July 2001

Wildlife Damage News, Volume 2, Summer 2001

This is a quarterly publication of the *Cornell Cooperative Extension Wildlife Damage Management Program.*

Co-Editors: Kristi Sullivan & Paul Curtis
Production: Diana Bryant

Message from the Editor:
If you have any comments, questions, suggestions or articles to contribute to the newsletter, please contact, Kristi Sullivan at 607-255-5508 or e-mail: kls20@cornell.edu

Websites:
www.dnr.cornell.edu/ext/wildlifedamage

In this issue:

Wildlife Damage News

Volume 2 Summer 2001

Managing Human-Wildlife Conflicts Program Work Team

–by Kristi Sullivan, Wildlife Communications Specialist
Cornell Department of Natural Resources

Recently, Program Work Teams (PWTs) were conceived as a new template for conducting applied research and extension at Cornell University. The purpose of the PWT is to conduct the on-going business of program development by: (1) engaging stakeholders and determining educational needs, (2) conducting, interpreting, and applying research, (3) developing internal and external funding proposals, (4) designing and implementing educational programs, and (5) evaluating the impacts of the program. In summary, a PWT is a team of campus- and county-based educators and researchers, as well as external stakeholders focusing on an issue of mutual concern.

Paul Curtis, Extension Wildlife Specialist at Cornell University and Mike Fargione, Extension Educator for the Cornell Cooperative Extension Hudson Valley Regional Fruit Program, are co-chairing a new PWT on "Managing Human-Wildlife Conflicts." The focus of this PWT is to promote management of human-wildlife conflicts at both a site-specific and community scale. Many communities are facing the complex, often controversial challenge of managing wildlife (e.g., white-tailed deer, Canada goose) populations at desirable levels. Helping people resolve wildlife damage problems requires an understanding of the issues at 2 different levels. The first level involves being able to solve site-specific damage problems. The second level entails making informed decisions and resolving conflicts on a landscape or community-wide scale. The goal of this PWT is to increase the capacity for communities to experience the benefits of wildlife while minimizing their conflicts, by empowering individual citizens to solve site-specific conflicts while simultaneously fostering community-based knowledge and decision-making.

Current team members include county and regional extension educators in community IPM, horticulture, fruit and vegetable farming and natural resources. Campus-based faculty and staff from the Pesticide Management Education Program, natural resources, human dimensions of natural resource management, and horticulture are also participating. In addition, external stakeholder members include wildlife biologists from the Department of Environmental Conservation and USDA APHIS Wildlife Services. If you are interested in joining this PWT and would like to have input into programming in this area please contact Paul Curtis, Mike Fargione or Kristi Sullivan.

Initial planning meetings for this PWT will be scheduled during ealy fall.

The Promise of QDM

–by Gary Goff, Senior Extension Associate
Cornell Department of Natural Resources

The relatively new deer management "scheme" that has attracted a lot of attention on the part of landowners, hunters, and state wildlife management agencies, is called Quality Deer Management (QDM). Given the increasing deer populations in the northeastern states (witness two consecutive record annual deer harvests in NYS), it may be a useful tool to regain control of burgeoning populations on a regional basis. BUT, it unfortunately cannot be the proverbial "silver bullet" that will work in all communities!

Deer exclosure at the Arnot Forest demonstrates impact of deer browsing on height and species composition of vegetation (fenced-left, unfenced-right).

The term "Quality" refers to the objective of producing quality deer (healthy), quality forest environments (adequate regeneration of desireable species), and quality hunting (provides a reasonable opportunity to harvest mature bucks). A good way to think of QDM is that it theoretically restores "balance" in consideration of many factors.

Just as a limited number of livestock can graze in a fenced pasture, any deer habitat can only provide food, cover, and water for a limited number of deer, beyond which both the deer and the habitat suffer. Less than optimal body size, antler development, and fawn production are indicators of deer populations out of balance with their habitat. Most rural and many suburban environments are negatively impacted (both human interests and biodiversity of the ecosystem) by deer populations that eliminate vegetation (flowers, herbs, forbs, shrubs, trees) that is preferentially browsed by deer. This shift in vegetation further impacts other wildlife and prevents the regeneration of many valuable sawtimber tree species.

There are no set provisions for implementing QDM. Rules and regulations must be adjusted in consideration of many current factors including deer population levels, sex ratios, age distribution, landowner preferences, and deer hunter preferences in order to achieve the desired collective goals set by all parties concerned (hunters, land owners, the community, wildlife biologists, etc.). Generally however, QDM provisions strive to achieve a nearly balanced sex ratio (1 doe:1 buck), a healthy deer herd, and older bucks. The current skewed ratio of does to bucks in much of the northeast, serves to enhance annual production of deer. But where there are too many deer, a more balanced and natural (1:1) sex ratio is desirable. This shift would simultaneously lower the overall reproductive capacity of the herd while increasing the ratio of bucks to does.

Typically hunters are encouraged to harvest more antlerless deer (mostly does) than bucks early in a QDM program, thereby allowing more bucks to reach older age classes. These older, bigger-antlered bucks are the proverbial "carrot" used to entice hunters to harvest more does. QDM is not however "trophy management" where the single goal is the maximum production of trophy bucks, but rather the goal of QDM is quality deer, quality habitat, and a quality hunting experience.

QDM has been used quite extensively and successfully in the southern states where land holdings and leases are fairly large. Some entire counties, including public and private lands, are managed under such provisions. Three constraints against quick and wide-spread adoption in the northeast are hunting tradition, the prevalence of small rural land holdings, and extensive suburban areas. Many hunters have a difficult time passing up even small bucks and focusing on the harvest of does. Plus, it may well take a minimum of a few thousand acres under QDM provisions to achieve success on a regional scale. And finally, it will be impossible to implement QDM in suburban landscapes where hunting is outlawed or impractical.

Although certain constraints exist, QDM is being used by groups of private landowners/hunter associations in a few dozen areas in Pennsylvania and New York. This year NYSDEC Bureau of Wildlife is involved in assessing the promise of QDM at the King Ferry hunting cooperative in Cayuga County, New York.

Cornell University's Dept. of Natural Resources has been using its version of QDM, called "Earn-a-Buck" at its 4,000-ac. Arnot Forest for two years. The primary goal of that program is to reduce the overall deer population to a level that will permit successful regeneration of valuable sawtimber tree species. To date, the program has shown good promise with hunters being able to achieve desired harvests of does. Vegetation response is being monitored to determine at what point the herd is sufficiently reduced.

For more information on the topic: read "Quality Whitetails: The Why and How of Quality Deer Management" edited by K. Miller and R. L. Marchinton, Stackpole Books, 1995; visit The Quality Deer Management Association website at www.qdma.com/, or visit Cornell's Arnot Forest website at www.dnr.cornell.edu/arnot/. In addition, you can contact the Dept. of Evironmental Conservation deer biologist in your region.

Summertime House Guests

–by Lynn Braband, Extension Associate
NYS Community IPM Program at Cornell University

In the summer, animals that inhabit building walls, attics, and crawl spaces often are not alone. They may be accompanied by their offspring. The young complicate effective animal removal and exclusion. As in many of life's choices, there is no one right answer. Several factors should be considered regarding if, when, and how to remove the animals.

KNOW THE ANIMAL

Seek to identify the critters that you are dealing with. Brief descriptions of the New York State species likely to be found in buildings are found in the Cornell Cooperative Extension publication *Beasts Begone* (see page 4).

Assess the likelihood that young are present. Tree squirrels (gray, red, and flying) give birth in the spring. Litter size varies from 2 to 7 with red and flying squirrels tending to have more young than gray squirrels. Most of the young are weaned by the end of June. Gray squirrels, at least, often abandon the building den shortly after the young are weaned. However, the female may be back in late summer to raise a second litter.

The reproductive biology of the chipmunk is similar to that of tree squirrels. However, chipmunks can obtain high population densities if habitat conditions are conducive.

Raccoons typically have 4 to 6 young per litter. Most litters are born in the spring, although late breeding females will result in some births throughout the summer. The young are not weaned for at least 2 months. Even then, they will stay with the mother often through the winter. Thus use of the natal den usually lasts for months.

Woodchucks have from 2 to 6 young per litter and are weaned by mid-summer. The young then disperse, looking for their own burrows.

Skunks usually give birth to 4 to 6 young in late spring or early summer. The young stay with their mother until fall. Thus the natal den can be used throughout the summer.

Opossums are unusual in that the mother is essentially the den. The young travel either in her marsupial pouch or, as they age, on her back.

FIND THE ENTRY SITE

Gray squirrel and flying squirrel entry points are usually high on the building. Typical locations are eave fascia boards, dormers, and similar sites along the roof line. Vents (roof, soffit, gable, and fan) are also common sites.

Skunks and woodchucks are normally found in crawl spaces underneath structures. Frequent locations include porches and decks.

Raccoons, red squirrels, and chipmunks may enter anywhere on the building where they can gain access. Red squirrels and chipmunks may get into crawl spaces and wall voids via attached garages. Mice and rats also may use this route.

The entry holes of red squirrels, chipmunks, and flying squirrels are often small and difficult to find.

Chimney caps can prevent entry by summertime house guests.

KNOW THE LAW

In New York State, the property owner has the legal right to remove and destroy the adults and young of most mammal species causing damage in buildings. However, the transportation of some species (raccoon, gray squirrel, skunk, opossum) off the property requires a state permit. Contact your regional office of the NYS Department of Environmental Conservation for the details. A summary of the regulations is in the publication *Beasts Begone*.

ASSESS HEALTH AND SAFETY FACTORS

Evaluate the risks to human health and of structural damage by the presence of the animals. The location of the animals may be a factor. Squirrels or raccoons in an outbuilding may be more tolerable than in an attic of the house. The likely length of the animals' residence might be considered. An opossum with young may move on shortly. Gray squirrels may leave, at least temporarily, after the young are weaned in early summer. Raccoons, however, can be expected to occupy the den for months.

Evaluate the risks associated with not only the animal but with the possible removal techniques. Expedient removal of animals that pose a serious threat is often necessary; however, be sure to use removal techniques that pose the least risk themselves.

CONSIDER THE HUMANENESS

Options concerning animals in buildings range from not disturbing them, to seeking to evict them, to destroying them. Generally, humaneness refers to minimizing the pain felt by an animal. A quick lethal technique is often considered more humane than a non-lethal technique that has a high probability of causing prolonged suffering.

BE AWARE OF THE SOCIAL CONTEXT

Human responses to animals are diverse and often intense. It is important to consider the visibility of the animal removal and choose techniques that will help maintain positive relationships with the building's occupants and the broader community.

EVALUATE THE PRACTICALITY

Assuming that the animals are to be removed, if the chosen techniques are ineffective, too expensive, or otherwise cumbersome, they will not be successfully implemented.

REMOVAL SCENARIOS

Communicate to the property owners the options available based upon the consideration of the above factors. Realize that the decision rests with the owners. They are the ones that must live with any risks associated with the animals' presence.

One possibility is to monitor the entry site and to close the hole once it is inactive. Put newspaper (or similar material) in the hole. When the paper has not been disturbed for several days, the assumption is made that the animals are gone, and the hole is closed.

Trapping and removing the animals is another possibility. Several approaches could be taken when young are present. The property owner can wait until the young are active outside the den and then seek to trap the female and the litter. Another option is to trap the adult and then capture the young by hand or with traps inside the den (i.e., attic or similar accessible site). Legally, the owner can usually destroy the animals. As described earlier, a permit is often needed for transporting the animals off the property.

A third possibility is to trap the adult, capture the young, and close the entry hole. The young are then placed outside and the female is released. The hope is that the mother will return and move her litter to a new den site.

One-way doors are an alternative to traps. These devices, either commercially available or homemade, allow an animal to exit but not reenter a building. The property owner might wait until the young animals are mobile and then install the one-way door.

Another option is to install the one-way door to allow the adult animal to leave the structure. The young are then captured and euthanized, taken to a wildlife rehabilitator, or placed outside. If placed outside, the assumption is made that the female will return and move the young to an alternative den. Hopefully, the animals will not be a problem at the new location. A few wildlife control companies specialize in this approach.

CONCLUSIONS

Whether the summer tenants are tolerated or removed, the long-term solution is effective animal-proofing of the entry site. The following resources provide information on exclusion and additional insights in dealing with wild animal problems.

Beasts Begone! A Practitioner's Guide to IPM in Buildings. NYS IPM Program/Cornell Cooperative Extension. May be ordered from the NYS IPM Program at (315) 787-2353 or (800) 635-8356. E-mail: nysipm@cornell.edu Stock Number: IPM # 609; cost: $3.00 (plus tax for NYS residents).

Some electronic resources for nuisance wildlife control:
NYS Department of Environmental Conservation, Bureau of Wildlife
http://www.dec.state.ny.us/website/dfwmr/wildlife/index.html

US Department of Agriculture, APHIS, Wildlife Serivces
http://www.aphis.usda.gov/ws/

Keeping Wildlife at a Safe Distance
http://cc.usu.edu/~rschmidt/welcome.html

Wildlife Control Technology Magazine
http://www.wctech.com/index.htm

Internet Center for Wildlife Damage Management
http://wildlifedamage.unl.edu

Review of Current Literature

–excerpted by Kristi Sullivan

Wagner, K. K. and D.L. Nolte. Comparison of active ingredients and delivery systems in deer repellents. Wildlife Society Bulletin 29(1):322-330.

Deer (*Odocoileus spp.*) foraging can affect reforestation efforts and can result in considerable economic damage to nurseries, ornamental plants, and field crops. Chemical repellents are a non-lethal alternative to reduce damage in some situations, especially where plants are vulnerable to damage for a limited portion of the year. A wide variety of repellents are available, but not all products are effective. Although many products have been tested in previous studies,variations in experimental design, environmental conditions, plant materials, season, and condition of the plant materials make it difficult to make direct comparisons among products.

Despite the variety of products available, the active ingredients in these products can be categorized into 1 of 4 modes of action - fear, conditioned aversion, pain, and taste. Fear-inducing repellents contain some compound, which emits sulfurous odors (e.g. predator urine, meat proteins, garlic). Herbivores perceive these odors as indicators of predator activity and avoid treated items. Products that use conditioned aversion cause animals to form an association between the treated item and illness and subsequently avoid eating the target item. Pain-inducing repellents contain ingredients like capsaicin, allyl isothiocyanate, or ammonia, which cause pain or irritation on contact with trigeminal

receptors located in the mucus membranes of the eyes, mouth, nose, and gut. When used in sufficient concentration, trigeminal irritants can reduce foraging but the concentration response thresholds are unknown for most species and active ingredients. Repellents that use taste as a mode of action generally contain bittering agents like denatonium benzoate (Bitrex). However, herbivores generally do not avoid bitter compounds and deer repellents using these compounds have had little success.

Wagner and Nolte evaluated the efficacy of 20 products in reducing black-tailed deer (*Odocoileus hemionus*) on Western red cedar (*Thuja plicata*) and tested for trends in efficacy among the different modes of action and delivery systems (topical application or area repellents) currently in use. During fall 1998, they placed treated western red cedar in pastures with black-tailed deer and recorded the number of bites taken from each seedling at weekly intervals for 18 weeks. Four of the 5 most effective repellents used fear (sulfurous odor) as a mode of action. However, not all sulfurous odors were equally effective in reducing damage and the specific chemical compounds in the repellents may determine success. Performance of products containing trigeminal irritants may be attributable to the amount of active ingredient required to induce a response. Past studies have shown that repellent efficacy increases as concentration of capsaicin increases. This study provides some guidelines for product efficacy, however additional research is needed.

Reader's Quest

–by Kristi Sullivan

Question:
How do I keep a yellow-bellied sapsucker from pecking holes in my tree?

This summer, Kevin Mathers, extension educator from Broome County Cooperative Extension, contacted me with a question about yellow-bellied sapsuckers. A client of his had contacted him with a concern about yellow-bellied sapsuckers pecking holes in a mountain ash tree on his property and wanted advice on how to solve this problem.

Answer:

The yellow-bellied sapsucker is a migratory member of the woodpecker family, Picidae. In New York, the sapsucker is found in heavily forested regions of the state, primarily in the Adirondacks, and the Tug Hill and Appalachian Plateau.

The sapsucker is about 8 inches in size. Males have a red forehead and throat, a yellowish belly, a conspicuous white wing bar and black and white striped pattern down their backs. Females are predominately black and white.

The yellow-bellied sapsucker feeds on tree sap that oozes from horizontal rows of small holes that it drills into tree

Typical horizontal row of holes made by a yellow-bellied sapsucker.

trunks. Sapsuckers bore a series of parallel rows of 1/4- to 3/8-inch closely spaced holes in the bark of limbs or trunks of healthy trees and use their specialized tongues to remove sap. Their tongues are shorter than other woodpeckers and have fine, hair-like processes (brush-like) on the tip of the tongue that helps them collect sap by capillary action. The sap also serves as an insect trap from which insects can be harvested later. Sapsuckers prefer softwoods such as apples, birches, red maple, tulip poplar, cherries, pines, and aspens, but will puncture other trees as well.

As with any animal the key to reducing damage is to act quickly when damage first begins, and use a combination of methods to reduce that damage. Sapsuckers, like other species, can be very persistent and once habits are established they can be hard to break. Sapsuckers causing damage to a particular tree can be deterred by draping nylon bird netting over the entire tree. Parts of the tree can also be protected by loosely wrapping hardware cloth (1/4 inch) or burlap around the trunk or limbs. Strips of aluminum foil (3-4 inches wide and 4 feet long), mylar tape, aluminum pie tins, or brightly colored windsocks can be hung near the damaged site. Attach the strips in a manner that will allow the objects to move in the wind and maximize reflection from the sun. To be effective several different visual scare devices should be used in different combinations and they should be moved around frequently so the birds do not become habituated to them. By using visual and sound tactics in combination, effectiveness can be enhanced.

The yellow-bellied sapsucker is a state and federally-protected species. Therefore, federal U.S. Fish and Wildlife Service and state (State Wildlife Agency) permits must be

obtained if lethal control of woodpeckers is being considered. There are currently no repellents or toxicants registered by the Environmental Protection Agency for use against woodpeckers on structures or on trees.

Upcoming Meetings and Events

September 25-29, 2001

The 8th Annual Conference of The Wildlife Society, will be held in Reno/Tahoe, Nevada The Annual Conference is internationally recognized for the opportunities it provides professionals and students to keep informed of technical and scientific advances in the field of wildlife science and management. Participants also benefit from the many contacts made with other wildlife professionals and students. The conference theme, Excellence in Wildlife Stewardship through Science and Education, will be addressed in 12 symposia, 3 workshops, 1special poster session, 3 contributed poster sessions, and 18 contributed paper sessions.

Reno, the host city for this year's conference, is known as the "Biggest Little City in the World." The city is known the world over for its fun and games, as well as scenic beauty. The meeting will take place in the Reno Hilton in the downtown area. The Reno Hilton is a complete resort casino, and it is conveniently located near the Reno-Tahoe International Airport as well as downtown Reno with many more night spots, casinos, and restaurants. The conference will begin with a welcome reception on Tuesday evening, and conclude with a beach party on the shores of beautiful Lake Tahoe. **The deadline for early registration discounts is Monday, August 27.**

For more information visit http://www.wildlife.org/conference/index.htm.

March 4-7, 2002

20th Vertebrate Pest Conference

Silver Legacy Hotel, Reno, Nevada USA

The Twentieth Vertebrate Pest Conference will be held March 4 - 7, 2002, at the Silver Legacy Hotel, Reno, Nevada. This conference is an educational event for discussing and exchanging information on problems and solutions to wildlife damage and undesirable interactions between wildlife and people.

For more information visit http://www.davis.com/~vpc/welcome.html

June 2-5, 2001

3rd Natural Resource Extension Professionals Conference

Revolutionizing or Evolutionizing Extension Programming?

Held at: The Naples Beach Hotel and Golf Club, Naples, Florida.

The theme to be explored during this conference is whether another rapid (revolutionary) or a more gradual (evolutionary) rate of change should occur to make Extension more relevant in today's communities and the role of natural resource extension programming in his revision.

For Program Information: Conference Organizer Joe Schaefer, Director, University of Florida/IFAS, Center for Nature Resources, PO Box 110230, Gainesville, Florida 32611; Phone 352846-2009; Fax: 352-846-2856; E-mail: jms@mail.ifas.ufl.edu

Website: http://conference.ifas.ufl.edu/nrep/#additional

Staff Contacts:

Kristi Sullivan, Wildlife Communications Specialist
607-255-5508, kls20@cornell.edu

Paul Curtis, Wildlife Specialist
607-255-2835, pdc1@cornell.edu

Milo Richmond, Leader
NY Cooperative Fish & Wildlife Research Unit
607-255-2151, mer6@cornell.edu