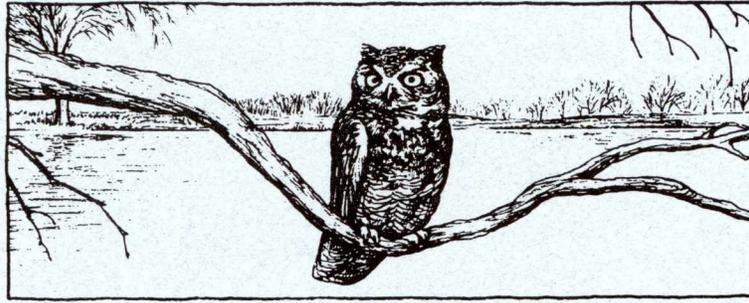


# STILLMAN NEWSLETTER



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## Great Bear and Why Trees Run Red

--Mark Spreyer

One explanation for why trees change color can be found among the legends of Native Americans. It seems dedicated hunters pursued Great Bear across the sky, finally catching him in the autumn. His blood dripped down on the forests, turning the green leaves a vivid red. As the celestial hunters cooked the bear meat in a large kettle, hot fat splattered out from the pot, turning others leaves a rich yellow. Other peoples have other stories but, since I'm a white naturalist, I'm going to tell you about the chemical processes responsible for a green living leaf changing into brilliant colors before becoming a decaying piece of plant matter.

First, we need to review the often lengthy names of the pigments that can be found in leaves.

Topping the list is chlorophyll, which gives a leaf its green color. Chlorophyll is also essential to the tree's food-making process, called photosynthesis. It is the pigment that absorbs energy from sunlight and uses it to transform water and carbon dioxide into carbohydrates such as starch and sugars.

Tree leaves also contain non-photosynthetic pigments. Such pigments include carotenes and xanthophylls which are yellow and orange in color. (These same substances give corn, squash and carrots their familiar colors.) Most of the year, these yellowish colors are masked by the greater amount of green chlorophyll pigments that are present in the leaf. In the autumn, the chlorophyll dissipates and the yellow pigments become visible giving the leaves of trees

such as elm, ash and silver maple their distinctive fall colors.

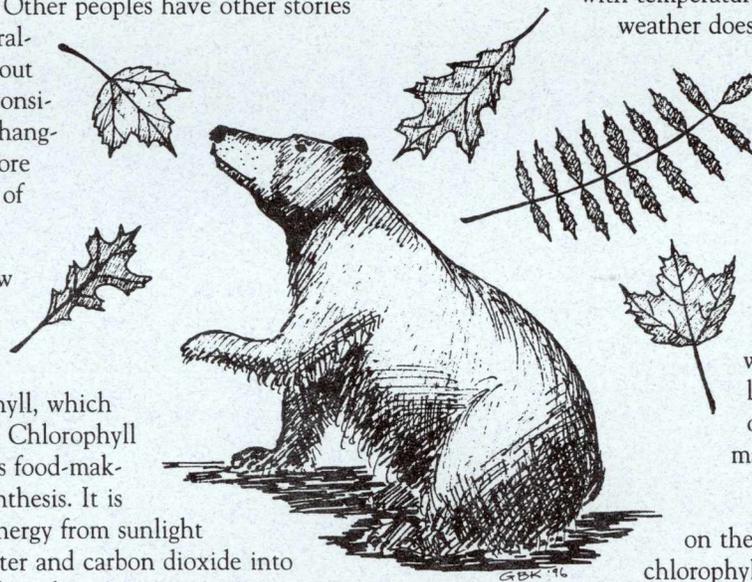
A third class of pigments, called anthocyanins, produce the brilliant reds we see in red maple, red oak and staghorn sumac. Autumn weather favoring the formation of these red pigments are warm sunny days followed by cool nights with temperatures below 45°F. Obviously, if the weather doesn't cooperate, the colors will have less intensity.

If you understand the role light plays in painting the fall palette, you can figure out why an individual tree can display different colors. Imagine a maple growing on the north side of a road that runs east-west through a forest. The leaves facing the road, with a sunny southern exposure, are likely to turn bright red while leaves on the shady north aspect of the maple turn a pale yellow.

Before light can have any effect on the quality of fall colors, the dominant chlorophyll pigment needs to be removed.

This happens as the tree prepares to shed its leaves in order to survive the oncoming winter. Long before the leaves fall off, an abscission layer begins to form in the leaf's stem. This layer is, in effect, the dotted line along which the leaf will detach.

As the abscission zone develops, photosynthesis ceases and the leaf no longer produces chlorophyll. As the chlorophyll slowly bleaches away, the other pigments, which have been there all along, have their chance to shine. Of course,



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not all trees have colorful pigments waiting in the wings, I mean, leaves. In trees whose leaves simply turn brown, such as beech and a variety of oaks, tannins predominate.

Whatever their color, when the trees do finally drop their leaves, they seem to fall in the millions. In fact, that figure isn't too far off. An oak tree can shed as many as 700,000 leaves while a mature American elm, a rare sight these days, produces 5 million leaves!

Which brings us to the subject of raking. Fallen leaves contain relative large amounts of valuable elements, especially potassium and calcium, which were obtained from the soil by the tree's roots. As the leaves decompose, these elements are returned to the soil. Decomposed leaves also thicken the soil's water-absorbing humus layer.

Needless to say, if you take away the leaves, you are removing these benefits. In the case of oak trees, that are often already stressed by suburban development, tree experts recommend that their leaves be left on the ground. If you must rake your leaves, consider composting them. Leaf compost is excellent for conditioning the soil.

At Stillman, where we have plenty of leaf compost, some of the brightest fall leaves belong to staghorn sumac. This shrub forms thickets by putting up numerous root sprouts. Its large compound leaves, containing 19 or more pointed leaflets, often turn a brilliant scarlet. Sumac grows in a variety of locations including along the tree line that runs south from Penny Road to the cattail marsh.

It is interesting to note that there is no advantage to the trees for producing colorful leaves. Color in birds can make them more attractive to mates. Color in butterflies can flash a warning that they are poisonous. Color in trees? No purpose at all unless... it is Great Bear's blood dripping from the sky.

## PROGRAMS

### BIRD BANDING HEADS SOUTH

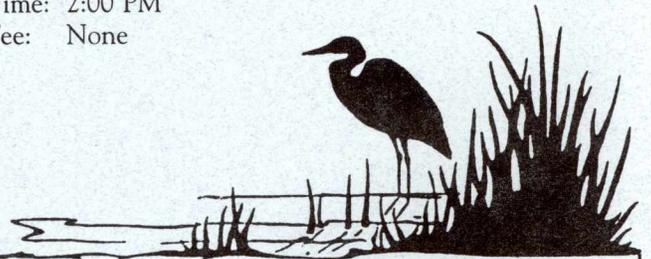
Watch Mark Spreyer (a licensed bird bander) measure, weigh, tag and record data about our resident and migratory birds. Banding birds is not always predictable, so come prepared to hike the trails. If it is raining, the demonstration will be cancelled.

Date: Sundays; Sept. 1 & Oct. 6  
Time: 9:00 AM to Noon  
Fee: None

### TREE I.D. OR THIS BUD'S FOR YOU!

As the leaves turn color, join Stillman's naturalist as he shows you how to identify some of our Midwestern trees. Easy to remember tips and simple hand-outs will inspire you to open your own "branch office." Come prepared to be out in the weather.

Date: Sunday, Oct. 13  
Time: 2:00 PM  
Fee: None



### WONDERS OF WETLANDS EDUCATORS' WORKSHOP

This workshop, hosted by the Stillman Nature Center, is aimed at educators who want to learn about wetlands. Those who attend will learn what a wetland is, why they are valuable, and what is being done to conserve Chicagoland's remaining wetlands.

Workshop participants will each receive a copy of **WOW! The Wonders of Wetlands**, a book for educators that describes a variety of activities appropriate for K-12 grade students as well as adult audiences. Other wetland informational materials will also be available.

The instructors will be Cyndi Duda, Environmental Education Specialist with the U.S. Fish and Wildlife Service, and Stillman's own Mark Spreyer. The morning's schedule includes getting into, literally, the wetlands. So please bring (or wear) rubber boots or old shoes, and long pants.

**Reservations are a must.** To sign up, call Mark at (847) 428-OWLS.

Date: Saturday, Sept. 14  
Time: 9:00AM to 12:30PM  
Fee: \$10.00, payable to  
Stillman Nature Center.

## TWILIGHT WILDLIFE HIKE

If you have ever wanted to investigate and interpret wildlife signs, take a night hike or sharpen your senses to the sights, sounds and smells of the outdoors, then this evening is for you! The activities you will do come from the U.S. Fish & Wildlife Service's "Watching Wildlife" program and we are delighted to have Cyndi Duda, from the Barrington Fish & Wildlife office, on hand to lead us from daylight into darkness.

Casual clothes and good hiking shoes or boots are required. If you have to leave early, that's O.K. Call 428-OWLS to make reservations.

Date: Sunday, Oct. 27  
Time: 5:00 to 8:00PM  
Age: 6 years and up  
Fee: None



## BACKYARD BIRD FEEDERS

Stillman volunteers Roy Schodtler and Jim Kaltsas invite you to try your hand at making bird feeders out of common materials. There's no better way to add color to your winter yard than by attracting birds to your own feeder.

Date: Sunday, Nov. 10  
Time: 2:00PM  
Fee: None



## WINTER HOURS BEGIN IN NOVEMBER

In September and October, Stillman will be open Sundays from 9 AM to 4 PM. Starting in November, Stillman will be open Sundays from 1 PM to 4 PM.

## EQUINOX

CELEBRATION  
for MEMBERS and VOLUNTEERS

On the equinox, daylight and darkness are evenly split. From now until the first day of winter, the hours of night will gain on the hours of light. At Stillman, where owls hunt and nest, we welcome the night and are offering a special celebration for our volunteers and Friends.

To help us mark the equinox, Tony Pantanella, a member of the Northwest Suburban Astronomers, will point his 11" telescope skyward for a close-up look at

stars, planets and moons. Refreshments will be available and members can pick up a Stillman T-shirt which features a Great Horned Owl. If possible, bring binoculars.

Remember, this evening is set aside for members and volunteers. So, if you haven't joined yet, now's the time to become a Friend of the Stillman Nature Center.

Date: Friday, July 20  
*If Friday is cloudy, we will try again on Saturday, September 21, weather permitting.*  
Time: 7:00 to 10:00PM

## THANK YOU

During this past wet spring, it almost seemed that you needed a snorkel to get around Stillman. That's why a BIG thank you goes to the **Heller Lumber Co. of Arlington Heights** who donated all the building materials for a much needed foot bridge.

The bridge, located at the east end of the east-west tree line, is six feet wide and approximately forty feet long. It was designed by George Allie and erected by George, Jim Kaltsas, Roy Schodtler and Brian Kaltsas. The second day of construction was a muddy mess and we thank them for their dedicated volunteer effort.

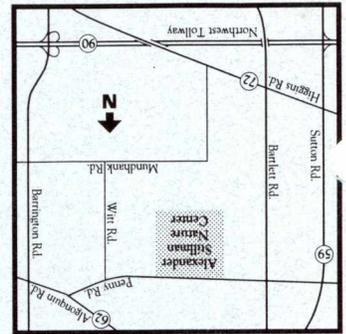
Jim and Roy, both high school teachers, also helped by bringing out groups of hard-working students. From Palatine High School, Roy brought the Ecology Club which, among other things, built and then placed Wood Duck boxes around Stillman's pond.

From Hersey High School, Jim brought Advanced Placement biology students who painted the eastern most section of our brick wall, picked up litter, and cleaned out the octagon building. These are not pretty jobs but they needed doing and, thanks to these volunteers, we can move on to other projects.

## BIRD SEED SALE

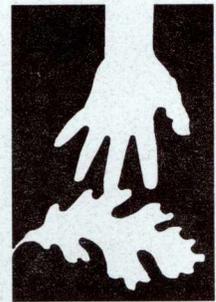
The Barrington Natural History Society is preparing for its annual bird seed sale. All proceeds from the bird seed sale are donated to conservation organizations including the Stillman Nature Center.

If you want to help Stillman while feeding the birds, please call 639-0823 for a bird seed order blank.



(847) 428-OWLS  
 South Barrington, IL 60010  
 33 West Penny Road

**STILLMAN**  
 nature center



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*If you aren't already a Friend, please consider joining us.*

- Yes, I'd like to become a Friend of the Stillman Nature Center. I enclose my tax deductible contribution of \$\_\_\_\_\_.
- I'd like to help as a volunteer with programs or land management at the Stillman Nature Center, please call me.
- Please send a gift membership from \_\_\_\_\_ to the name and address listed below.

Name \_\_\_\_\_  
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