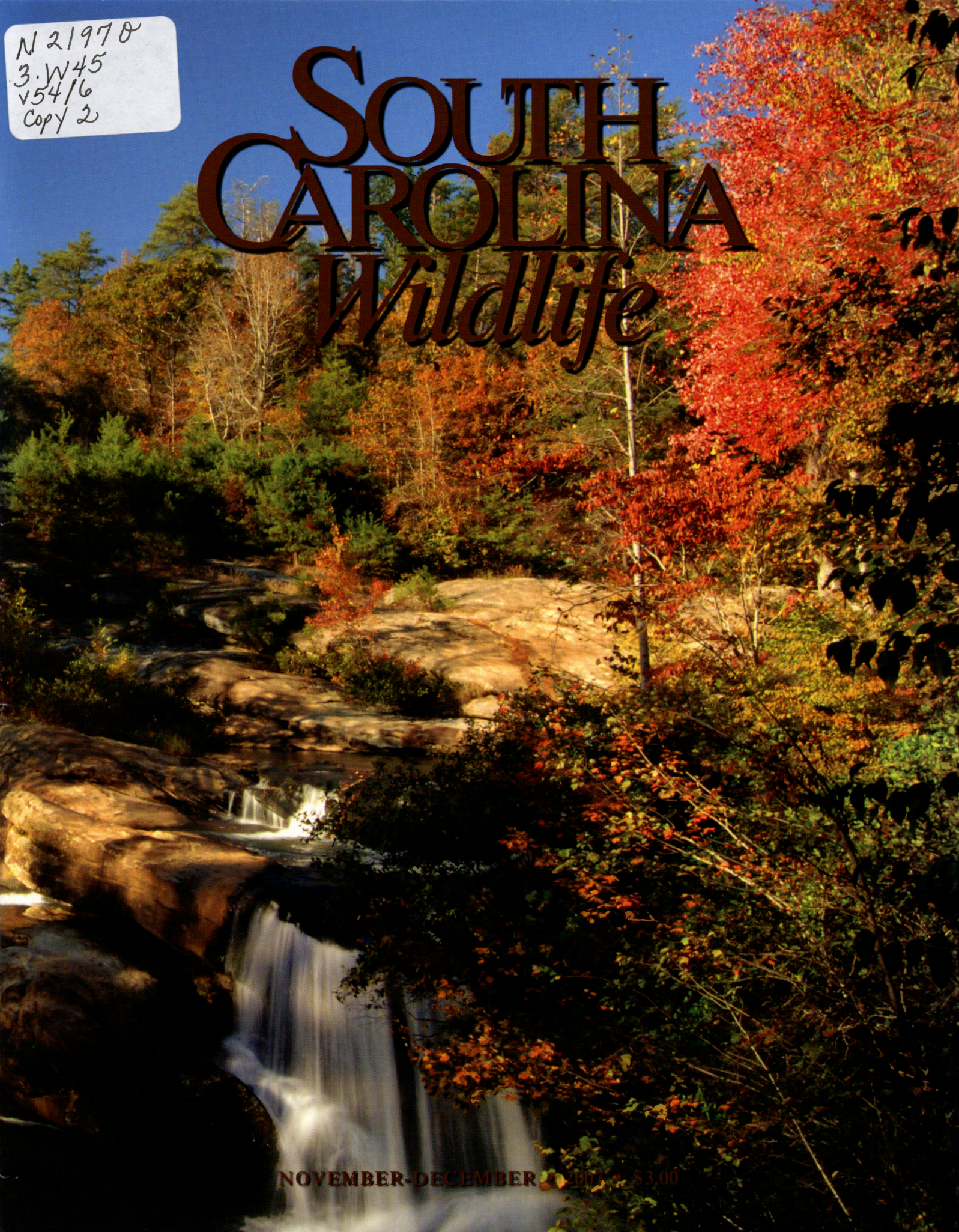


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Directions

AS I TRAVEL AROUND THE STATE, people frequently ask me why I chose a profession in the natural resource area. The answer is quite simple: It was because of my outdoor experiences as a youth.

As you have read in some of my earlier "Directions" columns, I spent most of my daylight hours outdoors (most kids did back then). I captured and cared for little animals (mostly insects, amphibians and reptiles) from an early age and was amazed at their behaviors and responses to captivity. From my interactions with these animals, I learned that I was a part of nature rather than apart from nature and came to understand the essentials of life's water, space, food, air and even parental care.

Too many of today's youth lack that understanding of the way we, as creatures of nature, depend upon our environment. If we do not try harder to facilitate the nature-child connection, I wonder if we will have future environmental leaders who understand the intricacies of long-term human survival on this planet. Who, for example, will have the expertise to handle the projected impacts of global warming?

Of course, helping a child learn his or her part in the web of life doesn't have to be all about preventing impending doom! As parents, we should view nature as a means of adventure—as well as a source of life lessons—for our children. The natural world has an unparalleled way of nurturing creativity and wonder. Think of the excitement when a child sees firsthand how a caterpillar spins a cocoon and then ultimately emerges as a butterfly. Imagine the child's amazement as, through time, she watches a tadpole grow its legs and become a frog.

I encourage parents to allow children to bring these creatures into their homes. Caring for these animals as they pass through their life stages can help teach our children responsibility and make the miracles of life real to them. They also will learn about the reality of death—a part of nature that may be more easily understood by youth through peripheral exposure to the life cycle of an animal like a butterfly or frog.

Only by making sure our children get outside can we provide the experiences of touch, smell, hearing, sight, and even taste, of nature—and the life lessons these experiences teach.

South Carolina has much to offer in terms of the nature experience, and I believe our state's future depends on our ability to provide outdoor areas for parents and children to enjoy. Wilderness lands make great outings for children, and even if they never set foot in a biology class they will still take away some important lessons of life and the natural world. These wild lands are where our children need to learn, experience and play—not in a man-made environment under the spell of TVs, computers and other mechanical creations.

Come to think of it, we could all benefit from unplugging and spending more time in the great outdoors! 🦋

—John E. Frampton, Director
South Carolina Department of Natural Resources



PHILLIP JONES

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Friendly Pat On The Back

I am sending this letter for two reasons. First, to say DNR Director John Frampton's "Directions" columns are very interesting and many bring back childhood memories. Thanks for reminding me of a great time in my life.

Second, I am asking you to relay my thanks to one of the DNR's employees. I have been trying to title a boat motor I bought while living and working in Tennessee, and I contacted Maureen Lane by e-mail. She has been very patient and helpful, answering all of my questions and sending paperwork, which I hope will complete the process. I thought it would be nice for her to hear this.

Jim Sweat
Georgetown

Case Of Mistaken Identity

The September-October issue is wonderful; the front cover image of monarchs drew me in. However, when I turned the magazine over and saw a Gulf fritillary in the center, I immediately went to the credits to see if it got attention. It didn't.

Some folks might be misled, thinking they all are monarchs. I've been raising butterflies on my back porch for several summers, and the variegated fritillary is one of my favorites. I had studied the "family" and immediately recognized your "Gulf frit" in the middle of the monarchs.


Patricia Tanner Candal
Georgetown

Editors' Note: The conclusion to the Roundtable article, "Redeye Special," in the July-August 2007 issue was regrettably cut off. The article describes the impact of exotic Alabama spotted

bass on native redeye bass. The conclusion is printed below:

Can we conserve our special redeye? Or is such a task unworkable? "We were very glad to see that our stream populations for the most part are still pure," points out [DNR fisheries biologist] Jean Leitner, "and their protection will be important to the future of redeye bass in South Carolina. Considering the whole drainage, we can't get the spotted bass out of there—that's just not possible. What we can do is study how the spotted bass are affecting the redeye and other native fish, and use what we learn in making management recommendations to protect those species. The take-away lesson here is to leave fish where you find them—don't move them from one body of water to another. As we have seen, the negative impact on our state's resources can be far-reaching and irreversible."

S.C. Shrimpers Take Heart

I continue to hear that the sun is setting on the shrimping industry. I am fully aware of the cheap, pond-raised junk coming from Thailand and elsewhere. But, nothing compares to fresh, wild-caught shrimp. It seems to me that the shrimping industry has a P.R./advertising problem that could be corrected. I was in Georgetown a few weeks ago and purchased some shrimp right off the boat, took them home and fried them. It was the best seafood dinner served that evening anywhere in Atlanta, I can assure you. With a product that tasty, this industry can survive. More should be done to help these folks involved in this worthy pursuit. 


Leonard G. Moody III
Atlanta, Ga.



JENNIFER JACKSON

IN OUR NEXT ISSUE . . .

Nature photography: it dazzles the eye, documents our natural world and provides entertainment—even a living—for growing numbers of hobbyists and professionals. Dedicated photographers brave cold, heat, bugs, weather and other unfavorable conditions as they watch and wait for the perfect image. In *S.C. Wildlife's* January-February 2008 issue, join writer Joey Poole as he talks with amateur and professional shutterbugs to hear tales of challenge and reward in the field. Plus, get inspired by the winning photographs from our 2007 Outdoor Photography Competition.

Plus . . . catch up with some of South Carolina's lady hunters . . . take a fun look at the Palmetto State's weather extremes . . . find out why kids and duck hunting make a great match . . . and get the scoop on research projects conducted in S.C. State Parks. 

Call of The Hunter's Horn



TED BORG

With one long note on the horn, the huntmaster signals the start of the hunt, launching horsemen and dogs as the standers listen and wait.

by Dennis Chastain

*I*n the pre-dawn darkness at Middleton Hunt Club, just across the highway from Charleston County's historic Middleton Place Plantation, an inconspicuous dirt road leads off into the dark forest. Standing there at the gate in a small circle of light from their vehicle's dome light are the club president, Bill Silcox, and his young son, Will. Only one thing would bring this father-and-son pair out here in the wee hours of an autumn Saturday morning. The Middleton Hunt Club is about to put on a deer drive.

PHILLIP JONES



Horsemen, hounds and hunters make ready as the horn's call, which signals the beginning of a traditional deer hunt at Middleton Hunt Club, fills the crisp autumn morning.

PHILLIP JONES





The day's excitement builds slowly, beginning at "The Bench," where hunters gather for fellowship and a safety lesson before the big event.

As Silcox explains the details of how the hunt will be conducted, one thing is becoming obvious. Regardless of where, or by what means, you have hunted deer in South Carolina, this is something very different, something few have been privileged to see. The Middleton Hunt Club, throughout its long history, has gone to extraordinary lengths to preserve and perpetuate through practice an old, traditional way of hunting deer with horses and hounds. The deer drive itself is part bona fide deer hunt and part pageant—a celebration of a Lowcountry hunting tradition that dates back to the earliest period of the Palmetto State's rich and varied outdoor heritage.

As a heavy curtain of coastal fog lifts from a clearing in the forest, the dim light from a slowly rising sun begins to illuminate the scene. Thirty-five members of the club have arrived one-by-one from all around the Charleston area and have assembled at "The Bench," a historic gathering place that dates back to the club's beginnings in the early 1900s.

Many of the senior members of the club, like Col. James Rembert, a retired Citadel professor, sport the traditional English-style shooting jacket and a sensible dull-green shirt adorned with the official club necktie. Standing there, tall and lean in the grey light of dawn, Col. Rembert bears an uncanny resemblance to South Carolina's late great outdoor icon, Archibald Rutledge. Rembert and his properly attired colleagues serve as a gentle but constant reminder to the younger generation that this is a "gentleman's hunting club."

Rembert misplaced his hunter's horn while on stand in the woods last season, but many of the members carry the traditional hunter's horn, an honest-to-goodness, hollowed-out horn from a bull. Just as countless Carolina sportsmen of a bygone era—from William Elliot to Wade Hampton—communicated with each other and the dogs through a system of notes blown on the hunter's horn, so do these modern-day Lowcountry outdoorsmen.

(Continued on page 8.)



PHILLIP JONES



PHILLIP JONES

Middleton Hunt Club deer hounds train from the time they are puppies to obey their master and flush deer only on club property.

Middleton Hounds

Watching them perform, one cannot help but be impressed by the hounds at the Middleton Hunt Club. During the deer drive, these highly disciplined hunting dogs perform with a degree of restraint that most houndsmen would think impossible. Indeed, this kind of discipline in hunting hounds does not come easy. It requires working with them from the time they are puppies until they take their place among the pack.

Much of that duty falls on Rawlins and Edward Lowndes III. Rawlins recalls that his father, the late Edward Lowndes II, once told him, "You can train a dog to do just about anything if you put the time and effort into it."

Rawlins Lowndes says that he and his brother start working with the puppies with three goals in mind. "When I train my deer dogs, I want them to follow me on the horse through the woods. When I release them, I want them to pursue the desired game, and when they get out of the drive I want them to quit the chase and follow me back into the woods.

"First, to get them to learn to follow me, I start taking them on walks when they are eight months old, and they get in the habit of following me. Then when they get older it is natural for them to follow me around. I introduce them to the hunter's horn at this time. When they wander off, I blow the horn and call them back to me. Sometimes I reward them with a treat when they come back to me. Next, I introduce them to game by dragging around a deer hide and letting them chase it around. It is natural for a dog to chase something, so all I have to do is let them know what it is that I want them to chase. The final step is teaching them to stop the chase. That's a little more challenging. When they come to the road, I pop a bullwhip and this is their cue to stop. I am on a horse, so I just ride up to them and pop the whip and they stop and come back. Over time, as they grow older, they eventually put it all together and you've got a hound you can control." 🐾

—Dennis Chastain



PHILIP JONES

The shared feeling of anticipation is tangible as trucks carrying hunters to their stands make their way quietly through the Lowcountry woods.

As soon as the guests are welcomed and the safety talk has ended, the members pile into the beds of several pick-up trucks and head out into the moss-draped deer woods. You would not think that a pick-up truck could slip quietly through the trees, but on the soft, sandy roads of these coastal woods, the trucks creep along as quietly as cats on carpet. The hunters speak in hushed tones to keep from tipping off the deer. Each hunter gets off at a pre-determined stand until all are in place around the perimeter of the block to be hunted.

Meanwhile, at the other end of the block, the other players in this outdoor drama are getting their act together. Bill Green, once described as the “last of the great Southern deer drivers,” releases the hounds from their wire cages on a flatbed trailer. Although, as every Lowcountry deer hunter knows, it is in a hound’s nature to bark and howl at the prospect of being released for a hunt, these meticulously trained, highly disciplined dogs

mill about in restrained silence. Bill Green and his son Bubba, who is also an accomplished horseman, along with their young assistants, mount their stocky, woods-savvy steeds and the dogs fall into a pack behind the horses.

When all is ready, the huntmaster, Henry Lowndes, blows one long note on his hunter’s horn. The sound reverberates through the woods as it is telegraphed around the block from one stander to the next. Then the woods fall silent. The birds momentarily suspend their song, the grey squirrels freeze in place and every deer in the block perks up its ears. The woodland creatures, great and small, seem to know this ancient signal means that the hunt has begun.

As the horsemen weave their way through the thick woods, the sharp crack of a bullwhip warns wandering dogs to fall back in line behind the horses. In his thick, enchanting Gullah accent, Bubba Green talks loudly to the deer, “C’mon buck. I know you’re in here.” The

bullwhip cracks again. Suddenly, and without warning, something goes dashing off through the woods ahead, and the barking and baying of the hounds rises to a fevered pitch. A mature buck has bolted from his bed and can be heard crashing off through the brush toward an escape route that he knows from past experience.

*Y*oung Dedrick Schweers, stationed at the point where that particular deer trail crosses the dirt road, at first sees only a flash of brown and white, and then the whole deer, complete with a set of antlers, comes flying through the woods. The buck leaps across the road some 50 yards away and hesitates in the thick brush for a precious second, or possibly two. Sixteen-year-old Dedrick can feel his heart pounding in his chest as

he raises his shotgun and takes aim at the deer. The teenager, well-schooled in the rules of engagement, makes a last-second decision not to shoot. It's just too thick. The deer quietly disappears into the woods behind a wall of sweet gum saplings.

The hounds come rushing through the woods howling in sheer delight. They encounter the road and slam on the brakes. The barking stops as abruptly as if someone has thrown a switch. Though it goes against their very nature, their lifelong training will not allow them to cross the road. Elvis, the lead dog, takes one last sniff of the delicious deer scent and trots off back into the woods to find the horses. The remainder of the pack obediently follows the leader.

In a few minutes the dogs start up again and a shot rings out. One long blow on the hunter's horn while
(Continued on page 11.)



PHILLIP JONES

A strong and enduring sense of tradition brings Middleton hunters back to these deer drives year after year.



Riding tack, hunters' horns and a shared love of pursuing game bring Middleton hunters together in life and facilitate a bond that persists beyond death.

In Memoriam

The Middleton Hunt Club has had more than its share of personal losses in the past several years. People who hunt together for long periods of time are often bound in a way that no other fraternity can claim. Never is that bond more strongly felt than when a hunt club loses one of its members in death. Although the members don't often talk about it, when a member of Middleton Hunt Club passes away, the loss is palpable.

In March of 2006, one of the most prominent members of the club passed away. Edward Lowndes II, the huntmaster at the time, was a fixture at Middleton and an iconic symbol of what the club represents. Virtually every member carries with him the mental image of Edward Lowndes gliding through the Lowcountry woods astride his favorite horse, the hounds obediently trotting along behind him. Sitting there snug in the saddle, completely at ease on his horse, and with that ever-present, sweat-stained, wide-brimmed hat, Edward Lowndes struck a pose reminiscent of a Confederate general leading his devoted troops into battle.

In 2004, the oldest, most venerated member of the club also passed on to his reward. Frank Ford

was 100 years old when he died. "Mister Ford" was a real character and an institution at Middleton. He participated in the deer drives right up until the end. Russell Tyler remembers putting him on stand for one of his last hunts at Middleton. "He was pretty frail by then, but I put him out on a deer stand, and he sat there and rested his old L.C. Smith shotgun on his walker. He had already killed a hundred bucks in his lifetime, but he said he wanted to hunt one more time. That man loved to hunt. Everything he hunted was off a horse and with dogs. The only thing he didn't like about 'coon hunting was you couldn't ride a horse." His grandson, Timmy Ford, now carries on the Ford legacy at Middleton.

When one of the Middleton members passes on, the club has a solemn tradition befitting the circumstance and the occasion. They attend the funeral service *en masse*. Then, at a certain point in the ceremony, the club members rise in unison to honor the memory of their departed fellow. At that point, the huntmaster blows three long, mournful notes on the hunter's horn, signifying the hunt has ended. 🦋

—Dennis Chastain



After the hunt, standers share more than a meal—they recall the highlights of the day and memories from hunts past and get to know the club's newest hunters.



(Continued from page 9.)

the hunt is in progress means that someone has taken a deer. It turns out to be a doe. A few more short races ensue over the next half hour, but those deer all get past the standers. Soon the hunter's horn is heard again. Three long blows mean the hunt has ended.

Back at "The Bench," Bill Green explains over lunch that one of the fundamental differences between this style of hunting and more conventional Lowcountry deer hunting is that the dogs are not just cast into the woods to jump and run the deer at random. At Middleton, controlling and containing the hunt is paramount. These intensively trained, highly pedigreed dogs simply file along behind the horses until a deer is spotted or jumped by the drivers on horseback. Only then do the hounds come into play, pushing the deer toward the standers.

"You know, this is the best kind of hunting," proclaims Green. "This is the way all hunting ought to be. Everybody and every thing, in this kind of hunt, is using all the abilities that nature has given him. The deer are smart, and they are using all their natural abilities. The dogs and the horses and the hunters—they're all smart, and they're using all their natural abilities. The only way we ever kill a deer is when the

deer makes a mistake."

True enough. If anything, the rules of fair chase at Middleton probably come down in favor of the deer. But that doesn't bother these dedicated deer hunters one bit. Regardless of which one you talk with, they all say basically the same thing—it's all about the hunt itself, not necessarily bringing home the bacon.

At Middleton Hunt Club, tradition trumps virtually everything else. "If we don't preserve the tradition," asserts huntmaster Henry Lowndes, "it will be gone forever." When asked why they do what they do, club president, Bill Silcox, rather than trying to explain in words, simply points to his son, Will, who started coming to Middleton with his "pop gun" at age four and took his first deer, a nice eight-point buck, last year. "It's all about him."

Harrington Bissell, a forty-something stock broker, confesses, "Sometimes when I'm sitting out there on stand at first light and I hear the horn blow that one long note to begin the hunt, I just bow my head, close my eyes, and thank God that I am fortunate enough to be a part of all this." 🐾

Dennis Chastain is an Upstate outdoorsman and free-lance writer.



Adventures in the (Gravitational) Field

by Elizabeth Renedo

Navigating with a map and compass may not be as flashy as using GPS, but in a crisis they'll never run out of battery power or lose a satellite signal.

Who doesn't love a good action-adventure movie, the kind that makes us feel that maybe if we were in a tough spot, we would have the instincts and know-how to save the day just like our big-screen heroes? Of course, it's pretty unlikely that the average moviegoer will ever be in a situation in which she needs to, say, scale a vertical rock cliff in bare feet, jump out of a moving helicopter into the bed of a speeding truck or outmaneuver a gang of superhuman androids controlled via satellite by a mad scientist out for revenge.

Thankfully, action movies are works of fiction, but even the most well-prepared adventurer will probably run into a sticky situation at some point in his or her outdoor travels. Taking time to learn skills like basic survival and wilderness first-aid can mean you're ready if something goes amiss on an outdoor excursion. But, basic land navigation with a map and compass, once considered essential knowledge for outdoors enthusiasts, is being replaced with faster technology in the form of global positioning systems (GPS).

MICHAEL FOSTER



GLENN GARDNER

Waterfalls—indicated by contour lines drawn very close together around moving water—are just one type of land feature you'll learn to identify on a topographical map like the one Simons Welter (at left) is using to practice map orientation in the field.

Still, even with the advent of GPS and all of its amazing abilities, the unexpected always looms nearby, so it's a good idea to have some basic land-navigation skills. According to Glenn Gardner, host and producer for *South Carolina Wildlife Television* and land-navigation teacher for the S.C. Department of Natural Resources' *Becoming an Outdoors-Woman* program (BOW), "What we usually tell folks is to trust the earth's gravitational field more than a couple of double-A batteries in a GPS unit. GPS also requires a clear view of the sky to work...not always easy to find in the Southeast."

First things first: learn to interpret a topographical map. A topographical, or "topo," map is a two-dimensional representation of three-dimensional terrain. The first time you examine a topo map, it may look like little more than a tangle of squiggly lines and randomly shaded areas, but don't be overwhelmed. With a little practice, you'll see those lines and shades, almost literally, begin to jump off the page.

Every topo map provides in its margins or in a legend the scale and other information that will help you read it accurately. The scale—1:24,000 is common and ideal for most purposes—tells you precisely how much the map has been reduced. On a 1:24,000-scale topo map, for example, one inch on the map represents 24,000 inches, or 2,000 feet, of terrain; one foot equals 24,000 feet of terrain. Maps with scales containing high numbers—1:250,000, for example—are referred to as small-scale maps because they show a larger area, but with less detail. Larger scale maps, like 1:24,000, focus on smaller areas in greater detail, and prove most useful for the average walking trip.

You will notice that the lines, symbols and shading on your topo map show up in different colors; these colors always represent the same features. Black lines and symbols mean man-made features such as roads and buildings; blue shading and lines indicate water; the brown squiggly lines are contour lines that illustrate the shape and elevation of the terrain; green-shaded



PHOTOS BY PHILLIP JONES



Unlike compasses, which work with the earth's magnetic field, GPS receivers use information from global positioning satellites in space to determine a navigator's location.

The DNR offers classes in basic land navigation through its *Camp Wildwood* program for teens and the *Becoming an Outdoors-Woman* program for women. For more information on these programs visit www.dnr.sc.gov and click on "Education."



PHILLIP JONES

areas feature trees dense enough to conceal a platoon of soldiers (about forty men) on one acre, according to original U.S. Geological Survey standards; white areas contain no significant vegetation; red lines represent major highways, and purple is used for features that have been added to the updated version of the map.

To get the most from your topo map, hone your contour-line interpreting skills to a fine point. Understanding contour lines is the key to being able to visualize terrain when looking at a map. It's also the key to matching features on your topo map to terrain features you see around you in the field—an indispensable skill to help you "stay found" if you get off trail.

Identifying peaks and ridges can help you begin to get a feel for the way contour lines depict terrain because they are some of the easiest landmarks to pick out on a topo map.

Picture a cone-shaped paper cup, like you would find dispensed at a water cooler. Imagine taking a marker and drawing a series of rings around the cup. Now, mentally flip the ringed cone upside-down on a table top and look down at it from above with your mind's eye. The smallest ring circles the point of the cone, just as the smallest ring on a topo map circles the summit of a mountain, ridge or hill. The rings on the cup widen bit by bit as they approach the wide lip, which now forms its base. Similarly, the rings that spread out around a small summit ring on a topo map depict the shape of the slopes that lead up to it on all sides. Long ridges are also indicated by a small inner ring surrounded by

widening rings that define the dimensions of the ridge, but the rings are more elongated.

Look at the spaces between contour lines to determine how steeply the elevation rises. Each space, no matter how narrow or wide, represents the same increment of change in elevation. Check the legend for the elevation distance between each contour line. Since each space between contour lines indicates the same change in elevation, lines that are close together illustrate a steep rise and those with wider spaces in-between tell you the rise is more gradual.

Of course, peaks are not the only terrain features you can identify by looking at a topo map. Many other features will appear in the snaky lines as you gain experience reading contour lines. Once you can visualize real terrain when reading a topo map, you will be able to associate the land features around you in the field with those recorded on your map. This is called terrain association, a very useful skill to have if you become disoriented in the field. Make terrain association an early goal in your study of land navigation.

Once you have become comfortable reading topographical maps, you're ready to bring a compass into the mix. Using a compass will help you accurately travel to a specific destination you have located on your map using bearings, or horizontal angles that are measured in degrees in a clockwise direction beginning at *North*, which has a bearing of zero degrees. That may seem like a convoluted concept, but like the swirling lines of a topographical map, once you learn to visualize what bearings have to tell you, their meanings will become clear.

Visualize the way compass bearings work by thinking of the face of a clock. Imagine you're standing in the center of a giant clock, facing the 12, but mentally replace the numeral with a big *N*, for north. You are now pointed toward a bearing of zero degrees. Slowly turn clockwise, and the degrees begin to increase, reaching ninety degrees when you're facing the numeral 3 on the clock dial, 180 degrees when you face the 6 and so on.

Before you take your first bearing, you'll need to learn the parts of your compass. The base plate is the flat, usually rectangular base on which the compass housing—the liquid-filled case that encloses the needle—is mounted. The base plate also has the direction-of-travel arrow marked on it: the simple, often (but not always) blue arrow that points toward the top of the base plate. This is the arrow you will follow when moving along a bearing. The magnetic needle floats in the liquid inside the housing, and turns on a pivot; the end that points toward magnetic north is usually red. The orienting arrow is the shed-like, red-outline arrow inside the housing, underneath the pivoting magnetic needle. It is used to “box” the red end of the needle when determining your bearing. The degree dial is marked out into 360 degrees (typically marked in increments of two) and is located on the outside of the housing. When you turn the degree dial to set your bearing, the red orienting arrow turns with it.

To begin taking a bearing, start out facing north: hold the base plate level and in alignment with your

body. Glenn Gardner advises his students to “hold the compass away from your body so no metal zippers or the like interfere. Think of it as the ‘extension of your bellybutton.’” Next, turn the degree dial so that the zero-degree mark, or north, is at the top, aligned with the direction-of-travel arrow, then turn your body until the red end of the needle is inside the red, shed-like orienting arrow. Or, as Gardner tells his students to remember it: “Put red Fred in the shed.” As you work through the steps, continue to make sure that the compass is level and that the base plate is aligned with your body, “perpendicular to your bellybutton.”

Next, continue facing north, and turn the degree dial so that your desired bearing is at the top, aligned with the direction-of-travel arrow. Now, turn your body until the red end of the needle is again inside the red outline of the orienting arrow. You are now facing your bearing.

When you begin to travel, it's not a good idea to look down at your compass all the time, as this can cause you to veer off course. Instead, while you are still standing at the starting point, facing your bearing, look straight ahead and choose a distant landmark that lies directly on your bearing and walk toward it. An unusually shaped tree, a body of water, a peak, a rock formation or any other landmark that lies directly in your path is fair game. Walk toward your chosen landmark, and when you reach it, take your bearing again. Then choose another landmark to continue the process.

When taking and following bearings, the biggest risk is human error, so it's always best to travel with a



BOB BOWKER

Basic land-navigation skills belong in all outdoor enthusiasts' mental toolboxes, no matter the age or level of experience.

partner who can double-check the bearing and help you maintain course. A partner is also useful to have around when traveling at night or through an area with few distinct features. When you cannot find a useable landmark on the path of your bearing, you can send the partner out ahead, and direct him or her into the proper alignment using hand signals, then walk toward him or her and continue the process that way.

To estimate distances as you travel along a bearing, you need to know the length of your pace. You should measure your pace before you get out into the field, then memorize it to make distance calculations easier once you are on the trail. One pace equals two steps, so when you measure pace, you aren't measuring the length of one step, but two. Simons Welter, who assists with land navigation classes for the BOW program, remembers it this way: “You must use each foot one time to make one pace.”

To measure your pace, mark out a straight line 100 feet long, preferably on a grade. Stand at one end of the line, then begin to walk, taking normal steps along the line. Step first onto your right foot and count each time your left foot hits the ground. When you reach the end of the one-hundred-foot line, write down the number of paces you took. Do this a total of three times, uphill and down, then average the three pace counts to determine

your average number of paces per 100 feet.

To determine the length of your pace, divide the distance by your average number of paces; the resulting number is the length of your average pace. Most people have a pace of 4 to 5 feet. Back in the field, you can use this knowledge to estimate distances by counting your paces as you travel along your bearing. Gardner adds: “With practice, you will learn to determine distances based on the type of terrain and the amount of time traveled.”

Of course, land navigation involves much more than reading a map and taking bearings on a compass. Entire books have been written on the subject, in fact, so this article is just the beginning of your land-navigation education. For more information, check out the National Outdoor Leadership School's *Wilderness Navigation* by Darran Wells, available from The Wildlife Shop at 1-888-644-WILD (9453) or www.scwildlife.com.

With a little study and some practice in the field, you'll be ready to star in your own, preferably not-too-action-packed adventure movie. 🐾

Elizabeth Renedo, managing editor of S.C. Wildlife, is new to land navigation, but very experienced at getting lost. She thanks Glenn Gardner and Simons Welter for their invaluable instruction and for not making fun of her too much in the process, and Johnny Stowe for his helpful comments.

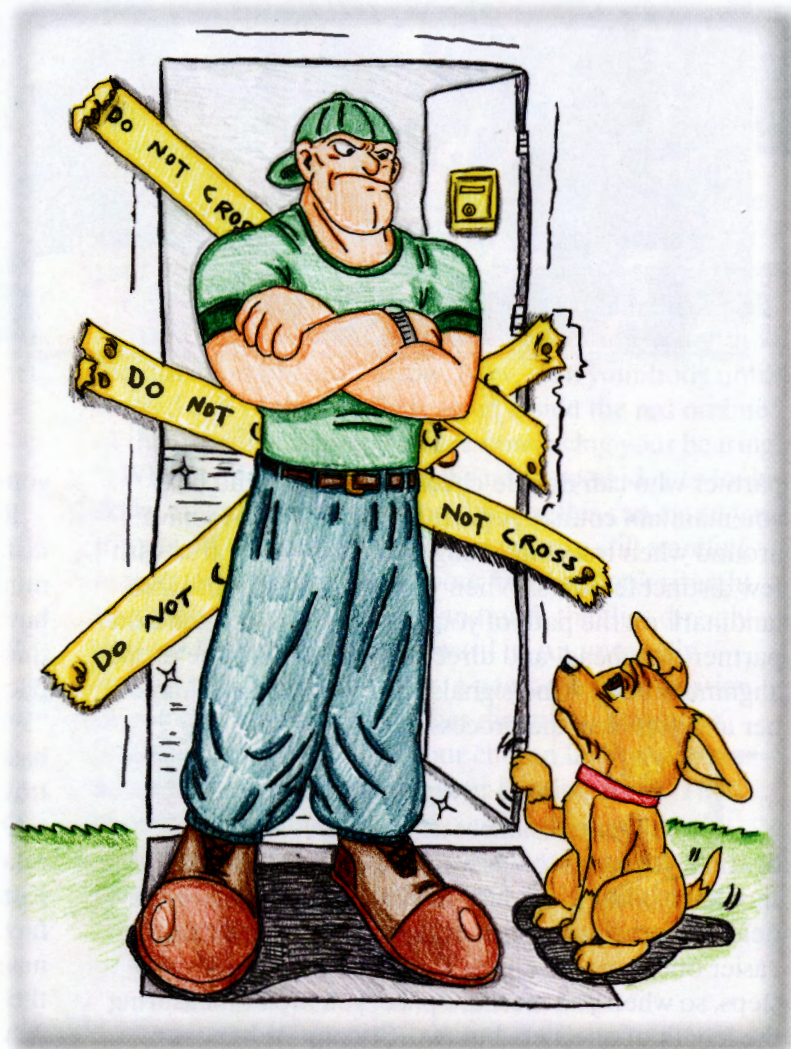


There are many compasses for many purposes: some with bells and whistles for specialized uses, like the one shown on the far left; some that are large and easy for students to read (far right). But, a simple base plate compass (middle) has everything you'll need for most backcountry trips.

Housebreaking and the Family Dog

Puppies bring joy and trouble into their new homes—sometimes in equal measure!

by Jim Mize



ILLUSTRATIONS BY WILLIE DAVIS JR.

Few things bring as much joy into your house as a fuzzy little puppy. But in reality, a puppy is a cute, furry bundle full of stuff you don't want on your carpet.

Sometimes I question whether dogs belong indoors. Firefighters seem to get this. Even though they keep a Dalmatian on hand at all times, the people always sleep upstairs, the whole place is made of concrete and cinderblocks, and the pole is dog-proof.

The truth is, some pet habits that are acceptable outside don't always transfer inside. For instance, my dog likes to dig. On the bright side, I now have a basement.

Furthermore, not all pups can tell *their* toys from yours. My Lab likes to grab the TV remote control and refuses to give it back. I don't mind the teeth marks as much as having to watch *Animal Planet* all the time.

Besides, pups rarely return your things in their original condition. Couch pillows are far less attractive once they look like they went through a blender. At least now I know why they call a pile of pups a litter. After an afternoon with our pup, the house looks like it was recycled by the stars of *101 Dalmatians*.

Developing certain behavioral habits is a must for the well-mannered dog. Also, every pup takes to training differently. I've seen bumper stickers that say, "My dog is smarter than your honor student." I don't own that dog. My bumper sticker says, "This is the only car part my dog hasn't chewed."

You need a few basic commands for all indoor dogs, including, "Get out of the refrigerator!" After this one, I'd go directly to "Sit," "Stay" and "Whoa," followed by "Not there," "Don't eat that" and "Give it back."

Some owners train their dogs to stay off the furniture. I'm not sure how they do this, though I suspect it involves bribes.

Once you have spent some time with your dog indoors, you will notice that your pup's set of bad habits is never covered by the manuals. I mean, who could have predicted you would need a chapter on ceiling fans?

Of all the indoor lessons, housebreaking is the most critical. Housebreaking has never been a problem with my dog; she has broken practically everything *in* the house. In fact, she can break underwear.

Trainers have different theories on the best time to begin housebreaking. My own opinion is that it's best to begin before you let a dog indoors.

Housebreaking consists of several steps, the first of which is setting the dog straight on who is boss. With any luck, you will win the coin toss. After that, the dog needs to know what's his territory and what's your territory. You'll have to figure out how to communicate this without marking it yourself.

Another important way to help the situation is by feeding your dog dry food. This helps in two ways. First, the pup is less likely to overeat, and the less in, the less out. Second, there's that texture thing.

If you watch closely, the pup sometimes tips you off that it's time to go outside. She may look restless, start circling or stand by the door clearing her throat and humming, "Hmmm hmmm hmmm."

I've bought a number of training manuals with chapters on housebreaking. They finally worked . . . once I had enough of them to cover the carpet.

Many pet-supply stores now offer basic training classes. Ever notice, though, that they rarely teach these on new carpet? I've often suspected that the pet shop clerk who teaches housebreaking doesn't really have her heart in it. Just think how much it could cut into their sanitizer sales.

The real problem with trainers is that they're not there when you need them. By the time you can dial their numbers, the people you really need are at Roto-Rooter.

Cat owners never seem as concerned about housebreaking. I don't know whether cats learn faster or their owners give up quicker.

Some pups decide that, rather than go outside, they will just sneak off and go in the worst possible place. There's an expression for this, but it's not fit to print.

Trainers often point out that certain smells trigger a pup's choice of toilet sites.

One scent does for sure—new carpet.

In summary, teaching dogs indoor manners sounds like a lot of effort, but just remember, dogs over the years have developed

the reputation for being "man's best friend." There's a reason for this. If it's your

dog and it goes on Mom's new carpet, you're both in the doghouse. With quarters that tight, you had better be friends. 🐾

Jim Mize is an Upstate outdoorsman still trying to figure out why puppies chase their tails. That's fine, because his pup is trying to figure out why he goes to work every day.



It Takes All Kinds

Calls, crises and capers keep the DNR radio room hopping around the clock.

by Marc Rapport



MICHAEL FOSTER

As calls flicker across computer screens in the cramped little room, Andrew Shipes shakes his head and observes, "If I could do one big thing in this lifetime, it would be remove humanity's collective fear of snakes."

Shipes and two fellow telecommunications operators (TCOs) comprise the staff this Saturday in the S.C. Department of Natural Resources' radio room. The facility operates twenty-four hours a day, seven days a week, tucked away in a small, block building at the old Styx Fish Hatchery in Lexington County's Pine Ridge community, not far from Columbia Metropolitan Airport.

Telecommunications operators in the DNR radio room never know what surprises the next call will hold; they may need to dispatch an officer to help with a serious situation in the wild or on the water, or they may get a chuckle at a snake who's taken up residence where it doesn't belong.

TED BORG





PHILLIP JONES

DNR law enforcement officers' days are not always filled with action and danger; courtesy boat inspections, hunter and boater education, fishing rodeos, hunting and fishing events for children and the disabled and many more community outreach programs also fall under their purview.

Along with reports of drunken boaters and missing hikers, the DNR hotlines receive various calls from citizens encountering alarming creatures in their yards, especially serpents and saurians, and Shipes says the callers are often not just mildly concerned.

"I've had people literally crying because there's a rat snake in their yard," he says. "And I had a call just the other day from someone saying there was an alligator in a drainage creek in Murrells Inlet and asking what should they do.

"I said, 'It lives there. Really, just leave it alone.'"

Unfailingly polite, Shipes and his fellow TCOs—on this sunny morning Crystal Elam and Tiffany Gibbs—field calls from the public on a dizzying array of topics, including a beer can flying out of a car window in the Upstate somewhere and whether it's OK to cast a net for shrimp in a creek off Folly Beach.

The calls arrive on eleven different phone lines—including Operation Game Thief (1-800-922-5431) and the Litter Busters hotline (1-877-7-LITTER)—and they number "conservatively, thirty-five hundred to

four thousand a month," says Sgt. Rick Dye, the DNR officer in charge of the operation.

These fifteen or so TCOs also are responsible for the twenty-one radio channels that serve as an around-the-clock lifeline for the 175 or so DNR officers out in the field at any given time across the state, keeping them in touch with home base and with other law enforcement and emergency response agencies.

"The people in this room are the first line of communication for our officers out in the field," Dye says. "They can be encountering marijuana fields and poachers and who knows what else. They can be in quite isolated areas and in quite difficult circumstances. They have to be able to count on us."

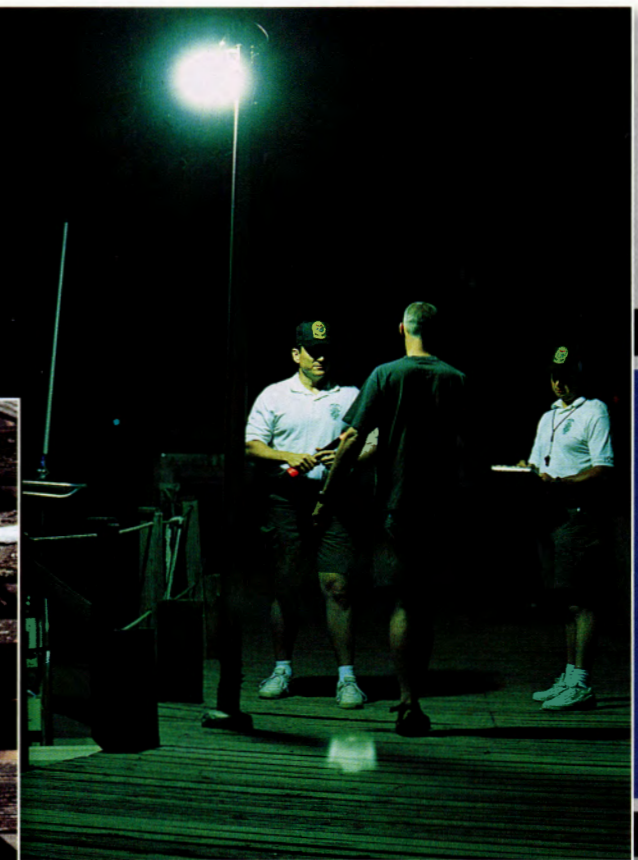
Situations range from emergency to routine, from responding to a sinking boat to simply running a license check on a watercraft found adrift and alone. Rules and regulations change frequently with the seasons and at different locations, and helping officers keep up with them is a big part of the job.

"No one can keep all that in their heads, and we don't



TED BORG

TED BORG



PHILLIP JONES

Whether they're working to keep boaters safe on the water or risking life and limb to make emergency rescues, DNR law enforcement officers, with the help of their first line of defense in the radio room, answer the call whenever South Carolinians need them. Folks needing to rid their property of an unwanted wild visitor should call the DNR radio room, or visit www.dnr.sc.gov/wildlife/nwco.html, for a referral to a nuisance wildlife control operator.

want our officers to look bad, so we need to be able to find that information here—and find it quickly,” Elam says.

Gibbs adds, “I know I was here a couple months before I felt really comfortable with all this, and we’re still always being trained.”

Besides educating themselves, educating the public also is part of the job.

For instance, DNR can’t really do anything about the neighbor’s cow in the road or, for that matter, the snake in the car engine or possum in the bedroom drawer.

“All we can do in a lot of those cases is direct callers to the proper place to get help,” says Dye, the DNR sergeant. “But sometimes we do get involved.”

“Once there was this wild turkey hen that wouldn’t let a lady get to her car in her driveway. It kept chasing her off. We did go get that bird for her.”

But things can get a lot more tense.

That was the case one afternoon for Elizabeth Bradley, a former TCO who now holds a more sedate post in The Wildlife Shop at DNR’s Dennis Building headquarters in the Statehouse Complex.

“One of our wardens got involved in a chase that began in Clarendon County,” Bradley recalls. “Well,

this stolen pickup hit the county line and the Clarendon officer stopped, but the truck just kept going.

“Because we have statewide jurisdiction, our officer kept going, too, and they ended up crossing the dam on Lake Moultrie somehow. That’s not a public road. I don’t know how they got through the gate and all that. I’m trying to keep up with him on the radio, and then I hear there’s a report of shots fired,” Bradley says.

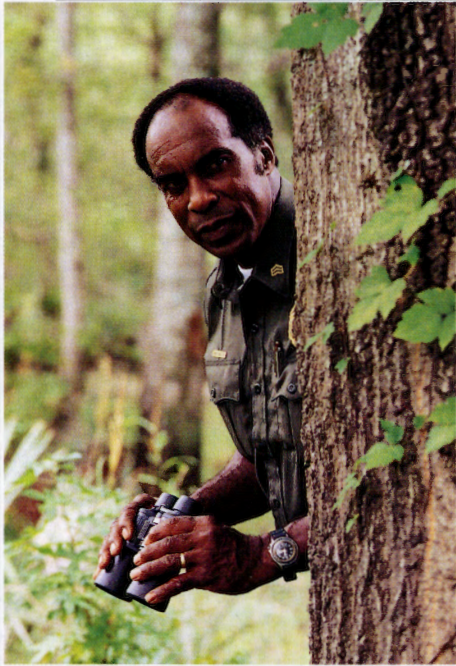
“Next thing I know, I hear one of our sergeants from Berkeley County was at a fish camp with his family just across the dam, and he scrambles out onto the road on the other side of the dam and gets the truck stopped. The suspect ended up having been shot, but not killed, and taken off to jail, and our guys weren’t hurt, so the ending was good,” she says.

Despite the stress, Bradley says she sometimes misses the two years she spent in the radio room. “I have to admit, I’m a bit of an adrenaline junkie, and really, it wasn’t continually stressful. Sometimes the callers are just plain, well, colorful.”

For instance, she says, “We had a fellow call us to tell us he needed the game warden because a large drug shipment was coming into Charleston Harbor and the FBI and CIA and ATF were all ‘compromised.’ This fellow says he could only trust the game wardens. Don’t



Call 1-800-922-5431 to report violations of natural resource laws to Operation Game Thief, Property Watch and Coast Watch, a program designed to protect South Carolina’s valuable coastal resources.



PHOTOS BY TED BORG

True team players, DNR Law Enforcement pitched in on Tuesday, August 14, 2007 when two prisoners escaped from the Midlands' Broad River Correctional Facility. DNR officers, working with personnel from several other S.C. law enforcement agencies, apprehended both escapees in just over 24 hours of searching the swampy woods near the facility and made headlines around the state.

know what he was smoking that day, but it took about a half hour to get him off the phone.”

On many days in that little room off Fish Hatchery Road, that troubled soul couldn't get that much time from the harried operators.

“On summer weekends, it's not unusual to have all twenty-one radio channels lit up and the phones ringing off the hook,” says Chris Wages, a shift supervisor of the radio room. “The hotter it is, the more drunks are out on the lakes.

“And then night falls, it quiets down for a bit and the calls start coming in about people who didn't make it back before dark and are reported missing,” Wages says.

Maintaining order on the water is a big part of the job, Shipes agrees. The Coast Guard wields an important role on the coastal waters, of course, and local law enforcement also partners with the DNR inland.

“Lexington County, for example, has deputies in boats on Lake Murray and that's a big help. And most people are not looking for trouble and really don't mean any

harm,” Shipes says.

“For instance, we'll get calls about personal watercraft bothering fishermen, things like that, and we'll let one of our DNR officers know about it. There's something about flashing blue lights on top and twin 225 Contenders in back running up on you that'll encourage you to straighten right up,” the radio-room veteran says.

Sometimes, though, the problem is tragic accidents, not bad behavior. A recent Saturday morning found Shipes looking for help from the U.S. Navy in Charleston. A sailboat manned by a young father had sunk on Lake Jocassee, taking a small child to the bottom of the very deep mountain reservoir.

Shipes was seeing if the Navy could send sonar equipment and operators to help with the recovery effort.

“It's so sad sometimes,” says the four-year veteran of the radio room. “You just do what you can. But I really do think we make a difference.” 🐾

Marc Rapport is a Columbia-based free-lance writer and senior writer for the S.C. Department of Parks, Recreation & Tourism.

Warming Up to a Cold Reality

Fewer ducks, milder winters, earlier blooms: South Carolina's outdoorsmen and women have noticed these and other changes, and many associate them with global warming.

by Rob Simbeck

Ask Columbia's Thomas Foy about global warming and he's likely to talk about duck hunting. "Yes, I've noticed a change," says the forty-year-old hunter, fisherman and self-professed concerned conservationist, "and a lot of it has to do with duck season. In our Eastern flyway, ducks are pushed down the coast toward us by cold weather, and the major thing is we just do not seem to get the cold winters we used to get fifteen or twenty years ago."

It's a sentiment Sammy Fretwell, an environmental writer for *The State* newspaper, has heard quite often.

"Duck hunters are concerned about dwindling wintering populations," he says. "There is some evidence that warmer Midwest winters have contributed to lower populations of some species in South Carolina. The thought is that they don't have to fly as far south as they once did to escape harsh winters."

In fact, mallard numbers have dwindled to the point that many duck hunters are releasing farm-raised mallards to hunt.

"I've had some duck hunters tell me it's the only way they can enjoy the sport anymore," says Fretwell.

Anecdotal evidence like that is widespread, according to Judy Barnes, a hunter and a wildlife biologist for the S.C. Department of Natural Resources, who cites reports ranging from changes in the mating habits of moose in the upper Midwest to altered polar bear habitat and more frequent drought in the Southeast.

One of those speaking out most strongly about global warming is John Tanner, a Hemingway resident and lifelong outdoorsman who was part of the state's Wildlife and Freshwater Fisheries Advisory Committee for twelve years and has been on the Saltwater Recreational Fisheries Advisory Committee the past three.

He cites early turkey-breeding activity, the early budding this year of hardwoods and subsequent killing frost—"You're probably not going to be able to buy an acorn in southeastern South Carolina this fall"—and phenomena like *El Niño* and the melting of polar ice, and says, "all this relates, I'm convinced totally, to greenhouse gases."

As Northern winters become shorter and milder, migrating ducks may not need to travel as far South as they once did to find food and open water, meaning fewer ducks in South Carolina and other Southern states.

PHILLIP JONES



PHILLIP JONES

Some hunters and other outdoors-people believe that global warming has caused changes in Eastern wild turkey breeding and recruitment and migration patterns of birds, including the ruby-throated hummingbird. However, more research is needed to determine exactly what effects it has had. Many Palmetto State bird-watchers have noted hummingbirds at their feeders well into the winter months, sightings that were rare as recently as ten years ago.

MICHAEL FOSTER



The state's outdoorsmen and women may possess the most intimate day-to-day knowledge of climate and its effects on plants, animals and the seasons, walking ground zero as the rhetoric and the planet heat up. They, like everyone, have heard the thesis—many scientists, as well as activists led by former Vice-President Al Gore, have been making the case that human activity is warming the planet and that without a reversal, catastrophic consequences await us. For a time, those who took sides in the ensuing debate seemed to do so on roughly ideological grounds, with conservatives more likely to resist the increasingly prevalent view on global warming. In South Carolina, at least, that resistance appears to have waned considerably.

Earlier this year, Gov. Mark Sanford used an op-ed piece in the *Washington Post* to declare himself “a conservative and a conservationist,” and to state his conviction that “human activity is having a measurable effect on the environment.” While he warned strongly

in that piece against governmental overreaching in seeking a solution, he has created an advisory group to study how climate change and commerce interact and to find ways for the state to increase energy efficiency and independence, “with an eye toward crafting a plan that balances the needs of the business and environmental communities.” The eighteen-member commission is scheduled to report next March.

Sanford's action came in the wake of a 2006 survey that showed South Carolina's outdoorspeople—a demonstrably conservative group—apparently lining up on the side of those wanting action to deal with warming they also see as man-made.

“The results were somewhat of a surprise,” says Mark Damian Duda, executive director of Responsive Management, the survey-research organization hired by the National Wildlife Federation and its South Carolina chapter to conduct the survey. “It certainly showed a majority was seeing things in the field in terms of earlier springs or warmer winters, and they attributed that

to global warming, which fifty-nine percent said was caused primarily by the burning of fossil fuels. That was pretty surprising.”

The survey, part of a larger group of state polls conducted in March and April of 2006, showed that South Carolina's sportsmen agree that global warming—defined in the survey simply as an increase in atmospheric temperatures—is problematic:

- Eighty-two percent say addressing global warming should be a high priority;
- Eighty-eight percent think the United States is addicted to oil and eighty-four percent do not think Congress or the Administration are doing enough to break this addiction; and,
- Ninety percent support the development of a statewide energy policy that encourages the development and use of alternative fuels and renewable sources of energy—a policy that may well emerge from the governor's advisory group.

The survey lists the signs of warming seen by those

who hunt, fish and otherwise use and enjoy the outdoors. Some 57 percent have noticed warmer or shorter winters, the single biggest indicator cited. Others included earlier springs (41 percent), earlier bloom times (37 percent) and hotter summers (39 percent).

“The biggest thing I notice,” says Bob Harwell, 62, a lifelong outdoorsman and turkey-call maker from Columbia, “is that we don't have a winter anymore. Very few mornings do you wake up with frost, and it seems like the summers are getting much, much hotter.” He notes that squirrels around Columbia are breeding year-round and that flowers are blooming a little earlier.

“The scientists say the world is gradually warming up, and I believe pollution is speeding it up a little bit,” he says, adding that he favors immediate action. “I think everybody should be trying to clean the air up. Worldwide, all countries need to stop the air pollutants, the smoke and chemical vapors released into the air.”

The survey itself held apparent dichotomies. While

more than 70 percent were very or somewhat concerned that wildlife or fish populations “will decrease significantly or disappear in the next ten years,” 63 percent said hunting and fishing habitats have improved or stayed the same within the past few years. Fewer than a quarter said they had noticed less snow or less ice cover on ponds, lakes or rivers. Nearly half said they had seen no indications of a list of changes that included more intense storms, changing migratory bird patterns or decreasing bird, fish or wildlife populations, and nearly half said they did not believe any such conditions that might exist were caused by global warming. A significant minority, nearly 30 percent, agreed with the statement, “Global warming will have little or no impact on hunting and fishing conditions, and concern about it is overblown.”

Even some of that group, though, concluded that action is necessary to address the issue, as 85 percent agreed, “The United States should be a world leader in addressing global warming.” Nearly as many believe the United States should reduce greenhouse emissions, and more than 70 percent said Congress should pass legislation setting a clear national goal for “reducing global warming pollution with mandatory timelines.”

What’s more, the survey’s wording is not without critics.

“One could argue the questions are incomplete,” says John G. Geer, a professor of political science at Vanderbilt University knowledgeable about polling questions. He sees some questions, like one about reducing emissions, as pushing respondents toward a

level of agreement that “seems way too high.”

“It would be better,” he says, “if the other option (that greenhouse gases are not undermining wildlife) was mentioned. I do not think there is anything intentionally misleading going on. It is just hard to ask fair survey questions.”

The firm surveyed 305 people in South Carolina, giving the poll a sampling error of 5.6 percent.

“Of the people we interviewed,” Duda says, “forty-eight percent were conservative, thirty-five percent moderate and five percent liberal. One of the surprising things is that a lot has changed just in the past year.

When we started this a year and a half ago, this wasn’t nearly as ‘on the radar screen’ as it is now. These are traditionally conservative individuals telling us global warming is a real issue. The most important thing is that these are people who are in the field every year, year in and year out.”

Nearly 70 percent of those surveyed voted for George W. Bush, and 56 percent said next time they would vote for a candidate who would fight global warming. Some 83 percent were male.

Duda, who frequently speaks to outdoor groups, says, “I was presenting to a room full of sportsmen, and one of them told me, ‘You just confirmed the obvious. We’ve been seeing this for years.’”

For some outdoorsmen, the situation is a dire one.

“The single most pressing issue we have on this planet right now is what we’re doing to it in terms of pollution in all its forms,” says Tanner. “I truly feel that global warming is having a major effect on what we’re seeing happening in the environmental and wildlife world—things like animals migrating into places where



PHILIP JONES



PHOTOS BY PHILIP JONES

Global warming could require people to change the way we travel, live and do business, but we can all make a difference with minimal impact on our daily lives. Visit www.targetglobalwarming.org for more.



they’ve never been before. When we were kids growing up, we had freezing-cold winters. You could expect hard freezes up through mid to late March. I don’t know when we’ve seen one of those. The climate, animals, plant life, everything is changing so much. I half-jokingly tell my children that in twenty-five years you’re going to be growing citrus in Williamsburg County.”

Tanner blames both the Bush administration and Congress for a lack of response to the situation, and says both “should start taking steps to mandate legislation dealing with carbon-producing activities relating to industry and automobiles and other greenhouse gas-producing mechanisms to start bringing all of this under control.”

Others are not so sure.

“It seems to me like fish are spawning a little bit earlier,” says Marc Ackerman, a 62-year-old Cottageville resident who is a lifetime hunter and fisherman, and owner of Swamp Thing Mallard Calls. “I can see both points of view. Everything that humans do, I’m sure, has some kind of effect on the environment and the climate. Then again, there’s a bigger force than we are causing a lot of things to happen.”

Pat Robertson, a longtime outdoor writer for *The State*, is in the same camp.

“I don’t know how much of global warming is due to me driving an SUV or pickup truck,” he says, “and how much is the earth going through what it does over a period of eons. We had both cold and warm this year. The one cold spell around Easter weekend upset the fish spawning, and it certainly did something to the turkeys. They were not in what you would consider a normal springtime pattern—even more because of the really warm February and early March—so they were

disjointed all year. It’s been that way a couple of springs in recent years. I think there are some convolutions in the climate, but how much of it has to do with an overall global trend toward warmer weather I don’t know. We’ve had some really cold and hot spells in history and pre-history.”

Foy sees the governor’s point in wanting to temper environmental concerns with the needs of industry, looking for a responsible balance.

“We’re trying to keep industry here,” he says. “It just needs to be regulated. We don’t want to be like Los Angeles, which has air so bad there are days when people with any respiratory problems at all can’t go outdoors. Who wants to live like that? Overall, we’re a society that’s greener and more earth-friendly than we were thirty years ago, but the government needs to push more regulations on industry so they’ll do more research to cut more pollution.”

That long-term scenario is one Ackerman knows is as complex as present-day society itself.

“I’m guardedly optimistic,” he says. “I’m hoping that what we’re in is just a natural cycle. Of course, I like the luxury and the comfort of modern technology as does everybody else. I do think that the government ought to regulate emissions from power plants and do what they can to clean up the rivers and the rest of the environment.”

It’s a sentiment Foy agrees with, but one he thinks will take the concerted effort of society as a whole.

“It’s going to take a big push,” he says, “from consumers telling government and industry, ‘We want our descendants to have a good environment for the next thousand years.’”

Rob Simbeck is an award-winning free-lance writer living in Nashville, Tennessee.

Climate experts project that weather patterns triggered by climate change will result in more intense weather events, including harsher winter weather in some areas, severe droughts, more and stronger hurricanes and more tornadoes, among others. Drought at Lake Jocassee, right.



MICHAEL FOSTER

Hunter's Harvest:

From Field to Table



The taste and quality of the venison steaks you serve for dinner depend largely on how the deer is handled in the field.

*by Dennis Chastain
photography by Phillip Jones*

Silently, the deer comes slipping through the woods, stopping every few yards to check for danger along the path ahead. The hunter sits in a tree stand 50 yards away on full alert. Soaked in sweat from the oppressive September heat, he fears the deer will wind him at any minute. The young cowhorn buck, a nice "meat deer," steps into a little clearing in the forest and the hunter makes a well-placed shot. The deer is down. Now what?

The decisions that our fictional hunter makes in the next few minutes will determine the quality of the venison he puts on the family dinner table for the remainder of the year. Should he field dress the deer, or just try to get it out of the woods and into a cooler as soon as possible? Should he attempt to butcher the deer himself or take it to a processor? Unfortunately, for many hunters, the answers to those questions, and many more, are often based on myth and misinformation about the proper protocol for handling deer from field to freezer.

Deer hunters spend hours honing their shooting skills, sighting in rifles, preparing their land and equipment, but the proper handling of game meat also requires skill and planning.



Many hunters prefer to take their harvested deer to a professional for dressing and processing to save time and ensure that the meat they take home is of the very highest quality. Patterson's Deer and Bear Processing, Pickens, above.

One of the oldest, most persistent myths about handling deer is also one of the most harmful. For as long as most deer hunters can remember, a pervasive rule of thumb has insisted that you cut the tarsal glands and the testicles from a buck as soon he hits the ground. The thinking was (and still is in some circles) that the gamey secretions from these two body parts would somehow leach back into the carcass and taint the meat. "Nothing could be further from the truth," says Charles Ruth, the S.C. Department of Natural Resources' Deer Project leader. "The deer's testicles didn't affect the quality of the meat while he was alive, and they won't bother the meat now that he is dead. And leave those tarsal glands alone. Don't even touch them. They will only taint your knife and your hands. And you will inevitably transfer that to the meat."

Charles Ruth knows a thing or two about skinning and processing deer. In his former life, before he came to work for the DNR, he processed more than a thousand deer while working on a private hunting plantation. He even starred in a video produced several years ago by the Clemson University Extension Service providing hunters with a step-by-step visual guide to

skinning and processing deer. "When you hear people talk about eating venison that tasted gamey, it's because they got a mouthful of a deer that was mishandled," Ruth says. "Most likely the meat was contaminated with dirt and debris, intestinal contents or bloodshot tissue." The secret to success in processing deer, says Ruth, is keeping the carcass clean and cool.

"I don't recommend field dressing deer. You can drive a truck to ninety percent of the deer harvested in South Carolina. My advice is to get that deer hung as soon as possible and move on to skinning it right away."

There are exceptions to that rule, Ruth admits: "Field dressing deer may be somewhat more popular and appropriate in the more remote areas of the northern part of the state." Sometimes it can be tough or nearly impossible to get a deer out of the woods in a timely fashion in the remote areas of the mountains, particularly if the deer is downed in the late evening. In that case, field dressing is sometimes required, but steps should still be taken to keep the carcass cool and to reduce the possibility of contamination of the carcass from dirt and debris. Often, the mountain deer hunter must walk out of the woods to get help dragging the

deer. That's an opportunity to stop at the store, pick up a bag of ice and carry it back to put in the cavity. The carcass can be protected while dragging through the woods by cutting a few small slits in the belly flaps and closing the cavity back up, temporarily stitching it closed with a length of string or cord.

But for most hunters, the trick is to get the deer out of the woods quickly and either to a deer processor or to the skinning shed. "You want to go right ahead and skin and eviscerate the animal. This is the step that has the biggest effect on the quality of the meat. If you contaminate the carcass with intestinal contents at this stage, or fail to completely remove the bloodshot tissue, it will spoil the meat," Ruth says.

Charles Ruth has perfected a method of skinning and processing a deer that is a wonder to watch and too involved to describe here in detail, but several things he does could save hunters a lot of time and frustration. For example, nine times out of ten, a hunter drags the deer up to the skinning shed and cuts two slits right above the hind leg knee joints, exposing the large Achilles tendon. The two curved ends of the gambrel are then slipped into these two pockets and the deer is hauled up by winch to a working height. The problem with that common practice is that once the hunter starts trying to skin the leg area around the gambrel, it is all but impossible to work the knife around the gambrel. The solution is so simple that it evades most hunters—skin a small section of the leg around the knee joint before you hang the deer. Just be careful not to cut the Achilles tendon. It is essential to hanging the deer.

But the best advice, the one thing that will make

the biggest difference in the final product, is to get rid of every speck of bloodshot tissue. Many hunters just quickly skin and eviscerate the deer and hang it in the cooler or take it to a processor. This is a recipe for disaster. Bloodshot tissue, that cherry-red to blackish area around the bullet wound, begins to decompose almost immediately and is a ready-made feast for bacteria. It can eventually taint the entire carcass, even while the deer is hanging in the cooler.

Here's how you get rid of it. Once the animal is skinned, locate the bullet-entrance hole and begin trimming away the entire area around the wound until you reach fresh, undamaged tissue. This is not the time to worry about trying to save every ounce of deer meat. Trim and discard every bit of tissue that shows signs of hemorrhage. You can't eat it, and if you take it to a processor, that's the first thing he is going to do anyway.

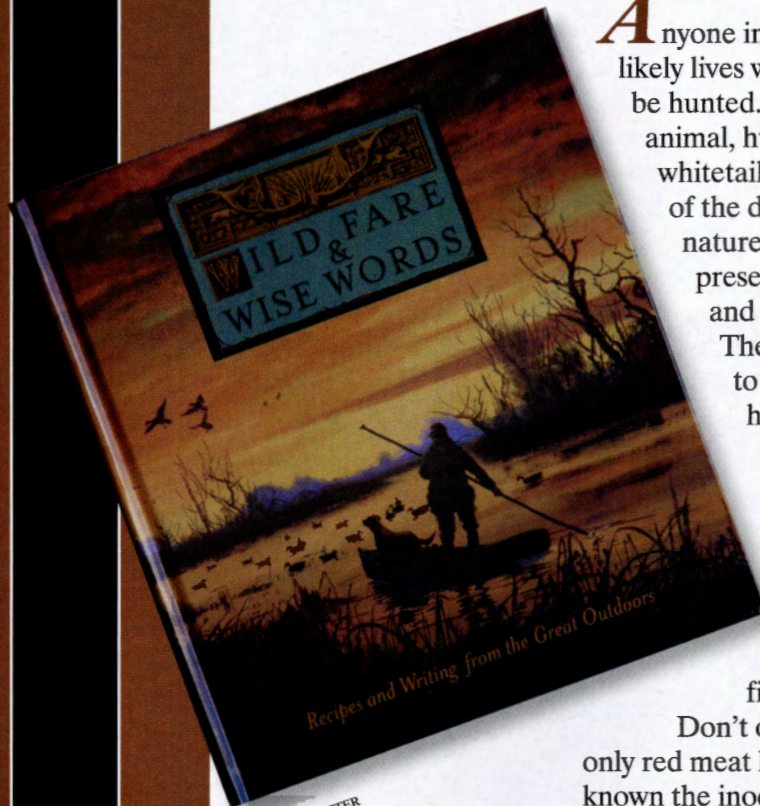
Michael Cordray, a custom deer processor located in Ravenel, handles about three thousand deer a year. He also has some advice for hunters who want to end up with venison that even those who are timid about eating wild game will brag about. "In hot weather—say August and September—if you can't get the deer to a processor in two to three hours, go ahead and field dress it. Get it in the cooler or put a bag of ice in the cavity. Even during cooler weather, it is still important to get the carcass cooled down as quickly as possible. A sealed up body cavity holds heat. The point is, take care of the meat from the time it hits the ground. Once the deer is down, it is no longer a deer—it's a piece of meat."

(Continued on page 39.)



Deer meat processors sometimes add beef or pork fat to ground venison because it is naturally so lean that it does not hold together well when formed into a patty.

Wild Fare and Wise Words: Venison



MICHAEL FOSTER

Anyone interested in enjoying the tempting taste of venison likely lives within a reasonable distance of places where deer can be hunted. To a greater extent perhaps than any other game animal, hunting is an imperative when it comes to managing whitetail populations. That means, in effect, that over much of the deer's range you are actually doing yourself and nature a favor by hunting deer. More to the point, in the present context, is the fact that properly dressed, handled and prepared deer is as tasty as the animal is abundant. The size of the animal ensures that it has the potential to make a major contribution to the table fare we all, as hunters, enjoy.

While a successful quest brings a real sense of accomplishment, for the sensitive and sensible hunter the decisive moment of truth is nonetheless a bittersweet one. It is precisely at that point, though, as he contemplates his kill and perhaps enjoys visions of venison dishes to come, that he should pause and ponder, full of wonder, on the finality of the ultimate act of hunting.

Don't overlook the health benefits of venison. It is often the only red meat heart patients should eat. Additionally, it has never known the inoculants, vitamin supplements, growth hormones, questionable feeding practices and crowded conditions endemic to both the beef and poultry industries. Venison has much less fat than beef (and what is present should be removed when the animal is processed), lower levels of cholesterol, and top-drawer nutritional value.

In short, venison is not only good; it is good for you.



Venison cubed steaks provided and prepared by the DNR's Elizabeth Bradley.

Venison Cubed Steak and Gravy

Venison Cubed Steak and Gravy

- 2 pounds venison cubed steaks
- 1 cup buttermilk
- 1½ to 2 cups all-purpose flour
- Salt and pepper to taste
- ¼ to ½ cup vegetable oil
- 1 onion, sliced (optional)
- 3 tablespoons all-purpose flour
- 1 cup milk
- 1 cup water

Preheat the oven to 350 degrees. Cut the steak into serving pieces and marinate in the buttermilk for a few minutes. Season 1½ to 2 cups flour with salt and pepper. Heat the oil in a large ovenproof skillet or Dutch oven. Coat the meat with the flour and fry in the oil until golden brown. Drain on paper towels. Pour off all but 2 to 3 tablespoons oil. Sauté the onion in the remaining oil until tender. Sift 3 tablespoons of flour over the onion and oil and cook, stirring, until the flour is brown. Remove from heat and add the meat, milk and water and mix well. Cover the pan and bake for 30 to 40 minutes, checking often after 25 minutes and adding water if the gravy becomes too thick. Serve the meat and gravy over rice or mashed potatoes. Makes 8 to 10 servings.



—Chapter heading and recipe from *Wild Fare and Wise Words* cookbook, by Jim Casada. *Wild Fare and Wise Words* is available through The Wildlife Shop by calling 1-888-644-9453 or online at www.scwildlife.com.

Getting An Edge

“This is the sharpest knife you’ve ever handled, honed on a wheel stone, so don’t cut yourself,” said my friend, an amateur blade-smith, who had just given me a handmade gift.

The knife was incredibly sharp, and it wasn’t long before I was being advised to keep my hand above my heart. My responsibilities in camp included helping with the dishes, and as I dried the mirror-like blade of my new toy, the edge ghosted through two layers of towel and into my finger before I knew it.

Honed on a wheel, you idiot, I thought to myself, you should have known better.

So, my first and most heartfelt piece of advice regarding the sharpening of any knife in any setting is, “Don’t cut yourself.”

Every good gun shop, and I’m not talking mega-stores here, has a sharpening stone on the counter, swooping low in the center like an old swaybacked horse, where customers dally to put an edge on their pocket knives. The good shops also have a small tin of oil nearby. The oil is important. Not intended to lubricate since abrasion is what we seek, it cools the metal and floats the fines (tiny, loose particles of stone) above the stone, allowing it to work. And herein lies an important principle in the sharpening of knives: Use a fluid. Water will work, but it’s sloppy. Oil, being more viscous, doesn’t stray over the counter or workbench.

The condition of the blade when we start will dictate the methods and materials we use.

If the knife is very dull, has been used to split the breastbone of a deer or filet fish on a rough surface, a coarse stone will be an important first step, allowing us to hog metal off quickly and reshape the edge. Move the blade as if trying to slice off a thin layer of stone, edge first, adding the oil as you go and counting strokes. Yes, I think it’s important to sharpen the blade evenly,



Follow these steps to keep good, sharp cutting edges on your favorite hunting and meat processing knives.

and I count passes on the right side, then match the number on the left.

The angle at which we place the blade against the stone is critical. Too shallow and the edge will be thin and won’t last, while a steeper angle will produce a more durable edge. Too much will prevent the razor sharpness we seek. Generally, fifteen to thirty degrees is fine, and the cross section of the blade will influence this. Nifty gizmos are available that precisely control the angle of blade to stone, and they work. I have one but find myself using the old laminated, fine to coarse stone I’ve had for years and eyeballing the angle. So much for accuracy.

After achieving a reasonable edge, meaning pretty darn sharp, we move to a fine stone, or a crock stick, to make us really proud. Same procedure, perhaps with less pressure. Ceramic sticks are absolute magic for finishing an edge to razor sharpness but will load up with fines, as well, and should be washed with hot, soapy water occasionally to refresh them.

At last, we’ve achieved our razor edge, documented solidly by the tiny hairless patches on our forearms. Remember, don’t cut yourself.

—Rick Leonardi



The final product: delicious, lean, top-quality, hormone- and antibiotic-free venison for the table. Ham and sausage at Cordray's, above.

(Continued from page 35.)

Cordray says he gets everything from the whole unskinned deer to individual pieces of meat. "We'll take it however they bring it in, but one thing I would stress is that when hunters skin the deer, they tend to wash it off like you would wash a car. That's fine, but the problem comes in when they lay the soaking wet deer on a dirty picnic table or in the bed of a truck. Everything sticks to a wet deer. The combination of water and bacteria and dirt is definitely something you want to avoid."

It seems that no one has ever taken the time to calculate just how much venison South Carolina hunters put in the freezer, and eventually on the dinner table, each year. Charles Ruth whipped out his calculator recently and came up with these figures—221,000 deer harvested last year, times an average live weight of 100 pounds, times 35 percent average yield of boned meat, equals an amazing 7.74 million pounds of venison. That's a lot of deer meat, and for some folks, a substantial part of their diet.

So it would seem logical that hunters would take whatever measures are necessary to make sure that the venison they serve their families is of the highest quality and purity. We expect and demand nothing less from commercial butchers and purveyors of beef, poultry and

pork, yet each year we see some hunters handle deer carcasses in ways that raise eyebrows around the deer camp.

Things like letting a deer lie around in the hot sun for several hours before skinning and gutting, working with dirty tools, and leaving bloodshot tissue for the processor to deal with, all work to guarantee a less-than-Grade-A product. Take the time to learn to do it right, and keep the carcass clean and cool. You will do justice to the fine animal you just harvested, and you are much more likely to earn the praise and admiration of those who sit down at your dinner table. 🐾

For more information on processing and preparing deer meat, including "Tender Loin Versus Tenderloin," "Top Ten Tips for Deer Processing," and "Easy Delicious Recipes," go to www.scwildlife.com and click on the "Hunter's Harvest" article. These short articles are included in the online version of "Hunter's Harvest" as sidebars.

For information about S.C. Hunters and Landowners for the Hungry, a non-profit organization that provides deer meat to hungry South Carolinians, visit www.schuntersforthehungry.org

Indigo bunting



JEFF MOLLENHAUER

MOST OF US SHY AWAY from scientific inquiry. Pursued with any real vigor, we fear, it can only mess things up. Take the rainbow. Examined closely, it's nothing more than the interaction of light waves, water droplets and the human eye. Philosophically speaking, given the concepts of primary and secondary qualities, it isn't really there. Bring that up, though, as you and your sweetie are looking at one and you are certain to kill whatever magic those airborne colors have created.

There are those, though, and I am one of them, who figure that awareness of the science and philosophy behind an experience can deepen rather than spoil it, adding an intellectual thrill to the sensual. And so, aware of the risks, I feel it's my duty to report that, in

the spirit of the rainbow, there are no blue birds. Now, since I realize you just looked again at the gorgeous photo of the indigo bunting above this, let me rephrase that: there are no blue pigments in the feathers of blue jays, bluebirds or, in the case at hand, indigo buntings.

The explanation can get awfully long-winded (Would it be science or philosophy otherwise?), but an indigo bunting's blue is what is called a structural color. The underlying pigment, melanin, is brown, but the feather's microscopic make-up causes different wavelengths of light to bounce in different directions, giving it a variable appearance. Backlit or in the shadows, an indigo bunting looks almost black. In direct sunlight—bingo!—those lovely indigo rays hit your eyes or a camera lens. It's analogous to the way the sun, which shines white light, looks red, orange or yellow,

depending on how much atmosphere that light is traveling through.

All of this, by the way, applies about half the time, since it's in the adult male that the indigo shows up. In females and juveniles, the operative color is brown, with just a few blue streaks in the tail and some faint breast streaks.

About five inches long, the indigo bunting is a finch with a fondness for brush and weeds, where it can be seen feeding on seeds and insects. It thrives in abandoned fields and forest clearings, and along weedy roadsides, which abound in the Palmetto State.

"I always think of indigo buntings as a real indicator of early successional habitat," says Laurel Barnhill, a wildlife biologist with the Department of Natural Resources. "Build it, and they will come. Along roadways, even in heavily forested areas, if there's light enough to grow shrubby habitat, the indigo buntings will be singing there."

The singing begins each year with the males' arrival in late April or early May from their winter homes in South America and the Caribbean. They await the females, singing a warbling, double-note song to stake out territory and then in courtship, when they often sing all day long.

"Their song is really unique," says Barnhill. "When we teach bird identification, we render it as *Fire! Fire! Where? Where? Here! Here! See it! See it!* They'll be near the thick, shrubby stuff, singing from about eye level to twelve feet or so. They really make their presence known."

Indigo bunting

Passerina cyanea

"Dark blue sparrow like"

Appearance: *In sun, breeding males appear brilliant blue, with darker crown and black feathers in tail. Females, young and wintering males are brown.*

Range and Habitat: *Gulf Coast to southern Canada and across the Southwest. Brushy edges, abandoned farmland.*

Nesting and Young: *Nesting begins in May. Two or more clutches. 3 to 4 eggs normally, up to 6 possible.*

Viewing Tips: *Listen for the energetic song in brushy areas and look for the often conspicuously perched male.*

The nest, built by the female, is a cup constructed of woven grass, leaves and twigs from 3 to 10 feet off the ground in a bush, hedge or sheltering tree. The female lays three to four bluish-white eggs and incubates them for twelve or thirteen days. The male brings food and defends the nest and chicks, relieving her of nest duties on occasion. The young fledge after eight to ten days, and the adults will often produce a new clutch, sometimes with other mates.

Indigo buntings migrate south again as the weather cools, traveling in flocks at night and navigating, in part, using stars. They form

large flocks in their winter homes, foraging and roosting in groups that may number thousands of birds.

They are sold as caged songbirds in Europe and Mexico and are often killed for food or sport in their wintering grounds. Here, it is sprawl that threatens them, constantly nibbling away at their favorite feeding and nesting places. Even so, their habitat needs dovetail nicely with current conditions in the state, and it's thought that, like mockingbirds, indigo buntings are probably more numerous now than they were when Europeans landed. Given their seemingly healthy population in South Carolina, it is easy to enjoy the songs and beauty—illusory though it is—of this magnificent little bird. 🐦

—Rob Simbeck

Rob Simbeck is an award-winning free-lance writer living in Nashville, Tennessee.

FIELD TRIP Congaree Bluffs Heritage Preserve

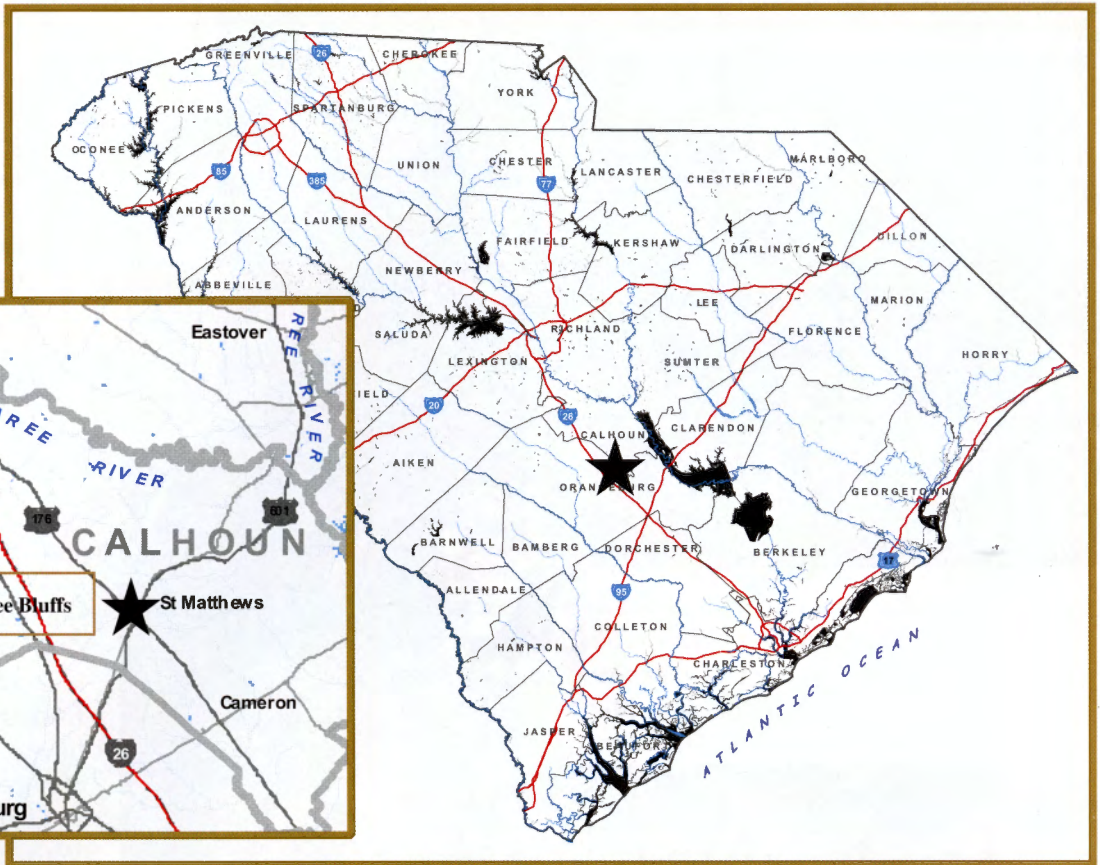


MICHAEL FOSTER

Visit Congaree Bluffs Heritage Preserve's observation deck for a bird's-eye view of the meandering Congaree River.

Just one hour from the bustling hub of Columbia, Congaree Bluffs Heritage Preserve offers an array of unique opportunities for hikers, bird- and wildlife-watchers, anglers, schools and other educational groups, and seekers of quiet and solitude. The 201-acre Calhoun County property, acquired by the S.C. Department of Natural Resources in 2001, contains three distinct types of habitat: bottomland hardwood forest, ravines featuring mixed hardwood forest, and upland planted-pine forest. First-time visitors to the preserve will want to explore a bit of all three types of habitat by walking portions of each of the three easy-to-moderate, looping trails, so plan your schedule accordingly.

1 To get to Congaree Bluffs Heritage Preserve, take Exit 125 from I-26, then turn right onto Old Sandy Run Road. Drive two miles on Old Sandy Run Road until you come to a stop sign at the intersection with US Highway 176. Turn right onto US Highway 176 and travel 7.6 miles. Turn left onto Old Bellville Road just after you pass West Bethel Church and continue on Old Bellville Road for seven miles. Turn left onto Purple Martin Road just past Mount Carmel Baptist Church, and continue on Purple Martin Road until you come to a stop sign at Fort Motte Road. Turn left onto Fort Motte Road and travel 2.8 miles. Keep your eyes peeled for the brown Congaree Bluffs Heritage Preserve sign on the right side of the road. When you reach that sign, a dirt road called Turkey Track Lane will be on your left. Take that left to enter Congaree Bluffs Heritage Preserve.



DNR TECHNOLOGY DEVELOPMENT PROGRAM

2 Before you set out, print out detailed directions and an easy-to-read trail map from the DNR’s Web site, www.dnr.sc.gov. Just click on “Managed Lands,” then select “Heritage Preserves” from the drop-down window labeled “Connect to type,” and scroll down to choose Congaree Bluffs Heritage Preserve from the list. This Web page also lists interesting information about the preserve and contact information for folks who have questions or want to make an appointment for their group to visit the education center.

You will not need much gear beyond the basics for this trip. Layers of clothing, comfortable walking shoes that will provide good traction on potentially muddy lowland trails, plenty of drinking water, a hat, camera, binoculars and a walking stick should be about all you’ll need to enjoy the preserve in late fall and early winter. Congaree Bluffs also features a cozy picnic shelter, so consider packing a lunch and making a day of it.

3 There are two public parking areas at Congaree Bluffs Heritage Preserve. Park in the second lot to check out the breathtaking view from the observation deck, the native-plant garden adjacent to the education center and the picnic shelter. (The education center is



TED BORG

Peer up into the tops of large mixed hardwood trees on the Observation Walk.



MICHAEL FOSTER

Mixed hardwoods, at left, cast shade over the open forest floor where five-lined skinks dart about and pokeberries ripen in the late fall. Be prepared to dodge lianas, or woody vines, as you enjoy the Bluff-River Walk trail, below.



MICHAEL FOSTER

open by appointment only, on a first-come, first-served basis.)

To get to the observation deck from the second parking lot, you have a few options. You may choose to cross over the dirt road and take the Bluff-River Walk trail, which winds down through the beautiful bottomland hardwood forest teeming with birds and other wildlife, to the Congaree River and the base of the sheer, rocky Congaree River bluffs for which the preserve is named. Take a moment to pause

at the base of the bluffs. Look straight up and take in their height, examine the cold, grey stone and try to imagine what amazing things they have witnessed standing guard over the river. Take the left fork, and the short trail winds around bringing you to a steep incline that will take you up to the observation deck overlooking the bluffs.

To get to the observation deck from the second parking area, you may opt to follow the dirt road past the locked gate, across an open field and to the deck. This path is not quite as scenic as the Bluff-River Walk, but it will give you an excellent sense of the lay of the land. As you walk along the road through the field in November and December, you will see a stand of planted loblolly pine to the left. This stand will be harvested and re-planted in longleaf pine in early 2008, restoring an even greater diversity of plant and wildlife species to the property. Ahead, you face the mixed hardwoods that are characteristic of the ravines—hickories, American beeches, red, black and white oaks and black cherries are just a few. To your right, you approach the now leafless, but still beautifully mysterious bottomland hardwood forest where pawpaw,

TED BORG



MICHAEL FOSTER



MICHAEL FOSTE



PHILLIP JONES

Along the trails at Congaree Bluffs, you may spot ribbon markers tied to trees indicating bird count sites. Many different types of birds, such as the pileated woodpecker (left) and the white-throated sparrow (below) call these woods home.

Bird-watchers will likely spot Congaree winter residents such as red-bellied and red-cockaded woodpeckers, cedar waxwings, American robins and scores more. Some very lucky visitors might even catch a glimpse of a bald eagle soaring over the Congaree. The river, too, looks different this time of year. With no leafy greens to reflect as it flows, it takes on a blue-grey sheen, mirroring the vast, stainless-steel winter sky.

5 To hike the full length of the longest trail,

the 1.5-mile Ravine Walk, go back to the first parking area and set out from there. All of the preserve's three trails interconnect, so hikers can spend an entire day exploring different sections of each one or lingering on their favorite trail. Whatever trails you choose to explore, you're guaranteed to have a unique experience with each visit to Congaree Bluffs Heritage Preserve. 🐸

—Elizabeth Renedo

Elizabeth Renedo, managing editor of S.C. Wildlife magazine, thanks Heritage Preserve Manager Brett Moule for showing her around and providing so much fascinating information. For more information, call (803) 734-3886.

many types of lianas, persimmon, sweet gum and red mulberry thrive, along with many other water-loving plant species.

The third route to the observation deck, the most circuitous, offers hikers a chance to explore a little bit of everything the preserve has to offer, from the upland pine forest to the ravines and a bird's-eye view of bottomland hardwoods from the deck. To follow this lovely, roundabout route, take the Ravine Walk from the second parking area, then follow the right-hand fork to hop on the Observation Walk, which, after a tour of the mixed hardwood forest and another right-hand turn, will bring you to the observation deck. Keep your trail map handy and you should have no trouble following the proper directions.

4

Overlooking the meandering Congaree River and miles of pristine swamp and bottomlands that make up the Congaree National Park, the observation deck provides views you won't want to miss. In summer, you'll see a seemingly endless, rolling cloud of emerald leaves and glittering green-brown water, but in late fall and winter things look dramatically different. The hardwood trees that populate the vast bottomland forests lose their leaves to the seasonal chill, opening the canopy and allowing for prime bird-watching.



BILL PRICE

NEW OPTIONS MAKE LICENSE PURCHASES A SNAP

Obtaining a hunting or fishing license in South Carolina is easier than ever, thanks to an enhanced recreational licensing system that allows customers to purchase licenses directly through the state's official Web site, www.sc.gov, by phone and at authorized point-of-sale agents.

"This exciting public-private partnership brings an unprecedented level of ease and convenience to the licensing process," says John Frampton, state DNR director. "We've embraced the information age and employed the latest technology to benefit hunters, anglers and all those who enjoy wildlife-related recreation and activities. This latest advancement in customer service is part of our commitment to provide convenient, user-friendly services to the public. Obtaining hunting and fishing licenses and permits has never been easier."

Doe tags, shrimp-baiting licenses and non-game fish tags are also available through www.sc.gov.

The online service allows individuals to select the license type and process Visa, MasterCard and Discover credit card payments through www.sc.gov's secure payment system. There is a convenience fee of \$3 for online purchases. Additionally, there are 274 authorized Internet point-of-sale agents across the state, including Wal-Marts, Kmart, Dick's Sporting Goods and many small, locally-owned businesses such as bait and tackle shops and hardware stores.

One primary benefit of the new



ROBERT CLARK

Many different options make purchasing a hunting and/or fishing license fast and easy in South Carolina. New online license sales add convenience for license purchasers in and out of state. Go to www.sc.gov and check it out.

purchasing options is that they allow hunters and anglers to get out in the field right away, without waiting for their new licenses to arrive in the mail. Those who purchase licenses online can print out a hard copy of the license for use until they receive their official license in the mail from the DNR headquarters in Columbia, usually within three to five business days. The same is true for those who purchase a license through a point-of-sale agent.

Another benefit of purchasing licenses online or through a point-of-sale agent: If you lose your license, for a \$3 fee you can print out a duplicate and request a new one from the DNR online or at a point-of-sale agent. Just use your customer number or the last four digits of your social security number and date of birth—no need to re-enter

personal information.

The phone option is ideal for last-minute purchasers. Phone transactions require payment by credit or debit card, and when the transaction is completed, the purchaser receives a confirmation number. If the purchaser is subject to a license check, he simply gives the number to the officer, and the officer can then call it in to home base and receive complete license information, which is updated on the system in real time. The DNR's Columbia headquarters will mail a hard-copy license within three to five business days. 🐾

For more information on hunting and fishing regulations in South Carolina, visit www.dnr.sc.gov. To purchase a hunting or fishing license online, visit www.sc.gov or call 1-866-714-3611.

DNR COMPLETES IMPORTANT HUMMOCK ISLAND SURVEYS

In 2004, *South Carolina Wildlife* magazine free-lance writer Pete Laurie reported on the preliminary findings of a survey of coastal hummock islands, also known as "hammock" islands, by DNR biologist Billy McCord. The feature article, titled "Saltmarsh Refuge" (November-December 2004), described the research, begun in 2003 and funded originally by a grant from the National Oceanic and Atmospheric Administration's Coastal Services Center and administered by the Department of Health and Environmental Control's Office of Coastal Resource Management.

Continued funding, provided by the State Wildlife Grants program, enabled McCord, along with survey volunteers and other DNR employees and the ACE Basin National Estuarine Research Reserve Program to examine 130 hummock islands located along the coast from Huntington Beach south to Palmetto Bluff. The islands, classified by their occurrence between barrier islands and the mainland, are surrounded by wetlands or tidally influenced water and range from 0.1 to 900 acres in size. About 3,500 hummock islands occur along South Carolina's coast.

Laurie reported on early findings in the 2004 feature: "McCord's preliminary list of species after less than a year of cursory surveys includes 270 plants, with as many as 50 more awaiting identification. He has also recorded 108 birds, 17 mammals, 17 reptiles, 9 amphibians, 4 fish, 49 butterflies, 14 dragonflies, 5 crustaceans and 7 mollusks."



PHILLIP JONES

Saltwater minks live and hunt on hummock islands in the South Carolina salt marsh, where they, along with dozens of other wild species, find refuge from encroaching development along the coast.

As impressive as these early results are, they were only the beginning. According to McCord, "Through the extensive survey, we found these habitats to be much more biologically diverse than what we originally thought before this undertaking."

Final survey results revealed more than 530 plant species, with approximately 800 more samples awaiting positive identification by a professional botanist. Animal species were also numerous: 161 birds, 21 mammals, 22 reptiles, 11 amphibians, 9 fish, 60 butterflies, 21 dragonflies, 6 crustaceans and 9 mollusks.

One notable discovery: hummocks serve as important habitat for many species of birds. As development continues to alter the traditional habitat along the coast, many bird species have likely sought isolated habitat on hummocks.

McCord says, "Since many bird species are habitat specialists, bird species diversity in any area is likely correlated with habitat diversity." McCord's observations show that

the Eastern painted bunting, one of South Carolina's highest priority species in need of conservation, is attracted to this diverse habitat. He observed painted buntings on 22 of the 25 islands surveyed during the bunting's breeding season in 2004, revealing that they often find desirable breeding habitat on hummock islands of two acres or larger.

Additionally, McCord noted that ten species of wading birds rest, roost and feed on hummocks and the surrounding wetlands. Wading birds that nest on hummocks include: the great blue heron, great egret, snowy egret, black-crowned night heron, yellow-crowned night heron and green heron.

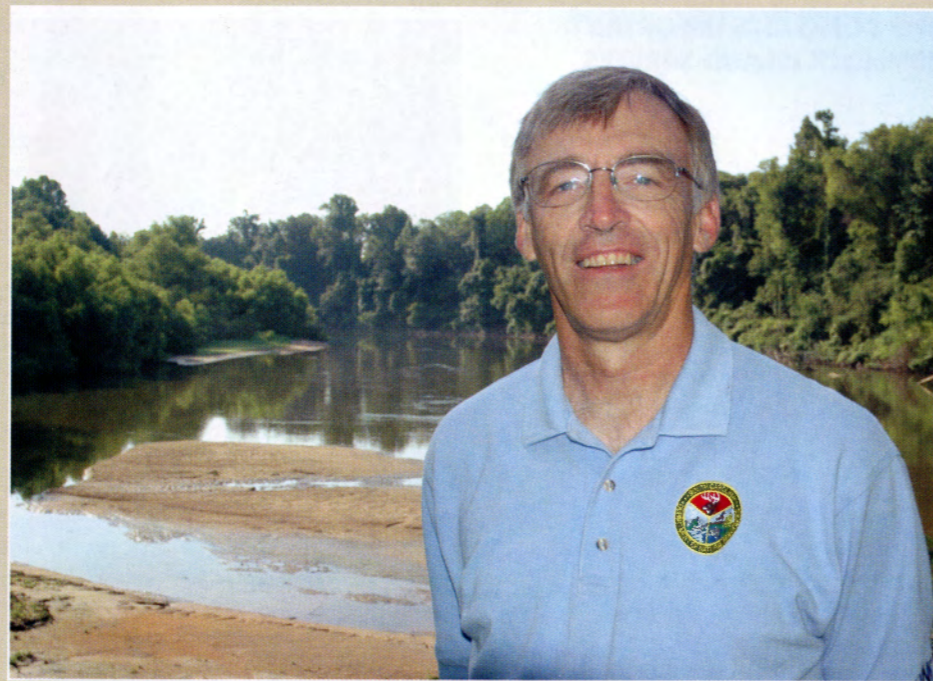
"Resting of many species of wading birds," according to McCord, "was observed to be more prevalent on isolated hummocks in the Charleston area than on hummocks farther south in the protected ACE Basin, which provides evidence that habitat loss and disturbance can influence the extent to which these species use the hummock islands." 🐾

AT YOUR SERVICE: JIM BULAK

“For several years,” recounts Jim Bulak, Freshwater Fisheries research coordinator for the state DNR, “agency colleagues and I collected striped bass eggs from the Congaree and Wateree rivers during the spawning season—every day, all day. In fact, I’d occasionally sleep in the boat at night between samples, to be awakened by a dawn chorus of birds. On several of those sampling days, I’ve been there in the midst of it all during the peak of striped bass spawning, generally the early evening. The sights and sounds of this event are amazing.”

While Dr. Bulak no longer finds himself sleeping afloat at night, he’s still energized by being in the midst of field research. For example, if you like to catch a few now and again at Lake Murray and you notice an increase in the number of fish favoring your hook, you’ll have Jim Bulak, in part, to thank: “One of the projects I’m doing field sampling for involves finding an optimal striper stocking strategy for Lake Murray,” he reports. “We mark fish we put in the upper part of the lake differently than those we put in the lower part; then we catch these fish two years later to see which ones survived better.” Knowledge gained from this field sampling, he trusts, will lead to better fishing at the Midlands’ largest water playground.

Aside from the satisfaction of personal field work, Bulak takes pleasure in forwarding the labors of on-site biologists. “I work with staff to find grants,” Bulak says. “At least half my time goes into this and other tasks that support our personnel here in Eastover, and I’m



PHILLIP JONES

also a resource for other section biologists.”

Between research reports on projects for which he’s primarily responsible, Bulak takes on queries from the angling public and responds to students asking about internships or projects: “In summer, we host several students; in the fall and spring, we usually have a student working on some kind of university-affiliated project all the time—right now, we’re cooperating on a redeye bass genetics project with the University of South Carolina—and in the spring, high school students often come out and shadow.”

Bulak’s national reputation as a leader in understanding landlocked striper populations has opened doors for him, affirms DNR Assistant Chief of Fisheries Ross Self: “Jim served as associate editor to the North American Journal of Fishery Management and as president of the South Carolina chapter of the American Fisheries

Society (AFS). He remains active with striped bass management as the section’s representative to the Striped Bass Committee of the Southern Division of AFS. As co-chair of a task group for Freshwater Fisheries, he was part of a process that led to fundamental changes in the way the section views fishery management, and the agency’s governing board recognized Jim with a Meritorious Service Award.”

Named 2005 Southeastern Association Biologist of the Year, Bulak considers his top achievement “bringing in outside funding so we can look at nontraditional areas like freshwater invertebrates. Twenty years ago, the agency was dealing mostly with huntin’ and fishin’, but now we’re examining our role as stewards of all natural resources.” Clearly, Jim Bulak still relishes his work with stripers, but his vision for conservation of South Carolina’s natural resources has expanded to include so much more. 🐟

—Rosanne McDowell

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TED BORG

Red drum.

NEW FINFISH LAWS IN EFFECT

To counteract fishing pressures and environmental stresses placed on South Carolina's marine finfish, the South Carolina Legislature, guided by the DNR, placed new regulations on black drum, weakfish, hardhead and gafftopsail saltwater catfish, red drum, spotted seatrout, flounders, black seabass and dolphins.

Details of the new laws are as follows:

Black drum: bag limit of 5 per person per day; minimum size limit of at least 14 inches total length, and maximum of no longer than 27 inches total length. **Weakfish:** bag limit of 10 per person per day; minimum size limit of 12 inches total length. **Hardhead and gafftopsail saltwater catfish:** possession is prohibited. **Red drum:** bag limit of 3 per person per day; minimum size limit of 15 inches total length, and maximum of no longer than 23 inches total length. **Spotted seatrout:** bag limit of 10 per person per day; minimum size limit of 14 inches total length. **Flounders:** bag limit of 20 per person per day, not to exceed 40 per boat per day;

minimum size limit of 14 inches total length. **Black seabass:** bag limit of 15 per person per day; recreational minimum size limit of 12 inches total length. **Dolphin fish:** bag limit of 10 per person per day and 60 per boat per day (headboats excluded from boat limit); no size limit. 🐟

YOUR STORY HERE!

S.C. Wildlife invites you to share photos, slides and/or short descriptions of your outdoor traditions. Tell us about what this traditional activity, meal or place involves, how it got started, why it continues and who is involved.

We'll collect your submissions, including descriptions of no more than 300 words, along with images, between now and December 1, 2007. If we get enough print-worthy stories, we'll publish some in our September-October 2008 issue. Just follow these guidelines:

1. Send only slides, prints or digital photos that are in focus and exposed properly—nothing blurry or too dark or bright!

2. Don't write on the back of photos. Instead, enclose a descriptive note or put a sticky note on the back. Please do not use tape or paper clips to attach notes. Prints, slides and digital photos on CD or DVD are OK, but no negatives, please.

3. To have your photo returned, enclose a self-addressed, stamped envelope.

4. You can send several photos, but only one will be used. Descriptions of outdoor traditions without photos are fine.

5. If you choose to send a story told to you by someone else, please send in only real stories of people you know. Also, please ask them for an appropriate photo and permission to publish it (if one is available).

6. Mail entries to Outdoor Traditions, *S.C. Wildlife* magazine, P.O. Box 167, Columbia, SC 29202 or e-mail submissions to FosterC@dnr.sc.gov and put "Outdoor Traditions" in the subject line.

For more on outdoor traditions, visit <http://www.scwildlife.com/pubs/julaug2007/storytotell.html>. 🐟



MICHAEL FOSTER

Tell our readers about your outdoor traditions! See <http://www.scwildlife.com/pubs/julaug2007/storytotell.html> for more details.

NOVEMBER-DECEMBER EVENTS

NOVEMBER-DECEMBER 31.

Trail Ridings. Cheraw, Spartanburg and Blacksburg. Contact Cheraw State Park, (843) 537-9656; Croft State Natural Area, (864) 585-1283; and Kings Mountain State Park, (803) 222-3209.

NOVEMBER 2.

Owl Prowl. Columbia. Contact Sesquicentennial State Park, (803) 788-2706.

NOVEMBER 2, 9, 16, 23, 30.

Lagoon Kayaking. Hunting Island. Contact Hunting Island State Park, (843) 838-2011.

NOVEMBER 3.

Park Volunteer Day. Myrtle Beach. Contact Myrtle Beach State Park, (843) 238-5325.

NOVEMBER 3, 10, 17, 24.

Plantation Days. Charleston. Contact Middleton Place, (843) 556-6020 or toll-free (800) 782-3608, or visit the Website at www.middletonplace.org.

NOVEMBER 3, 10, 14, 17, 28.

Outdoor Cooking Classes. Cayce. Contact Adventure Carolina, 1107 State Street, Cayce, SC 29033, (803) 796-4505.

NOVEMBER 10.

Catfish Festival. Society Hill. Contact Catfish Festival, (843) 378-4681 or toll-free (888) 427-8720.

NOVEMBER 19-JANUARY 1.

Children's Garden Christmas & Kid's Walk. Orangeburg. Contact Edisto Memorial Gardens, (803) 533-6020.

NOVEMBER 23-25.

Gem, Mineral and Jewelry Show. State Museum, Columbia. Contact Susan Shrader, Columbia Gem & Mineral Society, P.O. Box 6333, Columbia, SC 29260, (803) 736-9317.

NOVEMBER 23-DECEMBER 30.

Lights Before Christmas. Columbia. Contact Riverbanks Zoo, 500 Wildlife Parkway, Columbia, SC 29210, (803) 779-8717.

NOVEMBER 24.

Fall Leaves Hike. Cayce. Contact Adventure Carolina, (803) 796-4505.

Chitlin Strut. Salley. Contact town of Salley, (803) 258-3485, or visit the Website at www.chitlinstrut.com.

NOVEMBER 24-DECEMBER 31.

Fantasy of Lights. Sumter. Contact Swan Lake Iris Gardens, (803) 436-2640 or toll-free (800) 688-4748.

NOVEMBER 29-DECEMBER 31.

Lights of Cayce. Cayce. Contact Cayce City Hall, (803) 796-9020.

DECEMBER 1.

Catfish Stomp. Elgin. Contact Elgin Town Hall, (803) 438-2362.

DECEMBER 3-DECEMBER 31.

Plantation Christmas. Charleston. Contact Middleton Place, (843) 556-6020 or toll-free (800) 782-3608.

DECEMBER 15.

Family Yuletide. Charleston. Contact Middleton Place, (843) 556-6020, or toll-free (800) 782-3608. 🐟

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—Caroline Foster

NATIVE DECORATIONS

Nothing puts me in the holiday spirit like selecting a Christmas tree. It's a family tradition at our house—one we look forward to with great trepidation.

We usually choose a red cedar, though we've tried white pine, an assortment of non-natives and one assault on a small, bare-branched sweet gum that I wrapped in cotton and festooned with Spanish moss.

"Wow!" the boys howled. "A ghost Christmas tree. Creepy!"

The WW (wonderful wife) shook her head. "Get your coats, we're going to Mr. Huggin's."

Toad Huggin's tree farm was our usual holiday battleground in those days. Eighty-five acres of rolling piedmont dotted with a mix of mostly forgotten evergreens ranging in height from less than 3 to more than 30 feet.

Toad met us, brandishing a rusted bow saw. "I gotta drag 'er out with the tractor like last year, it's an extra five bucks."

"Not this year, my friend," I replied in my best Christmas-cheer voice, having spotted a beautifully shaped nine-foot cedar less than 10 yards from the gate.

"Now, now," began the WW, as the two boys and I formed a skirmish line and marched toward the tree. "That's a pretty one, but let's not be hasty." She began humming Christmas carols, a sure sign of a long afternoon.

"How 'bout that one?" our oldest asked, pointing across Huggin's pond. "Yeah!" chimed in our youngest, charging off behind his brother. After a muddy slog around the pond's upper end, the WW and I caught up just in time to hear the bad news.

"Aw . . . it's got no limbs on this

side, and a bird's been pooping in it."

"Well . . ." said the WW, "that one over there looks perfect." I followed her gaze toward a distant ridge, where a lone cedar stood against the skyline. Fifteen minutes later we all stood beneath a tree that would give the Statehouse tree-trimming crew nosebleeds trying to get a star atop it.

During the next three hours I cheerily hummed the theme from *The Bridge on the River Kwai* to keep family spirits up as we marched back and forth across Huggin's fields, finally cutting the nine-footer near the gate.

At home that afternoon the WW organized us into a bag-and-basket brigade. "That holly by the fence has lots of berries. Get some pine boughs and some smilax, and don't forget to bring a couple of pieces of magnolia for the table spray. Oh, and see if that big pine has dropped any large cones."

We knew for sure that the holidays were upon us as we scurried off on our assigned missions. When the blessed day finally arrived, the house was resplendent.

Actually, South Carolina hosts quite a variety of native vegetation one can use to decorate for the holidays, Thanksgiving through Christmas. Where you live and your imagination are the only limits.

Mistletoe and holly are two standards almost everyone knows. Winterberry and cassina (for those who live on the coast) also provide bright-red berries. Smilax vines with sprays of cedar and pine make excellent garlands, wall hangings and table decorations. Magnolia, bay and rhododendron leaves make a good base layer for table and mantle displays as well as wreaths. Hemlock and mountain laurel, called ivy by the locals, make beautiful wreaths and



PHILLIP JONES

South Carolina hosts a variety of native vegetation perfect for holiday decorations. Holiday decorations at Hobcaw Barony, above.

sprays. Coastal folks can add shells and palmetto fronds to make their décor naturally unique.

Pine cones, both large and small can add something different to your display. And grapevine wreaths, though they take a bit of time to construct, will last for several years.

If the above doesn't provide enough inspiration to make you consider adding native plants to your holiday decorations, visit one of South Carolina's many historic sites and homes on display during the holiday season.

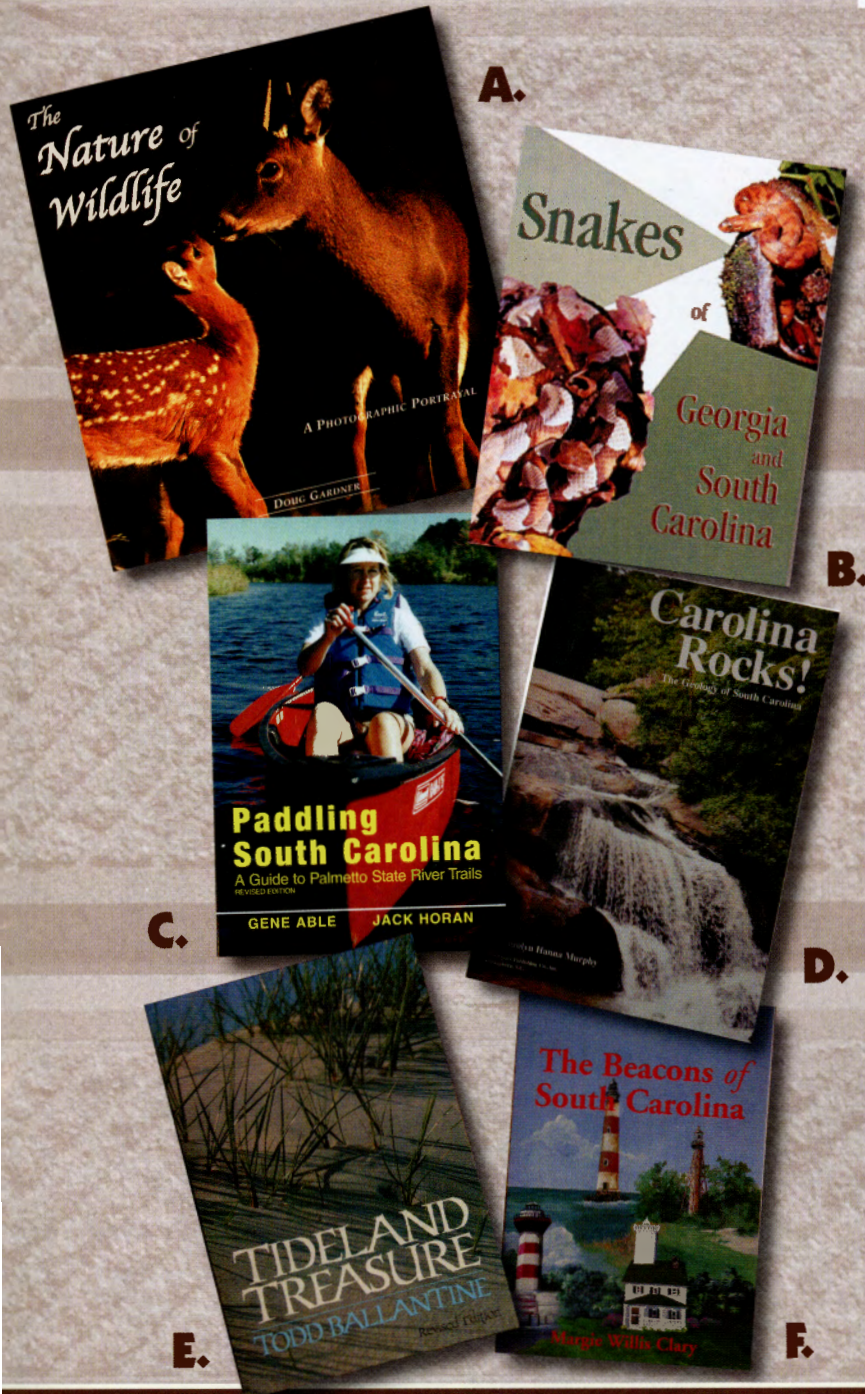
Last year I saw some arrangements containing dried grass plumes, seed heads, acorns and trumpet-creeper pods. Some were left natural, while others had been spray-painted gold and silver to add sparkle and color. One house had a weathered piece of driftwood with holes drilled in it for candles. The driftwood piece sat in a bed of Spanish moss.

"See," I nudged the WW. "I told you the moss would have looked good." 🌿

—John E. Davis

Get Comfortable With a Good Book!

SCW SOUTH CAROLINA WILDLIFE SHOP



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C. Paddling South Carolina. By Gene Able and Jack Horan. Complete guide to canoeing and kayaking the Palmetto State. 160 pages. \$13.

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by Phillip Jones. 30" x 22". \$5.
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by Michael Foster. 30" x 22". \$5.
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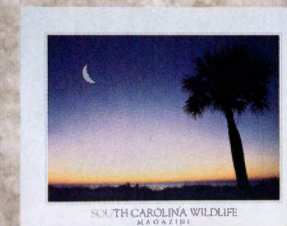
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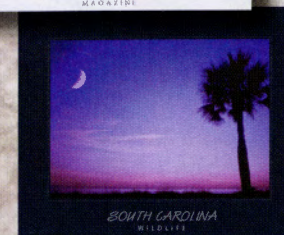
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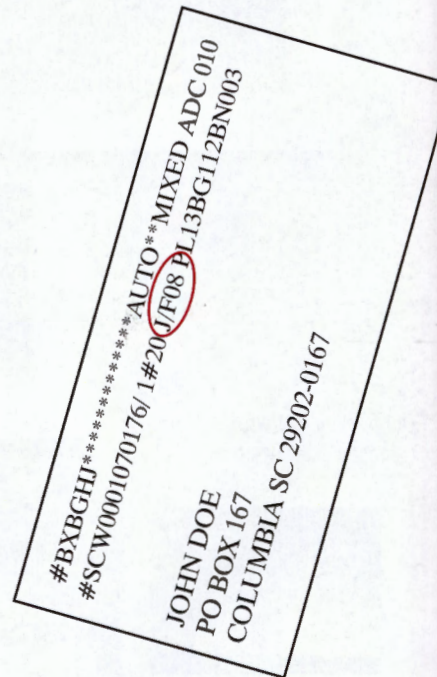
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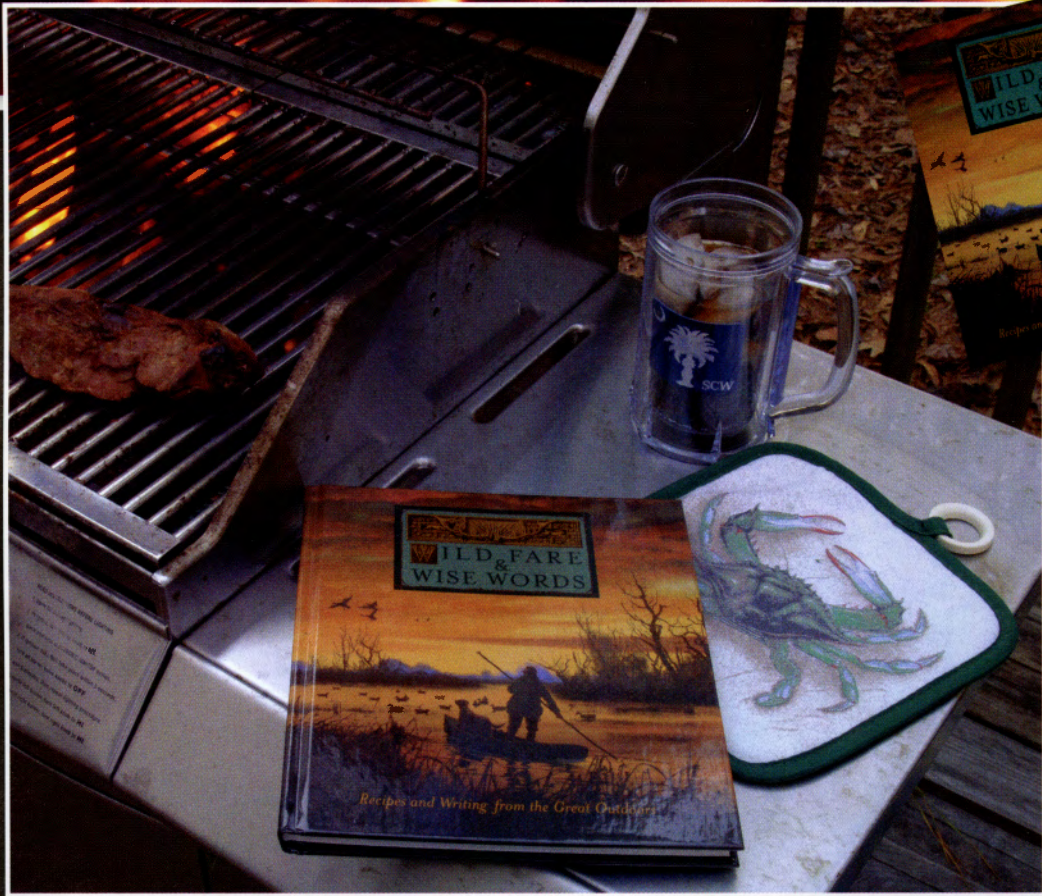


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