



Implementing the Shared Stewardship Strategy

A Collection of Success Stories from the U.S. South



Shared Stewardship Strategy in the U.S. South

In support of the Toward Shared Stewardship Strategy, state forestry agencies from across the nation have united to document and demonstrate cooperative and shared land management decision-making among federal, state and local entities.

This collaboration was initiated following the U.S. Department of Agriculture Forest Service's publication of the Shared Stewardship Strategy. Their strategy focuses on how we collectively approach land management and proposes how we can cooperatively set landscape-scale priorities for targeted treatments in areas with the highest payoffs.

Using the collaborative concept underlying the National Cohesive Wildland Fire Management Strategy of federal, state, tribal and local communities working together to reduce fuels and improve forest conditions, the Shared Stewardship Strategy sets forth an avenue for an out-come based investment strategy with partners and stakeholders across the nation.

The ensuing state agency-initiated Toward Shared Stewardship Strategy is a compliment to the federal plan.

This companion document provides a snapshot of state contributions to forest management and wildland fire activities in the United States:

- *How management decisions and priority settings should be shared among federal, state and local land managers;*
- *Acknowledges the value of state forestry agencies;*
- *Expands focus beyond wildfire mitigation and suppression activities; and*
- *Emphasizes the issues and priorities across all 59 states and U.S. territories represented by the National Association of State Foresters.*

In the U.S. South, state forestry agencies have long been practicing the foundational concepts underlying the Shared Stewardship Strategy. This report provides examples from all 13 southern states of shared stewardship in action.

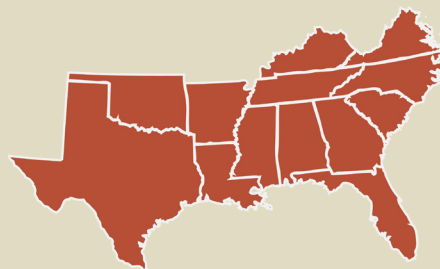


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Battling Public Perception of Fire

Graham Creek Nature Preserve educates surrounding community on the importance of prescribed fire

It was a humid day in 2010, and the smoke rose above the treetops. It had rained a few inches a couple of days before, but people were still out and about in the Graham Creek Nature Preserve—walking and biking along the trails, playing with their families on the playground, putting their canoes into Wolf Bay. They’d been using the park for a couple of years, but they had never seen a large plume of smoke in the air. Many panicked, thinking it was a wildfire that would tear through the Preserve, disrupting habitat, wildlife, and their neighborhood.

They didn’t know that was the day for the first controlled burn in the Preserve. After the City of Foley bought the land in

2004 for the valuable aquifer resources, it partnered with the Alabama Forestry Commission to promote conservation, education and passive recreational opportunities for the park.

The 484 acres had been used historically for row cropping and cattle pastures. It had been in rough shape sitting fallow for four or five years before the city bought it. Thanks in part to the humid climate and year-round growing season along the Gulf Coast in Alabama, the overgrown vegetation threatened the habitat for endangered species living in the Preserve. The Southeast leads the nation in prescribed burn acres on silvicultural land because of the rapid vegetation regrowth rate.

It also presented a fire risk for the surrounding communities, with their growing populations of young families, retirees and tourists. Many of them had grown up hearing that fire was always bad,

and they reached out to Leslie Gahagan, the environmental manager for the City of Foley and manager of the Graham Creek Nature Preserve. “We heard concerns that fire would get away, that their homes would burn down, that wildlife would run out of the forest on fire,” Gahagan said. “These were actual things that the residents addressed in early community meetings.”

While it came as a surprise to many around the preserve, it had been carefully planned and organized for six months leading up to the day of the first controlled burn. Since they first surveyed the land, the Alabama Forestry Commission knew that the burn would be extremely technical and require specially trained people to do it effectively.

“We knew that we could not perform a controlled burn on this property without some outside resources,” said Rickey Fields, a forester for Baldwin County with

the Alabama Forestry Commission, who manages the timber stand on the Graham Creek Nature Preserve. So, the Commission partnered with the Alabama Law Enforcement Agency and the Foley Fire Department to both focus on the burn and on fire suppression so it wouldn't spread outside the preset parameters.

Manpower wasn't the only challenge to a successful burn. It's impossible to predict how much rain will fall or what direction the wind will blow two months ahead of time, which can make it hard to coordinate all the partners. "What we did was zero in on a week, looking at historical fire weather, picked a week and had to stick with it," said Fields. Many were hesitant about the original date because of heavy rainfall in the preceding days, but the humidity and sun had dried the land out. "When we lit it, a lot of those skeptics quickly realized that rainfall was a blessing because it burned hot fast."

That first prescribed burn covered about 300 acres - over half of the entire Preserve. Plans for that first prescribed fire and its smoke had concerned residents of the surrounding communities.

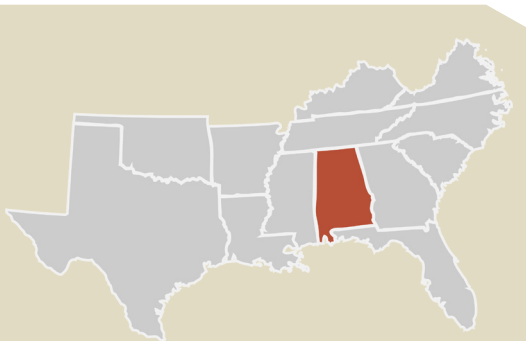
For six months before the first burn, Gahagan and others from the city and the Alabama Forestry Commission went door-to-door and attended meetings for local homeowners' associations, city council and the planning commission to talk about the importance of fire, why it's needed, why it's a natural way to manage the preserve, and especially what happens after the burn. "Some of the residents' biggest fears were about where the animals would go after the burn. We helped them realize that not everything burns to the ground, that the fires aren't that hot, and that the animals need that fire for their habitat to be sustainable," Gahagan said.

"After that first burn," Gahagan said, "we never received another complaint. Some people were fearful that smoke would cause health problems for them." Smoke-related impacts challenge the fire management community to implement management and response activities

"We heard concerns that fire would get away, that their homes would burn down, that wildlife would run out of the forest on fire."

- Leslie Gahagan, Graham Creek Nature Preserve





ALABAMA SUCCESS STORY

LOCATION
Foley, Alabama

STRATEGY
To create cultural and community awareness of the benefits of prescribed fire for wildfire preparedness and land management.

PARTNERS
Graham Creek Nature Preserve
Alabama Forestry Commission
Alabama Law Enforcement Agency
Foley Fire Department
Foley City Council
Foley Planning Commission

safely. Gahagan said that, “they couldn’t even tell we’d burned because the Alabama Forestry Commission was so well-versed in that fire regime that none of the smoke ever landed on any homes.”

Gahagan and Fields are intentional and active in educating the community about what’s happening on the preserve, especially around prescribed fires. With many local, regional and national events and 3,000 to 4,000 local students coming on field trips every year to the Graham Creek Nature Preserve, Gahagan and her team take every opportunity they can to talk about the need for controlled burns and the benefits they provide for wildlife, the ecosystem, and the surrounding communities. The City of Foley also emails the presidents of each of the nearby homeowners’ associations ahead of each burn to make sure the public knows what’s happening and is engaged in the planning process.

Fire is a critical part of managing the landscape here. It is a consistent challenge to educate the community on its importance.” – Rickey Fields, Alabama Forestry Commission



Fields serves as the liaison between the Alabama Forestry Commission, Graham Creek Nature Preserve and other government organizations and civic groups in Foley.

Those burns are becoming somewhat frequent, as the vegetation grows quickly in the humid, sandy soil off the Gulf Coast. And wildland fires burn all 12 months of the year in the Southeast, stressing firefighting capacity and resources. “We try to keep a pretty aggressive burning regimen on the property,” Fields said. The Alabama Forestry Commission has operated under the Southeastern Region Cohesive Fire Strategy, which emphasizes restoring landscapes that need frequent fires to thrive, creating communities that withstand wildfire without loss of life and property, and developing effective wildfire

management that reduces risk. “Since our initial burn, we have burned roughly every two years on average, but the first few burns were year-after-year just to keep the vegetation as minimal as we could.”

The sustainable and collaborative management of the Graham Creek Nature Preserve by the City of Foley and the Alabama Forestry Commission is ensuring that families, retirees and tourists will be able to walk, bike, canoe, play, and enjoy everything there is to offer there for generations to come. ■



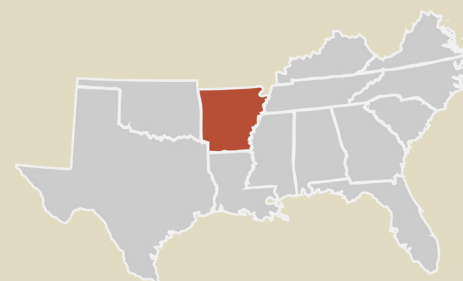
A Culture of Prescribed Fire

Arkansas agencies and NGOs collaborate to increase the number of trained prescribed fire technicians

“I think Arkansas, for our forestry community, is the most collaborative state in the country,” Joe Fox said, noting the partnership culture that existed when he started as state forester with the Arkansas Forestry Commission in 2012. It had been a wet spring, and the grass and underbrush grew green and tall. By May, though, the rains stopped, and it was an extremely dry summer. “We had over forty fires a day across the state that August,” Fox said. “It was something.”

The state hasn’t experienced anything close to the 2012 fire bust since. “Generally, Arkansas is blessed with weather that’s anti-fire, if you will,” Fox said. There’s still always a chance of a fire at the scale of what they saw in 2012, though. “We don’t really have enough staff and equipment to properly contain fires, to safely protect property and citizens *by ourselves* in an extensive fire bust. But we have ways through our partners to expand that,” he said.

To maintain the state’s fire readiness, the Arkansas Forestry Commission holds the annual Prescribed Burn School in partnership with The Nature Conservancy, the



ARKANSAS SUCCESS STORY

LOCATION

Arkansas (statewide)

STRATEGY

To increase the number of trained prescribed fire technicians in Arkansas through an annual Prescribed Burn School.

PARTNERS

Arkansas Forestry Commission
The Nature Conservancy
Arkansas Game and Fish Commission
Arkansas National Guard
USDA Forest Service
Arkansas National Heritage Commission



The Arkansas Prescribed Burn School has graduated more than 800 certified practitioners over the 22-year history of the program.

Arkansas Game and Fish Commission, the Arkansas National Guard, the USDA Forest Service and the Arkansas National Heritage Commission.

During the third week of every September, about 40 students and 50 cadre from industry, NGOs and nonprofits and state agencies come to Camp Robinson, an Army National Guard base in north Little Rock. There, as Fox puts it, they “spread the gospel of prescribed fire and its benefits for the forestland and the owners of the forestland of Arkansas.”

Those benefits are two-fold, they learn: prescribed fire helps ecologically maintain and preserve wildlife habitat, and it is the best tool to reduce available fuels on the ground and protect against wildfires. The students learn about the technical aspects of prescribed fire like weather, tactics and liabilities. They also get the chance to practice what they’ve learned through supervised burns on-site.

The Prescribed Burn School—which has graduated between 800 and 900 certified prescribed burn practitioners over its 22-year history—has been successful on many fronts. Before the program started, annual prescribed burn acreage averaged around 75,000-85,000; it’s now up to 250,000-350,000 acres per year.

The program continues to grow and expand, both in curriculum taught and

new audiences engaged. The newest partner agency to send students to the Prescribed Burn School is Central Arkansas Water, the largest water utility in the state. They’ve recognized that prescribed burning can help protect the forestland that moves and cleans the water they use for their approximately 125,000 customers. “They sent one student in 2018, and they’re going to send some more this year, too. Soon, they’ll be part of the cadre, teaching practitioners from a whole range of fields about water quality,” Fox said.

“It also builds an esprit de corps for the entire group every year,” Fox added. The school builds relationships and trust among practitioners from multiple sectors and across Arkansas. “During a fire bust, you recognize the others on site from the Prescribed Burn School. You recognize a voice on the radio, and you know you can depend on them because they’re trained and certified.”

The Prescribed Burn School is also helping to prepare the next generation of certified practitioners protecting Arkansas’ forests. As Fox and the other founders near retirement, they’re finding younger, highly skilled young men and women to pick up the torch. “We’re bringing younger, smarter fire practitioners to be the champions, letting them stand on our shoulders to do more and better things for Arkansas.”

The National Cohesive Wildland Fire Management Strategy has helped guide the program since its release in 2014. “By its nature, the national strategy brings lots of agencies to play from the same sheet of music and work towards the same goals. It’s right in line with the collaborative strategy that we’ve used in Arkansas for a long, long time,” Fox said.

“Most of us do not think we live in silos, when we probably do,” he continued. “My advice to others trying to be more collaborative in their efforts would be to be a little more open to modification and change. And especially be ready, as you have some success in establishing collaboration, to give the credit to the other people, to the other group that’s doing something new and different for them. That is most helpful for building a really good team and being effective stewards of our forestlands.” ■

The national strategy brings lots of agencies to play from the same sheet of music and work towards the same goals.

—Joe Fox, Arkansas Forestry Commission





Breaking Through Institutional Barriers

Residents and government band together to create a fire-adapted community.

On December 27, 2010, Martin County residents were taking advantage of Christmas sales and returning unwanted gifts to the local mall when a wildfire sprang up in the distance, visible to the residents at the mall. The fire, known as the Hobe Sound Wildfire, was eventually put out by emergency crews, but wildfires would continue to terrorize the community in Martin County throughout 2011.

The Florida Forest Service and Martin County Fire and Rescue continued to be vigilant and proactive in protecting their community by emphasizing principles to create a fire resilient community, but there were a few barriers they had to overcome.

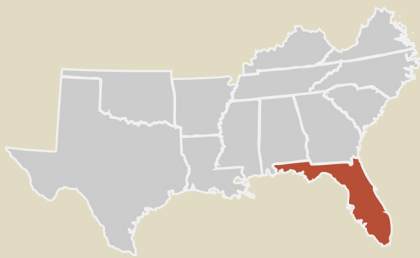
The problem for the residents, however, was long established regulations that protected wildlife preserves throughout the county. The regulations were part of a program that began in 1982 which protected wetlands and, later, native upland habitats within developed areas, including residential subdivisions. Certainly, these preserves warranted a certain level of protection from

development, as these natural spaces provide many aesthetic and environmental benefits to the citizens of the area.

“We have a beautiful, very natural atmosphere here,” said Doug Killane, Bureau Chief of Martin County Fire and Rescue, “and communities want to be a part of that.”

But what is the trade-off for the community? The reality is that structures are under a constant threat of a wildfire if preserves are not managed properly. Preserves particularly pose a serious threat to residential subdivisions where they come within a few hundred feet of homes, as underbrush and vegetation run rampant, providing potential fuel to any fire.

Wildfires are also not unique to Martin County. In 2015, the USDA Forest Service spent 52 percent of their budget fighting wildfires throughout the country. Just in the southeastern U.S., 1 million acres are burned each year, a result of nearly 45,000 wildfires.



FLORIDA SUCCESS STORY

LOCATION

Martin County, Florida

STRATEGY

To create a Wildfire Mitigation Task Force to amend The Arbors community's Preserve Area Management Plan (PAMP)

PARTNERS

Martin County Growth Management
Martin County Fire and Rescue
Florida Forest Service
Arbors Community Homeowners

“There are 54 homes that butt-up against the preserve, and that got us concerned about any fire that started.” – Rick Deluga, Resident of The Arbors



Rick Deluga moved to The Arbors community just two year's after the community's establishment 25 years ago. As a retiree, he serves as a volunteer, and has been critical to building consensus with residents.

Martin County was just another victim of a far too common problem where local ordinances do not consider principles that will protect communities from wildfire. The Cohesive Strategy for the southeastern region of the United States aligned with the goals of Martin County. The southeastern region identified three important goals for the southern states: restore and maintain landscapes across the region, ensure communities are built to withstand wildfires without loss of life or property, and create a strategy for effective wildfire response and management. These three goals provided the framework for collaboration between all members, from the public to local and state officials, in effectively combating wildfires by building fire resilient communities.

Fire resilient communities throughout the southeastern region, of course, could not thrive without effective collaboration between the populace, which increased 14.3 percent between 2000 and 2010 and had six of the 10 fastest-growing counties in the country, and the agencies and organizations that oversee fire safety

throughout the southeast. Cooperation between these different private and public stakeholders allows communities, like Martin County, to plan for the future by encouraging tactics that protect residential areas, like prescribed burning, which is more common in the southeast than in other regions because of the rapid vegetation regrowth rate throughout the area.

“You just can't always do it by yourself because it's just not always in your venue,” Killane said. “But if you can find the right people, you can certainly put it together.”

Through community involvement and discussion, launched by escalating homeowner complaints, the Martin County Fire and Rescue and the Florida Forest Service partnered with Martin County's Growth Management Department to create the Wildfire Mitigation Task Force with personnel from all three agencies.

The Wildfire Mitigation Task Force toured areas where structures were threatened by overgrown vegetation, discussed

potential solutions through meetings with homeowners in the community, and conducted home assessments to identify structures vulnerable to vegetation encroachment.

“We looked at what can we do right away to help these communities,” said Shawn McCarthy, Principle Planner for Martin County Growth Management. “We realized we needed to rewrite county code that would allow more fire protection.”

By looking at the assessments of the Wildfire Mitigation Task Force, the Growth Management Department drafted a proposal to present to the Board of County Commissioners. The proposal was adopted on June 11, 2013, as Ordinance 930, which amended Article 4, Division 2 of the Martin County Land Development Regulations.

The ordinance provided defensible space for new developments and gave existing communities the ability to amend their Preserve Area Management Plans (PAMP). The most important amendment was the



To assist in fuel reduction, the Florida Forest Service utilized light machinery to clear overgrown vegetation behind homes in close proximity to the preserve.

ability to hand clear dead vegetation in the preserves deemed a wildfire risk by the Florida Forest Service or Martin County Fire and Rescue.

One community, The Arbors, served as a shining example of these new policies in Martin County. The community consisted of 190 upscale homes built in the '90s along lakes and preserves. The preserves protected indigenous hardwoods and pines along with native flora and fauna. The residents rejected any plan that would destroy this ecosystem that housed endangered scrub jays and gopher tortoises, but they recognized the danger of vegetation that touched a dozen homes with no access for firefighters if an incident occurred.

"The fire that got us going was back in 2011," said Rick Deluga, a resident of The Arbors. "There are 54 homes that butt-up against the preserve, and that got us concerned about any fire that started."

In search of a solution for their community, The Arbors hired a consultant to rewrite their PAMP. The solution for The Arbors, known as The Arbors Community Fuel Management Plan, was voted in by the community on March 1, 2016. The votes were unanimously in favor of the plan.

"We had a lot of meetings with Growth Management in what we needed to do to work with them," Deluga said. "And working through the PAMP, which was kind of restrictive at the time, but they've worked with us to make it a little more workable for us residents."

Beginning in April 2016, the fuel reduction project was initiated in three parts. The first phase allowed the Florida Forest Service Region Four Wildfire Mitigation Team to mow the overgrown vegetation behind homes, providing a defensible corridor and access for Martin County Fire and Rescue in the event of a fire. Four acres were mowed, protecting 67 homes at a cost of \$14,298.69.

The second phase consisted of disking seven-foot-wide firebreaks through the preserve. The disk line in the preserve around The Arbors ran two miles long. The intention was to set up the preserve for the third phase, a prescribed burn to remove unwanted vegetation that posed a threat if a wildfire occurred. Phases two and three not only provided preventative protection for The Arbors, but also set the community up for future action as a clear plan allows all parties to act appropriately.

When asked about what the rest of Martin

County could do in the future, Shawn McCarthy stressed the importance of further developing and pushing the plans that have been put into place while continuing to spread Firewise USA® principles across the county.

"The next step, as part of this whole process, is to improve what we do internally and how we implement the code that we wrote," McCarthy said. "We ask that homeowners' associations set up their own meetings and educate their own community members on why this is important."

Moving forward, residents of Martin County can look back on the wildfires from 2009 through 2011 as a turning point for their community in the fight for adequate protection in the event of such a disaster. Luckily, success at The Arbor will serve as an example for future communities in both Martin County and throughout the southeast as those communities look to replicate the process launched by The Arbor, reduce homeowners' frustrations, and provide better communication between responders and residents. ■



With a Little Help from My Friends

Georgia Forestry Commission's Rural Fire Defense Program Assists Small Fire Departments by Re-purposing Equipment

"We want to protect our neighbors," said Shawn Wombles, Emergency Management Director and Fire Chief for Johnson County, Georgia. "When Ben Franklin started the volunteer fire service, that's what it was all about: helping and protecting our neighbors."

Johnson County is in Middle Georgia, sixty miles southeast of Macon on the way towards Savannah. The county has a population of approximately 10,000, with Wrightsville, the county seat, surrounded by open rural country.

The low population density historically made it difficult to protect against wildland fires and structural fires across the county. Wombles said the county gets 350 calls every year. Half of the calls come from outside of Wrightsville. The city's fire department is salaried, while the others around the county heavily depend on volunteers. And Wrightsville's department didn't have the ability to cover the entire county.

Before the 1970s, there wasn't enough capacity in these rural communities to respond to wildland and structural fires. Many homes and small businesses were lost in the county every year, holding back the stability and growth of the many rural communities.

In 1975, the Georgia Forestry Commission (GFC) saw this gap in rural communities across the state and created the Rural Fire Defense Lease program "to establish an initial fire protection program for unprotected communities and to reinforce existing fire departments with equipment and training." Frank Sorrells, GFC's Chief of Forest Protection, recognized that, "if we could somehow take some of the surplus equipment and convert that over to fire suppression apparatus, fire trucks and pumps, that would increase the capacity not only for the rural communities but also for the Georgia Forestry Commission to help meet our mission to protect, suppress and prevent all wild land fires in Georgia."

With GFC's help, we could start a fire department in our community with almost no start-up money involved."

- Shawn Wombles, Johnson County Fire Department

GFC may acquire Federal Excess Personal Property (FEPP) from the U.S. Department of Agriculture (USDA) Forest Service, which continues to own the equipment while GFC loans it to local fire departments through the Rural Fire Defense Lease program. In order for local communities to receive the equipment, they must submit a request to GFC and consult with their local county ranger. If their request is approved, they must sign an agreement with GFC ensuring that the equipment will be used and maintained.

Over the past four decades, GFC has distributed 930 pieces of fire suppression equipment to fire departments around the state through the program.

For areas like Johnson County, the program has had an enormous impact. The fire department, Wombles reported, receives an annual budget of about \$28,000 - \$10,000 of which comes from property taxes and goes towards insurance and workman's compensation liabilities, and the rest coming from a \$10 annual "fire fee" per household. "You start doing the math," Wombles said, "and you realize you can't buy a truck for \$18,000. You can barely even keep it maintained with that

much.

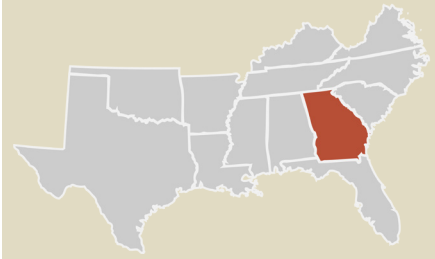
"With GFC's help, we could start a fire department in our community with almost no start-up money involved," he continued. Through the Rural Fire Defense Lease program, Johnson County has started nine fire departments with 22 apparatus, bringing 1,000-gallon pumping capacity from 3,000-gallon tanks on the front of each piece of equipment.

The Insurance Services Organizations (ISO), which rates fire departments' ability to adequately respond to fires, requires 4,000 gallons of water on the scene of a structural fire. Now, for calls from both urban and rural communities in Johnson County, the fire department can exceed the ISO standard with just two trucks.

Wombles credits GFC for that achievement. "We couldn't afford fire protection in our county without the Rural Fire Defense Lease program. If I went to a truck vendor, we would've paid anywhere from \$30,000 to \$325,000 per truck. Through this program, we paid \$50,000 compared to \$325,000, I've got new equipment that exceeds the ISO standard, and we're able to adequately protect our communities.



The Georgia Forestry Commission's shop is used to convert used equipment that is acquired through the Federal Excess Personal Property program, that equipment is then leased to local fire departments.



GEORGIA SUCCESS STORY

LOCATION

Georgia (statewide)

STRATEGY

To build rural fire department capacity by repurposing and leasing equipment through the Federal Excess Personal Property program.

PARTNERS

Georgia Forestry Commission
USDA Forest Service
Rural Fire Departments

The program doesn't just help support local fire departments; it also helps local homeowners and small business owners save money. By meeting and exceeding the ISO standard, insurance premiums are lower because they're at a lower risk of losing the property to a fire. "Based on the value of the property, those homeowners and business owners can save \$300 to \$400 every year," Sorrells said.

Sorrells sees this program as an example for other states and communities across the southeast and the country. "For a little bit of nothing, not a lot of funds, you can put fire suppression apparatus and vehicles into these communities to help the wildland fire agencies meet their mission."

Wombles emphatically agreed. "If this program spread across the country, it would make our whole country's fire service program a lot stronger and a lot better. It's a collaborative effort of everyone working together towards the number one goal of protecting the citizens of our communities and our state." ■



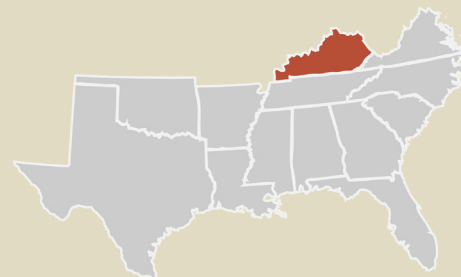
Guarding the State's Resources

Kentucky partnership plays off organizational strengths to reduce arson occurrences

In 2014, the Kentucky Division of Forestry used bloodhounds to track arsonists through the woods in eastern Kentucky. In one case, the dogs tracked an arsonist because of the trail they left with their all-terrain vehicle. In 2016, the state's wildfire officials had a different idea. They set loose bloodhounds on two feet, not four, to track arsonists.

The Division of Forestry, which spent much of their time chasing arsonists, created a partnership with the Kentucky Department of Fish and Wildlife Resources, Law Enforcement Division to try and curb arson. It worked in a big way.

Arson fires accounted for 68 percent of wildfires in the state, on average, between 2014-2016. The investigators – sleuths on two feet – arrived on the scene at the start of the 2016 fall fire season and arsons dropped a remarkable 15 percent since the inception of the partnership. These are seasoned investigators and the data suggests



KENTUCKY SUCCESS STORY

LOCATION

Kentucky (statewide)

STRATEGY

To focus on reducing wildfire threat by providing Kentucky Fish & Wildlife the ability to investigate and arrest in cases of timber arson.

PARTNERS

Kentucky Division of Forestry
Kentucky Department of Fish and Wildlife Resources, Law Enforcement Division

Arson accounted for 68 percent of wildfires in Kentucky.



the arsonists are pausing before lighting a match and leaving a trail.

“We would come up on a fire and we had to worry about getting out there and suppressing a fire, document where the fire is, this is what’s going on, and then come back and investigate,” said Brandon Howard, the Fire Management Chief for the Kentucky Division of Forestry. “Having the Kentucky Department of Fish & Wildlife they could start immediately investigating the fires and start apprehending people. That started happening__ they started questioning people and finding suspects. Any investigation is better if you start early.”

“Word started getting around and we made sure, in working with the Department of Fish & Wildlife, that they were on site and people knew about it. People started realizing pretty quickly we mean business.”

The fire sleuths carry sidearms in Kentucky, an advantage over the Forestry Division, which carried hoses, rakes, and other fire suppression tools.

In a 10-year summary of wildfire causes in Kentucky from 2007-2016, 8,575 fires were caused by arson. The next greater cause of fires was debris burning at 2,890. Arson is certainly a significant issue, but now it is being dealt with by more fire detectives.

The aid from law enforcement happened just in time through a grant from the USDA Forest Service. Kentucky, like much of the southern U.S., had one of its worst fire seasons in 2016 because of extreme drought.

Kentucky has laws in place to discourage arson in forests. The penalties for violating KRS 149.380 include a fine of not less than \$1,000, or more than \$10,000, imprisonment for not more than five years, or both fine and imprisonment.

There are things citizens in the area of a fire can watch for if they suspect arson. Unfamiliar vehicles leaving the area of a fire, as well as arsonists returning to the scene. Many times the arsonists want to see the mayhem they have caused.

“Citizens can also be on the lookout for hunters, who start fires to run deer, or burn a patch of land and wait for the turkeys to come in,” Howard said. Sometimes, the arsonist will be standing in the crowd acting the part of the innocent bystander.

“People like to see the emergency agency roll into their area,” Howard said. “If they are not going to get caught maybe it’s a little action. It’s a crime. People don’t realize it.”

The partnership not only allows the forestry division and local authorities more resources to suppress fires, it allows more resources for initiatives that help curb wildfires, Howard said. More attention is being paid to prescribed fires and their benefits.

“During the fire season is the best time to have proper prescribed fire management, but if we spend a lot of time trying to suppress fires caused by arson it takes up time,” Howard said. “By lowering our arson rate it has allowed us more time to get into practicing prescribed fire management.”

There are areas of Kentucky where there have not been fires and the vegetation has grown thick. It is fuel for forest fires. It is

an area that can be helped by prescribed fire.

“We’re trying to reduce those hazardous fuel loads for when those catastrophic times do come,” Howard said. “When the fires start they are not going to be that bad. We’re making a pathway for this to happen. It’s not just reducing fuel loads, there are some ecological benefits.”

Howard said Kentucky has not only ramped up its efforts in prescribed burns, the Division of Forestry is also educating the public on Firewise USA® practices.

“They should look at vegetation around their homes; if it dries out and it is particularly flammable,” Howard said. “They need to have green grass around their home. The gutters should not have leaves or pine needles. If you have a barn with a wood roof it doesn’t need to be right up against the woods. Make as much space as possible.

“A lot of times in Kentucky we’ll come up to a barn that’s used regularly and it is right up against the woods. We spend a lot of time trying to suppress that. The whole idea of mitigating these is to increase firefighter safety.”

Howard said the Kentucky Division of Forestry has people on staff who can advise the public of the proper way to mitigate these hazards.

While most of the serious, hard to handle wildfires are in the mountains, there is a threat from fires on flatter land, especially in the pasture lands. Kentucky has a significant economy in thoroughbred race horses.

“A grass fire is very deceptive,” Howard said. “You could have a breezy spring day, it could be middle of the day, and you decide to burn a brush pile and there is a lot of dead grass in that field. It doesn’t take a lot of wind on a dry day to push that fire, and grass fires have the ability to burn faster than woods fires. They are usually wind carried (light fuels). It’s something to watch out for with barns and horses. A grass fire can catch you off guard.”

But now it is the arsonists being caught off guard. The two-legged bloodhounds are on the trail. ■

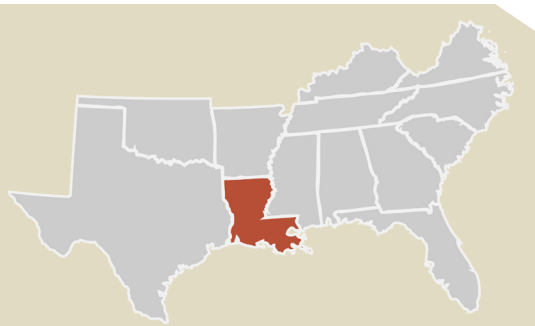


Building Lasting Partnerships

Louisiana Department of Agriculture & Forestry collaborates with like-minded organizations to manage state forest

Stand in the Alexander State Forest, and you'll hear a symphony of staccato rat-a-tat-tats and the piccolo chirps of the Red-cockaded Woodpeckers high above you. Walk further toward an opening between the pines and you may see a rafter of wild turkeys, a jake and jenny foraging on nuts and grasses. Maybe you'll be lucky and see a Louisiana pinesnake slither from one burrow to another.

On 8,000 acres in the middle of Louisiana, Alexander State Forest provides habitat for these and many other species in vast stands of longleaf pine along the Indian Creek Reservoir. That habitat always stands on a razors' edge, however, because Louisiana has a high risk of wildfire, as does the rest of the southeast. Between 2001 and 2010, nearly half of all national ignitions and over 40 percent of the country's large wildfires occurred in the region. One large wildfire in the area could be catastrophic, wiping out habitat and threatening many species' futures.



LOUISIANA SUCCESS STORY

LOCATION

Alexander State Forest
Woodworth, Louisiana

STRATEGY

To create a fire resilient landscape on the 8,000 acres that make up the Alexander State Forest through a consistent prescribed fire regiment and habitat management.

PARTNERS

Louisiana Department of Agriculture & Forestry

Louisiana State University Ag Center

USDA Natural Resource Conservation Service

Louisiana Department of Wildlife & Fisheries

National Wild Turkey Federation

It's an all-hands-on-deck effort to minimize and control the wildfire risk in the state forest. Over 1,000 acres are burned every year through the Louisiana Department of Agriculture and Forestry's prescribed fire management strategy. "In case we have a wildfire, those fuel reduction burns throughout the year keep the potential damage down," said David Campbell, Forestry Program Director with the department. The department's strategy builds upon the Southeastern Region Cohesive Fire Strategy, which focuses on restoring landscapes that need frequent fires to thrive, creating communities that withstand wildfire without loss of life and

"Our partnerships are the thing we're most proud of here at Alexander State Forest." - Don Smith, Louisiana Department of Agriculture & Forestry

property, and developing effective wildfire management that reduces risk.

Those regular burns can be difficult to execute, though, as long dry seasons stretch trained personnel away from proactive measures to fighting wildfires raging around the state. Smoke management is also an important factor, because of the proximity of the town of Woodworth to the north and Interstate 49 to the east. The Department of Agriculture and Forestry works closely with local fire departments, other state agencies and others to implement smart and effective prescribed burns without interfering with the local communities.

"The prescribed fires benefit the wild turkeys and wildlife, too, because the state forest is also a wildlife management area," Campbell said. "It's very important for us to keep burning to keep the feed available for all the wildlife." The Department of Agriculture and Forestry partners with the Department of Wildlife and Fisheries to maintain twelve Red-cockaded Woodpecker colonies, plant longleaf pine and to keep the stands open for the wild turkeys, Louisiana pinesnakes and other wildlife to flourish.

Longleaf habitat restoration is hand-in-hand with prescribed burns in how the Alexander State Forest is managed, because the species thrive in a habitat with good vegetation and healthy pollinators. "We want to create a mosaic of shrub-level and herbaceous vegetation, which work well together for healthy wildlife habitat, without it getting up to forest stand or mid-story levels and shading out other vegetation," said Rodney McKay, Louisiana Forester with the National Wild Turkey Federation.

McKay and the NWTF support partners using prescribed fire as a wildlife management strategy in the state forest through a two-year grant under the National Fish and Wildlife Foundation and funded by the Longleaf Stewardship Fund. "The money encourages the partners to do more prescribed burns or to be

more creative with how they manage the habitat," he said.

On top of the financial support, NWTF also provides technical assistance for private landowners in the area on how they can protect against wildfire risk while promoting wildlife habitat. McKay regularly points to the work at Alexander State Forest as an example. He'll tell skeptical landowners, "If you're not sure what you want to do, you're welcome to get in my truck and I can show you some examples of public land where it's been done and can be replicated on your land, too."

McKay helps connect them to the numerous programs available to support them – whether through the USDA Natural Resources Conservation Service, the LSU AgCenter, or David Campbell at the state Department of Agriculture and Forestry. "We want to find a program that fits the private landowner's situation, but that's something they're comfortable with and will follow through on because I want to see them sustain that through the years," he said. "Knowing that those partnership opportunities are out there has tremendously helped more private landowners to apply longleaf pine ecosystem work and prescribed fire on their land."

"Our partnerships are the thing we're most proud of here at Alexander State Forest," said Don Smith, Forestry Management Chief with the Louisiana Department of Agriculture and Forestry. "We're all trying to do more with less, and we're all trying to work together to get this multiple use management strategy accomplished." Smith stresses that "good communication and cooperation is key" to minimizing wildfire risk on public lands like Alexander State Forest.

McKay said that, "when we find people passionate about doing this type of habitat management and wildfire protection like all of our partners and many private landowners, we find good stewards of the land." ■

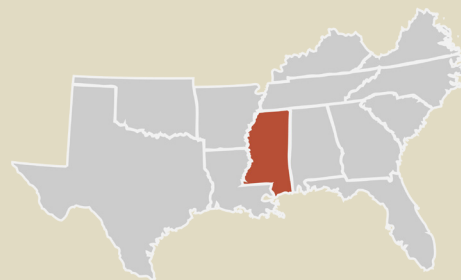
Too Close for Comfort

A close call with wildfire encourages implementation of Firewise USA® principles

Home is where the heart is, as the saying goes. But it's also where we keep some of our most important things—photos, gifts, family heirlooms, memories. It takes a lifetime to collect them, but they can go up in smoke in an instant.

Gladys Jowers sat in the family room of her ranch house in Louisville, Mississippi, one day in 2014. It was a Monday in early May, and she saw a roll of smoke billow over her deck. A tornado had come across town two weeks before and knocked many trees down in her neighborhood. That weekend, one of her neighbors piled up the debris from his property and burned it. He hadn't dug the perimeter deep enough, nor had he made sure the piles were completely burned down before leaving.

48 hours later, the fire had spread over onto Jowers' property, raging and growing from her own debris piles and grassy yard to the shrubs along her back deck. "I turned right around and called the fire department," Jowers said. As she hung up, she saw the bushes out her front window were on fire, too. A couple driving by stopped out front and rushed to help Jowers pull the garden hose out.



MISSISSIPPI SUCCESS STORY

LOCATION

Winston County, Mississippi

STRATEGY

To increase awareness of Firewise USA® principles and wildfire preparedness in Winston County.

PARTNERS

Mississippi Forestry Commission
National Fire Protection Association
Local Homeowners
Civic Organizations
Local Governments
Local Fire Departments
Emergency Services



“An ember from a brush fire can travel up to 14 miles, depending on wind speed. So, you can’t take anything for granted.”

– Orlando Ellerby, Mississippi Forestry Commission

The Louisville Fire Department arrived quickly after the call with a small tanker and began to put the grass fire out. As the blaze spread, the felled trees from the tornado at the back of the property roared. They had to call in a bigger truck, and they spent an hour trying to fight the growing fire.

The fire chief called the Mississippi Forestry Commission, who rushed out with a bulldozer and heavy equipment and contained the damage while the fire department extinguished the wildfire. Orlando Ellerby, Firewise USA® Coordinator with the commission jumped in his truck and drove straight to the property. The first thing he noticed when he arrived was the wood pile against the shed. “If the wood pile would have burned up, it would’ve definitely burned the house down,” Ellerby said. The fire department was quick to collect and move the wood away from the shed.

Jowers was lucky, the fire chief told her. Even though three-quarters of the 3.5 acres on the property were burned, the house had sustained no damage. The brick border around her deck had halted the flames from jumping from the grass to the house. And she had removed two cedars right next to the house after the tornado damaged them. The fire department and

forestry commission said those surely would have jumped the fire to the house and burned it down had they been there.

“That could’ve been really, really bad,” Ellerby said. Ellerby has said that, even though Mississippi’s forests are predominately hardwood, many homeowners are planting pine trees because they grow faster and are a nicer landscape aesthetic. But they prove a higher fire risk, he warns, as softwoods burn faster than hardwoods.

Ellerby works with homeowners around Mississippi like Jowers through Firewise USA®, a program through the National Fire Protection Association that “teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses.” He’s the primary resource for them to minimize their risk of wildfire damage to their house.

Since the fire that almost burned down her house, Jowers is vigilant if she sees anyone burning their debris piles in the neighborhood, and for good reason. “An ember from a brush fire can travel up to 14 miles, depending on wind speed,” Ellerby told her. “Fires can spread quickly because 65 percent of Mississippi’s land is in forestland, and those forests are close to homes out in rural areas.” And a recent

study by NOAA suggests that the risk of very large fire weeks will increase by 300 percent by 2041—so we all need to be as vigilant about wildfire safety as Mrs. Jowers.

“I feel very blessed that I just had minimal damage to the house,” Jowers said. “I’m so appreciative of the Louisville Fire Department, the Mississippi Forestry Commission and the good strangers who stopped to help out.” ■

PREPARE YOUR HOME

- Use fire-resistant materials in building and retrofitting a home.
- Use fireproof screens and vents on all openings.
- Create and maintain at least 30 feet of defensible space around your home.
- Removing hazards such as woodpiles or overhanging tree limbs.
- Regularly mow your lawn, sweep the roof and clean out the gutters.

Beyond Boundaries

North Carolina Forest Service conducts a series of live training sessions to improve aerial response to wildfire

The billboards along the interstate in North Carolina carry an ominous warning: *A single ember from a wildfire can travel over a mile.*

There is no boundary for airborne embers, so Hannah Thompson-Welch, a Wildfire Mitigation Specialist for the North Carolina Forest Service, and Jeremy Callicutt, a Stanley County ranger, decided they would not stay inside the boundaries of normal simulated training scenarios to fight those embers. They devised a new strategy for combining prescribed fire and training to mitigate wildfires in North Carolina.

Thompson-Welch and Callicutt started organizing live aerial training sessions across jurisdictions and agencies. Combining aerial ignition prescribed fire with training for wildfire resources that support and manage aircraft was an effective strategy to get two things accomplished at once, which is the boundary-less work Thompson-Welch talks about.

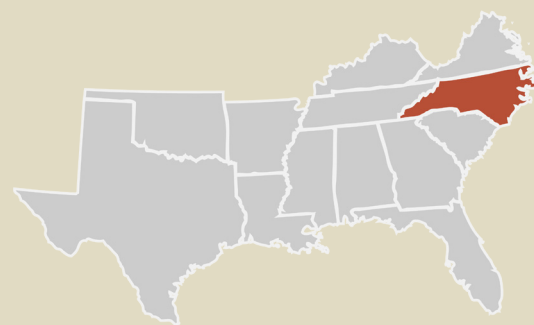
“Wildfires know no boundaries, why should we?” Thompson-Welch likes to say.

In January, 2018 the North Carolina Forest Service, the North Carolina Air National Guard, and the North Carolina State Parks, collaborated to do 1,000 acres of hazard reduction work in three days in the Piedmont (central) region in North Carolina.

Air National Guard helicopters were used for bucket drops to cool off areas of prescribed fire, which included using dip sites. The N.C. Forest Service used its Premo Mark III Aerial Ignition system to drop incendiary ping pong ball-sized plastic spheres to light the fires. Aerial ignition reduced the amount of territory that fireline personnel had to cover, which reduced risks for ground personnel.

The N.C. Office of the State Fire Marshal helped coordinate lodging and subsistence through their partnership with the Air National Guard. There was input from landowners and local residents, as well as city, county, and federal stakeholders. The caretakers of state parks have been anxious about the prescribed burning of park land in the past, but Callicutt said they bought in, too.

There were 50 personnel involved, and four helicopters and one fixed-wing aircraft. The logistics of coordinating a multi-agency training seemed daunting across so many platforms, but Callicutt and Thompson-Welch, who have been colleagues and friends for 15 years, planned the operation for six months, with the help of many others. The results—less fuel for wildfires over thousands of acres—showed



NORTH CAROLINA SUCCESS STORY

LOCATION

North Carolina (statewide)

STRATEGY

To enhance wildfire response through statewide, intergovernmental aerial wildfire training.

PARTNERS

North Carolina Forest Service
North Carolina Air National Guard
North Carolina State Parks
State Fire Marshal
County Government Agencies



Training sessions accomplished wildfire mitigation using prescribed fire and operators used common terminology to communicate during trainings

how effective the “live practice” strategy is at accomplishing wildfire mitigation goals. The Air National Guard fed the fire personnel and housed them at the barracks in the January, 2018 training.

The strategy was so effective the effort was repeated January 31 and February 1, 2019, and 1,200 acres were burned in just two days with fewer personnel, but more one-on-one individualized training.

“We’re always going to have wildfires,” Thompson-Welch said. “One way we mitigate is through these coordinated training events.”

Thompson-Welch said the prescribed burns were not only necessary live fire work to burn off dangerous fuel loads, the exercises were a training ground for certification. Specific positions all along the chain of work received needed training hours for building capacity and maintaining fireline qualifications.

North Carolina Forest Service helicopter pilots completed bucket training utilizing pumpkins (collapsible water tanks) for the first time during an air operations functional training exercise. North Carolina Forest Service employees attended a course called “A-219 Helicopter Transport of External Cargo,” during the prescribed fire burns.

Welch-Thompson and Callicutt were honored April, 2018 as Employees of the Month for the North Carolina Department of Agriculture and Consumer Services.

“We were able to get some training objectives accomplished using some work that already needed to be done, while working with air operations and ground personnel,” Thompson-Welch said. “We involved the operators early on and had everybody singing from the same sheet of music. We were coming from different agencies and regions across the state, but we used common interagency terminology to communicate.”

Here was the real benefit. Callicutt said typically there are serious wildfires in Stanly County every two years and then major, dangerous fires every five years. Those major blazes have been decreased with the larger prescribed burns, he said.

“One box this week we worked on with air resources was 540 acres and we did it in a couple of hours,” Callicutt said.

Callicutt said before the 2018 exercise in Stanly County with the combined agencies, the aerial training for burn work was always around “practice” or simulated events/areas.

Needless to say, the more training in “real” events, the more proficient the pilots and

crews have become in dropping incendiary devices and then working to cool the prescribed fires with bucket drops.

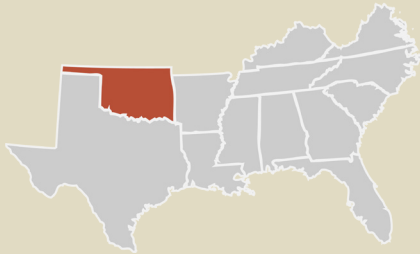
There is also a better understanding with the Air National Guard crews about how to fight the wildfires.

“One of the pilots said they were dispatched to Myrtle Beach to help with a wildfire and they had never done any formal training,” Callicutt said. “One of the things they were told to do was go put water on the small fires out ahead of the main fire. And they said they didn’t feel like they were doing anything to help. They were doing the right thing, but they did not have a true understanding of the work.”

It is a daunting task to try and collaborate across so many different agencies and share resources and people for the aerial work in mitigating wildfires. Callicutt said it is worth the effort.

“If you hit a bump in planning one of these, keep going, don’t quit, don’t give up,” he said. “Don’t shoot it down, just try. We put good leadership in place. It wasn’t just me and Hannah. There were some really good folks to make this a success.” ■

OKLAHOMA



OKLAHOMA SUCCESS STORY

LOCATION

Broken Bow, Oklahoma

STRATEGY

To develop, maintain and improve a Wildfire Response and Preparedness Plan for Hochatown, a heavily populated cabin rental area.

PARTNERS

Oklahoma Forestry Services
Absentee Cabin Owners
Corporate Timberland Owners
Local Fire and Police Departments
State and Federal Agencies

Paradise in the Pines

Oklahoma Forestry Services works to ensure the safety of cabin community vacationers

It was Labor Day weekend, and thousands of out-of-towners were descending on Hochatown, Oklahoma. The countless rental cabins nestled in the beautiful forests were going to come alive with campfires and barbeques for the last days of summer.

On Friday afternoon, as the highways were clogged with vacationers coming into the area, a wildfire caught on private timberland. It quickly spread to the surrounding subdivisions of rental cabins. The Oklahoma Forestry Service (OFS) immediately mobilized with the USDA Forest Service, private company foresters and local fire departments to arrive on the scene and contain the blaze. The firefighters prevented any structures from getting damaged, saving the holiday weekend for the 11,000-14,000 approaching tourists.

Planning for the Future

“It got close,” said Michelle Finch-Walker, Public Information Officer with OFS and a native of Hochatown who owns three-and-a-half cabins there. “There was good firefighting that day, but we got lucky that nothing was damaged and no one was hurt.”

Fires like the one on that Labor Day are what concern Don Cook, a forest ranger with OFS who focuses on fire suppression and protection in southeastern Oklahoma. The memory of the Gatlinburg fire around Thanksgiving 2016—where 16,000 acres in Tennessee’s Great Smoky Mountains burned, damaging or destroying 2,000 buildings and forcing at least 14,000 people to evacuate—is still fresh in his mind, and that’s a day OFS is trying to avoid.

In that effort, OFS developed a Wildfire Response/Preparedness Plan for Hochatown. “The whole goal of the Preparedness Plan is to have a set of guidelines to reduce the confusion and chaos that happens in fire events so everyone knows their roles, knows what they need to be doing, and knows what to expect,” Cook said.

The plan leans on several partners to overcome the two main challenges to fire preparedness the area poses: limited access to and from the many cabins down unmarked dirt roads, and communicating



The rugged aesthetic of Hochatown can be challenging when creating a preparedness plan. Many cabins have no address, and there may not be a clear address for the property.



“This is a ‘we’ project, and not a ‘me’ project because when a big fire event happens, it’s going to take all of us working together to get everybody out and to keep everybody safe.”

- Don Cook, Oklahoma Forestry Services

More than 80 percent of the 1,500 cabins are weekend rental cabins, owned by absentee property owners and leased on the nightly vacation rental marketplace.

with an ever-changing audience of tourists and absentee landlords. “I’ve said it from the beginning,” Cook reiterated, “this is a ‘we’ project, and not a ‘me’ project because when a big fire event happens, it’s going to take all of us working together to get everybody out and to keep everybody safe.”

Cook and the rest of the team at OFS have ongoing meetings with each of the partners – including private industry landowners, police and fire departments in McCurtain County, local park rangers, the USDA Forest Service, and game wardens with the Oklahoma Department of Wildlife. These partners work together to find solutions related to limited road access, notifications of hazardous situations and evacuation of renters.

One of the most impactful pieces of that cooperation is the Collector for ArcGIS app, a platform shared among all the partners designed to keep up-to-date maps of the areas and provide useful information

in the event of a fire. The main benefit of the tool is that first responders can see which structures are residences and which are rental cabins, where the nearest water source is, where the designated staging areas are, and more. Cook calls the tool a game changer. “It would be hard for me to imagine this project being where it’s at today without it.”

OFS has also had to educate the public about being smart and safe with fire, but it has been a challenge. The number of rental cabins in the Hochatown area has grown from around 500 ten years ago to at least 1,500 or more. Today, about 80 percent of the structures are weekend rental cabins, and they’re spread out over roughly 20,000-25,000 acres.

“We’ve reached out to the homeowners with information about meetings we’ve held and how they can take action to minimize their fire risk,” said Finch-Walker. “It’s tough to engage when most of them live away and are rarely in

Hochatown.” And there’s always a new audience of tourists from the major urban areas—Oklahoma City, Dallas, Fort Worth, and Tulsa—who may not know the risks of wildfire.

To prepare for the many changing variables in the area, OFS and the many partners in the Hochatown Preparedness Plan run simulations to practice and refine different scenarios to mobilize response forces effectively. Each simulation allows the partners to identify areas where they can improve response time and efficiency. “My advice to others would be to communicate, communicate, communicate—talk to each other, work with each other, and train with each other. It’s a ‘we’ job we’re doing,” Cook said.

Thinking about a Gatlinburg-type event raises Finch-Walker’s anxiety levels. But she says the cooperation and infrastructure set up and developed through the Hochatown Preparedness Plan definitely moves the area in the right direction. ■



Structural Firefighters Take a Walk in the Woods

Skillset exchange with local fire departments focuses on increasing wildfire response

When it comes to the structural firefighter and the wildland firefighter, the only common denominator between them is courage. Most everything else is different when it comes to putting out a fire.

The structural firefighter could be fighting a blaze in the center hall of a multi-story apartment building with communications muffled, and vision obscured. Their job is minutes to hours.

The wildland firefighter has to deal with uncontrolled humidity, wind, and everything Mother Nature can throw at them. Their task stretches days to weeks.

Thrust the structural firefighter into an unfamiliar environment in the wildland and they can be stripped of their safety nets, and their fallback plans. That's why the state of South Carolina has promoted wildland training for structural firefighters. There are two courses offered and, no doubt, they have saved lives and property.

Consider this statistic: 25 percent of the runs for South Carolina fire departments are for wildland fires. One in four times the

alarm sounds, the men and women who are accustomed to windless hallways could be in a windstorm of embers.

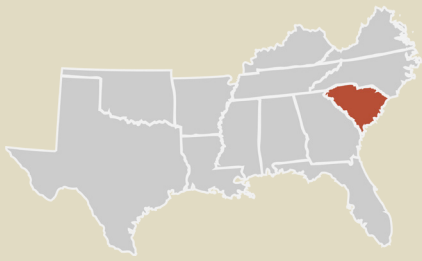
"It would be easy, and it's happened before, to approach a wildfire with the structural sort of mind frame and get yourself in a bad position," said Darryl Jones, the Forest Protection Chief for the South Carolina Forestry Commission. "That's what we don't want to happen.

"We bring bulldozers and hand crews and other equipment. They bring water and their expertise. So we need to make sure they understand what we're doing on the ground, and that we need to understand what their limitations and abilities are that can help us."

The two-day course offered for the city/town firefighters is Wildland Firefighting for Structural Firefighters.

The one-day course deals with wildland urban interface for structural firefighters, you know, the field on the edge of town that can catch fire and lick flames against City Hall.

"What we don't want to happen is a structural firefighter, a



SOUTH CAROLINA SUCCESS STORY

LOCATION

South Carolina (statewide)

STRATEGY

To increase collaboration and communication with local fire departments through training in an effort to increase wildfire response

PARTNERS

South Carolina Forestry Commission
Local Fire Departments

volunteer largely in South Carolina, to get a call to a wildfire and commit and be unprepared and not have the appropriate knowledge to address that wildfire safely,” Jones said.

The training program for structural firefighters has schooled 800-1,000 firefighters a year, Jones said. The good news is that firefighters from urban areas are seeking the extra knowledge. It is not a mandate coming from the top down, which means the buy-in is genuine.

The structural firefighters are given complex scenarios in the course and tasked with the safe execution. The goal, Jones said, is to force the firefighters into a decision-making mode.

“The fire environment for us—the weather, the fuels that you are in, the topography—all that makes a huge difference,” Jones said. “In a structural fire the humidity goes down outside, but it really doesn’t affect the way you fight the fire. For us, the relative humidity going from 25 to 15 percent is a dramatic difference in fire behavior. There is a chance of spotting, and a chance of increased fire intensity.

“So a large part is getting them to approach

It would be easy, and it’s happened before, to approach a wildfire with the structural sort of mind frame and get yourself in a bad position,”

— Darryl Jones, South Carolina Forestry Commission



a wildfire differently than they would a structure fire. Structure fire stays in one place, but our fire may shift 180 degrees and the houses that you thought were in a line of fire may not be anymore because the fire has moved.”

Recognizing the effects of wind, temperature, humidity, the topography, how fires behave differently running up a slope and down, and the type of fuels is all part of the training for structural firefighters.

Jones said he has seen fire departments not accustomed to wildland fire park an expensive fire engine in the middle of a field trying to catch a grass fire. It can lead to disaster because dried out grassy fields can ignite and spread quickly with wind.

The better plan may be to wait for the fire to get to the woods where there is shade, and cool, and less wind, and flames go from high to low.

“They want to go put the fire out, but we may decide not to engage, we wait until the fire burns to the road, or we go somewhere ahead of it and put in fire breaks and burn off, basically fight fire with fire,” said Jones, who spent a month in California in 2018 battling the

disastrous fires there.

“If you chase the fire in some places, and you’re not aware, you can quickly surround yourself with fuel and you have no safe place to go. That is a cornerstone for us. If I’m going to move 20 feet, I am reevaluating my safety zone and my route to get to it to make sure I still have a path that I can reach that’s legitimate.”

Jones said he has seen a difference in the mindset of structural firefighters around the state since the training went into full swing five years ago.

“We are seeing when we are showing up at fires they are recognizing ‘hey, we don’t need to chase the fire, we’re going to wait for the forestry guys,” Jones said. “We’re going to stay here with the houses and do structure protection.”

The course is not just a safety net for structural firefighters, it is building capacity into the system. In 2016, the Pinnacle Mountain Fire on the South Carolina/North Carolina border burned over 9,000 acres. Jones said structural fire fighters from departments around the state rushed in to help. They were capable because they had been trained for the wildland fire.

Jones said the structural firefighters bring a lot to the table. He admires their organization and devotion to their communities.

“Their hearts and souls are for their neighbors and where they live,” he said.

The partnership means a better protected state, from the timber in the forests to the wood in finished buildings. ■



First Firewise USA® Community

*Bolivar Fire Department takes the lead
to make their city the first in Tennessee
to be Firewise USA® Certified*

Few things travel more ominously than the sight of an ember on the wind. The destructive capability of the orange glow is enhanced because it can land anywhere, and land out of reach. A gutter full of dry pine needles could catch it. A barn roof with worn wood too close to a wooded area might be a resting spot.

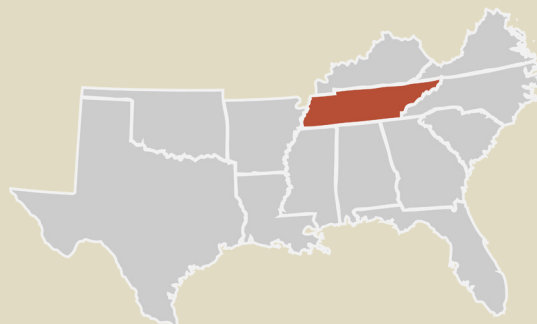
A cabin on the next ridge.

Robin Bible, a Fire Operations Unit Leader with the Tennessee Department of Agriculture Division of Forestry, once followed a trail of destructive embers as they bounded up a mountainside in east Tennessee setting fires, which consumed one cabin after another. The calamity didn't stop until the fire reached the top of the mountain in triumphant tragedy. Smoldering debris was strewn behind.

So when a forward-thinking city like Bolivar, Tennessee, comes to the Department of Agriculture looking for aid to make the city a certified "Firewise USA® community" and prevent those kinds of calamities, the state's wildfire experts, like Bible, greet the city enthusiastically. Bolivar is heavily forested community in west Tennessee and in 2015 it became the first city in the state to achieve Firewise USA® certification.

A year later, no one could dispute the city's foresight.

In 2016, one of the most destructive fires in the history of the state raged in Gatlinburg and Sevier County, killing 14 and



TENNESSEE SUCCESS STORY

LOCATION

Bolivar, Tennessee

STRATEGY

To sustainably manage forests, fuel amounts, defensible space, community planning and fire-resistant construction to build communities that can withstand destructive wildfire.

PARTNERS

Bolivar Fire Department
Tennessee Department of Agriculture Division of Forestry
Tennessee Prescribed Fire Council
Local Churches & Civic Groups
Local Government Authorities

consuming over 2,200 structures. Bolivar residents, like other residents across the state of Tennessee, watched newscasts with horror. The citizens of Bolivar rested better knowing they had taken some steps to avoid catastrophe.

“Not only did we say we did the right thing, we said we are glad to be at the forefront of it and being proactive rather than reactive,” said Sarah Rice, the administrative aid to the Bolivar Fire Department. “It is a time-consuming project to get one of these communities up and running (as Firewise USA® certified). It takes commitment and an all-in attitude.

“So seeing the devastation that happened in Gatlinburg put us a little more at ease here because we knew we were ahead of the game.”

Primarily it has been rural communities, and property owner associations, not municipalities, who had gone through the process of achieving Firewise USA® certification. Bolivar, with a population of approximately 5,000, and 157 miles west of Nashville, not only was the state’s first city to be re-certified, it gets re-certified every year.

“It is about making defensible space,” Rice said. “There are parts of town that aren’t threatened at all, but there are parts majorly threatened. We identified six neighborhoods that were at the top of being threatened and began to focus on those.”

The Bolivar fire department under the direction of Chief Lynn Price took the lead. It used fire department staff, but also volunteers for clean-up days from the community, the Red Cross, churches, and youth groups. The fire department also tied into city resources, like sanitation.

“It is a very forested area and there was a real concern that if a fire came into the community it could be devastating,” Bible said. “They really came to us and their fire chief was instrumental. We didn’t have many communities in west Tennessee so we were very excited to get Bolivar into the program.”

The interface—cities and wildfire—occurs everywhere, it doesn’t just occur in the mountains.

“You’ve got to have someone that really believes and cares enough to organize your committees to really work through it and carry it through and make sure the work gets done.”

– Robin Bible, Tennessee Department of Agriculture



Chief Price (right), David Fiorella (middle) and volunteer Ryan Herndon (left) of the Bolivar Fire Department conducted countless property assessments to achieve the Firewise USA® Certification for their community.

“It occurs all across our state,” Bible said.

The Tennessee Department of Agriculture Division of Forestry has three wildfire mitigation specialists who are contracted through the Resource and Conservation Development Districts. They fan out across the state to promote the Firewise USA® program and work with communities. Interest rose in 2016 after 87,000 acres burned in the state, which included the tragedy in the Smokies.

“Unfortunately, a lot of times it takes having a bad season where people see the potential of what can happen,” Bible said. “Since 2016 we have had these communities come say ‘we’re really at risk here. We saw what happened in the Smokies. It scared a lot of people.’”

Bible said the department has provided grants to communities interested in the Firewise USA® program. There are incentives for homeowners to build a home more fire adapted, such as putting a roof on the home that won’t burn, using fire resistance materials, and Firewise USA® landscaping.

One significant initiative to eliminate fuel around cities and towns is the Tennessee Certified Prescribed Burn Partner Program. There are parts of the state that have not had any fire and the amount of fuel has built up to dangerous levels. The program teaches landowners, homeowners, and forest consultants how to do a prescribed burn properly. So far there are 313 people who have passed through the program, Bible said. There is also a Tennessee Prescribed Fire Council.

Bible said each year there is a “Fire Adapted Communities Workshop” in Knoxville. People swap stories about what works. Bible heard the story of a community that wanted to reduce a fuel load on a steep hillside so it brought in goats to chew down the vegetation.

“You have to have a sparkplug,” Bible said when talking about the key to making a community safer. “You’ve got to have someone that really believes and cares enough to organize your committees to really work through it and carry it through and make sure the work gets done.” ■

Stronger Together

Texas A&M Forest Service Helps to Protect Lives, Property and Livelihoods from Wildfire

The East Amarillo Complex Fire in 2006 burned almost 1 million acres in 48 hours – most of that occurring within the first 24 hours. Olympic sprinters can't run that fast. The wildfires were driven by a weather phenomenon called a Southern Plains Wildfire Outbreak – or firestorm.

Firestorms can move with great speeds and consume tens of thousands of acres over a very short period of time. Fires are usually driven long distances from west to east and a corresponding wind shift will then drive the fires to the south, causing this fire to leap a mile in one direction and then suddenly turn and run in another direction. And firestorms, like tornadoes and hurricanes, are referred to as extreme weather events.

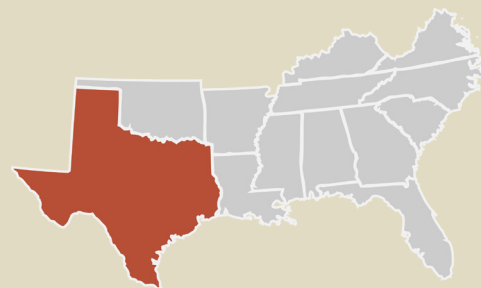
There are only two ways to deal with a Southern Plains Wildfire Outbreak (SPO). One is to get out of the way, and that is impossible for a small town in the Panhandle. The other way is development of pre-fire prescriptions through cooperative efforts of state agencies and the affected landowners themselves. So the prideful Texas ranchers, who fiercely protect their property rights, now swing open their gates for state and federal agencies. The team helps individual ranchers as well as helps them put up “zones of protection” around their communities.

“Texas is 94 percent privately owned and there are partnerships we have to create to make this work, not only with state agencies, but with federal agencies,” said Jim Cooper, the assistant chief state ranch management coordinator for the Texas Ranch Wildfire Program.

“The partnerships with the private landowners are key to preventing fires and mitigating fire throughout the state. It used to be we could go on private property only when the fire is burning. Now, we're doing it before the fire happens. This enables a quicker mitigation and containment of wildfires throughout the state.”

Ranches buy in because one of the first questions the state asks as part of the program is, “What are your priorities?” Ranchers' priorities can be different from ranch to ranch. They can pinpoint water sources, gates and sensitive areas. When a rancher's priorities are known by the Incident Commander of the fire, tactics and strategies can be adjusted to try to meet those needs. Thus enhancing relationships and cooperativeness throughout the ranching community.

The Texas Ranch Wildfire Program officially started this spring as a statewide initiative, but the partnerships between Texas A&M Forest Service, the state's official wildland fire service, and the ranchers in the combustible Texas Panhandle goes back a few years. In 2017, because of fuels and potential



TEXAS SUCCESS STORY

LOCATION

Texas (statewide)

STRATEGY

Develop partnerships to protect local communities through the development of fire resilient landscapes.

PARTNERS

Texas A&M Forest Service
Texas A&M Agrilife Extension
Texas & Southwestern Cattle Raisers Association
Texas Parks & Wildlife
U.S. Fish & Wildlife Service
USDA Natural Resource Conservation Service



SPO weather events, a grassroots approach unifying responders and landowners was formed. The initiative began to identify the best ways to address these challenges. Solutions included tactical ranch plans and community protection plans.

The collaborative efforts in the past in the Panhandle spurred the state to ask Cooper, a firefighter by trade, to take the program statewide. At this point, the program is ready to start comprehensive work in early August around four communities, in preparation for the upcoming winter fire season.

The initiative couldn't come at a better time. The USDA Forest Service, and other Department of the Interior agencies, spent a record \$2.9 billion in 2017 combatting fires.

What the Texas program will do is manage that "wildland urban interface," the ground between the plains and a town, so the town is not engulfed in flames due to an approaching wildfire.

Cooper said the majority of firefighters in West Texas are part of volunteer fire departments. The Texas Ranch Wildfire Program ties together VFDs and landowners with government agencies, such as the Natural Resources Conservation Service, Texas Parks & Wildlife Department, US Fish & Wildlife, and the Texas A&M Agrilife Extension Service. The Texas and Southwestern Cattle Raisers Association also plays a vital role.

In 2017, there was a significant fire adjacent to Borger – the Airport Fire. It was the combined efforts of prior training and mitigation – similar to ranch planning – that had a direct impact in bringing the Airport Fire to a successful conclusion and protecting the community of Borger.

This incident, unfolding in real time, gave cooperators from the Four Sixes Ranch, Borger Fire Department, Creek Ranch and Texas A&M Extension Service the opportunity to test the concept of the Texas Ranch Wildfire Program and prove that taking these mitigation efforts and partnerships between responders and landowners can successfully protect these communities on the plains.

The program is using data to prioritize which towns will need the most protection when the 2019-20 fire season arrives this winter. Scientists take historical weather data from the last 20 years, examine the drought index, look at the averages of fuel and ground moisture, and then rate towns that are under immediate threat. Most of those towns are in the Panhandle and north central and western Texas.

Additionally, the Texas Ranch Wildfire Program is working in coordination with Texas A&M Forest Service Forest Resource Development in studying the effects that wind rows have on the spread of fire. Trees are planted close together to create a windbreak as part of fire prescription.

Other prescriptions will include rotational grazing and grants through the Natural

Resource Conservation Services for "grubbing" in pastures to remove volatile fuels.

Cooper has put a lot of time and miles travelling around the state of Texas talking to ranchers, cooperators and community officials in the last four months. His primary objective has been to promote the Texas Ranch Wildfire Program. He has done this through one-on-one contacts, the development of a webpage and public service announcements created by Texas A&M Forest Service which may be considered first-rate. Cooper said the investments in PSAs are well worth it to get the word out to communities and ranchers.

In early June, Cooper gave a presentation on the Texas Ranch Wildfire Program in Sterling County. He walked in the room and there were 45 ranchers from the county eager to hear his pitch.

"They showed up with an eagerness to learn about the program and were very positive throughout my 3 ½ hour presentation. Ranchers in attendance understood and agreed that program objectives were not about personal gain, but to protect the community of Sterling City," Cooper said. "I don't know where else they are working on private property at this level to prevent wildfires. It's great to see communities band together."

"It's a one-of-a-kind initiative, and with continued successes could become a national standard." ■



Night Riders

While Mother Nature rests, fire crews go to work

Fighting a wildfire at night in late winter is sweaty work, until the crew expertly does its job and robs itself of the heat source. It's February and it's dark, the crew can be on the side of a Virginia mountain tamping out the last embers. Suddenly, the fire is out, and they are sweat-soaked in their gear. It is a scramble back to base. The crew is wet and temperatures have dipped below freezing.

All in all, though, fighting fires under the stars is sound strategy for the Virginians, give or take a chill.

In Virginia in late winter and early spring, dry cold fronts will move through and winds can whip up a wildfire from 2 in the afternoon until sunset around 5:15 p.m. The crews were fighting 160 of these fires on February 19, 2010, the ubiquitous Black Friday every fire team seems to have a story about. The Virginia crews welcomed the dark that day while fighting more fires than usual, even if it meant their sweat would turn cold, and they would be cold.

"The cold front finally passes, the winds settle down, temperatures dip to 20," said John Miller, the director of fire and emergency response for the Virginia Department of Forestry. "You can put the fire out so effectively, but you can find yourself sweating like the dickens because you have been fighting the fire as hard as you can go. Suddenly it is 20 degrees. You can get cold."

A little chill for a firefighter is a fair tradeoff for extinguishing a destructive wildfire. Miller said attacking a blaze at night is much more preferable to Virginia crews than letting it go because of darkness. It is harder to deal with it in the morning. In February, 2008, Miller said there were 300 wildfires around Virginia because of one of those dry cold fronts. By evening, the fires were mostly under control.

"We actively suppress fires at night," Miller said. "Some of the federal agencies have tended to get away from fighting fire at night from the standpoint that it is not safe for firefighters. I would disagree with that. We can attack a fire at night when the humidity has increased. Basically, the weather is in our favor at night in terms of fire suppression."

Miller said he occasionally needles federal fire officials, telling them, “Let me introduce you to head lamps.”

“They are taking a pretty major tool out of their arsenal to go in and attack a fire at a time when it’s easiest to attack at night,” Miller said. “We are not walking around out there in the dark. They (head lamps) can run 12-18 hours and illuminate 50 yards, 100 yards plus with high power. You multiply that by 10-15 people each with head lamps on it’s like working in the day time. There is really no limitation at night, just a few extra safety considerations that need to be in place.”

The biggest challenge at night is “a snag,” a tree that burns through and falls. The key is to make an extra effort looking for environmental hazards, like snags, and rolling rocks. It takes a heightened level of awareness to fight a fire at night, but Miller insists fighting a fire at night is sound strategy for two reasons.

One, you never know what the next day will bring with weather, which is a wild card for wildfires. Wind? High humidity? It can circle back on you.

“If you don’t work on it that night it is going to continue to burn,” he said. “The next morning you go in there to work on it, but you are going to be working on it during a period when it is increasing in activity. Our goal is to put it out. The weather may be working against us the next day.”

The other reason for a night time attack is to use the day time to prepare a fire line and then execute a plan at night when conditions are more favorable.

“Night time may be the only time we can practically use a “burn out operation” or where we use fire to burn out our control lines to make them wider before the approaching fire gets to you,” Miller said. “It’s really tough on a bad fire day—high winds, low humidity—if we need to burn out a line because even a back fire can jump our line.

“We will prepare fire lines because we know once night gets here things are going to calm down enough to where we can back fire a line. Suddenly you have burned out the fuel. It’s going to go out.”

The aggressive tactics in Virginia are a

necessity, Miller said, because so much sprawl has come out of the eastern cities and towns. This is not the west with its vast forestlands. Structures are close by, so Virginia crews leap into action. The DOF is trying to protect 15.8 million acres of forestland and manage 22 state forests.

“Our plan of action in Virginia is we just want to put that fire out in an effort to prevent that fire from being a bigger problem, more acres burning and additional threats to homes,” Miller said. “That’s a little different from some of the federal agency fire control. My personal opinion is that the federal response has shifted too far from initial attack to large fire management.

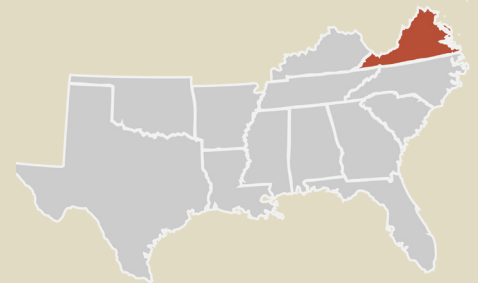
“Our goal is to be done with it.”

Miller said the increasing Wildland Urban Interface in the southeastern states makes it difficult to manage a fire from environmental benefit because that fire is immediately impacting homes. There is certainly a need to manage fires, but the planned burns are fewer and fewer because populations are shifting.

“If your goal is land management focused, or fire management focused, you say ‘hold up a minute we don’t want to put this out too fast’...there are some benefits from fire to the forest,” Miller said. “The problem with that is, especially in the eastern U.S. and southeastern U.S. there’s just so many homes in the wildland urban interface now.”

Virginia certainly recognizes and encourages the use of beneficial fire in the state’s forests for the ecological benefits that fire provides and the VDOF promotes the benefits of prescribed fire under controlled conditions. “It is sort of a good fire/bad fire situation, we encourage good fire whenever possible, and we suppress bad fire as aggressively as we can safely manage.”

“Any effort that delays initial attack you are really creating more of a problem for yourself of having a larger, more expensive, more damaging wildfire,” Miller said. ■



VIRGINIA SUCCESS STORY

LOCATION
Virginia (statewide)

STRATEGY
To decrease the potential for dangerous fires that burn in perpetuity, the Virginia Department of Forestry is focused on training wildland firefighters to tackle wildfires at night.



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