

**Disinfection Protocol for Bat Field Studies**  
**U.S. Fish and Wildlife Service – Region 3**  
**May 2008**

To minimize the potential for transmission of white-nose syndrome (WNS) while handling bats (both between handler and bats and between bats), these procedures can be easily implemented. To date, WNS has only been discovered in the northeast<sup>1</sup>, however the Midwest Region of the U.S. Fish and Wildlife Service (Service) is implementing these protocols in the interest of preventing WNS from spreading any further. In addition, we recommend that these guidelines be used any time people handle wildlife to minimize potential disease-related impacts to wildlife and people. Please note that individual states may have additional permitting requirements above and beyond these general procedures. In addition, these guidelines may be revised upon review of new information.

Any equipment that comes in contact with bats has the potential to be a vector for spread of WNS. For example, mist nets, harp traps, bat bags, wing punchers, weighing tubes, rulers, and gloves.

Bags and Gloves

To avoid cross-contamination of samples, it is imperative to keep holding bags as clean as possible. Each holding bag should be used only once per night of field work and should be washed (following procedures below) and dried between nights of use. Disposable paper bags are also a convenient option for holding bats temporarily. Bats should be kept in bags rather than holding cages.

At all times throughout a field night, only one bat should be in a given bag.

Disposable gloves should be worn over handling gloves and swapped out regularly throughout the night. Smooth leather gloves may be wiped down with disinfectant between bats. After each night of netting (or prior to the next night of use), remove heavy soil deposits from surface of bags and gloves, soak in an appropriate disinfectant agent, then dry completely.

Options include:

Bleach (sodium hypochlorite). Thoroughly wet surface or soak in 10% bleach solution (9 parts water to 1 part bleach) with detergent as a surfactant for 10 minutes (follow directions for bacteria, virus, and fungal sanitation on product label). Rinse thoroughly and completely dry.

Puregreen 24. Remove heavy soil deposits from surface. Thoroughly wet surface or soak in disinfectant for at least 10 minutes. Dry thoroughly. <http://www.puregreen24.com/index.html>

Quaternary Disinfectant Cleaner. Remove heavy soil deposits from surface. Thoroughly wet surface or soak in disinfectant with solution of 0.5 oz of concentrate per gallon of water. Keep on surface for 10 minutes. Rinse and completely dry. See product warnings for contact with skin and eyes. <http://www.drugs.com/vet/lysol-brand-i-c-quaternary-disinfectant-cleaner-concentrate.html>

<sup>1</sup>Currently found in Connecticut, Massachusetts, New York, Pennsylvania, Vermont

## Equipment with Hard Surfaces

Use a bactericide/virucide (e.g., Nolvasan®, chlorhexidine diacetate) or one of the above-listed agents to sanitize all equipment that comes into contact with a bat's body, including banding pliers, rulers, calipers, scale, etc. We suggest cleaning these items after each bat. If using containers to weigh bats, separate containers used to weigh tree bats from cave bats, do not place tree bats in a container previously used for a cave bat. Containers used to weigh cave bats (film canisters, baggies, cardboard rolls) should be disinfected regularly throughout the night or replaced periodically. Alternatively, plastic baggies can be used to line weighing containers, and bats can even be held in the bag during forearm measurements, reducing contact with wing rulers or calipers. Discard used bags after each bat.

If collecting wing biopsies for any approved research studies on Federally threatened or endangered bats, use a new (unused) punch for each bat. For other bats, punches may be reused if still sharp enough to make clean punches, but be sure to completely sterilize them between bats by flaming until the steel is hot enough to change color, and then allowing them to cool. The cutting board must also be disinfected between processing individual bats using one of the agents detailed above.

## Nets

- Use separate sets between states affected by WNS<sup>1</sup> and unaffected states

Or, if not possible and the state permit allows,

- When moving equipment from affected<sup>1</sup> to non-affected states, nets should be soaked in one of the above-listed disinfecting agents and hung until completely dry

## Harp traps

- Use separate traps between states affected by WNS<sup>1</sup> and unaffected states

Or, if not possible and the state permit allows,

- Each night after use in affected states<sup>1</sup>, remove any dirt/debris from wires/lines and bags, and spray on one of the above-listed disinfecting agents. Swab the bag with disinfectant and allow to dry completely (preferably in the sun) prior to the next use
- Bats should not be allowed to remain the bag for more than 10 minutes.

For situations when gloves may hinder field work (i.e. transmitter attachment) and bats come into contact with bare hands, apply hand sanitizer with alcohols (e.g., Purell®) afterwards. Make sure it dries completely before handling the next bat.

## **Notification of Signs of WNS**

As a reminder, the white fungus is only one of the signs of WNS. In addition, we do not expect to find bats with fungus on them during the summer/fall. However, if that should occur, photograph and report it to the nearest U.S. Fish and Wildlife Service Field Office within 24 hours.

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<sup>1</sup>Currently found in Connecticut, Massachusetts, New York, Pennsylvania, Vermont