



Letter from the President

Spring is a time of new beginnings, and that is true for both the wildlife we care for and for the rehabilitators themselves. The sunshine seems brighter, the days are longer, the weather is warmer, and we all want to be outside enjoying it. You can hear the songbirds calling now, observe mating behaviors, and see nest building activities going on all over. Yes, spring is in the air, and we rejoice that the cold, harsh, winter is behind us.

But be prepared for the infrequent cold spells that will snap us out of this early spring lull, and the strong March winds that can cause havoc for the wildlife. Eggs will be chilled, nests blown apart, and little squirrels will be blown out of their nests. Don't be tempted to put away all the heating pads just yet.

By now you have your animal rooms ready and your supplies restocked. Remember to also take time to renew your resource contacts in preparation for the baby seasons that are fast approaching. Decide if you can work with other local rehabilitators and semi-specialize: one takes the squirrels, one takes the rabbits, one takes the opossums, one takes the neonates, one takes the BIDs, one takes the fledglings, one takes those ready to move outside, etc. Division of labor can make it easier on everyone who joins forces and works together.

Establish or renew your contacts with veterinarians who are willing to work with you on the difficult wildlife cases. Find out what they will take, and how often. Will there be a charge for these services, or can they offer you a discount? Getting all this taken care of before you actually need their services will be helpful when you are super busy with all the babies coming in.

Remember to consult with other more experienced rehabilitators when you feel a little unsure about something. There was a lot of information available at the recent symposium, and you are going to want to try and use what you learned and put it into practice. I doubt there is anyone who would not be willing to share what they know and advise you - after all, this is a benefit to you as a WRNC member!

Enjoy the spring and the new babies and all the new situations that will soon be arriving. These challenges keep us from being complacent in our role as wildlife rehabilitators and encourage new growth in us as well.

Sincerely,
Toni O'Neil
WRNC President



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This is a quarterly newsletter produced by Wildlife Rehabilitators of North Carolina (WRNC). WRNC was organized in 1999 with a mission to share information and knowledge about wildlife rehabilitation. The opinions, techniques, and recommendations expressed in the articles of this newsletter are those of the authors and do not imply endorsement by WRNC. All material in the newsletter is copyrighted and should not be used or reproduced without permission from the author.



Stop Bird Window Collisions

by Jean Chamberlain

Birds used to crash into the windows of my home. Some flew away. Some recovered after a few hours. This fall an ovenbird and titmouse recovered and were released. A cardinal and others did not. I like having windows, and I have many. I enjoy having the natural light coming in through them. I enjoy the view I have of the woods around me and of Pilot Mountain in the distance. I enjoy watching birds feeding at my bird feeder. I felt guilty knowing that the windows have contributed to the injury and death of many birds, so I began looking for a way to prevent the collisions.

There is a very good website that suggests products that are currently available to prevent window strikes: www.flap.org. I have tried many of the products recommended on the site and have reduced the window strikes to next to none. If you have birds colliding with your windows, I'm confident one of these products can help.



Contact paper decals seen from the outside



Contact paper decals seen from the inside

If you have one window that is particularly susceptible to window strikes (picture windows and sliding glass doors are often the culprits), decals may work for you. I used solid white contact paper on my sliding glass doors. I purchased a roll at a discount chain for about \$6. It was in with the shelf lining paper. It took only a portion of the roll for the decals on the sliding glass door in the photograph.

According to flap.org, decals should be no further than 2" apart vertically and 4" horizontally. There are 58 decals on the door shown in the photo, and it isn't fully covered. The decals should be placed on the outside. Then they are clearly visible outside and less visible to you on the inside. I was surprised at how much less obvious they are on the inside.



Decorative cling decals

If you would like something in color or more pleasing in appearance, you might try decorative cling decals for windows that can be purchased at some arts and craft stores. I found some in a seasonal display at Michaels. They were inexpensive, costing \$1 a sheet containing several decals. I applied the decals on the outside of my kitchen window. They are easy to apply. They come off so you can move them around.

They don't stand out well, though, to my eye at least, so I expect they are not as effective as the solid white contact paper.

A couple of online companies (WindowAlert and Duncraft) sell static cling and low-tack adhesive decals with an ultra-violet coating. The decals reflect ultra-violet light that is visible to birds but is transparent to us.



WindowAlert static cling decals from the outside



WindowAlert low tack decals from the outside



WindowAlert decals from the inside

Stop Bird Window Collisions (Cont.)

WindowAlert sells their decals in several different patterns (butterflies, hummingbirds, squares, maple leaves, hawks, and a leaf medley). They recommend placing them a couple of feet apart. I placed mine closer together, 1 to 1-1/2 feet apart (using Duncraft's recommendation). The decals appear translucent from the outside. When I applied them, I noticed that they actually appeared to turn a purplish blue when seen at an angle in certain light. I suspect this is how they look to the birds. From the inside they appear frosted. WindowAlert maintains that the UV coating is effective for six to nine months. Duncraft has similar UV decals and a decal of a spider web that I really like, but it is more expensive (2 for \$14.95*) than the other decals. They recommend placing one decal on every three square feet of glass.

If you have many windows, you may not want to cover them all with decals. I felt using decals wasn't practical for the large bank of windows on the front of my home. This led me to test several of the other products that are available.

I purchased the do-it-yourself residential kit online from Feather Friendly Technologies. The kit contains a roll of sticky tape with very small square markers attached and two paper strips that serve as rulers. The two paper strips are marked every 2" so they can be used to line up the tape on the window. The paper strips are placed down the sides of the window (or along the top and bottom). The tape containing the tiny markers is then strung in strips across the window between corresponding marks on each side. It is pressed firmly to the window. When the tape is peeled off the markers remain on the window. Instructions to apply the markers are provided with the kit. I applied them to the exterior of the three middle windows in my bank of windows. The tape costs \$15.08 per roll (I used 2 rolls) plus \$2.10 shipping.

The markers are more visible on the outside. I don't find them at all distracting on the inside. In fact, they look somewhat decorative. When seen at an angle and in certain light conditions, they are almost invisible.



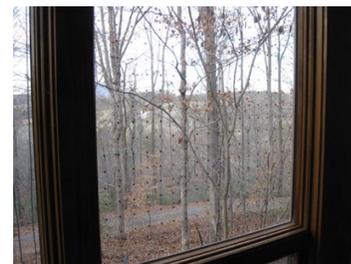
Applying Feather Friendly tape



Feather Friendly markers applied



Feather Friendly seen from the outside



Feather Friendly seen from the inside

I also purchased ABC Bird Tape from the American Bird Conservancy. It is easy to install. I applied the Bird Tape to the bathroom windows on the back side of my house. The strips can be applied either horizontally or vertically. I applied them vertically as they can be closer together (4" apart) when applied that way. They should be 2" apart when applied horizontally.

The strips are visible both on the inside and outside of the window. The Bird Tape is less expensive than the Feather Friendly product. One roll covered both windows. The tape comes in 3/4" wide 75 foot rolls, costing \$10.95 per roll, 3" wide 50 foot rolls at \$12.95 and pre-cut in 3"x3" squares at \$14.95 per roll. I used the 3/4" size.



ABC tape seen from outside



ABC tape seen from inside



ABC tape seen from inside up close



Stop Bird Window Collisions (cont)

I used parachute cord on the outer two windows of my bank of windows and on several bedroom windows. It is an inexpensive option to cover a lot of windows. A company at BirdSavers.com sells a product, AcopianBirdSavers, made from parachute cord. This product is priced by window width. As an example, they sell for \$29 for use on a 42.5" to 46.75" window (10 Cords). Shipping is free. On their site they also provide suggestions for making your own. I decided to make mine. Parachute cord is readily available at military surplus stores and online. You can buy it virtually in any length you want. It comes in a variety of colors. Olive drab is the most common and is found in nearly every store that sells the cord. I used forest green which was harder to find. I purchased a 1000' foot roll for \$55 from Amazon.

Cord can be used for the horizontal strip that is strung above the window as well as the vertical strips that hang from it. Alternatively, you can use a thin board with holes drilled every four inches to hold the vertical strips. The cords are strung from the horizontal strip. Each of my windows has 16 to 18 strands as I strung them less than 4" apart.



Parachute cord seen from the inside

Parachute cord does have disadvantages though. The white inner strands of the cord show where the cord is cut. I tried wrapping the ends in duct tape. Sewing them closed looks better but is hard to do, as the outer material retracts as soon as cut, leaving the white exposed. Another disadvantage is that the cords can become entangled in strong winds so be sure you are able to reach them to untangle them. The cords in one set of mine continually fly around a corner of my house and get caught on a wire hanger which is used to support a hummingbird feeder. Also, I'm not sure if the cords will shrink a bit so you may want to make them extra long.

I have been pleased with the results of using these products. Since they were applied to most of my windows starting in early December, only one bird, a chickadee, has hit any collision-protected window. I was not in the room at the time, so I was unable to determine if it struck a window with markers or cords. I'm wondering if the chickadee being so small, tried to fly between them. One window on the front of my house was in a difficult place to reach and was the last window to be done. Four birds struck that window before I was able to apply WindowAlert decals to it in the second week of February. No birds have struck that window or any of the protected windows since then. If you have birds colliding with any of the windows in your home, it's time to do something to protect them. Try one of these products. *Let's all do our part to stop bird-window collisions!*

If you use any of these or other bird-window collision prevention products, please contact me at jean@ncwindliferehab.org and let me know how well they work for you.

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*The prices for products are those provided on their company websites as of February 18, 2013.

All photos are by Jean Chamberlain

References

Fatal Light Awareness Program 'Bird-Window Collision Reduction: Tips and Techniques for Residents' available at <http://flap.org/residential.php>

WindowAlert™ 'Now You Can Protect Wild Birds From Striking Windows' available at <http://www.windowalert.com/>

Duncraft Window Strike Solutions available at http://www.duncraft.com/index/page/category/category_id/227/category_chain/227/name/Window+Strike+Solutions/

Feather Friendly Technologies® 'For the prevention of bird collisions' available at <http://www.featherfriendly.org/>

American Bird Conservancy Bird Tape available at <http://www.abcbirdtape.org/>

Acopian BirdSavers available at <http://www.birdsavers.com/>

Mysterious Bat Die-Off Triggers Alarm

by Nina Fischesser

Most of us have heard about the white-nosed syndrome that is killing off millions of the cave dwelling species of bats, but there is something new that is killing the big brown bat (*Eptesicus fuscus*) and Mexican free-tailed bat (*Tadarida brasiliensis*). We need the help of North Carolina wildlife rehabilitators to help monitor this situation and identify the culprit.

NC Wildlife Resources Commission Wildlife Diversity Supervisor, Kendrick Weeks, was contacted by Richard Oliver DVM, of the NC Dept of Agriculture Laboratory after eight young bat pups were submitted by Nina Fischesser, Director of the Blue Ridge Wildlife Institute. She was called out on a suspicious bat call from neighbors who stated that bats were falling from their roof eaves, crawling around the ground, and dying. When following up on the call, Fischesser found no adult bats in the vicinity, on the ground, or in the eaves of the roof. Weeks states that this is something that is happening in the southeast and may be happening in the northeast as well, according to Bat Conservation International.

The necropsy report indicated that interstitial pneumonia was the cause of death in the bat pups submitted by the Blue Ridge Wildlife Institute. Necropsies of bats from a Haywood County site also indicated that they were infected, but the cause of death was listed as undetermined. It seems that interstitial pneumonia may have been the culprit, and it is possibly viral. Very little is known, and more research is needed.

Wildlife rehabilitators are on the front lines when it comes to observing wildlife diseases. Although North Carolina rehabilitators cannot legally rehabilitate any of the rabies vector species, including bats, rehabilitators can turn in specimens for analysis when we come across this die off situation. Please contact your local NC diagnostic lab for submission of bat pups or deceased adults.

For addresses of the laboratories go to: <http://www.ncagr.gov/vet/ncvdl/VetLabFacilitiesDirectory.html>



Also contact Kendrick Weeks at:
Kendrick.Weeks@ncwildlife.org
Mountain Wildlife Diversity Supervisor
North Carolina Wildlife Resources Commission
346 South Mills River Rd
Mills River, NC 28759
919-609-7605



Pearl of Wisdom

by Toni O'Neil

Cut down on time, and take advantage of your heating pads to multi-task for you. If you know you are going to be giving either SQ or PO fluids to your animals that are on supplemental heat, tuck the syringes under the heating pad for a few minutes before hand to have the fluids warmed up and ready to go when you need them. Remember that our rooms will seem cold to the babies when you feed them, so you can tuck another small towel under the heating pad to warm up. When it is time to feed, the warm towel can be placed on your lap, or wrapped around the tiny guys while they are fed. This prevents them from being chilled from either the room or our cold hands.



Bot Fly Information Wanted

by Nina Fischesser

How many of us have admitted a young squirrel and upon examination we find a large cyst on its body? When we look closer, it's moving, and then we see there is a hole in the center, and then there's something coming up to the hole, and when you touch it, it quickly backs away. It's alive!! It's a *Cuterebra emasculator* larva, commonly known as bot fly or warble fly larva.

George Boettner is from the University of Massachusetts-Amherst, and he is working with Dr. Brian Weigmann in Raleigh, NC and Dr. Pape in Denmark, on a National Science Foundation proposal. They are hoping to look at the evolution of bot flies and their hosts using DNA.

About the Bot Flies

The tree squirrel bot fly, *Cuterebra emasculator* Fitch, is a parasite of tree squirrels and chipmunks found in most of eastern North America. The adult and other life stages are seldom seen. What is usually observed from July through September or October is the relatively large, fluid-draining swellings (warbles) in a host's skin caused by the subcutaneous larvae.

Tree squirrel bot flies undergo complete metamorphosis, which consists of four stages: egg, larva, pupa, and adult. The pupal stage overwinters buried in soil and requires about eight to ten months before emerging as an adult. There is one generation per year.

Typically, only one larva occurs in each warble. The bot fly larva orients with its anterior end situated toward the inside of the host, and its posterior end containing two kidney-shaped respiratory spiracles, at the warble pore. Unlike many other arthropod parasites of vertebrates, it is presumed that *Cuterebra* spp. larvae do not ingest blood but instead consume lymph fluid and possibly cellular debris and leukocytes of the host. Total larval development of the tree squirrel bot fly lasts three to four weeks, then the mature larva emerges from the host through the warble pore, drops to the ground, and burrows into the soil where it pupates.

Treatment

Because tree squirrel bot flies are natural, native parasites of squirrels and chipmunks, control efforts are not initiated; there is no known method for preventing infestation by these larvae. However, if an injured or orphaned animal that is also infested with larvae of *C. emasculator* requires care from a wildlife rehabilitator or veterinarian, the larvae often are removed. Forceps are used to grab the posterior end of a larva through the warble pore, and it is gently pulled out. The empty warble may be flushed with an antiseptic, followed by application of antibiotics.

Empty warbles typically heal within a week or so after a larva has exited its warble naturally or has been removed.

Bot Fly Research Project

Boettner stated that in the process of their research, they noticed that one of the bots, *C. emasculator*, seems to only use chipmunks in the north (and is generally always found in the groin area - hence the misleading name).

In the south, *C. emasculator* adults and larvae look the same, but favor grey squirrels and are generally found behind the arms or neck but almost never in the groin. Boettner would like to collect a few specimens of bot fly larva (known to have come from grey squirrels in southern states) to compare to northern specimens from chipmunks to determine if these may actually be two separate cryptic species. He would also be interested in any bot fly larva found in other wildlife such as rabbits, squirrels, and mice.

By sequencing dna they also hope to be able to make an easy test to ID larval bots that will help see which bots are turning up in vet clinics in predator species like dogs and cats. At the current time, larval bots are very hard to ID to species accurately. And there may be other cryptic species like *C. emasculator* still hidden out there.



Bot Fly Information Wanted (Cont.)



Bot fly larva



Chipmunk with bot fly warble

There are several ways to save the bot fly larvae: 1) If the bot is working its way out (they are large and often darker brown), then working it out of the wound with gentle massage and then dropping the bot in a vial with a 50/50 mix of peat moss and sand will allow George to rear the bot to adult (he overwinters them in a growth chamber to mimic soil temps); 2) If the bot is small or light brown, it can be shipped via two-day mail or put in alcohol. But some shippers don't like to ship alcohol (can be done UPS from main UPS hubs, but not many of the smaller drop off places. Best to call your UPS and see if they carry the special shipping labels needed for alcohol shipping); 3) If you have an older bot that has been in alcohol for a number of months or more, then you can drain off the alcohol and overnight ship it, and George will reload the alcohol on arrival; and 4) If you have a fresh bot, contact George and he can also ship you special mixes that help preserve RNA and DNA better than alcohol. If you know you see bots most years, he can ship you the mix as we get closer to the season for bots. Bots preserved this way are ideal for Next Generation sequencing which give the best DNA results.

Any help is appreciated. Even one bot fly larva is very valuable to George Boettner, so when you come across these little guys, please collect them and send them to George.

George (Jeff) Boettner
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Room 115 Ag. Eng. Bld.
250 Natural Resources Road
UMASS-Amherst
Amherst, MA 01003
boettner@psis.umass.edu
413-325-5563 cell

References

University of Florida Featured Creatures. Department of Entomology & Nematology, FDACS/DPI/EDIS. Retrieved March 6, 2013: http://entnemdept.ufl.edu/creatures/misc/flies/squirrel_bot_fly.htm

Boettner, G. H. (2013). Personal Interview.



Member Spotlight—Sue Heritage



How did you get started in the wildlife rehabilitation field?

One day a parent brought a sock full of opossums to my kindergarten classroom. Soon after, I joined ARC.

Who is someone you admire in the wildlife rehabilitation field?

I can't think of any rehabbers I've worked with over the years that I didn't admire...whether it's someone managing a large wildlife center or someone rehabbing out of their home. We have so much we can learn from each other!

What animals do you work with?

I work primarily with songbirds but do my fair share of squirrels and opossums.

What animal do you enjoy working with most?

I enjoy working with all of them but have a fondness for opossums and birds.

Do you have a favorite rehab experience?

My favorite experience was spending two weeks at Bat World Sanctuary in Texas as an intern. We fed over 200 bat pups 2-3 times daily and made daily trips to the wild sanctuary (an old gutted apartment building) where we checked the status of 50,000 freetail bats, removed injured or sick ones and swept the floors.

Do you have any pets?

I currently have a dog, a cockatiel, a Senegal parrot, two red eared sliders, and a corn snake.

Any non-animal family members?

Not in my immediate family.

What are your hobbies?

I enjoy working with fiber, whether it's knitting, weaving, or sewing. I also enjoy reading, bike riding and hiking.

Tell us about an accomplishment of which you are proud.

Other than my family, two accomplishments which I am proud of are becoming a National Board Certified Teacher and obtaining my federal permit for songbirds.

What do you like about being a part of WRNC?

I love the Symposium and getting to catch up with friends every year.

Is there anything else you would like to share with WRNC members?

I am pleased to be on the board and to have a chance to give back.

Member Spotlight—Michelle Ray

How did you get started in the wildlife rehabilitation field?

I was a vet tech and someone brought in a baby squirrel. I wanted to help it and called a local organization. They explained the laws and other aspects of wildlife rehab and told me that they offered classes. I took the classes and received my permit.

Who is someone you admire, in the wildlife rehabilitation field? There are so many people I admire for their hard work and dedication that I could not choose any particular person.



What animals do you work with? Mammals and reptiles.

What animal do you enjoy working with most? I enjoy the unusual animals that you don't get in every day. Otters, woodchucks and other larger mammals are very interesting. However, I definitely love the squirrels.

Do you have a favorite rehab experience? Raising Luna the otter for Grandfather Mountain was my favorite experience. She was not going to be released back into the wild, so we had a lot of room to spoil her. I definitely learned a great deal about otters and the bond that they have with their mothers.

Do you have any pets? I have 4 dogs, 1 bunny, a moluccan cockatoo, a parakeet and various turtles.

Any non-animal family members? It's just me and Larry, my "significant other." We have been together 30 years and own a house with some land in the country.

What are your hobbies? Between work, commuting, and wildlife, I don't have too much time for hobbies. When and if I have any free time, I enjoy traveling, target shooting, and sleeping.

Tell us about an accomplishment of which you are proud.

I am proud to be a wildlife rehabber in general. Knowing that I can make a difference in giving an animal a second chance and seeing it back in the wild is a wonderful feeling.

If you couldn't work with animals – what would your second choice be for a profession?

At one time, I wanted to be a pilot. I learned to fly small planes but got bored with it. I'm glad I changed my mind, otherwise I wouldn't be able to do what I do now with the animals.

What do you like about being a part of WRNC? The networking, learning, and meeting new people. It's always interesting to go to the symposium and finally meet people you have talked to for years.

Is there anything else you would like to share with WRNC members? I have enjoyed being a member of WRNC and hope to be a valuable board member.



Thank you to our 2013 Symposium Donors!

The following companies and individuals donated items for the WRNC raffle enabling our organization to raise money to support grants and training activities (like the Symposium!) for our members. Please consider purchasing from our business partners whose contributions make events like the Symposium possible.

Armstrong Crickets

Complete Cricket Farm Setup, including two cardboard cricket tubes, poultry waterer, measuring scoop, mini-dustpan & brush, mesh cricket catcher tube, container cricket food, pocket pal organizer, pen/paper kit, cricket catcher, plastic cup, four pens, pocket instant hand sanitizer, two calendars, and gift certificate for 2000 live crickets

Linda Bergman-Althouse, Jacksonville, NC

Framed hand embroidered picture
Wine caddie, chocolate caddie, spa caddie, movie time caddie

Buck's Ridge Upcycled Wine Crafts, Asheboro, NC

Gift basket with two etched wine glasses, hand-painted "Stained Glass" Birdfeeder, and Corky keychain

Cathy Burns, Richlands, NC

Nine wicker baskets

Carolina Hurricanes Hockey Club, Raleigh, NC

Signed puck by #59 Chad LaRose,
Two gift certificates for two tickets

Carolina Waterfowl Rescue, Indian Trail, NC

Two t-shirts



Charlotte Checkers Hockey, Charlotte, NC

Two tickets to April 12th game

Chippychipmunk.com

Two books

Jim Craig, Emerald Isle, NC

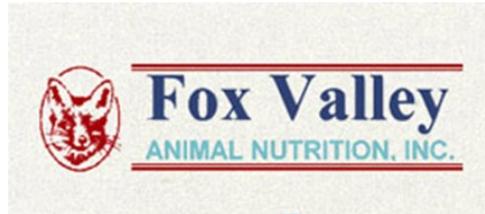
Three matted pictures

Diane Deal – c/o Cornett-Deal Christmas Tree Farm, Sugar Grove, N.C.

Gift certificate for one free weekend

Laurie Degernes, Raleigh, NC

Framed hawk kite from China
Pair of unframed silk paintings from China

Symposium Donors (Cont.)

Fox Valley Animal Nutrition, Inc., Sun City, AZ
 Literature, ten gift certificates for one 1 lb. product of choice
 plus free S&H; two Snugglesafe Microwave heatpads;
 1 lb. 32/40, 1 lb. 20/50, 1 lb. 40/25, 1 lb. 25/30;
 3.5 lbs. 20/50; 3.5 lbs. 32/40

Kevin Geraghty, Emerald Isle, NC
 Artwork including framed egret picture, four framed pictures in stand, ten matted pictures of wildlife

Ghann's Cricket Farm, Inc. Augusta, GA
 Three \$10 gift certificates

Golden Sands Beach Resort, Carolina Beach, NC - Mr. Jimmy Pope, Owner
 Gift certificate for free weekend stay



Bonnie Graham, Charlotte, NC
 Two gift cards for Richard Petty Ride Along Driving
 Experience

Grandfathers Mountain Stewardship Foundation, Inc. Linville, NC
 Two three-person guest passes,
 Three hour "Keeper for a Day" tour

Grubco, Inc., Fairfield, OH
 Five gift certificates for 1,000 mealworms

Elizabeth Hanrahan, Ocracoke, NC
 Assorted items including five plastic water bottles, 35 lighthouse ornaments,
 three "Hoi Toide" Ocracoke Speaks cassette/book/magnet/patch sets, coffee basket

Sue Heritage, Charlotte, NC
 Basket with candle, scented sticks, stationery; Christmas clock

Heather Hollmeyer, Charlotte, NC
 \$25.00 gift card for Target

Home Depot, Matthews, NC
 \$25.00 gift coupon



2013 Symposium Donors (Cont.)

Carla Johnson, Timberlake, NC

Assorted items including ceramic heater, heat lamp, two perfecto aquariums, crab box, feeder dish, three stuffed animals, two stuffed teddy bear sets

Carrie Kiger, Fayetteville, NC

Two fleece blankets

LaFeber Corporation

300 gram packet Herbivore Emeraid
300 gram packet Avian Omnivore Emeraid
300 gram packet Exotic Carnivore Emeraid

Mr. and Mrs. John and Kathy Lillard, Charlotte, NC

Assorted items including three t-shirts, three hats, and visor; 24 assorted bags and backpacks; mini cooler checkers toboggan; 40 calendars; two wallets; two dog bandanas; four cups; two water bottles binoculars; two calculators; license plate frame; dream catcher; two books; six screwdriver sets; two multi-function tool sets; two mini flash lights; two tape measures; two pairs welding gloves

Janet Link, Charlotte, NC

Mini-portrait oil painting
Jim Shore Owl

Lone Star Safety and Supply, Inc - Dallas, TX

Twelve grey welding gloves and twelve leather driving gloves

Lowe's, Matthews, NC

Three Jim Shore hummingbird feeders and three bottles of hummingbird nectar

Helen Mika, Spring Lake, NC

Owl clock and USB Video Camera

Mike Dupuy Hawk Food, Middleburg, PA

Gift certificate for ½ price for chicks

Miller Piano Company, Charlotte, NC

Gift certificate for free piano tuning
Used clarinet

Monroe Road Animal Hospital in Charlotte, NC

Three boxes of medical rehab supplies

National Wildlife Rehabilitators Association, Saint Cloud, MN

Two packs of literature pamphlets and pack of publications order forms
Two Wild Again DVDs
“Wildlife Rehabilitation” –Volumes 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
T-shirt and Polo shirt
4th Edition Minimum Standards book
Wildlife Rehabilitation Bulletins –Fall 2008, Spring 2009, Fall 2009, Fall 2010
Brochures: Answering the Call of the Wild: A Hotline Operator's Guide to Helping People and Wildlife

Nature's Way – Tim Vocke, Ross, Ohio

Gift certificate for 10,000 mealworms, two gift certificates for 5,000 mealworms

Symposium Donors (Cont.)

North Carolina Aquarium, Raleigh, NC

Four free passes

North Carolina Zoo, Asheboro, NC

Four NC Aquarium passes

North Carolina Zoological Society, Asheboro, NC

Sweatshirt and NC Zoo hat

Four pack gift certificate for admittance to the zoo

Betty O'Leary

Assorted items including two cutting tool sets, paint brush set, photo album, boxed note pad, butterfly cosmetic bag, squirrel dog toy, note cards, winter in new England CD, set cloth napkins, three cutting boards, set address book/notepad, Italian coffee, two magnets, three note pads, sticky notes, five blank CDs, ornament

PARC – Terry Z. Riley, PhD

Two “Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern US”

Petmart, Sneads Ferry, NC

Three bottles of Avian Plus vitamins/minerals supplement

Three 2 lb. bags of Parakeet Vita Seed

Three 2 lb. bags of Cockatiel Vita Seed

Mark & Martha Petty, Chapel Hill, NC

Assorted items including three puzzles, squirrel balloon, four sets of notecards, five animal pins, set of four butter knives, duck letter opener, hummingbird bookmark, notebook, set christmas towels, wildflower hot pad, scrub, plumeria candle, flea comb, squirrel sweat shirt, two pairs squirrel socks, squirrel T-shirt, two boxed sets of playing cards, butterfly sand dollar necklace, wolf water bottle, NWRA vol.7 book, bird note pad, flower postcard set, Nestle Recipe book, squirrel magnets, Peter Rabbit book, squirrel wall plaque

Possumwood Acres Wildlife Sanctuary, Hubert, NC

Assorted items including bird mobile, five mini sewing kits, bottle muscadine juice, five canisters of cookies

Shannon Ray, Charlotte, NC

Four wine bottle bird feeders

REPTILES Magazine, Mission Viejo, CA

Gift certificate for free 1 year subscription

RodentPro.com, LLC, Inglefield, IN

\$50 gift certificate

Mrs. Alice Sanders, Jacksonville, NC

Two framed pictures

Ten Thousand Villages, Greensboro, NC

Pair Mudra hand book ends



Symposium Donors (Cont.)



Tramplamps.com, Susan Hines
Print "Flight or Fight"

TrueValue Village Hardware, Sneads Ferry, NC
Two 20 lbs. bags of Wild Bird Seed

Sandi Tucker - Droll Yankees Customer Service Plainfield, CT
New Generation Metal Nyjer 15" Heirloom Gold Hanging Bird Feeder

Wild Birds Unlimited, Charlotte, NC
Assorted items including Worm Observation, Antworks TVquarium, miniDigIS photo album
yard ornament, cardinal tile, three bird keychains

Wildlife Rescue Center, Sanford, NC
Owl picture, two pairs of earrings, necklace, turtle magnet, book mark

Gary Woodruff, Stokesdale, NC
Wooden cabinet grade squirrel nest box



ZooMed Laboratories, Inc., San Luis Obispo, CA
Assorted items including three posters; fifteen containers of turtle food
3-pack for Water Turtles (food, water conditioner, and turtle treats);
Fourteen containers of Repti Calcium; Two jars ReptiVite
Four t-shirts; 25 gift bags; 73 Care Guide Booklets
Floating Turtle Log; Three cans O'Grasshoppers; Three cans O'Superworms
Two bottles Wipe Out 1 disinfectant; 25 reptile lighting fact charts
Six bottles Repti Safe water Conditioner
Three bottles hatching formula aquatic turtle food
Repti Heat Cable; Two Splashproof Halogen Lamp
ReptiBreeze aluminum screen cage

Thank you to all of our Symposium donors!!!

Creature Feature – Southern Flying Squirrel

By Tammy Greevers

The scientific name for the Southern flying squirrel comes from three word parts: *glaukos* (grey), *mys* (mouse), and *volare* (flying). These “grey, flying mice,” although in the same order as mice (Rodentia), are actually in the Sciuridae family and travel by gliding rather than flying.

HABITAT AND RANGE. Southern flying squirrels inhabit a wide range extending throughout parts of Canada, the Central and Eastern United States, Northwest Mexico, and Honduras. However, an individual’s home range is only about four acres. Their habitat consists of deciduous or mixed deciduous-coniferous forests.

DESCRIPTION. The Southern flying squirrel body is anywhere from 21-25 cm long with the dorsoventral tail adding 9-11 cm of the total length. Small by design, weighing anywhere from 50-79 grams, Southern flying squirrels have soft, glossy fur that is grey to olive-brown dorsally and white ventrally. Loose skin, stretching from the fore to hind limb, called the patagium, assists with their volant locomotion.

DIET. Southern flying squirrels are omnivorous and consume a variety of foodstuffs including, seeds, berries, fruit, and nuts as well as insects, eggs, buds and blossoms, and occasionally carrion.

REPRODUCTION. There can be up to two litters per season of 2-7 young. Breeding usually occurs during February-March and June-July with births occurring anywhere from April-May and August-September. The gestation period is about 40 days. Young open their eyes at 3-4 weeks and are weaned at 6-8 weeks. They are sexually mature at 1 year.

LONGEVITY. Flying squirrels live about 4-5 years in the wild, but up to 13 years in captivity. Their predators include owls, arboreal snakes, and small, carnivorous, nocturnal or crepuscular mammals.

INTERESTING FACTS.

1. Flying squirrels are the only other mammal besides bats to possess a patagium. On the fore limb, the patagium
2. attaches to the styloform cartilage, which allows for much more extension. Each glide averages 6-9 meters, but glides have been recorded as long as 30 meters.
3. Active year round, Southern flying squirrels are gregarious during the winter months and share body heat by communal nesting. Another adaptation that allows them to stay warm is non-shivering thermogenesis. This mechanism, which occurs in brown adipose tissue, uncouples ATP synthesis from cellular respiration in order to produce metabolic heat without wasting energy.

REHABILITATION CONSIDERATIONS.

1. Typhus, a zoonotic disease, is endemic in Southern flying squirrels in the Eastern United States. Transmission occurs to humans through direct contact or inhalation of infected louse feces. Lice become infected after feeding on an infected individual. Southern flying squirrels are a reservoir for the causative bacterial agent, *Rickettsia prowazekii*.
2. Southern and Northern flying squirrels are both native to North Carolina. The northern variety is found in coniferous forests within the range of the Appalachian Mountains. They are larger (113-185 grams) and their ventral side is white only at the tips with lead color at the base. The Carolina Northern flying squirrel, a sub-species of the Northern flying squirrel (*Glaucomys sabrinus*), is considered endangered in North Carolina.

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Calendar of Events

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Announcements

Chimney Swift Tower Grant Program



The WRNC Chimney Swift Tower Grant Program, implemented in 2007, opened like gang busters with numerous applications and inquiries from across the state, resulting in towers cropping up from the coast to the mountains of North Carolina. In the past two years, we have experienced a lull in applications, but the opportunity for monetary assistance is still available through our organization and the need for alternative habitat for chimney swifts is still great! Please help us get the word out there!

With the help of WRNC's Chimney Swift Tower Grant Program, construction of alternative habitats for our feathered environmental partner encourages them to return and thrive in our state. If you or your organization have noticed the loss of chimney swift habitat (possibly due to the capping of chimneys) or a decrease in numbers of chimney swifts, you or someone you know may also see the need and choose to construct and maintain a tower to entice the residency of these acrobatic insectivores who vacuum the sky at dawn and dusk ridding areas of pesky flying bugs, especially the dangerous mosquito. WRNC offers a \$300.00 grant and the Paul & Georgean Kyle book, "New Habitat for America's Mysterious Birds (A Construction Guide)" to assist you or your group in the undertaking of this valuable conservation project and can award three grants per year.

Please refer to WRNC's website <http://ncwildliferehab.org> for details of eligibility and application requirements. This program is open to North Carolina residents only. For further questions feel free to contact the WRNC Chimney Swift Tower Grant Program Coordinator, Linda Bergman, at [910-346-8345](tel:910-346-8345) or lbergman@ec.rr.com. Deadline for submission of applications and supporting documentation is January 5th, annually, and as fast as the chimney swift flies, so does time! Don't miss the opportunity to host chimney swifts in your area!!



Cage Building Grants

WRNC members are eligible to apply for the organization's Cage Building Grant! Remember that this grant can be used to repair existing cages as well as build brand new ones. You can also use this grant to expand old cages to fit the new dimensions listed in the latest edition of the *Minimum Standards* guide. The application can be found online at <http://www.ncwildliferehab.org/programs/Cage%20Building%20Grant%20Information.pdf>. The grant application deadline is May 1st. We look forward to seeing your applications!