

**Beginning this January, back issues of EnviroInfo can be found on the web at**

<http://www.aces.edu/fourh/NaturalResourcesandEnvironmentalEducation.php> .

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**1. LEGACY NEEDS VOLUNTEERS FOR ENVIROBOWL**

Legacy needs volunteers as moderators, judges, timekeepers, and scorekeepers for EnviroBowl--especially for the Florence and Dothan competitions. But they can use help at all locations. You can call (1-800-240-5115) or go to their website to sign up.

[http://www.legacyenved.org/student/student\\_enviro.htm](http://www.legacyenved.org/student/student_enviro.htm)

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**2. PINHOTI TRAIL HIKE: COLEMAN LAKE TO PINK E. BURNS TRAIL HEAD (TALLADEGA NATIONAL FOREST)**

\*\*Date: Saturday, January 21, 2006

\*\*Where: Talladega National Forest Pink E. Burns Cabin (Rabbittown, AL) Trail Parking (Transportation will be provided from parking area to start of hike)

\*\*Time: 9:00 am - 4:00 pm

\*\*Fee: \$10/adult, \$5/students (not recommended for children under 10 unless they are conditioned for all day hikes)

Mountain streams, ravines, longleaf pines, and incredible vistas! Join us for the first hike of the season along the Shoal Creek portion of Alabama's longest hiking trail.

Jeff Gardner from the US Forest Service will teach hikers how to identify winter trees. Chris Raney from Jacksonville State University Field Schools and Keith Hudson of the Anniston Outdoor Association will lead hikers through one of the most diverse sections of the Talladega National Forest.

Bring a daypack with lunch, water, and snacks. Be sure to check weather forecasts and dress accordingly. Layers are suggested. This is a moderately strenuous hike.

Pre-registration is required. CEUs available for teachers upon request.

Call for directions, to pre-register or for more information:

Renee S. Morrison, Coordinator Jacksonville State University Field Schools:  
(Little River Canyon Field School & Talladega Mountains Field School, 700 Pelham  
Road North Suite 246 Martin Hall, Jacksonville AL 36265, 256-782-5697 (office)  
or 256-225-2188 (cell), Email: <<mailto:rmorrison@jsu.edu>> [rmorrison@jsu.edu](mailto:rmorrison@jsu.edu)

Web: <<http://fieldschool.jsu.edu>> <http://fieldschool.jsu.edu>  
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### **3. TOP ENERGY CONSERVATION TIPS**

With the cost of energy skyrocketing this winter, folks all across the country are looking for ways to keep their energy costs low while not freezing in their own homes. Here is a list of energy hogs around the house, and some quick fixes to help keep them in check.

#### *A/C and Heating Systems*

1. Change or clean your furnace and air conditioner filters regularly to keep heating and cooling systems running efficiently. Dust can restrict airflow and stress the system. Filters can be washable or disposable. Measure the existing filter to make sure to buy a filter that fits properly. It is best to keep several filters on hand as replacements during the cooling season.
2. Make sure draperies, furniture or rugs do not block vents. These vents should also be cleaned regularly with a vacuum or a broom.
3. Put on an air conditioner cover during the winter to reduce drafts.
4. Install "draft blockers" or gasket insulators behind light switches and electrical outlets.
5. Install window film for windows that you don't open often, or that seem drafty.
6. Add attic insulation to increase the efficiency of both your furnace and air conditioner. A good standard is to reach "R30," which a contractor should understand.

#### *Refrigerator and Freezer*

1. Make sure the fridge door gasket seals tight. Test them by putting a piece of paper in a closed door. Pull on the paper and if it comes out too easily, you need to replace your gasket. Test at several places along the door. Another way to test: put a flashlight in your fridge and see if the light leaks out when you close the door.

2. The condenser coils on the back of your refrigerator often become dirty, thereby reducing their energy efficiency. Gently wipe and vacuum them once a year. Many fridges have a removable panel around the coils. Keep the back of the fridge at least four inches from the wall.
3. Check the temperature of your fridge and freezer by putting a thermometer in a glass of water. Put the glass of water in the center shelf in the center of the fridge. It should read 38-40 degrees Fahrenheit. The freezer should read 0-5 degrees Fahrenheit.
4. Remember, the fuller the freezer, the more energy efficient it is.

#### *Dish and Clothes Washing/Drying*

1. Try to do full loads when using washing machines and dishwashers. Choose the cold or warm cycles over hot cycles because heating the water for laundry consumes 90 percent of the energy of the laundry process.
2. Empty the lint trap after each use of the dryer. The better airflow will allow faster dry times for your clothes, and reduce the chance you will have to re-run a load.
3. Hang your clothes to dry either on a clothesline or a clothes tree, at least some of the time. In the winter, this is a natural humidifier in a dry room.
4. Set your water heater to a slightly lower setting or call a service person to adjust it for you. You probably won't even notice the difference in temperature and you will save the extra energy costs.

#### *\*\*\*Bonus Shopping Tips\*\*\**

1. While at the store, buy some compact fluorescent bulbs. They reduce energy use by up to 75 percent. Set a goal of at least replacing the bulbs that are most commonly on in your home.
2. When shopping for major home appliances and electronics, look for the "Energy Star" label.

Source: National Wildlife Federation

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## **4. LEGACY ENVIRONMENTAL EDUCATION SUMMER INSTITUTE**

### *What is Legacy?*

Legacy, Partners in Environmental Education, is a not-for-profit organization working to create environmentally responsible citizens. The organization operates through a grassroots, partnership network to develop and disseminate fact-based, balanced environmental information.

*What is the Legacy Summer Teacher Institute?*

The Legacy Summer Teacher Institute is a comprehensive, hands-on training course for Alabama teachers and Extension Agents interested in learning about environmental topics and issues. Participants are trained to integrate topics, such as pollution prevention, ecology, waste management and natural resources into their classroom curriculum. The Institute is designed to equip teachers and agents with hands-on teaching strategies, field experiences and content material relevant to protecting our environment. Any K-12 teacher or Extension Agent currently working in Alabama is eligible to attend the Institute. Legacy pays all expenses for the Institute including housing, meals and materials. A \$50 deposit is required with the application and will be refunded upon registration at the workshop.

*When and where is the Summer Teacher Institute held?*

The 2006 Legacy Summer Teacher Institute will be held at the Southern Environmental Center located at Birmingham Southern College in Birmingham, AL. The dates of the Institute are July 16-21, 2006.

*When will the Institute start and end each day?*

The Summer Teacher Institute is a fun, challenging and educational event. The Institute is designed to be residential with teachers from across the state living on campus at Birmingham Southern College. Activities are planned throughout the six days to educate, enlighten and entertain. We will begin between 8:00 and 8:30 a.m. each morning. The days will end at different times, allowing us the flexibility to cover needed content, while mixing in some fun activities. The day ends between 8:00 and 9:00 p.m.

*What environmental topics are included in the workshop?*

- Ecology - endangered species, food webs, habitat protection
- Natural Resources - water, wildlife, forest, farming
- Pollution Prevention - pollutants, sources of pollution, solutions
- Waste Management - recycling, composting, incineration

*What do participants have to look forward to?*

- Hands-on activity presentations by classroom teachers
- Educational and exciting field trips
- Content presentations by environmental experts
- Certificate of Completion and Professional Development Hours
- CEU's from the State Department of Education
- Lots of FREE materials

*Who is eligible?*

Any K-12 teacher currently teaching within the state of Alabama, any person about to or who has already graduated with an Education Degree, graduate students with an Education Degree or other environmental educators.

*Additional Note:*

Some of the field trips include fairly rigorous outdoor activities, including canoeing and hiking. Please let us know in advance if you have health concerns that may limit your participation in these events.

Deadline for Application Submission:  
Applications must be postmarked by April 28, 2006.

Emergency Contact Information

Participant Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Home Phone: \_\_\_\_\_

Emergency Contact: \_\_\_\_\_  
Relationship: \_\_\_\_\_  
Contact Address: \_\_\_\_\_  
Contact Phone (Day): \_\_\_\_\_  
Contact Phone (Evening): \_\_\_\_\_

Please list any medical conditions (allergies, etc.) that we should be aware of in the event that medical treatment is required.

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*2006 Legacy Summer Teacher Institute Application*

The Legacy Summer Teacher Institute is geared for teachers seeking professional development in environmental education and who are interested in serving as workshop presenters about environmental topics and issues. Any K-12 teacher currently teaching within the state of Alabama is eligible to participate in the Institute. Participants will be required to attend all sessions of the Institute to receive the professional development credit, CEU's and accompanying stipend. The deadline for submission of this application is April 28, 2006.

Name:

\_\_\_\_\_

Home Mailing Address:

Home Phone Number: (

) \_\_\_\_\_

Home E-mail \_\_\_\_\_

School or office E-mail \_\_\_\_\_

( Please provide home and school information due to the need for contact after school has ended for the year)

School Name:

School Mailing Address:

School Phone Number: (            )

Planning Period:

Years of Teaching Experience: \_\_\_\_\_ Grade Level

Taught:

T-Shirt Size: (Check One)      \_\_\_M      \_\_\_L      \_\_\_XL  
\_\_\_XXL    \_\_\_Other

Dietary needs/restrictions: \_\_\_\_\_

Male \_\_\_\_\_ Female \_\_\_\_\_ (For room assignment)

Health concerns/issues

(Please complete emergency information form attached and include with your application.)

How did you hear about Legacy's 2005 Summer Teacher Institute?

In no more than one page single spaced (on another sheet of paper), tell us how attending the Legacy Summer Institute will benefit you and your students or 4-Hers.

Mail or fax this completed form and attachments to the following address:  
(Mail deposit if form is faxed)

Legacy, Inc. Partners in Environmental Education, Summer Institute, P.O. Box  
3813, Montgomery, Alabama 36109, Fax: (334) 270-5527

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## **5. HOW DO ANIMALS SURVIVE IN THE WINTER?**

How do you survive the winter? Do you wear layers of warm clothes? Spend more time snuggled up in warm, sheltered places? Eat lots of energy-rich foods? Or do you avoid winter altogether by moving to a warmer climate?

These adjustments for surviving winter can also be observed in many species of wildlife. To survive the winter season, wildlife either migrate, hibernate, or adapt their behavior to colder temperatures and a changing food supply.

Wildlife migrate to find a consistent food supply and avoid the stresses of winter. Birds that migrate may carry up to 50 percent of their body weight as fat at the time of their departure. What do they encounter on their long journeys? Large bodies of water with no resting or feeding stations; predators waiting for their arrival; small, isolated pockets of habitat; new diseases and parasites that they have little or no resistance to. So why do they bother? Many animals have no adaptations to obtain food in a frozen world. For example, great blue herons have no ability to feed through even the thinnest layer of ice on ponds, and many birds of prey depend on thermal updrafts that allow them to glide with minimal effort in search of food but that occur infrequently in winter. Therefore, it's essential for some wildlife to migrate to warm climates where food is readily available.

Many of the animals that don't migrate in winter hibernate. Hibernating animals avoid winter hardships by seeking out refuges from the freezing temperatures. These animals enter a state of dormancy, lowering their body temperatures and reducing their metabolic rates to reduce the amount of energy expended to keep warm. This allows them to slowly burn off fat reserves to generate heat when the ambient temperatures begin to dip.

So, who hibernates and where do they go? In New England, mammals that hibernate include woodland and meadow jumping mice, woodchucks, eastern chipmunks, striped skunks, big brown bats, and black bears. Most of these animals hibernate in burrows under ground, but many also use crevices in stone walls or cavities in old logs and stumps. Bats usually hibernate in caves, but they will also use human structures, such as buildings, mines, and storm sewers.

Black bears spend their winters in a variety of locations, including hollow logs, caves, brush, or even drainage culverts. Snakes hibernate under logs, deep inside rock crevices, and in animal burrows. Frogs and toads burrow into streambanks or seeps. Some also seek out caves or burrow in pond bottoms with some salamanders and turtles. Some insects also hibernate, either as adults or as eggs, larvae, or pupae; you can find them under bark, within leaf litter, below ground, in pond bottoms, or within galls on vegetation.

The remaining animals that don't migrate or hibernate have adaptations that allow them to survive the winter. Lynx and snowshoe hare have large feet that, like snowshoes, help them avoid sinking into deep snow. Many animals curl up in a ball or huddle together to conserve heat. Birds can fluff their feathers to increase their insulating layer. Many animals move to sheltered locations to reduce body heat loss. When these strategies don't work, many mammals can generate heat by burning up fat reserves. Birds, however, can only store enough fat to keep them warm through one long cold winter night, during which they will huddle and fluff. They also rely heavily on shivering.

Animals have many ways of surviving the winter, and those that don't survive are eliminated from the population through the process of natural selection. Over time this tends to preserve and improve the adaptations at which we marvel at. But no harm is done if we want to help wildlife in our backyards survive the winter. We can provide food in the form of nutritious seeds, nuts, berries, and nectar for our migratory songbirds and butterflies in the fall and early spring and for our over-wintering wildlife during those cold blustery days. We can also provide some of the things that many hibernating animals are looking for in the fall and winter, such as brush piles, dense vegetation, and cavities for shelter.

Above all, we can learn to respect and appreciate the complex adaptations that wildlife have acquired to survive winter, which can inspire us all as we cope with those dark, cold days of winter.

### *On the Wild Side: Cold Storage*

It's a mistake to think that all of our fall migrants travel south. A few species move in other directions. The gray bat is one such contrarian.

Rather than seek out warmth, the Gray Bat leaves its comfortable summer cave for one with a temperature closer to freezing. Sometimes that means saying good-bye to balmy Florida and flying to cooler Alabama or Tennessee. The reason for the strange migration is that the Gray Bat hibernates during the winter, and it can do so effectively only in a chilly cave. Its heart rate plummets from several hundred beats per minute to 20 or 30, and its body temperature takes a similar nosedive. Stored fat provides enough food energy until spring,

and when the bat is thirsty, it simply licks some of moisture off the cave walls or some of the condensation off its fur.

Be sure not to disturb bats in their winter caves ☺ it can cause an increase in their activity level leading to the loss of life-saving fat reserves!

Source: Lisa Windhausen, National Wildlife Federation

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## **6. FOR THE BIRDS**

Winter, especially extended periods of below freezing temperatures, limits the availability of natural food sources. Help them out and have a great time watching.

### *Food*

Providing a variety of foods will meet nutritional needs and attract different species. Seed mixes, seed cakes, black oil sunflower seed, peanuts, thistle and suet (which melts above 70° F) are all easily available.

Feeding with seed and/or suet supplements the natural supply of natural seeds and the few overwintering insects that birds are able to locate.

Native plants, especially those that produce late-season seed and fruit that birds eat are also an excellent choice. Holly (the female plants produce seeds), cotoneaster, juniper, pyracantha, dogwood, viburnum and sunflowers provide a natural buffet. Note that trees and shrubs also provide habitat for insects, which are a food source.

Feeding will not prevent migratory birds from their instinctive journey. In fact, changes in daylight hours prompts migration, not food availability.

If you start feeding, keep feeding. Birds will become dependent on you. If you stop feeding, they will most likely to find food elsewhere, but don't be surprised if they are reluctant to come back when you do resume feeding.

Using a variety of feeders will attract different types of birds as well. Feeders are made as ground, pole-mounted or tube-type. Shelter the feeder from elements as much as possible, while still maintaining space from shrubs that might harbor predators.

### *Water*

A fresh water supply is just as important, if not more so, in winter than in summer. In addition to food, birds need water in the wintertime, when natural sources may not be available. The simplest way to provide water in colder areas is to add an immersion heater to your existing birdbath. Make sure you use an outdoor use-rated extension cord. Keep the water and bath clean year-round.

Predators are still active in the winter, both the ones that only seek bird food (like squirrels) and the ones that are after the birds themselves. Maintain a safe habitat for birds.

Source: Lowe's "How To" Library

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## **7. ATTRACTING BIRDS**

Birds are great fun to watch. You could think of them as wild pets. In addition to entertainment, remember that birds also help control insect populations, pollinate flowers and disperse seeds. Birds are important to a healthy environment.

It is not hard to attract them to your own lawn and garden - if you supply a few key things.

### *Getting Started*

First, take a look at your lawn and garden from a bird's eye view. Ask yourself:

Are there places for shelter and nesting? Birds need protection from inclement weather and predators. Trees, vines, shrubs and hedges are inviting environments for nesting birds.

Is there food and water? A combination of natural food sources and bird feeders will attract a variety of birds all year long. A year-round supply of clean water is also essential.

### *Shelter and Habitat*

Shelter is vital to a bird's survival. Essential for nesting and resting, an inviting habitat will attract birds. The best shelter is the living kind - shrubs and trees. A mixture of evergreen and deciduous plants provides year-round warmth and protection. Dead trees and limbs can also provide a home for nesting birds. If a dead tree doesn't endanger lives or property, leave it in place for the birds. Plant ivy or a blooming vine at the base to "disguise" it.

Shelter is especially important during the nesting season. During the spring nesting season (about 6 weeks) provide an environment free from man or other animals. To add or supplement natural habitat, birdhouses are a good choice.

Put your birdhouses up in the fall so they can weather over winter and be ready for birds in the spring. If you wait until spring to put up a birdhouse, you should have it ready by no later than mid-March. Place your birdhouse as close to natural nesting conditions as you can.

Most birds that nest in a house will do so anywhere in your yard or garden, but experts recommend these cautions:

Put all houses on metal posts, not in trees or on wood posts. This will keep cats, raccoons and other predators away.

Keep the birdhouse away from noisy areas.

### *Food*

By providing natural food sources, you can enjoy both the plants and the birds. Choose plants that will provide food in every season and your garden will attract birds year-round.

Here are some common shrubs and trees that attract birds:

Blackberry	Fir
Blueberry	Pine
Raspberries	Hemlock
Elderberry	Juniper
Hollies	Oak
Rose	Pine
Viburnum	Maple
Euonymous	Spruce
Hawthorn	Apple
Pyracantha	Mulberry
Dogwood	Cypress
Mesquite	Russian Olive

Bird feeders are an important supplemental source of food for birds, too. The type of feeder you choose will determine the birds that come to eat there.

Many bird watchers start with a solidly-built tube feeder. The clear plastic tube lets you know when food is running low and also helps the birds to find your food. Most tube feeders have individual perches, and they will attract smaller songbirds, but not larger birds.

Many people feed birds only during the winter months when the birds need it most, but feeding them year-round offers advantages. Feeding in the warm months can induce some birds to nest nearby, and many birds take on their most colorful plumage during the breeding season. Regardless of whether you feed only during the winter or year-round, be consistent with your feeding regimen. It is only fair to those birds who have come to rely on your feeders as a source of food.

Summer feeding requirements are slightly different from those of winter. Suet, for example, is a common winter feed. It is an attractive food for many birds, especially when offered with seeds, but it can quickly melt or go bad in the summer. Shelled nutmeats like sunflower seeds can also spoil, and should be

used sparingly. Any bird feed should be protected from moisture at all times since the presence of moisture can contribute to spoilage.

Here are common foods and the birds they may attract:

Sunflower seed - Chickadee, tufted titmouse, evening grosbeak, white-breasted nuthatch, blue jay, cardinal, purple finch, American goldfinch

Thistle - Dark-eyed junco, American goldfinch, purple finch, house finch, pine siskin, house sparrow

Cracked corn - Mourning dove, blue jay, house sparrow, tree sparrow, song sparrow, white-throated sparrow, brown-headed cowbird, red-winged blackbird

Millet - Mourning dove, house sparrow, tree sparrow, song sparrow, white-throated sparrow, brown-headed cowbird, red-winged blackbird

Suet - Downy woodpecker, hairy woodpecker, starling, chickadee, white-breasted nuthatch, red-breasted nuthatch

Commercial mixtures of bird food are readily available. They are formulated to attract certain categories of birds. If you wish, you may also mix your own food based on the types of birds you are trying to attract.

### *Water*

Many bird lovers faithfully provide food but overlook another key to survival - water. Some moisture is available naturally from dew, rainfall and wild food, but in most areas they need other sources as well. Throughout the year, it's important to supply water for drinking and bathing.

In addition to hydration, birds also need water for bathing. A bath helps a bird keep its feathers in perfect condition for flying. It also helps the feathers maintain their waterproofing and insulating properties.

Since wet feathers hinder a bird's ability to fly, it is important that a birdbath be placed near protective shrubbery so the bird can make a quick getaway if necessary.

A pedestal birdbath with a wide, shallow bowl is a good choice. Make sure the surface is rough so the birds will not slip as they drink and bathe. Use rock or stones to create various depths in your birdbath so you can attract a wide variety of birds. Most birds are terrified of really deep water, but you will find that song sparrows, goldfinches and chickadees will use the shallow section of our birdbath and the deeper end will be enjoyed by robins and jays.

A rim or perch near the water should be provided to allow the birds to alight before entering the water. If you have a water garden or small pond which is too deep for birds to use, place some stones in the water in such a way that they just break the surface, providing the birds with access to the water and a shallow area in which to bathe.

Innovative homeowners can also create birdbaths from supplies or materials found around the house like barrels, large stones with depressions or plastic lined depressions in the ground. With creative thinking, these baths can be incorporated inconspicuously into the environment. Remember, however, that the water source you provide must be free of lead and/or chemicals of any kind. The bath itself should be cleaned periodically with a scrub brush and fresh water, and refilled.

With preparation, birdbaths can be maintained all year, providing birds with a reliable source of water even during freezing weather. An all-season birdbath requires a means to prevent the water from freezing. Outdoor heaters designed specifically for this purpose are available and should be used with a heavy duty, grounded extension cord appropriate for the purpose.

Perhaps most important; put your birdbath in a sunny place. This will help keep ice away in winter months, and the warm sun will feel good to the wet birds any day of the year.

**Important Note:** Insecticides, fertilizers and other commonly-used chemicals can be deadly to birds. Please be conscious of how you use these products near bird feeding, watering or nesting areas.

### *Common Problems*

#### No Birds at the Feeder

If it is a new feeder, give the birds a little time to get accustomed to it. If it is full of fresh food, they will come.

Is there a new dog or cat in the neighborhood? Birds stay away when there is a predator nearby. If there is a new cat or dog, ask the owner to tie a bell around its neck to warn the birds.

Make sure your feeder provides adequate perching places and nearby trees and shrubs so birds can take cover.

Is your feeder clean? Wash your feeders occasional and let them dry thoroughly before refilling. Restock with fresh feeds.

#### Unwanted Visitors

Not all birds are a joy to watch. You can't really blame these uninvited avians for trying to survive, but there are some ways to keep unwanted birds away from your feeder:

Try using a small tubular feeder which attracts smaller songbirds. Larger birds won't be able to fit on the perches.

Remove perches from tube feeders to keep house finches away. To keep blackbirds and sparrows away, don't offer cracked corn.

To keep doves and sparrows away, don't put out bird mixes.

Starlings do not like to feed at a bottom feed suet feeder. It forces them to hang upside down longer than they like to.

Squirrels can also take over your feeder. Here are tips for dealing with an unwanted invasion:

Squirrels are territorial. Provide food for them away from your bird feeders. They will mark that area and stay away from your birds.

Try hanging your feeders at least 5 - 6' off the ground and 8' from a tree.

Providing food, shelter and water for birds can bring hours of enjoyment and education to your family. If you choose to feed the birds, they will depend on you, so starting a home "bird sanctuary" is a long-term commitment.

Source: Lowe's "How To" Library

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