



WNS Decontamination Requirements and Certification

General statement of Decontamination Requirements

Beginning August 1, 2010, Mammoth Cave National Park requires cave-level dedication or decontamination of cave gear (including everything worn or taken *into* a cave) as detailed below:

1. Incoming cave gear that has been in a cave/mine will require decontamination or cave-level dedication.
2. Gear will require decontamination *between all caves within the Park*, with the following exceptions:
 - Mammoth Cave System entrances on Mammoth Cave Ridge (Historic, Violet City, New, Frozen Niagara, Carmichael, Elevator, Cox, New Discovery, Echo River Spring, and the Ventilator Shaft) are considered as one cave.
 - Mammoth Cave System entrances on Flint Ridge (Salts, Crystal, Austin, Unknown, Woodson-Adair, Bedquilt, and Hazen) are considered as one cave. Note: Colossal Entrance is not considered as the same cave, due to its further restrictions as a hibernaculum.
 - Mammoth Cave System entrances on Joppa Ridge (Procter, Doyle Valley, Morrison, and Ferguson) are considered as one cave.
 - Mammoth Cave System entrances on Toohey Ridge (Historic Roppel, Daleo, Weller, Kahn, and Hoover) are considered as one cave.
3. Incoming and outgoing gear will require decontamination, use of disposable coverings, or cave-level dedicated gear in cave areas and caves with colonial bats *at any time of year*.
4. Outgoing cave gear will require decontamination before use in any off-Park caves.

Acceptable Standards for Activities With Intimate Cave Sediment Contact

The minimal acceptable decontamination standards for cave work at Mammoth Cave are the current acceptable standards available from the US Fish and Wildlife Service.

At the time of the preparation of this plan, standards for cave work are available at the USFWS's main WNS website at:

http://www.fws.gov/WhiteNoseSyndrome/pdf/WNSDecontaminationProtocol_v012511.pdf

http://www.fws.gov/WhiteNoseSyndrome/pdf/WNSDecon_Cavers_v012511.pdf

A PowerPoint presentation by Noelle Rayman and Jeremy Coleman (USFWS) provides a good summary as well. The PowerPoint presentation can be accessed at:

http://www.fws.gov/WhiteNoseSyndrome/ppt/NPS_Decontamination_Protocols_Webinar_June_9_2010.ppt

The procedures can be summarized as follows: Gear should be washed well (with a detergent—Woolite® fabric wash is recommended) to remove mud and other dirt. Then the gear should be soaked in a decontaminating solution (one readily available solution would be a quaternary ammonium compound

such as Formula 409® or Lysol® IC with a concentration of active ingredient >0.3%). Gear should be soaked for 10 minutes. The gear can then be thoroughly rinsed and air dried. Particular attention should be given to cleaning and decontaminating boots. As an alternative to chemical products, boiling submersible gear at a fast boil for 15 minutes is an acceptable method, followed by air drying. For gear such as cameras that cannot be submersed, the surfaces should be wiped with a cleaning solution (bleach, quaternary ammonium compounds, or Lysol® Disinfecting Wipes); alternatively, some electronics can be placed in sealed plastic bags (or wrapped) and the plastic bags can be discarded between caves.

Follow manufacturer's recommendations pertaining to Personal Protective Equipment for use with all decontamination chemicals. Material Safety Data Sheets for each product are available in the Science and Resources Management office and at the Visitor Center.

Approaches to Reducing Decontamination Needs

There are several approaches available which will reduce the amount of gear that needs to be decontaminated. They are as follows:

1. Reduce the amount of gear being taken into the cave/field to that needed for safe and effective work.
2. Gear (such as extra lights) which may not be used during a cave trip can be bagged in sealed plastic bags. If the bags are not opened in the cave, the gear inside will not require decontamination. However, the bags themselves will be considered contaminated and will require disposal or decontamination.
3. Clothing coverings, such as disposable rubber booties and disposable coveralls (made of tyvek® or similar fabrics), may be used to reduce the risk of contamination of clothing and shoes (and thus also the need for decontamination). However, it is important to be sure that coverings do not tear or otherwise allow clothing to be exposed to the cave sediments. Also, boot coverings can affect footing and should only be used when it is clear that they will not compromise safety.
4. Some gear (especially less expensive or difficult to decontaminate gear) could be dedicated for use in only one cave or cave area (such as Mammoth Cave Ridge system entrances or Dixon Cave).
5. In some cases disposable gear (such as latex or rubber gloves for handling bats) provides a preferable alternative to decontamination.
6. The use of submersible rubber boots, such as wellies, may expedite decontamination of footwear.

Transport and Storage

After gear is decontaminated, people must take care not to let it come in contact with gear that has not been decontaminated or to storage containers, car trunks, etc. that have been used to haul dirty cave gear. Decontaminated gear should be segregated from other cave gear (either by placing in sealed bags or by placing it in separate containers to keep it clean). Vehicles that have been used to haul dirty gear not properly stored should also be decontaminated. Careful double bagging of potentially contaminated gear after exiting the cave but before placing it in vehicles is essential to reduce the potential for contaminating vehicles and other gear.



Please read the following and provide certifications regarding the decontamination status of your gear (includes clothing, footwear, and all caving gear).

Incoming Gear

Gear that has been used in a cave other than the one you will be entering on the current trip since being last decontaminated, must be decontaminated and thoroughly rinsed with water (to reduce potential for transmission of chemicals into the cave environment) before entering the cave.

Decontamination of Gear Between Park Caves

Gear that has been used in any cave on the park must be decontaminated before being used in any other cave on the park (with the exceptions noted above).

Decontamination of Outgoing Gear

Gear (including clothes, footwear, and caving gear) that has come in substantial contact (more intimate contact than normal walking tours on trails) with the sediments of a park cave must be decontaminated before use in any other cave. Footwear must be decontaminated even if it comes into only minimal contact with the cave.

We expect that our cooperators and researchers will comply with park decontamination requirements. Our relationship with researchers and cooperators is built on a shared desire to understand and protect cave resources. We would hope that there would not be a need for park personnel to individually examine each participant for signs of appropriate decontamination. We expect groups to police themselves. However, park personnel working with groups will be watching for signs of potentially contaminated gear. If we find evidence that groups or individuals are not complying with gear restrictions and decontamination procedures, we would immediately need to re-evaluate our decisions to allow certain activities to continue because our assumptions about our ability continue them in a biologically responsible manner would potentially be invalid.

Certifications

I, _____, certify that I have read and understand the Mammoth Cave National Park procedures for preventing the spread of WNS to, from, and among the caves of Mammoth Cave National Park, and that all clothing, footwear and gear I will be using during cave activities in which I am participating is:

- 1) In compliance with the Incoming Gear statement above,
- 2) Will be decontaminated between caves as above (if applicable), and
- 3) Will be decontaminated before use in any other cave as above.

Signature: _____ **Date:** _____