

Lesson Plans for How to Write and Eco Mystery

Dear Teachers and Students,

It is an honor to share my adventures in creating my eco mystery series with you. I hope that as you read the eco mystery blogs and **The Adventures of The Sizzling Six** series, you will feel that you are there, out in the woods with the characters in the story. When you finish the eco mystery, hopefully they will inspire you to Become and Eco Detective and to Write your own Eco Mystery, and then to begin taking action in some way, no matter how small, to help conserve our precious natural resources.

Good luck and best wishes on your journey,

Claire Datnow

How to Write an Eco Mystery

Step 1. Research and Field Trips

Before I am ready to sit down at the computer to begin writing an eco mystery, I start by researching the species at the heart of the story. I READ everything I can find on the subject including: fiction and non fiction books for middle grade and young adult readers. I also read adult books and articles in newspapers and magazines. I look at videos on the topic. I search the internet for websites and information about the species. I contact experts on my species for more information. Then I follow that up with FIELD TRIPS to see what these scientists are doing to conserve the species. The field trips are the most fun, especially getting to meet the team of scientists devoting their lives to studying and conserving the rich diversity of life on our planet for future generations to enjoy.

To inspire you to write your own eco mystery-adventure, I invite you to follow my *Writing Eco Mysteries* blog. In these blogs I invite you to come along on the field trips I took to do research for **The Adventures of The Sizzling Six: Return of the Red-cockaded Clan**. You don't need to buy a ticket, pack a suitcase, or board a bus, all you need to bring along is your *imagination* and your *curiosity*! Your journey begins as we step off into the unknown of a writing project and see it through to its final destination.



WRITING ECO MYSTERIES (Blog 1)

A trip to the Talladega National Forest, Alabama

To write **Return of the Red-Cockaded Clan**, I need to get the feel and look of the woodpecker's natural habitat, which will be the setting for my eco mystery. With this in mind, I

set off on a trip to their nesting site in the Talladega National Forest, accompanied by my husband Boris and Greg Harber from the Birmingham Audubon Society. We arrive there late in the afternoon, after a rain shower. The beauty of the place struck me immediately, and I know that I will write about it in my story . . .

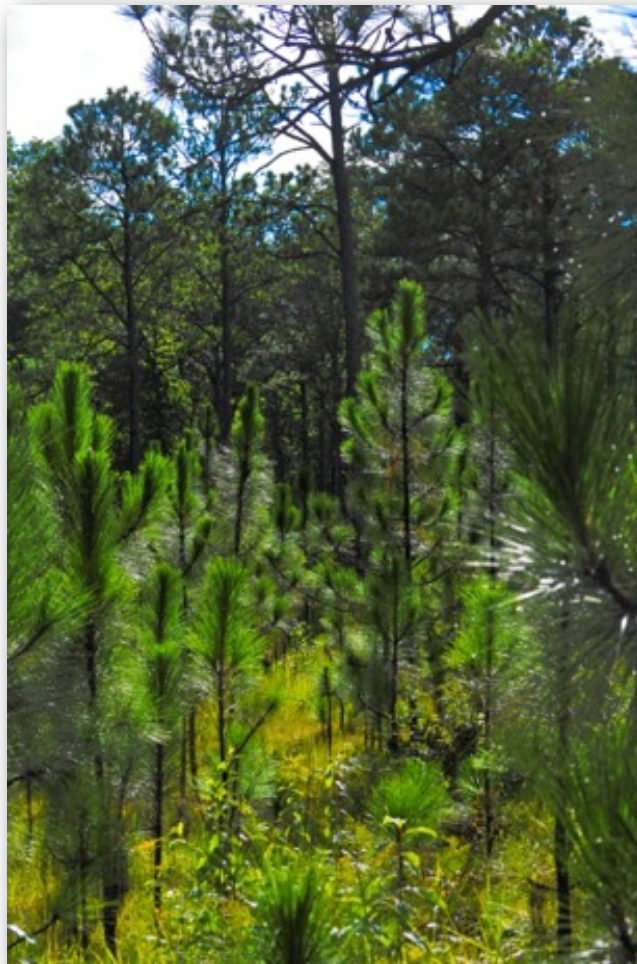


On the Road to the Talladega Forest, Alabama

I close my eyes, enchanted by the sound of the wind roaring through the pine needles and branches, in alternating low and high octaves, like fingers strumming on a string instrument. I inhale the earthy, sweet scent of pine resin after the rain. I gaze at the glistening raindrops suspended from the needles of young Longleaf pines, like crystal beads hanging from a chandelier.



At the top of a gentle incline, I pause to enjoy the fern clad, park-like understory beneath the trees. In the open gaps created by fire and fallen trees, young Longleaf pines march up the hill, clustering together in various stages of growth. Some Longleaf seedlings are in the grass stage, not growing much above ground while putting out a tremendous root system below ground. In this stage, Longleaf pine seedlings resemble a clump of grass—hence the name. Other Longleaf seedlings are in the rocket stage, when they grow rapidly in height.



Longleaf trees in various stages of growth

Yet I couldn't help noticing that there are no mature Longleafs in sight. The magnificent old-growth Longleaf forests once reigned supreme from Virginia to Texas, playing a vital role in the culture and natural history of the South, and providing a unique habitat for more than 40 different plant species per square meter and several wildlife species that are now threatened or endangered. Today less than 3% of the longleaf forests' previous range remains. And these old-growth ecosystems are few and far apart, which endangers the very existence of the Red-cockaded Woodpecker.

Our guide, Greg Harber, points out four Red Cockaded Woodpecker nests. He tells us that these nests have been excavated by forest rangers in tall Loblolly pines. I listen for, but don't hear the woodpeckers calling. Greg says we need to come back before sunrise, or at sunset to see them leave or return to the nest; **that will be our next trip!**



White Sap leaking from Red-cockaded Woodpecker's Cavity

Questions start popping into my head: Why have the nests been artificially created? Why are streaks of resin leaking around the nests? Why are there black burn marks on the tree trunks? Why have these forests been decimated? What can be done to restore the Longleaf pine forests? What can be done to save the RCW and other endangered or threatened species? I know that the protagonists in my story, six determined, gutsy teens, will ask these questions and that they will be plunged into a complicated and even dangerous eco mystery that they must solve to help save the RCW. That's all I know right now, but I'm confident that the story will begin to take shape as we continue our adventure.

[Making Connections: How did this experience of being in a forest weave its way into my eco mystery?](#) Read the passage from Return of The Red-cockaded Clan (pages 38-40):

We follow the rough trail winding through open patches of tall grass bordered by only a few longleafs and many soaring loblolly pines. As we hike along, our guide explains that the RCW prefers open forest habitats. They nest in loblolly pines at Bartram as most of the old longleafs were cut for timber. In the sunny spaces between trees, wildflowers bloom. Young longleaf pines, in various stages of growth, sprout in the sun. Some longleaf seedlings look like clumps of grass. Other longleafs are taller, with a white tip that looks like a candle, or maybe a rocket shooting out of a brush of pine needles. I look around but don't see any mature longleaf trees, only tall, skinny Loblolly pines.

There are several other places in the story that describe the longleaf forest, when you find them, note down the page number.

Read this passage (page 84):

The wind sings through the trees in alternating low and high octaves, like fingers strumming on a guitar. The earthy, sharp scent of pine resin after the rain fills the air, and raindrops suspended from the needles of young longleaf pines glisten like crystal beads on a chandelier.

Which of the five senses have used to describe a longleaf forest?

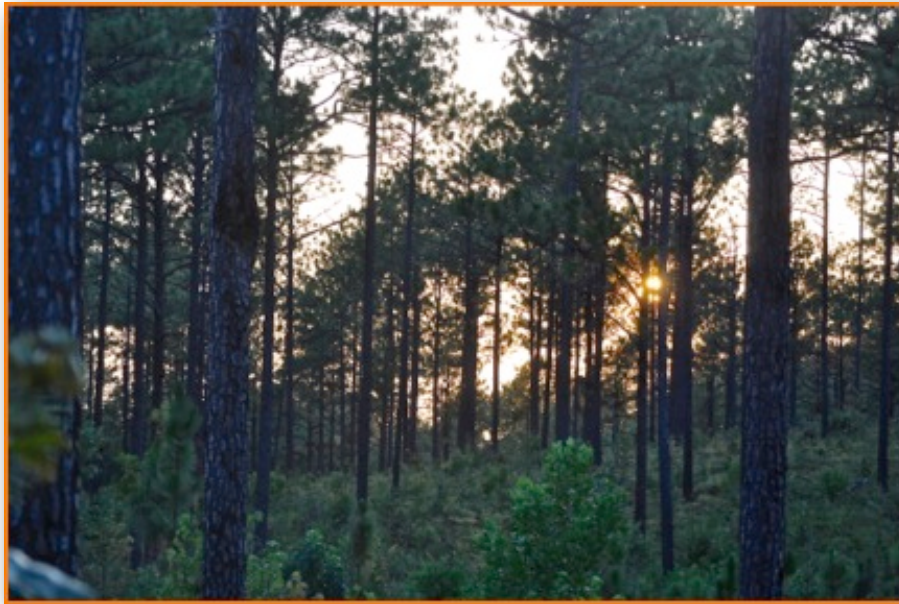
WRITING ECO MYSTERIES (Blog 2)

In Search of The Elusive Bird and a Ghost Town

Our journey continues. All you need to bring along is your imagination and your curiosity!

Towards evening, we set out on our second attempt to catch a glimpse of the Red-cockaded Woodpecker in the Talladega National Forest. As Boris and I speed along highway 280, a feeling of outrage rises inside me as we pass clustered suburbs, sprawling parking lots, and commercial shopping centers gouged into forested hillsides, destroying the lovely contours of the Appalachian foothills. I know that I want to put that feeling of outrage at the way we keep obliterating the natural beauty and habitat around us, into my eco mystery. A few miles out Sylacauga, the road undulates through a dense forest. Even on the edge of the National Forest, scattered houses and trailers scar the woods.

A few miles on, as the sun hovers low in the West, we climb the stony path worn into the wild grass by the tread of feet. Where the trail starts to peter out, we spot the four Red-cockaded Woodpeckers' nests we had visited a few days ago. Boris sets up the camera up on a tripod. Then we stand and wait. We feel confident that we will at see the birds returning to their nests for the night. The musical trill of small birds flitting high above and the electric chirr of cicadas in the grass below, serenade the coming of dusk. Still no sign of the woodpeckers we have come to see. The sun sinks lower, spreading a tangerine glow in the West.



Talladega Forest at Sunset

In the East, cotton-ball clouds, reflecting the colors of the setting sun, melt into candy-cotton pink. We gaze at the nest, silently waiting and hoping for just a glimpse. *Rat-tat-tat!* The woodpecker! Maybe it's on the other side of the tree trunk. Nothing to see. I pick my way toward the furthest tree with a nest in it, hoping to see the bird. The little path disappears. I wave my hand back and forth shooing biting insects away. The colors of the dying sunset fade the trees to black silhouettes. I find myself looking anxiously over my shoulder. Will my protagonists, The Sizzling Six, spend a night in the forest? How would they feel lost in the woods at night? A half

moon rise between the pines, like a delicate paper lantern.



A ghostly half-moon in the Talladega Forest

In the fast sinking light we make our way out of the woods, disappointed but not vanquished. Bird watching is all about patience . . . maybe we'll spot the elusive birds next time.



A Ghost Town: Robertson's Crossing, Autauga, Alabama

Two days later, we join Greg Harber and the Birmingham Audubon Society on a trip in search of Mississippi and Swallow-tailed Kites and Wood Storks—regular late summer visitors to the Tombigbee and Alabama River systems in the upper coastal plain. Our caravan halts at

fields of blooming cotton and mown hay. We step out of the car into the blazing heat and red dust, to gaze up into the sky, through binoculars, at the amazing acrobatic maneuvers of kites catching insects in mid flight. Another bonus is the good down home lunch of fried chicken and catfish with cabbage, collard greens, beans, squash and cornbread at Chef Lee's in Autaugaville. The ghost town, of Robertson's Crossing, near Autauga, is special gift for me. I doubt that I will be able to resist weaving it my story. Somewhere in the story my girls will spend the night, scared out of their wits, in this ghost town.

Making Connections: How did this experience weave its way into my eco mystery?

Read the passage from Return of The Red-cockaded Clan (page 155):

We sit and wait until the grey half light of dawn turns to silver, sponging away the darkness. Slowly, silently the sun begins to peek above the rim of eastern horizon, splashing the sky with bright colors. My stomach growls hungrily. *If I could lick the sunrise, it would taste like a smoothie of mango and peaches, oranges and strawberries, dribbled with golden honey, I think to myself.* Another thought pops into my head: *someone, somewhere, on the opposite side of the globe, is gazing at this sun sinking into the West as night falls. Which means day and night are linked, and that there cannot be sunrise without sunset! Yet sunrise and sunset cannot occur at the same time in the same place!*

As an author I have control over what I write. In this case I was inspired by the colors of I sunset, but I changed it to a sunrise to fit in with the timeline of the story.

Read the passage from Return of The Red-cockaded Clan (page 58):

Within a few yards of the orchard, we stumble upon a cluster of abandoned wooden buildings. Hairy poison ivy snakes over cracked windows, thorny creepers block doorways without doors, giant trees crowd out the sunlight. Across a deserted field of dried up cotton stalks, there's a cemetery with moss covered tombstones sticking out of the ground like rotten teeth.

Can you tell that the ghost town inspired this passage?

Read the passage from Return of The Red-cockaded Clan (page 152):

A few minutes later, we slip out of the cabin and make our way down the trail by the dim light of a ghostly half-moon. Stepping carefully over twigs and balancing on fallen logs, we try to make as little noise as possible. The forest is different at night.

Read the rest of the passage. Does you get the feeling that the forest can be a scary place at night?

WRITING ECO MYSTERIES (Blog 3)

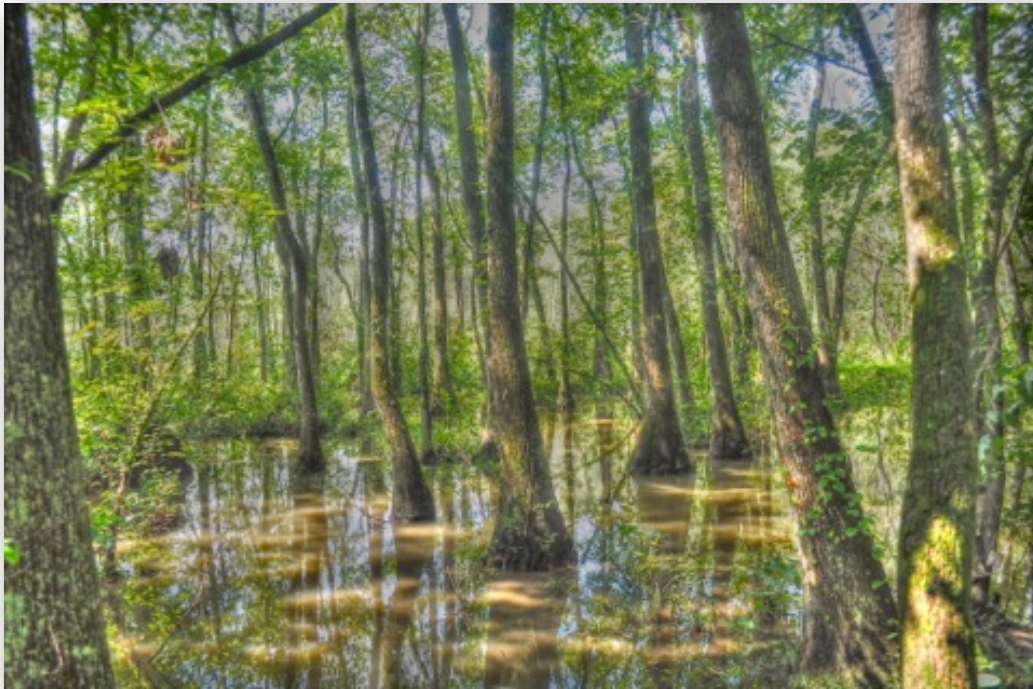
Ebenezer Tupelo Swamp Ecological Preserve Blue Ribbon Cutting at Limestone Park

Our journey continues . . .

Ghosts may be haunting the story I'm stitching together for *Return of The Red-cockaded Clan*. This eerie thought pops into my head as soon as I hear that we are headed for Ebenezer Tupelo Swamp. You see I cannot help associating Ebenezer with Scrooge and the ghosts of Christmas. And in our previous adventures (see Blog 2), we stumbled upon a ghost town, which led to a story about bridge with a haunted history on the road to Sweetwater Mansion.

On the short drive to the swamp, I allow my imagination to run wild! In my mind's eye I picture the corpses of soldiers slain in battle, of lights, flickering like candles, luring travelers to touch the bodies and drown, which haunt [J. R. R. Tolkien's](#) Dead Marshes in *Lord of the Rings*. Should the six girls in my story find themselves in a swamp? How would a swamp fit into the plot, since the Red-cooked Woodpecker lives in longleaf pine forests?

When we arrive at **Ebenezer Swamp**, the bright afternoon sun dispels these ghostly images. Shafts of sunlight sift down through the Tupelo Gum (*Nyssa aquatica*), spreading amber reflections on the water.



We amble happily along the boardwalk, built by the University of Montevallo, into the heart of the swamp, teeming with a rich and colorful mosaic of life, far more fascinating than imaginary ghosts can ever be. From the perspective of the swamp's denizens—beaver, American woodcock, turkey, great blue heron, timber rattlesnake, water moccasin, copperhead, raccoon, opossum, and freshwater clam—their habit is seething with delicious, edible things, crunchy and soft, or squirming and flying. I do not see these inhabitants, but I sense their hunters' eyes watching, waiting motionless ready to snap up their prey in the blink of an eye!

There appear to be oily patches on the water, but our guide assures us that they are caused by beneficial bacteria, which help to break down the organic matter and cleanse the swamp. This classic upland hardwood swamp located in Shelby County is one of the fastest disappearing wetlands in the Southeastern United States. It is a complex eco system that is a crucial home to many species. A few years ago, a Tennessee company applied for a permit to open a quarry just miles from the swamp. The residents were strongly opposed, as was the University of Montevallo, knowing that the acid leached from the quarry into the spring feeding the swamp would damage the eco system. Fortunately, the company backed out when they were threatened with litigation. This is another happy example of citizens banding together to protect significant natural habitats.

Links to explore:



What strange bird haunts the swamp?

Together with local birdwatchers, we enjoy a front-row seat at one of Shelby County's most active wildlife spots as the Mayor of Alabaster cuts the blue ribbon, officially opening the new birding observation deck at Limestone Park. The ribbon-cutting ceremony celebrates Limestone Park as a "magnet site" on the new Appalachian Highlands Birding Trail, which features 38 sites in Shelby and several other surrounding counties. We all applaud the fact that Alabaster teamed up with the Birmingham Audubon Society to construct the handicap-accessible wooden observation deck, elevated above a large wetland area. At the end of the walkway we relax on benches beneath a covered roof to spot birds and munch of granola bars generously provided by the city of Alabaster. Perhaps the Sizzling Six could be part of a community-wide effort to build a birding observation deck? This would be an excellent example of civic activism, don't you think?

Limestone Park's open meadows, Tupelo gum swamps, and nearby woodlands, attract a

wide range of birds, including great egrets, anhingas, great blue herons, woodstorks and roseate spoonbills. While the experienced bird watchers spot several of these species, I glimpse only the egrets and a blue heron. No doubt that I need to sharpen my birding skills. I'm thinking that the protagonists in my story will learn how to become good birders, thereby sharing these skills with their readers.

Making Connections: How did this experience weave its way into my eco mystery?

Unfortunately the swamp did not make it into my story because the Red-cockaded Woodpecker does not live in or near swamps. How would a swamp fit into the plot, since the Red-cockaded Woodpecker lives in longleaf pine forests?



WRITING ECO MYSTERIES (Blog 4)

Sehoy Plantation Deep in the Heart of Bullock County

Just about 130 miles southeast of Birmingham, we turn onto a narrow road, shaded by live oaks, leading to the Sehoy Plantation deep in the heart of Bullock County, Alabama. We have come to see Eric Spadgenske, with the U.S. Fish and Wildlife Service, and Mark Bailey, a conservation biologist, band Red-cockaded Woodpeckers (RCW). As we pause to look around, we sense that we have fallen into another era rich in history. Across the road from a restored brick building that once served as a train depot and a general store, stands a gracious Southern plantation mansion.



Upon entering the plantation's grounds, guests are greeted by a General Store with handsome wood flooring and cabinetry.

These structures and the surrounding forests and fields are part of the stew of history that has resulted in saving the Red-cockaded Woodpecker from extinction.

Seated at oak table inside the beautifully restored depot, which now serves as a conference room, Eric and Mark take time from their busy schedule to explain the work they are doing to save the RCW. Decades ago the forest now surrounding the plantation was cleared for the planting of crops. After the Civil War, wealthy New Yorkers bought the property and came down from the North to escape the cold winters and enjoy hunting for game, deer, turkey, duck, and

especially quail. When the quail population declined in the early 1900s, the wildlife biologist Herbert L. Stoddard, fitted the pieces of a complex ecological mystery together. He understood that quail need open pinewoods where the sun pours down, but the woods were growing clogged with hardwood brush and thickets.



Looking for RCWs In the Open Forest Where they Roost

Stoddard astutely observed that fire started by lightning is key to keeping the forests open. Like a finger moving through a flame, fire stays close to the ground, removing brush and oak without reaching the green pine needles on limbs higher up where the RCW build their nests. Using techniques that mimic nature, today controlled burns are started in on the plantation's forests about every two years, leaving habitat not only suited to quails but also to the Red-cockaded Woodpecker.

But more scientific information had to be pieced together to save the RCW. In order to survive this particular woodpecker has some unique requirements. RCW is the only North American woodpecker that excavates cavities in living pines. They need trees that are at least 80 years old, because younger trees do not have old, soft heartwood free of sap in which the woodpecker can chip out a nest (this process can take several years), Unfortunately, most old longleaf forests have been cut down for timber and cotton production. In the mid-1800s, longleaf forests extended from Virginia to Florida to Texas and covered nearly 90 million acres. Today these forests covered just 3 percent of their original range. Without suitable nests the woodpecker was doomed to certain extinction. Could the RCW be saved?

Translocation of the RCW

At dawn on November 9, 2007, a historic event took place. Seven juvenile red-cockaded woodpeckers were moved from Fort Benning Ga., to the woods of Enon plantation (adjacent to Sehoy). Forty artificial cavities had been installed to provide a suitable habitat for the new arrivals. These cavities were placed in younger loblolly pines, where the RCW will nest and breed. The

rest is a success story. The transplanted woodpeckers have flourished and produced new generations of woodpeckers.



Artificial RCW nest inserted into the pine tree

We have been so entranced by the intriguing story of the Red-cockaded Woodpecker spun by Eric that we are surprised when he declares, “Time for us to go find the RCW in its habit!” To find out what we discovered visit Blog 5
For additional information visit these links:

[**The Red-cockaded Woodpecker on Sehay and Enon Plantations**](#)

[**First-Ever RCW Translocation in Alabama**](#)

[**Red-cockaded Woodpecker and Hurricanes**](#)

[**Enon and Sehay Plantations
A Bright Future for RCW**](#)

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read this passage from The Return of the Red-cockaded Woodpecker (page 34-37)

Then Mr. Forrest tells us some really cool and surprising facts about these woodpeckers. Would you believe that they live in family groups! And each group of Red-cockaded Woodpeckers controls the territory that it lives in. The group is made up of the mother and father—the breeding pair—the father’s sons, and the nestlings, or baby birds.

Information about the RCWs is scattered through the book. Eric Spadgenske, with the U.S. Fish and Wildlife Service, and Mark Bailey, a conservation biologist, provided much of the initial information.

In this blog I write that Herbert L. Stoddard, fitted the pieces of a complex ecological mystery together. After you have finished reading *Return of The Red-cockaded Woodpecker*, can you explain in your own words what ecological mystery the scientists had to solve.



Biologist banding a Red-cockaded Woodpecker—notice the red feathers on its head

WRITING ECO MYSTERIES (Blog 5)

On The Trail of Red-cockaded Woodpecker

We bump through the tall grass and brush to the nesting site of a male RCW. As the sun drifts lower, we hear the raspy chirp, chirp of the woodpecker. Eric and Mark train powerful binoculars on the nests, easily detected by streaks of sap running down the bark. With net at the ready, Eric waits patiently, ready to spring into action.

When the bird, at last, decides it's time to roost in the nest, Mark scratches on the tree trunk with a stick. As the disturbed male attempts to exit the nest, Eric skillfully captures him in the net suspended on a long pole. Gently, but firmly he bands the capture bird, precisely recording the number and color combination for future identification. Eric and Mark often work from dawn to dusk, sometimes high off the ground, amid this immense green canopy, lassoing red-cockaded woodpeckers (*Picoides borealis*), shy, little tufts of black and white feathers whose numbers have dwindled disastrously in the past 150 years as a result of the wholesale deforestation of the Southeast.



Looking around I can imagine the magnificent old-growth forests of gnarled longleaf pines, set in a carpet of golden prairie grasses and green ferns, which once stretched away in all directions. As we rock our way out of the forest, a magnificent wash of pastel colors flames in the west, bidding us farewell and good luck on our next adventure.



A Bright Future for the RCWs.

In less than ten years the future of the red-cockaded woodpecker on private land was towards extinction. Today, with the cooperation of biologists, land managers, and landowners, the species is recovering.

Outdoor lovers have applauded the Lanier family's ownership, citing meticulous cultivation of wildlife habitats and the generous donation of almost 20,000 acres to the Alabama Forest Resources Center. Donations of such "easements" keep the land under the ownership of the donor, but bar any future development of the property, thereby maintaining natural habitat in perpetuity. Lanier's donation was the largest in Alabama history and one of the 30 largest in the Union.



How to weave this experience into my eco-mystery, *The Return of The Red-cockaded Woodpecker*?

The Sizzling Six, protagonists of my story, will observe how dedicated and patient field ecologists need to be in their efforts to conserve threatened species—they are often the unsung heroes. The girls will also absorb the curiosity, dedication and the scientific expertise needed to solve complex ecological problems.

Links to explore:

[The Red-cockaded Woodpecker](#)

[Red-cockaded Woodpecker Survey Protocol](#)

[Birmingham Audubon Society](#)

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read this passage from *Return of The Red-cockaded Woodpecker* (pages 136-137).

Now this sounds a whole lot more exciting! I start to imagine myself lurking through the piney woods, toting long-handled wispy nets and looking for young unsuspecting woodpeckers nestled in their beds with no idea of the great adventure that lies ahead!

Why does Sarah think capturing woodpeckers more exciting than sewing useful bird bags?

Read this passage from *Return of The Red-cockaded Woodpecker* (page 198).

In anticipation of this exact moment, Mr. Forrest stations himself beneath the tree. He's holding a net, suspended on a long pole, underneath the nest opening. One of the biologist taps the tree with a stick to force the bird out. With a swift move, Mr. Forrest captures the bird and lowers the net. He transfers it gently to one of the bird bags we made. A warm feeling washes through me, seeing those bags being put to good use.

What is the purpose of capturing the woodpeckers?

WRITING ECO MYSTERIES (BLOG 6)

Banding The Red-Cockaded Woodpecker

Just a few years ago, the trend for red-cockaded woodpeckers (RCWs) on private land in Alabama was toward extinction. Today, the future is looking brighter as biologists, land managers, and landowners employ new techniques and a new level of enthusiasm to the recovery of this endangered species. One of the most promising techniques in endangered species population management is translocation, or the relocation of individual animals from one population to another. This [video](#) was shot on location at the Sehoy Plantation in Bullock County, Alabama. Click on this link:

[The Red-cockaded Woodpecker: An Endangered Species](#)

In the early years of wildlife management, biologists successfully established techniques for improving game populations such as white-tailed deer and wild turkeys by relocating them from areas of where they species were still plentiful to areas where that no longer existed. Even though these techniques were commonly employed for game species, the conventional thought regarding rare or endangered species was a hands-off approach to preservation through strict protection. However, experience has proved that a hands-on approach is a vital tool for saving endangered species.

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read this passage from Return of The Red-cockaded Woodpecker (page 141)

Mr. Forrest: *Translocating birds takes care and skill. Before translocating juvenile RCWs, we band them when they are nestlings. In this way we can be certain of the family group they belong to. We transport them, at night, to their new location where we will release them at dawn.*

In this blog I explain that experience has proved that a **hands-on** approach is a vital tool for saving endangered species. Can you explain why the biologist decided to translocate the birds instead of waiting to see if they would recover in nature without their help?

WRITING ECO MYSTERIES (Blog 7)

Visit to Nature Centers and School

To put together the story, *Return of The Red-Cockaded Woodpecker* we visited the Wehle Nature Center, Gwin Elementary School, and Ruffner Mountain Nature Preserve. How will these experiences inform my story?

First, by talking to kids and observing them learning about nature, helps my mysteries come alive. Second, steeping myself in nature inspires me to create authentic settings for my stories. Third, environmental projects in the schools provide the “action” component to my eco mysteries. I’ll be adding these ingredients to the book.

I thoroughly enjoyed presenting a workshop for six graders at the Wehle Nature Center, near Auburn, based on [The Adventures of The Sizzling Six eco mysteries](#). I truly looking forward to seeing what the students, with the guidance of Mrs. Schley, create.

The following week, I visited Traci Ingleright’s fifth grade enrichment class to observe Helena Uber-Wamble, educational director of the Birmingham Audubon Society, do a workshop about owls.



The students dissected owl pellets and recorded what they had found inside. Mrs. Ingleright’s class will be making bird bags for temporarily holding Red-cockaded hatchlings after they have been removed from the nests. They will then be banded by Eric Soerhin and his team at the Wehle Nature Center, and then returned, unharmed, to their nests.

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read this passage from *Return of The Red-cockaded Woodpeckers* (p. 136)

There is one problem. The bags that we bought to hold the birds captured for banding are defective. They allow the birds to escape, and they shred when washed. Could your students design and make a better bag? I’ll send one of the bags we’re currently using.

Media Mint Publishing/Claire Datnow Eco Mystery series

You can tell that I used the student project at Gwin Elementary in my eco mystery.
Were the bags that the students made for the biologists work?



WRITING ECO MYSTERIES (Blog 8)

Audubon Christmas Bird Count

On a frosty Saturday morning, we woke to the first rays of the sun nibbling at the dark horizon, turning the sky from grey to silver. While we slurp down mugs of coffee inside our cosy house, the more hardy bird watchers had already begun the Birmingham Audubon Chris. By the time we join the experienced bird watchers, the sun had taken the sharp edge off the wintery chill.



Cluster of Black Eyed-Susans Nipped by the Frost

Standing in an old pecan grove near the visitor center at Ruffner, we spot several woodpeckers. I imagine the family that once harvested pecans here. Perhaps their large family helped with the backbreaking work crouched over and duckwalking beneath the trees, digging under the carpet of fallen leaves to find hordes of nuts. I lean over and pluck a nut on the ground, crack it open, and chew on the meaty pecan, thinking of the hours that that long-ago family spent cracking, and shelling nuts to bake into delicious homemade pies. Leaving the sunny pecan orchard, our group, led by Greg Harber, hikes up the step trail to the top of the mountain. We don't see many birds on the crest, but the panoramic view of the rolling hills with the downtown's sky scrapers in the distance is most enjoyable. By noon, with additional stops, over 40 species of birds were identified.

How might I incorporate this experience into the eco mystery I am writing about the Red-cockaded Woodpeckers? Perhaps Sarah and Grace, the protagonists of the adventure, could stumble into an abandoned pecan orchard? Participating in the count, which provides critical data on bird population trends, and climate change, is well worth the effort. The data from the over 2,000 circles across the country is entered in a central data base after the count, which then is available for research.

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Compare what I wrote about the pecan trees in this blog with what I wrote in Return of The Red-cockaded Woodpeckers (page 58):

Soon we come to an overgrown pecan grove. The old trees, planted in rows, cast long, black shadow on the ground. Above my head their spreading branches tangle with one other. They haven't been cared for in a long time. I imagine the family that once harvested pecans here, crouching down to dig for fallen nuts until their backs ache. I dig for pecans buried under the leaves. Most of them have been eaten by squirrels, but I find one that's not eaten. I crack it and chew on the meaty nut inside. I think of the hours that, that long-ago family spent shelling nuts to bake into delicious homemade pies.

How did I add to the description to make it more spooky?



The Author with Traci Ingleright's Eco Brains students.

WRITING ECO MYSTERIES (Blog 9)

Roebuck Springs/East Lake Park Audubon Trip

For those who have been following my blog about the process of writing eco mystery, *The Return of the Red-cockaded Woodpecker*, this blog moves from the first blog at the height of the summer to the depths of winter. I hope I can use this trip to capture the experience of bird watching in winter.

We woke to a frosty January morning, as the rising sun flushed the dawn sky with shades of tangerine and gold. For a moment, I debated if it was worth abandoning my cosy bed for a frigid bird walk.



Then bravely donning thermal underwear, Boris and I headed out to join the Birmingham Audubon Society birders on the field trip to East Lake Park. As we strolled around the lake with gloved hands shoved deep into our pockets, we admired the ducks and coots, paddling serenely on the cold water, creating a perfect portrait in silver, white and grey.





On an island in the lake, five plump Black-crowned Night-Herons, sitting very still on a dead branch, warmed themselves in the wintery sun.

I searched for birds calling to us high in the trees, but found them difficult to spot. With the help of our expert guide, Helena, and a pair of good binoculars, I spotted a busy Red-headed woodpecker, hopping up a telephone pole, and glimpsed smaller birds camouflaged in the trees. Even sans birds, the bare branches of the sycamores wove a lovely, lacy filagree against the pale winter sky.



Despite our red noses and cold hands, I felt invigorated by the other birders who freely share their love of birds and their zest or life. Indeed, birds of a feather do flock together!



[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read the passage about winter (p. 131):

It's an unusually warm day for winter. Lifting our faces upward, we enjoy the gentle tickle of the sun trickling down through Alba Maizie's bare branches. Against the tree's silvery-brown trunk and brown leaves, clinging to the bare branches, we look like exotic flowers in our fleece jackets of peach and pink, lime green and peacock blue.

Now compare it with the bitter cold winter day I describe in this blog. I decided to make it a warm winter day in the story because I don't think The Sizzling Six would want to be in the tree house on such a cold day—a writer tries to make the behavior of the characters in the story believable.

WRITING ECO MYSTERIES (Blog 10)

Eco-Brains Students Help Biologists with Bird Banding

My adventure in writing the eco mystery, *The Return of The Red-cockaded Clan*, continues at Gwin Elementary School with Traci Knight Ingleright's "Eco-Brains" fifth graders. You see, in each eco mystery the protagonists help protect an endangered or threatened species. To do this they must solve a complex eco mystery and then take action to save that species. The "bird bag project" the Eco Brains are working on is the missing "action ingredient" I need.

I first heard about the project from Helena Umer Wamble, Education Director of the Birmingham Audubon Society. As a result, I spent a fascinating morning with Mrs. Ingleright's fifth graders, observing them working on this special project.

The students explained that a light bulb went on when biologists at the Whele Nature Center told them that the commercially manufactured bags were defective. The bags, used to capture birds for banding, allowed birds escape, and ripped apart when washed.



With the help of their teacher, they brainstormed a way to design a better bag. They then sent the bags to the biologist for approval and testing. After their bags passed the test, the students have been hard at work making bags.



This is just one of the many projects that has earned the Eco-Brains a Silver Medal from the National Wildlife Federation's Eco-School program—and the teacher the title of Hoover Elementary School Teacher of the Year. The students' knowledge of the Red-cockaded Woodpeckers' habitat and life cycle was impressive. These students' dedication to becoming wise stewards of our precious natural resources have renewed my creative juices and my commitment to writing eco mysteries for all to enjoy.

[Making Connections: How did this experience weave its way into my eco mystery?](#)

Read the passage from Return of The Red-cockaded Woodpecker (page 198):

With a swift move, Mr. Forrest captures the bird and lowers the net. He transfers it gently to one of the bird bags we made. A warm feeling washes through me, seeing those bags being put to good use.

Do The Sizzling Six feel just as much pride for helping the woodpeckers as they would if they won a medal?

WRITING ECO MYSTERIES (Blog 11)

Eco Brains Science Camp

A shout out for the entertaining and informative Science Camp at Gwin Elementary School, organized by Traci Inglewright. The students viewed fascinating raptors close-up thanks to Becky Collier, program coordinator at the Coosa 4-H Center and her assistant Sunny Cooper. Ms. Collier shared stories about how these birds were injured—often by the careless behavior of humans—and can no longer survive in the wild.



Becky Collier with Barred Owl

Gwin students also participated in hands-on ecology related activities presented by student teachers from The University of Alabama. Congratulations to Traci, named the **Best Environmental Educator in Alabama**, by the Environmental Education Association of Alabama. She works tirelessly to teach our children how to become wise stewards of our precious natural resources.



Third graders trying to clean oil off eggs and feathers (simulation of an ocean oil spill)



Students playing the role of migrating birds and the obstacles they must face to survive.

[Making Connections: How did this experience weave its way into my eco mystery?](#)

What project did the students in my eco mystery I have to complete for their science teacher Mrs. Green?



The more you learn about nature the more you will enjoy being in the great outdoors!

Other Literary Devices Used in the Eco Mystery

—**Contrast and Contradictions:** When a character says or does something that contradicts (is the opposite) of what he has been saying or doing all along. Ask yourself: Why is the character doing that?

Read this exchange between the three girls (page 91):

"My Dad's going to be cutting old pines this week. He says he needs to do it before the government stops him."

"What?" I exclaim. "If there's a cavity in one of those trees, the birds will die!" I can feel my face flushing with anger.

"They can go some place else." Latoya puts her hands on her hips.

"My uncle says we need to follow the law that protects these birds, because they're endangered." Grace tells her.

"Your uncle's chicken!" Latoya jeers.

Grace and I exchange looks. "Oh, Latoya, Latoya—you have so much to learn," Grace says, shaking her head. "You poor thing, you."

Latoya locks her eyes on Grace's. Neither of them blink. Finally, Latoya throws back her head and laughs. "Hey, I'm just messing with you!"

Why is Latoya "messing" with Sarah and Grace? Is she trying to protect someone? Can you predict if Latoya can be trusted to help Sarah save the Red-cockaded Woodpeckers.

—**Wise Words:** When a character offers serious advice to the main character. Ask yourself, "What is the life lesson and how will it change the character? This may be the theme of the story."

Read the passage (page 120):

"I hope that this project has given you some idea of the hard work and dedication necessary for scientists to find answers that will help to save endangered species. It's important to remember that scientists do not expect to get immediate answers. They spend years observing, experimenting, drawing conclusions. They don't get answers to unsolved problems from the Internet."

Ask yourself: What is the life lesson and how will it change the character? This may be the theme of the story.

Read the these passages (on page 23, 120, and 195):

When it comes to nature I'm like a kid hooked by a magic show. Not the kind of magic where frogs turn into princes; the kind of magic where curiosity makes me want to find out more. My science teacher says: Nature is like a magic show, and science is our attempt to figure out her tricks.

"Thank you, Alex and Rose, that was very entertaining and creative. Nevertheless, while I enjoy folktales, they don't explain how the world works in the way that science does, do they?"

"Students, we could make the Red-cockaded Woodpecker the greatest conservation success story in the history of the nation. We know what the answers are. We know what to do to save these birds. We know what it will cost. Are we as a nation—all of us—willing to do it?"

We watch him walk away, his words ringing in our ears, feeling part of something important, something worthwhile.

Do you think this is the theme of the story? Explain.

—**Aha Moment:** When a character realizes or figures out something. Ask yourself: How will this change things.

Read this quote on page 172 and 173

Grace pushes away her plate and chews on her lower lip. An unspoken message passes between us: *Latoya's father is about to get himself into a big mess.*

I have to decide if we should warn Latoya that her father could get a huge fine for cutting down the pines.

How does the decision Sarah makes change things—in particular the way Latoya behaves?

—**Again and Again:** When you notice something happens again and again. Ask yourself, “Why does this keep happening?” The answer will tell you about the theme or conflict, or foreshadow what might happen later in the story.

“Anything’s possible if you’re determined and brave,” Rose says with a mischievous smile.

“Whoa, what are you cooking up?” Grace wants to know.

“Nothing, yet.”

We stare gloomily at one another. No one has come up with an “adventure” for this summer.

Sophie throws back her head and laughs out loud.

“What’s so funny?” I want to know.

“Don’t worry, Sarah, something will come up, it always does,” Sophie’s deep-set black eyes have that dreamy far away look. Sophie is our creative thinker and has a vivid imagination.

I smile thinking: *we have always found adventure in the woods and streams, hills and valleys surrounding our town—and we will this summer, too.*

“Sophie, you’re right. We don’t need to go looking for trouble. Trouble finds us, and we are always ready to take it on!” Grace agrees.

Does this will tell you about the theme, or foreshadow what might happen later in the story?

—**Memory Moment:** When the author stops the action to share a memory. Ask yourself: Why might this memory be important? The answer will tell you about the theme or conflict, or foreshadow what might happen later in the story.

Read the passage from Return of The Red-cockaded Clan (page 110):

“You know, in the story of To Kill a Mockingbird—that we’re reading in class—one of the characters says that killing their shy neighbor, Boo Radley, would be like killing a mockingbird who has done you no harm.”

I nod to show that I do remember.

“What has that got to do with solving our problem?” Clara folds her arms across her chest.

“I didn’t say it has,” Alex retorts.

“Uh, maybe I do see a connection between the mockingbird story and the Red-cockaded Woodpeckers.” I try to put my thoughts in order. “Like . . . I mean, isn’t it up to us to protect

creatures that can't protect themselves." I say.

Does this tell you more about the theme of the story?

—**Tough Questions:** When a character asks herself a difficult question. The answer will tell you about conflict, or foreshadow what might happen later in the story.

Read this passage from (page 179)

I go ahead and email Latoya. I warn her that her father could be fined, or even put in jail for harming a species listed as endangered. Right after I click the send icon, I sit there with an awful sinking feeling, wishing that I could stop the message from flying through cyberspace to hit Latoya in the face. What I've done could have the *opposite* effect to what I intended. I may have rushed Mr. Washington into cutting down the trees to make sure the Fish and Wildlife agents don't have time to find birds on his property. But will my good intentions cause bad results? It's as if each one of my actions is a line in a connect the dot puzzle; you can't see the whole picture until you're almost done.

What is the conflict here and how does it foreshadow the future?

Reference: www.heinemann.com/shared/onlineresources/E04693/NoticeNote_flyer.pdf

WRITING ECO MYSTERY ADVENTURES (blog 12)

The End of One Adventure and the Beginning of a New One



When I began writing the fifth book in my Eco Mystery series, I invited all of you to join me as I ventured across the state to gather material about the endangered Red-cockaded Woodpecker. For those of you who travelled along with me—through my blogs—I hope that you enjoyed the journey as much as I did. The adventure has now ended, as I promised, with the publication of book five of the Eco Mystery series (for middle grades 4-7). For more information:

[The Adventures of The Sizzling Six: Return of the Red-cockaded Clan](#)

I write these Eco Mysteries because I am passionate about inspiring young people to become educated, wise stewards of our precious natural resources.

Summary: The Adventures of the Sizzling Six: Return of the Red-Cockaded Clan

When monster Hurricane Grace slams into the national forest, killing the endangered Red-cockaded Woodpecker and destroying their nesting cavities, six determined teenagers are plunged into a dangerous adventure. Can they save this species from extinction? Can they restore the forest that is the woodpeckers' home? Will they be brave enough to stop their friend's evil father from chopping down the pine trees where the Red-cockaded Woodpeckers live? What can go wrong? One thing is certain—it's an eco mystery, and The Sizzling Six, with the help of a team of brilliant scientist must take action before it is too late!