WNS and ROPE DECONTAMINATION

The recent outbreak of WNS has spawned a great deal of discussion and debate over the question of how to avoid spreading contaminants between caves. Some recommendations include asking cavers to thorough clean and disinfect all clothing and equipment between cave trips.

Although it is not clear if or at what concentration bleach will permanently destroy spores believed to cause WNS, bleach seems to have become a popular cleaning option. Bleach is commonly known to damage fibers under certain conditions (including high concentrations, repeated use, etc), and because of this PMI is concerned about the recommendations being made for repeated cleaning of ropes with even diluted bleach.

PMI has previously published the following statement regarding the use of bleach to disinfect ropes:

Cleaning PMI Ropes
Effect of Bleach on Rope

Because PMI ropes are often used in rescue and other situations where equipment may be exposed to blood-borne pathogens or other infectious substances, we are often asked about appropriate methods for cleaning ropes.

Certain authorities recommend specific concentrations of household bleach for disinfecting gear that has been exposed to certain contaminants, so naturally customers often wonder at what concentration their PMI rope will experience deterioration. While PMI cannot speak to the subject of infectious diseases, or what solution might neutralize a given hazardous substance, we are happy to provide at least some guidance regarding the effect of bleach on rope fibers.

Specifically, PMI has found that a mixture of 1 part household bleach (with active ingredient of Sodium hypochlorite at 5.25% concentration) with 9 parts room temperature tap water and a 10min or less exposure time, immediately followed by a thorough rinse of room temperature water will not cause any appreciable harm to nylon or polyester ropes.*

PMI cannot, however, speak to whether or not such a mixture will truly disinfect your rope from contaminants.

Remember, ropes are a critical element of the life safety system, and it can be difficult to make subjective decisions about the strength of rope without actually testing it to failure. The prudent course of action is to discard any rope about which there is any doubt..

*DuPont Bulletin X225, 1968

This statement is intended to address a unique, distress situation and does not address the question of multiple, or repeated disinfection.

The situation with WNS introduces the concept of frequent decontamination, a situation that has not previously been common. With this in mind PMI would like to take this opportunity to remind cavers and other rope users that **bleaching a rope does weaken the fiber structure, and repeated bleaching will weaken the fiber structure even more.**

Specifically, although PMI's testing suggests that a single disinfection using the recommended method will not cause *appreciable* harm to nylon or polyester ropes, if this process is repeated multiple times the damage will inevitably become appreciable, and this damage is not necessarily detectable through visual inspection.

Therefore, at this time PMI does NOT recommend using the above method to repeatedly disinfect ropes.