

SKUNKS

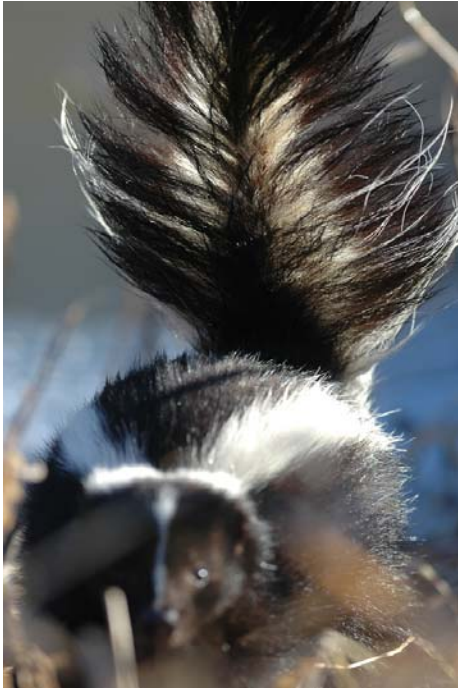


Figure 1. Striped skunk (*Mephitis mephitis*). Photo by Greg Clements.

OBJECTIVES

1. Demonstrate the ability to educate clients about control options.
2. Provide a diagram of typical sets used to capture skunks.
3. Identify various risks involved with working with skunks.
4. Relate odor control options.

SUMMARY OF DAMAGE PREVENTION AND CONTROL METHODS

HABITAT MODIFICATION

Remove garbage, debris, and lumber piles

EXCLUSION

Close cellar and outside basement and crawl space doors; seal and cover all openings

Trench screen decks and porches

Poultry yards: install wire mesh fences

Beehives: elevate and install aluminum guards

Secure the base of fences

FRIGHTENING DEVICES

Limited value

REPELLENTS

None are registered

Home remedies: mothballs, flakes, ammonia solution

TOXICANTS

None are registered

FUMIGANTS

Gas cartridges (These products are restricted Use Products and require certification to buy and use in Alabama through the Al. Department of Agriculture and Industries). Cartridges must be labeled for this use.

SHOOTING

Effective, but always emits odor

TRAPPING

No. 1 foothold

No. 155 Conibear style or body gripping traps

7 x 7x 24 cage/box trap

OTHER CONTROL METHODS

Direct capture

One way doors

SPECIES PROFILE

IDENTIFICATION

Striped skunk (*Mephitis mephitis*)

Spotted skunk (*Spilogale putorius*)

PHYSICAL DESCRIPTION

Skunks, members of the weasel family, are represented in Alabama by two of the four species occurring in North America. Striped and spotted skunks have short, stocky legs and proportionately large feet equipped with well-developed claws that enable them to be very adept at digging.

Striped skunks (Figure 1) are characterized by prominent, lateral white stripes that run down the back; the fur is otherwise jet black. Striped skunks are the most abundant of the four species.

Spotted skunks (Figure 2) are more weasel-like, and are readily distinguishable by white spots and short, broken white stripes in a dense jet-black coat.



Figure 2. Spotted Skunk.

Skunks have the ability to discharge nauseating musk from the anal glands and are capable of several discharges rather than just one.

Striped skunks are about the size of an ordinary house cat (up to 29 inches long and weigh about 8 pounds).

Spotted skunks are smaller (up to 21 inches long and weigh about 2.2 pounds).

SPECIES RANGE

Striped skunks are common throughout the US and Canada (Figure 3). Spotted skunks are uncommon in some areas but are distributed throughout most of the US and northern Mexico (Figure 4).



Figure 3. Range of striped skunks in North America. Image by PCWD.



Figure 4. Range of spotted skunks in North America. Image by PCWD.

VOICE AND SOUNDS

Skunks make various noises ranging from screeches, whimpers, and chips. They stomp their front feet in a thump, thump combination when agitated.

TRACKS AND SIGNS

Tracks may be used to identify the animal causing damage (Figure 5). Both the hind and forefeet of skunks have five toes. In some cases, the fifth toe may not be obvious. Claw marks are usually visible, but the heels of the forefeet normally are not. The hind feet tracks are approximately 2½ inches long.



Fig. 3. Tracks of the striped skunk.

Figure 5. Tracks of the striped skunk. Image by PCWD.

Skunk droppings can often be identified by the undigested insect parts they contain. Droppings are ¼ to ½ inch in diameter and 1 to 2 inches long.

Odor is not always a reliable indicator of the presence or absence of skunks. The odor can be smelled for up to a mile away. Opossums can also emit a “skunk-like” odor. Sometimes dogs, cats, or other animals that have been sprayed by skunks move under houses and make owners mistakenly think skunks are present. Skunk odor that persists for days and increases in intensity typically means a skunk has died and the sac has broken open.

GENERAL BIOLOGY

REPRODUCTION

Adult skunks begin breeding in late January. Yearling females (born in the preceding year) mate in late March. Gestation usually lasts 7 to 10 weeks. Older

females bear young during the first part of May, while yearling females bear young in early June. There is usually only one litter annually. Litters commonly consist of four to six young, but may have from two to 16. Younger or smaller females have smaller litters than older or larger females. Young stay with the female until fall. Both sexes mature by the following spring. The age potential for a skunk is about 10 years, but few live beyond 3 years in the wild.

The normal home range of the skunk is ½ to 2 miles in diameter. During the breeding season, a male may travel 4 to 5 miles each night. Females who do not wish to mate with a particular male will typically spray them.

NESTING COVER

Skunks prefer to den in abandoned woodchuck holes, under decks, porches, and other secluded areas. Dens typically have good drainage and protection from rain.

BEHAVIOR

Skunks are dormant for about a month during the coldest part of winter. They may den together in winter for warmth, but generally are not sociable. They are nocturnal in habit, rather slow-moving and deliberate, and have great confidence in defending themselves against other animals.

HABITAT

Skunks inhabit clearings, pastures, and open lands bordering forests. On prairies, skunks seek cover in the thickets and timber fringes along streams. They establish dens in hollow logs or may climb trees and use hollow limbs.

FOOD HABITS

Skunks eat plants and animals in about equal amounts during fall and winter. They eat

considerably more animal matter during spring and summer when insects, their preferred food, are more available. Grasshoppers, beetles, and crickets are the adult insects most often taken. Field and house mice are regular and important items in the skunk diet, particularly in winter. Rats, cottontail rabbits, and other small mammals are taken when other food is scarce.

LEGAL STATUS

Skunks are designated as fur-bearing animals in Alabama and may be trapped commercially according to seasons and bag limits. Alabama regulation 220-2-.27 allows landowners or tenants to “take” one skunk per incident that is causing damage to said individual’s property without a permit.

DAMAGE IDENTIFICATION

DAMAGE TO STRUCTURES

Skunk damage to structures tends to be of an olfactory nature rather than against the structure’s integrity. Odor can penetrate and linger in cloth furniture, clothing, and carpets. The odor can contaminate items several floors away from the original source.

DAMAGE TO LIVESTOCK AND PETS

Skunks occasionally kill poultry and eat eggs. They normally do not climb fences to get to poultry. By contrast, rats, weasels, mink, and raccoons regularly climb fences. If skunks gain access they will normally feed on the eggs and occasionally kill fowl. Eggs usually are opened on one end with the edges crushed inward. Weasels, mink, dogs and raccoons usually kill several chickens or ducks at a time. Dogs often severely mutilate poultry.

Skunks prefer to be left alone. Pets, particularly dogs, with strong territorial instincts will soon discover that skunks spray. Some dogs continue to attack and sometimes kill skunks. Owners should

avoid touching their animals and keep them outdoors. Pets should be washed down before handling. If possible, have the skunk tested for rabies. Owners should consult their vet about further treatment for their pets. Owners should consult the local health department about their own need for medical treatment.

DAMAGE TO LANDSCAPES

Skunks occasionally feed on corn, eating only the lower ears. If the cornstalk is knocked over, however, raccoons are more likely the cause of damage. Damage to the upper ears of corn is indicative of birds, deer, or squirrels.

Skunks dig holes in lawns, golf courses, and gardens to search for insect grubs found in the soil. Digging normally appears as small, 3 to 4 inch cone-shaped holes or patches of upturned earth (Figure 6). Skunks typically are very precise in their digging and they are known to systematically remove insects from the turf in a section by section fashion. In general, damage stops after three weeks because the food is no longer available. Several other animals, including domestic dogs, also dig in lawns.



Figure 6. Precise holes in the turf are classic signs of skunk damage. Photo by Stephen M. Vantassel.

HEALTH AND SAFETY CONCERNS

Avoid being bitten and coming into unprotected contact with the skunk’s bodily fluids. If exposure

has occurred, promptly seek medical advice. Have the skunk tested for rabies, if possible.

Some clients will respond with asthmatic symptoms when exposed to skunk odor. Advise clients to leave the area.

Skunks are mild-tempered animals that will not defend themselves unless they are cornered or harmed. They usually provide a warning before discharging their scent, stamping their forefeet rapidly and arching their tails over their backs. Anyone experiencing such a threat should retreat quietly and slowly. Loud noises and quick, aggressive actions should be avoided.

Skunks may carry rabies; skunks are the primary carriers of rabies in the Midwest. The possibility for contact with rabid animals increases during rabies outbreaks. Rabid skunks are prime vectors for the spread of the virus. Avoid overly aggressive skunks that approach without hesitation. Any skunk showing abnormal behavior, such as daytime activity, may be rabid and should be treated with caution. Report suspicious skunk behavior to local animal control authorities.

Laboratory testing is the only way to definitively determine the presence of rabies in an animal. Rabies can be prevented but it cannot be cured once the virus reaches brain tissue.

NUISANCE PROBLEMS

Skunks become a nuisance when their burrowing and feeding habits conflict with humans. They may burrow under porches or buildings by entering foundation openings. Garbage or refuse left outdoors may be disturbed by skunks. Skunks may damage beehives by attempting to feed on bees.

DAMAGE PREVENTION AND CONTROL METHODS

INTEGRATED PEST MANAGEMENT

TIMING, ECONOMICS, AND METHODS

Skunks may be controlled whenever damage is occurring. However, winter mating season, spring young rearing and lawn damage, are key times for skunk control.

HABITAT MODIFICATION

Remove garbage, debris, and lumber piles to reduce the area's attractiveness to skunks. In general, skunks prefer cover and debris filled areas as these provide excellent hunting grounds.

Properly dispose of garbage or other food sources that will attract skunks. Skunks are often attracted to rodents living in barns, crawl spaces, sheds, and garages. Rodent control programs may be necessary to eliminate this attraction.

EXCLUSION

Keep skunks from denning under buildings by sealing off all foundation openings. Cover all openings with wire mesh, sheet metal, or concrete.

Where skunks can gain access by digging, bury fencing ($\frac{1}{2}$ -inch weave) 2 inches below the ground and then extend the mesh out perpendicular from the location being protected at least 12 inches (Figure 7.).

Seal all ground-level openings into poultry buildings and close doors at night. Poultry yards and coops without subsurface foundations may be fenced with 3-foot wire mesh fencing. Bury the fencing as described above. Skunks can be excluded from window wells or similar pits with mesh fencing or window well covers. All pits greater than 3 inches

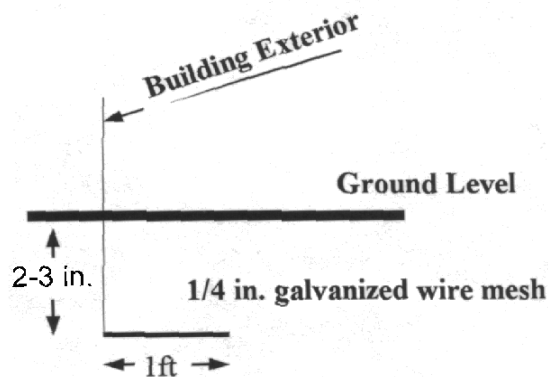


Figure 7. Diagram of below-ground exclusion. Image by Stephen M. Vantassel.

deep should be secured to prevent entrapment of juvenile skunks. Place beehives on stands 3 feet high. It may be necessary to install aluminum guards around the bases of hives if skunks attempt to climb the supports, though skunks normally do not climb. Use tight-fitting lids to keep skunks out of garbage cans.

FRIGHTENING DEVICES

No frightening devices are effective for skunk control.

REPELLENTS

There are no registered repellents for skunks. Most mammals, including skunks, may be discouraged from entering enclosed areas with moth balls or moth flakes (naphthalene). This material needs to be used in sufficient quantities and replaced often if it is to be effective. Ammonia-soaked cloths may also repel skunks. Repellents are only a temporary control measure; permanent solutions require other methods.

TOXICANTS

No toxicants are registered for skunk control.

FUMIGANTS

Two types of gas cartridges are registered for fumigating skunk burrows (These products are restricted Use Products and require certification to buy and use in Alabama through the Alabama Department of Agriculture and Industries. Cartridges must be labeled for this use). Fumigation kills skunks and any other animals present in the burrows by suffocation or toxic gases. Follow label directions and take care to avoid fire hazards and exposure of gases to non-targets when used near structures.

SHOOTING

Shooting is also effective; however, there currently is no method of shooting skunks without odor.

TRAPPING

BOX/CAGE TRAPS

In baiting situations, use canned fish-flavored cat food to lure skunks into traps. Other food baits such as peanut butter, sardines, and chicken entrails are also effective. Marshmallow spread in a jar, fruit preserves, and jellies are very effective skunk baits especially in areas where domestic cats are present.

While all cage traps should be covered at least 50% of their length, covers are particularly important when trapping skunks. Otherwise use box traps. Some manufacturers market box traps specifically for skunks and are made out of plastic to prevent the skunk from becoming upset and also to provide a barrier. Understand, covering reduces, it does not eliminate, the skunk's ability to spray. Always approach a trap slowly and quietly to prevent upsetting a trapped skunk. Gently remove the trap from the area and release or kill the trapped skunk.

Removing and transporting a cage/box-trapped skunk may appear to be a precarious business but if

the trap is completely covered, it is a proven, effective method for moving a skunk.

BODY GRIPPING TRAPS

Body gripping or Conibear-style traps generally kill the trapped animal. Body gripping or Conibear-style traps are only legal to use underwater in Alabama.

FOOTHOLD TRAPS

Foothold traps should not be used to catch skunks near houses because of potential problem of scent discharge. To remove a live skunk caught in a foothold trap, a veterinarian or wildlife official may first inject it with a tranquilizer then remove it from the trap for disposal or release.

HANDLING

RELOCATION

When rescuing skunks from window wells and garages, on-site release is the preferred option. Be sure the client and neighbors keep their doors closed, pets restrained, and children away from the area. Release the skunk in an out of the way area with ground cover. Whenever possible, release the skunk close to nightfall. Alabama law prohibits relocation releases outside of the county of origin or across any major river system.

TRANSLOCATION

Alabama law prohibits translocation releases outside of the county of origin or across any major river system. Attach a length of heavy string or fishing line to the trap cover and release the skunk from a distance.

EUTHANASIA

Carbon-dioxide is the preferred method of euthanasia. Skunks have been known to spray during

the process. Often, their sphincter loosens, allowing some fluid to release. Skunks are very tolerant of carbon-dioxide gas; 20 minutes is not an unreasonable time to death. Visually observe the skunk's chest for motion for at least one minute to ensure that breathing has ceased.

Where odor issues are not a priority, .22 caliber rimfire firearms can be used where allowed and safe. The shot usually is directed to the head. Some operators use "low" power ammunition such as .22 caliber "CB cap" or "Short" rounds. An extremely intense odor event will almost always be associated with the shot. Other methods may be preferable. Follow all firearm safety instructions at all times, and take a certified firearm safety course before attempting to shoot.

DISPOSAL

Refer to Volume 1 of the National Wildlife Control Program and your state regulations regarding carcass disposal.

OTHER CONTROL METHODS

DIRECT CAPTURE

Sometimes skunks must be captured directly, without the use of traps because the urgency of the situation demands immediate action. Skunks that are sick or in high visibility areas typically require direct removal. You can not guarantee an odor-free removal. Equipment needed includes, gloves, light colored blanket (large enough to cover the holding cage and protect the lower half of your body), and a cat grasper.

1. Restrict the skunk's movement.
2. Keep the blanket between you and the skunk.
3. Keep a low profile. Skunks feel threatened when large objects approach.
4. Watch skunk behavior. Approach slowly; stop when the skunk seems agitated. Speak softly or not at all.

5. When close enough, move quickly and precisely. Cover skunk with blanket and grasp with cat-grasper and insert into open cage. Sometimes skunks will walk right into an open cage.
6. Deodorize as needed.

SKUNK REMOVAL

The following steps are suggested for removing skunks already established under buildings: Seal all possible entrances along the foundation, but leave the main burrow open. Set traps in a barricaded fashion to force them into the traps. A minimum of three cage/box traps are recommended. Two-door traps are preferred because they reduce refusal behavior by skunks. But single door traps are still effective (Figure 8). Double door and single door traps can be set in the same manner. Be sure the traps placed so that a skunk trapped in one trap cannot reach over and fire the adjoining trap.



Figure 8. Two 1078 Woodstream cage traps set in front of skunk den entrance. Note the barricade to force skunks into the traps. Photo by Stephen M. Vantassel.

After the first night replace or reset traps and place a den test (Figure 9) over the den entrance to determine if more skunks are present. If there is no activity in two to three days, the den is likely empty.



Figure 9. The thin vertical sticks can be placed over a den hole to determine if the hole is still being used. Photo by Stephen M. Vantassel.

ONE-WAY DOOR

Secure the perimeter of a deck or shed with trench-screening. Install a one-way door (minimum size 4 x 4 inches, Figure 10) over the entrance in a manner that ensures the skunks can easily exit. Return after several days of good weather to evaluate the location. Remove the one-way door and secure the opening.



Figure 10. One-way door over the entrance to a skunk den. The thin vertical sticks in the back will be knocked over if an animal moves through. Photo by Stephen M. Vantassel.

Where skunks have entered a garage, cellar, or house, open the doors to allow the skunks to exit on their own, set a trap, or encourage the animal with a water hose. Watch the animal's behavior. Thumping

of front feet and turning their back sides to you are both signs the skunk is agitated.

Skunks trapped in cellar window wells or similar pits may be removed by nailing cleats at 6-inch intervals to a board (Figure 10) or securing hardware cloth between two 2 x 4s to create a gripable ramp for the skunk. Lower the board into the well and allow the skunk to climb out on its own.



Figure 10. Board with cleats to allow skunk exit. Photo courtesy of UNL.

ODOR REMOVAL

GENERAL BACKGROUND

Skunks are famous for their odorous defensive spray, known as musk. Skunk musk is a yellow tinted, oily liquid stored in two sacks located on opposite sides of the anus. Each sack holds about a teaspoon of musk; enough to allow multiple sprays. Musk is discharged through “nipples” which provide skunks with a number of key advantages: Each nipple has its own musk sack, allowing the skunk to shoot with “both barrels.” The nipples can be directed to aim at a specific target. The nipples adjust to discharge the musk in either mist or stream.

Skunk musk does not transmit the rabies virus but it can temporarily blind and stun individuals that are sprayed in the face. Victims will experience watering eyes and may vomit.

The best research has shown that skunk musk is composed primarily of three volatile chemicals known as thiols; three thioacetate derivatives of the thiols and an alkaloid. It is the thiols that give the skunk its awful smell. Humans can smell skunk musk in concentrations as low as 10 parts per billion.

ODOR CONTROL THEORY

There are three essential aspects that must be present before someone can smell an odor. First, there must be an odor source. Second the odor must be released. Finally, the odor must be perceived. Remove any part of the odor triad and you will be unable to perceive the odor. Odor control methods that endeavor to encapsulate odor are usually impractical for most situations. The vast majority of odor control techniques seek to remove the first and/or third parts of the triad.

General Deodorizing Principles. Whenever possible, treat the source of the odor. Deodorants work best when applied on the target of the skunk’s spray.

Avoid unnecessary movement of contaminated materials to reduce spreading odors to new areas. A key exception to this principle is when contaminated materials are being removed from site to a less inhabited area. Ventilate with fresh air.

Skunk odor may “reactivate” during periods of high humidity. If the odor does not seem to decrease in strength after a week or two then perhaps the skunk has re-sprayed or has died on the property. Use air fresheners as needed to mask any residual odor.

Women will be more likely to notice odors than their male counterparts. While the research is not conclusive, it appears that women are biologically wired to have more sensitive noses than men.

Deodorizing Treatment. An odor can be effectively controlled at its source by chemically changing the odorous compound into a less offensive smelling one. In the case of skunk musk relief can be achieved by oxidizing the thiols. Odors can also be controlled

by covering the unpleasant odor with a preferable one. Ultimately, both strategies have their role in gaining success over skunk musk. For the purposes of this paper we will use the term “neutralize” for those products that chemically interact with skunk musk. Scent will be used to describe those products that simply mask the skunk musk odor. Deodorizing will be a neutral term to describe all products that mitigate the skunk odor regardless of the mechanism.

Cautions:

- Deodorant products may cause adverse reactions in people sensitive to the ingredients. People do not always know what substances will cause them an allergic reaction. Some deodorants contain toxic materials. All chemicals, whether natural or man-made, should be used in a manner that reduces exposure levels. Take care to avoid exposing children, pets and plants to chemicals unnecessarily. Remove or secure food stuffs and food preparation areas whenever possible.
- Read and follow all product label directions and warnings. Use deodorants in well ventilated areas. Some products may discolor fabrics and other materials. Always test the product on a less noticeable area prior to treating more visible areas.
- Whenever odors penetrate porous surfaces such as sheet rock or unpainted wood, multiple deodorant treatments may need to be applied. Sometimes removal of contaminated materials will be the only solution. It is suggested that expectations be lowered to reduce the likelihood of disappointed people.

FIRST-AID PRINCIPLES

Always follow safety and first-aid guidelines on the product label first. They should be carefully read prior to mixing and applying the product. However, the following are general guidelines that can be used when other instructions are not available.

Eyes: If eyes are contaminated, flush the eyes with copious amounts of (preferably) luke-warm water for 15 minutes. Make sure run-off water does not contaminate the unaffected eye. Use a large cup and hold it 2 to 4 inches above the eye, while pouring. Consult medical advice.

Ingestion: Follow the directions on the product label and/or call Poison Control Center.

Inhalation: Move the victim to fresh air immediately. Consult medical advice. Key signs of inhalation poisoning include headache, dizziness and fatigue.

Skin: Remove contaminated clothing and flush skin with water for at least 10 minutes. Consult medical advice.

DEODORIZING PRODUCTS¹

Home Remedies/Over the Counter. Paul Krebaum discovered a formula that has proven its ability to chemically neutralize the odorous thiols: 1 quart 3% hydrogen peroxide, ¼ cup of baking soda (sodium bicarbonate) and a teaspoon of liquid detergent. Ingredients must be mixed in an open container and used immediately. Never mix the ingredients in advance as the oxygen in the hydrogen peroxide may be released causing the container to explode. This formula can be used on people or pets, just avoid splashing the product in the eyes or mouth. Allow the solution to remain in hair for 5 minutes before rinsing with water. Repeat as needed.

For inanimate objects only, mix one cup of liquid laundry bleach (sodium hypochlorite) into 1 gallon of water. Be careful; bleach has corrosive and staining properties. It is unclear if “color safe” bleach is an effective deodorizer for skunk musk.

There are a variety of odor control products available on area stores (Skunk-Off[®], Odor-Mute[®],

¹ Inclusion of specific product names does not necessarily imply endorsement nor does a product’s absence imply criticism.

etc.). Homeowners may find these products helpful in deodorizing their property.

Professional Deodorants. Neutroleum Alpha[®] is a scent product that has been used to control skunk odor in a variety of settings, including medical facilities. It deodorizes by masking the odor with a smell, described as “minty.” Use it directly on surfaces. It can also be used as an air deodorizer by dabbing on napkins and hanging them up. Generally one application is sufficient.

Neutroleum Alpha[®] has toxic and irritating properties. Applicators should use the product in well ventilated areas and avoid direct contact with skin or mucous membranes. Wear rubber gloves when mixing the solution. The product dissolves best in warm water. Use the solution when it is fresh and dispose of any leftover solution. Unmixed Neutroleum Alpha[®] must be stored in a cool dark environment to prevent explosion hazards. Neutroleum Alpha[®] can be ordered from <http://store.yahoo.net/debon-aire/index.html> or at the Pocatello Supply Depot in Idaho 208-236-6920.

Freshwave[®] is the retail name of the industrial product known as Ecosorb[®]. It neutralizes odors by using Van Der Waal forces. The product captures the malodorous compounds and then chemically modifies them. Freshwave[®] may be sprayed on affected surfaces and repeated as needed. Freshwave[®] does have a slight smell which has been described as “tea tree” in nature. For lingering odors, pour the product in a wide mouthed jar and allow it to spread into the air. To hasten the process, place jar in front of a fan. Freshwave[®] is also sold in candle form. Use appropriate fire pre-cautions with candles. Freshwave[®], being manufactured from plant oils, has few safety warnings, save avoid splashing product in the eyes. It is available at the company’s website <http://www.fresh-wave.com/> and Pocatello Supply Depot in Idaho 208-236-6920.

Epoleon N100[®] has had good reviews in its ability to neutralize skunk odor. The manufacturer states that Epoleon[®] is a water based organic odor neutralizer.

Although the chemical has an odor, it is so slight that it can almost be classified as an odorless product.

The Epoleon[®] is sold as a concentrate and must be diluted in water before use. Unfortunately, the manufacturer does not specifically give mixing instructions for skunk odor. One professional, who has used the product on multiple occasions, suggests a 1 to 20 ratio up to a 1 to 5 ratio depending on need. The diluted chemical can then be sprayed or atomized. The product will leave a slight residue as the water evaporates. Wipe down surfaces with a wet towel to gather up any remaining product. Epoleon[®] may be used in a variety of settings except where food is prepared. Epoleon[®] can be obtained through the company at <http://www.epoleon.com>.

Bioshield[®] is another manufactured product that is actually anti-microbial (EPA Registration Number 70871). It deodorizes by actually killing odor causing bacteria. It has been successfully used by NWCO’s. But given its toxicity and warnings regarding use, it is perhaps advisable that homeowners not use this particular product. It has a slight alcohol scent but is otherwise neutral in odor.

Electric Atomist Sprayers/Foggers. Sometimes the skunk odor is so dispersed that fogging a deodorant is necessary. As a rule of thumb, 16 ounces of neutralizing deodorant solution, atomized with a droplet size of 15 microns can deodorize a 1500 square foot residence. Atomizers, by converting the deodorant solution into fine mists, provide 2 key advantages for odor control over hand pump sprayers. First, small droplets stay airborne longer, thereby circulating throughout the treatment area. The tiny nooks and crannies present in crawl spaces and attics can be completely treated by exploiting natural air movements. Second, smaller droplet sizes allow less product to be used because they have greater surface area to volume than larger droplets.

There are a number of atomizers on the market but here are a few tips to help you evaluate the type which will best suit your needs.

1. Portability: How balanced the device? How much will it weigh when the storage tank is filled to capacity? Is it battery powered or will you be tied to an electrical cord?
2. Versatility: Does the atomizer have a flexible spray hose which will allow you to direct the fog to different areas of the room? How small of a droplet size does the atomizer create (you want at least a 22 micron droplet size or smaller)
3. Cost: How often will you use the device in relation to its cost? Adequate atomizers can be purchased for about \$200 or less.

Deodorizing Fabric. To remove odor from fabrics time, air, soap and water, and ammonia in water are recommended. Skunk musk is an oily compound and can be removed by methods used to remove oily soil. The odor molecule can be destroyed with a weak acid. White vinegar, dry-cleaning fluid or household chlorine bleach in a weak solution is suggested for removing skunk odor from clothing. Use these products in separate steps, not together.

Other recommended treatments include washing items with a strong soap, a heavy-duty liquid detergent, or borax. Consumers have reported that Neutroleum Alpha[®] can be effective for deodorizing washable items as well. Use at a rate of 1 oz. per 2 gallons of warm water.

For clothing that cannot be washed or dry-cleaned, such as shoes, some have suggested burying them in fine, dry soil for several days. The fine particles of soil are purported to absorb the odor, leaving the original article odor free. Kitty litter, sweeping compound, and other fine-particle materials are also alleged to work.

Odorous materials can be suspended outdoors allowing fresh air to carry away the volatile thiols. Provided the material isn't re-exposed to skunk musk, the odor will decrease over time.

***Reference to commercial products is made with the understanding that no discrimination is intended or endorsement implied.**

Deodorizing Techniques to Avoid

- Ozone generators are sometimes marketed as having deodorizing abilities. Studies have raised significant questions regarding their safety and effectiveness. It is best to avoid these products.
- Never mix deodorants with other chemicals or products unless the directions specifically permit it.

General First Aid Tips:

First Aid guidelines are often included with product use directions. Be sure that you and those around you familiarize yourselves with the guidelines before using the product.

If one is experiencing headaches, difficulty breathing etc. then the individual needs to be immediately moved into an area with fresh air. Clothing soaked with deodorants should be removed and the exposed skin flushed with clean water for (15 minutes) to prevent any potential for chemical burns. Eyes exposed to caustic deodorants must be flushed with clean water for 15 minutes making sure the water from the contaminated eye does not spill into the unaffected eye. Have someone call for Emergency assistance during the flushing process. If deodorants are ingested call the Poison Control Center.

Where musk has entered the eyes, severe burning and an excessive tear flow may occur. Temporary blindness of 10 or 15 minutes may result. Rinse the eyes with water to speed recovery.

ACKNOWLEDGMENTS

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RESOURCES

KEY WORDS

Skunk, wildlife damage management, nuisance wildlife control

ON-LINE RESOURCES

<http://pcwd.info>

<http://icwdm.org>

QUESTIONS FOR REFLECTION

1. List the seasons and the biological reasons for increased human-skunk conflicts.
2. Explain why a rabid skunk cannot be visually identified.
3. Explain the process for trapping a family of skunks under a deck.
4. Discuss the theory of odor control.

OBJECTIVE QUESTIONS

1. In January, clients complain of a sharp skunk odor. What has likely happened?
 - a. female rejected a male suitor
 - b. female accepted a male suitor
 - c. skunk has died
 - d. a skunk has walked by
2. Where would you look to see if a skunk was denning on the property?
 - a. trees
 - b. sheds/porches
 - c. window wells
 - d. attic
3. A client complains of a skunk odor that has been present for weeks and continued to get worse. What has likely happened?
 - a. female rejected a male suitor
 - b. female accepted a male suitor
 - c. skunk has died
 - d. a skunk has walked by
4. True or False: Tomato juice is an excellent deodorizing product.
5. How deep and away from the wall does a trench screen have to be buried to be effective?
 - a. 0 x 12 inches
 - b. 1 x 18 inches
 - c. 2 x 12 inches
 - d. 1 x 1 foot

DISCLAIMER

Implementation of wildlife damage management involves risks. Readers are advised to implement the safety information contained in Volume 1 of the National Wildlife Control Training Program.

Some control methods mentioned in this document may not be legal in your location. Wildlife control providers must consult relevant authorities before instituting any wildlife control action. Always use repellents and toxicants in accordance with the EPA-approved label and your local regulations.

Mention of any products, trademarks or brand names does not constitute endorsement, nor does omission constitute criticism.