



February 19, 2014

TREE COUNTRY SC

From the desk of...

STATE FORESTER
Gene Kodama



Good day,

The sun is shining, at least where I am, and I hope it is in your location also. We could certainly use a weather break about now. The recent 2014 winter storm was historic in many respects, essentially covering the entire state with ice occurring in about 39 out of 46 counties. Hundreds of thousands of homes and businesses lost power with a few locations still without power today. I was privileged to speak with several leaders of our SC power teams and see them and those they brought in from other states at work. These men and women are just as dedicated to their mission of providing power as our firefighters, law enforcement, and other emergency personnel are to protecting and serving South Carolina's citizens. I am proud to call them our friends and partners!

Of course, our Forestry Commission has also had an important role to play in response to this natural disaster and that role continues. Immediately after the storm, the Commission cleared debris from roads with dozers and chainsaw crews and had emergency 4WD transportation available if needed. Currently, the agency is responding to the impact of ice to the forest resource. This will be an extended process given that the storm affected most of the state. We have prepared an action plan that was reviewed Tuesday during a meeting with many forestry leaders from across the state. This plan will be refined based on that meeting and adjusted as needed. Key topics being addressed in the plan include disaster declarations and what they mean to the cleanup and salvage process, damage assessment, state and federal assistance programs for timber damage and reforestation, communications with governmental leaders, the industry, and the public, and wildfire implications.

At this time, a damage survey is underway with ground crews and aerial surveillance. Damage types include the bending of younger trees that will affect future



Ice damage in Berkeley County.



Gene Kodama, Representative Patsy Knight, Keller Kissam (with SCE&G), and others review ice accumulation map while in Walterboro for a meeting with Governor Haley.

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NOTE: The next Bulletin will be March 5.

value, pine trees with tops broken out which typically causes mortality, trees with portions of their crown broken out, and fallen trees. Future damage that cannot be immediately determined will come from lost growth due to reduced tree crown size that will reduce wood production, insects that enter through wounds and diseases that enter or attack weakened trees. So, damages can take several forms and are more than the immediate dramatic impacts that we see when trees are downed or completely broken off. The Commission will gather the damage data and prepare damage estimates and report on this impact.

Another key part of the response to the disaster is the assistance needed by private landowners who must deal with timber damage assessment, timber salvage, and reforestation. Private landowners own 88% of the forests and produce over 90% of the wood that keeps forest manufacturing going and people employed. The forest industry's mills and loggers will assist by helping landowners with harvesting where needed. This process will also help the mills retain wood flow.

Landowners with questions about timber damage and forest management should contact professional foresters for advice and should thoroughly assess their situation before taking action. Adopting a slogan from the country's northeast region called "Call Before You Cut" is a good idea to ensure that a landowner is properly informed before they take action that will impact their forest asset and possibly their financial future for decades. Landowners should also document any damages with videos and photos that include visible reference points in case they need to later prove that damages did in fact occur. These records can also be used to monitor forest stand development into the future. The Commission can provide forest management advice when asked and can also direct landowners to private forestry consultants in their area. The agency will also provide reforestation cost-share services as available to eligible landowners and seek additional governmental programs that provide this assistance.

In summary, our forests and our state took quite a blow last week from a tremendous winter storm. However, we have been hit before with ice storms (in 2004), hurricanes like Hugo (in 1989), pine beetle outbreaks (in 2002), and numerous bad fires seasons, and the state's forests, forest landowners, and forestry community have always bounced back because the forests, the forest industry, and our state's citizens are RESILIENT. This is a very important word that exemplifies our forests that are renewable, recyclable, and resilient. This is evidenced by the fact that the state has more wood volume now than ever recorded, and the amount of wood in the state is double the amount that was here just over 50 years ago on about the same forest acreage! Now, we must pick ourselves up, dust off the ice and debris, and continue growing our forests, industry, and jobs for South Carolina's citizens.

Best regards,

Gene



Forestry Commission Headquarters in Columbia after the snow. Although it was beautiful in some parts of the state, the storm was devastating in others.

Quote of the Week

I'm a great believer in luck, and I find the harder I work the more I have of it.

Thomas Jefferson

Winter Storm Hits South Carolina

Ice Storm

Starting on February 11 and ending on February 13th, South Carolina was hit by a very damaging winter storm. It started with snow in the upstate and northern counties above Columbia and sleet and freezing rain followed in the counties below and to the east of I-20. Thirty-nine out of 46 counties had some ice (and tree) impact, and the other 5 received snow.

By the end of the storm, 4-10 inches of snow had been dumped in the upstate and northern counties. The midlands received about an inch of sleet followed by up to an inch of freezing rain while the Coastal Plain received over an inch of freezing rain in some places. Estimated damage from the storm is expected to be over \$15 million according to the SC Insurance News Service, with additional estimated damage to the forest resource to be announced next week after the ice storm ground survey is completed.

The ice accumulations cut power to approximately 350,000 customers in the state, with many in rural areas still without power today. The most widespread power outages were in Aiken, Orangeburg, Berkeley, Dorchester, and Williamsburg counties. Utilities across South Carolina are reporting about 23,000 customers are still without power nearly a week after this crippling ice storm. The outages are in mostly rural areas.

Seven deaths are blamed on the storm in South Carolina ranging from hypothermia, carbon monoxide poisoning and traffic accidents. President Barack Obama has been asked to declare the state a federal disaster area. A disaster declaration from the President would mean the state would be eligible for help from the Federal Emergency Management Agency (FEMA), 75 percent of which would be paid for by the federal government. South Carolina is the only state in the nation without a federally declared disaster since 2006.

Damage

The loss of electricity may be a short term and trying loss, but the most important long-term impact of the storm will be in the timber industry. Ice damage from the storm can have an enormous impact on timber, the state's number 1 cash crop. South Carolina has 13 million forested acres managed for timber production, and 88 percent of that is privately owned.

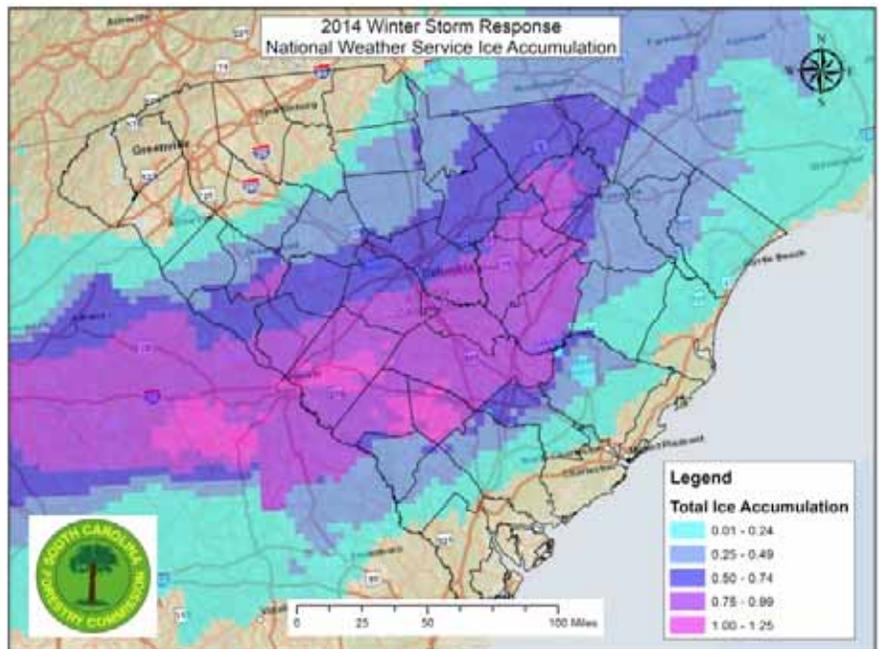
Timber damage extends across a wide and long swath of the state, as indicated by the National Weather Service ice accumulation map (above) and ranges from light to heavy. Some pine plantations have suffered damage that looks like tornado or



Ice weighing down trees in Hampton County.



Ron Holt's son Josh walks in what was to be his college fund. Pines thinned in the last two years were snapped in Williamsburg County.



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hurricane damage. SCEMD estimates the winter storm created over a million cubic yards of debris statewide.

We are preparing a Response Plan that will include topics like issuing a Forest Disaster Declaration, a damage assessment, a Disaster Action Plan, contacts for federal aid, contacts with the Governor and General Assembly for funding assistance (reforestation cost sharing), and a private landowner assistance plan.

Damage from this storm covers an area larger than the 2004 ice storm, which caused \$95 million in damage to the timber industry. The 2004 storm covered about a 20-mile swath of the state from Aiken through the Pee Dee. This time, the swath of heavy ice was nearly 50 miles wide. Ice ranged from half an inch to an inch thick in that swath, with moderate damage in the areas that got closer to half an inch.

The most damage is in young pines, ages 5-20 years, especially in tracts that have been thinned recently. These more open thinned stands allowed ice-laden trees to bend over or snap. After the ice melted, some trees remained leaning. Some will straighten out, but some, especially slightly older saplings, could be permanently bent making them unsuitable for sawtimber or poles in the future thus lowering their market value. Older pines lost branches, and that can reduce future growth and make them more susceptible to insect and disease damage but would not normally cause near-term mortality.

Many longleaf pines lost 3 or 4 feet of growth at the terminal buds at the top of their main stems. While some disease can enter through open wounds in those breaks, most of these trees will survive. But, when they are eventually harvested, they won't be straight thus reducing their market value.

Ron Holt said about 70 percent of the trees in some tracts in Florence and Williamsburg Counties were snapped like matchsticks about 20 feet up in some tracts, but only about 15 percent of trees were damaged in other tracts nearby.

Aerial and ground surveys are being conducted statewide to determine the damage statewide and to help determine if a Forest Disaster Declaration is warranted. A forest disaster was declared after the 2004 storm. This declaration serves to encourage, but not force, forest products companies to make use of the damaged timber in the state. It also makes some state resources available to help salvage and repair forests on private and public lands.

The 2004 ice storm caused \$95 million in timber damage, and it took weeks to collect the damage data. In comparison, the Highway 31 Fire in Horry County in 2009 consumed 19,000 acres and caused \$17 million in timber damages. Hurricane Hugo damaged over 6.7 billion board feet of timber on 4.4 million acres in 1989. Hugo devastated 36% of the state's forest land losing over \$1 billion in timber.

Providing Assistance

The South Carolina Forestry Commission serves our state during and after weather events. We provide



Terrell Smith supervises the clearing of roads in Allendale County.



Lowell Parnell pushes tree debris away from the shoulder of the road. Dozers had to be careful not to get on pavement.



The crew of Charlie Boles, Neal Murdaugh, Lowell Parnell, Bryan Smith, Rusty Barker, David Smith and Pete Stuckey (Terrell Smith not pictured) cleared roads in Allendale County.

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staffing at the SC Emergency Management Division's state Emergency Operations Center to provide resources such as four-wheel drive vehicles, bulldozers, and chainsaw crews.

We provided assistance during and after this storm to help clear the roads from tree debris. Chainsaw crews assisted Highway Patrol personnel in Berkeley, Charleston, Dorchester and Colleton Counties. Crews used chainsaws and three dozers to clear roads in Allendale County for two days. Four 2-man saw crews (from Coastal and Piedmont Regions) and one tractor provided assistance clearing roads in Aiken County, and were paired with the chainsaw operators from the Urban Search & Rescue team from Hilton Head. In Barnwell County, one dozer worked with fire department and county law enforcement officers to clear debris from roads. In Colleton County, a crew used a dozer to clear roads to an ETV tower in Cottageville and a SCFC control station in Lodge.



Ice coats a pecan limb.

The Commission conducted a preliminary aerial survey in areas with the highest amounts of accumulated ice and is now conducting a more detailed aerial survey followed up by ground checks to determine the areas to focus assistance to forest landowners as we move into the recovery phase of this winter storm event.



Ice covers a loblolly pine.

SCFC Forest Inventory and Analysis (FIA) crews are performing these post-storm evaluations of timber stand damage, Urban Foresters will help evaluate damage to trees in urban settings and will assist in prioritizing recovery efforts.

Around the Agency:

Our Columbia HQ received three and a half to four inches of snow and sleet during the storm and a little frozen rain on top of that. Power was never lost at our HQ office. Other than slippery surfaces and a few limbs down, everything was fine.

The state forests didn't receive any significant damage from the storm. Sand Hills and Poe Creek received snow while Manchester, Wee Tee and Harbison received a mix of snow, sleet and rain and had some minor tree damage.

Taylor Nursery in Edgefield County had some limbs down, but nursery beds are fine. No damage was suffered from the earthquake, either.

Coastal Region:

Calvin Bailey reported that the Coastal Regional Office suffered no damage except limbs down and the loss of power. Some areas of the region suffered major damage.

In the Edisto Unit, Pete Stuckey reported that the Hampton area received freezing rain and has trees down, limbs broken, and some counties still without power (Barnwell and Colleton). Heavy damage was reported in Aiken County too.

Walt Woodrum reported that the Santee Unit received an inch of ice at the Orangeburg office and only lost power briefly. There are fallen branches around the office, but no damage to the property. He reports that the Orangeburg Area does have a lot of damage and still has power out in many places.

Pee Dee Region:

Regional Forester Mike Ney reported that there was little damage at the Pee Dee Regional Office. A few

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Snow and ice falling off the storage shed at the Chesterfield Office.

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limbs fell in the yard. They received 1.5 inches of snow and 2 inches of sleet and ice on top of that. The office lost power for a short time.

The Black River Unit had some of the worst damage in the region. Ron Holt reported stands of timber that had been thinned within two years were snapped in two as occurred during Hugo.

In the Lynches River Unit, Clarendon and Sumter Counties received the most damage. (Again, with most being in thinned stands.)

Piedmont Region:

The Piedmont Region fared much better than the rest of the state. Having received mostly snow, damage to timber was minimal. Regional Forester Mike Bozzo said they received anywhere from 4-10 inches of snow (which was actually about 3-6 inches of snow initially, followed by sleet which turned into an inch of ice, and then another 3-4 inches of snow on top of the ice). It made for a crust ... even Paul Bower's mechanic's truck couldn't break through. All the snow, and now snow melt, plus scattered showers has curtailed prescribed burning until upcoming drier conditions occur.

There is some minor tree damage, mostly young pines leaning over from snow/ice in Edgefield County and lower Lexington County. Some hardwood bottoms were also affected in Edgefield County. Power outages were minimal over the region with some flickering or only a few hours without power and no known damage to agency facilities. The Edgefield earthquake was felt throughout the region with personnel reporting 'homes shaking'.

Piedmont West Unit Forester Michael Weeks reported that the Pickens area had no damage and a good 4-5 inches of snow.

Earthquake Rocks Edgefield

With the state shivering from the cold brought on by the winter storm, it shivered underground too. The U.S. Geological Survey reported a 4.1 magnitude earthquake Friday night (February 14th) around 10:23 pm centered seven miles west-northwest of Edgefield. The quake could be felt in South Carolina and Georgia. There were no reports of damage or injuries, even in the epicenter of Edgefield County.

Earthquakes are common in South Carolina, with 12 in the past 13 months. But none of the previous 11 were of a magnitude of more than 2.5, according to the S.C. Department of Natural Resources' earthquake webpage. It was the biggest earthquake to hit the state since 2002.

Geologists said the quake happened three miles underneath the earth's surface. Eric Strom, director of the U.S. Geological Survey's water science office in Columbia, said Saturday the quake "was pretty good sized" one for this part of the country.



Longleaf Restoration Report Released

The **America's Longleaf Restoration Initiative 2013 Range-wide Accomplishment Report** has just been released. Attached is the Executive Summary for the report. The public and private partners involved in the partnership effort completed 1.38 million acres of on-the-ground work in 2013. We hope the Longleaf Partnership Council report will be a useful resource for you.

To view or download the entire report go to the ALRI partnership website: <http://www.americaslongleaf.org/resources/2013-range-wide-accomplishment-report-and-executive-summary/>.

Chainsaw Safety Encouraged

It's expected that many homeowners may attempt tree clearing in the wake of the ice storm. Although widely available to the general public, these chainsaws are quite powerful and potentially deadly if used incorrectly by unskilled hands. The South Carolina Forestry Commission reminds everyone that the danger lies not only in the blade of the saw, but the energy in a damaged tree you unleash when a cut is made.

"Chain saws are wonderfully efficient tools, but they cannot tell the difference between tree limbs and human limbs," says retired SCFC urban forester Jimmy Walters. "I urge anyone who purchases a chain saw to carefully read the owner's manual. Safety equipment, such as chaps, goggles, and ear protection, is a must. A good set of chain saw safety equipment costs much less than a trip to the emergency room."

Here are some safety tips and chainsaw techniques from Forestry Commission staff:

- Protective equipment should be worn. This includes more than just goggles. Chaps, gloves and hearing protection should be worn at all times.
- Carefully look above the area you will be working. Watch out for limbs in trees that are still hanging or waiting to fall. It is best to wear a hard hat.
- Downed trees and limbs can be under a lot of stress. Watch for moving pieces when your chainsaw relieves that stress. A chainsaw operator can be pinned or injured from suddenly moving limbs.
- Watch for "kickback" from the chainsaw. Your operator's manual offers tips on how to avoid this.
- Avoid cutting over your head or from a ladder.
- If you don't know how to tackle a clean-up or if the job is too big, hire an experienced and insured professional from the phone book.
- Children should never be allowed to operate a chainsaw and should be kept away from downed trees.
- Be aware that a fallen tree may have taken a live power line with it.
- Never operate a chainsaw alone. Have a buddy or responsible family member on hand in case something goes wrong.

The best approach for most people with storm-damaged trees in their yards is to hire a professional arborist to cut the trees and clean up the debris, but caution is also called for in hiring a tree service. The Forestry Commission recommends asking for proof of property damage, liability and workman's compensation insurance before hiring a tree service to do any sort of tree work, and getting a firm estimate of the cost before proceeding.



Forest Resource—Tim Adams Environmental Program Manager Named

This third week of February sees **Herb Nicholson** taking over the reins of the Environmental Management Program. We were fortunate to have highly-qualified, homegrown applicants for this position right here with the agency.

Herb came to the Forestry Commission in 2004 and he has served as a Forest Inventory & Analysis forester, an Environmental Management forester and the Sand Hills State Forest Assistant Director. In his new role, Herb will be involved with statewide and regional environmental issues related to forestry activities. Please take the time to congratulate and support Herb in this new role in his career.



PHYSICAL FITNESS—Leslie Woodham Arduous Level Fitness Walks for 2014

Walk begins at 10:00am.

February 25 Spartanburg (rescheduled)
February 27 Florence (rescheduled)

Arduous Level-SCFC Employees

Any employee who wants to volunteer to take the Arduous level fitness test (3 miles with a 45 lbs. pack in 45 minutes or less) for 2014 needs to get the attached form completed by a qualified medical provider. This level is required to be red carded for wildland fire duty and may be required for positions on the Incident Management Teams. This is the only time that the arduous walks will be administered in 2014.

Arduous level participation requires a current medical clearance statement from a qualified medical provider. Clearances should be forwarded to me no later than **1** week before the scheduled walks. Passing this walk will also exempt an employee from the moderate level walks. <http://www.state.sc.us/forest/2538-4.pdf>

PHYSICAL FITNESS TESTING FOR NON-SCFC EMPLOYEES

Please pass this information on to any non-Forestry Commission personnel whom you think may be interested. The SC Forestry Commission is offering physical fitness testing for volunteers that have already passed the S- 190 and S -130 training and wish to be red carded for wildland fire duty with the SC Forestry Commission and Federal Agencies. To pass the required arduous level of fitness testing, you must walk 3 miles in 45 minutes while carrying a 45 pound backpack. Those co-operators passing the walk can attend the annual fireline safety refresher training after the walk to become eligible to be red carded. Volunteers who are red carded for wildland fire duty are expected to respond within 4-12 hours notice and be available for work details for a period of up to 14 days plus 2-5 days travel.

Before you can be tested you must provide a letter stating that your sponsoring organization will cover you under their workers compensation program during the testing. This letter must be signed by an appropriate officer of your organization. You must also provide a completed Medical Clearance Statement signed by a Qualified Medical Provider stating that you are cleared to take the 3 mile walk in 45 minutes with a 45 lb. pack. (<http://www.state.sc.us/forest/2538-4.pdf>).

These documents along with your telephone number must be received by Leslie Woodham, SC Forestry Commission, P O Box 21707, Columbia, SC 29221 no later than **1** week prior to the testing date. No one will be tested without both of these documents. If you have any questions regarding this testing, call Leslie Woodham at 803-896-8809.

Forest Management—Russell Hubright Ford Returns to SCFC

Bob Ford returned to the Forestry Commission on January 21 as the EQIP Forester for the Pee Dee Region. Bob is writing management plans for cost-share assistance and performing compliance checks to assist NRCS in their Environmental Quality Incentives Program (EQIP).

Bob is working in a familiar setting, making use of the Forestry Commission's Camden office — a location which was home to him for 9 years while he was Assistant District Forester. Welcome back, Bob!



Urban Forester Conference (Part 1)

Submitted by Jimmy Walters

The SC Nursery and Landscape Association held its annual conference and trade show (known as SCHI—South Carolina Horticulture Industry) on February 5-7 at the Myrtle Beach Convention Center. The conference features two days of educational sessions and workshops on a broad range of horticultural topics, including the production and management of shade and ornamental trees. Growers and wholesalers of plants, from greenhouse plants to large trees, came from the Carolinas, Georgia, Florida, Tennessee and a number of other states to display their materials, network, and book sales. The Forestry Commission has taken advantage of this trade show on a number of occasions to promote FireWise landscaping, Urban and Community Forestry, and proper tree management.

This year's conference was attended by Lowe Sharpe, Dena Jacob, Lois Edwards and Laurie Reid. Laurie gave four presentations at a "Boot Camp for Your Crew" workshop. SCFC retiree Jimmy Walters also participated in the workshop, with a hands-on session on how to use ANSI Standards to produce, sell, buy and plant quality trees for the landscape. Former Urban and Community Forestry Program Coordinator Liz Gilland, now City Arborist in Camden, was also in attendance.



Unarguably the most creative booth at the SCHI Trade Show was from Grandiflora Nurseries, a Florida grower specializing in flowering plants.



Jimmy Walters demonstrates how to choose a quality tree by making use of criteria in the ANSI Standards.

The Urban and Community Forestry staff maintains contact with the various players in the state's green industry through active participation in the SCNLA, the SC Landscape and Turfgrass Association, Trees SC and a number of local associations.

CURRENT JOB OPENINGS (www.jobs.sc.gov)**JOB TITLE: Forester I—Saluda County****CLOSING DATE:** March 5, 2014**AGENCY HIRING RANGE - MIN:** \$32,145.00 **MAX:** \$33,752.00**LOCATION:** This position works in Saluda, Edgefield, McCormick Counties/Surrounding Area.**JOB RESPONSIBILITIES:** Recommends and promotes sound forestry management practices to landowners to include examination of woodland and preparation of complete forest management plans. Assists landowners in implementing recommendations. Conducts prescribed burns; responds to wildland fires; performs forest fire suppression duties; marks and estimates volume on any stand of timber requested. Provides technical assistance in specialized areas of forestry to include best management practices, urban forestry and conducting insect/disease surveys. Provides information to the public regarding state forests and forestry services.**MINIMUM AND ADDITIONAL REQUIREMENTS:** A bachelor's degree in forestry from a college or university accredited by the Society of American Foresters. Must pass a physical fitness test of walking two (2) miles in thirty (30) minutes carry a 25 lb. pack. Must obtain firefighter registration with the South Carolina State Fire Marshall's Office. A criminal background check is a condition of employment. Current SC licensed forester or eligible within two years.**JOB TITLE: Program Coordinator II—Forest Resource Analyst****CLOSING DATE:** Continuous**AGENCY HIRING RANGE - MIN:** \$37,945.00 **MAX:** \$70,204.00**LOCATION:** Richland County, South Carolina**JOB RESPONSIBILITIES:** Serves as the South Carolina Forestry Commission's lead in forest resource analysis and wood products utilization and marketing. Conducts comprehensive, in-depth forest resource data analyses in response to forest resource development projects and for reporting purposes. Maintains primary and secondary wood product mill directories for internal and external use. Surveys primary forest product mills in cooperation with the US Forest Service Timber Products Output program. Assists with marketing SC forest products both domestically and internationally. Assists with data analyses and reporting for special projects, including economic impact studies and timber supply studies.**MINIMUM AND ADDITIONAL REQUIREMENTS:** A bachelor's degree and two years relevant work experience in forest resource analysis.**PREFERRED QUALIFICATIONS:** A bachelor's degree in forestry from a college or university accredited by the Society of American Foresters and a master's degree in forest economics. Experience in database management and computer programming. Must be willing to travel overnight, both domestically and internationally, as needed.

Basic Fire School

During the week of February 3-7, 2014, twenty-five students attended Basic Fire School in Columbia. Classes were held at the SC Criminal Justice Academy, with hands-on instruction at the Piedmont Regional Dispatch Center and office, Harbison State Forest, and the Columbia Headquarters.

Basic Fire School is for new SC Forestry Commission employees who can work on a fireline. The week-long class covers SCFC history, fire suppression tactics, bay fires and mountain fires, communication, equipment maintenance, safety, working with the media, fire shelter use, wildfire origin and investigation, map reading, land measurement, prescribed burning, smoke management, air operations, appearance and professionalism, a Highway 31 Fire Overview, handline construction, and defensive driving. There were also "hands-on" field exercises in radio communication, handline construction and suppression "sand box" scenarios.

Gene Kodama, Tom Patton welcomed the class at the beginning of the first day of class. Instructors for the class were: Darryl Jones, Leslie Woodham, Mike Bozzo, Michael Weeks, Ron Holt, Jeff Baumann, Mike Thomas, Lloyd Mitchell, Donald Bryant, Doug Mills, Scott Hawkins, Jonathan Calore, Pete Stuckey, Brad Bramlett, Mike Ney, Sam Anderson, Calvin Bailey and Kip Terry.

Many thanks go out to all those who assisted with the class and shared their knowledge with the new employees to help improve the protection of our state's forests, property, and the



Brad Jones shares his process for containment in the sand box exercise.



public.

Michael Weeks conducts the sand box exercises for the Piedmont area.



Pete Stuckey explains how to pick the best route to a fire.



Piedmont Dispatchers show the class how a fire call is handled.



Pete Stuckey and Kip Terry conduct the sand box exercises for the Coastal Plain.

(More photos on next page)

Basic Fire School (continued)



Brad Bramlett teaches proper fire shelter deployment in front of the HQ.



Protection Chief Darryl Jones observes the squad's handline construction.



Leslie Woodham addresses safety concerns on a handline.



Class members learn how to make a cup trench on a slope.



Doug Mills demonstrates the uses of different handtools to the class.



Brad Bramlett shows his squad how to clear a stump.



Jonathan Calore explains the line construction to his squad.



Nicole McCaskill works on the line.



Blake Morris and others work to clear the line.



Ronald McClary uses a fire rake on the line.

Manchester Hosts Motorcycle Events

Manchester State Forest recently hosted several motorcycle events promoted by SERMA (Sumter Enduro Riders Motorcycle Association). These races provide a good economic boost to the surrounding area.

The 45th Annual Sumter Enduro was held on Sunday, February 2. There were 480 entrants representing 19 states, Canada and Japan. Riders raced on a timed, 65-mile course through the Forest. There were 2,000 estimated spectators enjoying the event. Brad Bakken from Powhatan, VA was the overall event winner. Complete results can be found on SERMA's website at www.sermaclub.com.

The old Creech Greenhouse and Seed Orchard location was the location of the Burnt Gin Hare Scramble event and two Junior Hare Scramble SETRA Mini Cross Country Series events on January 25-26, 2014. Over the two-day period there were 385 racers entered and approximately 1,000 spectators. This event was the best turn-out of all the SETRA (Southeastern Enduro and Trail Riders Association) series races this year (starting in August 2013).

Johnny McCoy of SERMA stated, "we appreciate the efforts of the South Carolina Forestry Commission in working with us to promote quality events for riders that come from all over the United States, Canada and even Japan".

Hare Scrambles features grueling loop courses through the woods and natural terrain. On the Creech property, they raced through old progeny tests and seed orchards



Spectators of all ages enjoyed the races.



Starting line for one of the Mini classes.



Group narrows for the entrance to the woods.



Rider speeds by on a straight-a-way.



Young riders file through the forest.



Pee Wee racer comes to finish line.



Racer coming down a forested path.



Approximately 1,000 spectators were on hand for the races in the cold weather.

with several stumps to maneuver around and trees to avoid throughout the course.

Benjie Hayes, SCFC Lynches River technician, was on-hand with his firefighting unit ready to be dispatched to fires during the red flag. Benjie has been very involved in racing and SERMA for years and both of his sons race. Fourteen year old Chase won the Sr. Mini Class on Saturday and Sunday and finished first overall.

EMT crews, the fire department, and Forestry Commission law enforcement personnel were on hand in the event of any emergencies.



Starting line for the Sr. Mini class. (Chase Hayes is second from left)



Racer going down a third-row cutting, which became part of their trail.



Chase flies through the course to take first overall.



Motorcycles everywhere.



Chase Hayes crosses the finish line first.



Racers in the Enduro cross River Road.

Retiree News

Retired tower operator **Peggy Ann Roberts Hunt Wannamaker** passed away on February 2. Peggy was the tower operator for the St. George fire tower.

If you have any news on retirees, please send it to me at mjohnson@scfc.gov. We'd love to hear how they are doing.

FOREST INVENTORY ANALYSIS—Byron Rominger Cycle Completed

The South Carolina Forestry Commission FIA Program has completed Cycle 11, Subcycle 2. All plots have been transmitted. County materials have been through our final edits but will be retained due to a special GPS study being conducted in the state. Once data are collected for the special study those materials will be returned to SRS. If you have any questions or comments please feel free to contact me directly.

Santee Cooper Dedicates South Carolina's Largest Solar Farm

In October 2013, Santee Cooper began work on the state's largest solar farm, a 3-megawatt project near Walterboro in Colleton County. Sitting on more than 14 acres in Colleton County, the farm will provide renewable energy and vital data about the costs and integration of utility-scale solar power in South Carolina. The farm will be operated by a subsidiary of the InterTech Group out of North Charleston, who will then sell the energy to Santee Cooper and the Central Electric Power Cooperative. The solar farm was officially dedicated at a January 24th ceremony.



The project, the first of its kind in South Carolina, will offer real-world data on the viability of large scale solar power generation. Each of the site's 10,010 solar PV panels will generate 300 watts, enough to power 300 homes throughout the service area. Supporters hope that the new array will demonstrate that solar can be successfully used to generate energy and that it can be integrated into existing generation fleets.

BLACK RIVER UNIT—Ron Holt Belt Buckles

I have no belt buckles left, but I am starting a list of people that want one and currently have orders for 12. When I get 25 or more names I will contact those on the list to confirm their order and then make another order from the brass works. There is no time limit (at this time) but a reminder will go out when at least 25 names has been reached. Price will be then \$17.50 plus tax and shipping (for a total of approximately \$20) due to the lower number being ordered. Let me know if you would like to order one.

Ron Holt
Black River Unit Forester
SC Forestry Commission
596 I M Graham Road
Kingstree, SC 29556
Office 843-382-8761, Cell 843-992-6417



MORE PUNS

I tried to catch some fog, but I mist.

How does Moses make his tea? Hebrews it.

What does a clock do when it is hungry? It goes back four seconds.

Broken pencils are pointless.



MANCHESTER STATE FOREST—Steve Ward LE Honors Trooper

Manchester Law Enforcement officers James Douglas and Steve Ward took part in a ceremony naming a section of Highway 15 South in Clarendon after Trooper Riddle.

Patrolman John Ray Riddle of the South Carolina Highway Patrol was working a section of roadway in Clarendon County on Jan. 15, 1961, when his vehicle struck a semi-truck head-on. Riddle died at the scene.

On January 27, two ceremonies were held simultaneously to honor Riddle. Senator Kevin Johnson introduced the legislation in the Senate to have the road named in Riddle's honor.

One ceremony was held in Riddle's hometown of Batesburg-Leesville where members of Riddle's family were in attendance, including his son, Johnny, and Johnny's wife, Kathy, and Riddle's two surviving siblings, Paul Riddle and Doris Hite, along other members of his family. A second ceremony was held on U.S. 301 south of Summerton where signs mark a section of U.S. 301 from Jim Ross Road north to the Summerton Town Limit as the "Patrolman John Ray Riddle Memorial Highway." More than two-dozen officers from a variety of state and local jurisdictions attended the ceremony where the signs were unveiled.



James Douglas and Steve Ward are on the far right.

Highway signs are a very visible reminder of the sacrifice of public service employees dedicated to duty and for giving his life in service to our state. Riddle had only been a member of the Highway Patrol for a year when he was killed; but, during that year, he made an impression on those around him. Riddle's name along with names of 15 other fallen officers is engraved on the Clarendon County Law Enforcement Officers Memorial that rests on the Mill Street side of the Clarendon County Courthouse.

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It wasn't until 2011, that Johnny Riddle learned that the name of his father, a man he never met, had been engraved on a Clarendon monument that was dedicated in 2002. In April of 2011, more than 50 years after his father's death, Riddle and his wife, Kathy, attended a ceremony honoring his father and all the men whose names are on the monument.

SURPRISING BENEFITS OF WATER (part 6 of 8)

Water is wonderful! It makes up more than half of your total body weight. In fact, every function and system in your body depends on water. It flushes out toxins, aids digestion, makes up your mucous membranes and carries nutrients to cells. According to the Institute of Medicine, healthy women should get about 11 cups of water (or fluids) a day, and men require about 15 cups. These amounts include water contained in the foods we eat, as well as those consumed as beverages. If you're not drinking enough water (you're adequately hydrated if your urine is pale yellow to clear), you're functioning below par both physically and mentally. Over time, you may be hurting yourself more than you know. Drinking more water may stave off common health complaints. (MSN Health)



Boost energy

The next time you feel your energy lag during the day, down a couple glasses of water instead of reaching for that candy bar. "Drinking 8 to 12 ounces of cold water picks up your energy within a few minutes," says Jacob Teitelbaum, M.D., Medical Director of the Fibromyalgia and Fatigue Centers and author of the best-selling book *From Fatigued to Fantastic*.

Your cell's energy production depends on water, so even a slight water loss creates a large drop in energy. "Even mild dehydration causes fatigue," says Dr. Teitelbaum. "This occurs even if you are only 1 to 2 percent dehydrated." Drink water before reaching for a vending machine snack for mid-afternoon energy.

ATTA BOY

In an email to State Forester Gene Kodama dated February 4, 2014 from Sally Tucker, SC Forestry Association Director of Timber Operations Professional Program:

Gene,

I just wanted to take a moment and tell you how that I am extremely pleased with Jonathan Calore's involvement in our TOP 2-Day program. He always gets superb comments in our course evaluations and overall, does an excellent job presenting to our loggers, foresters and procurement folks. I am so grateful that he is an instructor and thank you for letting him participate. Job well done SCFC Law Enforcement, and BMP Foresters too!!!

Upcoming Events

Tuesday, February 25th: Arduous Walk in Spartanburg at 10:00 am

Thursday, February 27th: Arduous Walk in Florence 10:00 am

REMINDER to Employees: I just wanted to remind all employees to please send in your photos and information of events going on in your area regarding the SCFC...any type of recognition ceremony, important meetings, employee fun, and especially fires. I only want to make the Bulletin the best I can and it's hard to do that without information from ALL of the offices. Please keep this in mind and send your information and photos in. Thanks! Send them to: mjohnson@scfc.gov.

PHOTO OF THE WEEK



"Icy Rims"

Pee Dee Stewardship Forester James Brunson sent in this photo from January 29th. Ice formed on his tire rims after riding through the snow and ice in Darlington County, making a pretty design.

Please send in your funny, scenic or interesting photos to mjohnson@scfc.gov.

SERVICE AWARDS for February

Allen Land	Pee Dee Region
Rufus Roberts	Coastal Region
Joe Johnson	Piedmont East
Jonathan Calore	Columbia HQ
Trey Cox	Piedmont West
Laurie Reid Dukes	Columbia HQ
Tommy Mills	Piedmont Region
Donald Bryant	Pee Dee Region

30-Year State and Agency Service
25-Year State and Agency Service
20-Year State and Agency Service
15-Year State and Agency Service
10-Year State and Agency Service
10-Year State and Agency Service
20-Year Agency Service
20-Year State Service

Service Award Photos



Forest Technician Charlie Boles receives his 20-Year Service Certificate from Supervisor Terrell Smith at the Edisto Staff Meeting.



Forester Eric West received his 10-Year Service Certificate from Black River Unit Forester Ron Holt on February 4th at the Marion office. Eric is the project forester for Horry, Marion and Dillon counties.



Santee Unit Forester Walt Woodrum presents Forest Tech Michael Smoak with his 15-year Certificate of Service.



Supervisor/LE Officer Billy Rutland receives his 20-year Certificate of Service from Santee Unit Forester Walt Woodrum.

Arkansas Forestry Commission Pilot Found After Long Search



Arkansas Forestry Commission pilot Jake Harrell and the plane he was flying while searching for wildfires in western Arkansas was finally found on Tuesday, February 11th. The pilot and plane had been missing since Friday, January 31. Harrell's plane was located at 4:05 pm outside of Glenwood by Civil Air Patrol. Personnel then started constructing a road to the crash site. An investigation will be conducted.

Jake Harrell, 34 years old, was a seasoned pilot with the Arkansas Forestry Commission (AFC), since 2005. He had flown many times on the very route that he was traveling. He was flying as a part-time pilot with the AFC and worked full-time with the North Little Rock Police Department. He also served with the Arkansas Air National Guard 188th Fighter Wing.

Jake was flying a regularly scheduled detection flight from Malvern to points throughout western Arkansas when he went missing. His last known location was Oden, with the supposed intent of traveling toward Wickes. When Jake failed to check-in with AFC Central Dispatch (in Malvern) after 1:11 pm, a search began.

Search crews had been searching for days without any sign of either Harrell or the single-engine Cessna 210 Centurion he was flying. Jake disappeared in one of the most steep, untamed and unreachable areas in the state. The area is steep with ravines, bushy, and heavily forested with pine trees and is difficult to search in. This terrain coupled with continuing low visibility and icy road conditions hampered the search.

Ground crews searched the terrain while Civil Air Patrol planes, AFC planes, and National Guard helicopters assisted with search efforts from the air. Every resource was used to determine what factors could have contributed to Jake's possible change in flight route so that search efforts focused there. Extremely cold, icy weather conditions, paired with steep terrain and ice storm damage, and deep ravines, all presented extreme risk factors for officials to consider before deploying any search parties, especially those including volunteers. Drones were being considered.

The down plane that Jake piloted remains at a location 26 miles away from his last check-in point. From a state highway, this location is three miles into a heavily forested area, where a road had to be constructed by Arkansas Forestry Commission and U.S. Forest Service crews via dozers and chainsaws. The Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB) are now at the scene examining the area and aircraft.

The AFC has a fleet of 16 planes, including the plane that Jake was flying. Fourteen of these planes are single-engine aircraft, meant for detection flights. Detection flights travel pre-determined routes and report back to AFC Central Dispatch in Malvern with possible wildfires spotted on the ground. Weather conditions for take-off are monitored continuously, every day, according to a Terminal Area Forecast - in terms of many factors including ceiling and visibility, wind velocity, and approaching weather patterns like front systems. These conditions change constantly and can be unique by region.

The Incident Command structure in Mena was a Unified Command effort with the following partners involved: statewide Arkansas Forestry Commission crews, US Forest Service, Polk and Montgomery Law Enforcement, Arkansas Game and Fish Commission, Arkansas National Guard, Arkansas State Police, Emergency Management crews from Polk and Montgomery County, local volunteer fire departments, Civil Air Patrol, the National Weather Service, and the North Little Rock Police Department.

To honor the life and service of Jake Harrell, a Brayden Harrell Scholarship Fund has been set up for his son. This fund is open at all Simmons First National Bank and Metropolitan Bank locations. Donations can be taken to any of those banks; individuals should reference the fund by name to contribute.

Please keep Harrell's wife, son, and other family and Arkansas coworkers in your prayers.

Cold, Glorious Cold: How Cold Snaps Play a Role in Managing Invasive Species

<http://www.decodedscience.com/cold-weather-invasive-species/41624>

When the temperatures are so chilly that you can't step outside without losing your breath to the frigid air, it seems like the cold has very few redeeming qualities. However, cold does play an ecological role. For some plants, a period of winter cold followed by heat and light triggers new growth in the spring. To some degree, cold can also help manage the pests that prey on plants. Some invasive insects may not be able to survive our continent's intense cold snaps.

Pest Problems and Winter Weather

Why do we need to control insect populations? Many insects are herbivores, and they love to eat trees and other plants. Drought and hot summer temperatures can stress trees out, making them more susceptible to a large-scale insect invasion. While cold winter temperatures have historically kept insect populations in check, with warmer winter temperatures and a lack of cold snaps even native species may get a foothold in a plant population, using the dual opportunities of warmer weather and stressed vegetation to expand their range. Invasive insect species can also lack natural predators, making it even easier for them to gorge on local plants.

How Animals Handle the Cold

Plants have an ally in the winter cold snap. Winter's cold changes animals' behavior, and it also acts as a natural control for some animal populations. For animals, very cold winter weather can be dangerous. As water freezes, it expands. Since animals contain water, if their cells freeze they can burst, causing damage to the animal's body if it's exposed to extreme cold.

Animals have a variety of responses to winter weather. Some migrate before extreme weather hits. The monarch butterfly is a good example of a migratory insect. Other animals migrate locally. For example, worms may burrow below the freezing ground or move closer to warm spots if they are near a building. Some animals try to tough out the winter weather using fur, feather, fat or natural antifreeze.

How Insects Deal With Freezing Temperatures

Amazingly, many insects can survive a freeze using their own internal antifreeze: ethylene glycol. Similar to the antifreeze that you put in your car, this internal antifreeze allows animals' cells to be exposed to temperatures much lower than those that would normally cause ice to form.

If the insects are susceptible to freezing, this antifreeze or cryoprotectant allows insects to survive in weather that's much colder than they would otherwise be able to handle. However, freeze-susceptible insects do tend to have a point at which they will freeze, especially if they are exposed to the cold for long periods of time.

Other insects have varying degrees of cold-tolerance. Some may be able to survive freezing, as the liquid around their cells freezes, but not the cells themselves. They might not look lively when it's 30 below, but when the temperature rises, they perk up.

In part, the insects' adaptations depend on their genetic histories. If the bug came from a climate that experiences extreme cold for several days at a time, they may do just fine in prolonged cold weather. If they come from a climate that's a little warmer than North America and one that doesn't usually experience extreme cold, they may die. The longer the cold weather lasts, the more challenging it tends to be for the insects.

Cold Snaps Can Help Control Insect Populations

Scientists studying the populations of native and invasive insects are watching closely to see what impact the most recent cold snap might have on the populations of these insects. Will it dampen their spread, or will populations spring back? In part, this depends on each species' cold tolerance. Some species may not survive the cold temperatures. The hemlock woolly adelgid, for example, hails from Japan, and its body forms ice crystals around -5 F. Other invasive species are well-suited to the cold. In Ontario, scientists studying the Asian long-horned beetle have determined that the beetle may be freeze-tolerant. It contains glycol, and it can experience extreme cold of -40 F and then come back to reproduce.

In areas impacted by the Mountain Pine Beetle, the timing of the cold snap may be a little late. Sudden cold weather can kill pine beetle larvae that overwinter in the bark of the trees. This is particularly true in the fall, when the smaller, weaker larvae, pupae, and eggs can succumb when temperatures stay below -13 F for several days. Since the beetle larvae grow throughout the winter, temperatures have to get down to -31 F for the larvae to die in the winter months.

Winter Weather and Invasive Species

Prolonged and extreme cold can be a challenge for many animals, even those that naturally live in an area. For introduced species and species that have expanded their range northward, the cold snap may provide a natural check to population growth. This spring and summer's thaw will reveal what species had the ability to survive the freeze – and which ones did not.

How Does a Tree Grow in Nature

Seed Begins to Germinate

The seed of a tree begins to germinate, or grow, after it has found a proper place to do so. Seeds won't grow unless they have soil nutrients, water, and a favorable temperature. Seeds are often carried by the wind, streams of water, or animals. When a seed does begin to grow, it relies heavily on the nutrients it has brought with it from its parent tree – that is, the nutrients available in the seed itself.

Tree Growth Takes Place at Branch Tips

Tree growth does not take place at the base of the tree. Rather, it occurs at the branch tips. It also occurs in the trunk but not upward. Instead, the tree increases in diameter. This happens because trees grow by producing new cells in limited spots throughout the tree, called meristems. This is where all of the cell growth takes place. The meristems at the tree's roots and at the tips of the branches are called apical meristems. This means they are located at an apex or point—like a tree bud.



Vascular Cambium is Another Meristem

If you notice that a tree in your backyard has grown taller, you can be sure this is due to apical meristems at the tips of the branches – where the cells are highly active and expanding. Likewise, you might notice that the trunk of the tree has grown in diameter – this is the result of another meristem known as the vascular cambium. The vascular cambium makes the trunk, roots, and branches grow in diameter by producing phloem and xylem every year. Xylem is a compound tissue that transports water and nutrients up from the ground to the various parts of the tree itself.

How Tree Roots Grow

As the growth process continues, the seedling's roots anchor themselves in the soil and begin to soak up water and minerals. The hairs of the roots actually wrap around single grains of soil and begin extracting the needed minerals. Over time, this strengthens both the tree itself and the soil around the tree – with so many root hairs latched onto grains of soil, the soil is held together against erosion. As the seedling is strengthened, the stem tip drives its way up through the soil and, when its leaves are large enough, it begins to produce its own food in a process called photosynthesis.

Process of Tree Growth

A seedling becomes a sapling after it has grown to approximately 3 feet tall. Of course, this varies greatly according to species. A seedling does not technically become a sapling until it has surpassed, in height, the parameter determined for its species. In general, it remains in this sapling stage until it reaches about 2 3/4 inches in diameter. A young tree with a trunk that measures between approximately 2 3/4 inches and 11 3/4 inches in diameter is called a pole. A tree is considered mature when it has grown to just under 12 inches in diameter.

Difference From Trees in Nurseries

The root-systems of trees that are grown in containers at nurseries are much smaller than those of trees grown in the wild. Potted roots do not have a chance to spread and develop to their full potential – this greatly weakens the tree when it is planted in the ground. If these trees do not begin rapid root growth and expansion after they are planted in the field, they become highly susceptible to drought.

Fire Weather Outlook



A highly amplified pattern continued over North America in January with a trough of low pressure over the eastern U.S. and a blocking ridge of high pressure over the West and Alaska. This brought another round of significant snow and cold temperatures to the Midwest and Northeast through mid-month, with ice storms and snow into the deep South by the last week of the month.

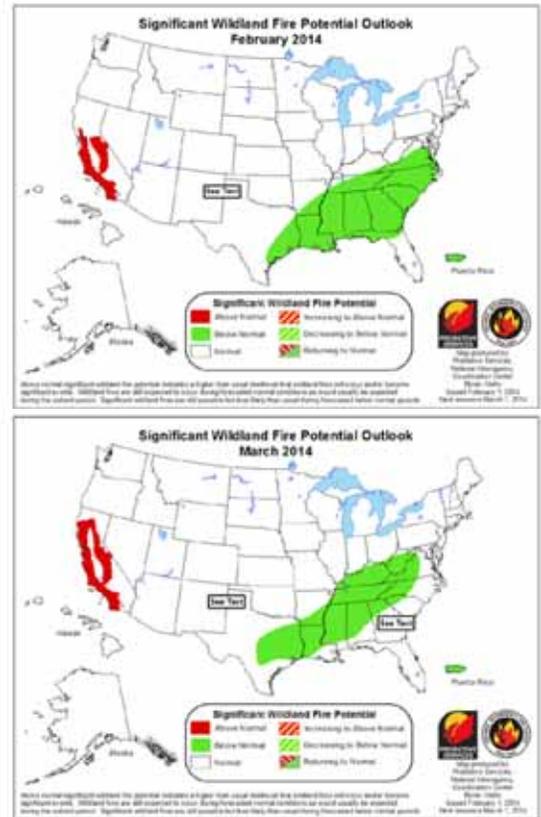
Extremely cold conditions plagued the East with temperatures as much as eight to ten degrees below normal from the Upper Midwest and Great Lakes to the central Gulf region. The West was generally warmer than normal with most of California more than six degrees above normal for January. Precipitation deficits affected most of the U.S. except for the higher elevations of the northern and central Rockies, parts of the Upper Midwest, and small pockets along the East coast.

Good precipitation for several months and a much colder than normal winter should keep fire activity below normal for much of the Eastern and Southern Areas. The exception is the Upper Mississippi Valley where drier than normal winter conditions have increased the potential for earlier than normal fire activity.

In the South and East, fuels remain moist; however, cold temperatures have led to some frost kill which could elevate fire potential.

Southern Area: Below normal significant wildland fire potential will persist across most of the Southern Area through May.

Rainfall continued to be below normal in January across much of the Southern Area, including the Gulf Coast where the monthly precipitation was about half of normal. Puerto Rico generally received daily rainfall from the tropical easterlies across the entire island. Recent forecasts indicate a change to frequent storm systems and rainfall for the Southern Area and would lower the risks of drought. February and March may still bring higher significant wildland fire potential for the drier areas including Oklahoma, Texas and western Arkansas. This would be where higher grass fuel loading combines with any short-duration low humidity and stronger wind events.

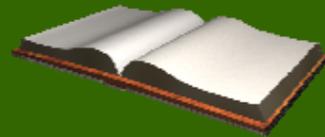


Current Fire Numbers for South Carolina

MONTH and YEAR TO DATE COMPARISON TO PREVIOUS 5 AND 10 YEAR AVERAGE

Time Period	FEBRUARY		JULY-FEB		FISCAL YEAR	
	Fires	Acres	Fires	Acres	Fires	Acres
5 Year Average	396	2,821.8	1,267	6,666.1	2,145	17,751.4
10 Year Average	365	2,483.7	1,338	6,541.7	2,605	17,747.7
Current FY ¹	54	131.7	743	2,569.2	743	2,569.2

¹To date for current fiscal year



The History Corner

NOW AND THEN

For the next few Bulletins I will be comparing old and recent photos of areas around the agency and state. Our state has changed tremendously since most of us were born, and the agency has drastically changed since it was created in 1927. Enjoy the changes!

If you have any photos you would like to share, just send them to me!

Fighting Fire on a Dozer



Fighting fire with a dozer has drastically changed since the Commission purchased it's first unit in 1942. The safety and protection of the dozer operator has greatly improved with personal protective equipment (PPE) and the modified cages on the dozer to prevent debris from entering the cab.

In the above photos, Ronnie Patterson awaits instruction in his unit in 2007. He is dressed in PPE and has very accessible radio communications. On the right is a photo of a firefighter in 1950 that is more exposed to the elements in the open cab.

The new enclosed environmental cabs are even safer for firefighters.

Bulletin Note: Due to snow, ice, the loss of power, the Bulletin scheduled for 2/12 was delayed until 2/19.



South Carolina Forestry Commission
Employee—Weekly News Bulletin

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