WHITE-NOSE SYNDROME
RESPONSE TEAM

October 8, 2020

To all potential users of the White-nose Syndrome Decontamination Protocol:

The National White-nose Syndrome (WNS) Decontamination Protocol has been an important tool for minimizing the risk of human activities contributing to the spread of *Pseudogymnoascus destructans* (*Pd*) among bat populations and habitats. The protocol has been revised regularly to reflect our changing understanding and needs. The protocol is specific to *Pd* and is not intended to specifically reduce the risk of spreading other harmful microbes to bats or their environments. However, we acknowledge that many of the disinfectant products and applications identified in the WNS decontamination protocol have been registered by EPA to be effective against other biological agents, including viruses like SARS-CoV-2[1]. These effects are coincidental, but have been recognized as an added benefit of following the protocol and using disinfectants in accordance with product labels.

The emergence of COVID-19 poses new challenges that we must overcome to continue to advance our conservation objectives for North American bats, especially those species that are highly susceptible to WNS. Results of a rapid risk assessment, conducted in spring 2020, revealed a risk of exposure and possible infection of bats by SARS-CoV-2 from human activities where infected people come in close proximity to bats[2]. The evaluation of risk was predicated on the use of current protocols and biosecurity measures, including use of disposable gloves and the WNS decontamination protocol.

While the disinfectants listed in the WNS decontamination protocol have been tested and demonstrated to be effective against *Pd*, evaluation of these products and applications for efficacy against SARS-CoV-2 was not conducted by the WNS Disease Management Working Group that developed the protocol. Therefore, it would not be appropriate to use the WNS Decontamination Protocol specifically to mitigate risk of spreading SARS-CoV-2 to bats or other wildlife. Those interested in SARS-CoV-2 effective compounds should refer to the EPA registered pesticide product list on the EPA website[1].

The Centers for Disease Control maintains the information on SARS-CoV-2 and associated risks to animals[3]. Please refer to the CDC website, and associated links, for the latest COVID-19 related information.

Thank you for your ongoing efforts to combat WNS and conserve our native bats.

Sincerely,

The National White-nose Syndrome Steering Committee

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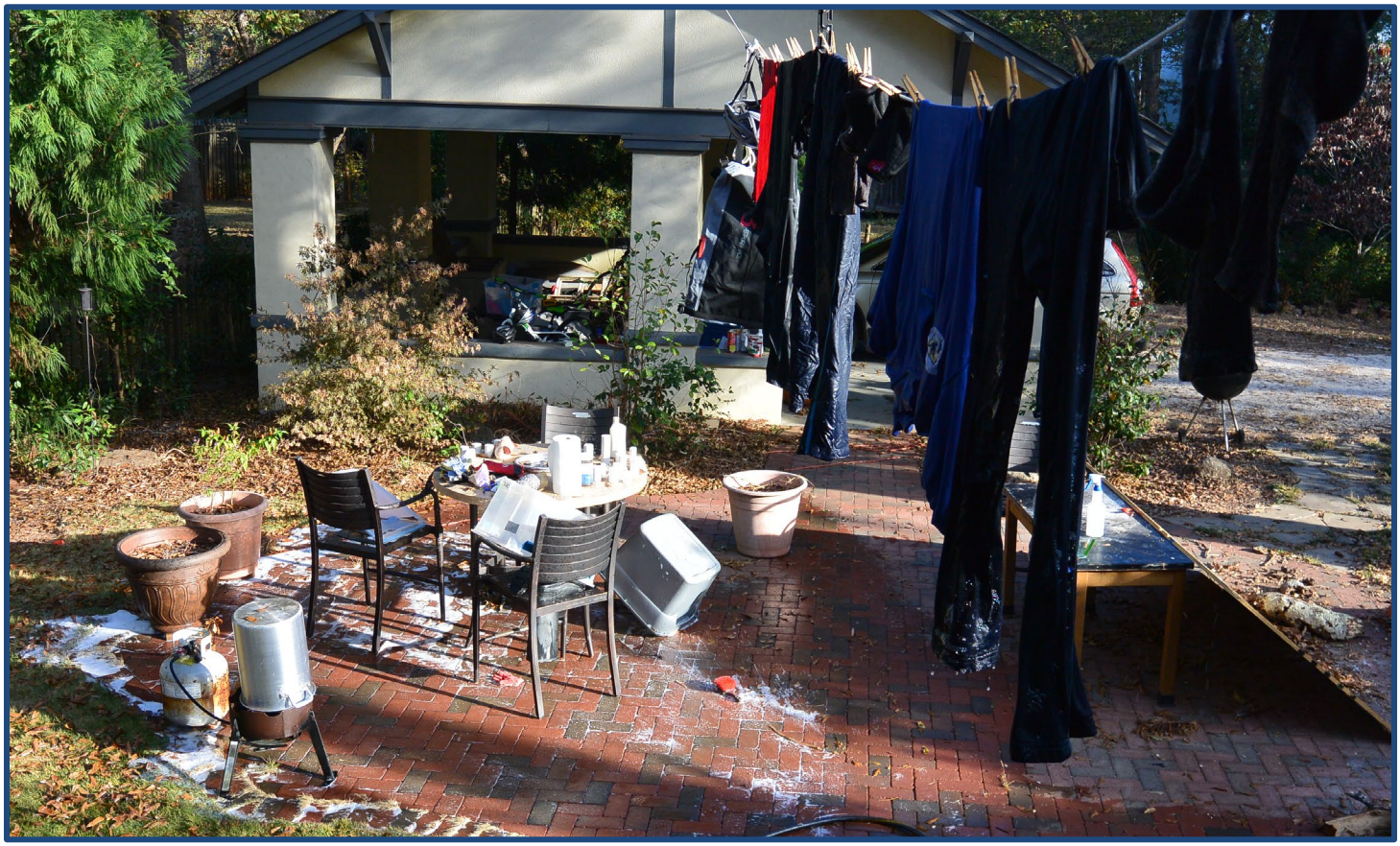
[1] For information about products that meet EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19 (accessed 1 October 2020), visit: https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

[2] Runge, M.C., Grant, E.H.C., Coleman, J.T.H., Reichard, J.D., Gibbs, S.E.J., Cryan, P.M., Olival, K.J., Walsh, D.P., Blehert, D.S., Hopkins, M.C., and Sleeman, J.M., 2020, Assessing the risks posed by SARS-CoV-2 in and via North American bats—Decision framing and rapid risk assessment: U.S. Geological Survey Open-File Report 2020–1060, 43 p., https://doi.org/10.3133/ofr20201060

[3] The Centers for Disease Control (accessed 1 October 2020): https://www.cdc.gov/coronavirus/2019-ncov/faq.html#animals

National White-Nose Syndrome Decontamination Protocol

Updated October 2020



White-Nose Syndrome Disease Management Working Group

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National White-Nose Syndrome Decontamination Protocol –October 2020

I. INTRODUCTION

The fungus *Pseudogymnoascus destructans* (*Pd*) is the cause of white-nose syndrome (WNS), a disease that has resulted in unprecedented mortality of hibernating bats in North America. The best available science indicates that *Pd* arrived in North America from a foreign source. Since the first documented evidence of WNS in New York in 2006, WNS has spread rapidly in North America and continues to threaten hibernating populations of bats across the continent. The fungus grows well on bat skin but can also grow and persist for years in cold and damp environments such as those favored by hibernating bats. Once *Pd* is detected at a site, either on bats or in the environment, that location is considered to be contaminated indefinitely due to the potential for long-term persistence of the fungus. Additionally, visitors to contaminated sites may inadvertently transport the fungus to new locations on clothing or gear, i.e. fomites. Because of the devastating effects of WNS in North America, and the ability of *Pd* spores to survive for months or years in the environment, guidance has been developed to minimize the risk of human-assisted transmission that could contribute to its spread. All persons and materials that come into contact with bats or their environments for any reason (*e.g.,* research, recreation, etc.) are asked to take actions to reduce the risk of inadvertent transport of *Pd* to bats or habitats.

These protocols have been tested specifically to reduce risks of people moving viable *Pd* on themselves and equipment but may also reduce risks of transporting other potentially harmful "biological hitchhikers" to and from bats. The applications identified herein have been selected for their efficacy against *Pd* specifically. Efficacy against other microbes is circumstantial.

II. PURPOSE:

The purpose of this document is to provide scientifically supported procedures known to effectively clean and treat (herein referred to as decontaminate) clothing, footwear, tools and/or gear (herein collectively referred to as equipment) that may have been exposed to *Pd*. When activities involve contact with bats, their environments, and/or associated materials the following decontamination procedures for equipment will reduce the risk of human-assisted transmission of the fungus to other bats and/or habitats.

For the protection of bats and their habitats, and the safety of all persons:

1) comply with all current cave and mine closures, advisories, and regulations on federal, state, tribal, and private lands;

2) follow relevant procedures found in this document;

3) avoid transporting any equipment that has come in contact with bats or their environments into or out of the United States of America

4) bats should **only** be handled by people who are properly trained, vaccinated, and, where necessary, authorized in writing to do so by the appropriate government agency

This document was developed as national guidance by a working group of the multi-agency National WNS Response Team. Local, state, federal, and other management agencies may have additional requirements or clarifications for equipment used on lands under their jurisdictions[1] or for work involving public trust resources.

Always follow all state and/or federal permit conditions. Contact the pertinent agency office(s) for additional information. http://www.whitenosesyndrome.org/partners

III. PRODUCT USE:

Ensuring the safety of individuals using any of the applications and/or products identified in this document must be the first priority. Safety data sheets (SDS) for chemicals and user's manuals for equipment developed by product manufacturers provide critical information on the physical properties, reactivity, potential health hazards, storage, disposal, and appropriate first aid procedures for handling, application, and disposing of each product in a safe manner. Familiarization with the SDS for chemical products, and manufacturer's product care and use standards, will help to ensure appropriate use of these materials and safeguard human and animal health. Read product labels in advance of intended use.

It is a violation of federal law to use, store, or dispose of a product regulated by the Federal Insecticide, Fungicide, and Rodenticide Act in any manner not prescribed on the approved product label and associated SDS. Products, including their contaminated rinse water, must be managed and disposed of in accordance with local environmental requirements and the product label to avoid contamination of groundwater, drinking water, or other bodies of water. **Follow all local, state and federal laws. Requirements for product disposal may vary by state.** Note: Large volumes of disinfectant wastewaters (especially those containing quaternary ammonium) should not be disposed in septic systems because of the potential for toxicity to the microbes in the septic system.

Furthermore, gear and equipment may be damaged by certain applications if the treatment is not recommended for use with that product. Adhering to the cleaning and maintenance information from those manufacturers is paramount to avoid affecting the integrity and efficacy of your equipment.

IV. TRIP PLANNING/ORGANIZATION:

1) **First and foremost, local state/federal regulatory or land management agencies may have specific requirements, exemptions or addendums pertaining to movement of equipment, decontamination requirements, work permissions, etc. for locations under their jurisdictions. It is your responsibility to know and adhere to these local requirements.**

2) Identify the appropriate WNS Management Area (Figure 1) in which the equipment has been used and will be used in the future. Users of new or site-dedicated equipment (that has been and will be used in only one site) may skip to #3.

3) Use Figure 2 to determine recommended movement and decontamination procedures in the identified Management Area for A. Subterranean/High-risk Terrestrial Equipment or B. Lower-risk Terrestrial Equipment. **"Subterranean/High-risk Terrestrial equipment" includes any equipment that has been in a cave/mine environment at any time of year or had potential direct exposure to the fungus during seasonally higher abundance. "Lower-risk Terrestrial equipment" includes any equipment that has not been in a cave/mine environment and has not been used in situations or at times of the year when the fungus is likely to be abundant.**

4) Regardless of the equipment designation, equipment should only be reused at similarly classified or progressively more contaminated locations[2], and should only be moved between states when that transfer is explicitly permitted by the local agency to do so. *Note*: *Given uncertainties in the distribution of Pd in some areas and the potential risks associated with combining different isolates of Pd, the risk associated with moving subterranean and terrestrial equipment should be evaluated*

even within the similarly classified or progressively more contaminated locations of the same management area. ***Before moving any equipment anywhere, consider the risk of the individual situation.***

5) Choose equipment that can be most effectively decontaminated in accordance with manufacturer's equipment care instructions [*e.g.*, rubber or synthetic rather than leather boots], otherwise commit use of equipment to a specific location (herein referred to as "dedicated equipment")**.** Brand new equipment can be used at any location, as long as it has not been stored or come in contact with contaminated equipment.

6) Prepare a safe and efficient strategy (*i.e.*, outline how and where all equipment and waste materials will be contained, stored, treated and/or discarded) that allows daily decontamination of equipment; including, where applicable, between individual sites visited on the same day, **unless** otherwise instructed by local state/federal or land management agency instructions. Even among sites of unknown *Pd* status there are different degrees of risk associated with the number of bats, environmental conditions, proximity to other sites, etc. Contaminated sites or those with a high index of suspicion for contamination should be visited **only AFTER** those sites of unknown *Pd*/WNS status[2] have been visited, to further reduce the risk of inadvertent transmission.

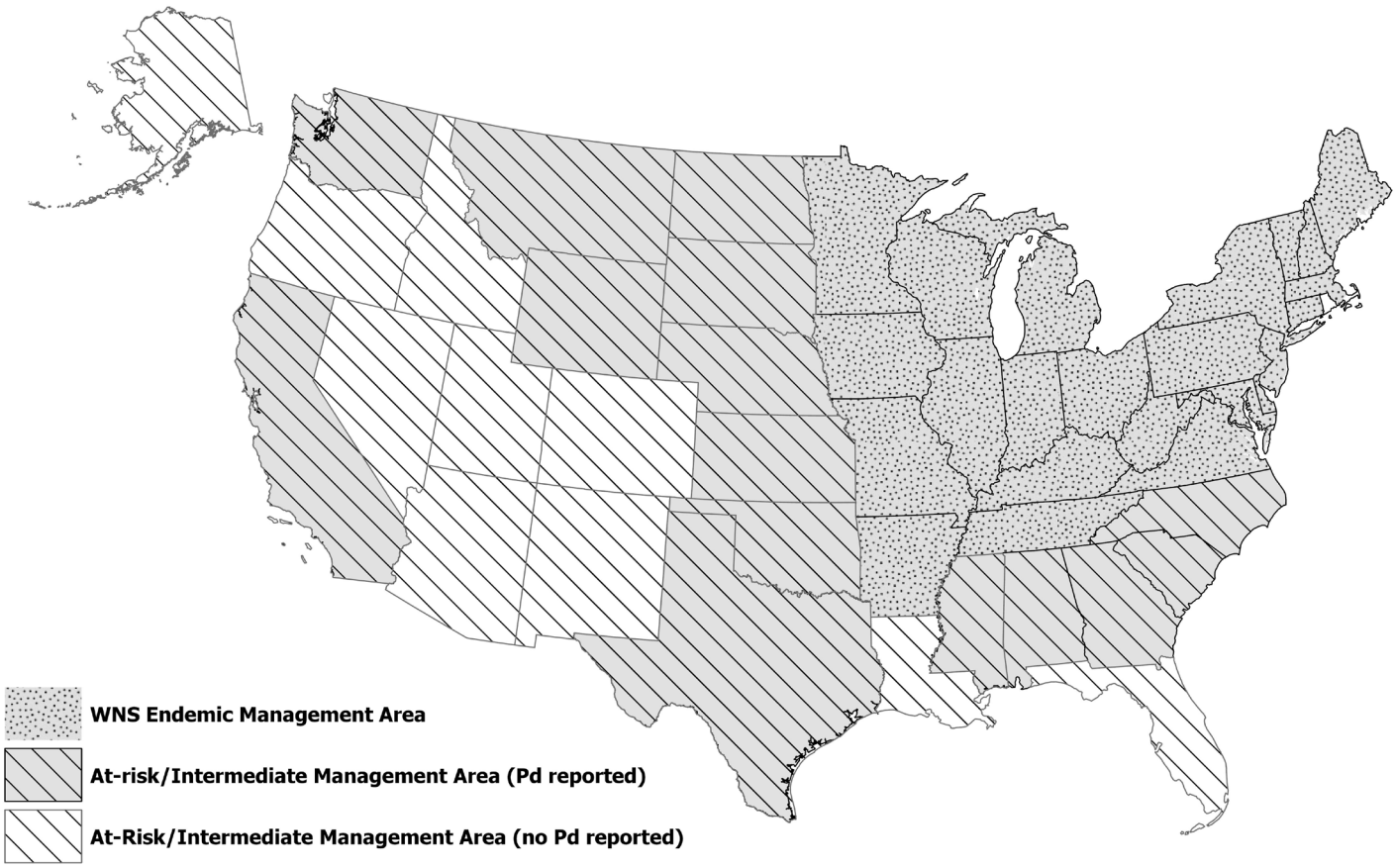
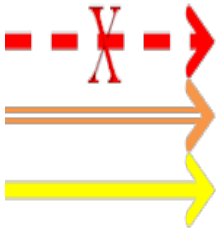


Figure 1. WNS Management Areas for decontamination. Endemic: Endemic states are those where *Pd* is determined or assumed present in most hibernacula. This area comprises states where WNS has been widespread for multiple years. At-risk/Intermediate: Intermediate states are those where *Pd* is detected or assumed present in some but not all hibernacula in the state. States adjacent to states with confirmed WNS are also included in the Intermediate category. At-risk states are those that have at least one state between them and the nearest confirmed case of WNS. Shaded areas are where Pd has been reported as of May 2020.

"Site" is loosely defined in this document as the location of a discrete bat roost (cave, barn, talus slope, etc.) or as a specific field location for mist netting or other trapping. Since conditions vary considerably, delineating sites will be at the discretion of the appropriate local regulatory or land management agency.

<u>All equipment must be decontaminated prior to any approved movement or transfer between locations.</u>

The following symbols indicate that equipment transfer/movement is:



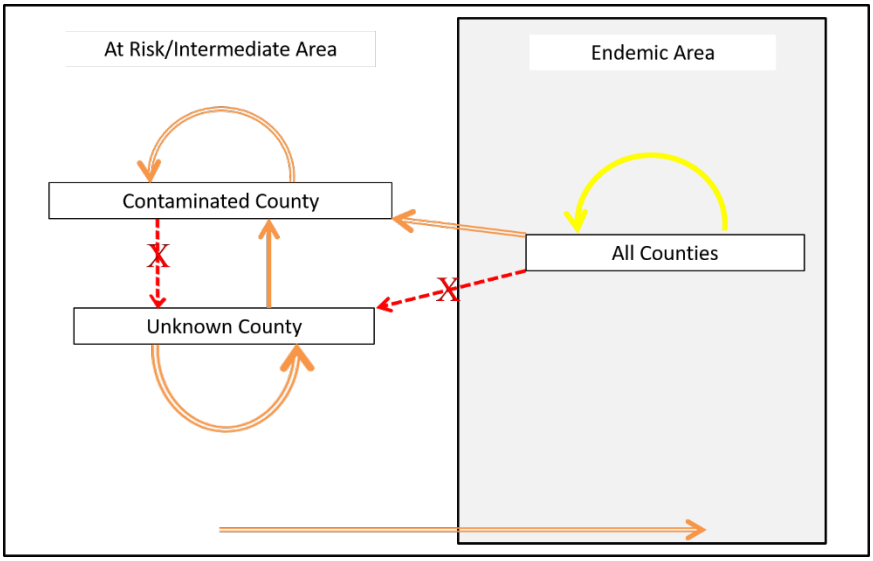
High risk – Do not transfer or use equipment from contaminated counties or states

Moderate risk – Equipment should not be transferred for use between management areas without authorization to do so in specified situations by the local land management agency.

Low risk – Equipment, once decontaminated, may be transferred or used in specified situation.

A. Strategies for movement of Subterranean/ High-risk Terrestrial Equipment evaluated at the <u>county</u> scale

"Subterranean/High-risk Terrestrial equipment" includes any equipment that is used in a cave/mine environment as well as other underground bat roosts, and certain other situations of potential exposure to seasonally abundant *Pd* fungus regardless of location.



B. Strategies for movement of Lower-risk Terrestrial Equipment evaluated at the <u>state</u> scale

"Lower-risk Terrestrial equipment" includes any equipment that has not previously been exposed to a cave/mine or other environments with potential exposure to seasonally abundant *Pd* fungus.

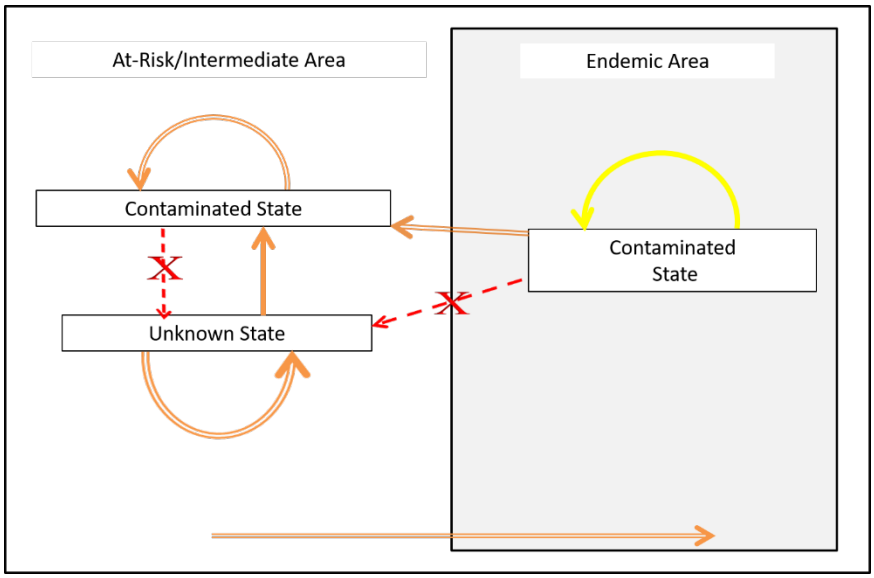


Figure 2. Movement recommendations for decontaminated (A) Subterranean/High-risk Terrestrial equipment and (B) Lower-risk Terrestrial equipment.

V. PROCEDURES FOR DECONTAMINATION:

1) On site:
   a. Before leaving a site, thoroughly inspect all gear, bags, etc. for "stowaway" bats.

   b. Thoroughly remove sediment and dirt from equipment upon exiting the site.

   c. Contain and seal all potentially contaminated equipment in bags/containers for treatment away from the location. Decontaminate the outside surfaces of hard, non-porous containers and bags prior to moving them to a secondary location (*e.g.*, vehicles, labs, or storage). Store all exposed equipment separately from decontaminated and unexposed equipment.

   d. Wash hands, forearms, and exposed skin with soap; change into clean clothing and footwear prior to entering a vehicle. Contain potentially contaminated equipment as per c) above.

2) Off site:
   a. REMOVE all dirt and debris from all items prior to cleaning and treating.

   b. CLEAN submersible and non-submersible equipment <u>according to manufacturer's recommendations</u>. Conventional cleansers like Woolite® detergent or Dawn® dish soap aid in the removal of sediments and debris and increase the effectiveness of subsequent treatment[3&4]. *CLEAN* the inside of field vehicles, especially floor mats and seats used by people who have been inside the bat roosts and cargo areas holding equipment that has been inside the roost. If the vehicle has become dirty or muddy from approaching or being inside a roost, wash the wheels and undercarriage before using it at additional sites. It is especially important to insure vehicles are clean prior to moving between WNS Management Areas or scenarios categorized as "High Risk" in Figure 2.

   c. TREAT submersible and/or non-submersible equipment as legally allowable according to the instructions provided on the product label using an application and/or product found in Table 1. The use of any product or application should also consider all pertinent equipment manufacturer's recommendations for cleaning and/or decontamination. For equipment that cannot safely be treated using an application in Table 1, dedicate to individual sites as determined appropriate in Section IV and clean according to the equipment manufacturer's instructions.

      i. <u>Submersible Equipment</u> (*i.e.*, equipment that can safely withstand submersion in hot water or other specified product for the recommended amount of time without compromising the integrity of the item):

      Recognition that not all products found in Table 1 are suitable for submerging equipment is a fundamental part of choosing the most appropriate application and/or product. The safety and integrity of equipment, therefore risk of personal injury or irreversible equipment damage, requires the user to carefully consider each application and/or product. Always remember to wear personal protective gear suitable for the application and/or product selected in Table 1.

      The preferred treatment for equipment deemed suitable for submersion is hot water that maintains a temperature of <u>at least</u> 55ºC (131ºF) for a minimum of 5 continuous minutes. **All equipment surfaces must remain in direct contact (*i.e.*, avoid all trapped air) with the <u>≥</u>55ºC (131ºF) water for the <u>entire</u> 5 minute treatment**

period. Many commercial and home washing machines with sanitize (or allergen) cycles may be capable of submerging gear in the recommended hot water application for the required time, but each machine should be tested to ensure it reaches and sustains the needed temperatures throughout the process. Remember, if heat may affect the safety and/or integrity of the otherwise submersible piece of equipment, consider equipment dedication or the remaining products listed in Table 1.

ii. Non-submersible Equipment (*i.e.*, equipment that may be damaged by liquid submersion):

Treat all non-submersible equipment using the most appropriate application or product in Table 1 that complies with the equipment manufacturer's recommendations and product label instructions. The listed applications or products may not be appropriate or safe for non-submersible equipment. Dedication of equipment should always be considered the preferred application in these circumstances.

d) RINSE equipment thoroughly, as appropriate, in clean water. This step is particularly important if the items may contact humans, bats, or sensitive environments. Allow all equipment to completely dry prior to the next use.

e) DECONTAMINATE the equipment bins, sinks, countertops and other laboratory, office, or home areas with the most appropriate applications or products in Table 1.

Table 1. Applications and products with demonstrated efficacy against *Pd* [3, 4, 5, 6, & 7]. Remember to consult equipment labels, registered product labels, and the appropriate SDS for regulations on safe and acceptable use.

	Tested Applications & Products [3, 4, 5, 6, & 7]	Federal Reg No.:	Laboratory Results
Preferred Applications	Equipment Dedication	N/A	Clean according to manufacturer standards and dedicated to a site.
	Submersion in Hot Water[4, 6, & 7]	N/A	Effectiveness demonstrated when submerged for 5 continuous minutes in water ≥55℃ (131℉).
Other Products	Ethanol (60% or greater)[4, 6, & 7]	CAS - 64-17-5	Effectiveness demonstrated upon exposure in solution for at least 1 minute.
	Isopropanol (60% or greater)[4, 6, & 7]	CAS - 67-63-0	
	Isopropyl Alcohol Wipes (70%)[4, 6, & 7]	CAS - 67-63-0	Effectiveness demonstrated immediately following contact and associated drying time.
	Hydrogen Peroxide Wipes (3%)[4, 6, & 7]	CAS - 7722-84-1	
	Accel®[4, 5, 6, & 7]	EPA - 74559-4	Effectiveness demonstrated when used in accordance with product label.
	Clorox® Bleach[3, 4, 5, 6, & 7]	EPA - 5813-100	
	Clorox® Clean-Up Cleaner + Bleach[4, 5, 6, & 7]	EPA - 5813-21	
	Clorox® Disinfecting Wipes[4, 5, 6, & 7]	EPA - 5813-79	
	Clorox Healthcare Hydrogen Peroxide Disinfectant Cleaner [4, 5, 6, & 7]	EPA - 67619-24	
	Formula 409® Antibacterial Kitchen All-Purpose Cleaner[3,4,5,6, & 7]	EPA - 5813-73	
	Hibiclens®[4, 5, 6, & 7]	NDA - 017768	
	Lysol All Purpose Cleaner Lemon Breeze[4, 5, 6, & 7]	EPA – 777- 66	
	Lysol Disinfecting Wipes[4, 5, 6, & 7]	EPA - 777- 114	
	Lysol® IC Quaternary Disinfectant Cleaner [3, 4, 5, 6, & 7]	EPA - 47371-129	
	Rescue Hydrogen Peroxide Personal Wipes[4, 5, 6, & 7]	EPA – 74559-4	
	Sani Cloth Germicidal Disposable Wipes[4, 5, 6, & 7]	EPA - 9480-4	
	Up and Up Disinfecting Wipes[4, 5, 6, & 7]	EPA – 6836-336-56952	
	Virkon S	EPA - 39967-137	

Other effective treatments with similar water based applications or chemical formulas (e.g., a minimum of 0.3% quaternary ammonium compound) may exist but remain untested at this time. Find more information on the USEPA or

FDA registered product labels by accessing the individual hyperlink or searching USEPA or FDA Registration Numbers at: http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1 or http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm.

Products with USEPA registration numbers mitigate persistence of living organisms on surfaces and are regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA, 7 USC 136, et seq.). FIFRA provides for federal regulation of pesticide distribution, sale, and use. Within FIFRA, pesticides are defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. FIFRA further defines pests as any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism (except viruses, bacteria, or other micro-organisms on or in living man or other living animals) which the Administrator declares to be a pest under section 25(c)(1). Find more information on FIFRA at: http://www.epa.gov/oecaagct/lfra.html.

VI. EQUIPMENT AND ACTIVITY SPECIFIC RECOMMENDATIONS:

It is the responsibility of the users of this protocol to read and follow the product label and SDS. The product label is the law!

1) **Clothing & Footwear:**

IMPORTANT: All clothing (*i.e.*, inner and outer layers) and footwear should be decontaminated after every site visit using the most appropriate Application/Product in Table 1 or otherwise cleaned and dedicated for use at individual sites or areas as determined appropriate in Section IV.

Use of a disposable suit (*e.g.*, Tyvek® or ProShield®) or site-dedicated, reusable suit (*i.e.*, coveralls) is an appropriate strategy to minimize sediment/soil accumulation on clothing during a cave/mine or bat research activity. All clothing layers should still be decontaminated or otherwise cleaned and dedicated after every use.

Contain all used equipment in plastic bags upon final exit from a site, separating disposable materials from reusable equipment. Seal and store plastic bags in plastic containers until trash can be properly discarded, and/or exposed reusable equipment can be properly decontaminated off site.

While significantly more comprehensive than the National WNS Decontamination Protocol, Centers for Disease Control provide more information about proper use of protective equipment here: https://www.cdc.gov/hai/prevent/ppe.html ("The resources on this [CDC] page are intended to promote patient safety and increase the safety of the healthcare work environment through improved use of personal protective equipment (PPE) by healthcare personnel.")

Cave/Mine and other Subterranean Equipment:

Dedicate, as necessary, or decontaminate all cave/mine equipment (*e.g.*, backpacks, helmets, harness, lights, ropes, etc.) using the most appropriate guidance in Section V. Most types of equipment, including but not limited to, technical and safety equipment, have not undergone manufacturers' consented testing for safety and integrity after decontamination. Therefore, carefully review and adhere to the manufacturer's care and use standards to maintain equipment functionality and safety protective features. If the application/product options in Table 1 are not approved by the manufacturer's care and use standards for the respective type of equipment, clean and inspect equipment according to manufacturer's specification and dedicate to similarly classified caves/mines/bat roosts and only reuse in progressively more contaminated caves/mines/bat roosts as determined appropriate in Section IV.

3) **Scientific Equipment:**

Only properly trained, vaccinated, and, where necessary, authorized personnel should handle bats!

Consider the use of disposable scientific equipment and materials that can be refreshed between contact with individual bats, especially in the Intermediate and At-Risk management areas. All disposable scientific equipment (*e.g.*, work surfaces, containers/envelopes, exam gloves, etc.) should only be used to process one bat, then discarded after use. Similarly, reusable equipment (e.g., cotton holding bags, gear bags, gloves, wing punches, banding pliers, rulers, and other field instruments) should only be used to process one bat prior to initiating procedures for decontamination. Any bag used to hold bats must be breathable and safe for the animals.

Use the guidance in Section V to determine the relevant procedure for decontamination of all work surface area(s) and equipment (*e.g.*, light boxes, banding pliers, holding bags, rulers, calipers, scale, scissors, wing biopsy punches, weighing containers).

Autoclaving non-submersible equipment is an acceptable sterilization measure, if feasible and permissible for the equipment, although this method has not been tested directly for *Pd*.

NOTE: In situations where disposable items (*i.e.*, nitrile or latex gloves) are in limited supply or unavailable, disinfecting them between bats may be allowable. Appropriate products must be selected to insure they are being used in accordance with label specifications, as would be done with any reusable equipment. As with any items that will come in contact with bats, disinfected gloves must be dry and free of residue that may be harmful to the bats before another animal is handled.

4) **Mist-Nets & Harp Traps:**

Dedicate, as necessary, or decontaminate all netting and harp trapping equipment (*e.g.*, netting, tie ropes, poles, stakes, trap bags, lines, trap frame and feet) using the most appropriate guidance in Section V for the particular equipment. This is only necessary after each night of use when the net and/or trap equipment come in contact with one or more bats OR enter a cave/mine/bat roost. Disposable harp trap bags or liners can be also be used to reduce transmission risks and should be discarded at the end of each night if any bats have come in contact with the bag.

5) **Acoustic Monitor, Camera, and Related Electronic Equipment:**

For electronic equipment and accessories used within bat roosts, dedicate, as necessary, or decontaminate all acoustic monitoring, camera, and related electronic equipment (*e.g.*, detector, camera, tablets, cell phones, laptops, carrying case, lenses, microphone(s), mounting devices, cables) using the most appropriate guidance in Section V for the particular equipment. The material composition of this equipment requires careful review and adherence to the manufacturer's care and use standards to maintain their functionality and protective features. If application/product options in Table 1 are not approved by the manufacturer's care and use standards for the respective type of equipment, clean equipment accordingly and dedicate to similarly classified caves/mines/bat roosts or only reuse in progressively more contaminated caves/mines/bat roost as determined appropriate in Section IV. Electronic devices used as lower-risk terrestrial equipment, and not used in bat handling work, pose a negligible risk of transmission (*i.e.*, driving transects or fixed point detector surveys not associated with a cave/mine/bat roost entrance).

Equipment used in a cave/mine/bat roost may be placed in a sealed plastic casing, plastic bag, or plastic wrap to reduce the potential for contact/exposure with contaminated environments. The outer surfaces of plastic protective covers should be cleaned after leaving the cave, mine, or roost and prior to removing the equipment. Plastic wraps should then be discarded (if disposable) or further treated (if reusable) using the most appropriate guidance in Section V.

These recommendations are the product of the multi-agency WNS Decontamination Team, a sub-group of the Disease Management Working Group established by the National WNS Plan (A National Plan for Assisting States, Federal Agencies, and Tribes in Managing White-Nose Syndrome in Bats, finalized May 2011). On 15 March 2012 the initial national decontamination protocol was approved and adopted by the WNS Executive Committee, a body consisting of representatives from Federal, State, and Tribal agencies which oversees the implementation of the National WNS Plan. The protocol is updated as necessary to include the most current information and guidance available.

1 To find published addenda and/or supplemental information, visit http://www.whitenosesyndrome.org/topics/decontamination.

2 Visit http://www.whitenosesyndrome.org/resources/map for the most updated information on the status of county and state. County and state level determination is made after a laboratory examination and subsequent classification of bats according to the current WNS case definitions. Definitions for the classification can be found at https://s3.us-west-2.amazonaws.com/prod-is-cms-assets/wns/prod/de91e7d0-9c0e-11e9-ad22-19882a049409-WNS-Case-Definitions_v5162019_FINAL-clean-logo.pdf Contaminated determination includes both confirmed and suspect WNS classifications.

3 Information from : V. Shelley, S. Kaiser, E. Shelley, T. Williams, M. Kramer, K. Haman, K. Keel, and H.A. Barton – Evaluation of strategies for the decontamination of equipment for *Geomyces destructans*, the causative agent of White-Nose Syndrome (WNS) Journal of Cave and Karst Studies, v. 75, no. 1, p. 1–10. DOI: 10.4311/2011LSC0249

4 Information from: J.A. Glaeser and C. Kunze – Further Evaluation of Decontamination Products to Minimize Human-based Transmission of *Pseudogymnoascus destructans.* In prep. These products were tested by the Northern Research Station, under USDA Forest Service Cooperative Agreement 13-IA-11242310-036 (U.S. National Park Service and U.S. Forest Service) & 16IA11242316017 (U.S. Fish and Wildlife Service and U.S. Forest Service)

5 The use of trade, firm, or corporation names in this protocol is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by state and/or federal agencies of any product or service to the exclusion of others identified in the protocol that may also be suitable for the specified use.

6 Product guidelines should be consulted for compatibility of use with one another before using any decontamination product. Also, detergents and quaternary ammonium compounds (*i.e.,* Lysol® IC Quaternary Disinfectant Cleaner) should not be mixed directly with bleach as this will inactivate the bleach and in some cases produce a toxic chlorine gas. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

7 Final determination of suitability for any decontaminant is the sole responsibility of the user. All users should read and follow all labeled instructions for the products/applications and/or understand associated risks prior to their use. Treatments and the corresponding procedures may cause irreversible harm, injury, or death to humans, bats, equipment or the environment when used improperly. Always use personal protective equipment in well-ventilated spaces to reduce exposure to these products or applications.