy to destroy.

Lake Castrovalva - Very fragile, unique area. No one may swim in or enter the inner pool.

Dilithium Crystal Pool - Unique, fragile pool with selenite crystals growing underwater. This is a very rare occurrence.

YO Acres - Located beyond the Pearlsian Gulf and contains large amounts of corrosion residues. Special care must be taken to avoid contamination of the Pearlsian Gulf area.

Temple of Dagon - Located above the Pearlsian Gulf and has the potential for knocking debris into the pearl areas.

Void Sulfur Area - Unique, very fragile geological and microbiological resource.

Sulfur Shores - Rare and fragile folia are found in this area.

Tower Place - Microbial research in pool area. Flowstone area.

Western side of the Sewing Room - Extremely fragile gypsum needles found here.

Ultra Primo - This is a very heavily decorated, sensitive area.

Vesuvius - This is also a very heavily decorated, sensitive area.

EASTERN BRANCH

Ghost Town - (1) Sulfur area in small passage off the NE portion of the room is fragile as well as scientifically important. (2) Balcony overlooking the room is very fragile. Damage will occur by anyone going there.

Ghostbusters Hall - Contains large sulfur deposits.

H Survey - Very delicate, very fragile. Damage occurs anytime anyone goes through this area.

Bryce Canyon - Contains fragile and delicate rillenkarren. Also a spectacular aragonite bush is in danger each time someone enters the area.

Boundary Waters - This is the upstream source for the Lost Pecos River drinking water. Also very delicate and fragile area.

Wet Dreams - Pool requires swimming.

Lake of the Loose Marbles - Pool requires wading to cross.

Happy Hunting Grounds - Requires a wade through water and is fragile.

Lake of the White Roses - Rare and fragile folia in a one-hundred foot vertical area.

Burning Lakes - A pristine area with pools.

Quasimoto's Lair - This is a very fragile, decorated area.

Stud Lake - Ongoing microbial study in Pool.

Lower Section of Grapes of Wrath Maze - Fragile, aragonite bushes.

Kachina Lake - Pool.

Special Attention Areas

The following areas, though not strictly off limits, require special precautions when entering them. If these precautions are not followed and unacceptable damage occurs, then they may be moved into a Resource Protection Zone.

ENTRANCE TO EF JUNCTION - Move Carefully! Especially in the Rim City and Windy City area.

SOUTHWEST BRANCH - Land of the Lost, Pearlsian Gulf (clean clothes, aqua socks required). Pearlsian Gulf has been contaminated by careless cavers in the past and then restored. Further impacts will result in the closure of this area. Underground Atlanta.

EASTERN BRANCH - China Shop, Firefall Hall

All areas of the cave should be traveled through carefully. However, **EXTREME CAUTION** should be exercised when moving through the **Land of the Lost**. Move at a very slow, careful pace, being aware of the gypsum hairs, threads, and beards in the area. Also, when moving through the **China Shop**, camp packs should be removed and passed carefully through the aragonite bushes.

Camping and Resting

Camping is allowed only in designated camps. No bivouacking is allowed without permission of the Cave Specialist. Teams entering the cave should inform the Cave Resource Office where they plan on camping. Designated camps and maximum numbers allowed at those camps are as follows:

EASTERN BRANCH

Rusticles - 6

Grand Guadalupe Junction - 9

SOUTHWESTERN BRANCH

Big Sky - 6

WESTERN BRANCH

Deep Seas - 12

Camp on a clean, plastic ground cover. At the completion of the camp, fold the ground cover to capture any items that may have dropped onto it. Do not shake cover off in cave at the end of the trip.

Small stoves may be used in camp areas only. Propane/Isobutane/Butane and alcohol are the preferred fuels, but white gas may be used as well. Stoves may be used in other areas only with the permission of the Cave Specialist.

When eating (either traveling through the cave or at camp) or preparing food, great care should be taken avoid dropping any crumbs, food particles or drink powders in the cave. Eating should take place over a plastic bag or camp ground cover.

Toothpaste, soap and other materials should not be drained into the cave. Rinsing off and allowing contaminated water to drain into the cave is not acceptable. Moist towelettes that can be removed from the cave are the only option for bathing.

Every team is required to leave a note in a prominent place in camp with the following information on it: What day it is, who is on the team, where in the cave you expect to be, and an expected return time.

Thoroughly check camp surfaces for any stray organic or non-organic items that may have accidentally been left before exiting the cave.

Exploration and Surveying

Exploration without surveying is strictly prohibited. Violators will be denied future access to park caves. Survey guidelines can be found in Appendix E and must be adhered to when surveying.

No digging, blasting, hammering, moving, or breaking of formations, rocks, etc., may be performed without prior permission from the Cave Specialist.

Discovery teams may name new areas, but names deemed inappropriate or distasteful, or named after living people will not be accepted.

When exploring new areas, strive to minimize impact. Transitioning to aqua socks, clean clothes and packs may be necessary and is time-consuming. Exploring and surveying the cave carefully is more important than exploring and surveying quickly.

When moving into unexplored areas, trails should be established that minimize the damage to the cave. Persons running lead tape position should carefully evaluate the passage and choose the path that will do the least damage to the cave. Trails should be flagged immediately, so that those who will follow will not have a choice as to where to walk and will have to stay on the established trail.

In extremely sensitive areas, such as aragonite bushes blocking the path (like the China Shop), or other noteworthy speleothems deterring progress, stop and do not proceed. Notify the Cave Resource Office who will make the decision on how to proceed.

After Leaving Park Caves

Any accident of a serious nature should be reported to NPS personnel as soon as possible. An incident report form, available in the Cave Resource Office, and other accident documentation must be filled out for any cave accident.

Any team entering park caves is required to fill out a trip report form and return it to the Cave Resource Office within one month. The report should include the date, personnel, places visited, and work accomplished including specifics such as types of information or samples collected. If survey was the objective, list the station numbers that were set. Expedition leaders are responsible for ensuring that all required paperwork is submitted on time.