

Backyard Tree Farm Newsletter

Fall 2005 Number 21

A Newsletter published for:
Backyard Tree Farm Program and
Individuals Interested in
Natural Resources Conservation

What Causes Fall Color?

By Kathryn Mascaro

Here in Indiana we are blessed with a large number of deciduous trees whose leaves turn wonderful colors in the fall.

This color display is so spectacular that people will drive great distances to make "color tours".

We see the yellow leaves of ashes, tulip-trees or sycamores, the orange leaves of some maples or hawthorns, the red leaves of ironwoods, black tupelos or some oaks, and the purple leaves of dogwoods or sweet gums.

What changes in the leaves cause this brilliant display of fall color?

The summer trees get their green coloration from the chlorophyll present in small structures called plastids.

Chlorophyll green is a strong pigment that mostly masks any other colors present in the summer leaves. This strong, but not total, masking explains the variations in shades of green.

When autumn comes, the tree begins to lay down an abscission layer between the leaf and the stem. The abscission layer is where the leaf and stem will separate during leaf fall.

This layer slowly cuts off the flow of minerals and water to the leaf. Deprived of this food, the chlorophyll breaks down and disappears. Without chlorophyll, the yellow pigments of the plastid, carotene and xanthophyll, become visible. This process explains the yellow fall color.

In addition to cutting off the flow of minerals and water into the leaves, the abscission layer closes off the flow of sugar out of the leaves. These excess sugars are converted into anthocyanin, a red pigment. How much red pigment is produced depends on the amount of sunlight, the temperature and the rainfall. More sunlight gives more anthocyanin, which explains why green ash can have yellow leaves on the inside of the tree and purplish red on the outside some years. Cooler temperatures (but not freezing) also increase pigment production which explains the more intense red colors in years with cool nights. And sufficient rainfall keeps the leaves on the trees longer, allowing the chemical processes that produce sugar and convert sugar to anthocyanin to go on longer and cause a more colorful display.

The brown coloration in leaves comes from tannins that accumulate as the chlorophyll disappears. For some trees, this is the normal fall color. White, scarlet, pin and shingle oaks as well as beeches can retain their brown leaves throughout the winter. These leaves are forced off the next spring by the newly emerging leaves.

Fall color is determined by plant genetics and by environmental factors. Genetics determine which colors the leaves can turn. Environment determines when it happens, how long it lasts and how intense the colors are. The onset of fall color occurs when the right combination of decreasing day length and cooler temperature occurs. Adequate rainfall gives the longest color season. Bright

and cool fall days with chilly, but not freezing, nights produce the best colors.

So enjoy the wonderful display of brilliant colors that Mother Nature and the trees bring us each fall. And appreciate the wonders of living in a great state with beautiful deciduous native trees.

References:

- ❖ Eastern Forests by John Kricher and Gordon Morrison
- ❖ Peterson's Field Guide Series, Houghton Mifflin Company, New York, 1998.
- ❖ Street Tree Fact Sheets, editors: Henry Gerhold, Norman Lacasse and Willet Wandell, Pennsylvania State University, 1993.
- ❖ The Gardener's Basic Book of Trees and Shrubs by Stanley Schuler, Simon and Schuster, New York, 1973.
- ❖ <http://www.urbanext.uiuc.edu/fallcolor/about.html>
- ❖ <http://www.fs.fed.us/co nf/fall/falcolor.htm>



Trees for Tomorrow

By Mike Baldwin



This is the story of the birth and growth of a tree planting cooperative that has served Indianapolis very well for the past 15 years. It is a story of partnering to enrich communities through the planting of trees.

In 1990 the Indianapolis Power & Light Company (IPL) began funding an existing Indy Parks program called Trees for Tomorrow. Over the years the program became known as the IPL Trees for Tomorrow Program.

To qualify for the program trees must be planted on public property. City parks, greenways, street right-of-way, and public schools qualify for trees under this program. Of course all trees must be the "Right Tree in the Right Place." Only low-growing compatible trees are planted under electric lines. IPL expanded the area eligible for the program to include its entire service area.

IPL approves and funds the purchase of trees for projects submitted by city park departments and community organizations. The submitting organization is responsible for obtaining volunteers to plant and maintain the trees. Community requests received by Indy Parks are evaluated by Indy Parks to make sure that the requests meet all the criteria. The most important element of a request is a well developed maintenance plan. A community's commitment to the future of the trees will go a long way toward getting a plan approved.

In 1998 the IPL Trees for Tomorrow Program added Keep Indianapolis Beautiful Inc. (KIB) as a third partner. KIB is a not for profit organization dedicated to improving the environment in which we live. Each year KIB organizes over 30,000 volunteers to paint and caulk houses, clean our river banks, collect and dispose of tons of trash, and plant trees and flowers in our neighborhoods. KIB's expertise in running volunteer projects

was a natural fit for the IPL Trees for Tomorrow Program.

In 2005 the IPL Trees for Tomorrow Program was reorganized to formally assign the responsibilities of the three partners. Although IPL will still have ownership of the program, the program name was shortened to Trees for Tomorrow. IPL will still approve and fund the program. KIB will be responsible for the logistics of each project, to include, ordering the trees, ordering mulch, augering holes, and obtaining volunteers. Indy Parks will be responsible for maintaining the trees. The new arrangement puts much more emphasis on tree survival. Scheduled maintenance includes, watering, pruning, and mulching.

What have we accomplished? Over 11,500 trees have been planted in the Indianapolis area. Most of these trees are 1.5 to 2 inches in diameter. We have talked with hundreds of our neighbors about the value of planting the "Right Tree in the Right Place."

On September 20, 2002 a tornado damaged several neighborhoods across Indianapolis. Many large street trees were completely destroyed. Before the debris was cleared, plans were underway to replant these neighborhoods. The event would be called "Tornado Turnaround." A total of 727 volunteers participated in planting 987 trees. Sixteen local businesses contributed everything from storm damaged tree maintenance to pizza; a total value of \$62,837. The total monetary value of the event was \$267,688. The true value is much more than money. What is the value of hundreds of volunteers planting trees in the rain? What is the value of the thank you's from people who had lost every tree in their yard? What is the value of great partners that do whatever has to be done?

The Tornado Turnaround project received the following awards:

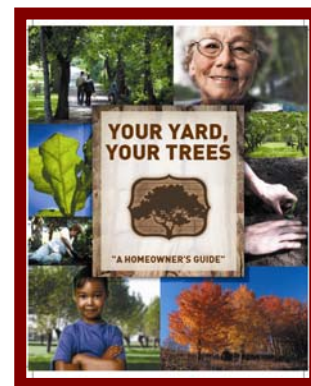
*Indiana Urban Forestry Council
"Project of the Year"*

*International Society of Arboriculture
"Gold Leaf" award*

The strong partnership between Indy Parks, IPL and other businesses, KIB and the communities of Indianapolis was cited as the primary reason Indianapolis won first place in the "America in Bloom" contest in 2003.

If you would like more information, please contact:

Michael R. Baldwin
IPL Staff Forester
317-261-8124
michael.baldwin@aes.com



YOUR YARD, YOUR TREES - A HOMEOWNERS

GUIDE is available from your local Soil and Water Conservation District. The Backyard Trees Committee of Hoosier Heartland prepared this 72-page book for you. It should answer most of the basic questions you may have about

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selecting, planting and caring for trees around you home or farmstead.

The book's nine chapters cover benefits of trees, the life functions of trees, the importance of native trees, tree identification, and selecting the right tree for the right place for the right reasons. It continues with how to plant and maintain trees after selecting the right tree, the basics of harmful and beneficial insects, how to attract wildlife with trees and finally how trees work for you.

The appendixes provide a glossary of tree terms, tree selection lists, a plant hardiness zone map and a list of important web sites.



Plant Galls Not Always Harmful

By
B. Rosie Lerner

Plants often develop bumps or other odd growths that might remind one of a science fiction movie, but there's no need to be alarmed. These unusual appearing growths are called galls and are usually more of a cosmetic problem rather than a health crisis.

The galls themselves are mostly made up of plant tissue, usually as an attempt to recover from insect or disease injury. Galls can be quite small, just a fraction of an inch, or can be as large as several inches long, depending on the plant and cause of injury. Some of the most common landscape plants that develop galls include oaks, maples, hackberries and roses.

Most galls occur on leaf tissue and are caused by insects. Adult insects lay eggs inside the leaf tissue, and either the adult or the developing young insects secretes a growth stimulation substance. Each insect causes a very characteristic gall. Most leaf galls are nothing to be concerned about from a plant

health standpoint, although they may be unsightly. However, once the gall appears, the appearance of the current growth cannot be remedied.

Some galls, particularly those that occur on the stems of perennial plants, can be very serious problems. The galls not only disfigure the plants, but can result in eventual death of the plant. These are more likely to be caused by fungal or bacterial pathogen. Crown gall, which affects euonymus and roses, is an example of a life-threatening gall.

Pruning out affected growth is about all that can be done once the galls appear. Pesticides to prevent insects or diseases from attacking the plants must be applied before injury occurs and the growth stimulation substances occur. For leaf gall-forming insects, insecticides must be applied during the brief week or so period that leaves unfold and fully expand in spring. Unfortunately, other pest cycles are less understood and chemical controls may prove inadequate.

Fortunately, most gall-causers are host-specific, meaning that they each have a preferred plant species. So galls that occur on maple trees, for instance, will not spread to other types of plants in the yard.

For more information on galls of ornamental plants, see the following Web sites:

- ❖ Purdue publication E-53 Galls on Shade Trees
 - <http://www.entm.purdue.edu/Entomology/ext/targets/eseries/EseriesPDF/E-56.pdf>
- ❖ Purdue publication BP-35 Cedar Galls
 - <http://www.ces.purdue.edu/ext/media/BP/BP-35.html>

- ❖ Purdue PPDL web page – Maple Bladder Galls
 - http://www.ppd.purdue.edu/ppdl/expert/Maple_bladder_galls.html

- ❖ Purdue PPDL web page – Oak Hedgehogs Galls
 - http://www.ppd.org/dd/id/hedgehog_galls-oak.html

Fall Tree Planting

By Bob Eddleman

The ideal time to plant balled and burlapped trees is during the dormant season—in the fall after October 1st and before the ground freezes is a great time. Weather conditions are cool and allow tree to establish roots in the new location before spring rains and summer heat stimulate new top growth. Before you begin planting your tree, be sure you have had all underground utilities located prior to digging.

It is important to understand that the tree's root system has been greatly reduced from its original size during digging process at the nursery. As a result of the trauma caused by the digging process, trees commonly exhibit what is known as transplant shock. Transplant shock is indicated by slow growth and reduced vigor following transplanting. Proper site preparation before and during planting coupled with good follow-up care

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reduces the amount of time the plant experiences transplant shock and allows the tree to quickly establish in its new location. The International Society of Arboriculture says to follow these eight simple steps, and you can significantly reduce the stress placed on the tree at the time of planting.

1. Dig a shallow, broad planting hole.

Make the hole wide, as much as three times the diameter of the root ball but only as deep as the root ball. It is important to make the hole wide because the roots on the newly establishing tree must push through surrounding soil in order to establish. On most planting sites in new developments, the existing soils have been compacted and are unsuitable for healthy root growth. Breaking up the soil in a large area around the tree provides the newly emerging roots room to expand into loose soil to hasten establishment. There is a true statement that it is better to plant a 50 dollar tree in a 100 dollar hole than to plant a 100 tree in a 50 dollar hole.

2. Identify the trunk flare. The trunk flare is where the roots spread at the base of the tree. The trunk flare tells you where the ground level was as the tree grew in the nursery. If the trunk flare is not visible, you may have to remove some soil from the top of the root ball. Find it so you can determine how deep the hole needs to be for proper planting.

3. Place the tree at the proper depth.

Before placing the tree in the hole, check to see that the hole has been dug to the proper depth—and no deeper. The majority of the roots on the newly planted tree will develop in the top 12 inches of soil. If the tree is planted too deeply, new roots will have difficulty developing because of a lack of oxygen. It is better to plant the tree a little high, 2 to 3 inches above the base of the trunk flare, than to plant it at or below the original growing

level. This planting level will allow for some settling. To avoid damage when setting the tree in the hole, always lift the tree by the root ball and never by the trunk.

4. Straighten the tree in the hole.

Before you begin backfilling, have someone view the tree from several directions to confirm that the tree is straight. Once you begin backfilling, it is difficult to reposition the tree.

5. Fill the hole gently but firmly. Fill the hole about one-third full and gently but firmly pack the soil around the base of the root ball. Then, cut and remove the string and wire from around the trunk and top third of the root ball. Be careful not to damage the trunk or roots in the process.

Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that may cause roots to dry out. To avoid this problem, add the soil a few inches at a time and settle with water. Continue this process until the hole is filled and the tree is firmly planted. It is not recommended to apply fertilizer at the time of planting.

6. Stake the tree, if necessary. If the tree is grown and dug properly at the nursery, staking for support will not be necessary in most home landscape situations. Studies have shown that trees establish more quickly and develop stronger trunk and root systems if they are not staked at the time of planting. However, protective staking may be required on sites where lawn mower damage, vandalism, or windy conditions are concerns. If staking is necessary for support, two stakes used in conjunction with a wide, flexible tie material will hold the tree upright, provide flexibility, and minimize injury to the trunk. There are also many good commercial



staking systems on the market. Remove support staking and ties after the first year of growth.

7. Mulch the base of the tree. Mulch is simply organic matter applied to the area at the base of the tree. It acts as a blanket to hold moisture, it moderates soil temperature extremes (both hot and cold), and it reduces competition from grass and weeds. Some good choices are leaf litter, pine straw, shredded bark, peat moss, or wood chips. A 2-inch layer is ideal. More than 4 inches may cause a problem with oxygen and moisture levels. When placing mulch, be sure that the actual trunk of the tree is not covered. Doing so may cause decay of the living bark at the base of the tree and provide a home for insects. A mulch-free area, 1 to 2 inches wide at the base of the tree, is sufficient to avoid moist bark conditions and prevent decay.

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8. **Provide follow-up care.** Keep the soil moist but not soaked; over watering causes leaves to turn yellow or fall off. Water trees at least once a week, barring rain, and more frequently during hot weather.

When the soil is dry below the surface of the mulch, it is time to water. Continue until mid-fall, tapering off for lower temperatures that require less-frequent watering.

Other follow-up care may include minor pruning of branches damaged during the planting process. Prune sparingly immediately after planting and wait to begin necessary corrective pruning until after a full season of growth in the new location.

After you've completed these eight simple steps, further routine care and favorable weather conditions will ensure that your new tree will grow and thrive.



Autumn Leaves – An Asset for Your Lawn

By Suzanne Stevens

The beautiful reds, yellows and gold's of your autumn leaves have faded to plain old brown and are now littering your lawn instead of gracing your trees. Don't be discouraged. Look at this as an opportunity, not a pain in the neck.

Fallen leaves are an excellent source of nutrients for your lawn and gardens. There are several ways to take advantage of the opportunity for some improvement to your soil. These include mulching your leaves

where they lay; incorporating them directly into garden beds, or composting them.

- ❖ Mulch fallen leaves directly on the lawn with a lawn mower. A mulching mower works best but several passes with any mower will do the job. It is best to mulch the leaves as part of your regular mowing routine over a period of weeks. Mulching leaves directly on the lawn becomes more difficult as the depth of leaves increases. A study at Purdue University, completed in 2000, demonstrated that directly mulching leaves does not harm the turf. Instead, the study indicated that shredded leaves caused an increase in microbial activity leading to improved soil quality. One point made in the study is the benefit of adding nitrogen to the turf during normal fall fertilization. The nitrogen aids in decomposition and balances the high carbon content of the leaves.

- ❖ Another option is to make a direct application of leaves to your annual flower or vegetable beds. Simply gather and spread up to six or eight inches of leaves over the beds and till them in. Again, adding a nitrogen source assists in the decomposition of the leaves. Normally, leaves directly applied by this method will break down in time for spring planting. A little more labor than mulching into the lawn, perhaps but a lot more flowers and veggies.

- ❖ Leaves are always a great source of 'brown' material for the compost pile. You can add fall leaves to an existing compost system or create a 'leaves only' compost pile. If adding a large amount of leaves to an existing compost pile, be sure to mix in other compost materials,

preferable 'green' material such as grass clippings, fresh garden waste or appropriate kitchen waste. You can intersperse 'brown' layers of leaves with layers of green' materials. You can also add equal amounts of leaves and 'green' material, mixing them in by turning the pile.

I recommend you opt for a 'leaves only' compost pile, using large compost bins or create large piles, five to six feet across. Internal heating of the pile, necessary for decomposition, occurs more readily in a larger pile. Mix nitrogen into the leaves as you add them to the pile. Some fresh green material (equal parts to the leaves) or blood meal or lawn fertilizer (eg. 34-0-0, ½ cup per 4 bushels of leaves) will do the job. Moisten the leaves as you create the pile. Don't turn the compost in the fall or winter (you don't want to lose heat), but do turn the pile as the weather warms in the spring. By adding nitrogen, assuring moisture and turning in the spring, fall leaves can produce compost for use the following spring.

**Nutrient
Rich
Fall
Leaves**

Trees & Wildlife

By Bob Eddleman

“Of the many benefits to planting trees around the home, the potential to attract wildlife can be one of the most satisfying,” says Brian MacGowan, Extension Wildlife Specialist from Purdue University. Whether you live in the city, a suburb or a rural community, planting trees can be an important part of making your yard a better place for wildlife. Planning a habitat for backyard wildlife is unique and challenging. Trees are a critical component to any backyard habitat. Shrubs, wildflowers and other plantings provide other important parts of the habitat. In the next several issues of this newsletter we will cover many of the aspects of backyard trees and wildlife habitat.

Basic wildlife requirements are the theme for this issue. Quality habitat is of vital importance to wildlife. Habitat includes proper food, cover, and water in sufficient quantities to meet specie’s basic needs. Arrangement of these requirements is also important.

Planning a habitat for backyard wildlife is unique and challenging. You not only need to supply the basic habitat requirements for the species you wish to attract but it must conform and integrate with your landscape design. Trees are a critical component to any backyard habitat.

Several factors will determine which wildlife species you may attract to your yard. These include the habitat surrounding your property, the plants you use to attract wildlife and specific requirements of the wildlife species you wish to attract.



Look Around You

People living in more rural habitats and that are

surrounded by habitats like woodlands, wetlands or meadows, will be able to



attract more species of wildlife than those living in large urban areas. However, there is still a variety of wildlife species one can view within the big city including songbirds, bats, squirrels, chipmunks and raptors. One can never tell what they will see. Viable populations of coyotes have even been documented in Chicago. Birds and other wildlife will take advantage of trees and other habitat components that provide food or cover in your yard.

The size of your property will influence the type of wildlife you will be able to attract. The needs of some species, such as chipmunks and gray squirrels, can be provided on smaller lots. However, the needs of species such as pileated woodpecker or deer that have larger home ranges may not be met on a single piece of property. Despite this, you can still attract them to your property. Select the required habitat element that is in shortest supply in the neighborhood and provide that element on your property. Give them a reason to visit your property.

A neighborhood can work together in planning and planting wildlife habitat over a larger area and the result will be a greater number of species being attracted to the area.

What Do I Plant?

The trees and plants you establish will affect what wildlife species visit your property. The basic rule of thumb for wildlife is diversity. Maximize the number of plant species you have that

vary in respects to when they bloom or produce fruit, type of food they produce, height and structure. Intersperse these different trees with other habitat components like shrubs, wildflowers, ground cover, vines, and water sources for increased value to wildlife.

Where Do I Plant It?

How you arrange the plantings are just as important as what you plant. Food, cover and water need to be close together. A good backyard arrangement is to plant conifers and other species providing wind protection on the northwest side to block prevailing winter winds; plant hardwoods in other areas around the yard to provide shade in the summer, but allow sunlight during the winter.

Try to plant trees in clumps or groupings. This will help combine food and cover benefits of plantings and



will give your yard a more natural appearance.

TRI-COUNTY FORESTRY FIELD DAY

By Cindy Beckner



Ken Fallis with his granddaughter, Whitley and his Mother, Martha Coers at their "Symbiosis" Farm

The Soil and Water Conservation Districts (SWCD's) of Hancock, Shelby and Johnson counties USDA/NRCS, ISDA- Division of Soil Conservation and Hoosier Heartland Resource Conservation and Development Council Inc. hosted an interesting and an informative Forestry Field Day on Saturday, July 30, 2005. The Field Day was held at the Ken Fallis Farm "Symbiosis" located at 1241 S. 775 E Waldron, IN 46140.

On this day, we saw how you can increase your benefits from trees and forests. Features of this field day included:

- ❖ Plant A Million Celebration and Kick Off Event
- ❖ Received a copy of the *Your Yard, Your Trees – "A Homeowner's Guide"*
- ❖ Fraley Truck & Implement Sales, Inc. Rushville, IN donated the use of a 1949 Massey Ferguson Tractor with the Henry County Tree Planter Demonstration.
- ❖ Tree plantings and management of tree plantations
- ❖ Wood-Mizer Demonstration
- ❖ Timber stand improvements and timber harvesting
- ❖ Enhancing wildlife habitat
- ❖ How to enter your land into classified wildlife or classified forest status (and save yourself some tax money in the process)
- ❖ A kid's program that includes a nature hike, tree identification, and crafts

Sessions were concurrent on a rotational basis with the following guest speakers.

- ❖ **Timber Selection and Timber Evaluations:** question and answer time, How to Select a Logger and other topics with Brian Crusier, ACF ABC Forest Management.
- ❖ **Classified Forests and DNR programs:** Timber Stand Improvements, Hands-on Selection, with Jason Waterman District Forester, IDNR and Ken Fallis Family, landowners.
- ❖ **WHIP:** Wildlife Habitat Management Planning & Associated NRCS and DNR Programs with Josh Griffin, Wildlife Biologist, IDNR; Ken Fallis Family, landowners; Mike McDaniel, land manager; and Bill Harting, NRCS District Conservationist.

The 50-acre farm includes a classified forest that produces many varieties of hardwood veneer and serves as a wildlife habitat. The farm has a trail system throughout the wooded area for your enjoyment as well. It is available for other educational groups/families to take a walk in the woods, contact the Hancock, Shelby or Johnson County SWCDs for more information.



Hannah Browning, Rushville, assists in the tree planting of the Tulip Tree donated by Brehob Nursery, Noblesville

Massey Ferguson Tractor and Tree Planter at work !



Create a "Backyard Journal"

By Cindy Beckner

Creating a Backyard Journal with your child or grandchild will help give you both many benefits, presently and long-lasting. Following these basic small steps starts you both on a world of wonder....

1. **Create a preview** from various field guides of the animals/vegetation in your region or county. Making listings of specific species under these categories: Trees & Shrubs, Wildflowers, Birds, Insects & Spiders, Butterflies & Moths, Reptiles & Amphibians, Mammals, Mushrooms, etc.
 2. **Establish current habitat types using these categories**
 - a. Forest
 - b. High Grass
 - c. Grass & Shrubs
 - d. Pond Area
 - e. Other Habitat Types
 3. **Make a map!** Contact your local SWCD for the basics:
 - a. Elevation of property
 - b. Latitude
 - c. Longitude
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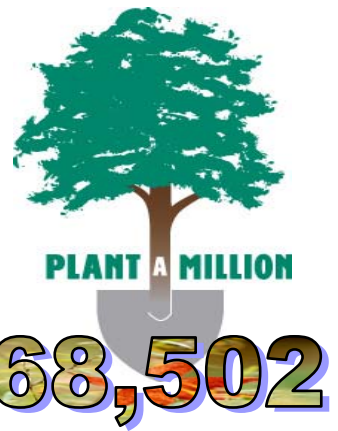
- d. Average summer temp.
- e. Average winter temp.
- f. Average yearly precipitation
- g. Drainage Type
- h. Soil Survey Map

4. **Create a current survey** using the same list that you have established and highlight or circle the names of the species that you know live in your backyard habitat or can see tracks of them being there.

Taking the concept of *I Wonder...* and writing down specific questions that you both would like to find answers to; begins the backyard journal.

They may have questions when they are first learning about organism identification or they may have a question that pops up when they are in the backyard. Recording "I wonder..." questions in their journal, establishes inquiries regarding what they have seen, learned and experienced in the backyard study.

This *Backyard Journal* can be used to help you and your child or grandchild begin an active investigation of questions about nature. As they investigate these questions, they will develop additional questions, which will spark the students' interest in the complex natural world that surrounds them.



Counted number of trees planted in central Indiana since March 2004

Check out the website for

Plant A Million at <http://www.hhrcd.org/plantamillion.htm>



Hoosier Heartland
RC & D Council, Inc.
6041 Lakeside Boulevard
Indianapolis, IN 46278-1989
Ph: 317-290-3250
Fax: 317-290-3150
www.hhrcd.org
email:hhrcd@hhrcd.org
BYT Newsletter Editor:
cindy.beckner@in.nacdnet.net

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