

Standardized forms and checklists can help streamline and increase the efficiency and efficacy of the process of conducting a bat-friendly exclusion. Provisional materials can help keep operators and clients on track and ensure that key information important for supporting bat conservation is not missed.

Forms and Checklists for Bat-friendly Exclusions

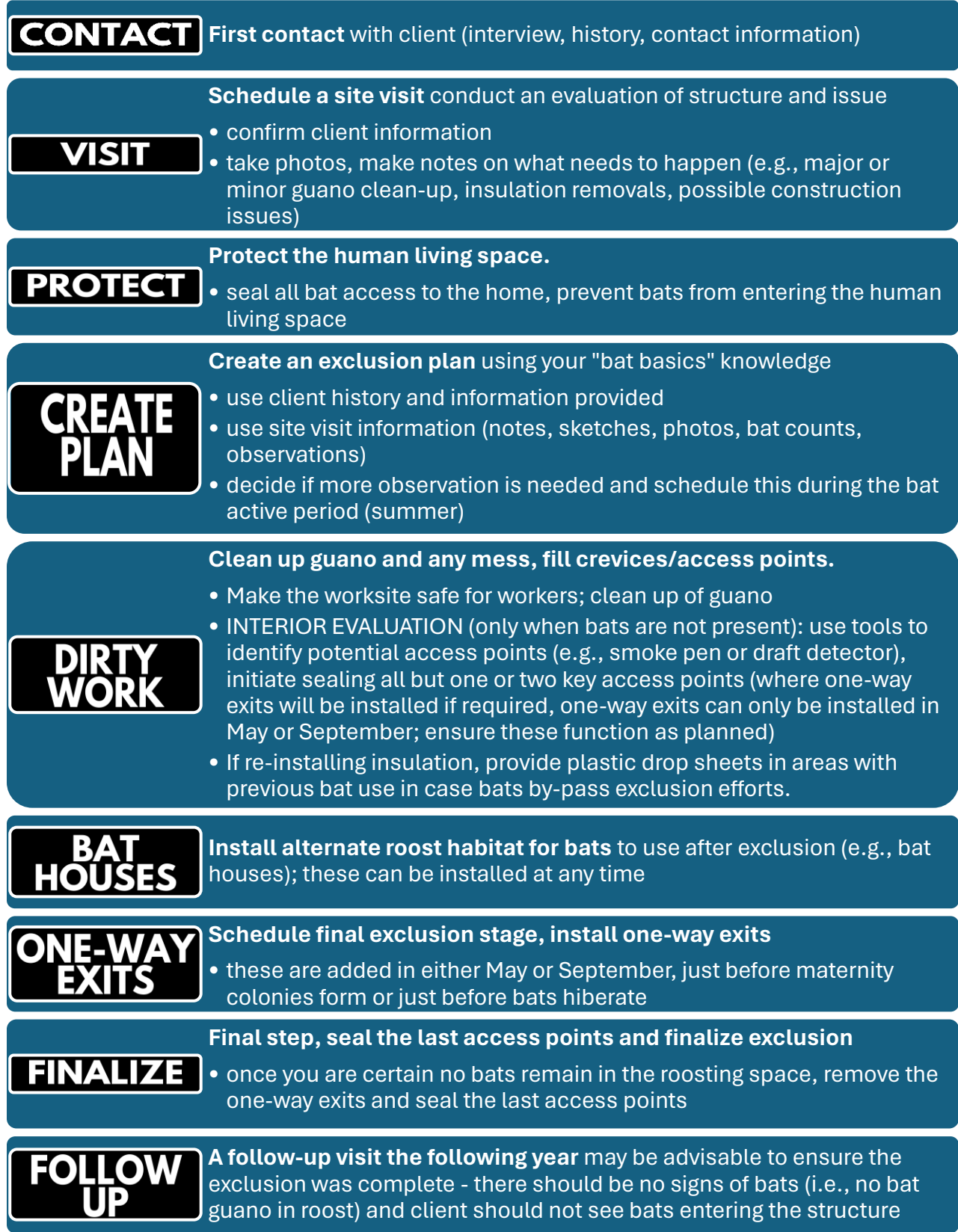
Bat Friendly Canada: Training
Program for Managing Bats in
Buildings

Wildlife Conservation Society Canada 2024

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1.0 Flow Chart of Bat Exclusion Process



2.0 CONTACT: Initial Client Evaluation Form

This form is designed for wildlife control operators working with clients who want a bat exclusion. This questionnaire could be put into a google form that the client can fill out independently. The results from the questions can automatically be exported into a spreadsheet for easier tracking of the information for each case.

This form allows wildlife control operators to collect essential information from clients regarding the bat-related issue, the history of the building, and whether an initial site visit is necessary. It also provides space for attaching photos to help assess the situation more accurately and allow operators to be fully prepared for the initial site visit.

2.1 Part A. Bat Exclusion Consultation Form (to be filled out by the client)

Client Information:

- Name: _____
- Company (if applicable): _____
- Contact Information: _____
- Address of Property: _____
- City/Province: _____
- Postal Code: _____
- Phone/Email Address: _____
- Preferred Method of Contact: [Phone / Email]

Description of Issue or Situation:

- Please describe the bat-related issue or situation in detail:

Photos:

- Please attach any photos of the property or areas affected by bat activity (if available):
- Please attach any photos of roosting bats or close up photos of dead bats:

History of the Building:

- How long have bats been present in the building? _____
- Describe the extent of signs indicating bat presence (e.g., guano, urine stains, odours): _____
- Has any previous exclusion work been attempted? If yes, please provide details:

Homeowner observations of bats and guano:

- Is the guano only on the exterior of the building? [Yes/No]
- Estimate the amount of guano present (in cups): _____
- Is guano only ever seen outside, on the ground with a noticeable accumulation, or on the exterior of the building, but bats are never seen in the daytime and there is no sign that bats are actually entering the structure? [Yes/No]

- Is this exterior location in a spot that is out of the wind, protected from rain and warm at night? [Yes/No]
- Does this involve a single bat observed on the exterior of the building? [Yes/No]
- Does this involve a single bat suddenly appearing inside the building for the first time? [Yes/No]
- Have bats been repeatedly found inside the building? [Yes/No]
- Have large numbers of bats been seen flying at night? [Yes/No]
- Has the homeowner heard consistent noises in the attic or walls that suggests bats are present? [Yes/No]
- Has the homeowner seen large numbers of bats or large piles of guano in the attic space? [Yes/No]
- Is the space used by bats accessible to humans? [Yes/No]
- Describe the space used by bats:

Additional Comments or Questions:

- Is there any additional information you would like to provide or questions you have regarding the bat exclusion process?

Client Signature:

- By signing below, I acknowledge that the information provided is accurate to the best of my knowledge.

_____ (Client's Signature) Date: _____

2.2 Part B. Preliminary Assessment by Operator based on initial client consultation (before a site visit takes place):

- Based on the information provided in the initial client evaluation form, do you believe an initial site visit is required? [Yes/No]
- Is this a large job or a small job?
- Initial information suggests that this is likely a:
 - Maternity roost
 - Night roost
 - Batchelor roost
 - Transient or temporary roost
- Requires immediate visit? [Yes/No]
- First visit scheduled for (date): _____

3.0 VISIT & ASSESS: Roost Evaluation on First Visit Form

This form is designed to capture information upon the first site visit to a bat colony in a building being assessed for exclusion. This form can be compared to the client form, or it can be used to get clarity on the issue and the historical information for the site.

This form covers various aspects of the exclusion such as observation dates, bat behavior, environmental conditions, species identification, and any observations during the winter months. Additionally, it provides opportunity to add any additional comments or observations.

3.1 Roost Description (compiled by Operator) Based on Interview with Client and First Site Investigation

Client Information

- Client Name: _____
- Client Phone Number: _____
- email address: _____
- Client Case Number: _____
- Date of Assessment: _____

Property Information:

- Address of Building: _____
- City/Province or Territory: _____
- Postal Code: _____

History of the Building:

- How long have bats been present in the building (estimate if necessary – recent/10 years or less/decades)? _____
- Describe the extent of signs indicating bat presence (e.g., guano, urine stains, odors): _____
- Has any previous exclusion work been attempted? If yes, please provide details (type of work done, dates work completed, degree of success):

Observation Details from Owner – where are the bats?

- Bats are using an interior building space that is easily accessible to humans (e.g., attic). [Yes/No]
- Has the homeowner seen large numbers of bats or large piles of guano in the accessible attic space? [Yes/No]
- Bats are using an interior building space that is inaccessible to humans (e.g., A-frame home with a narrow space between the interior ceiling and exterior roof, under roofing materials such as tile or tin, or within wall spaces): [Yes/No]
- Has the homeowner seen large numbers of bats or large piles of guano in the inaccessible spaces of the building? [Yes/No]
- Bats are using other interior spaces in the structure (describe): _____

- Bats are using exterior building space during the daytime (such as under exterior flashing spaces either along ridge cap of roof, adjacent to chimney stacks, or inside soffits around the perimeter of the home, under shutters, or other – please describe): _____
- Bats are using an exterior building space, only at night, (e.g., under an overhang, in a warm site, protected from wind). Visible sign is a pile of guano left behind, bats are not seen or heard during the daytime. [Yes/No]
- Bats are using other exterior building spaces (describe): _____

- Describe the space used by bats: _____

Observations of bats and guano (by Building Owner and/or Operator):

- Dates of Bat Observations: _____
- Presence of Pups: [Yes / No / Not Sure]
- Has the owner conducted bat counts for the colony? [Yes/No]
- Number of Bats Observed: _____
- Description of Bat Behavior Observed: _____
- Does this involve a single bat observed on the exterior of the building? [Yes/No]
- Does this involve a single bat suddenly appearing inside the building for the first time? [Yes/No]
- Have large numbers of bats been seen flying at night? [Yes/No]
- Have bats been repeatedly found inside the building? [Yes/No]
- Has the homeowner heard consistent noises in the attic or walls that suggests bats are present? [Yes/No]

Winter Observations:

- Bats seen or heard during winter? [Yes/No]
- If known, please identify the species of bats observed: _____
- Ask if they have any photos of bats or recovered dead bats.
- Winter bats are almost certainly Big Brown Bats. Work schedules for a bat-friendly exclusion will have to include one-way exits installed during May or September (or during the appropriate operational windows for work set by your region).

Property Information:

- Type of building construction: _____
- Choose type of building: small home (<1200ft²), large home (>1200ft²), business (describe type): _____

- Number of floors of building: _____
- Any additional buildings on the property? [Yes/No]
- Height off the ground to suspected access point of bats: _____
- Age of building: _____
- Large, accessible attic space? [Yes/No]
- Are bats entering the human living space from inside the building? [Yes/No]
- Bats are entering the human living space accidentally (through an open door or window) [Yes/No]
- Do you know where bats are entering the human living space? [Yes/No]
- Are there any particular areas inside of the home where bats often show up?
Describe:

- This building will require sealing access points from inside the human living space.
[Yes/No]

3.2 Observation Notes Made by Operator During Preliminary Site Visit:

- Date of Visit: [_____] *Note: Interior inspections of the roost should be conducted outside of the active period for the bats. If you are within the active window – your inspection visit should be quick and non-disruptive as possible.*
- Presence of Pups: [Yes / No / Not Sure] *Note: if you see pups, a return visit outside of the active period for bats will be required to conduct the actual exclusion work.*
- Number of Bats Observed (maximum/minimum) from client: [____ / ____]
- Number of Bats Observed during site visit: _____
- Description of Bat Behavior Observed during site visit: _____
- Dead bats found? [Yes/No] Dead bats collected? [Yes/No]
- Can you smell bat guano when entering the building? [Yes/No]
- Bats are using an interior building space that is easily accessible to humans (e.g., attic). [Yes/No]
- Types of bat sign visible in attic: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe): _____

- Bats are using an interior building space that is inaccessible to humans (e.g., A-frame home with a narrow space between the interior ceiling and exterior roof, under roofing materials such as tile or tin, or within wall spaces): [Yes/No]
Describe: _____

- Types of bat sign visible: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe):

- Bats are using other interior spaces in the structure (describe): _____
- Types of bat sign visible in attic: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe):

- Bats are using exterior building space during the daytime (such as under exterior flashing spaces either along ridge cap of roof, adjacent to chimney stacks, or inside soffits around the perimeter of the home, or other). Describe:

- Types of bat sign visible on the exterior: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe): _____

- Bats are using an exterior building space, only at night, (e.g., under an overhang, in a warm site, protected from wind). [Yes/No] Visible sign is a pile of guano left behind, bats are not seen or heard during the daytime. [Yes/No]

- Types of bat sign visible on the exterior roost space: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe):

- Bats are using other exterior building spaces (describe):

- Types of bat sign visible: guano, bat pee, smell, dead bats, staining (circle all that apply), or other (describe):

Conditions within the Bat Space:

- Temperature Range: _____
- Humidity Level: _____
- Description of Roosting Area: _____
- Any Damage or Disturbance to Property by Bats: [Yes / No / Not Sure]
- Large or Small guano deposits (circle one) on floor? [Yes/No] Estimate amount? []
- Guano accumulated in inaccessible areas such as wall spaces, soffits, roof spaces or all bat guano is easy to access (Circle those that apply).

Suspected type of roost (choose all that apply):

- Maternity
- Batchelor
- Night-roost
- Hibernation site
- Other _____

Species Identification:

- If known, please identify the species of bats observed: _____
- Are there any photos of bats or recovered dead bats (dried or frozen). [Yes/No]

Description of Issue or Situation:

- Please describe the bat-related issue or situation in detail:

Review Homeowner Forms at Site Visit:

- Add any additional information or any clarifications:

Photos/Site Sketches:

- Attach photos of the property specifically areas with visible bat sign:
- Attach photos of known access points or potential access points both interior and exterior):
- Create a site sketch of the building. Highlight locations where bat access has been noted or where bats may potentially access the building.

Additional Comments or Observations:

- Is there any additional information you would like to provide about the bat colony or the building's conditions?

4.0 CREATE PLAN: outline the exclusion workplan

These are the key steps, considerations and checklists needed to conduct a bat-friendly exclusion.

1. Determine timing for work:

- Do you need to conduct any additional emergence counts and/or observe bats exiting the building? If yes, set a date for counting bats (ensure it is during prime active period – between mid-June and early August; evening should be warm, calm, and no rain). Use the checklist for conducting emergence counts. Enlist the help of the building owners for this task. More counts and observations of bats exiting the building will help identify all potential access points.
- Do you need to return for further inspection of the roosting space? If yes, set dates for future inspections.
- If you know you have Big Brown Bats: Plan on installing one-way exits. Initiation of your exclusion will start in either May or September (or when one-way exits can be installed in your region).
- If you know you do not have Big Brown Bats: you have the option of not using one-way exits and simply conducting the exclusion in winter while bats are absent.
- Set a date to conduct the bat-proofing of the human-living space to protect the people from bat exposure (this can immediately and can happen at any time of year).
- Set a date to conduct the clean up, sealing crevices and finalizing the exclusion (if installing one-way exits, you might need to wait until a later date to remove the one-way exits if these have been used, this could even be delayed until the winter or the following spring if exits are installed in the fall).

2. Bat-proof the living spaces of the building; develop a plan to protect the people.

- Use the checklist for bat-proofing.
- Use the information from client to determine sites within the home where bats may be entering the living space.
- Use the information from the initial site visit and observations of bat sign to determine key problem areas of the building.
- Inspect the building, room by room and address any potential entry points.

3. Make a To Do List for Roost Space Clean Up and Crevice Sealing

- Use checklist for decontamination protocols.
- Use checklist for materials needed to complete cleanup and sealing crevices/access points.

- Use checklist for installing one-way exits (if needed).
- Just in case, use the checklist for transport and handling bats (have materials on hand to be ready if needed).

4. Conduct the clean up and seal all crevices.

- Use drop cloths and tarps to keep dust and debris from sifting into the building interiors.
- Make the space safe for work.
- Clean up the space.

5. Assess and seal all possible gaps.

- Start with observations from the exterior of the building and locate those access points and determine if they are best sealed from inside or the outside the building or both.
- For all types of roost situations – deploy “draft detection” devices (e.g., smoke pen, infrared heat sensitive cameras or simple hangar with tissue paper attached) to find potential access points. Take photos of spots where air movement is detected.
- Physically mark these potential access sites and known access sites inside the roost if you can, this will make them easier to find when you go to seal up spaces.
- Draw a sketch of the roost space, mark sites on the sketch and make notes.
- Need toolbox with materials for sealing crevices (spray foam, caulking and backing material).
- Fill every possible crevice. Bats can squeeze through any gap that you could fit your pinkie finger into. This is the often tedious and finesse part of bat exclusions. It is best to take your time with this step!
- Consider restricting access to the tops of interior walls (screen material could be used if there are considerations about airflow).
- Use the “draft detection” devices again after completing the work of sealing crevices. Make sure all gaps are sealed.
- If re-installing insulation material, consider laying down plastic drop sheets in areas that have been used by bats in the past to protect new materials in the event that bats by-pass efforts to exclude them. Often exclusions require more than one season to be successful.

6. Complete finalization form

- Go over process with client if needed.
- Set a date or month when you plan to check back in with the client to check for any issues.

5.0 PROTECT: Bat-proofing Checklist

Protecting people in their living spaces from bat intrusions can be done at any time of year and involves sealing any bat access points into the human living space from inside the living space. There is no contact with bats. In most cases, clients will call about bat exclusions during the nursery period when bats are most noticeable, but exclusion work must be delayed until the bats leave after the summer nursery period. Bat-proofing can console clients with immediate action. A return visit will likely be required to initiate the work plan for the bat exclusion. During the summer nursery period, operators responding to bat calls should arrive prepared to:

- **Consult with Client:**
 - Share information on how to be bat-friendly; provide a copy of the brochure for clients (from Lesson 11).
 - Operators may take time during this visit to review the exclusion plan for the site with the client (if the process for a bat-friendly exclusion has been started), explain when the clean up and exclusion will happen, when one-way exits will be installed (if needed) and the plan to protect the living space in the building.

- **Identify Entry Points inside the human living space:**
 - Inspect the interior of the home to identify all potential entry points for bats, including gaps, cracks, holes, and openings around windows, doors, vents, and utilities.
 - Be sure to check under sinks where plumbing passes through the walls.
 - In older homes, be sure to check at the base and tops of walls (look closely for cracks or gaps where bats may pass through).
 - Poorly installed electrical outlets may also provide access points and should be examined for gaps.

- **Seal Entry Points:**
 - Use appropriate sealants and materials to close off all identified entry points, ensuring a tight seal to prevent bat entry. Common sealants include caulk, expanding foam, weatherstripping, and mesh screens.
 - For spots that are highly visible, consult with the homeowner before filling gaps. They may want to use a method that blends in with the décor and this may be something they want to take on as a task themselves. But be sure to make a note of these potential access points.

- **Inspect the Basement and/or Crawl Spaces:**
 - Check basements, and crawl spaces for additional entry points or signs of bat activity. Seal any gaps or openings found in these areas.

6.0 ONE-WAY EXITS: Installation of Devices and Tracking Information

This form serves as a record of the installation activities, ensuring that the process is conducted in a bat-friendly manner and that all necessary materials and methods are used appropriately. It also provides documentation of client satisfaction and any additional comments or observations related to the installation.

Operator Information:

- Name: _____
- Company: _____
- Contact Information: _____
- Date of Installation: _____
- Client Name: _____
- Property Address: _____

Exclusion Equipment and Materials:

- Type of Exclusion Device Used: _____
- Number of Exclusion Devices Installed: _____
- Location of Exclusion Devices (e.g., specific entry points or areas of building):

- Sealants Used for Sealing Entry Points: _____
- Additional Materials Used (if any): _____
- Photos or Documentation of Exclusion Setup:

Checklist of Materials and Methods:

- One-way bat exclusion devices (e.g., bat cones, valves)
- Sealants (caulking, foam) for sealing entry points after installation
- Protective equipment (gloves, eye protection)
- Ladder(s) for accessing entry points
- Screwdriver or drill for installing exclusion devices
- Wire cutters (if necessary)
- Bat-friendly exclusion netting (if applicable)
- Zip ties or fasteners for securing exclusion materials
- Flashlight or headlamp for visibility in dark areas
- Safety harness (if working at heights), safety gear (hard hat)
- First aid kit
- Communication device (e.g., phone) for coordination with team or client

Installation Process:

1. Preparation:

- Assess entry points and determine suitable locations for one-way exclusion devices.
- Gather all necessary materials and equipment.
- Put on personal protective equipment (gloves, eye protection).

2. Installation of One-Way Exclusion Devices:

- Carefully install one-way exclusion devices over identified entry points, ensuring they are securely fastened and allow bats to exit but not re-enter.
- Use sealants (caulking, foam) to seal any gaps or cracks around the exclusion devices to prevent bypassing. Be sure that bats are not at-risk of contacting any sticky surfaces from any sealants used.
- How many one-way valves were installed? _____
- Provide a sketch of the building and mark spots where valves were installed:

3. Sealing Entry Points:

- Seal all other potential entry points with sealants, bat-friendly exclusion netting, or other appropriate materials to prevent future bat access.

4. Safety Measures:

- Maintain safety precautions while working at heights or in confined spaces.
- Use appropriate ladder safety techniques and secure the ladder properly.

5. Cleanup:

- Remove any debris or waste generated during installation.
- Ensure the work area is clean and free of hazards.

6. Client Communication:

- Inform the client about the exclusion process and any post-installation recommendations.
- Provide the client with information on monitoring bat activity and signs of successful exclusion. Indicate that the client should notify the operator as soon as possible if the device becomes loose or falls off.
- Indicate dates when exclusion devices will be removed, and final access points will be sealed. _____

Additional Notes or Comments:

7.0 FINALIZE: Final Form for a Bat-Friendly Building Exclusion

This form allows for the formalization of the bat exclusion process, including the finalization of the removal of one-way exit valves. It captures essential details such as the date of initial installation, the duration of valve installation, the success of the exclusion, and client sign-off to confirm the completion of the job. Additionally, it indicates that the operator will follow up in a year to assess the effectiveness of the exclusion and address any ongoing issues.

Client Information:

- Client Name: _____
- Case Number: _____
- Company (if applicable): _____
- Contact Information: _____
- Address of Property: _____
- City/State/Province: _____
- Postal Code: _____
- Phone/Email Address: _____
- Preferred Method of Contact: [Phone / Email]

Exclusion Details:

- Date of Initial Installation of One-Way Exit Valves: _____
- Number of Days or Weeks Valves Were Installed: _____
- Date of Valve Removal: _____
- Was the Exclusion Successful? [Yes / No]
- If No, Please Provide Details: _____
- If No, set a date for follow-up inspection: _____
- Recommendations for occupants:
 - Monitor for bat activity (conduct roost counts, observations of bats entering or exiting the structure): _____
 - Take notes, photos, sketches to identify access points (especially important if another round of sealing gaps is required).
- If Yes (exclusion was successful), sign below to confirm that the job of exclusion is complete.
- Additional Notes or Comments: _____

Operator Follow-Up:

- The operator will follow up in one year to determine if the exclusion was successful or if further action is needed.

Operator Signature: _____

(Date: _____)

This data sheet serves as a record of key information related to the bat exclusion process, including observations, exclusion methods used, and post-exclusion recommendations. It helps wildlife control operators document their efforts and communicate important details to clients or stakeholders involved in bat management and conservation.

Client Sign-Off:

- By signing below, I acknowledge that the one-way exit valves have been removed, and the exclusion process is complete.

_____ (Client's Signature) Date: _____

8.0 CHECKLIST: Decontamination After Visiting Bat Roosts in Buildings

When visiting an attic with bats, particularly in the summer when bats are more active, it's essential to take precautions to prevent the spread of *Pseudogymnoascus destructans* (Pd, the fungus that causes white-nose syndrome (WNS) in bats) and other potential contaminants. Here's a checklist of materials needed for decontamination:

1. Personal Protective Equipment (PPE):

- Disposable coveralls or old clothing that can be laundered separately.
- Disposable nitrile gloves.
- Protective eyewear or goggles (optional).
- N95 respirator mask or equivalent for airborne particle protection.

2. Cleaning Supplies/Disinfectants:

- Bleach solution (1 part bleach to 9 parts water); bring a bottle of bleach and water for mixing solution.
- Spray bottle for bleach solution.
- Other approved decontamination solutions for WNS include:
 1. 50-70% Isopropanol (70% for wipes).
 2. Disposable wipes with 3% hydrogen peroxide (e.g., Clorox, Accel, Lysol).
 3. Quaternary disinfectants (Virkon, Prevail Microban). Follow manufacturer instructions for proper dilution and application.
- Mild detergent or soap.
- Trash bags for disposal of contaminated materials.
- Check www.whitenosesyndrome.org for the latest list of acceptable decontamination products/solutions.

3. Tools and Equipment:

- Scrub brush or sponge.
- Vacuum cleaner with HEPA filter.
- Mop and bucket.

4. Protective Coverings:

- Plastic sheeting or drop cloths to cover sensitive items or surfaces.
- Sealable plastic bins for storing contaminated clothing or materials until laundering or disposal.

5. Personal Hygiene Supplies:

- Approved wipes (determined to kill fungal spores of Pd, see above listed under cleaning supplies) or a handwashing station with soap and water.
- Clean towels for drying hands.

6. Optional Items:

- UV-C light wand for additional disinfection of surfaces.
- Respirator fit test kit (if using respirator masks).
- Privacy tent for changing dirty clothes before re-entering vehicles.
- Decontamination shower or access to a shower for thorough cleaning after work.

7. Documentation and Communication:

- Pen and notebook for recording decontamination procedures and any observations.
- Communication devices (e.g., phone) for coordinating cleanup efforts with others.

It's important to follow established decontamination protocols and guidelines provided by relevant authorities, such as wildlife agencies or public health departments, when cleaning areas potentially contaminated with *Pseudogymnoascus destructans* or other pathogens. Additionally, individuals should be aware of any regulations or permits required for handling wildlife and bat habitats in their area.

9.0 CHECKLIST: Materials Needed to Perform a Bat Exclusion from a Building:

Before conducting a bat exclusion, it's essential to familiarize yourself with local regulations regarding bat protection and exclusion practices. Additionally, consider consulting with a wildlife biologist or bat conservation organization for guidance on humane exclusion methods and conservation best practices.

When conducting a bat exclusion from a building, it's crucial to ensure the safety of both the occupants and the bats. Here's a checklist of materials needed for a bat exclusion:

1. Personal Protective Equipment (PPE):

- Gloves (preferably soft leather but resistant to punctures from bat bites); nitrile gloves.
- Long-sleeved shirt and pants.
- Closed-toe shoes or boots.
- Eye protection (safety glasses or goggles).
- Respirator mask (N95 or equivalent) if working in confined spaces with bat guano or dust.
- Basic First Aid kit in case of minor emergencies.

2. Bat Exclusion Materials:

- Bat exclusion devices (such as one-way doors or exclusion netting).
- Sealants (caulking, quick drying spray foam, or mesh) for sealing entry points after exclusion; backing materials to cover sticky surfaces to ensure there is no risk of bat entrapment.
- Bat cones or tubes (for one-way exclusion devices).
- Zip ties or fasteners for securing exclusion materials.

3. Tools and Equipment:

- Ladder(s) tall enough to access entry points; any associated safety gear needed for working at heights (safety harnesses, ropes, etc.).
- Flashlight and/or headlamp for visibility in dark areas.
- **Smoke Pencil or Smoke Stick:** Smoke pencils or smoke sticks produce a thin, visible stream of smoke that can be used to detect air movement. By observing the movement of smoke around windows, doors, electrical outlets, and other penetrations, it may be possible to identify points of air infiltration or exfiltration. Closer examination could indicate if spaces are large enough for bats to access.

- **Infrared Imaging Camera:** Infrared imaging cameras, similar to thermal imaging cameras, detect temperature differences. They can be used to identify areas of heat loss or gain, which may indicate insulation deficiencies or air leaks.
- **A simple air leak detector** – can be made by taping a sheet of tissue paper to a clothes hanger. Movement of the paper indicates a leak (this tool get best results when used on a windy day).
- Screwdriver or drill for removing and reinstalling access points.
- Wire cutters (if using wire screen or metal hardware cloth for exclusion).
- Staple gun or hammer and nails, duct tape (for securing exclusion materials).
- Utility knife or scissors for cutting materials to size.
- Black Sharpie marker to mark potential access points that will require filling.
- Need 10% bleach solution squirt bottles for spot treatment or squirt bottles with water just to keep the dust down.

4. Protective Coverings:

- Plastic sheeting or drop cloths to cover sensitive items or surfaces near the work area.
- Tarpaulin or plastic sheeting to create a containment area around the entry point during exclusion.

5. Cleaning Supplies:

- Shovel, or broom/brush and scoop or dustpan for removing bat guano or debris from entry points and surrounding areas.
- Disinfectant cleaner for sanitizing surfaces contaminated by bat droppings (see decontamination checklist).
- HEPA vacuum cleaner for removing bat guano and dust (if applicable).
- Trash bags for disposal of contaminated materials.

6. Communication and Documentation:

- Pen and notebook and/or data sheets for recording observations, exclusion activities, and any necessary permits or regulations. Keep copies of the permits on hand at the work site.
- Camera or smartphone for documenting entry points and exclusion process.

7. Optional Items:

- Wildlife exclusion permit (if required by local regulations).
- Bat boxes or alternative roosting sites for displaced bats.

- Wildlife rehabilitation contact information for injured or orphaned bats.
- You may need planks for safe navigation in attic area to prevent stepping through the ceiling if there is no floor (make notes if there are precarious areas in the attic or roosting space that could be a safety hazard for workers).
- Need plastic sheeting installed to prevent dust/particles from drifting into living space (make notes on where installation should occur). Need duct tape or other materials for fixing plastic sheeting in place.

10.0 CHECKLIST: Materials Needed for Capture, Handling and Transport of Bats to a Wildlife Rehabilitator as Part of a Building Exclusion.

When capturing, handling, and transporting bats to wildlife rehabilitation facilities as part of managing bats in buildings, it's essential to prioritize the safety and welfare of both the bats and the individuals involved. Here's a checklist of materials needed for this process:

1. Personal Protective Equipment (PPE):

- Soft leather gloves resistant to puncture from bat bites; nitrile gloves.
- Long-sleeved shirt and pants.
- Closed-toe shoes or boots.
- Eye protection (safety glasses or goggles).
- Respirator mask (N95 or equivalent) if working in confined spaces with bat guano or dust.

2. Capture and Transport Equipment:

- Hand-held nets for capturing bats that have landed or are in torpor. (Mist-netting active, flying bats requires further, specialized training for deployment and safe bat removal and is not recommended).
- A small, shoe-box-sized box to place over torpid, roosting bats and a stiff piece of cardboard for gently slipping under the bat to trap it within the box.
- Soft-sided mesh bat bags or containers for temporary containment equipped with both air holes and a system for securing the lid (such as elastic bands).
- Labeling materials (e.g., permanent marker, labels) for marking containers with relevant information (e.g., date, location, species).
- Separate clean coin envelopes for guano sampling if required, and a pencil for labeling envelopes. Cotton balls, silica gel desiccant packets and data sheets for recording guano sampling information.

3. Cleaning and Disinfection Supplies:

- Disinfectant wipes or solution for cleaning hands and equipment after handling bats.
- Trash bags for disposal of contaminated materials.
- Change of clothing prior to entering vehicles; exterior layer of clothing worn by anyone handling bats should be placed in a bag or tote box with a lid for later laundering and decontamination.

4. Communication and Documentation:

- Pen and notebook for recording observations, capture locations, and other relevant details.
- Contact information for local wildlife rehabilitation facilities or bat experts.
- Wildlife rehabilitation permits or authorization documents (if required by local regulations).

5. Optional Items:

- Bat boxes or alternative roosting sites for displaced bats to be released after rehabilitation.
- Informational materials on bat conservation and rehabilitation for building occupants or stakeholders.
- GPS device or maps for recording capture locations and release sites.

Before capturing and transporting bats, it's essential to familiarize yourself with local regulations regarding bat handling, wildlife rehabilitation, and transportation. Additionally, consider consulting with wildlife experts or bat conservation organizations for guidance on humane capture and handling techniques.

11.0 CHECKLIST: Materials Required for Observation and a Bat Exit Count of a Building Roost as Part of a Bat Exclusion.

When conducting observation and counting of bats leaving a building roost at dusk for the purpose of a bat exclusion, it's crucial to have the right materials to ensure accurate data collection and effective exclusion planning. Here's a checklist of materials needed for this process:

1. Observation Equipment:

- Flashlight or headlamp with a red filter to minimize disturbance to bats.
- Infrared or night vision camera (optional) for recording bat activity in low-light conditions.
- Notebook or data sheet for recording observations, including species identification (if you have access to a bat detector), emergence times, and flight patterns.
- Data sheets should include space for rough sketches of locations of bat exit points.

2. Counting Equipment:

- Click counter or tally counter for keeping track of the number of bats exiting the roost.
- A watch or a timer to record the duration of bat emergence.
- Smartphone or camera for documenting emergence behavior and bat exit points.

3. Safety Equipment:

- Personal Protective Equipment (PPE), including gloves, long-sleeved clothing, and closed-toe shoes for protection against potential hazards such as tripping in the dark.
- Insect repellent to deter mosquitoes or other biting insects.

4. Communication and Documentation:

- Pencil and waterproof notebook for recording observations and counting data.
- Map or sketch of the building and surrounding area, indicating observation points and potential exit locations.
- Prepare for bat counts by looking up the sunset times for the date of your planned count and location. Consider avoiding counts on nights with a full

moon as bat activity can be either delayed or less during very bright evenings.

5. Optional Items:

- Video camera or GoPro for recording bat emergence behavior and documenting exclusion efforts.
- Remote monitoring devices or bat acoustic detectors for passive monitoring of bat activity over extended periods.
- Weather monitoring equipment (e.g., thermometer, anemometer) to record environmental conditions during observations (bat counts should occur on warm nights, with low wind and no rain).

6. Refreshments and Comfort Items:

- Water bottle and snacks to stay hydrated and energized during prolonged observation periods.
- Folding chair or portable seating for comfort during extended observation sessions.
- A warm jacket in case temperatures cool after sunset or if the weather changes.

Before conducting bat observations and counts, it's essential to obtain any necessary permits or permissions required for accessing the building and conducting wildlife surveys. Additionally, ensure that all activities comply with local regulations and best practices for bat conservation and management.

12.0 DATA SHEET: Exit Count

Bat Exclusion Data Sheet

Operator Information:

- Name: _____
- Company: _____
- Contact Information: _____
- Date of Exclusion: _____

Location Details:

- Building Address: _____
- County/City: _____
- GPS Coordinates (if available): _____
- Description of Building Structure: _____ (e.g., type of building, number of stories, roof type)

Bat Observation and Count:

- Start Time of Observation: _____
- End Time of Observation: _____
- Weather Conditions: _____ (e.g., temperature, wind speed, humidity)
- Observation Points (provide a sketch indicating where observers are located for counting:
 - Location 1: _____
 - Location 2: _____
 - Location 3: _____
- Total Number of Bats Observed: _____ Pups seen or heard? [Yes / No]
-
- Species Identified (if possible): _____
 - Identified in the hand using species key [Yes / No]
 - Identified using a bat detector [Yes / No]
 - Identified from a captured or dead bat [Yes / No]
 - Identified using DNA testing [Yes / No]
- Emergence Patterns:
 - Time of First Emergence: _____
 - Time of Peak Emergence: _____
 - Duration of Emergence: _____
- Any Observations of Abnormal Behavior: _____
- Any newly volant bats seen flying (usually late July/early Aug) [Yes / No]