

A Quick Guide to Decontamination for Cavers^{1,2}

July 31, 2013

This summary was adopted from the Southeastern Cave Conservancy's '[Clean Caving Procedures](#)' which was developed from national protocols and may be used in the Rocky Mountain Region. The national protocol provides additional detail about which techniques are best suited for different types of gear.

Step One: Get the Mud Off!

Remove as much excess mud as you can while you're still at the cave entrance. Go back to your vehicle, get out a big trash bag and put everything in it. Seal it up and take it home.

Step Two: Clean your Gear

Pre-clean submersible gear by hosing it down really well. Use a scrub brush and mild soap if necessary to remove all the sediment. When there's no more visible mud coming out, machine- or hand-wash with a mild cleanser. For non-submersible gear (such as cameras and other electronic gear), remove all visible mud by wiping with a damp cloth or scrubbing, then go straight to Step Three.

Step Three: Disinfect your Gear

Once your gear is clean, you still need to make sure there aren't any microscopic hitchhikers waiting for a free ride into another cave. You can use a variety of methods, including the following:

Hot Water Bath

Soak your gear in hot water that is at least 122°F (50°C) for at least 20 minutes. This method is easy, and it uses no chemicals other than water. Top-loading washing machines can be used, if the hot water heater is set high enough. Tubs or baths also work, using either hot tap water straight from the tap, or hot tap water supplemented by heated water.

Chemical Solution Bath

Soak your gear for at least 10 minutes in a bath or tub one of the following solutions:

- *Lysol I.C. Quaternary Disinfectant Cleaner* – use 1 oz. per gallon of water;
- *Professional Lysol® Antibacterial All-purpose Cleaner* - use 1 oz. per gallon of water;
- *Household bleach (6% hypochlorite, or HOCl)*- use 1 part bleach per 9 parts water.

Rinse your gear thoroughly after removing it from the bath, being careful not to let it touch any potentially contaminated surfaces. Soft gear and clothing may be run through a washing machine. The recommended Lysol products are available from janitorial supply stores and online sources; household bleach is widely available at grocery and other retail stores. Bleach solutions can weaken nylon and other materials, and must be discarded within 24 hours, because the diluted bleach breaks down quickly.

Non-Submersion Methods

For gear that cannot be submerged in water, use one of the following methods:

- *Lysol Disinfectant Wipes*: Wipe all surfaces. After 10 minutes, wipe dry with a clean cloth or towel.
- *Formula 409® Antibacterial All-Purpose Cleaner*: Spray at full strength on all surfaces. After 10 minutes, wipe dry with a clean cloth or towel.

¹These procedures are intended to be an easy-to-follow summary of procedures published by the U.S. Fish and Wildlife Service in March 2012, which are available at:

²**Safety Disclaimer:** You're responsible for using any of these methods safely. Be sure to follow manufacturer's recommendations, label instructions, Material Safety Data Sheets (MSDSs), and common sense.