Finding of No Significant Impact

Subsurface Management Plan
Oregon Caves National Monument

PURPOSE and NEED for ACTION: The purpose of the proposed federal action is to manage the subsurface resources of Oregon Caves National Monument in such a way as to better meet resource and visitor protection objectives of the National Park Service (NPS). These proposed program enhancements are intended to fulfill the vision of the 1998 General Management Plan (and Final Environmental Impact Statement) which summarized cave management practices.

These alternatives and the draft subsurface management plan are presented to the public in order to receive input in regard to the public's choice of alternatives, the addition of subject matter expertise, and in making both the subsurface management plan and this document more effective, factual, understandable, and transparent.

Actions common to all alternatives include implementation of previous relevant environmental assessments and environmental impact statements, protection of the Oregon Caves Historic District, ongoing consultation with both cavers and non-cavers with subject matter expertise, and regional cooperation on various issues such as fire management, surface edge and fragmentation effects, and the effects of tourism.

SELECTED ALTERNATIVE: The National Park Service will implement a modification of the Proposed Action (also described in the Environmental Assessment as Alternative B), based in part on public comments, agency and subject-matter expert consultations, and further consideration of park capabilities at this time. The proposed program consists of the following elements (in addition to basic tours which have traditionally been offered at the park and will continue): The park will conduct an introductory caving tour that has been rerouted to reduce potential impacts. In addition to assistance to ongoing and future research by non-NPS investigators, baseline and monitoring studies will continue to occur, and include water, air, flowstone, and biologic sampling and inventory, and monitoring of changeable attributes of a room-by-room inventory.

Monitoring will also evaluate ongoing restoration and mitigation. Actions include subsurface restoration and mitigation, training of park staff, inventory and monitoring based on the vital signs and park cluster concepts, and offering public tours that would vary in both time and distance covered both on and off the Caves' paved trail. The impact of foot traffic on invertebrate biodiversity, speleothem polish, mud spread, total dissolved solids, and cave formation breakage will be mapped and quantified.

Cave restoration or mitigation will include removing lint and non-paved trails, installing tarps or cement ridges to trap human-caused particulates, controlling non-native species,

installing emergency toilets and card locks on gates, and, if recommended by research, altering entrances or passages so that their cross-sectional areas are similar to what existed prior to the historic discovery of the Caves without substantially impacting bat populations. Alternative B is considered the environmentally preferred alternative.

The difference with the proposed alternative will consist of not removing rubble or non-historic infrastructure, not repairing cave formations, not infilling drilled holes in wallrock or formations, and not removing or aerating existing dirt trails. The reason for this change is that DNA data indicate there is little effect of trail compaction on bacterial and fungal diversity, and it is likely that the other such restoration or mitigations efforts are also largely cosmetic, i.e., they appear to have little ecologic impacts. With limited resources, the effort expended on such restoration could be better spent on mitigation such as reducing and/or isolating the amount of human-caused organics in the Caves.

Under these modifications of the Proposed Alternative, the NPS engages in more research and offers more varied experiences for Monument visitors, while at the same time ensuring that no impairment of park resources occurs. A caving tour is not meant to replace the current basic tour, but to enhance existing visitor services and provide additional visitor experiences. Baseline studies intended to measure human impacts will continue; these may include, but are not limited to, photomonitoring, quantitative impact mapping (compaction, mud spread, broken speleothems, fossils, and biodiversity), air and water monitoring, and archaeological, historical, mineralogical, and bat surveys.

RANGE of ALTERNATIVES CONSIDERED: The EA identified and analyzed five alternatives, including a no-action alternative, all of which incorporated the possibility of public tours off of the paved trail.

The alternatives that were considered are summarized below.

Alternative A is the "No Action Alternative." Alternative A would involve a continuation of existing conditions, including about an equal emphasis on subsurface management compared to the rest of resource management in the Monument, but would only involve research and other actions that involve public tours on paved trails.

Alternative B constitutes the preferred alternative. Alternative B would increase the emphasis on subsurface management but would balance the emphasis on subsurface research and non-research actions.

Alternative C would decrease the emphasis on subsurface management. The emphasis on surface management and subsurface management would be about evenly split between research and non-research actions.

Alternative D would increase the emphasis on baseline and monitoring studies.

Alternative E would decrease the emphasis placed on baseline and monitoring studies. Major actions would include subsurface restoration, mitigation, and prevention of human impacts.

As described in the EA, under **Alternative B** (Proposed Action) the traditionally offered basic cave tours continue as at present. Caving tour size would be limited to a maximum of six visitors and two park staff (guides). This tour would be offered for approximately 75 days per year from late June to early September with a maximum of one tour per day. The park would provide hard hats, headlamps, kneepads, and gloves. Only electric lights would be allowed on the caving tour. This tour combined with the basic tours would add a maximum potential of two to six visitors per day for about 75 days. This would be in addition to the predicted maximum annual visitation of approximately 61,000 visitors on paved trail tours. How much the addition of off-trail caving tours will increase the total number of people visiting the cave is uncertain, as previous experience indicates that some people will opt for a caving tour and not take a paved-trail tour as they had intended. In any case, the maximum possible increase in total visitation will be less than 1%.

Alternatives Rejected: In addition to these five alternatives, several other options were considered initially, but were not developed as alternatives for further analysis in the EA. These include:

1. A much more extended list of research and mitigation projects than what has been presented by park staff.
2. Keeping the basic public tours open during the winter.
3. Not giving any caving, geology, lantern, or basic cave tours. These options were rejected from detailed conservation planning and environmental impact analysis because they neither met the expressed purpose and need for federal action, nor adequately fulfilled the intent of the approved General Management Plan.
4. The use of disposable suits for each visitor to the Caves.
5. A further study of the historic signatures in the Caves.

Environmentally Preferred Alternative: As documented in the EA, Alternative B was deemed to be the "environmentally preferred" alternative because it surpasses the other alternatives in realizing the full range of national environmental policy goals as stated in Section 101 of the National Environmental Policy Act. The modification of this alternative does not change this finding. In particular, the Proposed Alternative provides the widest range of recreational and educational opportunities to the public while ensuring no impairment of park resources. Both these objectives are achieved through mitigation measures tied to responsible parties and critical milestones listed below.

Alternative A (no action) was not found to be environmentally preferred because it does not provide for further research on the biologic impacts of human-introduced organics in the cave in order to decide what effect removing or trapping organics by the trail is having.

Alternative C was not found to be environmentally preferred because it could decrease the emphasis on subsurface management to the extent that human-caused organics would not be removed from the main cave, which the protection thereof was the main reason the Monument was established.

Alternative D was not found to be environmentally preferred because it could decrease the emphasis on subsurface management to the extent that human-caused organics would not be removed from the main cave, which the protection thereof was the main reason the Monument was established.

Alternative E was not found to be environmentally preferred because it would decrease the emphasis placed on baseline and monitoring studies to the extent that effectiveness of controlling non-natives and containing other human-caused organics could not be evaluated.

Environmentally Preferable is defined as the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act. Section 101 of the Act states that "… it is the continuing responsibility of the Federal government to …

1. "Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." – All alternatives will not likely impair resources.

2. "Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings." – Alternative B probably provides the most healthful, productive, effective, and aesthetic alternative.

3. "Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." – Alternatives B and E probably provide the widest range of beneficial uses while adopting Alternatives A or E would likely reduce the Park Service's ability to detect undesirable and unintended consequences of human actions, including management actions.

4. "Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice." – Alternative B and E provide the greatest variety of individual choice but Alternative B does the best preservation overall because it strikes a more even balance among mitigation, restoration, and prevention and understanding the impacts that these human actions and others are having on the subsurface.

5. "Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities." – Alternative B probably provides the widest sharing of life's amenities.

6. "Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." – Alternative B and D probably provide the widest enhancement of quality of renewable resources.

The NPS has determined that the environmentally preferable alternative is Alternative B because it surpasses the other alternatives in realizing the full range of national environmental policy goals, as stated in Section 101 of the National Environmental Policy Act, and it is the alternative most likely to fulfill the purpose and need of a subsurface management plan as stated at the start of this document.

BASIS for DECISION: As documented in the EA, the NPS has determined that Alternative B could be implemented without significant adverse impact to cave features, air quality, water quality, floodplains, wetlands, socioeconomic environments, sediments, threatened and endangered species, cultural resources, and other park resources associated with the cave system or other underground areas. As discussed below, these findings apply as well to the selected alternative, which is a modification of Alternative B. Furthermore, the mitigation measures listed in the accompanying Matrix are intended to avoid, reduce, mitigate, or eliminate the unacceptable effects of any potential increase in organics, trampling, sediment compaction, accidents, vandalism, temperature, lights, or other environmental consequences which may ensue as a result of implementing the proposed alternative.

Air Quality: The changes in carbon dioxide and heat levels represented in all alternatives would be negligible or not measurable. Exhalation by both visitors and tour guides in the main cave likely increases the average humidity in the upper parts of the cave during the summer because relative humidity sometimes falls below 100%. However, any additions are more than likely offset by increased dryness in the cave due to decreased surface water infiltration resulting from vegetation increases caused by decades of fire suppression.

Cave Formations: Damage could occur from deliberate vandalism or from not watching one's head in relation to the ceiling in a fifty-foot stretch of the cave. The off-trail trail would be rerouted to substantially reduce such potential damage.

Cultural Values: Based on an intensive archeological survey by two NPS archeologists in the summer of 2003, there is no evidence of Native American use or artifacts on or near any of the proposed routes. Historic signatures could be vandalized along the paved route but this apparently has happened only in a minor way (no obliteration of signatures) since tours on the main paved trail were instituted in the early 1900s. There are no historic signatures likely to be damaged by human-caused organic removal or on off-trail routes in the Caves.

Health and Safety: Given the maximum amount of time rangers and the public would spend along the various routes in the cave, radon concentrations do not constitute a hazard. Not removing heavy amounts of material during cave restoration would reduce the possibility of back or foot bone injuries. Given the history of trail use and

compliance with mitigations, it is unlikely that any serious accidents will occur along the proposed caving route.

Paleontology: It is likely that bones underlie off-trail routes; however, it is highly unlikely that the possibility of increased compaction would damage such material. It is even less likely that significant fossil resources would be damaged, especially since there will be a minimal amount of rubble removal. The possibility of the compacted surface being broken by a shoe and any bone being disturbed is very low**,** but not zero. In conjunction with Ted Fremde, the Chief Paleontologist at John Day Fossil Beds, the Monument will develop a paleontology plan in FY 2007 that will cover the monitoring and curation of paleontologic objects from the monument.

Sediment Compaction or Translocation: Only caving and park management trips in the cave might cause this. However, DNA data indicate that a slight increase in compaction that could result from increased off-trail impacts during both monitoring, mitigation, and public tours have no measurable ecologic impacts. Some mud would be tracked through the cave as a result of the proposed tour, especially in spaces between boot lugs. Increased nutrients can result from disturbance of mud (increased surface area of nutrients for microbes), and deposition of organic particles from visitors (hair, skin flakes, lint), but this apparently is not measurable. In the last 17 years, over 40,000 square feet of trail compacted sediment has been removed from the cave, at least several orders of magnitude greater than any possible increase in trail compaction from use of any of the proposed trails.

Water Quality: Any effects from an increase in monitoring, mitigation, and public use of off-trail areas would likely not be measurable except for slight increases in total dissolved ions in puddles next to the paved trail. As mentioned in the EA, sampling for E-coli will ensure that no human wastes are contaminating water draining from the proposed caving route.

Wildlife: A few invertebrates could be stepped on accidentally. Between zero and three bats might be disturbed during the caving tour. Between zero and 20 bats (at start of regular public tours in late March) might be disturbed during the other tours. Several years of data from a weekly recording of cave fauna indicate that a single person doing the inventory does not cause any measurable disturbance of bat populations.

Cumulative Impacts: Particle buildup on the caving route would likely be insignificant and not measurable. Human inputs of carbon dioxide (exhalation), body heat, heat from lights, and organics is unlikely to be cumulative due to oxidation, natural airflow in the cave, and the tiny incremental increases of temperature and carbon dioxide from those objects. Trail sediment compaction would likely be slightly cumulative at diminishing returns, but the effect is likely to be minor (that is, very localized although possibly measurable). Changes on wildlife populations would not likely be cumulative. Given the slow renewal of cave formations and deposition of bones under the current cave climate, damage to cave formations or fossils could be cumulative but of minor or negligible effect as it is not expected that the damage, if any, would be measurable.

Potential Impacts	Mitigation Measures	Responsible Party and Critical Milestones
Formations: Past broken speleothem inventories indicate at least several formations broken per year.	Guide staff will be trained in how to ensure that their uniforms, verbal credibility, and proximity control will reduce impacts and increase compliance.	Chief of Interpretation via a 1-2 week training for cave guides. Natural Resources Specialist audits guides with 1993 survey form to compare effectiveness
Inaccuracies & typos in public documents (brochures & EAs) could reduce credibility and compliance by visitors.	Update park brochure.	Chief of Interpretation submits changes to Harper's Ferry by 8/1/07
	Revise tour guide and glossaries via purchasing and literature search.	Natural Resource Specialist by 8/1/06
The proposed route goes through an area with a potential for damage to small crystals.	Reroute the proposed caving tour to avoid small crystals.	Natural Resource Specialist makes recommendations to Superintendent for proposed caving route by 7/15/06
Sediment sticks to boots and clothes. Some sediment could be kicked up and become airborne although the high humidity and wetness of the sediments would likely make this not measurable.	Visitors and park staff will clean shoes before getting back on the paved trail. Park would provide shoes for those visitors with deep lug boots. If the amount eventually reaches ~one pound, it will be transferred back along the route.	Chief of Interpretation - Purchases shoes by 7/1/07 Physical Science Technician – Installs cleaning station by 9/1/06
Further compaction on the trail could occur which could alter nutrient and oxygen availability for bacteria or change waterflow.	The present amount of compaction & guidance from the park guides and the paved, flagged and/or taped routes to stay on the trail should keep future compaction far below that of past mitigation (removal of trails).	Physical Science Tech. – Complete baseline penetrometer/ porosity by 8/1/07 Western Kentucky University – Finished DNA baseline by 9/1/05 – no statistical effect on biodiversity from compaction
Surveying parties may be too big, stay in caves too long & may use equipment damaging to the cave.	Limit surveying parties to two people and use laser measurements & simplified surveying protocols to reduce total impact while still maintaining the appropriate degree of accuracy and data management.	Physical Science Tech. – Revise surveying protocols and add to GIS Plan by 12/1/07
Touching and brushing against speleothems and wallrock causes impact.	Complete impact mapping mud spread, broken and polished speleothems, TDS, & fossils on both paved and proposed caving tour routes.	Mapping completed by Physical Science Tech. by 6/1/07
	Monitors the effectiveness of ranger guides in reducing touching and brushing speleothems.	Natural Resources Specialist by 6/1/07

Water Quality: Foot or body travel through water could increase total dissolved ionic solids. Batteries or human waste could degrade water quality.	Care will be taken to avoid water bodies, and highly impacted pools will be restored and flagged off. All batteries would be accounted for at the end of each trip. Containers will be provided to contain human wastes. Establish baseline of total ionic dissolved solids (TDS) in bodies of water along paved and caving routes.	Physical Science Tech. – Completes restoration and flagging by 9/1/06 & monitors compliance by 6/1/07 Baseline completed by Physical Science Tech. by 6/1/07
Fossils: Buried bones could be stepped on or trace fossils such as claw marks and tracks could be damaged.	No fossil sites that could be affected by being stepped on are known from any of the proposed routes. The flagged trail and guidance from the park guides to stay on the trail and not grind one's heels into the sediment should prevent any traffic over trace fossils or damage to bones. Develop a paleontology plan in FY 2007 that will cover the monitoring and curation of fossils from the Monument.	Physical Science Tech. surveys fossil sites every two years starting on 7/1/06 Ted Fremde, the Chief Paleontologist at John Day Fossil Beds & Natural Resources Specialist by 9/1/07
Geology: Small pieces of wallrock might be knocked off ceilings by being hit by helmets (off-paved trail), heads (on paved trails), or while climbing or crawling. Quartz dikes and visible calcite crystals might be damaged. Locks are not re-cored frequently enough to eliminate the possibility of unauthorized access to the cave and possible resulting damage.	Visitors will be monitored and cautioned by park guides to watch their heads, feet, & where their hands are in relation to fragile formations and not to flail legs, etc. while crawling or climbing. Caving route will be re-routed (see above). Fragile areas will be flagged with precautionary red tape and the sides of the trail will be taped to reduce possible sediment compaction. Install battery operated locks on all three gates to the Caves.	Natural Resources Specialist – Certifies guides prior to tours off the paved trail Physical Science Tech. – Flagging completed by 6/1/04 Chief of Maintenance by 6/6/07

Wildlife: Bats and invertebrates may be disturbed by lights or group size.	Seasonally open the Caves to public tours when most bats on or near the paved trail route have left the Caves. Have guides training to give tours not go through the main concentration of bats at the main entrance. Use low-intensity flashlights or laser pointers on tours and don't talk near bats.	Park Superintendent determines opening time each year based in part on recommendations by Natural Resources Specialist Natural Resources Specialist – Analyzes weekly wildlife counts on most routes by 9/1/06 Chief of Interpretation – Buys 10 laser pointers by 10/1/06
The use of dilute solutions of sodium hypochlorite to control cyanobacteria and algae around lights can kill small animals and alter the pH of water.	The minimal amount of both sodium hypochlorite and hydrogen peroxide will be used to effect a substantial but not complete removal of non-native species. Before treatment, all surfaces will be surveyed for invertebrates and areas with such species will not be sprayed until the next treatment.	Natural Resources Specialist – Makes sure non-native control follows protocols to reduce impacts
Possible minor adverse effects on populations of invertebrates from trampling.	Based on two trampling studies, the number of people in the cave per year will not cause measurable results.	Chief of Interpretation ensures that cave guides caution visitors to watch where they walk
Human-caused organics are likely continuing to impact cave species. Skin flakes, hair and lint could impact invertebrates.	Install tarps to capture human organics under stairs. Photographing of passive pitfall traps, macro-visual identification and comparison with past trap data. Provide participants on caving tours with souvenir bandanas to tuck hair back.	Physical Science Tech. – Tarps installed by 6/01/06 Physical Science Tech. – Study begins 1/1/07 (when protocols are established) and ends 10/1/07 Natural Resources Specialist – Purchase custom bandanas by 7/1/07
Safety: Traversing over pits or slick rock could pose hazards, especially for those individuals not used to such action. An injury is likely to cause damage to the cave during a rescue.	Park guides and visitors will be instructed by park guides on how to cave safely. Helmets and long pants will be mandatory. The caving route will be rerouted to avoid potential falls of >10 feet.	Natural Resources Specialist – Certifies guides prior to tours
Radon might increase the probability of developing lung cancer, especially to those who smoke nicotine.	Because of the amount of time that park guides and visitors are allowed in the cave is limited; no limits involving Working Levels of radon will be exceeded.	Landauer, Inc. – Reports Avg. Radon Conc. Pci/l Completed 7/29/05
The use of shorts or short-sleeved shirt may leave staphylococcus in the cave and thus increase the risk of infection.	No short sleeved shirts or shorts will be allowed on caving tours.	Natural Resources Specialist – Ensures tour guides follow protocols

Air Quality: The use of dilute solutions of sodium hypochlorite to control cyanobacteria and algae around lights does leave a small residue of chlorine in the air for short periods of time.	The minimal amount of both sodium hypochlorite and hydrogen peroxide will be used to effect a substantial but not complete removal of non-native species. The two chemicals will be used alternatively so as to reduce the impacts of both methods.	Physical Science Tech. – Determine most effective solution or chemical by 9/1/07
Visitors would deposit lint and skin cells, increase humidity from sweating, add smoke from candles, increase temperatures from human bodies, and increase carbon dioxide from breathing.	Continue to use Hobos to monitor temperature and relative humidity along paved and caving routes.	Physical Science Tech. – Periodic download of data and replacement of Hobo batteries. Sampling of atmospheric particulates and carbon dioxide by 7/1/07
Some human-caused air flow continues to move into the Exit Tunnel Cave.	Survey by Dr. Steve Cross to make sure >50 bats are not impacted by a tunnel door (the last assessment indicated that most bats were now using the 110 Exit). If so, then install air restrictors.	Natural Resources Specialist by 9/1/07
Carbon dioxide concentrations may be changing in cave due to human-caused changes in airflow (global warming) and increases in atmospheric concentrations.	Monitor carbon dioxide concentrations at all Hobo sites in cave once per month starting 9/1/06 and compare to 1993 baseline.	Physical Science Tech. completes survey by 9/1/07
Cultural Resources: No effects on cultural resources anticipated because no significant cultural resources that could be impacted are present in the cave except some marble steps. All travel will be over a heavily used caving route and not over any undisturbed substrates.	Complete baseline archeological, anthropological, ethnographic, and ethnohistoric surveys.	Kirstie Haertel, NPS Archeologist – Completed 10/01/03 Doug Deur, Anthropologist & Ethnographer, completes project by 12/10/06
Some historic signature may have been uncovered during restoration or new ones added.	Resurvey historic signatures to make sure all were recorded and to detect new ones.	Volunteer help under the supervision of the Physical Science Technician. New signatures will not be removed.

PUBLIC and AGENCY INVOLVEMENT: Three scoping meetings for the Subsurface Management Plan were held, the first in Cave Junction on May 29, 2003 (three non-NPS people attended), the second at Grants Pass on May 30 (no non-NPS people attended), and the last at the National Speleological Convention in Porterville in August of 2004 (~24 people attended). Five letters were received during the scoping period.

The Park consulted with the Confederated Tribes of Grand Ronde, of which the Shasta Nation is an affiliated tribe, but received no written or oral replies.

In addition to park staff, the NPS involvement with the proposed special cave tours included the NPS Geologic Resources Division, Ft. Collins, Colorado, (Paleontology; Cave Management) and the Columbia Cascades Support Office, Seattle, Washington, (Anthropology; Geology). Consultation with other agencies included discussions with U.S. Fish and Wildlife Service, the Confederated Tribes of the Grand Ronde, and the Takelma ethnic group; a site visit by U.S. Forest Service cave resource managers from Mount Saint Helen's National Monument was conducted.

This information was considered at the outset of internal scoping for the EA during August 2004. In December 2001 approximately 450 letters asking for input on the proposed actions linked to the GMP\FEIS and the EA on special cave tours were sent to all people on a mailing list for the General Management Plan.

Approximately thirteen responses from a total of eight individuals were received. The following issues, selected to be addressed in the EA (in addition to those mentioned above), emerged as a result this public input:

1. Need for more research
2. Appropriateness of the proposed tour route
3. Potential for damage to cave formations, and impacts to cave floor
4. Impacts to fossil resources
5. Hazard assessment
6. Potential impact on cave life
7. Unauthorized cave access

The Environmental Assessment was released on June 24, 2002. Approximately 200 notices of the availability of the EA on the Monument's website were sent to all people on the GMP mailing list in November of 2005. Notifications of the release were also sent to seven local or regional newspapers or radio stations. A notification that the EA was available on the park website was also e-mailed to all California, Oregon, and Washington cavers with e-mail addresses as listed in the then most current National Speleological Society (NSS) Directory. Two hard copies of the EA were made available upon requested.

Twelve written comments were received. There were no concurrences from non-NPS agencies. A geologist from the Seattle Support Office commentated favorably on the draft subsurface plan and its environmental assessment.

Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	NOTA	Misc. +	Misc. -
	2		8			5	1

Definitions
NOTA: None of the above, i.e. none of the listed alternatives are acceptable.

Miscellaneous +: Five individuals expressed interest and/or support of a caving tour, but did not comment on the EA.

Miscellaneous **–:** One individual expressed a viewpoint that did not support having a caving tour, but did not comment on the EA.

The main issues and concerns which emerged are as follows:

1. The need for more baseline studies and monitoring.
2. Wide support for aspects of the preferred and modified alternative other than caving tours and a balanced approach to both mitigation and research on the surface and underground.
3. Near universal support for caving tours from the public who had participated in the trial run caving tours or had written on visitor comment forms.
4. The need to revise the present environmental assessment and subsurface management plan and texts available to the public in regard to changes in definitions of cave terms and minor typos.
5. A preference that no mitigation or restoration be done until more research is completed.

The park's responses to substantive comments received is contained in an Errata which was prepared as an attachment to the EA. The Errata is meant to provide clarifications and minor corrections.

NON-IMPAIRMENT of RESOURCES and PARK VALUES: The modified Proposed Alternative will not affect or impair cultural resources or any listed species or endemic cave species that may be listed in the future. After consideration of the effects on potentially affected resources, it was determined that the selected actions will have (at most) temporary, localized, minor effects on air quality, water quality, non-soil sediments, and wildlife, and will therefore not impair these park resources. Any potential adverse effect is very short term or very minor and does not substantially affect resources considered to be primary to the purposes for which the park was established; or can be ameliorated, so as to be essentially negligible. Therefore, there will be no permanent impairment of the known cultural and natural resources or park values for which Oregon Caves National Monument was established or which have been added or discovered since the Monument's establishment.

CONCLUSION: Based on the conservation planning and environmental impact analysis completed (as documented in the EA on the Subsurface Management Plan at Oregon Caves National Monument), and the capacity of the mitigation measures to reduce or eliminate adverse impacts, and with due consideration of the public response received and the concurrence of agencies consulted, it is the determination of the NPS that the Proposed Alternative is not a major federal action significantly affecting the quality of the human environment. There are no significant connected actions or cumulative or indirect effects foreseen, nor is the selected action without precedent or similar to one that normally requires an environmental impact statement. Therefore, in compliance with the National Environmental Policy Act, the selected actions may be implemented on an interim basis as soon as practical and feasible.

Recommended: _____ Date: _____

Craig W. Ackerman
Superintendent, Oregon Caves National Monument

Approved: _____ Date: _____

Jonathan B. Jarvis
Regional Director, Pacific-West Region