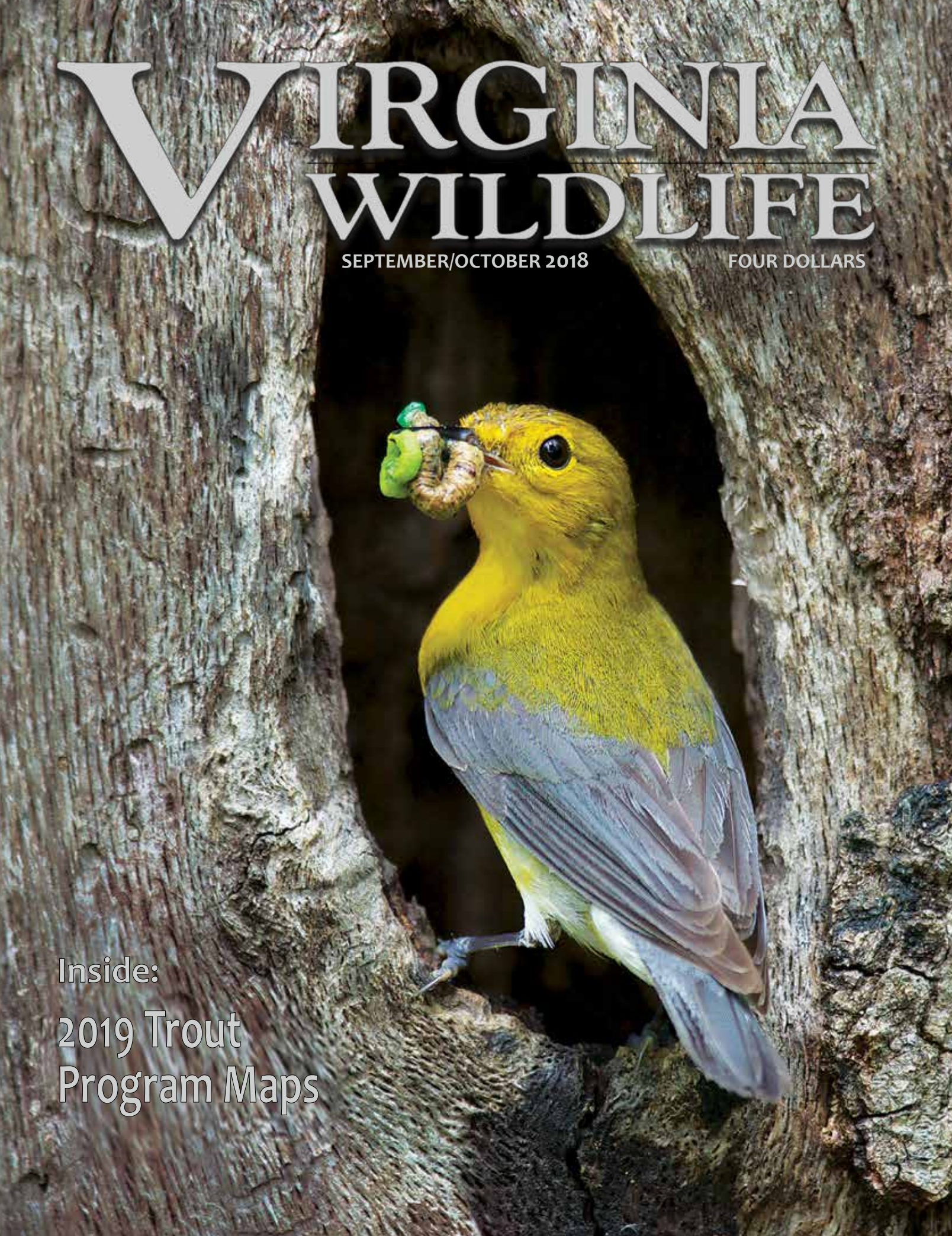
# VIRGINIA WILDLIFE

SEPTEMBER/OCTOBER 2018 FOUR DOLLARS



Inside:

## 2019 Trout Program Maps

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**Cover:** A female prothonotary warbler brings caterpillars to her young. See page 5. ©Mike Roberts
**Left:** A handsome white-tailed buck pauses while feeding along a fence line. ©Ryan Yoder
**Back Cover:** Native brook trout ready for those fly rods. See page 32. ©Eric Engbretson

BOB DUNCAN
Executive Director

September is a most wonderful month, as the dog days of August turn into that special time when squirrels are cutting hickory nuts and days begin to cool down. The dove fields beckon and the retrievers are eager to do the thing they were born to do! Yes, September is the start of everything fall: college football, getting in some great days on the water, and spending time afield. No wonder September was the month picked to celebrate National Hunting and Fishing Day, along with Virginia Public Lands Day. Both are recognized on September 22 and offer you the opportunity to explore Virginia's bounty of game and fish species. While making plans, consider taking a youngster to a dove shoot or your favorite fishing hole. We have a one-of-a-kind campaign running right now, Refer A Friend, with incentives designed to motivate current anglers to refer new folks to buy a license and get out on the water! Through the Go Outdoors website (gooutdoorsvirginia.com), you will receive a personalized referral code to share with any potential angler. See page 44; it's a great way to introduce a new person to the sport.

The articles in this issue remind me of the early fall season, in that there's something for everyone. The work by Mike Roberts on prothonotary warblers intrigued me, as it reveals the presence of these magnificent songbirds in locations farther west than has been generally reported. Curtis Badger takes us back to a simpler time when school kids learned about the natural world firsthand by squeezing in hours afield at the end of the classroom day. And John Shtogren shines a light on the exciting trend of women afield—noting the industry's attention to the need for firearms, clothing, and accessories that more suitably match their proportions. Other features consider: the annual ritual of cobia moving out of the Chesapeake and multi-state efforts to manage that fishery; the joy that members of the Virginia Herpetological Society share for all things reptile and amphibian; and the importance of looks in young animals as a biological adaptation that enhances their odds of survival and attentive parents. Trout stocking maps also have been updated inside (and appear online at www.dgif.virginia.gov/fishing/trout/area-maps) for those of you seeking some mountain stream adventures.

Across the commonwealth, as the ironweed and joe pye weed blooms give way to the early fall colors of sumac and sugar maple and other deciduous trees, and as nature once again provides us with a reminder of how beautiful Virginia is, please take time to appreciate the wonders of the season. As always, I hope to see you out there!

MISSION STATEMENT

Conserve and manage wildlife populations and habitat for the benefit of present and future generations. Connect people to Virginia's outdoors through boating, education, fishing, hunting, trapping, wildlife viewing and other wildlife-related activities. Protect people and property by promoting safe outdoor experiences and managing human-wildlife conflicts.

CONSERVE. CONNECT. PROTECT.

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**www.dgif.virginia.gov**



# How Sweet Sweet Sweet It Is!

Story and photos by Mike Roberts

There are sounds of nature tucked into the minds of all naturalists which, upon reoccurrence, unspool the memory of the moment in time they were first heard. One such personal memory occurred for me on a warm April morning nearly 40 years ago. Ernie Davis and I were anchored adjacent to a deep run in the scenic Staunton River lobbing bucktails to fat-bellied striped bass on their annual, 60-mile spawning journey. Above the noise of rushing waters, screaming reel drags, and occasional laughter, the cheerful notes of an avian's song caught my ear. Twisting around on the seat of the flat-bottomed boat, I caught a flash of yellow in the overhanging sycamore and boxelder limbs. Then, as if scripted by Aldo Leopold, the colorful bird flew down to a twisting, wild grapevine just overhead and began chirping a most delightful ditty. This was my unforgettable introduction to the prothonotary warbler. There was no way to know it at the time but, many years later, the recollection of that neotropical migrant would initiate a new, exciting chapter of my personal environmental study.

## Evolution of a Project

In January 2017 it was my good fortune to accept employment through the Ward Burton Wildlife Foundation. Because of our lockstep interests in wildlife conservation, Ward and I had developed a meaningful friendship decades earlier. Soon after meeting the successful NASCAR driver, it became obvious his primary interest in life was natural resource stewardship. Through sustainable forestry practices, sound land-use decisions, and habitat enhancement, Burton's organization dedicated itself

Once called the "golden swamp warbler," this handsome neotropical migrant makes its annual flight from Central and South America to parts of Virginia in search of wetland breeding habitat.

Brandon Martin, natural resource manager for Fort Pickett, right, and volunteer Phil Davis, strategize nesting box locations along tributaries of the Nottoway River in Brunswick and Dinwiddie counties.

A Halifax County High School student sets up a press prior to drilling drain holes in a PVC nest bottom cap. Under teacher supervision, HCHS shop classes manufactured 50 of the project's nesting boxes.

to the welfare of the diverse community of plants and animals dependent on his foundation properties at the Cove.

During an early meeting, Ward instructed me to develop a project that could raise public awareness of the foundation's objectives. My initial thought was to establish an interesting non-game project. So on a cold February morning, I set out to explore the Cove's 2,500 contiguous acres bordering the Staunton River in rural Halifax County.

I knew we needed an extraordinarily interesting subject to attract attention; pulling on waders, I headed into the swamps. Although the day was blustery, the wetlands were teeming with wildlife. Flocks of woodies, mallards, and black ducks flushed from a beaver canal as I labored to push through the thick, underwater mats of smartweed. A red-shouldered hawk's shrill call pierced the air, while a great blue heron in departing flight croaked disapproval at my intrusion. From the impenetrable tangles of leafless button bush, dried stalks of swamp rose mallow, and black willows, thoughts of that fishing trip and the little, yellow passerine emerged from my memory bank. If prothonotary warblers were using the Staunton River as a migration corridor, no doubt a pair nested here. The muddy margins of those Jurassic-like wetlands produced the concept of "Project Prothonotary."

Researching ornithology in Southside Virginia, I soon discovered most people were not familiar with the prothonotary warbler. Prothonotary studies have been ongoing for decades in the lower James River and Tidewater, but breeding information in the Roanoke River basin was nonexistent. A handful of birders had recorded the species, but individual sightings seemed to be the extent of activity.

With no time to waste, materials were purchased, a half-dozen cedar boxes were constructed, and four sourwood tree cavities were collected from the forest. With assistance from several energetic youngsters—another vital component of the project—sites were selected and potential nesting facilities installed. By the end of March and right on schedule, everything was in place!

## Science of the Matter

The prothonotary warbler *(Protonotaria citrea)* is a habitat-specific species preferring flooded timber with stagnant or slow-moving water. It is Virginia's *only* warbler that nests in tree cavities. The majority of these gorgeous birds spend winter in Central and South America. Depending on where they overwinter, some round-trip migratory routes take them nearly 5,000 miles.

The prothonotary's North American geographic range includes parts of Texas, Oklahoma, and Kansas, from Wisconsin and Michigan south to the Gulf of Mexico, east to the Atlantic seaboard (excluding mountainous terrain), north to New Jersey and south to the Florida peninsula. Population strongholds are the Mississippi River drainage and swamplands in the eastern section of South Carolina. The International Union for the Conservation of Nature lists the species in the category of "least concern," although historical numbers are suspected to be down in parts of its range by as much as 40 percent. The likely cause for decline is loss of wetland habitat and competition from other cavity nesters. In areas of the commonwealth where prothonotary populations have been monitored extensively, numbers are either stable or increasing.

As birds of perpetual motion, prothonotary warblers search thick, stream-side tree canopies for beetles, lacewings, crickets, caterpillars, small moths, and spiders. They also forage near the water's surface and along floating logs for aquatic insects such as mayflies, stoneflies, caddisflies, damselflies, and the occasional terrestrial crustacean.

As with most members of the wood warbler family, the male prothonotary is first to arrive at a potential breeding location. With tireless vigor, he performs a repetitive chorus of "Sweet, sweet, sweet, sweet, sweet, sweet"—both to establish territorial parameters and to attract a mate. During this period he seeks out multiple nesting sites and garnishes each cavity with tidbits of moss. Upon arrival, and after pairing and mating, the female selects the preferred cavity to construct her nest of dried grasses, sedges, rootlets, moss, and willow leaves. The typical clutch of eggs is four to six, cream to pinkish-colored, highlighted with splotches of purplish-brown and gray. Incubation lasts approximately two weeks and is conducted solely by the female. Both adults participate in feeding the young that fledge 10 to 12 days after hatching. Nests are occasionally parasitized by brown-headed cowbirds; odd, because seldom do they target cavity nesters. Also unique to most warbler species, the prothonotary often produces two broods annually.

## Jubilation Day

With the approach of spring, prospects for the project's success seemed somewhat dubious, primarily because the underlying concept was based upon suspicion rather than empirical proof. But upon my return to the wetlands in late April, all doubts were erased: The unmistakable song of a male prothonotary rang out loud and clear from the willows at the first site. In a matter of moments, the handsome songster flew to a dead limb within feet of where I stood mired in knee-deep muck to perform his sweet melody. No words can appropriately describe the jubilation I felt at that moment.

Three hundred yards farther upstream, a second male was singing. Even more exciting, through binoculars from 40 yards away I watched a female busily transporting nesting material into the cavity. Over the next two days it was my pleasure to discover five of the cedar boxes and two natural cavities in use. Even the vacant box had pieces of moss scattered over the bottom. Seven pairs of prothonotary warblers in wetlands stretching less than two miles: unbelievable!

## Spring Semester

In a matter of a few short weeks, discovery transformed into a fantastic learning experience. It involved study of a range of interesting plants and animals that depend upon wetland conditions; suffering through the misery of stifling humidity,

Clover Power Station employees Will Solomon, left, and Tim Hamlet erect a nesting box in company-owned wetlands adjacent to the Staunton River near Clover, Virginia.

During 2018, Project Prothonotary used PVC nest boxes originally designed by Wisconsin DNR. Readily accepted by the birds, boxes were sponsored by individuals, organizations, and companies as seen on the name plate here.

*"The real jewel of my disease-ridden woodlot is the prothonotary warbler…The flash of gold-and-blue plumage amid the dank decay of the June woods is in itself proof that dead trees are transmuted into living animals, and vice versa."*

–Aldo Leopold

blood-thirsty leeches, and mosquitos; and yes, the inconvenience of spring floods. But the project turned out to be an exhilarating spring semester of outdoor education!

Time spent staring through a camera lens and binoculars validated much of the birds' known behaviors. Yet there were several notable surprises, especially when the adults were feeding their young. For one, females approached nest sites in silence. Males, however, routinely flew to nearby perches to announce their presence with song. At the first note, the hatchlings automatically opened their bills! Also, it quickly became apparent that prothonotary warblers are effective hunters. Seldom did either adult return to the nest with a single food item. More often they transported multiple catches, especially when there were mayfly hatches. I observed the warblers' bills packed with an assortment of food sources: spiders, mayflies, stoneflies, and caterpillars. Perhaps the biggest surprise of the entire project was the manner in which they tolerated my human presence. Still, on several occasions when I was caught standing outside the camouflaged blind, approaching males—like master ventriloquists—exhibited an uncanny ability to throw their songs, an adaptation to make them sound much farther away.

Not one of the installed nesting boxes was adopted by other cavity nesters or flying squirrels. I attributed this to the fact that the facilities were purposely placed in late March after chickadees, nuthatches, and titmice had already selected nesting sites. To discourage use by tree swallows, the boxes were located in flooded areas with tree canopies. No nests were disrupted by snake or raccoon predation.

Although the project was established to determine presence of a unique migratory bird, it became a genuine lesson in land stewardship. For decades the Cove's bottomlands had been heavily grazed

Success! Five eggs found in one of the newly installed nest boxes.

by cattle, which resulted in soil erosion and habitat degradation. But with new ownership and a halt to agricultural practices, nature reclaimed the area under the supervision of a keystone species—the North American beaver. Bulging populations of the big rodent with superior engineering skills resulted in natural reclamation that benefitted numerous species of plants and animals, one of which was the prothonotary warbler.

## Project Prothonotary 2018

The Ward Burton Wildlife Foundation made a decision to increase the project's scope of activities in 2018. A design was adopted from the Kentucky Department of Fish and Wildlife Resources, and 106 boxes were constructed and installed in portions of the Roanoke drainage (selected wetlands along the scenic Staunton River from Brookneal, downstream to Kerr Reservoir, up the Banister River, and the Dan River upstream of South Boston). In addition, 13 boxes were placed in wetlands along the Nottoway River within and adjacent to Fort Pickett in Dinwiddie and Brunswick counties. The objective was not a focus on propagation or collecting scientific data, but rather, expanding educational outreach in Southside Virginia about prothonotary warblers as ambassadors for a critical component of the larger environment.

By the end of April a number of females had accepted the newly designed boxes, although heavy rains flooded several in low-lying areas. Then, during mid-May, and just as the warblers were in the middle of nest construction and egg laying, calamity struck. Over ten inches of torrential rain fell in the upper portion of the Banister, Dan, and Staunton rivers. Within hours, nearly 40 percent of the nesting boxes were several feet under water—silting nests and eggs. Yet the warblers showed resilience by adopting other boxes and, no doubt, natural cavities. By June, and exceeding all expectations, over 100 prothonotary warblers had been confirmed in close proximity to the selected nest sites.

Though purposely avoided by most people during warm weather, the inhospitable quagmires along the Roanoke River are treasure troves of flora and fauna. Thanks to the support of the Ward Burton Wildlife Foundation, we now have

Braving the chill of March and cold, inhospitable wetlands, a group of energetic youngsters surround conservationist Ward Burton while placing nest boxes for Project Prothonotary.

tangible evidence that far more golden swamp warblers spend their springs and summers here than anyone ever suspected!

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State and local agency partners included DGIF, DCR, and the Halifax Soil and Water Conservation District. Box construction and installation assistance included students from Averett University, Halifax Co. High School, Hargrave Military Academy, employees of the Clover Power Station, and other volunteers. Financial support was provided by concerned individuals and businesses donating through the Ward Burton Wildlife Foundation's Adopt-A-Box initiative and corporative partners Dominion Energy, Old Dominion Electric Cooperative, and Clover Power Station.

*Mike Roberts is a lifelong naturalist and wildlife photographer who utilizes his knowledge of animal behavior and nature to educate others about respect and appreciation for the great outdoors.*


### FOR MORE INFORMATION

- Ward Burton Foundation and Project Prothonotary
  www.twbwf.org/project-prothonotary
- Birding
  www.dgif.virginia.gov/vbwt
  www.dgif.virginia.gov/wildlife/birds/virginia-breeding-bird-atlas

# Hunting: A Foundation for Life

By Curtis J. Badger

When I was a teenager I often carried a gun to school. The thought of that generates shock in this day and age, but in a time long ago when the world seemed sane and safely benign, it meant only that I had negotiated use of the family Ford for the day, and in the trunk of the car were my father's old Fox 20-gauge double, the shell vest, and my brier-proof pants. When the final bell rang at 3:10, I would be on my way to a friend's farm and would walk the hedgerows and cutover soybean fields until dark.

On some days I would bring home a bobwhite quail, or perhaps a rabbit or a squirrel or, more frequently, nothing but weary legs and the quiet satisfaction of having spent the day's end trudging alone through thickets of greenbrier, filling the senses with the sights and sounds and the wild aromas of the outdoors.

I grew up in a small town on the Eastern Shore, and hunting is something most of us did without giving it much thought. My father called it "going gunning," a term that is equally nonspecific and unfocused. Going gunning is unlike other field sports, such as ducking, which means you're going to the blind with the decoys before dawn and hoping to return by lunchtime with a pair of ducks. It is unlike bird hunting, which implicitly refers to bobwhite quail and pointers and setters, or rabbit hunting, which calls for beagles. And it is not like marsh henning, which means poling a skiff through the marsh during very high tides to flush clapper rail.

Going gunning is at the generic core of the hunting and gathering tradition of rural Virginia, and for generations it has existed to put food on the table, like catching a nice mess of fish. Ducking is a sport unto its own, a complex occupation filled with rites and rituals, a Masonic meeting in the salt marsh.

Bird hunting can be elitist. At its height it projected an image of expensive dogs, horses, professional trainers, and shotguns with gold inlays. Rabbit hunting is a specialty sport, practiced by a devoted few willing to house and feed a pack of dogs all year for a season that lasts only a few weeks out of the fifty-two. Marsh henning is an accidental sport, happenstance, usually unplanned, available only when the lunar tides conspire with the daily weather to produce tides well above normal.

I have a special affinity for the marsh hen because it was the first bird I ever killed and ate. I went marsh henning with my father, who correctly reasoned that a slow-flying bird in an open setting would be a good choice to introduce a neophyte to wingshooting. We borrowed an old cedar skiff from a friend and launched it in a seaside bay, my father poling from the stern, keeping the bow heading into a little wake kicked up by the northeast breeze. I was 13 and this was my initiation to hunting, to the stark, and perhaps uncomfortable, reality that in order for us to live, something else had to die. I had caught fish many times before and had proudly brought them home for the table, but fishing differed from hunting in ways that were discrete and profound. To catch fish, you baited a hook, dropped it into the blackness of water, and waited until that rattle and jerk meant a fish was on. The fish would die, but it would seem an anonymous partner in the process, a willing participant in the ritual of hunting and gathering.

To kill a rail, however, was an overt and conscious act of violence. A decision was made to take a life, and it was carried out the instant the gun was pointed and the trigger was pulled and the bird lay shattered and broken in a spray of lead shot, a wing beating the water in a final act of muscle memory.

© Shutterstock

***We learn as hunters that we are not above nature and separate from it, but rather, a part of the delicate balance that is vital to the health of all natural communities.***

Marsh henning began my life as a hunter, and it was a seaside baptism of full immersion, a ritual which demonstrated that man is not separate and above the realm of nature, but part of it, an active participant in the daily ritual of life and death, just as surely as the harrier nabs the field mouse, or the peregrine takes the teal. The difference, I think, is that to me the taking of life was not necessarily a matter of survival, but an experience that forces us to contemplate the violent and ephemeral nature of living.

I'm in my seventies now and no longer hunt. I didn't make a decision not to hunt, but rather, it happened over time, a progressive situation that might have begun with surgery to repair a ruptured quad tendon, and a resulting inability to trudge easily through greenbrier thickets. It also might have something to do with how the natural world has changed in the last half-century.

I grew up hunting quail. We always had a bird dog around the house, a succession of pointers and setters of uncertain bloodlines, dogs that were eager hunters but also more than willing to serve as the family pet. Those were the last of the good days of quail hunting, when there were sufficient hedgerows to sustain multiple coveys, when there were fewer "posted" signs, when farming was more likely a family business than an industry.

Quail are rarely seen today. The annual Audubon Christmas Bird Counts turned up 100 or more birds on a regular basis until the mid-1980s, but in recent years quail rarely show up at all in the yearly tallies. Conversely, when I was growing up it was very rare to see a deer, and even as the population grew, I never developed a desire to kill one. Today, where I live on the Eastern Shore, more deer are killed on the highways than were killed by hunters years ago.

Although I no longer take a shotgun afield, I find that hunting instilled in me certain values and a mindset that defines my life today. Through hunting I developed an appreciation for the natural world, the joy of being out there, and now I suspect that "going gunning" was not about hunting and gathering so much, but simply the need to be out there in nature, to let it all soak in. And I still do this. The Nikon has replaced my father's 20-gauge Fox, and I use a little digital recorder to pick up bird sounds or to make notes to myself about something I might want to write about later.

I learned early in hunting the importance of habitat, and today I enjoy volunteering with organizations such as the Virginia Master Naturalists to establish natural area preserves. One such preserve near my home was until recent years a commercial tomato growing operation, a part of the industrial agriculture infrastructure on the Shore. Today, native plants have replaced the long rows of tomatoes, and our reward is to go down to the preserve in summer to hear bobwhite quail calling back and forth.



Hunting, and to a lesser extent fishing, provided me with a foundation that led to a broader appreciation for nature and the outdoors. And this led to a life of writing about nature, of advocating for the protection of wild places and wild things, and it also led to a great interest in wildlife photography. I find myself supporting organizations that share the values I learned as a hunter. These would include Ducks Unlimited, which has protected vast areas of wetlands in North America, and The Nature Conservancy, which on the Eastern Shore established a preserve of barrier islands and tidal wetlands that represent some of the last coastal wilderness in the East.

We learn as hunters that we are not above nature and separate from it, but rather a part of the delicate balance that is vital to the health of all natural communities. I have birder friends who detest hawks because the feeding station they set up for chickadees and titmice sometimes becomes a feeding station for sharp-shinned and Coopers hawks as well. "Hawks have to eat too," I tell them. I don't add that their feeding station for songbirds is a great target for hawks cruising for a meal. In nature, hawks and songbirds constitute a balance, even though some may see the process as cruel.

Nature is healthiest when there is a balance. Before game laws were passed, shorebirds were hunted without limit during spring migrations, and written accounts from the period paint a picture of greed and waste. As a result, many species became endangered. A century ago, there was a market for the plumes and feathers of birds to use as ornaments on ladies' hats. This led to a precipitous decline in the population of birds such as snowy egrets.

Having been a hunter, I think, made me aware of the importance of finding a balance, the necessity of getting out there as often as I can, to watch and to learn and to experience firsthand how nature really works. It all began with afternoon hunts after school, exploring farm fields and hedgerows, carrying my father's old Fox double. And it troubles me to realize that mine may be the last generation to do so. ❧

*Curtis Badger has written widely about the natural and human history of the coast. His most recent book is Letters Home, written with his wife Lynn, is a collection of letters written by family members during the post-Gold Rush days in California to family back home in Va.*

## Youth and Apprentice Hunting Opportunities

Youth and Apprentice Deer Hunting Weekend:
**September 29-30**

Youth and Apprentice Bear Hunting Weekend:
**October 13-14**

Youth and Apprentice Fall Turkey Hunting Weekend:
**October 20-21**

Youth Waterfowl Hunting Days:
**October 20 and February 2, 2019**

For more information, see the current Hunting and Trapping in Virginia or Migratory Game Bird Hunting in Virginia guides.

# WOMEN AFIELD: FINALLY!

By John Shtogren

I can picture them smiling, Diana and Artemis, the Greek and Roman goddesses of the hunt and the wilderness. They like what they see looking down from Olympus on our woods and waters. What they see has been a long time coming. Finally, they see their sisters, women of all ages, joining in the hunt and going into the wild as never before. I wonder how a Greek chorus would sing, "You've come a long way, baby!"?

## And Then Came BOW

It's hard to say exactly when the sea change began, when women started going afield in more than ones and twos. If I had to pin a date on it, I'd say 1991. That was the year a young professor at the University of Wisconsin, Christine Thomas, offered a hands-on workshop for women to learn outdoor skills. The workshop was part of her research on why women did not participate in outdoors-related activities. She hoped a dozen women would sign up for the workshop. It turned out that more than a hundred women wanted in.

During early workshops, Thomas learned a number of key factors that would shape later programs: 1) Women didn't pursue outdoor activities simply because they didn't know where to go to learn; 2) They learn best from other women in a supportive, non-competitive environment; 3) They gain a strong sense of empowerment from attempting activities that had seemed off-limits.

Thomas's findings became the basis for the phenomenally popular BOW program, Becoming an Outdoors Woman. The basic BOW weekend workshop has three components—hunting, fishing, and non-harvest subjects like canoeing or campfire cooking. After-dinner sessions may include anything from a guest biologist talking about endangered species to a fashion show featuring the latest in outdoors women's apparel.

BOW gives women a chance to challenge themselves, to step out of their comfort zones and to experience the rush of empowerment. Kim Dunnigan, a volunteer BOW instructor, teaches muzzleloader shooting. "The first time the women fire that gun, it's like, 'Oh my gosh, I have to have one of these.'"

Since its early days, the word about BOW has spread far and wide. It is now offered in 39 states, usually through its natural resources office, as well as in six Canadian Provinces. To date, 200,000 women have attended BOW workshops and 20,000 will attend 80 workshops this year.

## Looking Good

Back in the day, becoming an outdoors woman usually meant borrowing a brother or son's clothing and gear. As a colleague recalls girlhood hunts with her father, "I looked like a cross between the Pillsbury Dough Boy and the Michelin Man. I was lugging a 12-gauge pump with a 32-inch barrel that was about as tall as I was." About the time this century turned, the sporting goods industry caught on to the growing outdoors women's market and began to tailor their products to meet their special wants and needs.

Right: Founder of GRITS, Liz Lanier and fellow shooters return from the fields after a successful pheasant hunt. Photo by ©Adam Ewing

Clothing retailers were the first to smell money. They noticed women make up more than half the consumers in the $887 billion outdoor recreation industry. As women began to pursue hunting and fishing opportunities, retailers in the rag trade were quick to claim they could dress them in style.

Unfortunately, the first line of women's field clothing to hit the market was little more than "shrink it and pink it." Small men's or youth sizes were trimmed in pink and presented as "just for women." No, a smallish male of a particular height and weight does not have the same contours as a woman with the same overall numbers.

In time, customer-driven manufacturers started with a clean sheet. For example, Sitka offers high-end hunting apparel designed by women for women. They listened to what accomplished women hunters wanted which led to designs, for example, with different collars since women don't have beards, and more protection on the back and down the backside of the thighs. As John Barklow, Sitka big game product manager noted, "Women want more comfort when sitting in a tree stand or leaning against a tree." And nothing in the Sitka line is pink.

## Shooting Straight

In the dozen years between 2001 and 2013 women were the fastest growing segment in the shooting sports—60 percent increase in target shooting and 83 percent increase in hunting. Firearms manufacturers initial response was like the sporting apparel folks—"pink it and shrink it." Stubby youth model shotguns and rifles were prettied up in pink and labeled as ladies models.

"Shrink it and pink it" didn't work any better for guns than it did for clothes. A short-barreled shotgun with a limited sight radius is hard to aim and a stock designed for little men is downright painful for a woman to shoot. Even a light weight 20 gauge will smack a woman in the face and punch her in places that hurt. In time the women shooters' message got through to the firearms designers—"It's the FIT, not the finish!"

Manufacturers like Ithaca, Fausti, and Syren have introduced guns for women based on anatomy, not fashion, taking into account:

- Women have smaller hands and need narrower grips and more slender forearms.
- Women have longer necks and higher cheek bones and need higher combs.
- Women have shorter arms and need shorter stocks to reach the trigger.
- Women are different up-front and need those shorter stocks angled out and up to put recoil on the shoulder and away from sensitive areas.

Liz Lanier is a Level III sporting clays shooting instructor and founder of Virginia-based GRITS, Girls Really Into Shooting. In a *Garden and Gun* piece, she stressed the importance of fit for women shooters: "Shooting a shotgun that fits well is like wearing a great pair of stilettos. If it feels good, looks good, gives you some confidence, and even makes you feel a wee bit sassy, you are probably going to feel more comfortable and more confident shooting it."

## Tight Lines

Women's growing numbers in fly fishing are even more impressive. Currently, women make up 2 million, or 31 percent, of the 6.5 million members of the fly-fishing community. In a new industry initiative led by Orvis, the goal is to make fly fishing an equal 50-50 gender split by 2020. Orvis and other fly-fishing retailers are hoping to outfit another one million women in the next two years.

In fly-fishing the single most important piece of equipment isn't the rod you carry; it's the waders you wear. You'll understand if you slip on a mossy rock in waist-deep water and have an icy wave seep down to your socks as you struggle to stand. At that moment, you lose interest in fishing.

Manufacturers have invested time and money to improve waders for women in both form and function. Patagonia's fishing director, Bart Bonime, explained why they didn't take the shrink-it-and-pink-it approach. "We didn't want to take a men's wader and dumb it down and color it differently for women. Women don't want something that's designed for a man. They want something that's designed for them."

In addition to sizing to various female body types, Patagonia's Spring River waders address a very practical issue—how to relieve oneself without having to strip down. A drop-seat function helps a woman answer the call of nature. It's still awkward, but better.

Unlike firearms, fly rods and reels are gender free. A six-weight is going to fish the same for a man or woman. Rods in pink, lavender or sparkly teal may add a fashion flair but trout don't care. What women need is a fly-shop pro who will help them find the right rod and reel for the water and species they'll fish.

Fly-fishing's special appeal to women may have something to do with its no-kill ethic or the zen of the long looping line over sparkling waters. As Alaskan fly-fishing guide Kate Taylor describes, "It deepens our connection to natural rhythms, and that brings humility and the understanding that you are part of something that's much larger than our own personal self."

## Women Afield and Our Future

Undoubtedly, the sporting goods industry is benefitting from the growing number of women afield, but their presence may hold a far greater benefit for all of us who love the outdoors. Taylor hinted at it when she described fly fishing and women's "connection to natural rhythms" and a new-found understanding of being part of something larger than themselves. Dale Hall, CEO of Ducks Unlimited, sharpened the importance of women afield when he explained why his organization is actively recruiting women—and it's not to fill duck blinds.

DU's goal, as Hall said, is to "adopt conservation as a significant family value in homes across the country." He believes women afield are key to achieving that goal. "We need to embrace the fact the women in our lives drive our value system more than men do." When conservation is a bedrock family value, the future will be bright for all outdoors women and men. When that day comes along, we'll all be smiling with Diana and Artemis.

*John Shtogren is a freelance outdoors writer and editor living in Cumberland County. He is working on a new book on fair chase wild boar hunting in the Southeast.*

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## Women Afield in the Old Dominion

More and more women are going afield in Virginia. "Twenty-five percent of our Hunter Ed students are girls and women," reports Sgt. David Dodson, DGIF Hunter Education Program Manager. That is a good-sized number when you consider 14,000 new hunters take the mandatory course each year, either online or in the classroom. Instructors are trained to make it a positive, non-intimidating experience for everyone.

"We train our trainers to celebrate the overall experience," says Jimmy Mootz, Region 4 Recreational Safety Coordinator.

The Department is always looking for opportunities to connect with women in its programs. For example, a Basic Hunter Education Live Fire Course catering to women is staffed with female instructors like CPO Amanda Nevel to create a more female-friendly experience. Also, as Mootz notes, "Many women hunt for food, not trophies," so adding a cooking and tasting component to a workshop on deer processing adds appeal for women.

The Department's Novice Deer Hunter Workshop and Hunt is open to any newcomer over 20, but can be an especially meaningful experience for women. Amy Johnson, in her 30s, participated in the two-day workshop and three-day hunt at Banshee Reeks Nature Preserve to better understand her husband's hunting passion. "He grew up in a hunting family. My family didn't hunt—in fact, we were anti-hunting," admits Johnson.

During the hunt to control the deer population, she enjoyed spending time with a knowledgeable, patient mentor. Even though she didn't fire a shot while sitting in a blind for three days, Johnson says, "I felt comfortable going out on my own after that." When she took her first deer, there was none of the high-five celebration we often see among hunting buddies. "I was overwhelmed, it was a humbling experience." She encourages women hunters to go afield with other women hunters. "It's like being with a friend, without any pressure." Women afield connect with nature, but perhaps a bit differently than men.

# EXPLORE, ENJOY

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Photos by Lynda Richardson / DGIF

# WHAT'S UP WITH COBIA?

*Virginia works to be a leader in sound cobia management.*

Story and photos by Ken Perrotte

The 2018 cobia fishing season in the Chesapeake Bay began with the usual high hopes for recreational anglers. For many fishermen, the hard-fighting cobia remains king of the Chesapeake summer, quickening their pulse and challenging their skills.

Master angler Wes Blow of Newport News has caught, tagged, and released hundreds of cobia in the name of research. He also likes to dine on smoked cobia salad. Ten days into the season he was "0-fer"—meaning he had boated 13 fish, but not one reached legal-keeper size of 40 inches. That record changed with his next trip out, but the point was the fish he was finding were relatively small.

Blow likes to set up several rods baited with eels, spot, or croaker and entice the cobia in with a whiff of chum in the water. In recent years "sight-fishing," where the angler stands higher in a small tower atop the boat looking for and casting to big cobia swimming near the surface, seems to be the most productive, especially on sunny days with little wind. You also avoid bait-stealing sharks and bluefish, which can be prevalent the closer you fish to the Bay Bridge-Tunnel.

Often thought of, primarily, as a lower Bay fish, anglers today also find cobia in good numbers in the middle Bay. Yes, it's easy to get hooked on fishing for these olive-brown specimens. Recent years, though, have seen considerable controversy about how to best manage migratory Atlantic cobia.

Rewind to 2016: The South Atlantic Fishery Management Council (SAFMC) calculates "unusually high landings of cobia in the 2015 fishing season," with recreational anglers allegedly overfishing the level determined as sustainable. As a result, the National Marine Fisheries Service plans to close recreational cobia fishing season in federal waters—3 miles offshore—on June 20 of 2016. Because Virginia falls under the SAFMC, it's expected to be a good soldier and close the season in state waters.

This would have wiped out almost all of Virginia's cobia fishing since it usually isn't until June that these fish typically start arriving here in good numbers. The rub was that anglers from southern North Carolina to Florida would have felt no impact, since their cobia seasons are earlier in the year.

Virginia pushed back. Many people doubted the methodology used to calculate harvest statistics. After months of discussion, fact finding, and public input, the Virginia Marine Resources Commission (VMRC) voted 5-4 to preserve a 2016 modified cobia fishing season in state waters until Aug. 30. Virginia did increase the minimum size to 40 inches from 37 and limited each boat to two fish daily, or one fish if only one angler was aboard. Only one of the kept fish could be longer than 50 inches.

A key provision was that Virginia would work out some sort of mandatory reporting requirement, designed to get a full, accurate picture as to how recreational cobia anglers were faring.

Returning to 2018: Things are on a more even keel. An Atlantic States Marine Fisheries Commission (ASMFC) interstate management plan for migratory cobia went into effect in April and in June the SAFMC voted to transfer management responsibility to the ASMFC. This should help promote consistent regulations in state and federal waters and improve management flexibility of cobia from Georgia to New York.

While some cobia are caught offshore, most are harvested in state waters, within 3 miles of shore. Virginia and North Carolina anglers catch the most cobia, far surpassing other states. Catch allocations by state are based on calculated previous landings.

According to the ASMFC website, "When a species is added to the list of Commission-managed species, an Interstate Fishery Management Plan is developed, which establishes the management of that species in state waters. Once approved, it is the responsibility of the involved states to implement the plan's management measures in their jurisdictions."

The ASMFC adopted baseline, interstate regulations for cobia matching the current federal regulations for Atlantic migratory group cobia (Georgia to New York). Each state's regulations must match the base regulations or be more restrictive. (See Regulatory Roundup, p. 23, for baseline regulations and state-by-state regulations.)

Yorktown dentist and VMRC Commissioner Ken Neill III is a member of the Finfish Advisory Committee and an avid recreational angler. He likes the ASMFC getting enhanced responsibility for overall Atlantic cobia management.

At its March 27, 2018 meeting, the VMRC adopted recreational and commercial cobia regulations in response to the ASMFC's plan. Virginia's recreational regulations set a 40-inch minimum length with a one fish per person daily possession limit or 3 fish daily vessel limit, whichever is more restrictive. Only one fish per vessel per day may be greater than 50 inches long. Big cobia, larger than 55 pounds, are mostly mature females. The adopted limit helps protect breeding stock.

For one, Blow favors protecting the biggest fish. He notes that the largest cobia caught during last year's Virginia Saltwater Fishing Tournament was 82 pounds, the smallest in well more than a decade and indicative of a several year

trend of ever smaller fish. The dearth of bigger fish has him worried that anglers may be getting too proficient at targeting the big females.

"Small fish are good for the future, but for years the biggest fish weighed more than 100 pounds, with many more over 90 pounds," Blow reports.

The 2018 season opened June 1 and closes Sept. 30. Commercial cobia anglers have a 37-inch minimum size limit with a daily possession limit of 2 cobia per commercial fisherman registration licensee or a 6-fish-daily vessel limit, whichever is more restrictive. Commercial anglers have a continuous open season.


Wes Blow holds a cobia he tagged before release. Working with VIMS, he has tagged numerous cobia.

Virginia cobia anglers, both recreational and commercial, must apply for a no-cost cobia permit and complete an annual report. Individual reports include trip dates, mode of fishing, number of anglers, number of cobia kept, and number released. Anglers can report electronically using a computer, tablet, or smartphone, or use a VMRC paper form. Permittees can also report additional detailed information, such as fishing location and length and weight of any cobia caught.

Neill said this year's regulation-setting process went much more smoothly. He added that he's hearing Virginia anglers are pleased, overall, with the regulations.

## Learning is Ongoing

Along with Virginia's catch reporting, additional tools are providing insights into cobia behavior and numbers. Various tagging programs have been ongoing for the past 15 years. Research student Douglas Jensen and Dr. John Graves from the Virginia Institute of Marine Science placed satellite tags on 36 cobia caught in Virginia waters in 2016 and 2017. Their study is looking at a couple of things: First, how far do these fish migrate, and second, how well do they survive after being caught and released?

The satellite tags collect information transmitted when the tag pops off the fish, usually within six months. "One fish [tagged while fishing with Blow] traveled as far south as waters near Daytona, Florida," Jensen reports. "Another had its tag pop off some 40-45 miles off the coast of South Carolina."

While many people consider cobia a strictly inshore fish, the satellite tagging revealed some fish range deep, right to the edge of the continental shelf. Jensen said he has heard of anglers south of Virginia sometimes jigging deep water for cobia. Most fish stayed within the expected boundaries—the Chesapeake Bay to southern Georgia and northern Florida.

Jensen said 24 of the 36 tags performed as desired. The good news is none of those tagged fish seem to have died after being caught and released. "Cobia are a hardy fish," he says.

The Virginia Saltwater Fishing Tournament also yields anecdotal insights. According to tournament director Lewis Gillingham, the minimum weight for a cobia citation was 45 pounds when the tournament began more than 50 years ago. There was no release award; release citations were added in 1991.

The years from 1995 to 2002 were big years for cobia anglers, according to tournament data. Nearly 650 awards were made in 1997. Since 2005, though, the number of registered trophy fish has ping-ponged from about 150 to 400 annually.

"I think the citation data are good indicators of the quality of the trophy fishery," Gillingham says. "And, given the qualifying minimums for a citation over the past 14 years, it would indicate a healthy number of large and older individuals." But, Gillingham cautions, "It doesn't measure abundance, effort or account for improvement in fishing techniques, such as sight casting from a boat on an elevated tower."

Virginia's stringent reporting system should fill in some of these gaps. Neill said he believes Virginia's mandatory reporting system could lead the way in trying to collect complete, accurate information regarding cobia catches.

"We still do not trust the Marine Recreational Information Program… the other jurisdictions are watching us closely," he says.

The mandatory reporting system is a work in progress. The 2017 report showed 6,588 permittees who were responsible for reporting the 2,296 cobia kept and 7,345 cobia released over the course of 4,969 trips. The charter fleet had 193 permittees who were responsible for reporting 591 cobia kept and 1,193 cobia released over the course of 466 trips. Optionally reported biological data included 982 individual cobia lengths (averaging 38.21 inches) and 124 individual weights (averaging 37.05 pounds). These reflected a mix of fish that were caught and released as well as kept.

According to the VMRC, the percentage of private recreational permit holders who fulfilled their reporting obligations by Sept. 30, 2017 was 53.96 percent. The charter fleet number was 38.34 percent. Any trip resulting in the catching of cobia, whether caught or released, needed to be reported within seven days. Trips that didn't result in any cobia needed to be reported by 15 days after the conclusion of the recreational season.

Since it was the program's first year, the VMRC continued to accept reports after the deadline. Neill pointed out that anglers who didn't file a report are ineligible for a cobia permit this year. Permit numbers are down for 2018. As of mid-June, the VMRC had issued 4,133 private recreational permits and 170 for-hire permits.

For now, Neill is optimistic about the future, noting that fast-growing, prolific cobia have a limited commercial fishery. He believes the strict recreational regulations currently in place, along with careful monitoring, improves the outlook. ❧

*Ken Perrotte is a King George County resident and the outdoors columnist for Fredericksburg's Free Lance-Star newspaper. Contact him at Kmunicate@gmail.com.*


Cobia are an exciting game fish known for speed, strength, and good eating.

## Regulatory Roundup

**Atlantic States Marine Fisheries Commission Baseline Regulations**

*Recreational Bag Limit:* 1 fish per person, 6 fish per vessel per day; 36-inch fork length (FL) minimum size or total length (TL) equivalent.

*Commercial:* 2 fish per person, 6 fish per vessel; 33 inches FL minimum size or TL equivalent

**2018 State Regulations**

VIRGINIA

*Recreational Bag Limit:* 1 fish per person; 3 fish per vessel per day (only one fish per vessel per day may be greater than 50 inches long); minimum size 40 inches TL. Season from June 1 – September 30.

*Commercial:* Possession Limit of 2 fish per commercial fishermen registration licensee; 6 fish per vessel per day; minimum size 37 inches TL; Season open all year.

Note: Virginia has a required permit and a mandatory reporting program for the recreational harvest of Atlantic migratory group cobia.

NORTH CAROLINA

*Recreational Bag Limit:* 1 fish per person; "for-hire" vessel limit of 4 fish per day; private vessel limit of 2 fish per vessel from May 1 - May 31 and 1 fish per vessel from June 1 - December 31: 1 fish per vessel per day; minimum size of 36 inches FL.

*Commercial:* Possession limit of 2 fish per person with vessel limit of 6 fish per day; minimum size 33-inches FL. Season open all year.

SOUTH CAROLINA

*Recreational Bag Limit:* 1 fish per person; 3 fish per vessel per day in the Southern Cobia Management Zone – 6 fish per vessel per day in other areas; minimum size 36 inches FL. Southern Cobia Management Zone season of June 1 - April 30; other areas, open all year (South Carolina tracks federal regulations and will close if federal waters close).

*Commercial:* Cobia is listed as a game fish in South Carolina. Commercial harvest in state waters is prohibited.

GEORGIA

*Recreational Bag Limit:* 1 fish per person; 6 fish per vessel per day; minimum size 36 inches FL. Season: March 1 – Oct. 31

*Commercial:* Same as recreational, but season open all year.

FLORIDA

Florida is not a part of ASMFC's plan because the range for Atlantic migratory group cobia is from Georgia to New York.

# FOR THE LOVE OF SNAKES

## (AND TURTLES, AND LIZARDS, AND FROGS.)

Story and photos by David Hart

Five of us emerge from the woods and gather around Dane Conley as if he just discovered a hidden pot of gold. What he holds in the palms of his hands is even better. It is a black racer, a snake named both for its color and its ability to evade predators with what seems like blinding speed. This one, however, wasn't fast enough to get away from Conley. He's been catching snakes and other reptiles for most of his life. Now 22, he works as a wildlife biologist assistant for the Department, helping with reptile and amphibian research and management throughout the state.

After everyone snaps a few photos, Conley sets the racer back on the ground and sends it on its way unharmed. We spread out again and continue searching for another treasure.

An hour earlier, a dozen members and guests of the Virginia Herpetological Society (VHS) assemble in a parking area of Big Woods Wildlife Management Area, a 2,200-acre Department-owned property in rural Sussex County. It is a mix of towering pines, mature hardwoods, creek bottoms, and tannin-stained wetlands. In other words, it is an excellent place to find reptiles and amphibians, or "herps" as enthusiasts call them.

After a brief meeting, the volunteers split into two groups and disappear into the woods. They scan the forest floor for signs of life, gently turning over logs and peering into thickets. A few slosh through creeks and make their way along the edge of a swamp. The goal is simple: Find as many reptiles and amphibians as possible, identify them, and record them. Despite the ticks and mosquitoes and sometimes sweltering heat and humidity, "herping" is a mission that many of the group's 260 members take seriously.

"Our membership includes scientists and biologists, but most of us are amateur herpetologists," says VHS secretary Dave Perry. "We just enjoy getting out and finding and identifying reptiles and amphibians."

Like Conley, Perry's fascination with herps started when he was a kid. He spent his days in the woods looking for snakes, lizards, frogs, and other reptiles and amphibians. When he found them, he often caught them, admired them, and then released them. That passion only became stronger as he grew older.

"I've lived in seven states and I was always looking for them when I was out hiking. When I moved to Virginia, I wanted to continue so I joined the VHS in 2010. It has been a great way to keep doing what I enjoy and I get to do it with a lot of great people," says the 68-year-old retired Palmyra resident.

The VHS organizes as many as seven surveys each year, often on wildlife management areas. Others are held at state parks or natural areas throughout Virginia, often on lands that have not been surveyed before or that have sensitive habitat or threatened species.

These days, places like Big Woods WMA serve as a sanctuary of sorts, a place where wildlife is protected from development and other habitat threats. That's important to all wildlife, but it is especially critical to a variety of amphibians and reptiles. Three of 28 frog and toad species are listed as Tier I or Tier II species in *Virginia's Wildlife Action Plan*, which means they are facing a high or very high threat of extirpation. The plan ranks species based on their conservation needs. Ten of Virginia's 56 salamander species are Tier I or II and three of 34 snake species have similar classifications.

"Habitat loss is likely the main threat to reptiles and amphibians, especially those dependent on wetlands," says Conley.

### Snakes Alive

Habitat loss isn't the only threat to snakes. Persecution is likely taking a toll, as well. Lots of people have an innate fear or even hatred of snakes and kill every one they see at every opportunity.

Left: VHS member Dr. Bryan Kim holds a black racer, a common snake found throughout Virginia. Above: Members and guests of the Virginia Herpetological Society check a vernal pool for tadpoles and salamander larvae on a survey at Big Woods Wildlife Management Area.

That's too bad, says Conley. Of the 34 snake species native to Virginia, only three are dangerous. Copperheads, cottonmouths and timber rattlesnakes can inflict a serious, even deadly, bite, but such bites are extremely rare. Only 15 people in the past 30 years have died from a snakebite in Virginia. Copperheads are the most common and widespread venomous snake in Virginia. Their range extends throughout the state. Cottonmouths are only found in southeastern Virginia, mostly in and around the Great Dismal Swamp region, and timber rattlesnakes are found primarily in the mountainous western third of the state. A small, reclusive population of timber rattlesnakes, known as canebrakes, lives in southeastern Virginia, as well.

Contrary to popular belief, none of the three venomous snake species will chase a person. In fact, they won't bite unless provoked or threatened. Don't believe it? Various researchers have tested the aggressiveness of venomous snakes. One study, conducted in Georgia by herpetologist Dr. Whit Gibbons, found that most cottonmouths will first try to retreat when provoked. They next resort to defensive posturing and bite only when they have no other choice. Gibbons used tongs fitted with a prosthetic hand to pick up cottonmouths to determine their reaction. Just a third of those picked up attempted to bite. A similar study in Florida found that just 8 percent of 336 pygmy rattlesnakes encountered struck when tapped on the nose with a gloved hand.

In 1958, noted herpetologist Clifford Pope famously said, "Snakes are first cowards, then bluffers, then last of all warriors."

"Statistically, people who tend to get bit by a venomous snake are young men who either are attempting to pick it up or even kill it," says Perry. "The best thing you can do if you don't like snakes is to walk the other way. They want to be left alone, too, so if you don't bother them, they won't bother you."

Even better than walking away? Become educated. By learning which snakes are venomous, you will know which ones pose a potential threat. The VHS website is filled with great information on snake identification, including pages with photos showing venomous snakes next to non-venomous ones. With a little practice, you will learn which snakes to avoid and which ones to admire up close or from a distance.

Even experts sometimes refer to an app to identify species such as this yellow-bellied slider.

*"Habitat loss is likely the main threat to reptiles and amphibians, especially those dependent on wetlands."*
–Dane Conley

Dane Conley holds a five-lined skink so another VHS member can photograph it.

"Many snakes eat rodents, so they are actually good to have around if you don't want mice in your house," says Perry. "A couple of species native to Virginia will actually eat other snakes like copperheads." And a single rattlesnake may remove up to 2,000-2,500 ticks through the rodents they consume.

## Citizen Scientists

The VHS doesn't exist entirely to educate the curious among us or to give members an excuse to tromp through woods and swamps in search of reptiles and amphibians. The data collected during member surveys is vital to the science community. It helps keep tabs on population trends and it can reveal previously unknown locations of various species.

"It seems like just about every survey finds a species that hasn't been found on that site before or is a new county record," says Conley. "That can help focus conservation efforts for those species most at risk."

The VHS is also a great avenue to meet like-minded people who just love to seek, find, and sometimes catch reptiles and amphibians, admits Perry. Surveys allow new members to meet veterans and they serve as a classroom of sorts. Since many of the attendees aren't experts, they are often grouped with someone who is. People like Conley and Perry are well-versed in Virginia's herpetological species and help identify species for those who may not be. They also share their enthusiasm. For them, and for many other VHS members, catching a black racer, or any other reptile or amphibian, isn't much different than stumbling upon a pot of gold.

Venomous, yes, but copperheads are shy and rarely bite unless provoked. If you see one, please leave it alone and it will leave you alone!

Members of the Virginia Herpetological Society come from diverse backgrounds, but they have one thing in common: a love and respect for Virginia's native reptiles and amphibians.

*David Hart is a full-time freelance writer and photographer from Rice. He is a regular contributor to numerous national hunting and fishing magazines. Contact him at hartfish1@gmail.com.*

### WANT TO LEARN MORE?

Membership in the VHS is open to anyone interested in Virginia's native reptiles and amphibians. Herp surveys are typically held in the spring and are scattered throughout the state. Members can bring a guest. The VHS also holds an annual meeting in the spring. Non-members are welcome to attend. For more information visit: www.virginiaherpetologicalsociety.com.

# The Evolution of Cute

By Jason Davis

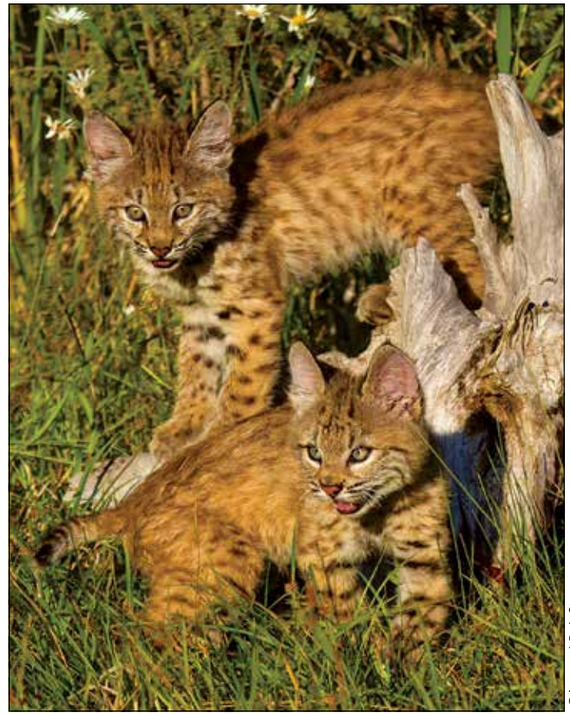
I have a bet for you, but first I want you to do to something for me. Take a long look at the photographs on the next few pages—the bear cubs, the bobcat kittens, the ducklings, the fawn. Take your time and really look at them… just be sure to tear yourself away and get back to reading at some point.

Done? Okay, here's my prediction: I'm willing to bet that at some point while you were gazing at those incredibly adorable baby animal photos, you smiled or found yourself about to go "Awwww…" Maybe you even wondered if baby bobcats could possibly be as snuggly as they look.

Regardless of your age, gender, or background, pretty much everyone knows cute when they see it. And we love to see it! The question is: why? Why do we think certain features are cute? And why do those features show up in babies of so many different species? Why and how are our brains wired for cuteness?

Most baby animals, at least baby vertebrates, kind of look the same. They have big heads, small eyes, stubby little limbs; all the things that we find adorable. There's actually a pretty good set of reasons that infants across species look this way.

A functioning nervous system allows animals to learn and respond to the environment and it's an essential feature for survival in almost every species. Muscles, bones, and strong jaws are important too, but not quite as essential or as energy- and time-intensive to grow. Because of that difference in prioritization, infants are almost always born with nervous systems that are more mature than their musculoskeletal systems. This explains why most babies have a "baby face"—a large forehead, a small jawline, and great big eyes. Newborn humans have eyes that are almost 70 percent the size of adult eyes, stuck in a body that is roughly 5 percent of adult weight. A five year old has a brain that is all but fully grown, but a body that is roughly a third the weight of an adult.



©Ann and Rob Simpson

Because these features are so universal, they provide an easy way to identify infants. Nobel prize-winning biologist Konrad Lorenz theorized that many adult animals have what he called a "kindchenschema" or 'kid category' response—a built-in trigger that makes them act parental around infants. This means that just *seeing* something that looks like a kid makes adult animals more likely to be protective and nurturing, to defend and care for offspring.

Many species of animals, particularly those that provide long-term care to their young, seem to be just as prone to respond to cuteness as we are. The same features that make us think a baby, pup, kit, or gosling is cute seem to make their parents think they're cute too. A recent study showed that people find baby animals from species that practice intensive parenting to be far cuter than closely related species that don't have a need for parental care. This suggests that animals that need parenting have actually evolved to emphasize their baby-ish characteristics, essentially to look cuter than animals that do not.

This kind of universal cuteness may help to explain why some animals are willing to foster kids that aren't their own. Adoption of orphans has been reported in white-tailed deer, black bears, geese, and right whales, just to name a few. It even happens across species Young animals may even attempt to look cute longer in order to maintain their parents' attention. Recently fledged blue jays and gulls that are perfectly capable of finding their own food have been shown to change their body posture, fluffing out their feathers and tucking in their legs and necks; essentially trying to look more baby-like to convince their parents to keep taking care of them. Even pelican 'teenagers' will act like great big kids, bobbing their heads and squawking loudly and intensely just like they did when they were nestlings in order to push their parents into feeding them.

Left: Big heads and small eyes make black bear cubs adorable to us. Just look at those faces! Photo by ©Bill Lea
Above: Bobcat kittens couldn't look any snugglier, could they?

Cuteness isn't just for adorable animals, motivational posters, and forwarded emails. It's a powerful biological adaptation, a built-in mechanism that helps parents of many species to recognize and respond to offspring.

© Rue Wildlife Photos

Adorable wood ducklings stage at the entrance to their nest hole before leaping to the ground.

Of course there's a dark side to this, too. Brown-headed cowbirds don't take care of their own offspring, instead laying their eggs in the nests of other species. These 'host' species are almost always smaller than the cowbird, and the cowbird chick usually sticks out from its adopted siblings like a giant sore thumb. Still, the host parents continue to feed and care for the nestling cowbird—often at a major cost to themselves and their own offspring. Why? At least in part it seems to be because the cowbird chicks act a lot like their own chicks, making begging calls, showing the inside of their mouths and flapping their wings, and acting in all ways like a baby that needs to be fed. The unwitting parents are, in a sense, held captive by their cuteness.

Cuteness may also explain some weird features of our own culture. The process of domesticating animals often gives them more juvenile or infant-like features: large heads, shorter faces, and thicker, less lanky bodies. Being more childlike may make animals more curious, calmer, and easier to handle, but it may also make us find them cuter and more appealing, encouraging us to want them around and to use their photos as backgrounds on our phones and computers. It may even explain why so many of our cartoons and comic characters are drawn with huge eyes and even bigger heads. Bobble-headed designs are baby-like, which means they're cute, which means we like them more.

It makes sense that evolution would select parents to recognize kids and to want to take care of them, but what's actually going on in the brain that makes us so attracted to cuteness? In tests of several different species, images of infants and cute pictures cause increased activity in specific areas of the brain. Increases in activity were seen in the orbitofrontal cortex, an area associated with attraction and appraising of value and in the nucleus accumbens, an area associated with motivation and reward. Babies seem to automatically make adults feel that: a) this small thing is really great, and b) it would feel really great to take care of it.

Hormones also play a key role in cuteness. One of the most famous of these hormones is prolactin. Prolactin basically translates as "for milk," and it encourages milk production in all female mammals, from deer to dolphins and everything in between. What is more surprising is that prolactin can be found at high levels not only in the brains of lactating mothers, but also in many mammalian fathers, in parenting birds, alligators, and even fish…none of which has any ability to make milk.

So what is a milk-making hormone doing in animals that don't have the ability to make milk? It turns out that prolactin is generally responsible for triggering parental behavior in vertebrates. Whatever form parenting takes, whether it be snuggling with your young to keep them warm (voles), feeding them from your meals (pretty much all birds), herding them into your mouth for safety (alligators), fanning them to make sure they have enough oxygen (sunfish), or simply protecting them from predators (lots of species), prolactin almost always seems to be involved in making those behaviors happen.

Given prolactin's special connection to parenting, it only makes sense that it might also play a role in responding to cuteness. Several studies have shown that prolactin increases when adults view pictures of babies. These increases in prolactin, along with increases in estrogen and progesterone (hormones also involved in reproduction and parenting), also make adults more likely to recognize and respond to "cute" pictures and to engage in parenting behaviors.

This hormone-cuteness relationship is a two-way street. Exposure to cuteness also trains your brain to be an attentive parent. Looking at pictures of cute things causes a release of oxytocin and dopamine in the brain. Both of these neurotransmitters are associated with feelings of happiness, contentment, and reward. Probably because of this effect, adults of several species show a marked preference for cute pictures over non-cute pictures. That's right, you can get "high" on cuteness (at least a little bit).

Cuteness isn't just for adorable animals, motivational posters, and forwarded emails. It's a powerful biological adaptation, a built-in mechanism that helps parents of many species to recognize and respond to offspring. Cuteness has evolved to hijack our brains for the good of our kids. So don't feel too guilty the next time you find yourself staring at an adorable photo of a baby fox or cute chick—you just can't help yourself.

*Jason Davis is an assistant professor of biology at Radford University. His research focuses on physiological processes in wild animals.*

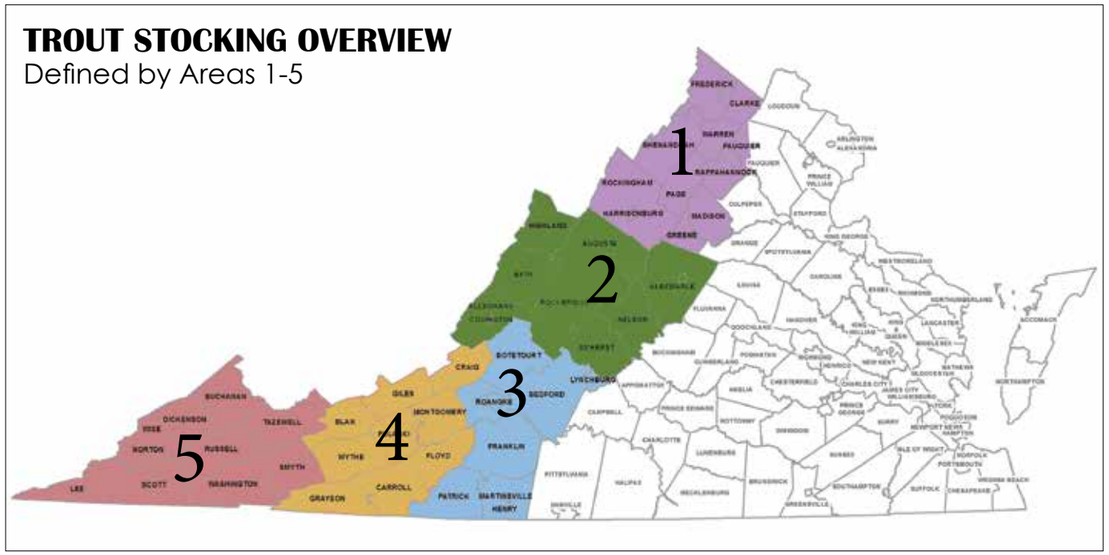
©Lynda Richardson

Fawns always bring an"awww" from their audience. These charming, spindly-legged babies bring out the parenting instinct in us.

Maps by Jay Kapalczynski

# 2019 Trout Program Maps

Included here are updated maps of the western region of the state where the Department is actively managing for trout. As always, streams are delineated as: stocked trout waters, wild trout waters, and special regulation waters. Special regulations include delayed harvest, fee-fishing, catch-and-release, special creel limits, size limits, and other restrictions. Remember, detailed information about special regulation waters as well as the Department's entire trout management program can be found online at www.dgif.virginia.gov/fishing/trout and inside the fishing digest, published in January.




**FREDERICK COUNTY**
1. Hogue Creek
2. Paddy Run (NF)
3. Clearbrook Lake
4. Wilkins Lake

**SHENANDOAH COUNTY**
5. Little Passage Creek
6. Little Stony Creek (NF)
7. Mill Creek
8. Passage Creek (NF)
9. Peters Mill Run (NF)
10. Stony Creek
11. Tomahawk Pond (NF)

**ROCKINGHAM COUNTY**
12. Big Run (SNP)
13. Black Run
14. Dry River
15. German River
16. Hone Quarry Run (NF)
17. Madison Run (SNP)
18. N. Fork Shenandoah River
19. Slate Lick Run (NF)
20. South River (Grottoes)
21. Briery Branch Lake (NF)
22. Hone Quarry Lake (NF)
23. Silver Lake
24. Skidmore Reservoir
25. Slate Lick Lake (NF)

**PAGE COUNTY**
26. Cub Run (NF)
27. Hawksbill Creek
28. Jeremys Run (SNP)
29. Naked Creek (SNP)
30. Passage Creek Upper (NF)

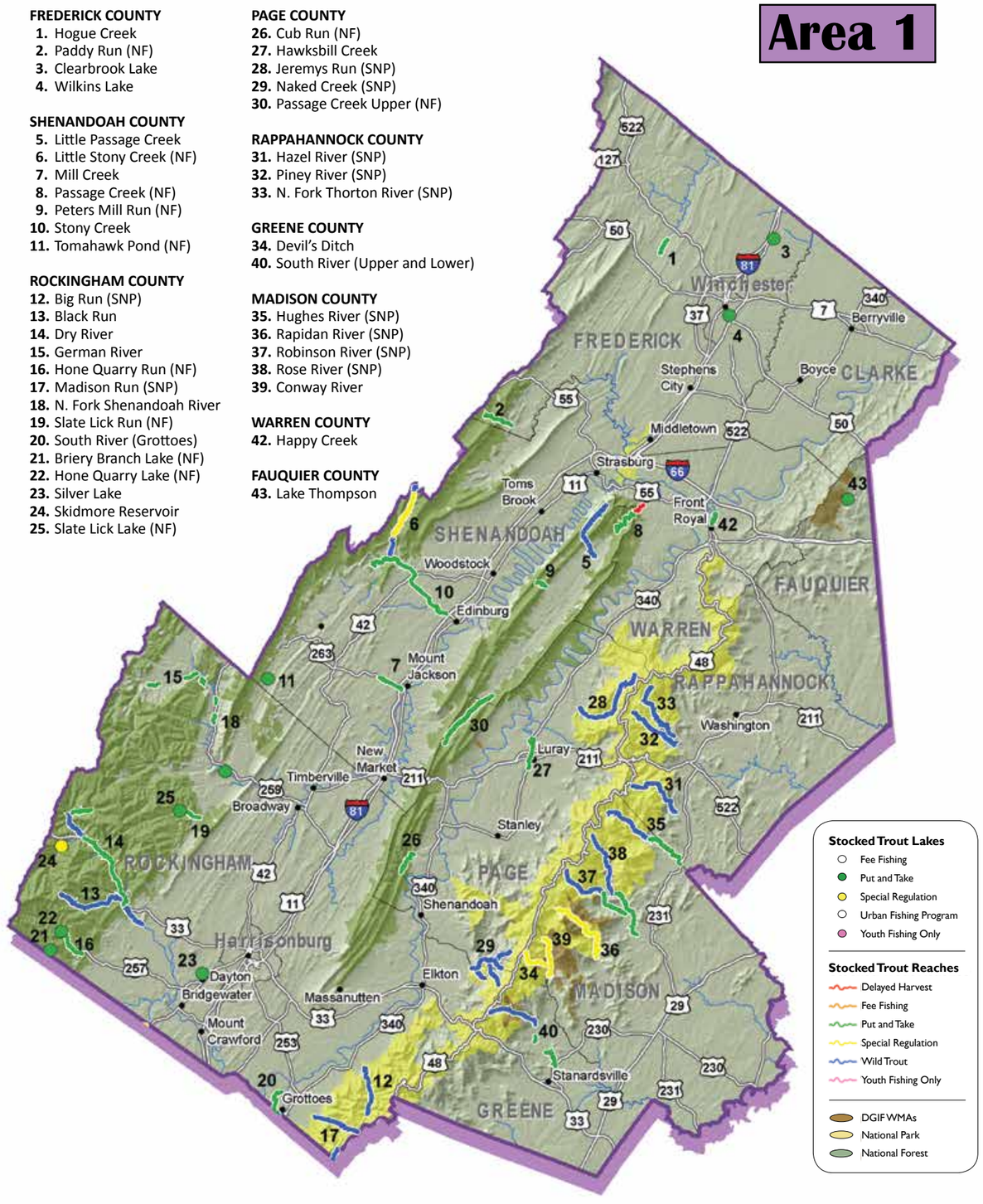
**RAPPAHANNOCK COUNTY**
31. Hazel River (SNP)
32. Piney River (SNP)
33. N. Fork Thorton River (SNP)

**GREENE COUNTY**
34. Devil's Ditch
40. South River (Upper and Lower)

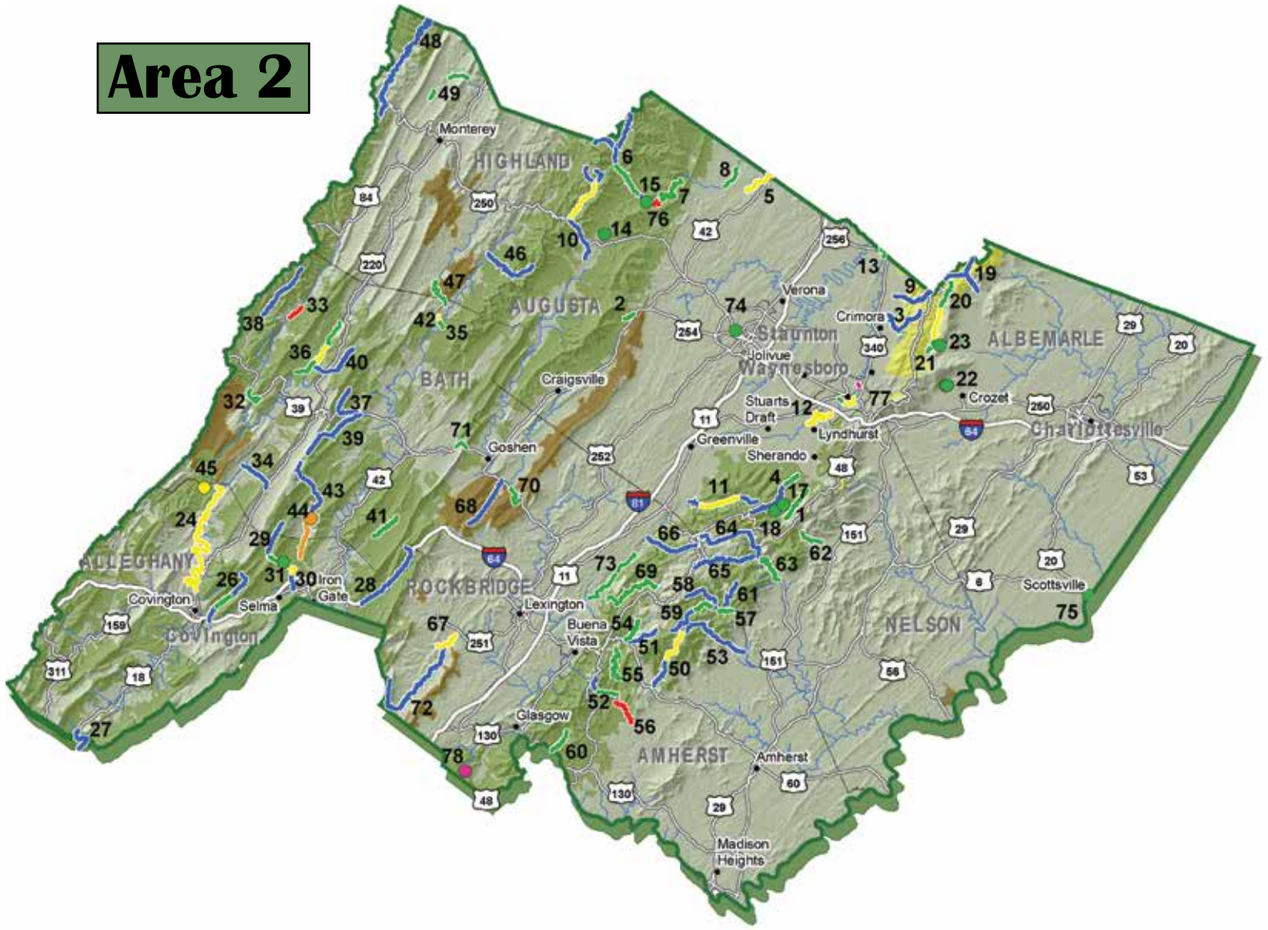
**MADISON COUNTY**
35. Hughes River (SNP)
36. Rapidan River (SNP)
37. Robinson River (SNP)
38. Rose River (SNP)
39. Conway River

**WARREN COUNTY**
42. Happy Creek

**FAUQUIER COUNTY**
43. Lake Thompson



# Area 2




**AUGUSTA COUNTY**
1. Back Creek (NF)
2. Falls Hollow (NF)
3. Meadow Run (SNP)
4. Mills Creek (NF)
5. Mossy Creek
6. North River Upper (NF)
7. North River Gorge (NF)
8. North River (Natural Chimneys)
9. Paine Run (SNP)
10. Ramsey's Draft (NF)
11. Saint Mary's River (NF)
12. South River
13. South River (Grottoes)
14. Braley Pond (NF)
15. Elkhorn Lake (NF)
17. Lower Sherando Lake (NF)
18. Upper Sherando Lake (NF)
76. North River (Tail) (NF)
77. South River (Basic Park)

**ALBEMARLE COUNTY**
19. Doyles River (SNP)
20. N. Fork Moorman's River (SNP)
21. S. Fork Moorman's River
22. Mint Springs Lakes
23. Sugar Hollow Reservoir
75. Scottsville Lake

**ALLEGHANY COUNTY**
24. Jackson River Tailwater
26. Pounding Mill Creek (NF)
27. Shawvers Run
28. Simpson Creek
29. Smith Creek (NF)
30. Smith Creek (NF)
31. Clifton Forge Reservoir (NF)

**BATH COUNTY**
32. Back Creek (NF)
33. Back Creek
34. Cascades Creek
35. Cowpasture River (NF)
36. Jackson River (NF)
37. Jordan Run
38. Little Back Creek
39. Mare Run
40. Muddy Run
41. Pads Creek (NF)
42. Spring Run
43. Wilson Creek
44. Douthat Lake Fee fishing
45. Lake Moomaw

**HIGHLAND COUNTY**
46. Benson Run
47. Bullpasture River
48. Laurel Fork
49. South Branch Potomac River

**AMHERST COUNTY**
50. N. Fork Buffalo Creek
51. Davis Mill Creek (NF)
52. Little Irish Creek (NF)
53. Little Piney River
54. Pedlar River Upper (NF)
55. Pedlar River Lower (NF)
56. Pedlar River Below Dam (NF)
57. Piney River (NF)
58. N. Fork Piney River
59. S. Fork Piney River
60. Rocky Row Run (NF)

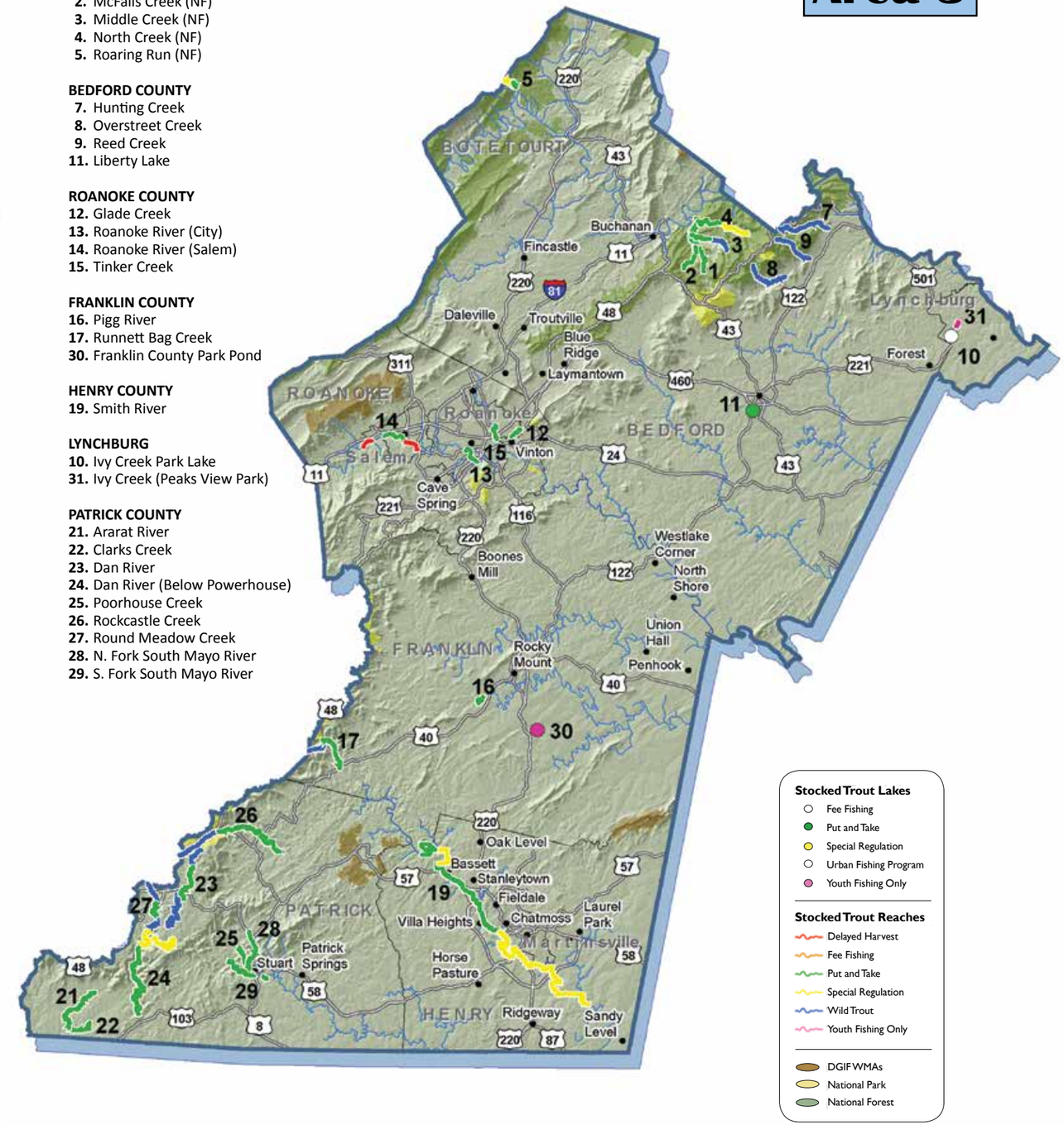
**NELSON COUNTY**
61. Shoe Creek
62. South Rockfish River
63. Tye River
64. N. Fork Tye River
65. S. Fork Tye River

**ROCKBRIDGE COUNTY**
66. Big Marys Creek
67. Buffalo Creek
68. Guys Run
69. Irish Creek (NF)
70. Maury River
71. Mill Creek (NF)
72. South Buffalo Creek
73. South River
78. Cave Mountain Lake

**STAUNTON CITY**
74. Lake Tams



# Area 3




**BOTETOURT COUNTY**
1. Jennings Creek (NF)
2. McFalls Creek (NF)
3. Middle Creek (NF)
4. North Creek (NF)
5. Roaring Run (NF)

**BEDFORD COUNTY**
7. Hunting Creek
8. Overstreet Creek
9. Reed Creek
11. Liberty Lake

**ROANOKE COUNTY**
12. Glade Creek
13. Roanoke River (City)
14. Roanoke River (Salem)
15. Tinker Creek

**FRANKLIN COUNTY**
16. Pigg River
17. Runnett Bag Creek
30. Franklin County Park Pond

**HENRY COUNTY**
19. Smith River

**LYNCHBURG**
10. Ivy Creek Park Lake
31. Ivy Creek (Peaks View Park)

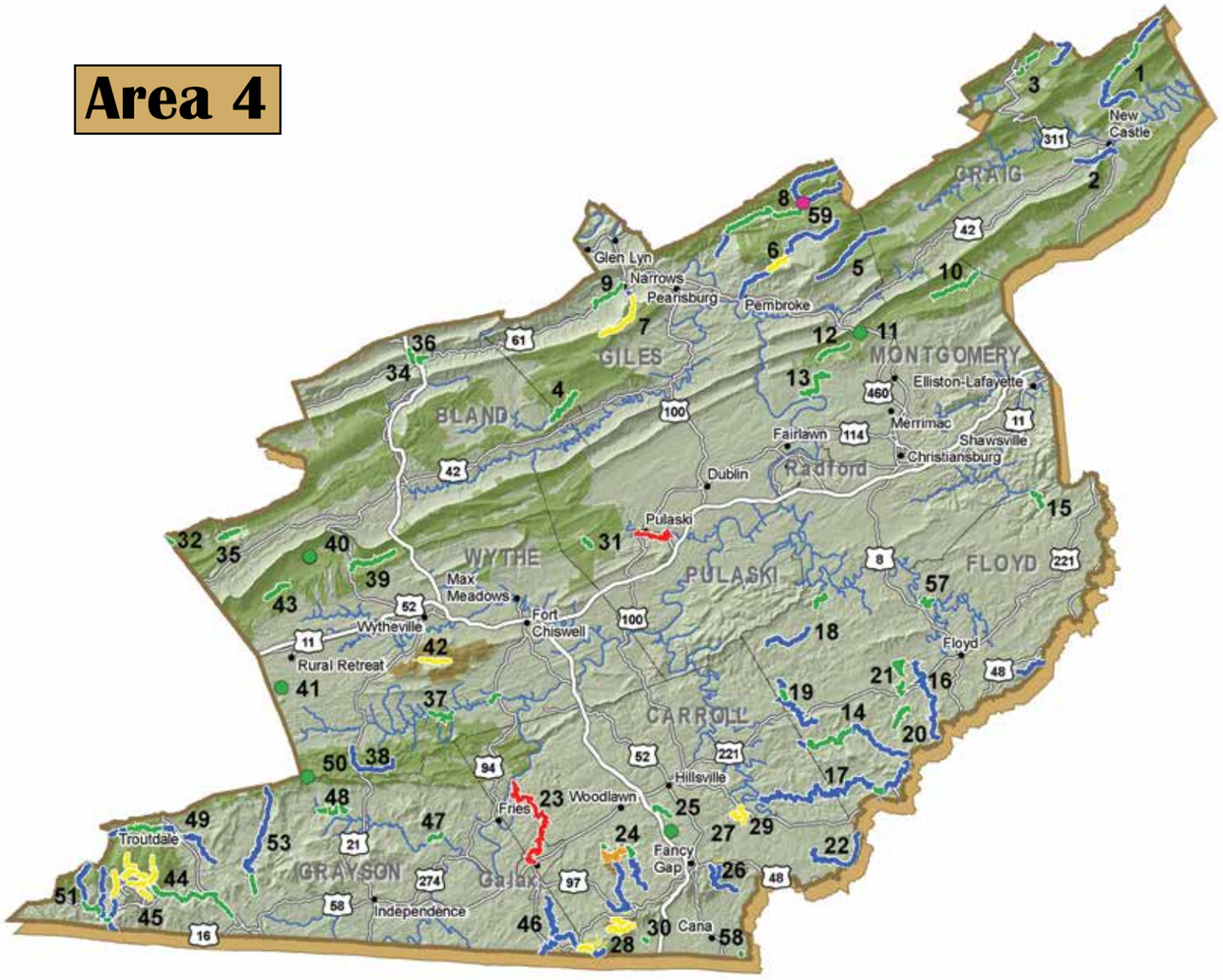
**PATRICK COUNTY**
21. Ararat River
22. Clarks Creek
23. Dan River
24. Dan River (Below Powerhouse)
25. Poorhouse Creek
26. Rockcastle Creek
27. Round Meadow Creek
28. N. Fork South Mayo River
29. S. Fork South Mayo River

**Stocked Trout Lakes**
- Fee Fishing
- Put and Take
- Special Regulation
- Urban Fishing Program
- Youth Fishing Only

**Stocked Trout Reaches**
- Delayed Harvest
- Fee Fishing
- Put and Take
- Special Regulation
- Wild Trout
- Youth Fishing Only

- DGIF WMAs
- National Park
- National Forest

# Area 4




**CRAIG COUNTY**
1. Barbours Creek (NF)
2. Meadow Creek
3. Potts Creek (NF)

**GILES COUNTY**
4. Dismal Creek (NF)
5. Johns Creek
6. Little Stony Creek
7. Mill Creek
8. Big Stony Creek (NF)
9. Wolf Creek
59. Glen Alton Pond

**MONTGOMERY COUNTY**
10. Craig Creek (NF)
11. Pandapas Pond (NF)
12. Poverty Creek (NF)
13. Toms Creek

**FLOYD COUNTY**
14. Burks Fork
15. Goose Creek
16. Howell Creek
17. Laurel Fork
18. Little Indian Creek
19. Mira Fork
20. Rush Fork
21. W. Fork Little River
57. Little River

**CARROLL COUNTY**
22. Big Reed Island Creek
23. Chestnut Creek
24. E. Fork Crooked Creek
25. E. Fork Little Reed Island Creek
26. Elk Spur Branch
27. Little Snake Creek
28. NF & SF Stewarts Creek
29. Snake Creek
30. Stewarts Creek
58. Lovill's Creek

**PULASKI COUNTY**
31. Peak Creek

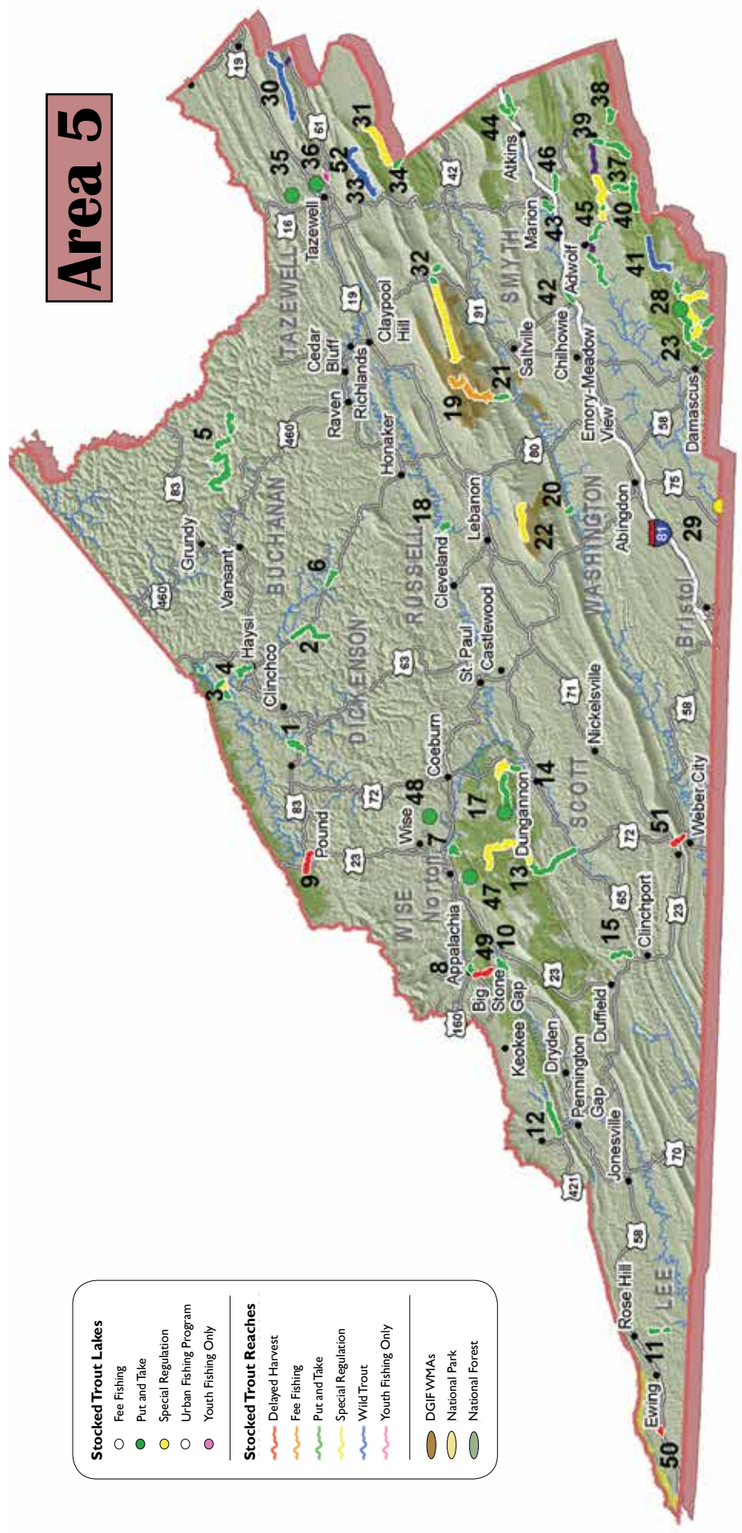
**BLAND COUNTY**
32. Laurel Creek (NF)
34. Laurel Creek
35. Lick Creek
36. Wolf Creek

**WYTHE COUNTY**
37. Cripple Creek
38. E. Fork Dry Run
39. E. Fork Stoney Fork (NF)
40. Gullion Fork Ponds (NF)
41. Rural Retreat Pond
42. Venrick Run
43. W. Fork Reed Creek (NF)

**GRAYSON COUNTY**
44. Big Wilson Creek
45. Little Wilson Creek
Mill Creek
Quebec Branch
Wilburn Branch
46. Chestnut Creek
47. Elk Creek Lower
48. Elk Creek Upper
49. Fox Creek (NF)
50. Hales Lake (NF)
51. Helton Creek
53. Middle Fox Creek



# Area 5




**SMYTH COUNTY**
37. Comers Creek (NF)
38. Cressy Creek (NF)
39. Dickey Creek (NF)
40. Hurricane Creek (NF)
41. Little Laurel Creek
42. Middle Fork Holston River (Chilhowie)
43. Middle Fork Holston River (Marion)
44. Middle Fork Holston River (Upper)
45. South Fork Holston River
46. Staley Creek

**LEE COUNTY**
11. Martins Creek
12. North Fork Powell River
50. Indian Creek

**SCOTT COUNTY**
13. Big Stony Creek
14. Little Stony Creek (NF)
15. Stock Creek
17. Bark Camp Lake (NF)
51. Big Moccasin Creek

**RUSSELL COUNTY**
18. Big Cedar Creek
19. Laurel Bed Creek

**WASHINGTON COUNTY**
20. Big Brumley Creek
21. Big Tumbling Creek
22. Brumley Creek
23. Green Cove Creek
Straight Branch (NF)
Tennessee Laurel
Valley Creek
Whitetop Laurel (NF)
28. Beartree Lake (NF)
29. South Holston Reservoir

**TAZEWELL COUNTY**
30. Cove Creek
31. Roaring Fork
32. Little Tumbling Creek
33. Maiden Spring Creek
34. Laurel Creek (NF)
35. Lake Witten
36. LincolnShire Lake
52. South Fork Powell River (Dunford Park)

**DICKENSON COUNTY**
1. Cranesnest River
2. Frying Pan Creek
3. Pound River
4. Russell Fork River

**BUCHANAN COUNTY**
5. Dismal River
6. Russell Fork River

**WISE COUNTY**
7. Clear Creek (NF)
8. Middle Fork Powell River
9. Pound River/N.F. Pound River
10. South Fork Powell River
47. Norton Reservoir
48. Bear Creek Reservoir
49. Powell River

**Stocked Trout Lakes**
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**Stocked Trout Reaches**
- Delayed Harvest
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- DGIF WMAs
- National Park
- National Forest


# Outdoor Classics

by Beth Hester

***Pheasant, Quail, Cottontail: Upland Bird and Small Game from Field to Feast***
by Hank Shaw
2018 H&H Books
Huntgathercook.com
Hardcover, 336 pages
Color photographs by Holly A. Heyser

*"In general, the culinary experience of the red-meat realm is relatively narrow compared to the world of small game. No other area of hunting offers such a dazzling array of flavors. Even pheasants, partridges, and quail—the most chickeny of our wild birds—have their own unique flavors."*
–Hank Shaw

Mouth-watering recipes, game prep techniques, food safety best practices, game storage guidelines, sausage-making instructions, and giblet use: It's all here in this handsome, new volume from Hank Shaw. A former journalist, Shaw is a chef, angler, food blogger, storyteller, hunter/gatherer, and conservationist whose fresh approach is opening up the world of wild foods to people who are just now picking up a rod or gun, and who are wondering what to do with their quarry once they get it home. His food blog, *"hunter angler gardener cook,"* is helping to create a new wild foods community. Bookmark his blog for constantly updated fish and game recipes, stories, and inspiration.

The problem with many game cookbooks is that they don't always answer the basic questions new hunters may have about plucking, skinning, and dividing small game. Thanks to Shaw's detailed instructions and Heyser's color photographs, hunters can dive into their game prep with confidence. Even old-timers might learn a few new tricks. Shaw's approach to cooking is globally inspired, incorporating the food traditions and flavors of various ethnic traditions. He also respects and breathes new life into simple and satisfying standards like Brunswick stew, smoked turkey breast, gumbo, and barbecue.

Shaw shows how to prepare and showcase each type of small game to best advantage, and his helpful use of game icons in each chapter illustrates the various types of game that benefit from a particular recipe. He shares the secrets and science behind how marinades work, and he shows how to prepare even the most challenging cuts of meat.

Here's just a sampling of recipes that will entice you to cook your way through each chapter:

- Chinese Orange Pheasant
- Pheasant Paprikash
- Turkey Carnitas
- Southern-style Quail with Grits and Greens
- Rabbit Ragu
- Rail Perloo
- Giblet Bolognese

All of the recipes are straightforward, and most ingredients are readily available. If an ingredient isn't at hand, Shaw suggests good alternatives.

Shaw didn't pick up a shotgun until later in life, and it took a while for him to find mentors, so he had to learn things the hard way. That's what makes the food lore and stories in this book so inviting; no matter your level of wild food experience, he speaks to you where you live and answers your questions like he was reading your mind. You might want to check out his earlier volume from Rodale: *Hunt, Gather, Cook: Finding the Forgotten Feast*. Here you'll learn how to use wild greens and make wine and liqueur from local berries and plants, and he'll introduce you to new ways to prepare wild boar, fish, crabs, venison, shellfish, and much more.

A portion of the proceeds from this book are being donated to *Pheasants Forever* and *Quail Forever* which will use the funds to restore, improve, and expand habitat for all upland birds.

## Don't Forget Your Duck Stamps and HIP Registration

2018 Virginia Migratory Waterfowl Conservation Stamp artwork, ©Brian Murillo

All hunters (licensed or license-exempt) who plan to hunt doves, waterfowl, rails, woodcock, snipe, coots, gallinules, or moorhens in Virginia must be registered with the Harvest Information Program (HIP). HIP is required each year and a new registration is needed for the upcoming season.

In addition, to hunt waterfowl in Virginia hunters (age 16 and older) must obtain a Federal Duck Stamp and the Virginia Migratory Waterfowl Conservation Stamp. Both stamps can be purchased from DGIF license agents or from the Department's website:
**www.gooutdoorsvirginia.com**



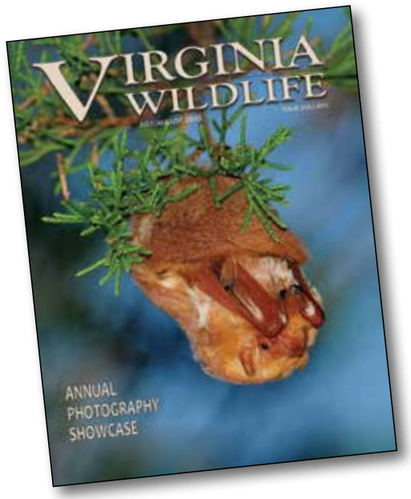
## 2019 Photography Showcase Deadline:

Monday, February 4

NEW CATEGORY!
Trail-Cam Images

Submissions are now being accepted online!
www.dgif.virginia.gov/virginia-wildlife/photo-showcase-entry

**ENTER TODAY!**

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## PICS FROM THE FIELD

It looks like love is in the air, and it is, but according to our biologists these big guys are actually fighting, not mating! Mid-July to early September is rattlesnake breeding season while other snakes mainly breed in the spring (April-May). This rarely seen behavior is performed to obtain breeding rights to females. Two observant readers sent these in.

Left: Wrestling timber rattlesnakes surprised **Martin Hanbury** of Blacksburg behind his cabin on Bush Mountain. Martin used a Canon PowerShot A2500 digital camera, ISO 160, 1/160, f/6.9, to capture the moment. Congratulations, Martin! Incredible!

Right: **Lucile Smalley** of Virginia Beach came upon two big male cottonmouth moccasins sizing each other up in Back Bay National Wildlife Refuge. Using a Nikon D3300 DSLR camera, Tamron 18-400mm f/3.5-5.6 Di II lens, and settings of ISO 450, 1/250, f/6.3, Lucile recorded the amazing scene. WOW! Congratulations, Lucile!

Isn't nature the coolest thing EVER?

You are invited to submit one to five of your best photographs to "Pics from the Field," Virginia Wildlife Magazine, P.O. Box 90778, Henrico, VA 23228-0778. Send high-resolution jpeg, tiff, or raw files on a CD/DVD or flash drive and include a self-addressed, stamped envelope or other shipping method for return. Also, please include any pertinent information regarding how and where you captured the image, what camera and settings you used, and your phone number. We look forward to seeing and sharing your work with our readers!

# A Walk in the Woods

By Mike Roberts

Some of Virginia's most interesting natural history is seldom observed because it occurs after nightfall. A portion of the life cycle of North America's largest, indigenous silk moth is a classic example of such obscure behavior.

No doubt, Swedish botanist Carl Linnaeus had a logical basis for the application of *Hyalophora cecropia* in his scientific naming of the cecropia moth. Why he compared the physiology or behavior of this handsome lepidopteran to Cecrops—the first, mythical (half-human, half-snake) king of Athens—remains a mystery. To folks who lump all insects into a single category, our giant silk moths are merely big bugs that fly helter-skelter around dusk-to-dawn lights or flutter noisily against window panes at night; their confusion resulting from the effects of bright light on the animals' compound eyes. Nevertheless, to those of us who study and admire creatures with six legs, the cecropia moth ranks as royalty!

Keep in mind, the cecropia, or colloquial "robin moth," is present in forestland habitat in either of four distinct stages throughout the year. During winter, pupas not targeted by parasitic flies and wasps, or mice and squirrels, are reposed within the confines of large, finely woven silk cocoons attached to tree limbs. During spring, and after several consecutive nights of warm temperatures, the single generation of sleeping pupas is awakened by nature's biological alarm clock. Soon afterward, ongoing metamorphosis causes the aroused moths to release acidic fluids, which dissolve escape routes in the double-layered enclosures. For hours after emergence, underdeveloped adults cling precariously from the vacant cocoons or adjacent tree branches while they utilize an internal hydraulic system to pump

hemolymph fluids through veins that eventually unfold nearly six inches of sturdy, colorful wings.

Come nightfall, the flight-capable adult females release chemical messages to attract suitors that have synchronously emerged throughout the forest. Using hair-like scent receptors on large, feathery antennae, amorous males can detect the pheromones for miles. Such behavior is extremely important because of the species' low population density. Upon mating, females fly to a wide range of food sources palatable to their offspring, where they lay upward of a dozen eggs on leaves in several, distinct locations. The adult moths lack functional mouth parts for feeding and perish a few days later.

In less than two weeks, a new generation of quarter-inch, hairy black caterpillars hatch and begin munching on the leaves of red maple, river birch, black willow, button bush, and a host of other tree types. Throughout late spring and summer the caterpillars undergo five individual molts, referred to as instars, each resulting in increased size and hue alterations. At four and a half inches, the full-grown cecropia larva's bluish-green color scheme is unique to the Polyphemus and Luna's lime-green, camouflaged colors. Although the caterpillars blend in well with their environment, a percentage of them are victimized by ravenous spiders, insects, and birds.

Then, in early autumn, Mother Nature sends the cecropia caterpillars another biological notice. As the length of daylight hours recedes, it is time to prepare for that long, winter nap, which results in a flurry of proleg activity. Rather than spinning cocoons in the proximity of their summertime food larders (evident to opportunistic predators), the larvae disperse in wanderlust. This is why they are often encountered on the ground, crossing highways, and crawling across porches during late September and early October and their cocoons are discovered attached to the stems of plants other than normal food sources, such as the thick vine cover of blackberry and poison ivy. Adaptive behavior of this nature increases survival rates.

Upon sealing itself inside the durable, watertight cocoon, the caterpillar's skin splits and the insect metamorphoses into a pupa that is a perfect, keratinous casting of the adult's body, eyes, antennae, and rudimentary wings. The pupa then produces a glycerol solution (a liquid combination of sugar and alcohol), which prevents it from freezing during the cold months ahead. Amazingly, cecropia moths spend over half of their lives in a state of suspended animation!

Come a warm night in late May, this remarkable process is repeated in all of its splendor to be savored by those who simply take time to go for a walk in the woods!

*A lifelong naturalist and wildlife photographer, Mike Roberts enjoys sharing his knowledge with others.*


**Dear Luke,**
**I have read with great interest about the Lonesome Dove Hunt Club and Literary Society and wondered, how does one become a member?**
**Rufus T., Heathsville**

Dear Rufus,
The first qualification is that you have only a modicum of good sense, which you use sparingly. The very fact that you are inquiring about membership proves you meet that qualification. Obviously, you are a "come here," for if you had spent any time in the area, you would have been warned by the upstanding members of our quiet community to steer clear of anyone associated with this organization. Although the rules are as "flexible" as Mr. Debit's (the club accountant) tax advice, I will try to give you a helpful hint to swing the vote your way.

One, you can donate to any of the members' charitable funds which, coincidentally, are named after each individual member. It is best to do this close to when you are under consideration for membership—while your charitable donation is still fresh in their minds.

Next, it is very important that you bring something to the club. For example, Cous'n Walter, Reverend A.S. Wray, and Fumbles have the best bird dogs in the state. Arby Woolfolk owns a mile of the best trout water in Bath County. Swede Anderson has land in Amelia, where you are guaranteed to get a turkey anytime you hunt.

If you own a quail plantation in southern Georgia or a lodge on a trout stream in Montana, I think the members will make you president.

**Dear Luke,**
**I have been training my retriever all year. He knows three tweets on the whistle means come, and he will sit and stay. During the summer we trained on water retrieves by throwing bumpers in and around decoys and he navigates around them pretty well. Is there anything else I should know before I take him duck hunting?**
**Walter J., St. Stephens Church**

Dear Walter,
Ol' Jones wishes he had asked that question when he got his first Lab, Casey, which was short for Casey Jones, the railroad engineer. He should have named that dog Loco—short for *locomotive*—because sometimes Casey could be a train wreck in a blind.

So first, make sure your retriever is steady to shot in a duck blind. Casey was not. On their first duck hunt together, Ol' Jones learned—to his chagrin—that Casey was blasting out of the blind at the first shot, come heck or high water. It did not matter if he had to leap over the blind, go through the blind, or go through Ol' Jones to get out. Kind of embarrassing and very dangerous! Jones either had to wrestle 93 pounds of muscular, whirling dervish to the ground while the guide shot the ducks, or the guide would wrestle Casey while Ol' Jones shot. There was no quit in that dog when it came to going after ducks, but that is not always a good thing.

What you need to remember is that every duck or goose that has been shot may be more alive than dead when it hits the water. A crippled duck on the water does not plan on sticking around and beats a quick getaway as soon as it can, especially if there is some fiery-eyed retriever steaming towards him. You'd better make sure that your retriever responds to the stop whistle signal when in the water.

Ol' Jones once winged a duck while hunting near Claremont on the James. The duck had a 60-yard head start and was in high gear, heading downstream by the time Casey hit the water in hot pursuit. At 150 yards, both dog and duck were going strong and the guide recommended Ol' Jones whistle the dog in. Jones blew and blew, but Casey was not coming back without the duck. At 200 yards, both were almost out of sight when the guide suggested he ought to go after Casey before the dog tired and found himself in trouble. The guide's exact words were, "I'll take the jon boat and see if I can find him. You take your car, get on 64, and try to pick him up when he passes Hampton Roads."

Keep a leg up,
Luke

*Luke spent many sunrises hunting up good stories with Clarke C. Jones, and thankfully, left us a cache of colorful tales. You can learn more about Clarke and Luke at www.clarkecjones.com.*

"OK, Now let's check your weight."



# PHOTO TIPS

By Bill and Linda Lane

## Fall Photo Fun

Waterfalls, fall colors, and reflections are popular subjects and make for extraordinary images. But, many photographers struggle over proper exposures and techniques: waterfalls are blown out, colors are overexposed. Reflections? Well, they simply don't show up. Let's start with waterfalls.

Never shoot waterfalls in the bright sun unless for a picture of record. The best light is early morning or evening. Use a polarizer, turned counter-clockwise so it won't unscrew. Its purpose is to reduce glare, which will enhance detail and color. And don't blow out the very white water. A small spike on the right side of your histogram is acceptable but can be reduced if you use the HDR (high dynamic range). We use Light Room software for this, but there are many others. Set your camera to take a desired number of shots. We take five at one-stop intervals, in which case we'd program the camera to shoot at -2, -1, 0, +1, +2 in that order (helps us know where one set started and stopped). Then we put all five shots into the HDR program and hit "run." Simple, and yes, you can use HDR on moving water. We also use the highlight or white slider to reduce overexposure of water.


Never shoot waterfalls in bright light. A polarizer will help reduce glare and, thus, enhance detail and color.

Remember that within an image are found numerous others that can be isolated, as within a waterfall. Zoom in and isolate various sections of the water. Exposure remains the same until the light changes.

Trees in the fall do not average out to be a medium tone on your meter read-out scale, which would be "0." Instead, we've learned that using the matrix or evaluative metering system on fall colors is excellent *if* you compensate, realizing that those fall colors average out to be darker than medium due to the shadows between trees and leaves. So we have found that if we call the whole scene a little on the dark side, let's say a -2/3, the tones are much improved. Of course, if you are able to spot meter on something else more solid within the scene that is in the same amount of light, you could use that reading instead. There are many ways to reach the same results.

One of the most popular draws for our North Carolina Workshop in October is going for those colorful, abstract reflections. They are always gorgeous and different if Mother Nature cooperates. It requires a special lighting situation and no polarizer. You must have a cloudless blue sky; most of the time, we photographers like a diffused sky! You need bright, hard sun shining on trees with leaves of a variety of colors on the north side of the stream or river. And you need to find a place where the water is cascading, or flowing, in the shade with the colors reflected on it. After having experimented with numerous shutter speeds, we have found that 1/8 to 1/4 of a second works best. If the shutter speed is too fast, the colors don't blur enough. If it is too slow, they blur too much and wash out.

Again, look for the image within the image. Happy Shooting!

*Nationally recognized photographers Bill and Linda Lane have shared their love of photography by teaching classes and workshops over the past 24 years. Check out their Nature's Image portfolio and workshop offerings at www.lanephotoworkshops.com.*

# 1 ON THE WATER 2

By Mary Loose DeViney

## It's a Canoe, It's a Kayak: It's a Boat — Oh My!

Lee Walker / DGIF

Canoe and kayak "Demo Days," such as this one in Farmville, offer opportunities to try out different boats and equipment and learn about boating safety.

Yes, a canoe or kayak is considered a boat for required safety equipment within the commonwealth, and the operator must follow the same laws and regulations and, most of all, *safety rules* required by this type of boat.

So what is required to be legally compliant to "operate" a manually propelled vessel?

- A lifejacket must be readily available.
- A vessel under oars may display those lights prescribed for a sailing vessel, but if it does not, it shall have ready at hand an electric torch or lighted lantern shining a white light which shall be exhibited in sufficient time to prevent collision.
- Visual distress signals must be available when on coastal or federal waters.
- A horn, whistle, or bell.
- And, of course, navigation rules must be followed.

Yes, you are operating a boat when you get into a canoe or kayak!

Information on the required safety equipment can be found on the Department's website and in the Go Outdoors App. The DGIF website offers an excellent and *free* online paddling safety course by BoaterEd. Take time to check it out, at: www.boaterexam.com/paddling/.

Additionally, the American Canoe Association in Fredericksburg offers a fee-based online safety course, at: www.boat-ed.com/paddlesports/.

Although paddle sports education is not required, operators are responsible for learning the laws and regulations associated with it. Both of these courses are interesting and fun to take and will help you be safe on the water while enjoying local waterways.

Keep paddling!

*Mary Loose DeViney serves as the Boating Safety Education Coordinator in the north-central region (Region IV).*

# Dining In

By Ken and Maria Perrotte

## Mommie Ree's Bird Pie

This recipe is designed for dove or quail. You could probably try it, too, with "four and twenty blackbirds," but we don't encourage it. We first heard about the dish after a quail hunt in Louisiana. Christina Cooper, with the St. Tammany Tourist and Convention Commission, shared that she had an old family recipe passed down from her grandmother, Mommie Ree Van Norman. Her dad saved it for her and sent it with a note wryly remarking that her grandmother "wasn't much on seasoning."

We gave Cooper's recipe a try. Her dad was spot on. It was bland but made a good starting point for creative doctoring. Here's our adaptation.

### Ingredients

8-10 dove breasts, deboned (cut into 16-20 pieces)
4 slices bacon
1 tablespoon olive oil
2 tablespoons flour
½ onion, chopped
⅓ cup chopped celery
2 big garlic cloves, chopped
5 or 6 mushrooms (white or baby Bellas)
Salt and pepper, to taste
½ teaspoon Creole seasonings (optional, but recommended)
½ teaspoon herbs de Provence (optional)
1 ½ cups chicken or vegetable broth
1 dozen biscuits from your favorite biscuit mix, unbaked (we used Southern Biscuit Mix) *Warning: Canned biscuits won't work in this recipe; they get gummy and don't bake properly.*

### Preparation

Cook bacon in a large pan over medium heat until slightly crispy and rendering grease. Remove bacon and add dove meat, lightly browning both sides. Remove dove meat and add 1 tablespoon oil or enough when combined with the bacon grease to leave 2 tablespoons fat in the pan. Add 2 tablespoons flour and reduce heat to low. Cook, stirring constantly to make a light to medium brown roux. This will take several minutes. Add vegetables and cook another few minutes until they start to soften. Add spices, if desired, and a little salt and pepper. Tread lightly; you can add more to taste toward the end of cooking.

Add back the doves and bacon and stir in the broth. Turn up heat and bring to a boil. Reduce heat; cover and simmer 30-45 minutes until meat is tender and gravy is thick. If needed, remove the cover to let some liquid evaporate. You want to end up with a slightly thick gravy that doesn't quite cover the meat. Finish seasoning to taste.

While doves are simmering, prepare biscuits according to directions on package and preheat oven to 450°. Heat the meat mixture to almost boiling and ladle into a casserole dish. Use enough gravy so the meat is not quite submerged. Immediately place the unbaked biscuits on top. They should rest on the meat, not sink into the gravy. It's important to have the meat and gravy very hot when the biscuits are added. Bake for 10-12 minutes until biscuits are cooked and the tops, browned. Serve immediately. Makes enough for 2.

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