NHEE E-NEWS

NEW HAMPSHIRE ENVIRONMENTAL EDUCATORS

Excellence in Environmental Education from the Mountains to the Sea

Volume: 1 Issue: 4 Date: Fall 2009

In this issue:

Discover the nature of bats in the Environmental Educator's Toolkit section of this issue!

OH DEER!–Who knew that being an NHEE member was so much fun! NHEE members facilitate a Project WILD educator's workshop. (Image courtesy of NH PLT)

Calendar:

- **2009 Farm Based Education Conference,** November 12-14, Tarrytown, NY http://www.farmbasededucation.org/page/2009-farmbased-education
- **Celebrate 30 Years of NH PLT at the annual banquet!** Thursday, November 12th from 5-9 PM at the Common Man Inn in Plymouth, NH www.nhplt.org
- National Association for Interpretation, **National Interpreters Workshop** in Hartford, CT: **November 17-21, 2009** www.interpnet.com
- The **2009 New Hampshire Joint Water and Watershed Conference** in Concord, November 20-21 www.nhrivers.org
- **Save the Date and Call for Presentations. NHEE Annual Conference. March 10, 2010,** at the Squam Lakes Natural Science Center, Holderness, NH www.nhee.org
- **Save the Date and Call for Presentations!** 39th Annual Conference of the North American Association for Environmental Education in Buffalo Niagara, NY in 2010. Sept. 29th – Oct. 2nd, http://www.naaee.org/conference/call for presentations.

PRESIDENT'S MESSAGE

Hi, NHEE Members! We hope this message finds everyone enjoying their fall season. We know you were all busy with the opening of the school year.

The NHEE Board has started getting ready for the annual conference. The conference will be held on **March 10, 2010**, from noon until 8:00 p.m. It will be held at the **Squam Lakes Natural Science Center** in Holderness. The theme is **"Locally-Grown Learning: Education Using Your Community Resources."** The call for workshops, which are due November 13th, is available at www.nhee.org.If you have any questions about the conference and/or are interested in joining the conference planning committee, please contact the conference co-chairs Alicia Carlson at Alicia.Carlson@des.nh.gov or Judy Tumosa at Judy.Tumosa@wildlife.nh.gov or see the related article on page 5. We look forward to another great conference.

The NHEE Educator of the Year committee is looking for nominations for the 2010 awards. If you know someone that should be recognized for their amazing contribution to environmental education please consider nominating them. For more information on the NHEE Educators of the Year please see the related article on page 4 or contact Ruth Smith at Ruthnaturally@myfairpoint.net.

A small group of environmental educators have met to discuss NH's Environmental Literacy Plan (ELP). Some members attended a training in September to get further information and ideas on how NH should proceed. This group will continue to meet and are planning to have an event to work on this process soon. If you are interested in learning more about the ELP or would like to participate in the group please contact Judy Silverberg at Judith.Silverberg@wildlife.nh.gov or look for more updates on the listserve soon!

Recently, the NHEE Board has been working on communications in a variety of ways. First, the Board has been working on a display for events like Discover Wild NH Day and the NH Science Teachers Conference. We hope to be able to participate more at these and other events in the future. The Board is also considering whether or not social media marketing (SMM) is something we should be doing and we have been slowly updating our website. Currently, everything is up to date, however, we are lacking in events! We want to post and market your events. Please contact Jessica Morton at jessica.morton@des.nh.gov if you would like to see your event posted!

In September and October NHEE hosted two events. On September 8th member Scott Fitzpatrick of Plustime NH offered the NHEE Roundtable discussion "The Nature of Afterschool." Then on October 6th board member Beth March and offered a SMM workshop. We hope to get Beth to do another workshop over the winter or in the spring in a computer lab for a working SMM session. Thanks to Scott and Beth for presenting and offering these workshops. For more information about any of these programs please contact Jessica

We hope you enjoy this fourth edition of the NHEE E-News. We are always looking for article suggestions. Please send us your ideas and comments. Thanks! We hope to see you in March at the annual conference.

Audrey Eisenhauer and Jessica Morton

Susan Cox, US Forest Service, Durham NH
is the 2009 NEEEA Non-Formal Educator of the Year

Susan Cox is at the forefront of new and innovative environmental education initiatives not only in the 20 states she covers as part of her duties with State and Private Organizations, but she is also relied upon regularly by the Director of Conservation Education, for the US Forest Service. She supplies advice, direction and team support on environmental education on a daily basis for her organization and others. Her involvement with teacher trainings, revision of state learning standards, and development of materials to help educate the public about emerging and important topics makes her a vital component to all aspects of education. Her strong partnership ethic allows the Forest Service to be an important player in conservation education in the state, region and nationally.

Susan clearly embodies the spirit of this award through her ability to work cross boundaries, bringing together ideas and people; through her creativity and commitment to the highest quality and standard of education for trainings, materials and programs; and her depth of knowledge of the current and past education scene, ensuring that we all aren't "reinventing the wheel".

Susan has been a member of the NH Environmental Educators (NHEE) and has served on the board of directors and as president of NHEE. Susan was on the board of directors from March 2002- March 2009 in 2006 Susan became the president. While in her tenure as president she worked to build the association's capacity through conferences, trainings, and web-based communication. She also helped significantly in strengthening the collaboration between state EE associations and NH Dept of Education (DOE). Susan works very closely with the NH Department of Education Science Consultant and has been active member of the NH Science Leaders, which is a group that looks at ways to make classroom teachers more aware of non-formal educators and their expertise in "real science".

Most recently Susan has been working on encouraging more schools and families to go

outside and enjoy nature. Susan has worked with the NH DOE on "May is Outdoor Science Learning Month in NH" which is initiative to use during the month of May to get students outside doing science. In part, this addresses preponderance of schools who keep students inside during the science testing weeks and brings to light that students can (and should) practice outside the science they are being tested on inside!

Susan's energy, enthusiasm and professionalism make her a frequently sought-after person when developing new or upgrading the out-of-date initiatives and materials. She accomplishes much with little time and without her own direct resource. She is a master at working with people and helping foster a feeling of cooperation and communication.

Please help me congratulate Susan Cox the 2009 NEEEA Non-Formal Educator of the Year.

It's time to begin thinking about nominees for the 2010 Environmental Educator of the Year awards. These awards are given out annually by NHEE to individuals who do exemplary work informing and inspiring students (of all ages) to be better stewards of natural resources and lessen their impact on the earth.

If you know of someone who is doing this kind of work please consider nominating them for one of three categories: elementary school, middle/high school or non-formal/college educator. The process is simple. Visit the NHEE website (www.nhee.org) for an updated nomination form. They must be completed no later than February 1, 2010, but can be submitted any time between now and then.

If you have a potential nominee in mind and don't know if they have already received the award, contact me. We have a pretty good record, but it is not quite complete. We are attempting to fill in the gaps of our award history. If you or someone you know was an EE award winner in NH during 2003, 2001, 2000 or 1996-98, please let me know what year and what category. Thanks for your help.

Ruth Smith, Awards Committee Chair

ruthnaturally@myfairpoint.net

NEEEA Update

By Ruth Smith, NHEE Representative to the NEEEA Board.

The 43rd annual New England Environmental Education Alliance conference was held in September in Ivoryton, CT. Attendees were treated to interesting workshops, entertaining performers, and of course lots of opportunities to network with colleagues from across the region. Awards were given out and recipients included NH's own Susan Cox who won the New England Environmental Educator of the Year award for the non-formal category. Congratulations Susan, we're so proud of her work in NH and beyond.

Attendance at the conference was down this year. The economy is was certainly one reason, many staff development and travel budgets have been cut. Time is always a factor as it can be difficult to carve out 3 days to get away from work and family commitments. To this end, the NEEEA board will be examining the role of NEEEA and the annual conference at its November board meeting. This will be an on-going discussion because of the importance of the topic and the impact on future conferences and events. If you have attended a NEEEA conference in the past and couldn't make it this year, we'd love to hear what your reason was. If you've never been to a NEEEA Conference, we're very interested in hearing why you don't attend. Do you have ideas about how a regional network could better meet the needs of environmental educators in NH? Send them along. We are anxious to get ideas from members (if you are a member of NHEE, you're a NEEEA member) about

how NEEEA can better serve the EE community in New England and support state efforts on a regional basis. Please send any thoughts to my email address: ruthnaturally@myfairpoint.net

One of the best aspects of the conference was a day-long workshop on Environmental Literacy Plans (ELPs). Brian Day from the North American Association of Environmental Education (NAAEE) led the workshop, with the help of NEEEA Board member and NAAEE Advocacy chair, Shareen Knowlton. Representatives from all 6 states were updated on the No Child Left Inside legislation that is before Congress, opportunities to connect the NAAEE Guidelines for Excellence with State Standards and how to develop statewide ELPs. Those in attendance all agreed that this is the type of collaborative effort that NEEEA should be hosting. The group will continue to meet as ELPs are developed. Stay tuned for updates from the NH ELP team.

It's not too early to save the dates for the 2010 NEEEA Conference. Vermont will be collaborating with Promise of Place to host "Create, Cultivate, Collaborate: Designing our Shared Future" on October 21-23, 2010 at the Lake Morey Inn. Watch for more information on the NEEEA website: www.neeea.org.

Join the NEEEA list serve. Go to www.neeea.org and sign up through Yahoo groups. It's a great way to stay informed of what's going on and communicate with other EE professionals around New England.

Upcoming Conferences, Program and Grant Opportunities

- **SAVE THE DATE for the 2010 NHEE Conference**

  The 2010 NHEE Conference has been scheduled for March 10, 2010. We will meet at the Squam Lakes Natural Science Center in Holderness. The theme for this year is "Locally-Grown Learning: Education Using Your Community Resources," and we hope to incorporate outdoor, hands-on workshops throughout the day. The conference will begin at noon – bring a lunch and network for an hour! Follow this with a two hour workshop session, a one hour workshop session, dinner (provided), the business meeting and awards, and finally a one hour outdoor evening session. And, as usual, there will be a silent auction with goodies to bid on!

  If you are interested in presenting a workshop, please contact Judy Tumosa (judy.l.tumosa@wildlife.nh.gov) or Alicia Carlson (alicia.carlson@des.nh.gov)

  Watch for emails or check the NHEE website for the registration forms early in 2010. We hopeto see you there!

- **Asian Longhorn Beetle Train the Trainer sessions.**

  A great service learning project; several sessions are being held in NH for people interested in learning about the Asian Longhorn Beetle and its threat to NH forests. Training will cover how to recognize infestation symptoms, and how to educate the people in your community.

Session dates: Nov. 17: Brentwood, Nov. 18: Meredith, Nov. 19: Manchester. The sessions will be from 5:30-7:30 PM. For more information and to register go to http://extension.unh.edu/Agric/Docs/ALBtrainthetrainerbrochure2.pdf

- **www. Planet-Connect.org** has extended its grant application deadline to November 15, 2009 for environmental grants for high school students. Do you and your students have an innovative solution that will help protect the environment? Planet connect will support you with up to $1,000, and fund a local environmental internship.
- **NHSEA Home Energy Conference 2009, November 21 to be held at Plymouth State University. 8:30 AM-4:30 PM.** Interested in how to get started incorporating sustainable energy tools and technology into your home and work life; even in your classroom? Check into this conference to learn how. For more information go to www.nhsea.org
- **Bears, Bobcats, Moose and more!** Free Tracker Training with Susan Morse of Keeping Track Thursday November 5 at Holderness Central School, 6:30 PM.
- **Wildlife Action Grants Available! Deadline February 1, 2010.**

  Teachers and others interested in starting wildlife habitat projects can apply to the Homes for Wildlife Action Grant Program at NH Fish and Game for start-up funds. Mini-grants of up to $300 ($600 with matching funds) are available for school or community projects to enhance habitat for people and wildlife. For a proposal packet contact Marilyn Wyzga, Public Affairs, NH Fish and Game Department, 11 Hazen Drive, Concord, NH 03301; email Marilyn.wyzga@wildlife.nh.gov or call 603-271-1197. This project is funded through the sale of conservation license plates (moose plates).
- **Prescott Farm Environmental Education Center in Laconia offers;**

  Maple Sugar Madness (entire month of March)
  Saturdays, March 6, 13, 20 & 27
  Program Times: 10:00 am – 11:30am, 12:00 pm – 1:30 pm & 2:00 pm – 3:30 pm
  Each hour and a half program experience includes tapping, gathering, boiling, and tasting maple syrup, as well as discovering the natural history of the maples and the maple sugaring process. Maximum of 24 per program. This is an extremely popular program, so we encourage people to sign up early. All ages are welcome. Cost $5 M/ $8 NM per person. Family Rate: $15 M/ $20 NM per family. To learn more about this and other educational opportunities at PFEEC visit www.prescottconservancy.org

Environmental Educator's Toolkit:

The Nature of Halloween: Batty for Bats

by Suzanne Petersen, Lamprey River Advisory Committee

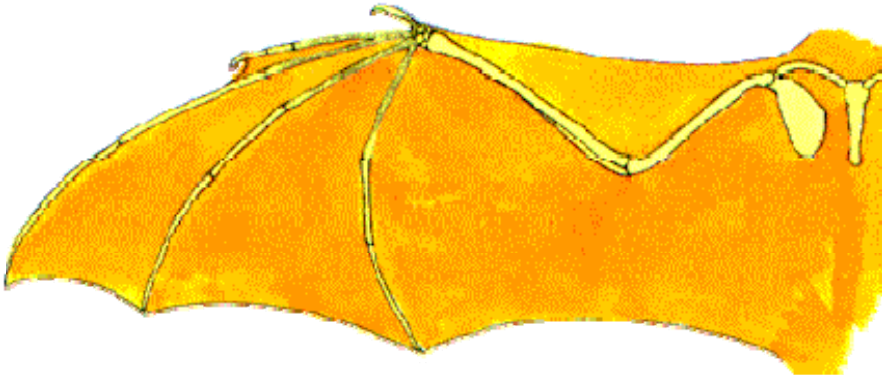
Bats have long been associated with spooky witches, ghosts, and goblins, but the more bats are studied, the more they are viewed as valued members of the natural community. Bats are diverse and interesting, and they have more reason to fear humans than humans have to fear them. They are

active at night, but they are definitely not from the “dark side”. For bats, truth is far more interesting than fiction, so read on…

Bats are the only mammals that can truly fly. (Animals such as flying squirrels do not actually fly; they use a flap of skin connecting their arms and legs to glide from one place to another.) Bats began to appear in the fossil record 52.5 million years ago. They belong to the scientific order of Chiroptera, meaning “hand wing”.

(from pages.slc.edu/.../L2-willis-bats/s12-bats.htm)

The skeleton of bats shows that the bones of the wing are the same bones found in a hand, with four fingers and a thumb. Bats use their wings to fly, and they often use them to catch their prey, mostly flying insects. Even though most bats are small and resemble rodents, they are not rodents. In fact, bats are more closely related to small, tropical primates than to rodents.



(from http://www.nurseminerva.co.uk/adapt/wings.htm#bat)

All bats are nocturnal, meaning they are active at night. There are several reasons for this. First, by hunting and foraging at night, bats avoid competition with most other animals, and certain insects are more active at night, thus food is abundant. Second, bats can avoid becoming prey for most other animals which hunt by day. Third, bats use a lot of energy when they hunt. (Their heart beat can rise to 1000 beats per minute!) If they were to hunt during the heat of day, they could easily overheat. The thin skin over their wings creates a lot of surface area for such small animals. By hunting in the cooler air of night, they can better maintain a normal body temperature and reduce the risk of dehydration.

Bats are found on every continent except Antarctica, and approximately 1000 different species exist. The United States has 40 species. As a percentage of total mammal species on earth, bats account for about 25%, rodents account for almost 50%, and all other mammals account for the remaining 25%. The largest bat in the world is the rare giant golden-crowned flying fox (*Acerodon jubatus*), a fruit-eating species of south central Asia. The maximum size can approach 1.5 kg (3.3 lb), 55 cm (22 in) long, and the wingspan may be almost 1.8 m (6 ft).

The smallest bat (also the smallest mammal) in the world is the bumble bee bat, *Craseonycteris thonglongyai*, also known as the hog-nosed bat. It has an adult body weight between 1.5 and 2.0 grams, and its wingspan is less than 3 inches across. The body is about the size of a large bumblebee. This endangered species was unknown to scientists before 1974. These tiny bats live only in a few limestone caves in Thailand and Myanmar. Another tiny bat is the Philippine bamboo bat, *Tylonycteris pachypus*, and it has a reported weight of just 1.3 grams.

(from scienceray.com)

Bats are true mammals in that they give birth to live young, produce milk to feed their young, have hair, and can self-regulate their body temperature (they are warm-blooded). Bats are unique among mammals in that they can fly. Although bats fly, they do not fly the same way that birds do. Most of the flight muscles controlling the bats' wing beat are attached to the shoulder blades and only one muscle is attached to the breast bone that sits amid flattened ribs. These adaptations create a light but sturdy frame and provide bats with their incredible agility in flight. In contrast, birds have flight muscles that are braced against a rounded rib cage and the prominent keel on the breast bone allows many heavy muscles to be attached, giving birds much greater strength and endurance.

The legs of bats are also special among mammals. Bats are the only mammals whose knees bend backward, not forward. This allows bats to grip with their feet when their knees are bent, a very handy adaptation that allows bats to crawl flat against a surface or to land feet first. In all other mammals, when the knees are bent, the feet face backward. Bats, in this case, are similar to birds.

The feet of bats have additional special traits. In most mammal limbs, gripping is a task that requires the energy of muscles and is a conscious act. In bats, gripping neither requires energy nor conscious thought to be performed. Bat feet grip at rest. To release their grip, bats must make a conscious decision and engage energy-consuming muscles. This adaptation of their feet allows bats to rest safely while hanging upside down. Bat legs are strong for hanging, but not for standing. This hanging adaptation also allows bats to "fall into flight", rather than spending a lot of energy building up enough speed for take-off or launching into flight the way birds do. Because bats must be light enough to fly, their bones are very delicate and weak. Birds' bones are stronger than bats' bones, but birds' bones are hollow to reduce weight.

(from http://animals.howstuffworks.com/mammals/mammal-pictures.htm)

Most bats eat insects, some eat fruit, a few eat small fish and frogs, and three tropical species sip blood. The bats that eat insects have the ability to find prey using echolocation. First, the bat emits a series of sounds. These sound waves go out and when they hit an object, the waves then bounce back to the bat. Based on the pattern that comes back, the bat can locate its prey.

Bats are the most important predators of night-flying insects. One of New Hampshire's common bats, the little brown bat, can eat 1000 mosquitoes in just one hour. Bats not only help to control the number of pesky insects in our lives, but bats that eat fruit and nectar are essential for pollination and seed dispersal for bananas, cashews, dates, figs, giant cactus plants, and mangoes that grow in warmer climates. Because all bats are nocturnal, fruit-eating bats often locate the area of their food by smell and then use their keen eyesight to locate individual morsels. With the exception of three flower-eating species that migrate from Mexico, all the bats in the United States are insectivores.

Bats give birth to single or occasionally twin "pups" that are up to 35% adult size at birth and are fed exclusively on milk until they approach 90% adult size (after just a few months). Imagine a human mother giving birth to a 50-pound baby and breast-feeding it until it was in high school! Mother bats often share baby-sitting duties and adopt orphaned baby bats. Mortality among pups is high, mostly due to being jostled in the nursery and then falling to the ground. The ground is a hazardous place where predators or disease can kill the vulnerable pups if they are unable to crawl back up to the nursery. Fortunately, bats grow quickly to become independent. Unlike short-lived rodents of the same size whose life span may be only a few years or less, many bats can live 20 years or more.

New Hampshire has eight species of bats. The table below summarizes some key information.

species	photo	summer habitat	winter survival	notes
little brown bat		roosts in human buildings	highly vulnerable during winter, survives on stored fat	NH's most common bat
big brown bat		roosts in human buildings;	highly vulnerable during winter, survives on stored fat	becoming more common in urban areas
eastern pipistrelle		roosts in trees	hibernates in caves or mines; highly vulnerable during winter, survives on stored fat	of conservation concern; please do not disturb their winter caves

eastern red bat		roosts in trees	non-hibernating, migrates to southern states	of conservation concern; needs more old forest
eastern small footed bat		roosts in rock crevices and rocky outcrops	hibernates in caves or mines; highly vulnerable during winter, survives on stored fat	NH state endangered; please do not disturb their winter caves; please be careful when doing maintenance to dams and rip-rap
hoary bat		roosts in trees	non-hibernating, migrates to southern states	of conservation concern; needs old forest
northern myotis		roosts in human buildings	hibernates in caves or mines; highly vulnerable during winter, survives on stored fat	of conservation concern; please do not disturb their winter caves; needs more old forests
silver haired bat		roosts in trees	non-hibernating, migrates to southern states	of conservation concern; needs more old forests

(photos from Google images)

During the summer, bats can be found throughout New Hampshire in almost every habitat. At night, they can be seen and heard hunting insects around street lamps, over bodies of water, or along paths in the woods. By day, they roost in a number of places, including hanging among tree foliage, under tree bark, in rock and tree crevices, and in human structures.

Little brown bats with white nose syndrome

(from: Nancy Heaslip, New York Department of Environmental Conservation)

In addition to habitat loss and disturbance that almost all bats worldwide face, New Hampshire's hibernating little brown bats and cave hibernating bats are currently facing a deadly fungus called "white nose syndrome". This disease has been found throughout New England, as far south as Virginia, and as far north as Canada. New Hampshire has few natural caves, so many of its bats migrate to other areas to hibernate. The fungus attacks bats on their noses, wings, and tails and weakens the afflicted bats. In response, bats sometimes come out of hibernation early, try to find food, and are further stressed. In some affected hibernation sites, the death rate has been as high as 99%. More recently, white nose syndrome has started to affect bats in the summer, as well. The cause has not yet been determined, but scientists are actively trying to learn how it is spread and how it can be prevented. No one wants an ecosystem without a healthy population of bats!

Many people are scared of bats and falsely believe that most or all bats are "vampires" that can suck blood or transmit rabies. Of all the 1000 species of bats worldwide, only three eat blood. These live in the tropics and normally feed on, but do not kill, cattle as they rest in the field. While it is true that some vampire bats transmit rabies to cattle, bats in the United States have a very low incidence of rabies. The rate is barely a fraction of a percent and there is very little danger to humans. Humans are far more likely to get rabies from skunks or foxes. As with all wild mammals, however, bats should be handled with caution. If a bat enters a house, the best way to handle the situation is to close all doors, leaving one window completely open to the outside. The bat will usually leave on its own.

Bats are good neighbors who eat pesky mosquitoes and moths, serve as essential pollinators and seed dispersers, and are very diverse and interesting creatures. In addition to protecting tracts of old forests and not disturbing caves during winter hibernation, everyone can help to provide bats with a good home by providing access to traditional roosts such as barns and attics or by building simple bat houses for the yard.

For more information on bats, please see the full articles from which information for this article was gathered:

animals.howstuffworks.com/mammals/question668.htm

Batting 4,000 (PDF, 928 KB) by bat researcher Dr. Scott Reynolds, from the Sept./Oct. 2007 issue of N.H. Wildlife Journal magazine, pages 8-12.

www.coolquiz.com/trivia/explain/docs/bats.asp

Connecticut DES www.ct.gov/dep/cwp/view.asp digimorph.org/specimens/Craseonycteris

Humane Society of US www.hsus.org/wildlife/a_closer_look.../bats/bat_facts.html

Smithsonian Institute www.si.edu/Encyclopedia_SI/nmnh/batfacts.htm

www.txtmania.com/articles/bats.phpen.wikipedia.org/wiki/Largest_organisms

www.wildlife.nh.gov

The Connecticut Dept. of Environmental Services offers these hints for bat houses:

1. Use the roughest sides of the wood on the inner areas of the house. It is also a good idea to horizontally groove inner surfaces for footholds or attach non-metal screening to provide toe holds. This is also important for landing areas below the entrance.
2. Caulk all outside seams to limit air flow. This helps trap the bats' body heat inside the house. Sealants approved for aquarium or kitchen use are best.
3. Place tar paper or dark shingles on the top and 4 to 6 inches down the side to increase inside temperatures. Nursery roosts often require temperatures of 90 degrees F or more. A dark stain also helps increase the temperature.
4. Hang houses 10 to 15 feet above ground. South and southeast exposures are best for providing maximum thermal gain. Bats prefer houses that get at least 6 hours of sunlight a day.
5. If possible, protect the house from prevailing winds and provide an unobstructed approach.

Bat houses attached to the sides of buildings have had the greatest reported success. Free-standing poles in open areas also work, but tree-mounted houses generally remain unused. Bat houses placed near water or wetland areas often are most successful. Installing a bat house before April improves the chance of occupancy. Don't be discouraged if bats do not immediately move into their new home. It is not unusual for a house to stand empty for at least a year before it is used.

See Bat House building plans below:

Small Bat House

Use rough-cut lumber or exterior grade plywood (1/2" thick minimum). The furring strips (E) should have a finished thickness of approximately 3/4".

Staple 1/8" mesh (HDPE plastic) netting to back and front 2 sections. Make sure mesh extends to bottom of back.

Caulk all pieces and assemble with drywall screws to prevent wood from splitting. Apply additional caulk to outside joints as needed.

Apply dark stain to exterior surfaces and use tar paper or shingles on the roof and the top half of the bat house to increase interior temperatures.

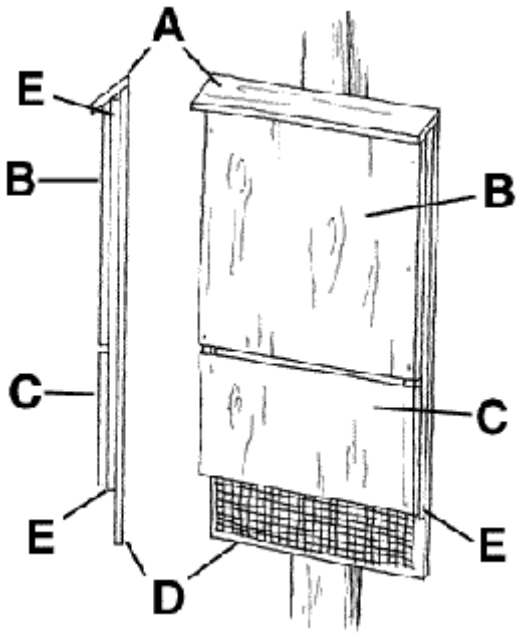
A Roof 4"x14"

B Upper front 12"x20"

C Lower front 12"x10"

D Back 12"x36"

E Spacers (1) 2"x12", (2) 2"x301/2"



Large Bat House

Use 1/2" exterior grade plywood for front and back sections; 1/4" for all partitions. Sides are 1"x6" stock.

Staple 1/8" mesh (HDPE plastic) netting to all partitions and the back panel. Apply caulk to all joints.

Begin assembly by screwing the back to the sides. Attach 31" spacers to inside corners.

Place a partition on top of the spacers to within about 1/2" of the roof. Put the next set of spacers (26") on top of the partition and screw into the first spacers.

Repeat for remaining partitions ending with 283/4" spacers (flush to roof line). Screw front to sides. Make sure roof angles are aligned.

Screw roof in place and caulk all exterior joints.

Scratch or roughen the front near the vents to provide a toe hold for bats landing on the box.

A dark stain should be applied to all exterior surfaces and tarpaper or shingles to the roof and upper half of the house to increase interior temperatures.

A Roof 6"x28"

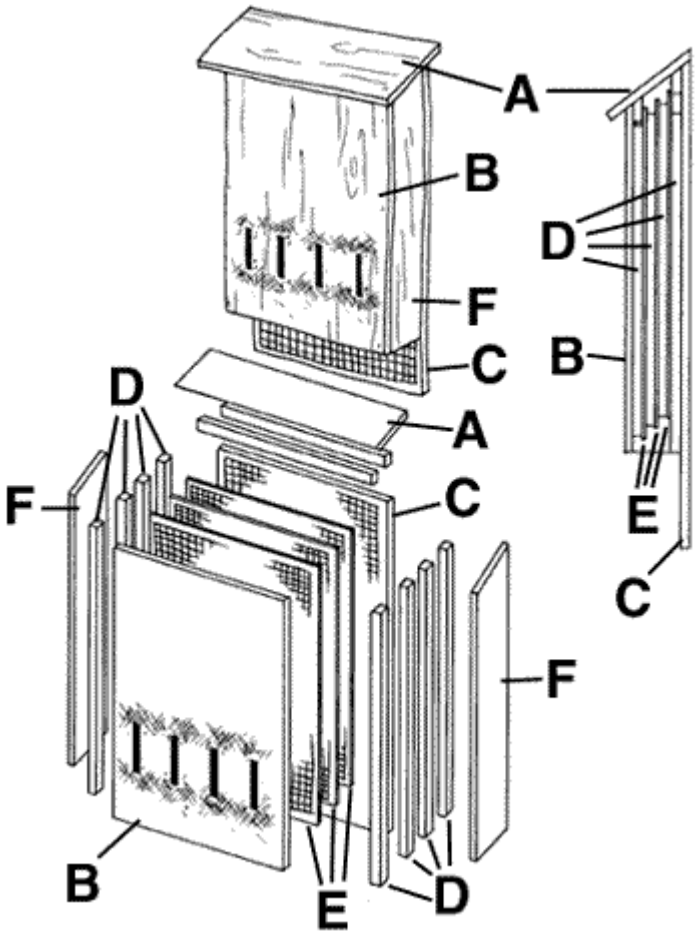
B Front 24"x283/4" (cut slots for vents, 5" above bottom edge)

C Back 24"x36"

D Spacers 1"x2" (4) 26" long, (2) 31" long, (2) 283/4" long

E Partitions 1/4" thick, 3/4" apart, 26" long

F Sides 4"x283/4"x31" (angle-cut top edges)



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NEW HAMPSHIRE ENVIRONMENTAL EDUCATORS

Visit us on the web at http://www.nhee.org

If you have questions or comments contact the Newsletter Editor at acerno@earthlink.net