

Living Safely with Bats



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PREDICT-2 is part of USAID's Emerging Pandemic Threats (EPT) program and aims to strengthen global capacity for the detection, discovery, and prevention of viruses with pandemic potential, specifically those that can move between animals and people (zoonotic viruses). Implementing partners for PREDICT-2 are the University of California, Davis; EcoHealth Alliance; Metabiota; Smithsonian Institution; Wildlife Conservation Society; and, the partner institutions and governments of the 35 countries in which we have worked.

A goal of the behavioral risk component of PREDICT-2 is to use scientific results to inform the development of intervention strategies that could reduce the spillover, amplification, and spread of novel viruses. Preliminary analyses identified an expressed need to provide behavior change strategies as they relate to living safely with bats. The current resource was developed to address this need.

A moderated picture book format was recommended by local leaders. Subject matter experts from the PREDICT-2 consortium developed an initial draft which was updated based on feedback from country teams and local community members. When the picture book is used in new settings, it is recommended that additional local level feedback be incorporated to tailor the content to the specific context.

Moderation of the picture book is intended to be provided by a trusted community leader, and talking points are provided for each image that the storyteller can use to moderate the discussion. To facilitate this, the document should be printed out such that there is an image on one side with the talking points on the other side. The moderator can then hold up the images to show to the audience, and use the talking points on the back to guide the discussion.

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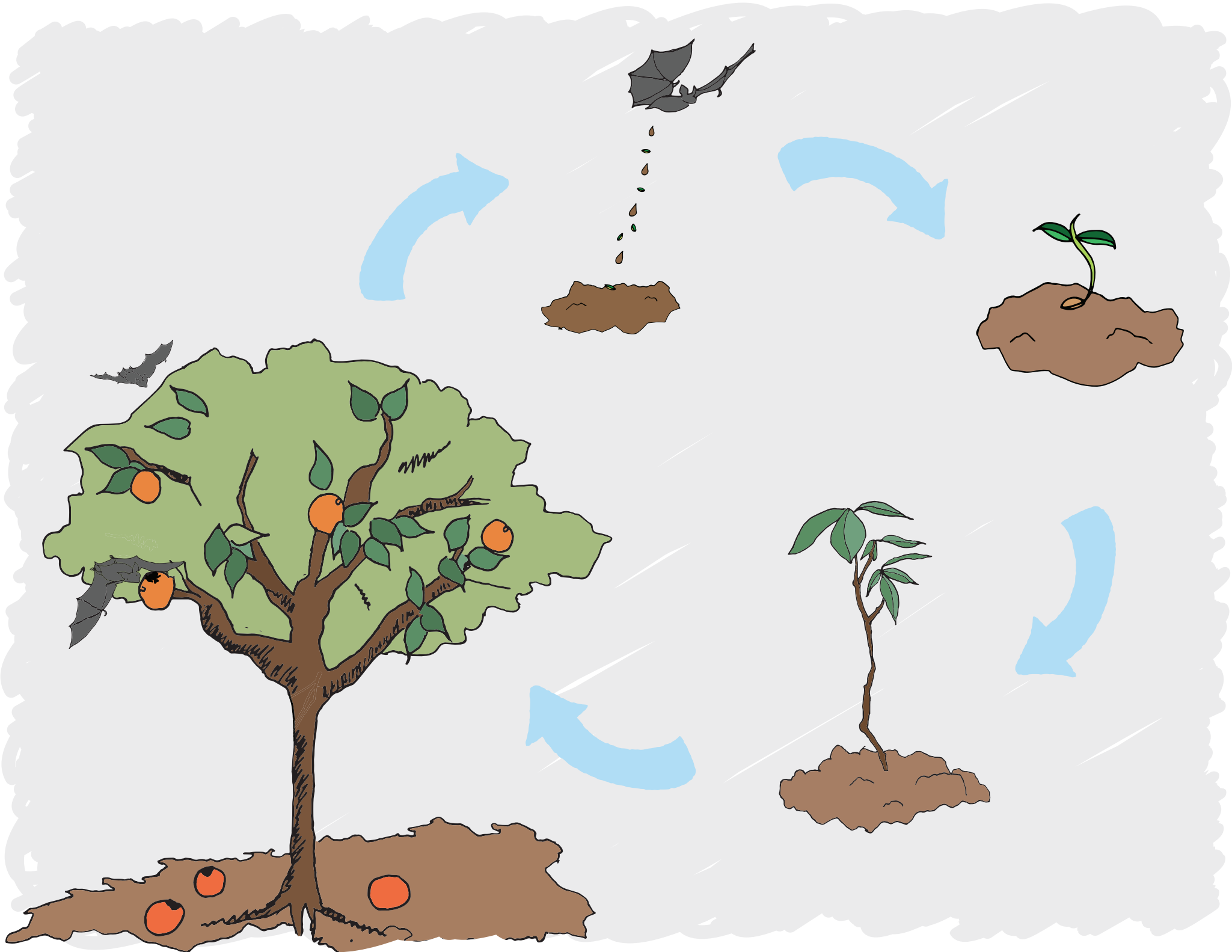
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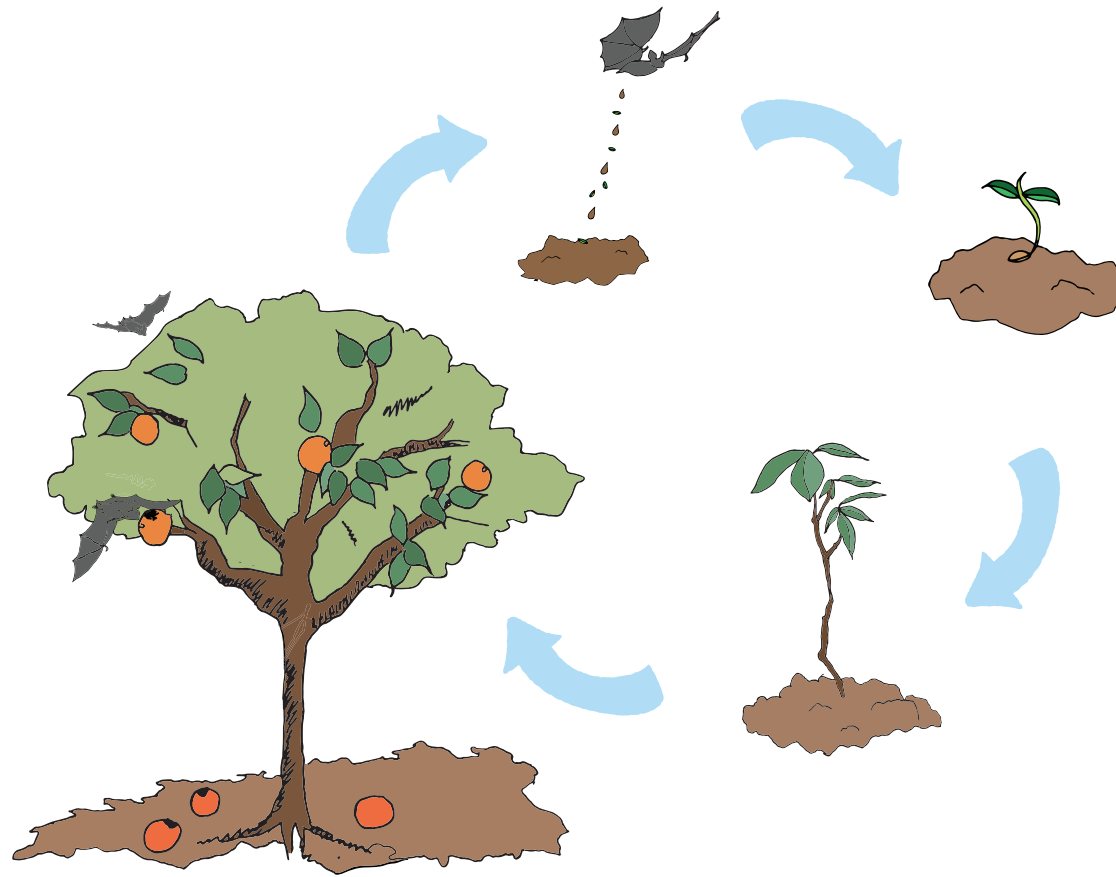
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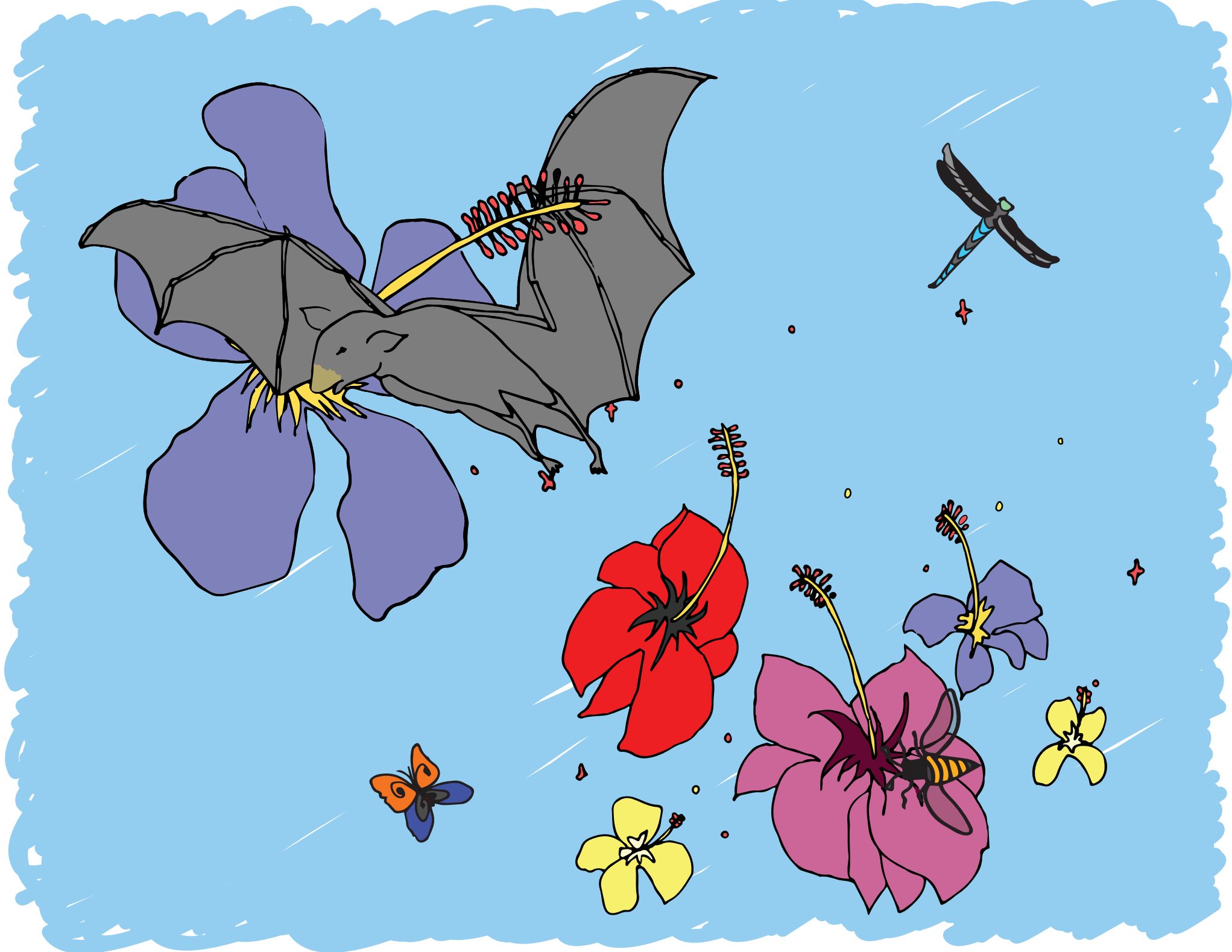




Section 1. Bats are an Essential Part of our Ecosystem

Bats play an important role in keeping us and our ecosystem healthy. For example, bats spread seeds from hardwood and fruit trees.

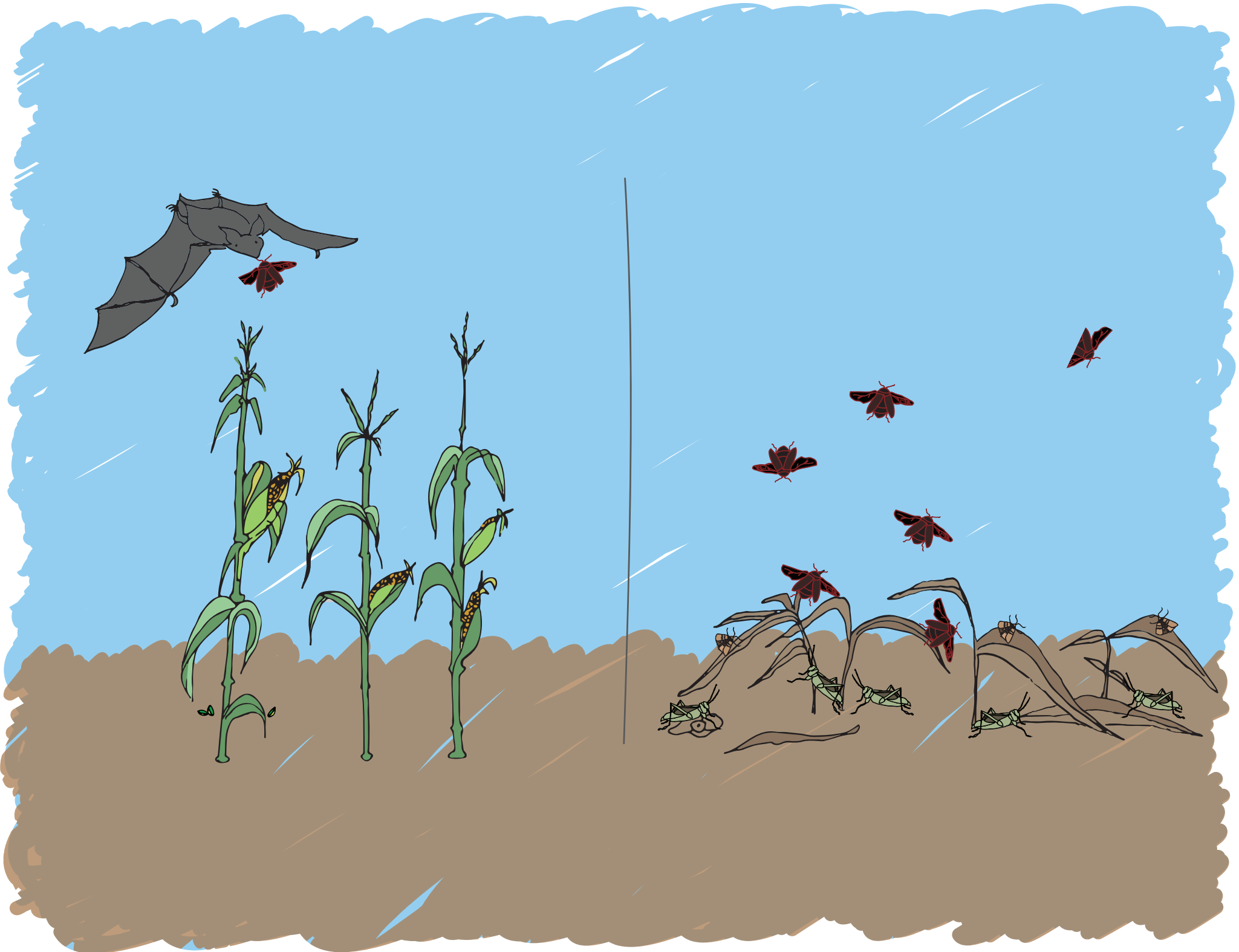




Section 1. Bats are an Essential Part of our Ecosystem

Bats also play an important role in keeping us and our ecosystem healthy by pollinating flowering plants. Over 300 species of fruit depend on bats for pollination. These fruits include mangoes, bananas, and guavas.

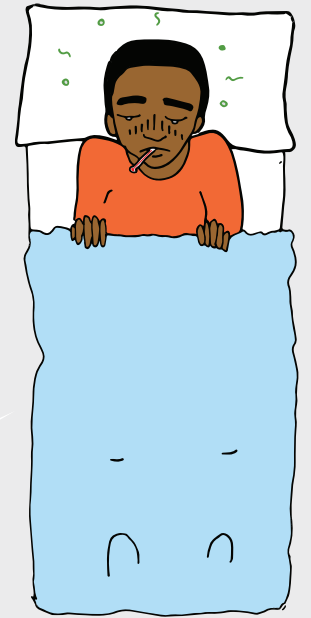




Section 1. Bats are an Essential Part of our Ecosystem

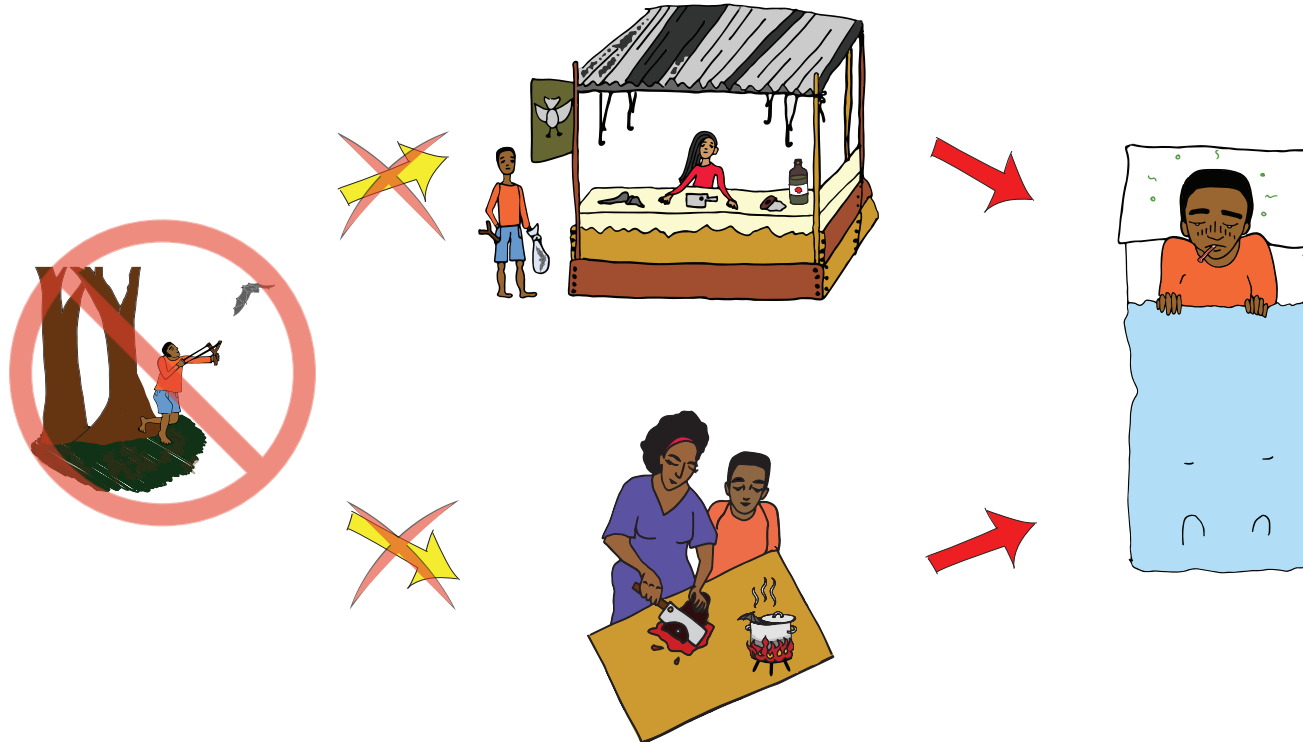
Bats also eat insects such as moths and beetles that damage crops.





Section 2. Ways to Live Safely with Bats: The Basics

While bats have been connected to rabies and other diseases, killing or disturbing the natural homes of bats can actually make rabies spread to more people. Because of this, it's best not to kill, hunt, sell, cook, or eat bats.

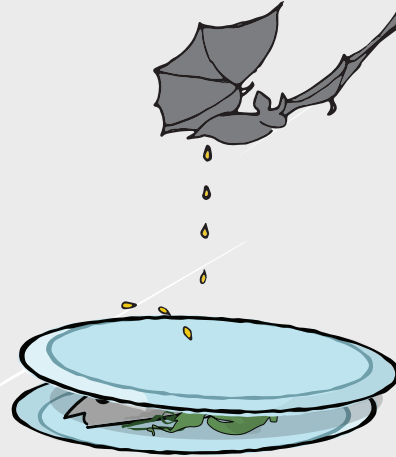




Section 2. Ways to Live Safely with Bats: The Basics

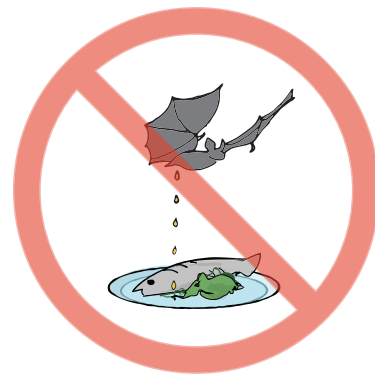
The best way to live safely with bats is to avoid all contact with both living and dead bats. It is especially important to avoid bodily fluids such as spit, blood, urine, or feces, and to prevent bats from living inside homes and buildings (also called "roosting").

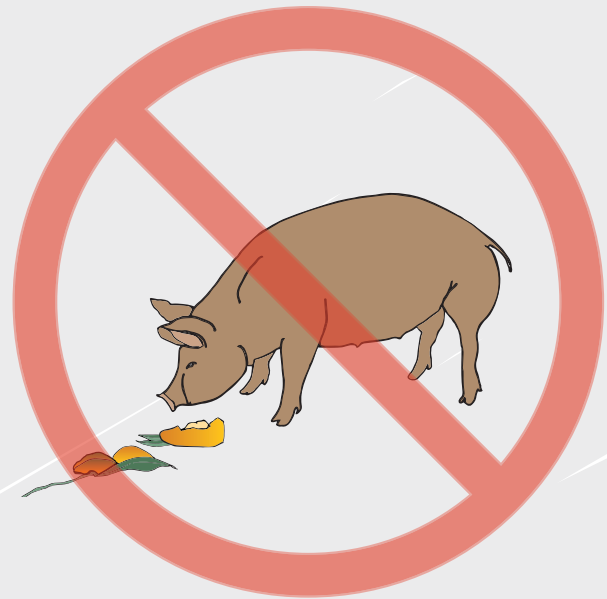




Section 2. Ways to Live Safely with Bats: The Basics

One easy way to stay safe is to avoid eating food or drinking water that has come into contact with bat urine or feces. For example, you can cover your food and water. When you do, it is important to regularly clean these covers with soap and running water.

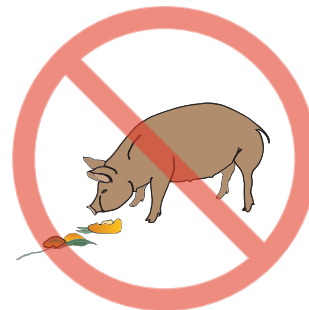
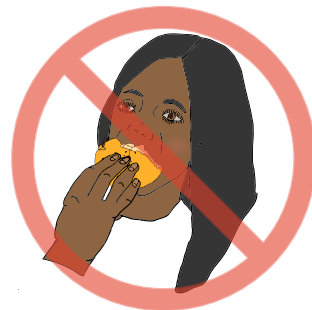




Section 2. Ways to Live Safely with Bats: The Basics

To reduce the risk of getting sick, avoid eating fruit that has been partially eaten by wild animals or livestock. You should never eat or drink something that you think bats have come in contact with.

Do not try to save food that has been partially eaten by bats by removing the sections with obvious bite marks, and do not feed these partially eaten fruits to livestock. The entire item may be spoiled and could make you sick.





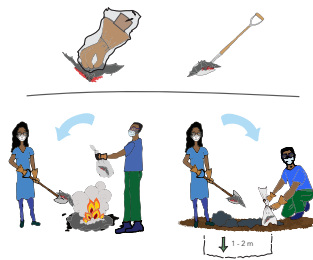
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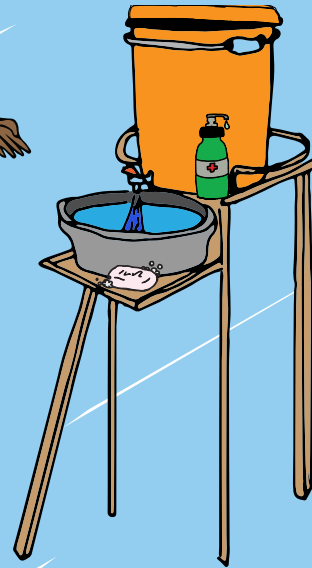
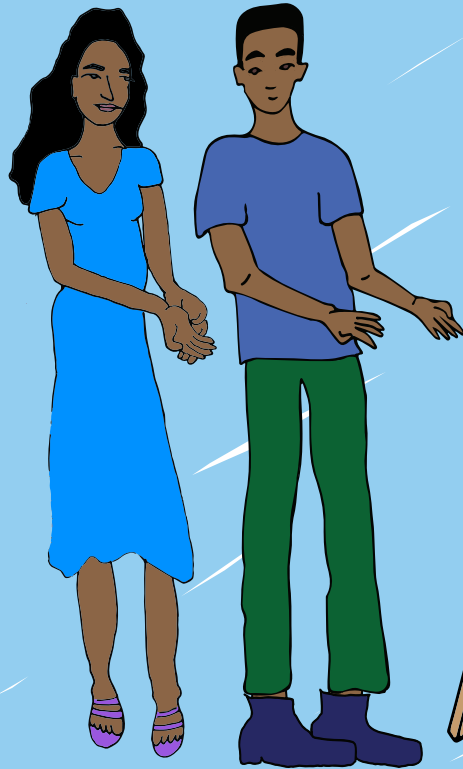
Section 3. How to Dispose of Dead Bats

It is important to avoid directly touching bats. If a professional is not available to help you get rid of a dead bat, here are some steps you can take. First, cover your mouth and nose with a mask. A mask that has a tight seal around the nose and mouth would be best. If you don't have one, use a tightly wrapped scarf. Also, cover your eyes with glasses and your hands with heavy gloves. If you do not have heavy gloves, cover your hands with plastic bags. If you do use heavy gloves, you should still cover the gloves with plastic bags so that you can place the dead bat in the bag without ever getting any blood on your gloves. Remember, you can still be hurt by a dead bat. Bat claws are very sharp and can easily cut or scratch your skin.

To pick up the bat, put your gloved hand inside a plastic bag, then pick up the bat, and pull down the top of the bag to turn it inside out with the bat inside. You can then put the bagged bat in a second bag and tie it tightly.

Once placed in a bag or container, the bat should be burned completely or buried 1 to 2 meters deep and covered by at least 60 centimeters of soil using a shovel. It is important to clean your shovel with a bleach solution when you are done.

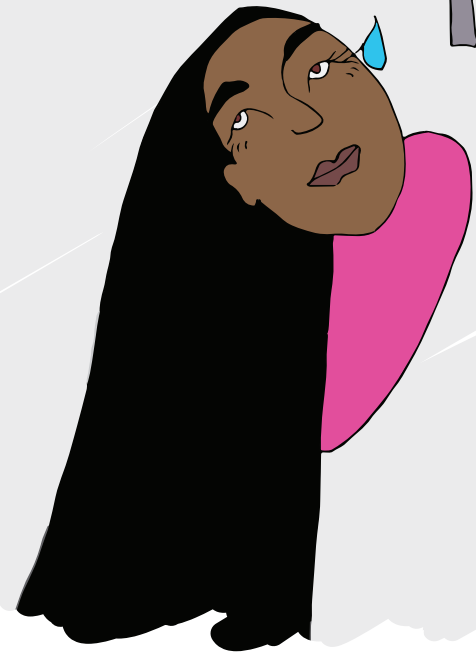
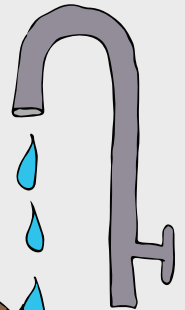
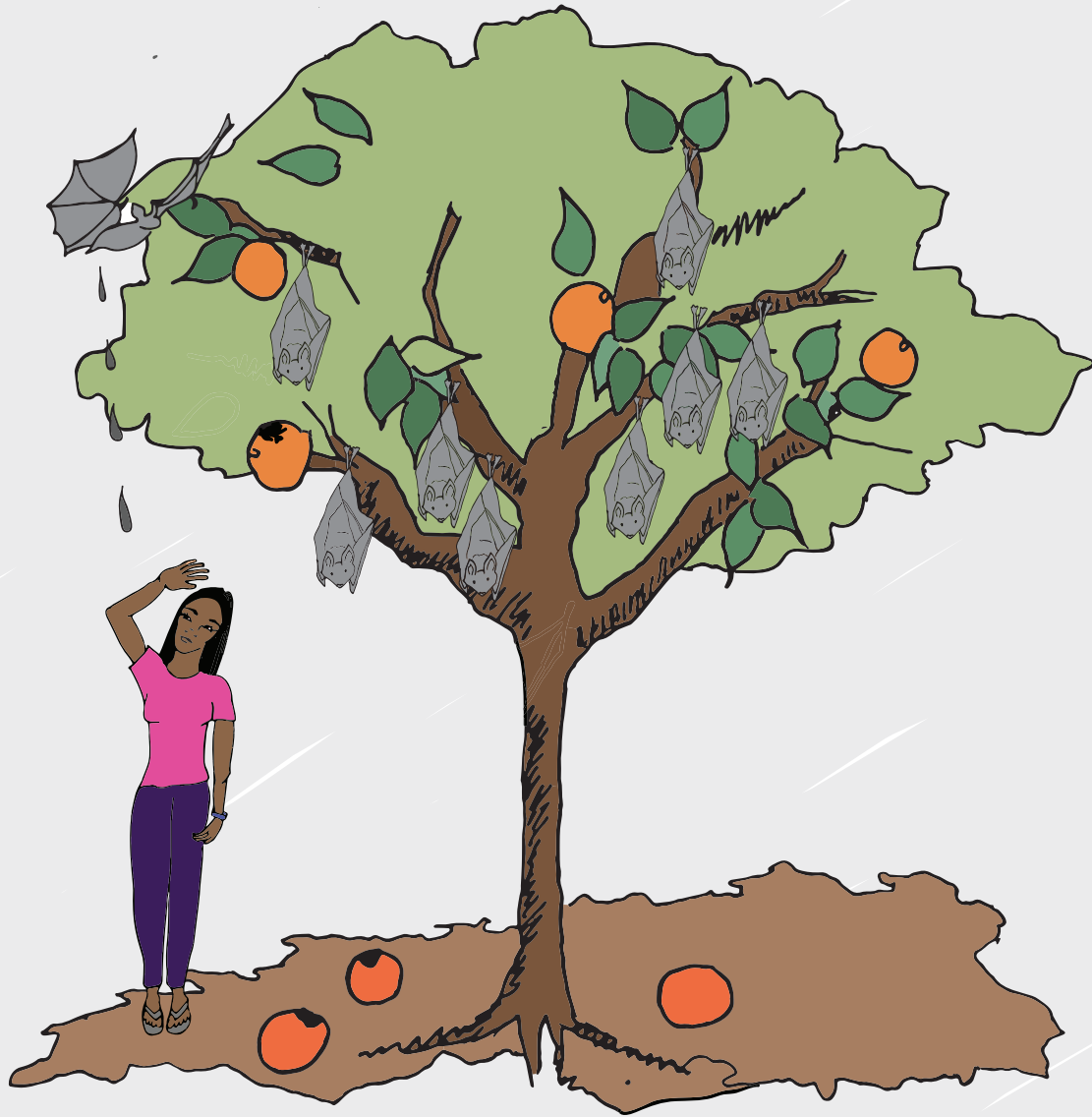




Section 3. How to Dispose of Dead Bats

After getting rid of the dead bat, wash your hands with soap and running water. If available, use a disinfectant that can kill viruses, such as hand sanitizer gel or wipes.

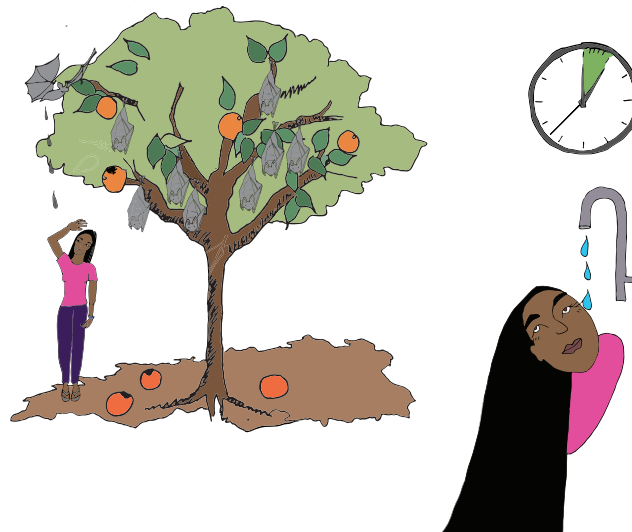


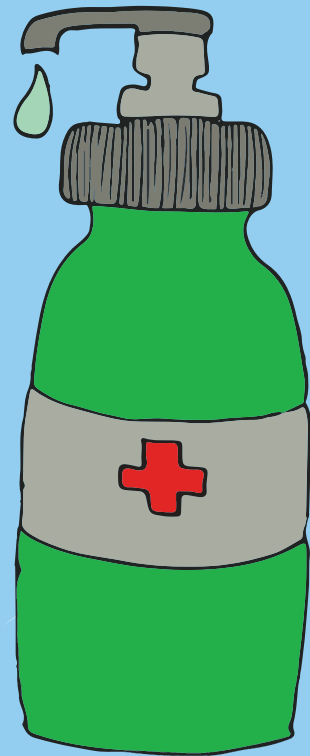
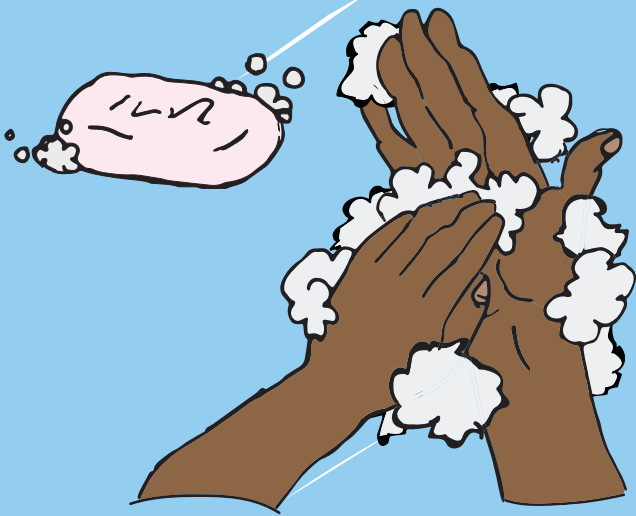
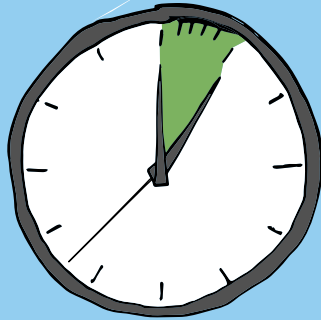


Section 4. If Contact with Live Bats is Unavoidable

The best way to live safely with bats is to avoid all contact with them. However, if handling live bats is unavoidable, protect yourself from their bodily fluids (such as their spit, blood, urine, or feces). Even if a bat does not look sick, it may still be sick.

If spit, blood, urine, or feces enters your eyes, nose, or mouth, the area should be washed very well with running water for five minutes. If you don't have a way to tell time, slowly count to 300 while washing. Do your best to wash your skin, in addition to any other surfaces that may have bat bodily fluids on them, with soap and water. If possible, see a doctor.





Section 4. If Contact with Live Bats is Unavoidable

First Aid if Bitten or Scratched

- If you are bitten or scratched by a bat, wash the area thoroughly with soap and running water for at least five minutes. If you don't have a way to tell time, slowly count to 300 while washing your hands.
- If available, use a disinfectant that can kill viruses, such as hand sanitizer gel or wipes.

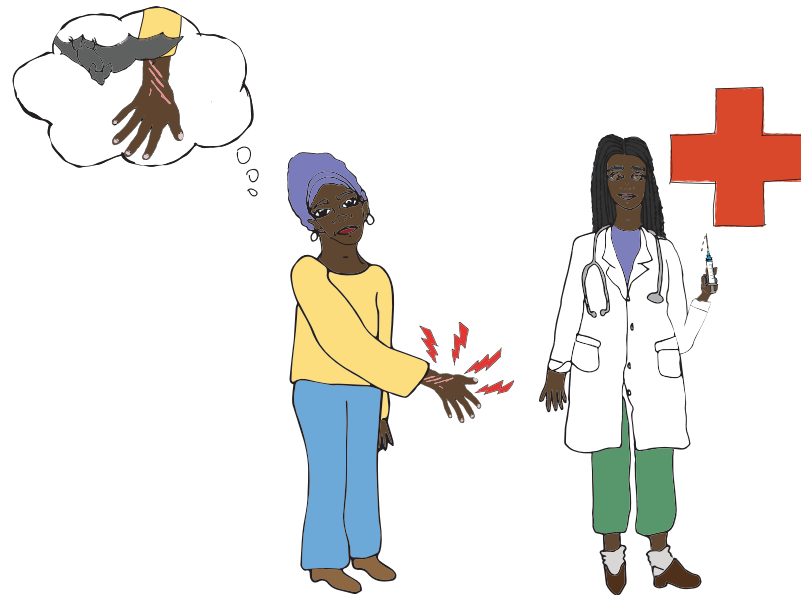




Section 4. If Contact with Live Bats is Unavoidable

First Aid if Bitten or Scratched (continued)

- Also, if you are bitten or scratched, go see a doctor for medical care, including a rabies vaccine.
- Even if you haven't been bitten or scratched, if signs of sickness develop, go see a doctor and let her know that you have been exposed to a bat. Remember to describe the details of your contact with bats, so that she can make the right choices about how to heal you.





Section 5. Managing Bats in the Home

There are many kinds of bats that live around villages or in cities. Most bats that would live inside buildings or houses are smaller, insect-eating bats. Normally, bats are harmless and will not bite or scratch people if left alone. However, on occasion, bats can be infected with viruses such as rabies, which can make them act mean and more likely to bite or scratch, which is how the virus is spread to people.

Because some bats with disease may also act normally, direct contact with all bats and their bodily fluids should always be avoided. Avoiding contact with bats and their bodily fluids is the best way to prevent yourself from getting sick from any disease they may have.

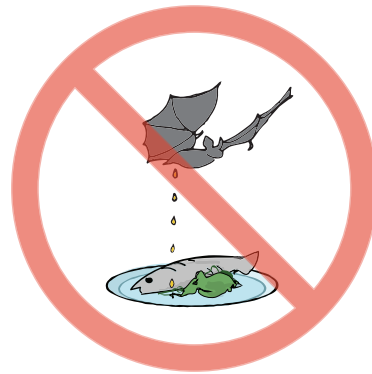


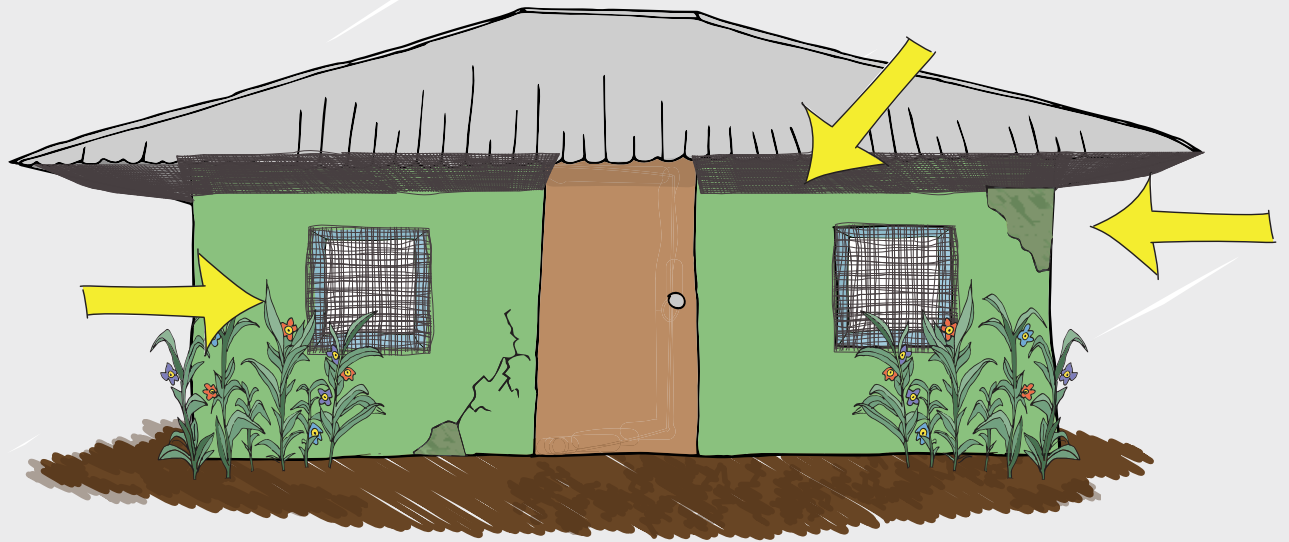


Section 5. Managing Bats in the Home

Removing Things that are Attractive to Bats

Bats may be attracted to uncovered sources of water and other liquids. When bats drink from these sources, they can spoil them with their spit, urine, or feces. To prevent bats from being drawn to liquids or foods in your home, keep them securely covered.





Section 5. Managing Bats in the Home

Preventing Bats from Entering your Home

The most effective method for preventing bats from entering a building or house is to make sure that there are no holes or extra spaces around your doors, windows, ceiling, and roof where they can enter. Tightly placed screens can be used to cover windows and doors. To close up any holes, you can use caulk, sealant, stainless steel wool, or wet newspaper.





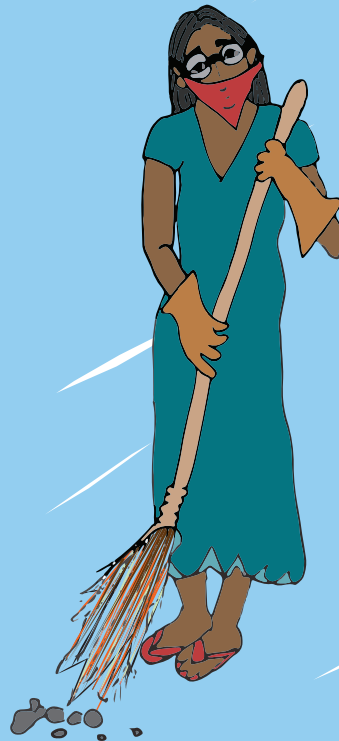
Section 5. Managing Bats in the Home

Bats typically prefer to hang from the ceiling at the highest point in a room, such as the peak of a pointed ceiling or roof. Many of the bats that roost in buildings are small and dark, so they may be hard to see.

Smaller bats are able to squeeze into tiny spaces such as between boards or between thatch and wooden frames like rodents do. They often huddle together in groups. These groups can range from a few (like 3 or 4) to many (like around 25 to 30) bats.

A sign that there may be bats in your house is the presence of feces on the floor. Bat feces appear as small, black, rice grain-sized pellets. There may also be visible streaks of urine running down the ceiling and walls. The unique smell from the feces and urine is another sign that there may be bats in the house.





Section 5. Managing Bats in the Home

Removing Bats from a Building or House

If a professional is not available to help you get bats out of your home, there are a few things you can do. First, before cleaning up bat urine or feces, put on an air tight face mask so you don't inhale any dust from the bat feces that might be harmful to you. If you cannot find a face mask, cover your face with a wet cloth or bandana. If possible, cover your hands with gloves and your eyes with glasses. Before sweeping or mopping up dust from bat feces off of the floor, wet the floor with soapy water to stop the dust from flying into the air.





Section 5. Managing Bats in the Home

The best time to remove bats from a building is after dark, when bats have likely left to feed outside. Bats typically become active around dusk, but may leave at any time after sunset. It may be necessary to spend a night or two watching the bats' patterns of exiting the house, as they don't all leave the roost at the same time. It is important to avoid trapping bats inside such that they are unable to leave.

After bats have left to feed outside after dusk, if it is possible, close off all entry points into the house by placing screens tightly over windows and doors, ensuring that there are no holes in the house that would allow bats to enter. You can use caulk, sealant, stainless steel wool, or wet newspaper to close up holes that bats could use to enter your home. Small, insect-eating bats are able to enter buildings through very small openings. Remember that if you are able to fit a small finger into an opening (the finger test), insect-eating bats may be able to enter.





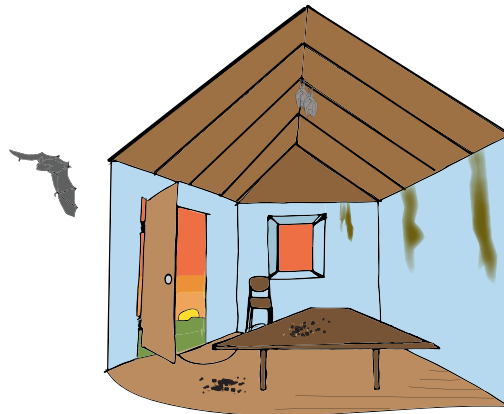
Section 5. Managing Bats in the Home

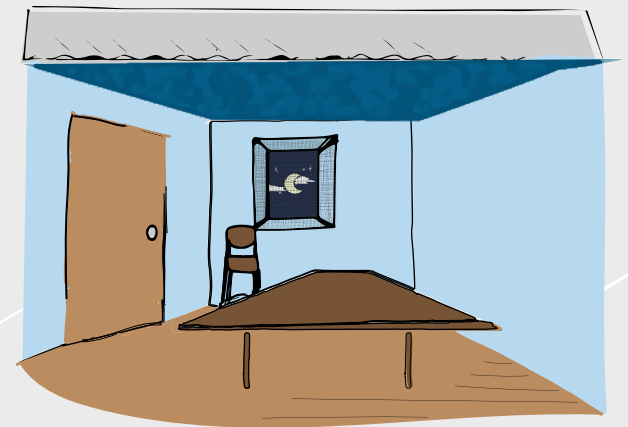
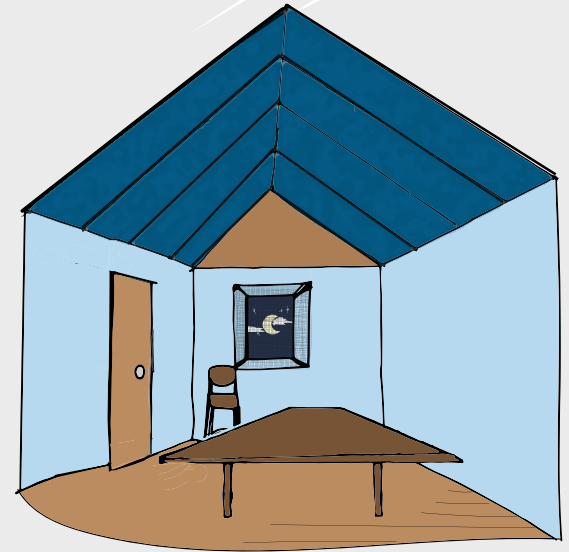
Removing Bats from a Building or House

Bats have been known to live in buildings especially when they are pregnant. In order to successfully remove all bats, if you have baby bats (pups) in your home, you should wait until they are able to fly.

You'll be able to tell that a bat is a pup if it is smaller, clinging to its mother during the day, and is different in color as compared to the bigger bats.

Baby bats often remain at the home while the mother leaves to collect food. When forcefully separated from their babies, bat mothers may look for other ways to get in. Also, pups can starve to death when separated from their mothers.



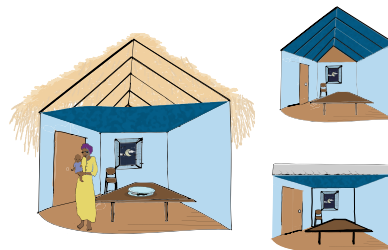


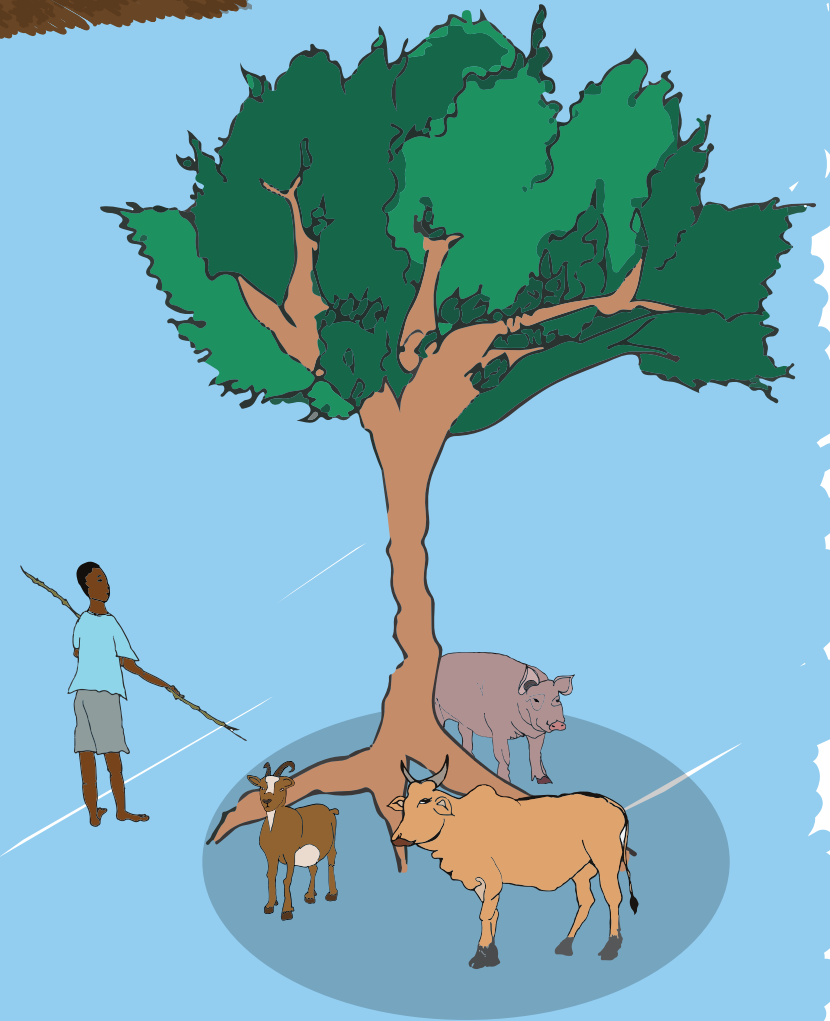
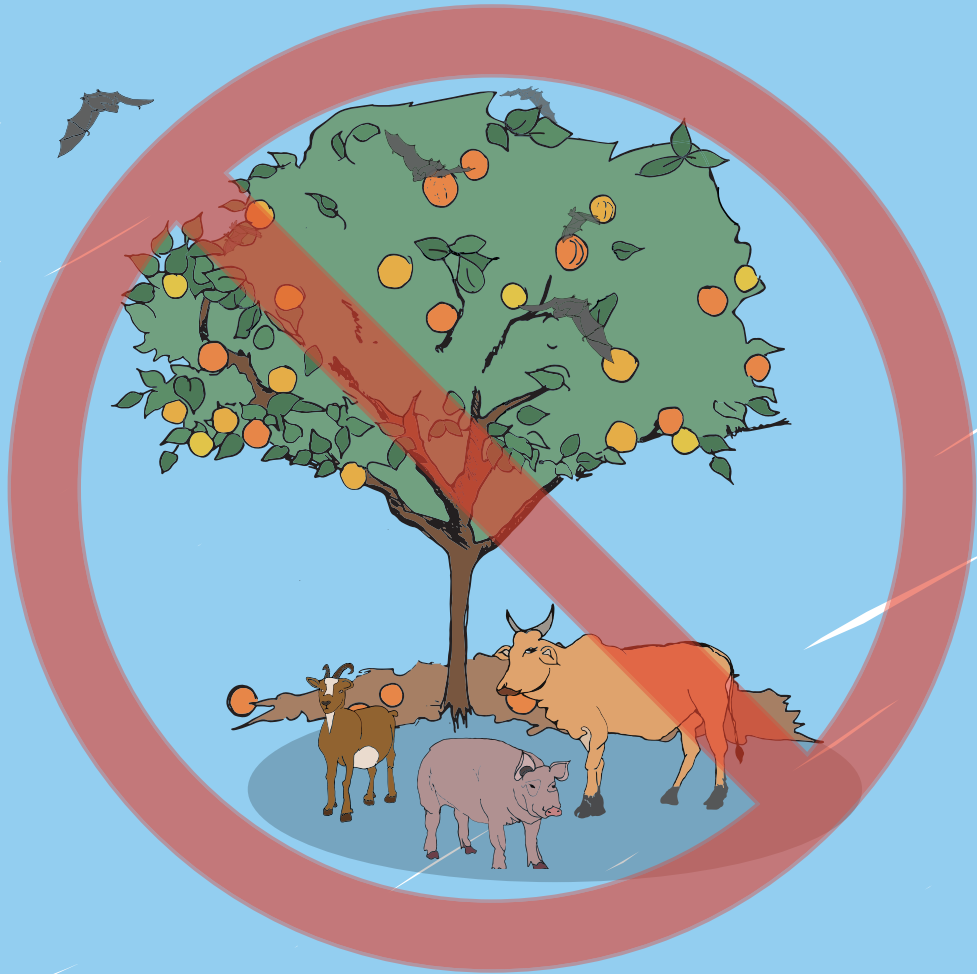
Section 5. Managing Bats in the Home

Removing Bats from a Building or House

Next, you may consider placing a plastic sheet or tarp along the inside of your roof. This may prevent bats from easily finding a place to hang, and may also reduce your contact with bat urine and feces. All houses are different, so you may choose different ways of hanging the sheet. For example, if you have a thatched roof and air flow is an issue, you may want to hang the sheet slightly below where bats roost, and above where people live, eat, and play. For other homes, you might be able to place the tarp directly against the inside of the roof.

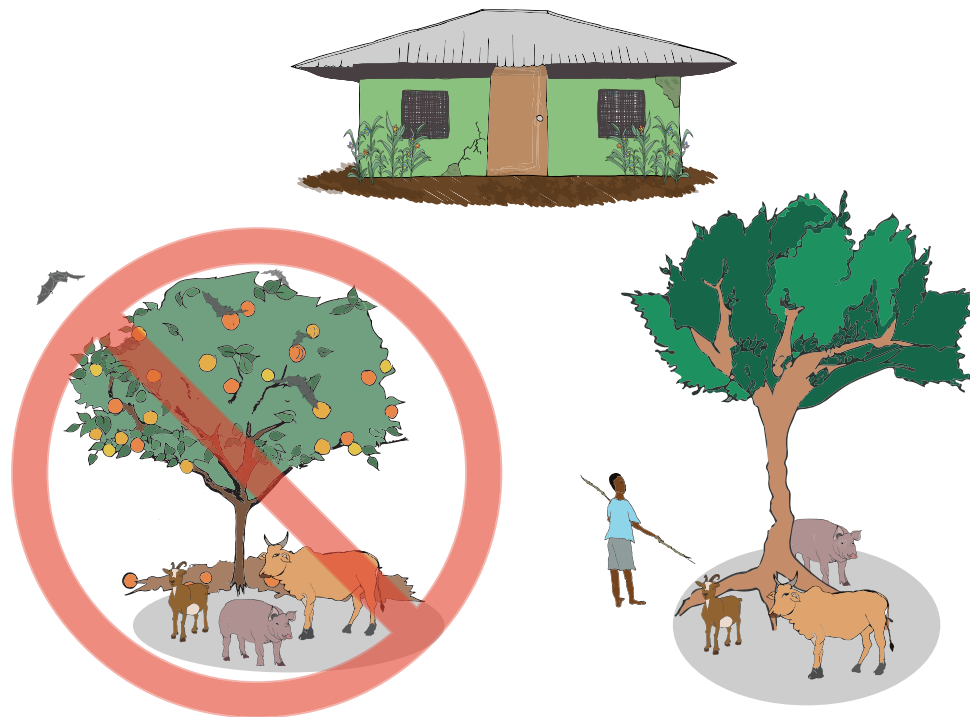
It will be important to continue to regularly check the ceiling and exit points, as well as check the plastic sheet for signs of bat feces, as the bats may be entering holes in the roof and flying between the ceiling and the sheet. If there are still bats, regularly clean the sheet with water and detergent while wearing a mask, gloves, and glasses. In addition, continue to close off any entry points as described earlier until the bats are completely gone.





Section 6. Managing Bats around the Outside of your Home

Bats often live and roost in trees around your home. When farm animals and domestic animals eat or rest under a tree with bats in it, bat urine and feces can fall onto the animals and their food. This can cause them to become sick. If you have animals, it is best to find ways to make sure that they eat and sleep under trees that do not have bats.

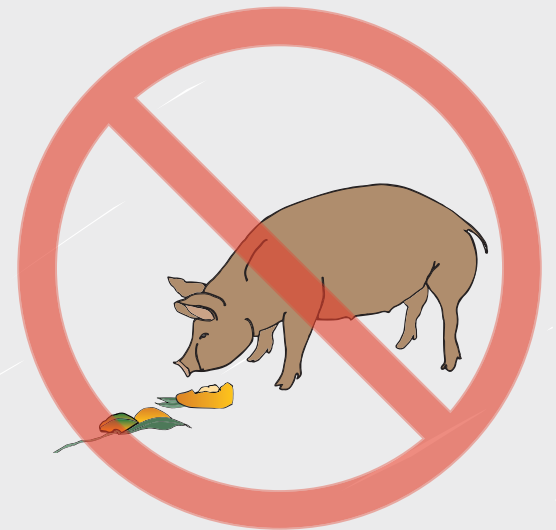




Section 6. Managing Bats around the Outside of your Home

Take time to explain to children why it is important not to touch, play with, or kill bats. Children should be especially discouraged from touching sick or dead bats that may be found on the ground near trees where bats are roosting. Live bats found on the ground are likely sick or hurt, and can be a source of disease. If a dead bat is found on the ground, avoid directly touching it. Instead, follow the advice we talked about earlier on how to handle dead bats.





Section 6. Managing Bats around the Outside of your Home

Some bats eat fruit, such as mango or guava. Because fruit dropped by bats may have bat spit on them, eating this fruit can make a person or animal sick. Avoiding direct contact with bats, and the food or other things they touch, is an important way to stop the movement of sicknesses from bats to people. Bats tend to prefer ripe fruit, so harvesting fruit on time could reduce the number of fruits that are bitten by bats and reduce the number of bats that feed on your tree.

Remember, to reduce the risk of getting sick, it is best to avoid eating fruit from the ground or feeding it to livestock, especially if the fruit has been partially eaten by another animal. You should never eat or drink something you think bats have touched. Do not try to save food that has been partially eaten by bats by removing the sections with obvious bite marks. The entire item may have been spoiled.





Thank you for joining me today for this discussion on ways to live safely with bats.

Today we learned:

- * That bats are an essential part of our ecosystem
 - * Basic ways to live safely with bats
 - * How to dispose of dead bats
- * What to do if contact with live bats is unavoidable
 - * How to manage bats in the home
- * Ways to manage bats around the outside of your home

The End

Do you have any questions you'd like to discuss?

