

Eastern Spotted Skunk Survey - Camera Trapping Protocol

Start date: February 1 at the earliest in areas with no hunting activity and following close of firearms season in areas where hunting is permitted for safety of volunteers. Start date can be delayed until weather is cold enough to make picking up roadkill deer less difficult (and messy) and/or if there are still bears active in your area.

End date: Apr. 12, 2018 or sooner if the weather gets too warm to use deer bait and/or bears are coming to the cameras.

Choosing camera site locations:

Before deploying cameras, whether on public or private land, make sure you have the land owner's permission to do so. This may require permits for scientific research activities on federal, state, or other government owned lands. If your chapter already has a working relationship with a land owner be sure to get approval for this project specifically.

Spotted skunks do not seem to prefer any particular type of forest to any other (e.g., oak vs. pine doesn't matter) but they do seem to prefer forested areas that have a lot of protective cover. When choosing a camera site look for features such as:

- Moderate to dense understory cover including mountain laurel, rhododendron, huckleberry, green briar, etc.
- Large downed woody debris (greater than 10 cm in diameter) such as logs/downed trees, large branches, wood piles, stumps, and even snags. These all make good den sites too!
- Large rocky outcroppings, rocky over looks, and large rock slides/piles. Skunks will den, hunt and move around in rock piles ranging from about 10 cm in diameter to truck sized boulders and larger. If you know where any wood rats are nesting you may have a spotted or two there as well.
- Small hollows are preferred over hill tops, probably for protection from predators and exposure to bad weather. Bait in flat areas is also visited more than bait on hill tops.
- Canopy cover doesn't seem to be particularly important to skunks, but a large canopy gap will make your bait very easy for vultures, hawks, eagles and crows to find. They can do a number on a deer carcass in a surprisingly short amount of time.
- Small game trails, skidder trails, and logging roads are used by spotted skunks and most other species of carnivore so these are good places to put cameras. Just make sure to keep them out of sight if these trails are also used by a lot of humans (some of our cameras have gone "missing" before).

We have yet to sample residential or urban woody areas. Volunteers are absolutely welcome to put cameras out on their own property or someone else's with their permission. We have had a

small handful of reports of spotted skunks showing up in backyards and industrial areas so at this point anything may be possible!

Camera Settings

All camera models are different and it is a good idea to read the manual to become familiar with your equipment. We are currently using Bushnell Trophy Cam, Bushnell HDs, and Spypoint Force 10 cameras. These are very simple, user friendly cameras without too many settings to worry about but some camera models may have many advanced settings. For this project, the main settings are:

- Date/time
- Single photo
- 5 mp or higher if possible
- 1 minute intervals
- Medium/moderate sensitivity
- Medium/moderate flash
- If your camera records temp/humidity/etc., use the setting that displays that info on the image

If you find that these settings are not working well on your camera, make adjustments as needed. Just be sure to note any changes made on the data sheet. Avoid multi/burst shots and video. Since we are using bait the animals will stay at the bait and feed for quite some time and multi shots or video will burn through batteries and fill up SD cards very quickly.

Cameras should be strapped/attached to a tree about 2– 3 m (6 – 10 ft) away from the bait. I try to set the camera up in a spot that is clear of understory, branches, grass, twigs, etc. to avoid getting hundreds of pictures of plants blowing in the wind. You may have to clear a spot by trimming branches that are in your way. Also, pay close attention to what is in the background. Most cameras can be triggered from 20 – 50 feet away or more so background plants can give you a lot of grief on windy or stormy days.

The best height to mount the cameras is about a foot or so off the ground, however if you are expecting heavy snow it might get buried. If this is the case the camera can be mounted up to 1 m (2– 3 ft) above ground and angled/pointed downward using shims or sticks. Also check that the camera is pointed at the bait before leaving. Most cameras have a “test” setting that allows you to do this without having to look at the pictures. It is very frustrating coming back a week later to check the camera only to find it was pointing too high or too low.

I strongly recommend using cable locks to lock your cameras to the trees if they are in areas with human traffic. Also, if you have a lot of bear activity in your area during late fall/early winter or late spring a metal security box (aka bear box) can save your equipment from hungry and curious bears. These are both optional accessories and not necessary for the survey but may come in handy in certain locations.

Additionally, “Do not disturb” signs are available on the VMN spotted skunk survey page (<http://www.virginiamasternaturalist.org/spotted-skunk-survey.html>). These signs can be

printed and attached to the trees with the cameras. We have left this file as a Word Doc so Individual or Chapter contact information can be added in addition to my contact information is desired.

Bait

Road killed deer:

Pros

- Free(ish), and easily available in most areas
- Can be quartered and used for multiple cameras
- Large bait lasts longer and needs to be refreshed less often
- Utilizing animals that were killed by cars for a good (scientific) purpose

Cons

- Requires a salvage permit from VDGIF. Permits can be acquired at <https://www.dgif.virginia.gov/permits/scientific-and-educational-collection/> by individuals, groups or VMN chapters. If acquiring a permit is not possible, contact me and we can add you to our permit.
- Requires a vehicle capable of transporting a deer
- Road kill deer are not common in all areas
- Laws regarding transfer of deer/roadkill may vary by county so make sure it is legal in your area
- Bobcats and coyotes may occasionally hog the deer carcasses and run off with them if they can get them loose which prevents small carnivores from getting to the bait.
- It's kind of gross

I have had the most success by wiring deer to trees with tie wire (12 – 14 gauge). Wiring the legs is pretty straight forward, wiring the rest of the deer requires a bit more creativity. I wrap wire around the neck and head (like a bridle on a horse) and attach that to the tree trunk. This method has proven “theft proof” by bobcats and coyotes. Alternatively, rebar can be pounded through the rib cage to stake the deer to the ground. However the larger carnivores will eventually get the bait loose and drag it away.

Chicken/other small meats (including leftover deer parts if you hunt/butcher your own deer):

Pros

- Can be easily kept, frozen, and transported
- Does not required a permit (though local regulations may apply to using domestic animal parts as bait. Be sure to check with your local government)

Cons

- Small bait needs to be enclosed in some type of metal mesh (stronger than chicken wire) to keep animals from eating it all right away. I use suet cages because they are

really easy to wire to a tree and refill and withstand abuse from every carnivore except very determined bears. Also, bobcats and coyotes tend to get frustrated with the suet cages quickly and then leave them alone allowing the little carnivores to come to the bait. Just make sure you also wire the suet cage shut. Skunks, raccoons and opossums figure out how to open them very quickly.

- Small bait gets eaten quickly and needs to be refreshed more often than large bait
- Chicken and suet cages have to be purchased so it is an added cost

Sardines/canned cat food/scent lures

- Studies in warmer climates have been moderately successful with these baits, however I haven't had any luck with them because they lose their odor when they freeze solid. These baits also tend to be costly over time. If used, they are most effective with the can open and enclosed in a suet cage so the animals spend enough time trying to get the food out for the camera to get a picture of them.

No matter the bait, try to avoid attaching it to a large tree (saplings work best) or putting too close to the camera. This will cause the flash to blow out the picture. If flash becomes a problem (snow and fog will do this too) try covering part of the flash with tape so less light hits the objects in the images.

Data Sheets

Data sheets should be filled out for every camera site. If a camera needs to be moved for any reason a new data sheet needs to be filled out. Data can be entered online at http://citsci.org/cwis438/Browse/Project/Project_Info.php, can be scanned and emailed to me at edthorne@vt.edu, or can be photocopied (make sure to keep a copy!) and mailed to me at

Emily Thorne

107 Cheatham Hall, 310 West Campus Dr.

Virginia Polytechnic Institute and State University

Blacksburg, VA 24061

Submitting Photos

Only photos of any/all animals need to be submitted. Feel free to keep photos of wind, snow, shadows, etc. (empty photos) for your own records or amusement but you do not need to spend time submitting them. You can upload photos to

http://citsci.org/cwis438/Browse/Project/Project_Info.php though this is a painfully slow process if you have more than just a few to submit. If it is easier, photo files can be "zipped" and uploaded to my google drive. Let me or the project leader for your chapter know if you would prefer this method so we can coordinate. Alternatively, SD cards can be snail mailed to the address above and I can mail them back after I transfer the photos. I have mailed the SD cards in standard paper envelope with no problems. Expensive padded packaging is not

necessary unless you feel more comfortable mailing the SD cards this way. If you prefer the snail mail method let me know and I will send you one of our SDs with a stamped envelope to send it back in.

Feel free to contact me with any questions about any parts of the project at my email address (edthorne@vt.edu)! Thank you for participation in the Spotted Skunk Survey. We are very excited to be working with the Virginia Master Naturalists!