



Chattooga Quarterly

Winter ♦♦♦ 2017



FIRE ON THE MOUNTAIN

Pinnacle Mountain, located in upstate South Carolina adjacent to the Chattooga River watershed, recently endured the largest mountain wildfire in the state's modern history. Wildfires across north Georgia during the fall of 2016 torched more than 40,000 acres across the region.

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Director's Page

Nicole Hayler

2017 was a tumultuous year, any way you look at it. From my perspective I saw relentless assaults on our environment, from politicians working to dismantle laws protecting clean air and water, to the ubiquitous forces of global human population growth, habitat destruction and climate change. With everything that's going on, what do we have to look forward to in 2018? For starters, 2018 is the Year of the Bird!

2018 is the Year of the Bird because it marks the 100-year anniversary of the Migratory Bird Treaty Act (MBTA), which is one of the oldest, most important and powerful wildlife protection laws on the books. The Year of the Bird is being championed by National Geographic, National Audubon Society, Bird Life International, Cornell Lab of Ornithology and a multitude of participating organizations, including the Chattooga Conservancy.

Because the Migratory Bird Treaty Act is recognized as one of the greatest conservation achievements of the 20th century, its origin and history are of interest. The Act's current status and the species it protects also illustrate the challenges brought about by environmental degradation and contemporary political pressures to weaken or negate environmental protections.

The Migratory Bird Treaty Act was signed into law by President Woodrow Wilson on July 3, 1918. It was the outcome of efforts by President Teddy Roosevelt and other leaders of the nascent environmental movement at the turn of the century to end the careless exploitation of wildlife. At that time, Labrador Ducks, Great Auks, Passenger Pigeons, Carolina Parakeets and Heath Hens were already extinct, and numerous other species were on the brink. The MBTA made it a crime to "pursue, hunt, take, capture, kill," or "sell" a migratory bird or any of its parts, including nests, eggs, and feathers.

Most laws for protecting natural resources face opposition from those wanting unfettered access to exploiting those same resources for personal and corporate financial gain, and this certainly applied to the MBTA. In 1920, the U.S. Supreme Court addressed a challenge to the constitutionality of the Migratory Bird Treaty Act, and with the majority opinion written by Justice Oliver Wendell Holmes, ruled that it did not violate states' rights.

Meanwhile, the MBTA was already supported by a prior treaty established in 1916 with Great Britain (acting on behalf of Canada, then part of the British Empire), and the Act was further strengthened by a treaty with Mexico in 1936. So the MBTA

was helping to protect migratory birds across the entire North American continent. Then during the 1970's, treaties to protect migratory birds were established with Japan and the Soviet Union, which both share migratory birds with North America. These gains were supported by a broad coalition of citizens including hunters, community clubs, scientists, politicians and others who recognized migratory birds' aesthetic and recreational appeal, as well as their tremendous economic value to agricultural production as voracious insectivores.

The 1970's also brought applications of the MBTA that not only charged hunters for violations, but also targeted oil, gas, mining, timber, chemical and electricity companies that incidentally were causing millions of bird deaths every year. The U.S. Department of Justice notified companies of violations, and then worked cooperatively with industries on simple infrastructure modifications to avoid "takings" of the protected birds. Habitat conservation and pollution abatement measures were also being encouraged as critical elements of conserving bird populations.

***“The Year of the Bird’
aims to heighten public
awareness of birds
because of their wonder
and beauty—and because
they symbolize nature’s
interconnectedness and the
importance of caring for
our shared planet.”***

Then in 2015, the U.S. Fish and Wildlife Service (USFWS) announced they would begin considering industries' impact to bird populations from industrial sources (power lines, gas flares, open oil pits, wind turbines and cell phone towers, etc.), to incentivize developing alternatives to takings of migratory birds.

Enter the Trump Administration, which cancelled the USFWS's potential rule-making updates for the MBTA in 2017. Rep. Liz Cheney (R-WY) also introduced

an amendment to the SECURE American Energy Act such that the MBTA would no longer cover incidental taking. This would end industrial accountability for impacts such as oils spills, while removing workable incentives for protecting birds. Add the Trump Administration's efforts to weaken the Endangered Species Act, endorsement for oil and gas drilling in the Arctic National Wildlife Refuge and new offshore oil and gas drilling in coastal waters of the U. S., plus other legislative attacks on public land habitat such as the "Resilient Federal Forests Act," which altogether will have negative impacts on avian populations while unraveling 100 years of reasonable conservation measures as per the Migratory Bird Treaty Act.

These days it's easy to get discouraged by the massive scale of global environmental problems—habitat destruction, climate change, air and water pollution...the issues go on, and we see them manifested here in the Chattooga watershed. So take heart, take action and take time to get involved in protecting our home turf. Try this: every spring, we seek inspiration by sponsoring an educational bird walk, to see and listen to neotropical migratory birds around the watershed. Join us, and join in celebrating our magnificent Chattooga River watershed!

Chattooga Elk

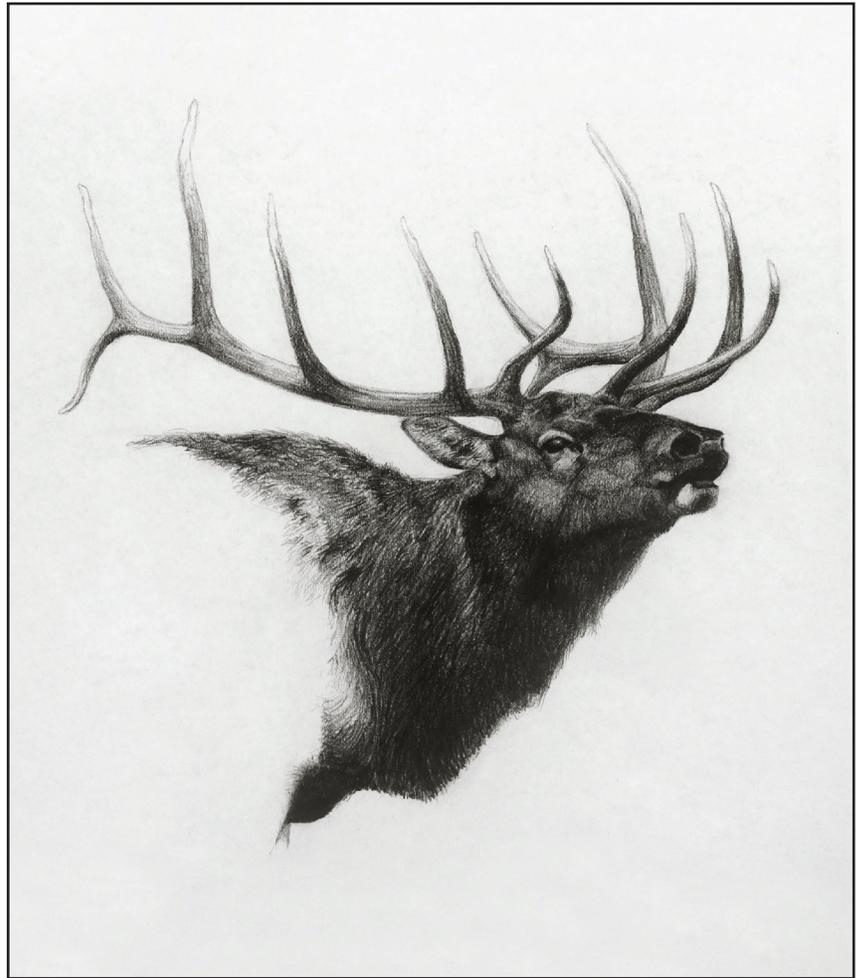
Buzz Williams

The Eastern Elk (*Cervus elaphus canadensis*), once abundant in the Chattooga River watershed, has been extinct for over 200 years. So during the winter of 2016 when a young bull elk was photographed in a field near the Satolah Fire Station (located in the headwaters of the West Fork of the Chattooga River) it caused quite a stir. Soon there were five or six more confirmed sightings of a young elk, all appearing to be 300-400 pounds, with four prongs on each antler and looking very similar to the one seen in Satolah. The time and place of each sighting indicated that they were indeed one and the same. This solitary elk had wandered away from an established herd in the Great Smoky Mountains National Park, made his way up the Tuckaseege River, over the Blue Ridge Divide to Highlands, North Carolina, then across the Chattooga River watershed, until he finally wound up in the Jocassee Gorges in South Carolina.

This surprising visit by a keystone species—one that had been absent for so long—poses many questions: Is there enough habitat to support an elk population in the Blue Ridge Escarpment area? Are there sufficient wildlife corridors to allow migration into the area? How would the return of elk to the Chattooga River watershed affect our environment? Would people tolerate elk, which might impact the private lands interspersed throughout the existing habitat on our national forest lands?

Elk FAQs To answer these questions, one needs to take a closer look at what is known about elk. Elk are members of the deer family, *Cervidae*, which includes the White Tail and Mule Deer, moose and caribou. Elk bone fossils date to the Lower Oligocene Epoch, 120,000 years ago. They were originally an Old World species that some scientists believe crossed from Asia into North America via the Bering Strait. Their original range in North America was from southern Canada, below the boreal belt, to the southern U.S., and from the Atlantic states to California. Elk are ungulates, i.e., mammals that have hooves. The bull elk have impressive, multi-branched antlers that they shed each spring. Like cows, they are ruminant animals that chew their cud. Elk are one of the only animals that have both antlers and canine teeth. They are also unique in that they and the walrus are the only animals that have ivory canines, which scientists believe are remnants of the tusk of an ancient ancestor.

Elk utilize a wide range of wooded habitats including brush



Elk
by Heather Theurer

graphite on paper

lands interspersed with meadows, and often use older forests for bedding and shelter from wind. Research has shown that elk that have been relocated back to the eastern U. S. will quickly adapt to eating acorns. Acorns are very nutritious and plentiful in the east, and it has been postulated that this is the reason the original Eastern Elk was so large. Elk are mostly grazers but will eat leaves, mushrooms, lichens, acorns, bark and buds from shrubs and trees. Elk will often seek out “licks,” where the soil is rich in minerals to supplement their diet.

Because they can exist in such a variety of habitats, elk at one time were the most widespread hooved animals in North America. The original population of elk in North America has been estimated at close to 10 million. Originally, there were two species of elk in North America, the North American Elk (*Cervus elaphus*; note, however, that in some classifications it's called *Cervus canadensis*), and the Tule or Dwarf Elk (*Cervus nannodes*). The Tule or Dwarf Elk is the smallest of our elk species, and inhabits the mild Mediterranean climate of central California. However, the North American Elk has five subspecies, which are:

Chattooga Elk

☞ **Rocky Mountain (or American) Elk** (*Cervus elaphus nelson*) is the most wide spread subspecies of elk, with a range of most of the eastern slopes of the Rocky Mountains, from the Yellowstone National Park area of Montana and Idaho, through Jackson Hole, Wyoming, to the Four Corner states of Colorado, Utah, New Mexico and Arizona. The Rocky Mountain Elk have the largest and most impressive antlers.

☞ **Eastern Elk** (*Cervus elaphus canadensis*) was the most populous subspecies of elk, and ranged in woodlands east of the Mississippi River in the early years of European colonization. Eastern Elk populations soon plummeted because of habitat destruction and over-hunting for subsistence, and market values such as meat and high quality, durable leather. The U. S. Fish & Wildlife Service has verified that the Eastern Elk was extinct by 1870.

☞ **Roosevelt Elk** (*Cervus elaphus roosevelti*) is the largest subspecies, with bulls sometimes weighing more than 1,000 pounds. They inhabit the rugged rain forest of western British Columbia in Canada, down through the Cascade Mountains of Washington, Oregon and northern California.

☞ **Manitoban Elk** (*Cervus elaphus manitobensis*) inhabits the Manitoban and Saskatchewan regions of south central Canada. It is larger than the Rocky Mountain Elk, but has a smaller antler rack.

☞ **Merriam Elk or Mexican Elk** (*Cervus elaphus merriami*) once inhabited an area of Arizona and New Mexico, but is now extinct.

The Native American name for elk came from the Shawnee Indian language and was *Wapiti*, which translates as “white rump.” This is a fitting name, since the light yellow patch on the rump of an elk is very apparent and distinctive. During winter, elk are a light tan on their back and a darker brown toward the belly. Males sport a short, shaggy mane on a powerful neck, which supports an impressive set of forked and spreading antlers. Although subspecies vary, generally a full grown bull elk can stand five and a half feet tall at the shoulder, and weigh between 800 to 1,000 pounds. A typical cow is not as tall, but may weigh 500-600 pounds, with much the same coloration patterns as the males.

Elk have two kinds of fur: a predominantly tan winter coat of long guard hairs, under which is a thick, warm, down-like layer, and a sleek, copper-colored summer coat. A calf born in late spring is spotted, turning to tan by fall. A young calf can weigh about 35 pounds, and will stand a few hours after birth. The cow usually hides the calf for a while, until it can follow its mother.

The magnificent spreading antlers of the bull elk are iconic. Male elk begin growing horns in the spring of their second year from two buttons on their forehead, although it takes several more seasons before the young bulls will develop a full “rack.” The underlying antler bone is grown and nourished by blood, in a layer of skin covered with thick, short hair called “velvet.” In late summer the antler bone hardens, while the velvet withers and is scraped off by rubbing the antlers against stiff vegetation such as bushes and sapling bark. By September, the antlers are solid bone. Bull elk compete against each other in jousting matches, where the combatants lock antlers and engage in shoving to determine dominance and the right to breed with cows. This time is called the “rut.” Antlers are shed in late winter or early spring. New antlers begin to grow almost immediately, and are fully formed again by mid-summer.

Elk are one of the only animals that have both antlers and canine teeth. They are also unique in that they and the walrus are the only animals that have ivory canines, which scientists believe are remnants of the tusk of an ancient ancestor.

A young male elk will develop a set of antlers called “spikes” in their second spring. Young 3-year-old bulls grow antlers that are “crotched.” The antlers of a healthy bull will increase in

size and spread as it ages, up to a peak of about 8 years prime. These impressive antler racks reach over 5 feet in spread, and can weigh up to 40 pounds. A typical fully developed rack is supported at the base by a stout beam, with four tines forking forward while the mane beam sweeps back into a wide, spreading cradle that is studded with curved tines, and terminates in a prominent fork with tines sweeping toward the withers. Only one other member of the deer family—the moose—has bigger antlers, but none are as magnificent and graceful as the elk.

Elk move in herds. In western states they migrate from open, high-elevation grasslands where they graze in summer, to the more sheltered wooded slopes and valleys in the winter. Elk that have been relocated to the eastern U. S. (more on this later) also move from one habitat type to another, but not on such a great scale. Their movement across the landscape is more localized, and is best described as nomadic rather than migratory.

Chattooga Elk

Herds are made up primarily of cows, calves and adolescent males. Bulls band together in bachelor groups from mid-winter until late summer, staying close to the main herd in their summer range. In late summer as the herd begins moving toward the winter range, the dominant bulls rejoin the main herd and start assembling harems of up to 20 cows. This is the breeding season, or rut. The rut is a very exciting time during the life cycle of the elk, and it lasts until about November.

Bulls in full rut wallow in muddy places, and perfume themselves with urine-soaked mud and vegetation thrown over their backs by thrashing about with the forward antler tines. Their necks swell and develop a hefty dark brown mane. The rituals and physical displays send a clear message through sight and smell to cows seeking a healthy mate, and to other bulls, signaling that they can accept a challenge to fight or leave their territory.

While bull elk attract mates to their harem, they challenge other bulls with a mating call known as “bugling.” It has been described in various terms, but to me, bugling begins with a lower rumbling note that gradually increases in pitch and frequency to reach a high-pitched scream or whistle, and ends in a quick series of short grunts. Younger bulls are often driven off by more dominant males, but usually hang close by. Occasionally, one of the adolescent males will venture forth into new territory.

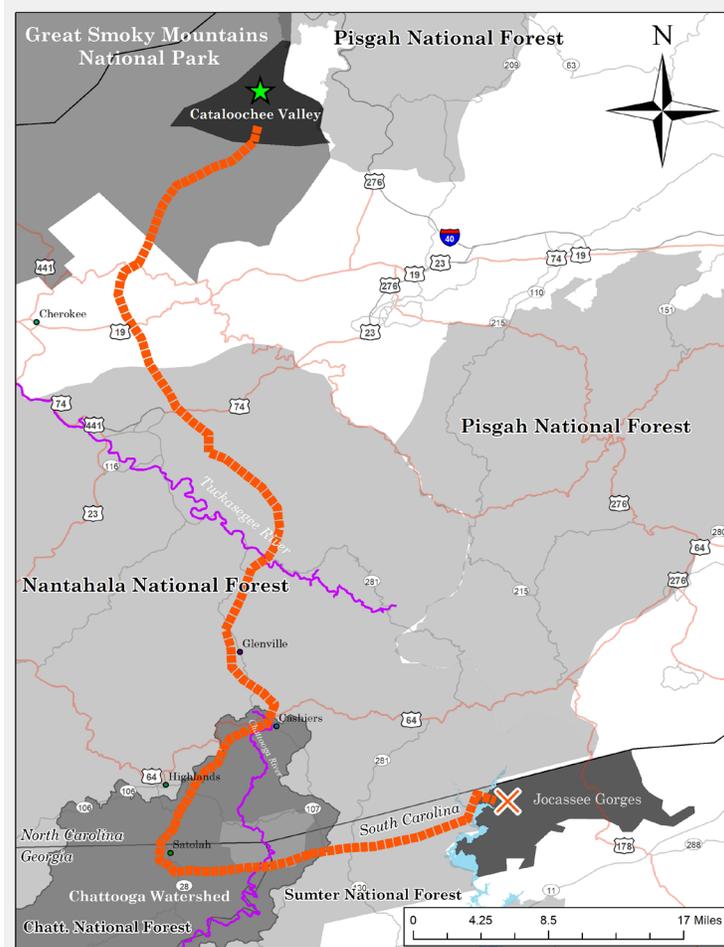
Cows usually come into estrus in September and are receptive to mating for only 24 hours. They may go through up to 3 cycles every 20 days. By November the rut is over and elk will reform original bands, while feeding for the winter in the more sheltered winter ranges. Calves are born about June, scentless and camouflaged with spots so as not to be detected by predators. Originally, the main elk predators were the mountain lion, wolves and the occasional bear.

The Chattooga Elk The story of the young bull elk that recently wandered into the Chattooga River watershed is linked to efforts to reintroduce elk back into the eastern U. S. after the extinction of the Eastern Elk. The Eastern Elk disappeared from the South Carolina frontier in the early 1700s. Unlike the wily white tail deer, the Eastern Elk was not as shy, and often remained grazing even when a hunter approached, making them easy targets. John James Audubon, famed ornithologist and artist, observed in 1810 that elk were becoming very rare in Kentucky. Elk were often killed by hunters for their “ivories” (upper canine teeth), which were often used for watch fobs or jewelry. The last recorded Eastern Elk killed in Tennessee was in 1870, and they were declared extinct by 1880.

The beginning of the 20th century was marked by a movement—inspired by such notable advocates as Theodore Roosevelt and others—to protect and restore natural ecosystems in the eastern states, which had been ravaged by clearcutting and poor agricultural practices. One early effort in 1913 was an elk reintroduction project by the Pennsylvania Game Commission. The Commission purchased a small herd of Rocky Mountain Elk from Yellowstone National Park and released them into the Allegheny Mountains. One of the things learned early on was that elk were susceptible

to a sickness called Chronic Wasting Disease, a deadly brain disease belonging to the family of diseases known as transmissible spongiform encephalopathies. Wildlife managers came up with a strategy for more aggressive reintroduction plans to introduce elk in larger numbers, in hopes that the herd would have more of a chance to survive disease.

In 1997, 1,800 Manitoban Elk were released in Kentucky and Tennessee, at a large National Recreation Area called The Land Between the Lakes. Seven years later, the herd was 4,500 strong and had spread into Virginia. Much of the land in this



The “Chattooga Elk” traveled approximately 87 miles from its origin in the Great Smoky Mountains National Park, across the Chattooga watershed, to the Jocassee Gorges in SC.

was that elk were susceptible

Chattooga Elk



The “Chattooga Elk” grazed on the grounds of the Highlands Falls Country Club in Highlands, NC.

area had been reclaimed after strip mining and planted with grasses favored by elk.

The lone elk that passed through the Chattooga River watershed probably came from the herd reintroduced into Cataloochee Valley, NC, in the Great Smoky Mountains National Park. This reintroduction effort started in 2001, when 50 Manitoban Elk from Kentucky were released, followed by another 52 in 2002. This herd has expanded to almost 150 individuals, moving into the Oconaluftee area of the Cherokee Indian Reservation and even onto adjacent private lands. These successful reintroductions of elk demonstrate that there are indeed good opportunities in the east. In addition, much has been learned about how elk maintain open areas by grazing, and creating traditional natural habitat patterns for themselves and other species.

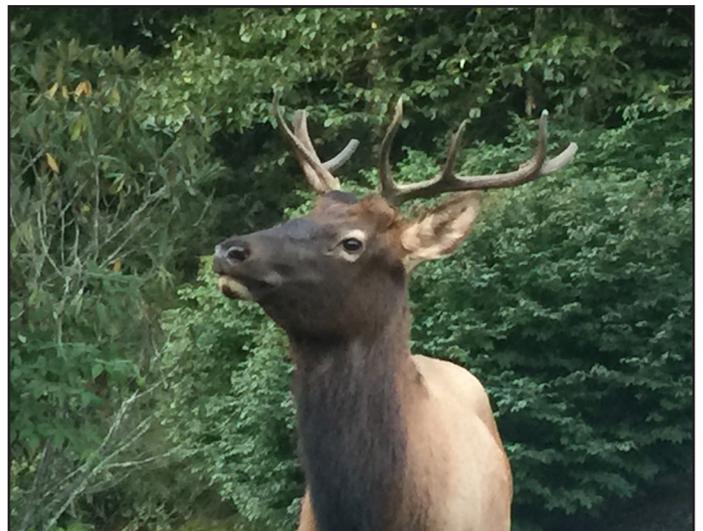
Interactions with people seem to be the greatest problem with managing reintroduced herds. Elk encounters in the Smokies have become such a problem that rangers and wildlife officers are reprogramming elk that are becoming too friendly. Their strategy is to bait the elk into range with apples, and then give them a very unpleasant shot of pepper spray, to break them of interacting with humans. North Carolina has just passed a law allowing private landowners who are having trouble with elk destroying their crops, to obtain a nuisance animal permit to kill the animal in season, and report the kill within 24 hours. In some cases, fences have been built to keep wandering elk at bay.

Then there is the problem with roads and highways. Naturally, elk are in danger when crossing roads as they move from one place to another. Experiments in Europe, and in the Pacific Northwest in this country, have been implemented to address this problem. Large, earthen overpasses have been built to bridge highways and allow elk to cross without interfering with road traffic. Fences funnel the elk to these overpasses, where they establish travel corridors. In the eastern U.S., unfortunately very little attention has been given to this idea, nor do the public

land agencies who craft management plans for the national forests—where most elk habitat exists—plan for travel corridors or habitat connectivity.

The North American Elk was once an important and magnificent keystone species in America, but due to massive habitat destruction and over-harvesting, elk populations have suffered greatly. The upshot is that much progress has been made to actually bringing this species back. Proof of this is the over 1 million elk that exist in America today, due to the efforts of dedicated people trying very hard to restore the species. Our young, errant bull elk wound up hanging around the Jocassee Gorges in South Carolina. I have a friend who saw him and remarked, “That elk is either here looking for food or love, and he don’t look hungry.” I believe that the habitat to support an elk population in the Blue Ridge Escarpment area, though small and fragmented, is there—if managed properly.

The interaction with too many humans will be the elk’s biggest hurdle. Unfortunately, it’s likely that under the Trump Administration, conservation initiatives including efforts to restore and protect native ecosystems will be almost non-existent. Gloomy as all that sounds, I choose to take the bull elk’s migration into the Chattooga River watershed as a sign. Native American elders can teach us many things, and I choose to think of dark times the way they do: “This is also a time for renewal,” the elders often say. After all, a year ago, who would have imagined that an elk would wander back into the Chattooga River watershed after 200 years of absence? I’m taking it as a good sign!



EPILOGUE *The South Carolina Department of Natural Resources captured the 500-pound wandering elk (above) near Devil’s Fork State Park in upstate South Carolina. The animal was tranquilized and moved to Charles Towne Landing, a nature park near Charleston, SC, where it is on public display in an open fenced area.*

“Chattooga Elk” photos courtesy of Bob Trevathan

Wildfires in Our Watersheds

Kyle Bennett

Editor's Note: The author, Kyle Bennett, is a stormwater technician for Pickens County, SC. The graphs accompanying this article are from a lecture by Lee H. MacDonald, Colorado State University.

Wildfire and South Carolina are not two words you often hear in the same sentence. Compared to the nation as a whole, South Carolina ranks relatively low when it comes to wildfire events. Annually, approximately 1,300 acres are burned in the Upstate versus a national average of nearly 6 million acres. However, this past November [2016] brought fire to the forefront of many residents' minds. The Pinnacle Mountain Fire was the largest mountain wildfire in South Carolina's modern history, blazed for 27 days, prompted local evacuations, encompassed a 31-mile perimeter in and around Table Rock State Park, and ultimately burned 10,623 acres before being effectively contained on December 5th.

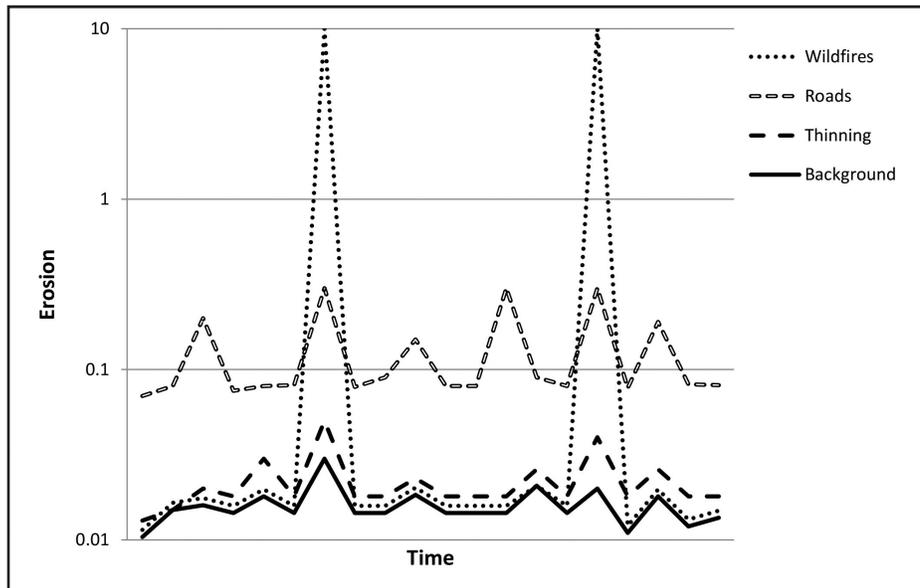
Although potentially devastating and destructive to humans, fire has long played a role in reshaping the natural ecosystem. Some burns are even beneficial. Wildfires help recycle nutrients by burning vegetation and other organic matter while simultaneously reducing competition for established trees. Diminished undergrowth enables sunlight to more readily reach the forest floor, promoting the growth of new seedlings. Furthermore, fire can function as a disinfectant, killing off diseases and insects that prey on trees.

It should come as no surprise that wildfires impact the terrestrial components of an ecosystem. And given the interconnected nature of the environment, wildfires correspondingly alter an ecosystem's aquatic elements. And

not always for the better. The magnitude of impacts to water quality is largely a function of a fire's severity. Prescribed burns or low intensity fires tend to do little damage, merely reducing undergrowth without killing overstory vegetation or scorching soil. It is the moderate and high intensity burns that are cause for concern.

In the aftermath of a wildfire, one serious consequence is the risk of increased erosion. Fire hampers a watershed's capacity to slow, intercept, infiltrate and absorb rainfall.

Immediate impacts from such fires include ash deposition, temperature increases, and debris in waterways. Temperatures of surface waters in affected areas can spike due to direct heating, reducing dissolved oxygen in the water. Ash deposited may unbalance biogeochemical cycles, increase pH (being alkaline in composition), and affect physical properties of water like turbidity. Fallen trees and other debris can pile up in streams and creeks disrupting natural water flow patterns.

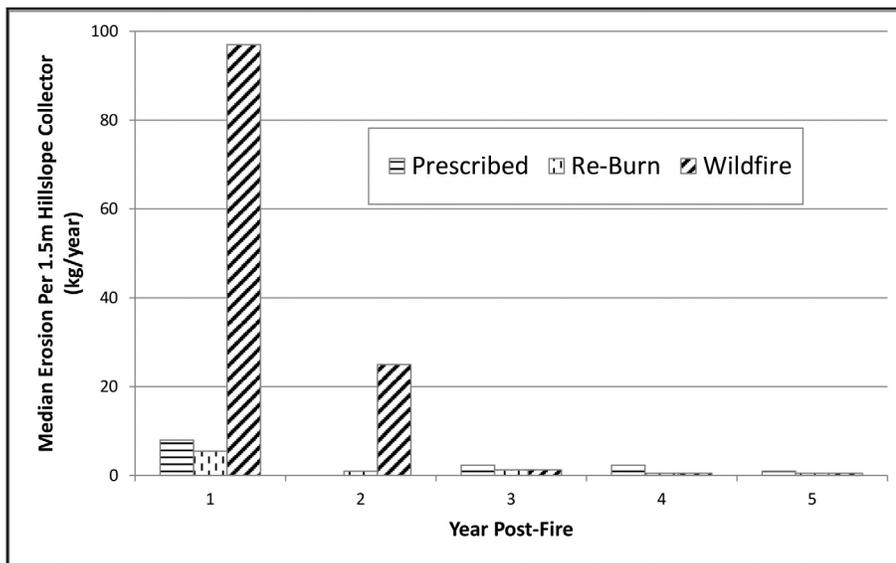


In the aftermath of a wildfire, one serious consequence is the risk of increased erosion and sedimentation.

In the aftermath of a wildfire, one serious consequence is the risk of increased erosion. Fire hampers a watershed's capacity to slow, intercept, infiltrate, and absorb rainfall. Trees, underbrush, and leaf litter all play an important role in decreasing the amount of surface flow. Loss of vegetation means water will flow more quickly through burned areas thereby reaching greater velocities and peak flows. Furthermore, a greater area of soil is directly exposed to rainfall. As raindrops fall they pick up speed, sometimes hitting the ground at velocities exceeding 20mph. These impacts can dislodge soil particles, facilitating erosion.

Depending on the temperature of the burn, even the soil's chemical composition can change. Combustion of organic matter forms a waxy coating around soil particles

Wildfires in Our Watersheds



The high intensity fires associated with wildfires lead to increased runoff during rain events, and corresponding spikes in erosion and sedimentation.

grass seed, cleaning out stream crossings, and stabilizing firelines.

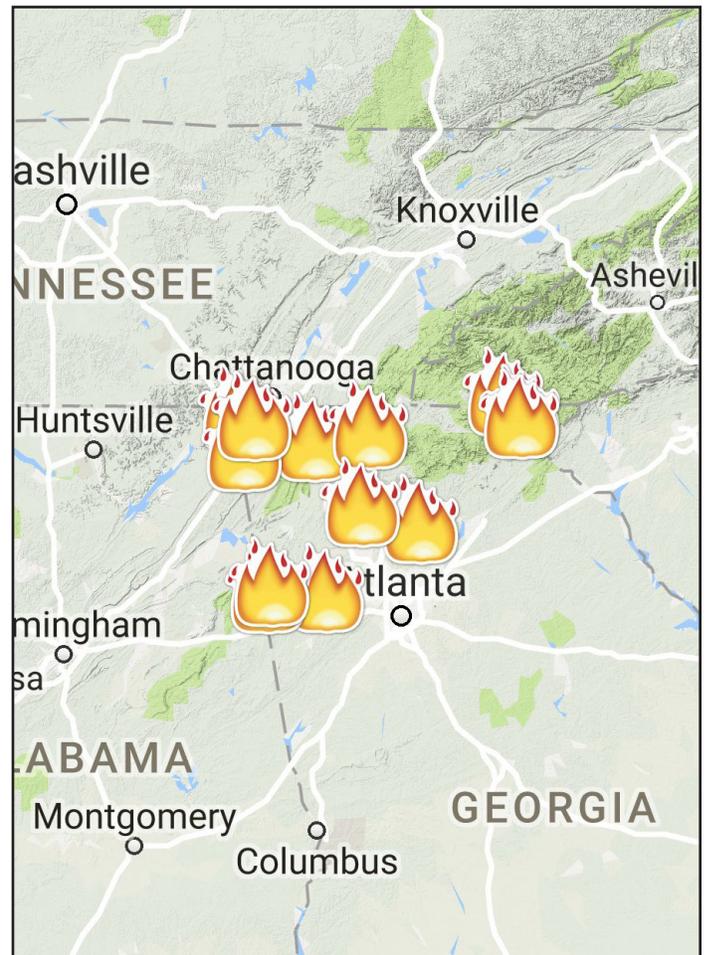
Luck holding steady, the upstate will not see another conflagration for some time. However, looking toward 2017 (the hottest year on record for the third year running) and beyond foreshadows greater challenges. The frequency of severe wildfires has been on the rise since the mid-1980s, a trend that is predicted to continue throughout the 21st century. And despite the potential effects on downstream water quality, there is a general dearth of post-fire runoff routine monitoring and assessment. Subsequently, the local impact of many wildfires remains poorly understood. In the future, stormwater management may more often have to grapple with the impacts and aftermath of wildfires on water quality.

rendering the soil hydrophobic or water repellent – further reducing infiltration. All of these outcomes engender post-fire runoff flows greater than pre-fire flow rates. Downstream rivers, lakes, and reservoirs face greater risks of bank erosion, flooding, and habitat loss for certain aquatic species. Increased runoff also means a spike in sedimentation that persists up to a few years until vegetation re-establishes.

Excess sediment can have a variety of negative impacts for water quality. Large volumes of sediment may dam rivers, change the course of creeks, fill in pools and riffles, and reduce riparian habitat diversity. Aside from the physical effects, sediment contains nutrients, metals, and pollutants that affect a waterway's chemical composition. After a fire, many of the nutrients and metals previously stored in vegetation as well as other compounds generated during combustion (like polycyclic aromatic hydrocarbons) are released into the environment.

During rain events, heavy metals and polycyclic aromatic hydrocarbons (PAHs) are transported into water bodies, where they can adversely affect the survivability, growth, and reproduction of aquatic species. Phosphorous and Nitrogen tend to be found at greater concentrations in surface water following a burn. Often limiting resources for algae growth, the influx of nutrients can contribute to eutrophication and algae blooms starving the water of oxygen.

It's not all doom and gloom however. Much can be done in the wake of wildfires to mitigate the more deleterious effects. Post-fire stabilization, restoration, and rehabilitation techniques designed to protect life, property, water quality, and deteriorated ecosystems from further damage are now commonplace. At the site of the Pinnacle Mountain Fire, several measures are being taken including the construction of water turnouts, planting



Wild fires across north Georgia burned over 40,000 acres in the fall of 2016.

Watershed Update

Nantahala Ranger District Proposes Southside Timber Sale

In March 2017, the Nantahala Ranger District issued a controversial “scoping notice” for timber harvesting and road construction in the heart of the Chattooga’s NC headwaters. Known as the “Southside Project,” the proposal got a large number of comments opposing it. The next step after “scoping” is for the Forest Service to produce an “environmental assessment” (EA) for the project. We’re expecting the EA to be released in January 2018.

The Southside project is controversial because it calls for heavy-handed “even age” timber cutting and road construction in and next to sensitive, special areas in the Chattooga headwaters, including the Ellicott Rock Wilderness Extension Area, Slick Rock, Granite City and the Foothills Trail. *Here is what the Southside Project scoping notice proposed:*

☞ **Logging in the Ellicott Rock Wilderness Extension Area**, which is currently being considered for wilderness designation in the ongoing revision of the Nantahala-Pisgah Forest Plan. Logging here would damage its potential for wilderness designation.

☞ **Logging old growth trees and building roads on top of Brushy Mountain**, which is next to Terrapin Mountain and the Ellicott Rock Wilderness Area. Brushy Mountain contains a beautiful old-growth hardwood forest that provides excellent wildlife habitat, while adding to the unique beauty of the Highlands-Cashiers area.

☞ **Logging within a NC State Natural Heritage Area** near Granite City. Natural Heritage Areas are recognized as important for the conservation of natural biodiversity. This site is also located within an area designated for restoring old growth trees.

☞ **Logging adjacent to Slick Rock, which is a Natural Heritage area**, a public area, and habitat for the Green Salamander. Logging here would negatively impact habitat for the Green Salamander, which is a federally-listed Endangered Species.

☞ **Logging along the steep banks of Jacks Creek, one of the last remaining wild Brook Trout streams in the area.** Jacks Creek flows into the East Fork of the Chattooga River, which, in turn, feeds the Walhalla State Fish Hatchery. Logging could harm Brook Trout populations by diminishing required environmental conditions—namely cold, clean and clear water—and might also degrade water quality for the Walhalla Fish Hatchery.

The Forest Service will release their EA for the Southside Project soon, and ask for public comments. Be ready to take action to help preserve and protect sensitive and special areas in the Chattooga’s North Carolina headwaters!



An increment borer is used to collect a core sample of an old growth tree on Brushy Mountain, in an area proposed for logging in the Southside Project. The sample showed the tree is well over 200 years old.

Chattooga Conservancy Land Trust “Accreditation” Awarded

The Chattooga Conservancy operates a land trust, as a component of our environmental advocacy work. The objective of the land trust is to preserve natural resources on private property through executing conservation easement agreements with willing landowners. *In March 2017, our land trust was awarded “accreditation” status from the Land Trust Alliance’s Accreditation Commission.* The Chattooga Conservancy’s land trust has now joined a trusted network of accredited land trusts by meeting high standards for demonstrating sound finances, ethical conduct, strong organizational leadership, responsible governance, sound transactions, and lasting stewardship of the land we currently protect through conservation easements. Only 28% of the 1,363 land trusts operating in the United States are accredited.



Hot Off the Press Foothills Initiative “Proposed Action”

The Chattahoochee National Forest just released a major “proposed action” for their new Foothills Landscape Initiative project, followed by a call for public comments. *The Foothills Project area encompasses a whopping 143,000 acres of national forest land in north Georgia, including a significant portion of the Chattooga River watershed in Rabun County.*

Watershed Update

So what is the Foothills Initiative? It was launched about a year ago, when the Forest Service announced that a big project was in the works. The Forest Service is billing it as a “restoration plan” that would occur over 10 years or more, in an area that they’ve designated as “the foothills landscape.”

For starters, we disagree with the Forest Service’s boundaries for the “foothills landscape.” This is an important point because landscape zones determine what kind of vegetation naturally grows there; for example, predominantly hardwood trees, pine trees, or some of both. Based on the work of respected scientists such as the late Dr. Charles Wharton, author of the landmark book *Natural Environments of Georgia*, the “foothills region” does not extend into the Chattooga River watershed. *In fact, the entire Chattooga River watershed, starting just south of the watershed at Tallulah Falls, GA, has been identified as part of the “Blue Ridge Province,” which is a predominantly broadleaf hardwood forest ecoregion.* Yet the Forest Service has arbitrarily designated a large portion of the Chattooga watershed as being in the “foothills” zone, that would contain predominantly pine trees. Accordingly, their Foothills Initiative proposal places inappropriate emphasis on restoring pine forests in the Chattooga watershed.

The Foothills Initiative is also based on an over-inflated mandate to create more “early successional habitat,” i.e., 0 to 10-year-old trees, and proposes to do this by cutting down older stands of oak trees. The Forest Service is also proposing to *apply herbicides to all timber harvesting areas*, to allow only certain tree species to grow back as a “tree crop,” which reduces the biological diversity of our forests. The environmental impacts of widespread, repeated herbicide applications is a concern, in and of itself.

Currently, the Forest Service also wants to move ahead with the Foothills Project without providing citizens the details about exactly what areas and which stands of trees would be targeted for timber harvesting and herbicides.

The Forest Service intends to release an “environmental assessment” for the Foothills Project in the spring of 2018, and will ask for public comments. Visit www.chattoogariver.org for more details about the Foothills Project proposal, and get involved! *A project of this scale and implementation timeline will have a big impact on our public lands in northeast Georgia.*

Chattooga Conservancy Mentors Highlands Biological Station Students

Chattooga Conservancy staff mentored 4 students from the University of North Carolina (UNC)/Chapel Hill, who spent their fall semester at the Highlands Biological Station. Two students studied mountain bogs, which are relatively rare in the Chattooga watershed. Their field research took them to



UNC students studying at the Highlands Biological Station investigated mountain bog habitat in the Chattooga watershed.

mountain bogs in NC, SC and GA, that were all located in the Chattooga River watershed. The students researched how to identify suitable habitat for Bog Turtles, which are a federally-listed endangered species.

Two other students worked on documenting old growth tree characteristics of selected forests in the Highlands-Cashiers Plateau, in the Chattooga’s North Carolina headwaters. Their research included taking core samples of selected trees, and measuring downed woody debris in the surrounding forest. The core samples were from trees located at Granite City and on top of Brushy Mountain, just north of the Ellicott Rock Wilderness, where the students documented trees well over 200 years old. The Forest Service has proposed to harvest these trees as a part of the Southside Project timber sale. Hopefully, the results of the students’ old growth project will prompt the Forest Service to withdraw these areas from the timber sale.



A UNC student carefully counts the rings of a core sample collected from a tree on Brushy Mountain, to determine the tree’s age.

Watershed Update

Chattooga Stewardship Initiative

The Chattooga Conservancy is launching a “Chattooga Stewardship Initiative,” to provide opportunities for all of us to be better stewards of the magnificent Chattooga River watershed. This program was initiated in mid-October, when volunteers assembled to remove a swath of unsightly graffiti from rocks and trees at Sandy Ford, on the SC side of the river. It took lots of scrubbing, and the mission was accomplished!



Volunteers scrubbed graffiti off of rocks and tree trunks on the SC side of the river at Sandy Ford.

Initial efforts will focus on cleaning up trash on public land in various areas of the watershed. **Each stewardship field trip will take place on the 3rd Saturday of the month, from 11:00AM to approximately 2:00PM.** The dates and locations are shown below. Also see our website and Facebook for updates and driving directions. Please consider joining!

DATES & LOCATIONS ALL DATES ARE SATURDAYS IN 2018

- ⇒ **February 17 Sutton’s Hole** Meet on the corner of Hwy. 76 east and Forest Service road 290 in GA.
- ⇒ **March 17 Sandy Ford** Meet at the Sandy Ford parking lot in GA.
- ⇒ **April 21 Earls Ford** Meet at the Earl’s Ford parking lot in GA.
- ⇒ **May 19 Woodall Shoals** Meet at the Woodall Shoals parking lot in SC.
- ⇒ **June 16 Highway 28 Bridge** Meet at the “fisherman’s parking lot” in SC.
- ⇒ **July 21 Burrell’s Ford** Meet at the Burrell’s Ford parking lot in SC.
- ⇒ **August 18 Bull Sluice** Meet at the Bull Sluice parking lot in SC.
- ⇒ **September 15 Thrift’s Ferry** Meet at the first camping area on the left at the start of the Thrifts Ferry Road in SC.

We’ll provide garbage bags. Please bring your gloves, water, and food if so desired. Our goal is to collect at least 1,500 pounds of trash over the course of the next year!

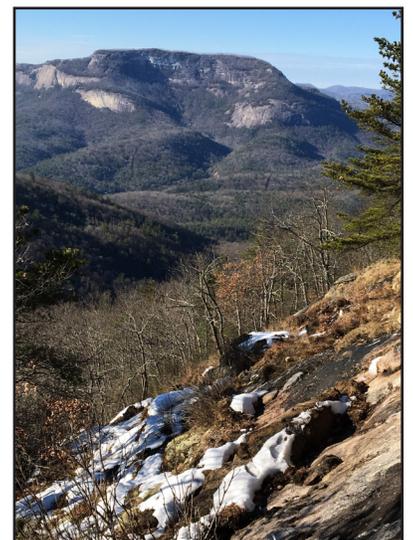
Nantahala-Pisgah National Forest Forest Plan Revision

The “forest plan” for the Nantahala-Pisgah National Forest is being revised—a major project that has been ongoing for the past couple of years. The outcome of this process is important, because the new forest plan will dictate management of public land in the Chattooga River’s North Carolina headwaters for the next 15 years or so. Its next phase of completion will be a “draft environmental impact statement,” which is scheduled to be released in the spring of 2018.

This past spring, in May 2017, the Forest Service’s “planning team” issued batches of information that they called “building blocks” for the new Nantahala-Pisgah Forest Plan. **This info was alarming, because it indicated reduced protections for special areas, while ramping up the timber cutting program.** For example, Forest Service planners proposed:

- ▶ *Increasing the suitable timber base for logging by 130,000 acres.*
- ▶ *Opening 28% (25,168 acres) of inventoried old growth trees for logging.*
- ▶ *Opening 39% (88,126 acres) of State Natural Heritage Areas for logging*
- ▶ *Opening 35% (127,328 acres) of Wilderness Inventory Areas for logging.*
- ▶ *Also, NOT recommending the Terrapin Mountain Wilderness Inventory Area or the Overflow Wilderness Study Area, which are both in the Chattooga watershed, as eligible for potential wilderness area designation.*

The Chattooga Conservancy has been participating in the forest plan revision process by attending public meetings, networking with citizens in the Highlands and Cashiers communities, and giving input to the Forest Service on portions of the draft forest plan. Our input to Forest Service planners has advocated for potential wilderness area designation for Terrapin Mountain, Overflow Wilderness Study Area, and the Ellicott Rock Extension Area, which



The view from the top of Terrapin Mountain features Whiteside Mountain and surrounding wildlands in the Chattooga headwaters.

Watershed Update

are all special wild lands in the Chattooga River headwaters. We've also called for Overflow Creek and its East and West Forks to be recognized as eligible for Wild & Scenic River designation.

Wilderness area designations in the Chattooga headwaters have been endorsed by many citizens, as well as the Cashiers Area Chamber of Commerce and the Highlands Chamber of Commerce. While final designation of new wilderness areas requires action by the US Congress, **lands qualified for wilderness area designation must be recognized by the Forest Service during the forest planning process, to protect them from timber harvesting and road building projects.**

Inevitably, if potential wilderness and other special areas fail to gain protections during the forest planning process, their relatively natural and undeveloped characteristics will be lost. **Public support for protecting these last remaining special areas is the key to preserving them.**

The heated debate about the outcome of the new Nantahala-Pisgah Forest Plan is also being influenced by two "stakeholder" groups, that formed around the forest planning process. These stakeholder groups are composed of special interest and conservation organizations, and they've been meeting for the last several years to try and reach a consensus about important components of the new forest plan, such as protections for old growth trees, recreation use, potential wilderness areas, etc. Politicians have also entered the scene to influence the outcome, such as Congressman Meadows (R-NC), who wants less protection of public land in western NC, as well as numerous County Commissions in western NC, who've weighed in by passing either pro or anti wilderness resolutions.

Over the winter, the Forest Service will be reviewing public input to date while continuing to work on the forest plan revision. The draft forest plan is expected in the spring, with the opportunity for submitting comments. Stay tuned for next steps!

Stekoa Creek Watershed Management Plan Implementation

The Chattooga Conservancy, in cooperation with the GA Department of Natural Resources and the City of Clayton, recently completed the *Stekoa Creek Watershed Management*

Plan (WMP). This plan contains the history of how Stekoa Creek became so polluted, and the various efforts over the years to improve the stream's water quality. The WMP also identifies the hotspots of water pollution in the Stekoa watershed, and lists some ways to clean them up. (To see the Stekoa WMP, visit our website homepage and click on the "Learn" menu.)

Another aspect of the Stekoa WMP is that it enables projects for improving water quality to apply for competitive state and federal funding applications. So with the Stekoa WMP completed, we teamed with the Georgia Mountains Regional Commission to apply for another grant to start improving water quality in Stekoa Creek. Good news - the grant request was successful! This project will begin soon, and the work includes:

Green Infrastructure Demonstration Project



The large parking lot adjacent to Stekoa Creek on Hwy. 441 in Rabun Co. will be modified to stem the flow of polluted stormwater into the creek.

The Food Bank of NE Georgia is based in Rabun County, GA, at the "Covered Bridge Shopping Center" on Hwy. 441. The facility has a large, 2-acre impervious parking lot that borders Stekoa Creek. During storm events, this parking lot funnels all of its polluted stormwater directly into Stekoa Creek, which also causes chronic erosion of Stekoa's streambanks at this site.

The green infrastructure project will implement an engineering plan that involves removing the parking lot pavement that is within the creek's 50-foot buffer zone, and replacing this paved area with rain gardens, tree islands and sections of permeable pavement. These installations will intercept the stormwater and treat it through "bioremediation" techniques, after which it will eventually

be discharged into the water table.

Agricultural & Septic System Best Management Practices

Agricultural operations often contribute fecal coliform and sedimentation pollution into Stekoa Creek, particularly when animals have direct access to the creek. We'll be working with the Natural Resource Conservation Service, county agricultural extension agent and a willing landowner to fence their farm animals out of Stekoa Creek.

Faulty septic systems are another source of fecal coliform pollution in Stekoa Creek and many of its tributaries. We will be working with the Rabun County Health Department to help fund septic system pump-outs, repairs and replacements of failing septic systems located in the flood plain of Stekoa Creek and its tributaries.

THANK YOU VERY MUCH to everyone who recently contributed!*

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Your generous support will help us continue to work on the important conservation issues facing the Chattooga River watershed area.

*donations listed are just through 9/7/17.

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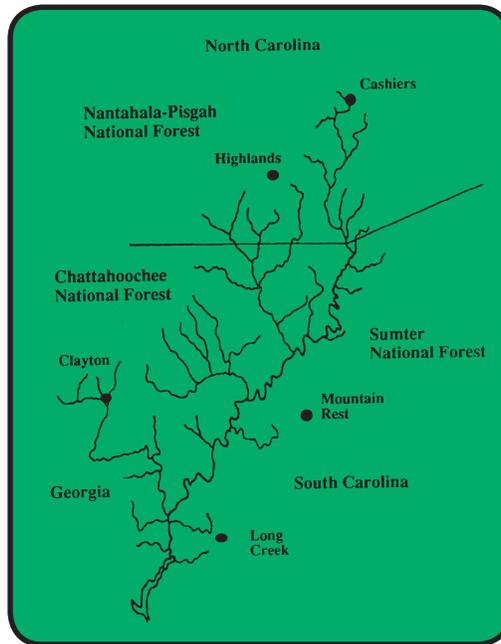
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Mission:

To protect, promote and restore the natural ecological integrity of the Chattooga River watershed ecosystems; to ensure the viability of native species in harmony with the need for a healthy human environment; and, to educate and empower communities to practice good stewardship on public and private lands.



Goals:

Monitor the U.S. Forest Service's management of public forest lands in the watershed, and work cooperatively to develop a sound ecosystem initiative for the watershed

Promote public choice based on credible scientific information

Protect remaining old growth and roadless areas

Promote public land acquisition by the Forest Service in the watershed

Educate the public

Promote sustainable communities

Promote conservation by honoring cultural heritage

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