Creating More Off Duty Time for Frontline Firefighters While Maintaining Adequate Fire Response

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In the late 1700's the citizens of South Carolina began to recognize the need for protecting our forests. South Carolina passed a law in 1787 that would punish those who willfully, maliciously, or negligently caused fire to damage property of another. Over the next century our state passed many laws to protect forests from fire damage. These laws and the realization that the availability of our forest resources was critical lead to the establishment of the South Carolina Forestry Commission in 1927.

Working alongside the Forestry Commission, community volunteer wildland fire fighter groups formed to protect forests. They started with five groups and grew to twenty-four within less than twenty years. These groups bravely fought wildfires with pine tops and hand tools. In 1945 the General Assembly passed the South Carolina Forest Fire Protection Act. This law established forest fire protection to every county in the state.

In the 1930's the Commission built a network of tower sites to detect forest fires. These towers ranged in size from fifty-five to one hundred and twenty feet tall. Forestry Commission employees ran phone lines throughout the counties so the tower operators could notify fire fighters of a fire threat. Tower operators would climb the tower and check for fires at different intervals depending on the fire danger. If there was a high fire danger they may stay in the tower for several hours during the day and make at least one check at night. If it was raining, they may not climb the tower at all. Over time the Forestry Commission provided ten acres and a home to live in. Usually, the wife was the tower operator, and the husband was the firefighter or warden. The husband-and-wife team would be on call to check the tower and fight fire as the weather dictated. During their spare time they would farm the ten acres to provide for their family's needs.

In 1993 the Forestry Commission closed its last tower site. Since then, the Commission has depended on 911 notifications of woods fires and aerial detection. Several of the tower operators came to work in our dispatch centers and the husbands remained as wardens. This legacy of work of fighting fires intertwining with family life still lives on. It became our lifestyle.

Problem Statement

Most of our fire fighters are no longer wardens, but forest technicians. We have traded pine tops and hand tools (though still used) for bulldozers. They are not on call twenty-four/seven as they were on the old tower sites. However, the mentality of twenty-four hour a day availability still exists. They work a forty-hour week rotation. On the days they are on duty they work from 10:00 AM until 6:00 PM. After 6:00 PM and until 10:00 AM the following morning they are on call for fires. We require firefighters to house their equipment so they are able to respond to a fire call a specified time. This means they will maintain their firefighting unit at their homes or nearby. When the fire fighters are on duty, they must respond to a call for service within two minutes. This means they must call dispatch and acknowledge they have received the fire page (contact established). They have ten minutes following this call to change into their firefighting personal protection equipment, prepare their transporting unit for service, and be on their way to the fire (rolling time). The agency has an expectation that the firefighters will arrive on the scene of the wildfire within thirty-eight minutes from the call for service (response time). During on call hours the firefighter must still establish contact with dispatch within the two minutes but has an extra thirty minutes to one hour to be enroute to the fire. The expectation is thirty minutes. However, the supervisor has the option to allow the firefighter up to one hour to respond while they are on call.

There has been a growing sentiment that employees feel they are always working and do not have adequate separation from their job. Though firefighters/wardens are compensated with compensatory time of time and a half over forty hours worked, they feel as though they have very little personal time. While on call a fire fighter may want to go out to eat, consume alcohol, watch a movie or child play a sport, but hanging over their head is the concern they may get called to a fire. They may get a fire call just as their food is being served. Their child's team may be about to win the championship, and the page goes out to respond. They may just want to drink an alcoholic beverage but know that they will not be able to respond to a fire call if they have been drinking. These are real life situations where the line between work and personal life become blurred. The frontline firefighters at the Forestry Commission are a committed and loyal group. They care about the work and their fellow fire fighter. When working for an emergency response agency, it becomes difficult at times to know when it is appropriate to separate ourselves from our work.

The sample off duty calendar below shows the scheduled days off for a five-week period. *Fire fighters have a rotating schedule where they are on duty for seven days, off for two days, on for eight days and off for four days, working forty hours each week. Every three weeks they have a long weekend of Thursday through Sunday off.*

SAMPLE OFF DUTY CALENDAR

SATURDAY	*SUNDAY*	*MONDAY*	*TUESDAY*	*WEDNESDAY*	*THURSDAY*	*FRIDAY*
29-Dec	**30-Dec**	**31-Dec**	**1-Jan**	**2-Jan**	**3-Jan**	**4-Jan**
MC 1-5	MC 1-5					
5-Jan	**6-Jan**	**7-Jan**	**8-Jan**	**9-Jan**	**10-Jan**	**11-Jan**
		MC 1-5	MC 1-5			
12-Jan	**13-Jan**	**14-Jan**	**15-Jan**	**16-Jan**	**17-Jan**	**18-Jan**
					MC 1-5	MC 1-5
19-Jan	**20-Jan**	**21-Jan**	**22-Jan**	**23-Jan**	**24-Jan**	**25-Jan**
MC 1-5	MC 1-5					
26-Jan	**27-Jan**	**28-Jan**	**29-Jan**	**30-Jan**	**31-Jan**	**1-Feb**
		MC 1-5	MC 1-5			

MC 1-5 is the radio call sign for the fire fighter.

In the Forestry Commission strategic plan Goal Five is “Strengthen the Commission for the Future.” Strategy two states that we are to “develop a workforce that is inclusive, skilled, engaged, and productive.” As an agency in order to maintain engagement and productivity we must be thoughtful in addressing the physical, mental, and emotional needs of our employees. The Mayo Clinic sites that poor work-life imbalance may cause burn out. Job burnout can lead to excess stress, fatigue, insomnia, depression, anger, heart disease, high blood pressure, diabetes, and vulnerability to illness.

Strategy three of Goal five maintains that we monitor and ensure that we carry out our mission efficiently and effectively. The first word in our agency mission is to protect. It is our duty to protect South Carolina forests. However, it also our job as managers to protect our employees. It is the hope of this project that supervisors may develop a rotating evening schedule that will allow a portion of our frontline firefighters to be on an off-duty status between the hours of 6 PM and 10 AM while still being able to provide adequate coverage and response to fires.

DATA COLLECTION

The goals of the data I collected were to determine if it would be possible to continue to provide adequate response to wildfire calls while reducing the number of available fire fighters during on call hours. I first looked at the goals and parameters set by the agency to respond to fires. Second, I gathered dispatch records for the fires of the past five years. Canceled fire calls were not included in my data set. Data collected from dispatch records included dates of fires, Call For Service (CFS) numbers, initial attack size, number of forested acres burned, number of non-forested acres burned, total acres burned, fire size class, county, unit, and region where fires occurred, number of suppression units dispatched to each fire, dispatch time, time of contact established, enroute time, rolling time, and on scene time.

I had several goals while looking at the data collected. First, I wanted to see if the agency requirements for roll out time and response time were reasonable. We must make sure what we are asking of our employees is attainable. Second, I needed to see how well we were meeting these requirements. Third, I compared the difference in the number of fires, size of fires, and number of fire suppression units needed depending if the fire occurred during on duty or on call,

what was the readiness level, and the time of year. Finally, I also consulted with Unit Foresters, Assistant Unit Foresters, and Regional Forester to determine how they decided what the daily readiness levels for their units should be.

I took all the data I had collected from historical records and entered them into an Excel spreadsheet. I entered data into sheets for each year as well as for the cumulative five years. I prepared pivot tables to compare average rolling times and response times, number of fires, acres burned, number of suppression units per fire, and initial attack acreage vs total acreage for each fire readiness level and month of the year for each county, unit, and region both for on duty times and on call times. Definitions of key terms are included in Appendix A.

DATA ANALYSIS

There are four main factors that determine the number of units needed to respond to calls for service during a given timeframe. They are acres burned, the number of anticipated calls for service, number of potential tractors needed for each service call, and potential fire size. These factors are all driven by weather, fuel conditions, recent fire behavior, and local burning history. Historically, February through May have been considered months with high fire activity. Considering that the readiness levels are determined by fire weather, fuel moisture, topography, and fuel type, I believe we should not only consider time of year but also readiness levels when deciding staffing levels.

It was necessary to know the Forestry Commissions goals and requirements for fire response. I had to ensure that if we reduced staff, we must continue to meet these parameters. I also wanted to see if the goals and requirements were attainable for employees. During on duty hours the Forestry Commission requires fire fighters two minutes to communicate with dispatch that they have received a call for service, and ten minutes after to prepare to be enroute to the fire. This is a total of twelve minutes for fire fighters to be on their way (rolling time) to the fire between 10 AM and 6 PM. I compared the average rolling time for each county, unit, and region. All regions and units averaged this requirement. Four counties did not average the twelve minutes. Those counties were Charleston, Marion, Lancaster, and Richland. As the Unit Forester over Charleston County, I can speak to the increased rolling times. Three of the fire fighters live in subdivisions where they are unable to keep their units at their homes due to restrictions of their homeowners' associations. They must keep them at nearby fire stations. Depending on the time of day of the service call the traffic may keep them from reaching their unit within the required time.

As an agency our goal is to be on scene of the fire within thirty-eight minutes of being dispatched (response time). The data showed that all regions and units met this goal. However, in four counties their average response time was not within the thirty-eight minutes. These averages ranged from 40:49 to 45:59 minutes. They were Beaufort, Charleston, Richland, and York. These counties are all high population, high traffic areas. As areas become more urban, I believe we will continue to find our response times increasing.

On call status allows fire fighters to add thirty minutes to their rolling times. This would allow fire fighters up to forty-two minutes for rolling times. No region, unit, or county's average times

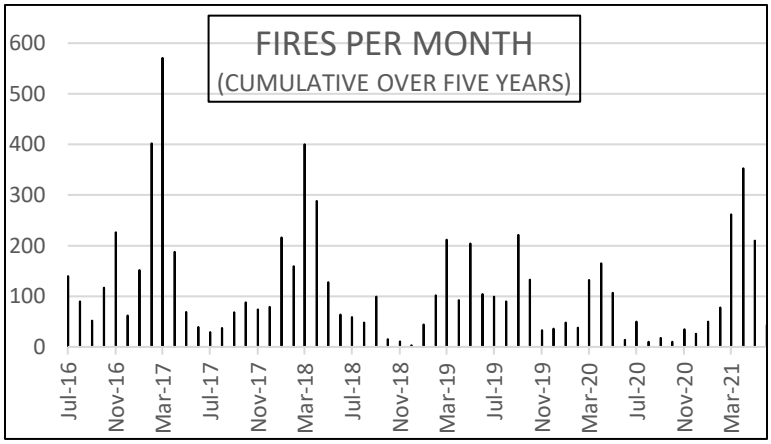
were above forty-two minutes. Most average times for the regions, units, and counties were two to three minutes higher during on call time as on duty times. The highest average difference for a county between on duty and on call times was eight minutes. Hence, firefighters continue, whether on duty or on call, to strive to provide the same level of service.

Unfortunately, I found problems with this data. My analysis found that there were time entries which could not be accurate. I first combined all calls for service. I looked at rolling times and response times. After consulting with our Equipment Coordinator, anything less than five minutes for a rolling time was unlikely because it takes five minutes for the suppression unit transport to build up enough air pressure to go enroute. I then assumed that it takes at least two minutes to drive to the fire. I separated out all fires that had less than 5 minutes rolling time and less than two minutes difference between rolling time and response time. I found that 32.8 % of the data collected for rolling and response time from fire calls were not likely to be accurate. This is a high percentage of potential error in data that is used to drive agency policies, procedures, and work expectations. If we look at individual fire rolling times, we find that 73% of fire fighters make the twelve-minute rolling time. This is not terrible, but is it close to accurate? There are a total of 5,201 entries, 3,675 have a rolling time of twelve minutes or less. Of those 3,675 entries 1,932 are rolling in less than five minutes or arrived on scene within two minutes. Fifty-two (52%) of the good rolling times are questionable. Many rolling times and response times are within seconds of being dispatched. These errors may come from numerous sources. They could be the result of fire fighter thoughtlessness, dispatch entry error, or fire fighter fudging numbers because they are struggling to meet agency requirements.

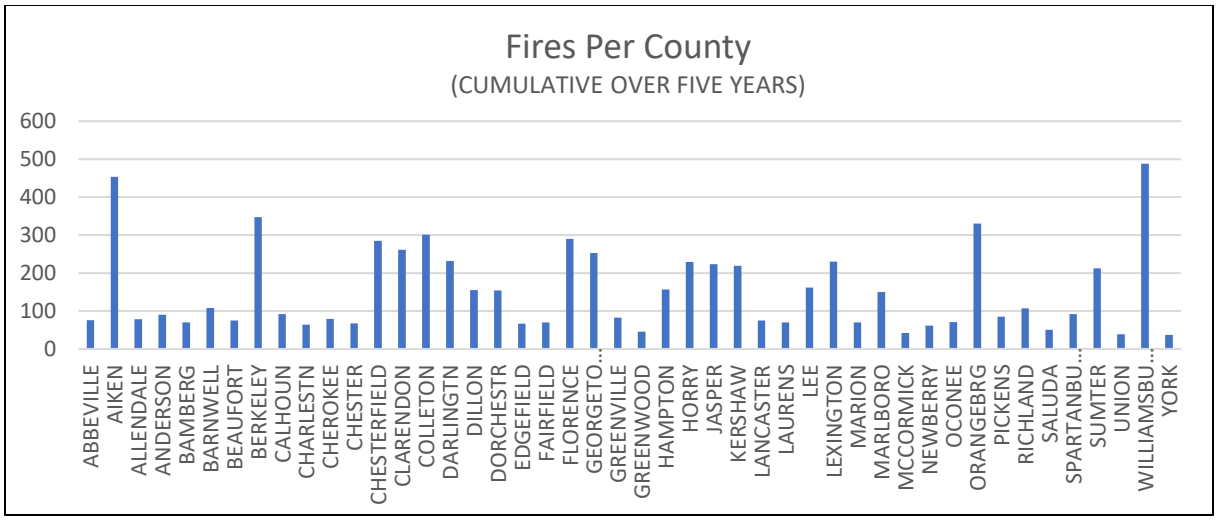
It is important for the agency to have a realistic knowledge of the timeframe a firefighter needs to be on their way to a fire. There are several factors that are preventing us from seeing an accurate picture. Many fire fighters choose to carry a local fire department radio that are provided by the local fire departments. They listen to local fire department calls. If a brush fire is called out, our fire fighter can have an advanced notice that they may be dispatched to a fire. They hear, "Call Forestry." With those words they head to where their unit is stationed and prepare to roll. This notice gives the fire fighter an extra 15 minutes or so to get ready. Having the advance notice is great for our response to fires but it inhibits the agency from knowing a true expectation of rolling time. Other problems include self-dispatching. Sometimes the fire department will call the fire fighter directly and not notify our dispatch center. The fire fighter will leave their station and not notify dispatch until they arrive at the fire. This not only skews data but is also a safety issue. High percentage wildland firefighter accidents occur while enroute to a fire call. When dispatch is informed of detail locations, they can make better decisions of where to send assistance. Some firefighters race to make the rolling time by notifying dispatch that they are enroute when they have only cranked their transport. They may struggle to reach their units in time due to traffic or other practical reasons.

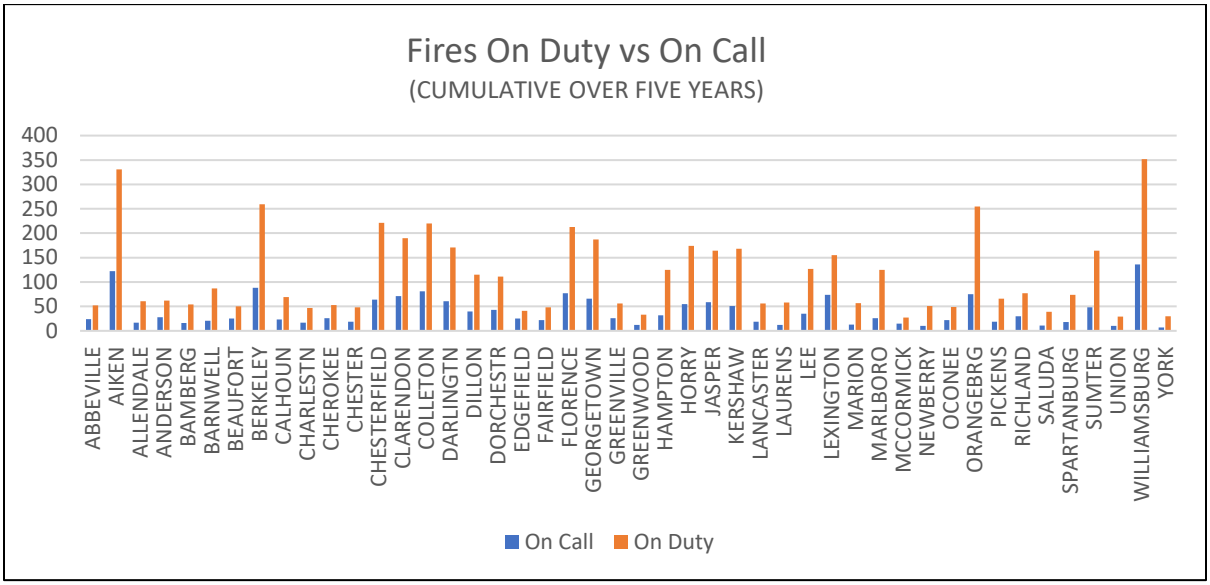
Our agency is small, and the culture is like that of a family. Most of our employees have an outstanding work ethic. They are committed to their job and faithful and loyal to the agency. They care about protecting and pleasing their coworkers, their supervisors as well as the citizens of South Carolina. I believe most of our employees are doing their best but some struggle with regulations they cannot attain.

Next, I looked at the time of year when most of the fires occurred. Typically, February until May is considered peak fire season for our state. March usually has the most fires. As the graph shows below this is still the trend. However, there are random other months where fires may increase. This is important because we would have to evaluate if we were able to reduce the on-call staffing year around, based on typical fire season, or based on readiness.

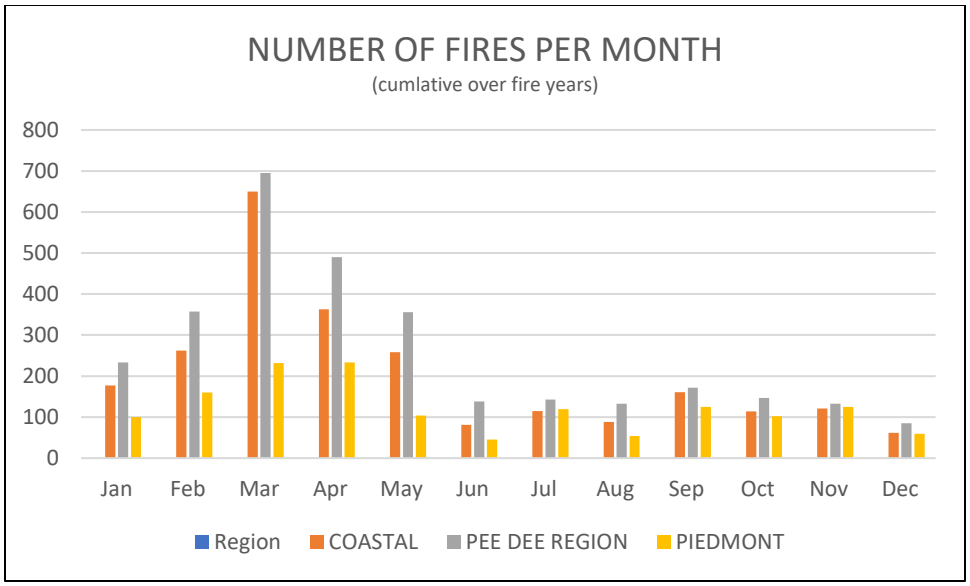


Second, I looked at the number of fires and acres for each region, unit and county both for on duty and on call. The overall conclusion was that approximately 75% of the fire calls and initial attack acres were during on duty time where 25% fell during on call hours. There were five counties that stood out as being unique. Allendale county had 58.12% of the acres burned during on call time, Chester 53.39%, Edgefield 52.63%, Clarendon 46.13%, and McCormick 46.33%. However, all counties ranged with 62%-83.6% of their fires during on duty timeframe. The overall state percentage was 74.4% during on duty hours and 25.6% during on call.





In the graph below we compare number of fires in each month and for each Unit. March and April have the highest fire activity for the state. The fire numbers reduce in the summer and increase some in the fall. During fire season there is a significant difference in the number of fires in the Coastal and Pee Dee regions as compared to the Piedmont region. However, Piedmont has almost the same level of fires throughout the year.

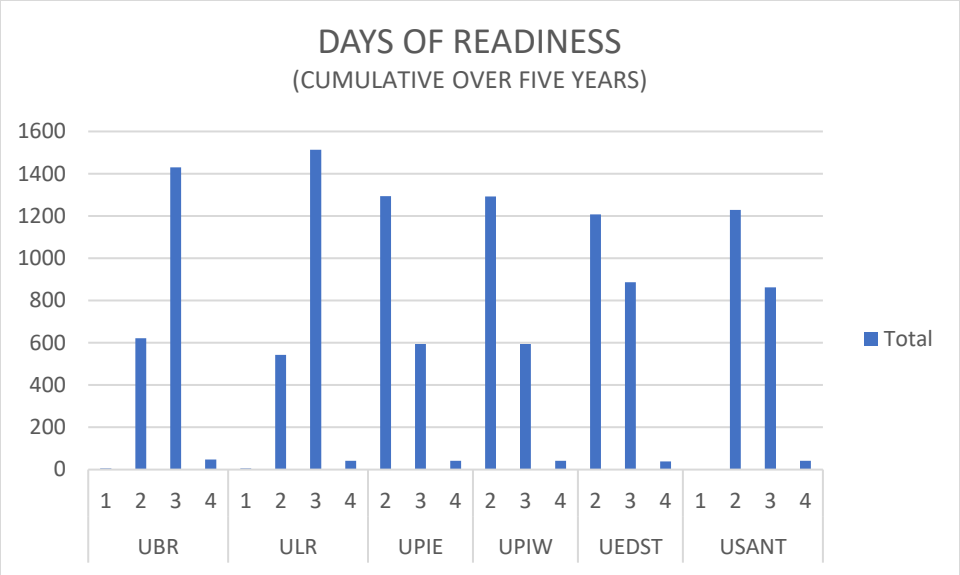


As mentioned earlier we also need to compare readiness. Most Unit Foresters set readiness daily. I received several responses to an email I sent asking how they determined readiness. Below are some responses.

I set mine by looking mainly at KBDI,RH, and wind. There are many others such as staffing levels, days since rain, how much rain did we get that are considered. I also consider factors such as the first nice weekend after the leaves have fell.

I would look at weather, # of days since last recorded rainfall, time of year, drought indexes and occurrences. Most important probably being occurrences. It is hard now, in my opinion, to set the readiness now with the size of the units. Parts of your unit could be wet with other parts be dry. It makes setting the readiness best on the worst counties in the unit.

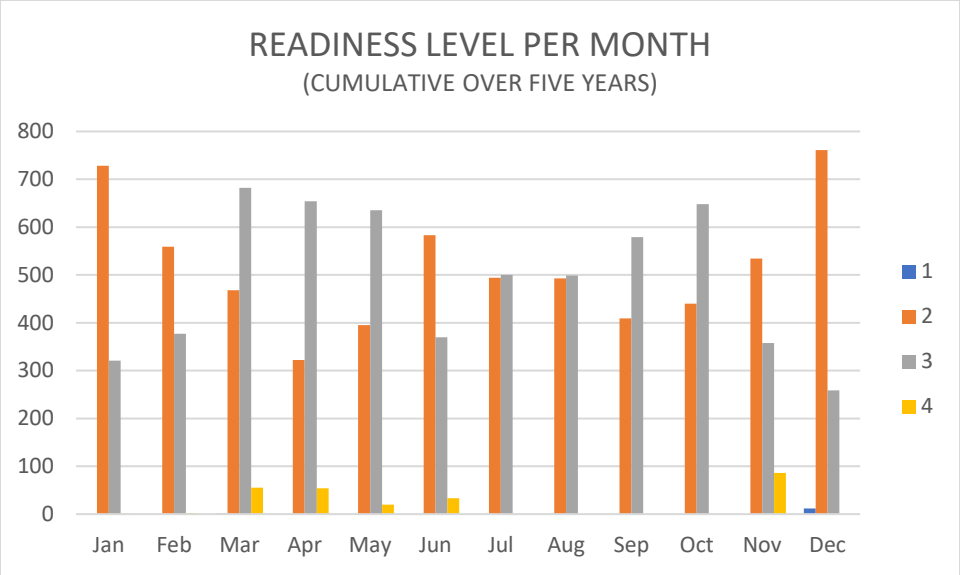
I use a mixture of things like weather patterns (radar, last rain, KBDI, wind, temp., humidity among just some factors). Of course, it depends how those are currently related to each other. Add a sprinkle of fire activity and cultural burning and you get a bigger picture. I may also increase the readiness to a higher level based on personnel availability such as sick leave/quarantine and vacancies. Don't forget input from my FMOs but I don't do it daily.



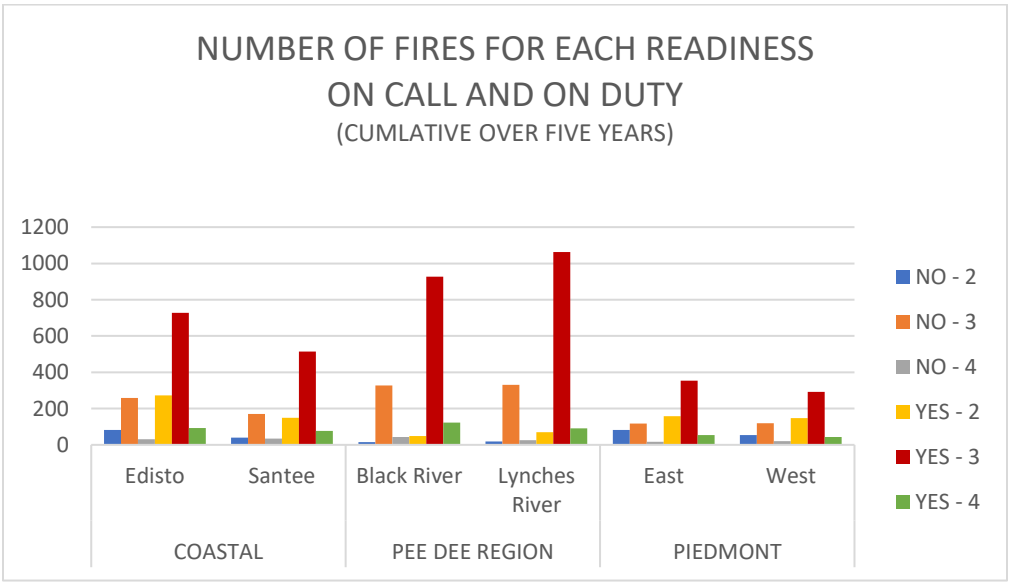
UBR-BLACK RIVER UNIT, ULR- LYNCHES RIVER UNIT, UPIE- PIEDMONT EAST UNIT

UPIW- PIEDMONT WEST UNIT, UEDST- EDISTO UNIT, USANT- SANTEE UNIT

Some interesting things to notice about the chart above is that Black River Unit and Lynches River Unit have significantly more readiness three days as compared to the other four units. Readiness levels are based on the burning conditions, fire activity, predicted weather, and resource availability. The Piedmont east and West, Edisto and Santee Units have more readiness two days. It is also interesting to note that each unit that is in the same region assigns readiness in similar patterns. This may be due to similar fuel moistures, fire activity, and weather, but may also be due to similarities in perception. Finally, each unit has the same number of readiness fours. This is due to high fire danger days are usually called by management in Columbia and not field personnel.



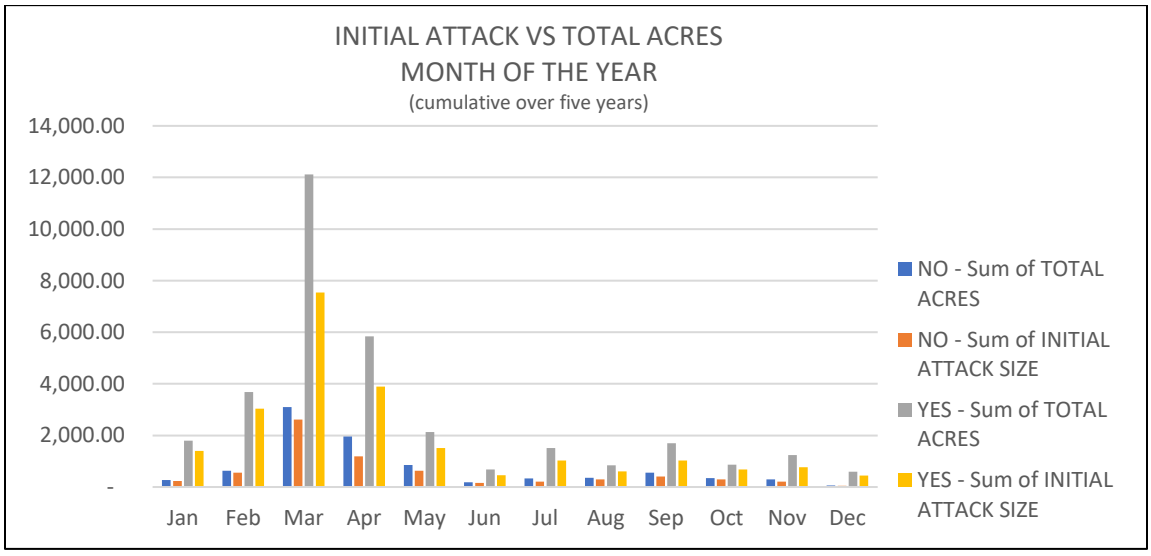
From this chart above we see more moderate fire danger and high fire danger in March, April, May (typical fire season) and a slight increase in fall which follows the pattern for number of fires. December and January are usually low fire months. In addition, the most common readiness level across the state for the year is a readiness two. We can conclude that fire activity is at its highest March until May. However, we have numerous times in the year where we experience moderate fire weather.



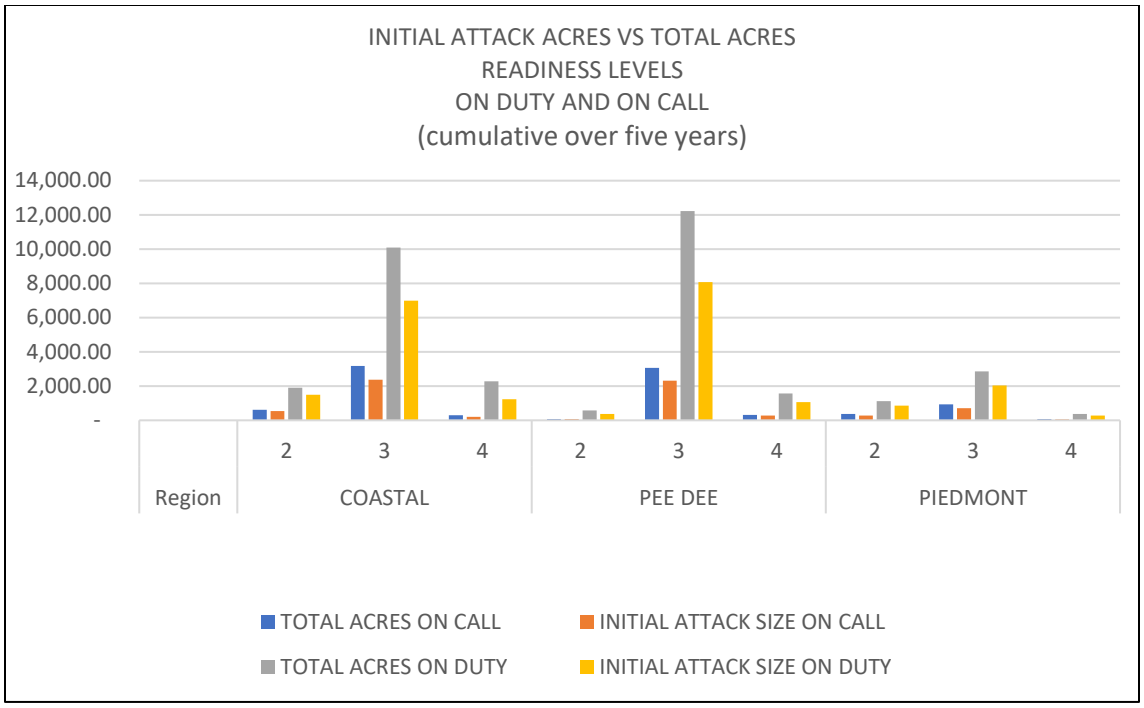
NO= ON CALL YES=ON DUTY

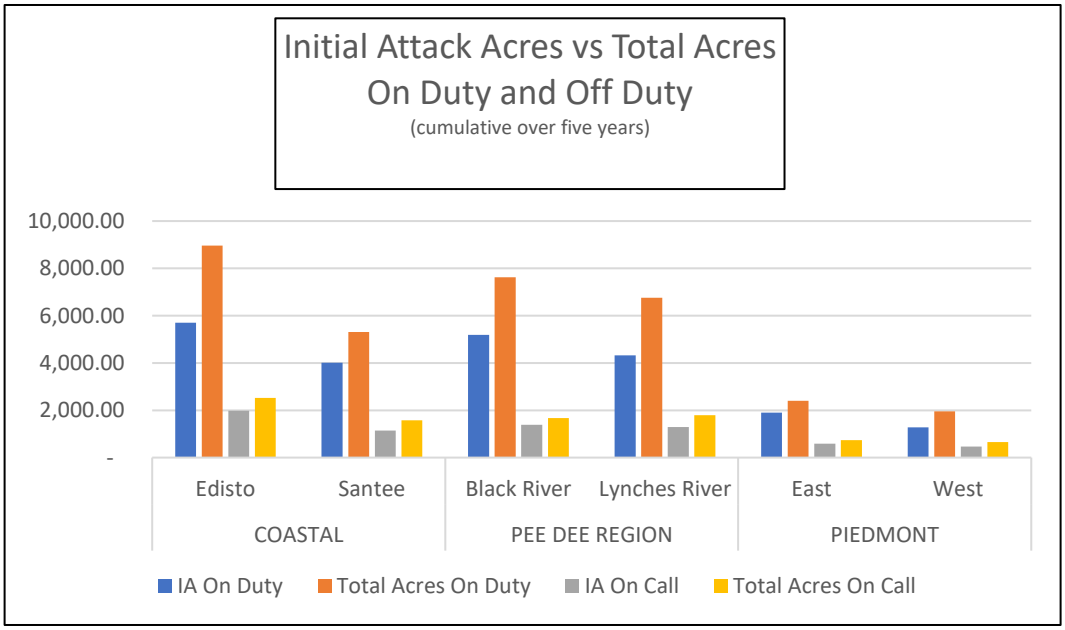
This chart above shows that the highest number of fires for each Unit is under a readiness three. However, when compared to a readiness three on call the fire numbers are significantly less. Most are over half the number as on duty. The only readiness that does not have this significant difference is on a four. Agency policy deems a readiness four as all regular days off are cancelled. On level four days any on call rotation would be cancelled.

The second factor in determining the possibility of an evening rotation is examining acres burned. In the charts below I compare initial attack acres (estimated acres given during size up but corrected later if needed in fire report) versus total acres burned. When we compare for time of year and readiness, we see that most acres are burned during the typical fire season. However, when we compare with on duty and on call time, we see there are significantly less acres burned during on call. For most areas there was 75% less acres burned during on call for both readiness and time of year.



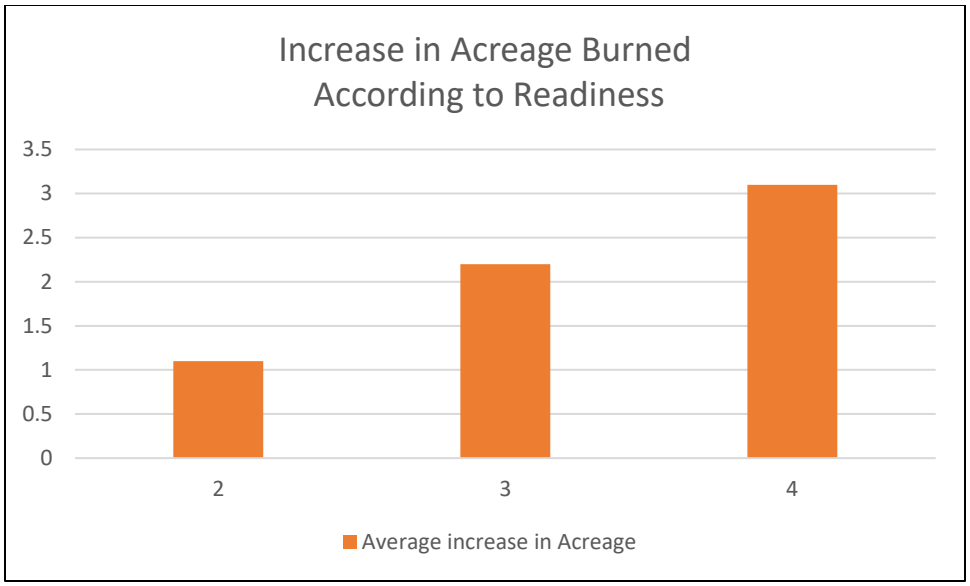
NO= ON CALL YES=ON DUTY

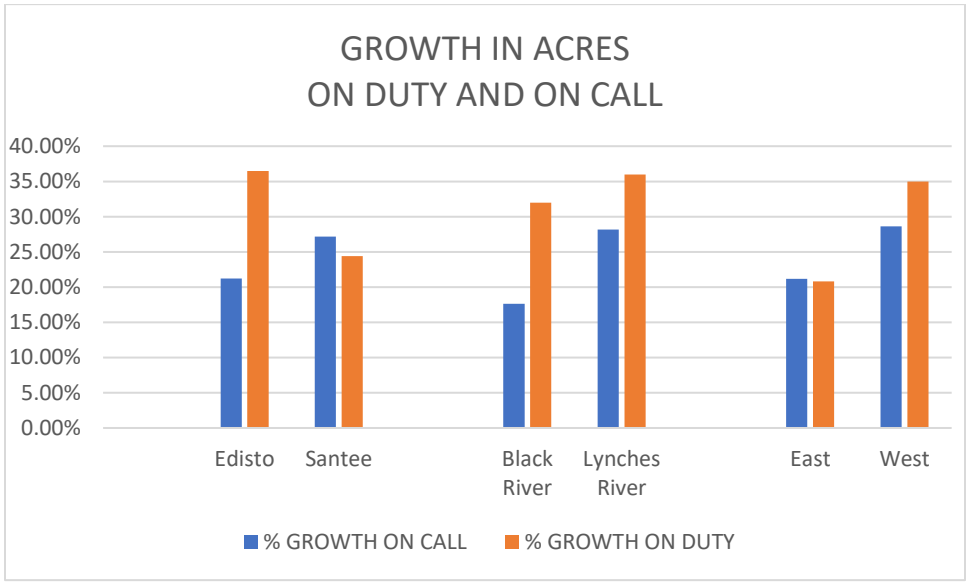

INITIAL ATTACK ACRES VS TOTAL ACRES
READINESS LEVELS
ON DUTY AND ON CALL
(cumulative over five years)
14,000.00
12,000.00
10,000.00
8,000.00
6,000.00
4,000.00
2,000.00
-
2
3
4
2
3
4
2
3
4
Region
COASTAL
PEE DEE
PIEDMONT
TOTAL ACRES ON CALL
INITIAL ATTACK SIZE ON CALL
TOTAL ACRES ON DUTY
INITIAL ATTACK SIZE ON DUTY


Initial Attack Acres vs Total Acres
On Duty and Off Duty
(cumulative over five years)
10,000.00
8,000.00
6,000.00
4,000.00
2,000.00
-
Edisto
Santee
Black River
Lynches River
East
West
COASTAL
PEE DEE REGION
PIEDMONT
IA On Duty
Total Acres On Duty
IA On Call
Total Acres On Call

Third, I studied how they grew depending on readiness levels. The readiness should show the threat of rapid-fire spread and difficulty to control. Analyzing the data, it was found that a 59.5% of the fires either got smaller after we arrived on scene or stayed the same. It is true that sometimes once we arrive to the fire the local fire department has extinguished flames, and we plow around the fire to ensure its containment. Also, when a fire fighter arrives on scene of the fire it is difficult to estimate the acreage from cab of his truck while he is giving a size up to dispatch. In addition, during our technician training we teach our firefighters that if the fire is a whole acre or larger, we round to the nearest whole acre. So, if initial attack is two acres and the fire increases in size to 2.3 acres the final and total acres burned is still two acres. Intuitively, we know that fires do not get smaller, and that most of our fires increase in size. It is advisable for a fire fighter to correct his initial attack acres from his size up when he gives his final report to dispatch, he should take consideration to be as accurate as possible. It would also be beneficial to use inexpensive GPS units in each bulldozer. It could be standard procedure to delineate each fire to determine acreage. This requires only a few buttons to press prior to plowing a fire. This would give an accurate measure of total acres. The firefighter could then give the estimate of initial attack acres. Estimating initial attack acres and total acres we could be missing fire suppression accomplishments and potential data need for future decisions.

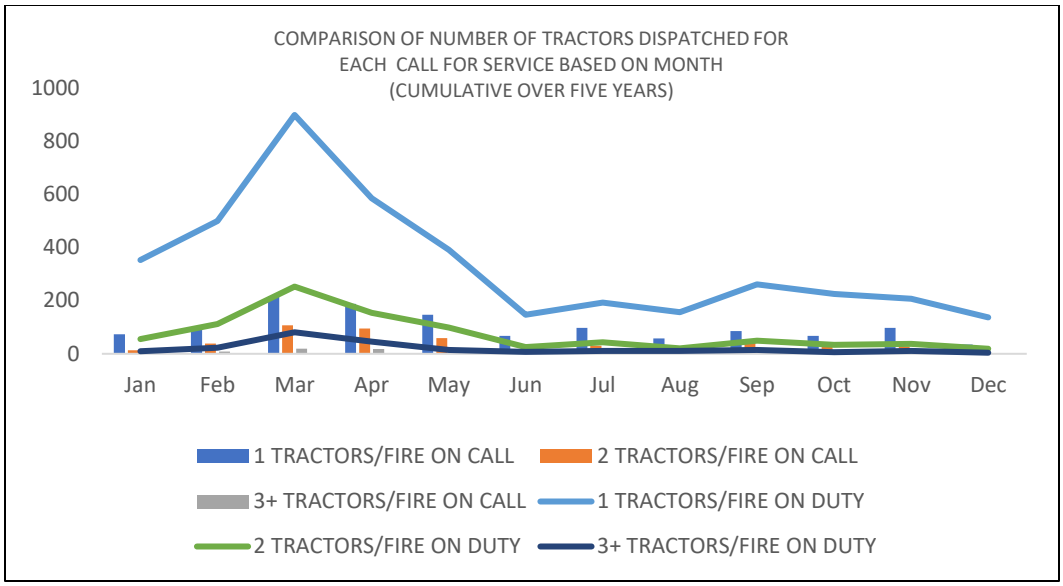
According to the data there were 977 fires on readiness two, 4508 fires on readiness three, and 574 fires on readiness four. Below is a chart that shows the average increase in burned acreage according to readiness.



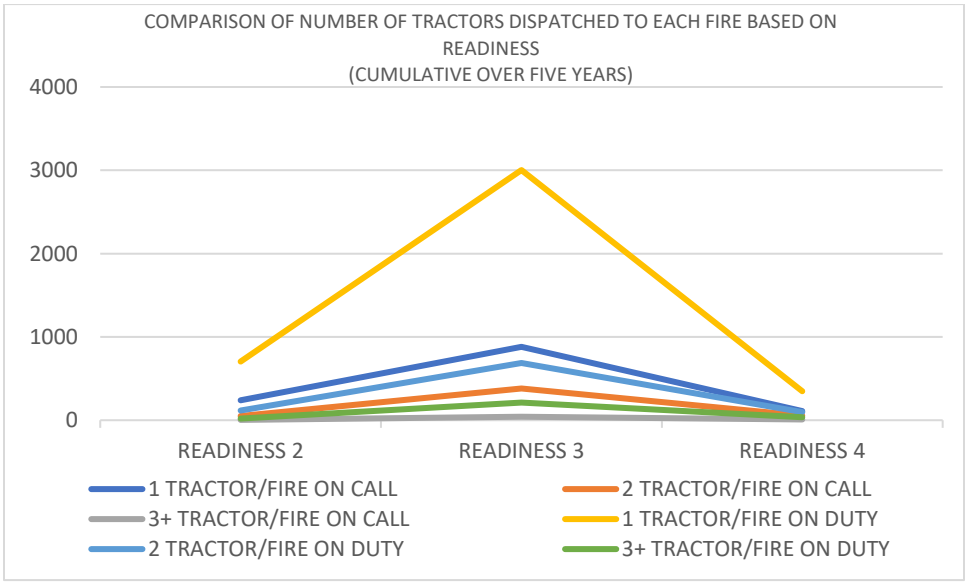


As would stand to reason the higher the fire danger the increase in the acreage that will burn given a consistent timeframe of arrival to the fire. The second chart shows the percentage difference in growth in acres for each unit. One would expect for the growth to be more during the day as compared to the evening. This would be due to higher nighttime relative humidity and lower temperatures. However, there are two units that have slightly more growth during on call as opposed to on duty. This is likely due to poor estimations of acreage.

The final numbers I examined were the number of tractors dispatched to fires based on readiness and on duty and on call. As with number of fires and acres burned, the number of units dispatched for fire increased in March with a slight increase in the fall. We see in the graph below that most fires both on duty and on call only have one tractor dispatched. Two tractors dispatched fall off significantly and three plus even more. During on call hours the number fires and units dispatched per fire are fewer. The data showed that the Piedmont region dispatched one unit to fires 74%, two units 22%, and 3% three plus units. Coastal was 78% for one unit, 19% for two, and 2% for three plus. Pee Dee differed with 58% for one unit dispatched, 37% for two units dispatched, and 3% for three plus units. This difference is due to a region procedure difference. The Pee Dee region's procedure is to call two tractors at night or send the unit with a supervisor for increased operator safety. The Coastal and Piedmont Units do not follow the same procedure and allow the firefighter dispatched to decide whether they need assistance. Dispatch always notifies the immediate supervisor when a firefighter is called to a night fire. Most supervisors contact the firefighter and monitors the fire and firefighter. If the firefighter needs assistance, they will request assistance through dispatch. Dispatch will then call for another tractor operator or the supervisor.



The chart below compares tractors dispatched for each call based on readiness. One unit was dispatched to most fires. The difference in the number of fires that dispatch one unit and two units during on duty hours is significantly more than the difference the same during on call hours, especially for readiness three. This could be due to the Pee Dee region having several readiness three days and incorporating the procedure to use two units during night fires.



CONCLUSION

After considering the factors of number of fires, number of acres burned, number of tractors dispatched to a fire, readiness, and time of year, it is reasonable to think reducing staffing during on call hours is possible for all times of the year except when there is a high fire danger and regular days off are cancelled. However, there are some situations that would make a rotation difficult such as regional procedural preference to send multiple units for safety concerns, fire fighter vacancies within a sector, the number of trainees (trainees must be dispatched with experience firefighter or supervisor) within a sector and added duties to supervisors and dispatch to maintain schedules. The benefits are that fire fighters have more personal time and can schedule events knowing ahead of time that they will have given evenings off duty. The increased separation from work gives the needed mental rest from responding to emergencies.

If the agency wished to test the idea, choosing a county with high fire activity (Aiken, Berkeley, or Williamsburg) and adequate staffing would demonstrate if an evening rotation was feasible and well received by fire fighters. Appendix B shows a sample calendar.

In the future, the agency should consider using GPS technology on the transports and bulldozers that interfaces with our dispatch centers. This can help ensure more accurate data collection for rolling times, response time, and acreage. This will lead to better decision making in the future. In the interim, it would be good to realize we are not able to accurately determine a rigid rolling time. Instead of a strict rule we should look at a twelve-minute rolling time as a goal. I would encourage increasing the rolling time goal to fifteen to eighteen minutes. Changing this mindset from rule to goal lets the employee know that we as management trust that they are putting

their best foot forward. It may also encourage the employee to be more accurate in notifying dispatch of their true rolling time. We should also communicate and educate field personnel the importance accurate data. Field personnel must be convinced that this data is not to reprimand them but to help them.

Gathering precise and accurate data is essential to measure our progress or regression. We cannot improve as an agency if we cannot see an accurate picture of where we stand. As we strive to improve our work processes, the accuracy of the data we collect will improve, thus improving our key performance indicators and reaching our goals.

APPENDIX A

DEFINITIONS

Wildfire- An unplanned and uncontrolled fire that burnt in a natural area such as a forest or grassland.

CFS Number- A number assigned to a call for service (fire).

Fire Size Up- A report given to dispatch by the initial attack fire fighter upon his arrival to the fire. This report includes how fast the fire spreads (running- moving with the wind, backing- burning against the wind, or flanking- burning perpendicular to the wind), estimated size of fire in acres, potential size of fire in acres, type of fuel the fire is burning, continuity of the fuel, structures threatened, hazards caused by smoke, other resources on scene (example fire department, law enforcement).

Initial Attack Size- The estimated size of the fire upon arrival of the first fire unit. This is an estimated size of the fire in acres. This estimate is given to dispatch by the firefighter prior to fighting the fire in his size up.

Number of Forested Acres- Forested acres that were burned by the fire.

Number of Non-Forested Acres- Acres that were burned by the fire that were not forested (example fields).

Total Acres- Total number of acres both forested and non-forested acres that were burned by the fire.

Fire Size Class- Expressed by A (1/4 acre or less), B (more than ¼ acre but less than 10), C (10 acres or more but less than 100), D (100 acres or more but less than 300), E (300 acres or more but less than 1000), F (1000 acres or more but less than 5,000), and G (5,000 acres or more). Each letter represents a range of burned acres.

Number of Units- Number of fire suppression dozers on the fire.

Dispatch Time- The time dispatch sends a call for service to the fire fighter

Time of Contact Established- Time the fire fighter contacts dispatch acknowledging they have received the request for service.

Enroute Time- The time the fire fighter leaves his home base.

Roll Out Time- The time difference between dispatch time and enroute time.

On Scene Time- The time the fire fighter arrives at the fire.

Response Time- The time difference between dispatch time and on scene time.

On Duty Time- Between the hours of 10 AM and 6 PM on schedule workdays. Fire fighters are expected to confirm with dispatch they have received a call for service within two minutes and be enroute to the fire within 10 minutes of the confirmation of the call.

On Call Time- Between the hours of 6 PM and 10 AM on scheduled workdays. Firefighters are expected to confirm with dispatch they have received a call for service within two minutes and be enroute to the fire within 30 minutes to an hour after confirmation of the call.

Off Duty Time- Hours not scheduled to be available for calls for service.

Fire Danger or Readiness- A rating that takes into consideration the daily weather and dryness of fuels. It lets firefighters know the potential for high wildfire activity. The readiness levels can range from one to five. One is zero; two is low; three is moderate; four is high; and five is extreme. Fire Danger for the South Carolina Forestry Commission is usually set by the Unit Forester.

Region- The South Carolina Forestry Commission is divided into three regions- the Piedmont Region in the northwest area of the state, the Pee Dee Region in the northeast area of the state, and the Coastal Region in the southern area of the state.

Unit- Each region is divided into two units made up of multiple counties.

Regional Forester- Agency head of a particular region.

Assistant Regional Forester- Assistant to the regional forester

Unit Forester- Agency head of a particular unit.

Suppression Unit- Bulldozer used to contain and control wildfire.

Appendix B

SATURDAY	*SUNDAY*	*MONDAY*	*TUESDAY*	*WEDNESDAY*	*THURSDAY*	*FRIDAY*
1-Jan	**2-Jan**	**3-Jan** Hol	**4-Jan**	**5-Jan**	**6-Jan**	**7-Jan**
MC 2-3 O-3-3	MC 2-3 O-3-3	MC-1-5 O-2-2	MC-1-5 O-2-2		MC-1-3 O-2-3	MC-1-3 O-2-3
MC-2-5 O-3-5	MC-2-5 O-3-5	MC-2-2 O-3-6	MC-2-2 O-3-6		MC-1-6 O-3-2	MC-1-6 O-3-2
MC 2-7 O-3-8	MC 2-7 O-3-8	MC-2-4 O-3-7	MC-2-4 O-3-7		MC-3-5 O-3-4	MC-3-5 O-3-4
MC 1-4 MC-3-3	MC 1-4 MC-3-3	MC-2-6 MC-3-6	MC-2-6 MC-3-6		MC 1-7 MC-3-4	MC 1-7 MC-3-4
AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM
MC-1-3 O-2-3	MC-1-3 O-2-3	MC 2-3 O-3-3	MC 2-3 O-3-3		MC-1-5 O-2-2	MC-1-5 O-2-2
MC-1-6 O-3-2	MC-1-6 O-3-2	MC-2-5 O-3-5	MC-2-5 O-3-5		MC-2-2 O-3-6	MC-2-2 O-3-6
ON CALL S-5 S-9	ON CALL S-5 S-9	ON CALL S-2 S-3				
8-Jan	**9-Jan**	**10-Jan**	**11-Jan**	**12-Jan**	**13-Jan**	**14-Jan**
MC-1-3 O-2-3	MC-1-3 O-2-3	MC 2-3 O-3-3	MC 2-3 O-3-3		MC-1-5 O-2-2	MC-1-5 O-2-2
MC-1-6 O-3-2	MC-1-6 O-3-2	MC-2-5 O-3-5	MC-2-5 O-3-5		MC-2-2 O-3-6	MC-2-2 O-3-6
MC-3-5 O-3-4	MC-3-5 O-3-4	MC 2-7 O-3-8	MC 2-7 O-3-8		MC-2-4 O-3-7	MC-2-4 O-3-7
MC 1-7 MC-3-4	MC 1-7 MC-3-4	MC 1-4 MC-3-3	MC 1-4 MC-3-3		MC-2-6 MC-3-6	MC-2-6 MC-3-6
AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM
MC-2-4 O-3-7	MC-2-4 O-3-7	MC-3-5 O-3-4	MC-3-5 O-3-4		MC 2-7 O-3-8	MC 2-7 O-3-8
MC-2-6 MC-3-6	MC-2-6 MC-3-6	MC 1-7 MC-3-4	MC 1-7 MC-3-4		MC 1-4 MC-3-3	MC 1-4 MC-3-3
ON CALL S-3 S-4	ON CALL S-3 S-4					
15-Jan	**16-Jan**	**17-Jan**	**18-Jan**	**19-Jan**	**20-Jan**	**21-Jan**
MC-1-5 O-2-2	MC-1-5 O-2-2	MC-1-3 O-2-3	MC-1-3 O-2-3		MC 2-3 O-3-3	MC 2-3 O-3-3
MC-2-2 O-3-6	MC-2-2 O-3-6	MC-1-6 O-3-2	MC-1-6 O-3-2		MC-2-5 O-3-5	MC-2-5 O-3-5
MC-2-4 O-3-7	MC-2-4 O-3-7	MC-3-5 O-3-4	MC-3-5 O-3-4		MC 2-7 O-3-8	MC 2-7 O-3-8
MC-2-6 MC-3-6	MC-2-6 MC-3-6	MC 1-7 MC-3-4	MC 1-7 MC-3-4		MC 1-4 MC-3-3	MC 1-4 MC-3-3
AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM	AFTER 6 PM
MC-1-5 O-2-2	MC-1-5 O-2-2	MC 2-3 O-3-3	MC 2-3 O-3-3		MC-1-3 O-2-3	MC-1-3 O-2-3
MC-2-2 O-3-6	MC-2-2 O-3-6	MC-2-5 O-3-5	MC-2-5 O-3-5		MC-1-6 O-3-2	MC-1-6 O-3-2
ON CALL S-2 S-5	ON CALL S-2 S-5					

Received Date: _____ Page 1 of 2 Received By: _____