



10 Minutes with the Southern Fire Exchange: Steve Miller

10 Minutes is an interview series where the Southern Fire Exchange talks with experts, leaders, and sages in southern wildland fire management and research. In this interview, the SFE speaks with wetlands prescribed burning expert Steve "Torch" Miller, Bureau Chief of Land Management for the St John's River Water Management District in Florida.

What makes burning in wetlands different from burning upland ecosystems?

"Several things are different when burning in wetlands. First, access (the ability to move around) is much more limited, and it requires specialized equipment such as airboats and amphibious tracked machines. Second, the ability to construct effective firelines is limited, so you need to rely almost entirely on changes in vegetation or existing breaks like canals, airboat trails and levies to limit the fire area. That typically means once you start, there are few options to shut it down early if conditions deteriorate, so it is crucial to pick the right day, with the right weather before you start. Third, when we burn wetlands we are typically trying to control the invasion of woody vegetation, so we want the maximum fire intensity we can hold. Often when we are burning uplands, we try to limit crown scorch on overstory trees, which then dictates our firing pattern. When we burn wetlands, we do not have to worry about how hot it gets. Lastly, because wetland vegetation typically burns aggressively (long flame lengths) and moves quickly, but people move slowly through water and tall grasses, we rely more heavily on aerial ignition."

What are some of the specialized tools, pieces of equipment or techniques that are needed for burning in wetlands?

"We use airboats to wet vegetation near the desired perimeter. I hesitate to call them firelines because that implies we constructed firelines. As I said, constructed firelines

are a rarity in burning wetlands so we count on existing breaks. Airboats can run an airboat trail and wet the adjacent fuels such that the fire will not cross the trail. We also use amphibious tracked vehicles to both wet vegetation to serve as a fire barrier and as an engine. One of our tracked machines functions as a type 7 engine if we need to mop up or to protect some improvement within or near a burn. We use a lot of aerial ignition when burning wetlands. We use both ping-pong balls and helitorches. Often the helitorch is more effective in wetland because the jellied gasoline sticks to the vegetation unlike the ping-pong ball, which can bounce off the vegetation and land in water."

How have you managed to grow public support for the District's fire management programs?

"We tell the story about how important fire is to healthy ecosystems every chance we get through every mechanism available. We have our fire message on our website. We issue press releases during prescribed fire awareness week and in advance of burns that may get public attention. We announce individual burns to our neighbors and through our website. We have brochures that describe the fire program. We attend Firewise meetings in neighboring communities. We meet with neighboring homeowners associations, and we put up signs on our boundary explaining to our neighbors that 'This property is managed with prescribed fire in order to maintain its ecology and to reduce the risk of wildfire.' One big advantage we have in Florida is that when we burn, the area greens up and often sprouts wildflowers within weeks of the burn. Once people see



Steve R. "Torch" Miller
Chief, Bureau of Land Management,
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Steve directs a multiple-use land management program covering over 400,000 acres of public lands in eastern Florida. As part of that program, Steve leads a highly successful fire management program that uses prescribed fire on over 30,000 acres per year. As many of the district's lands are annually or seasonally inundated, Steve has many years of experience working with fire in wetlands. He has extensive prescribed fire and fire suppression experience and is qualified as a Type I Burn Boss and a Type II Operations Section Chief.



how pretty the area is post burn, it is not uncommon for our neighbors to encourage us to come back to burn again.”

What significant changes do you expect to see in fire and land management in the South in the next 25 years?

“The fire environment is more complex than it used to be. Because of the expansion of the urban interface, the consequences of errors have grown exponentially. There are decision-making tools that are available to help fire managers, but they are a two edged sword. If there is a tool available, but if the fire manager is unaware of the tool, or how to use it, they can be criticized during an after action review for not having used the tool. This means fire managers need to keep up with current technology. The trend of increased complexity over the past 25 years will continue through the next 25 years, possibly at an even greater rate.”

What advice do you have for early professionals that can help them prepare for and shape the next 25 years of fire and land management in the South?

“Find a mentor; better yet find three, who exemplify the best talent in the specific aspect of your career in which you desire to excel. I say three because if you select the right mentor for one aspect of your career, they may not exemplify strength in another aspect.”

“Accept challenges, I have encountered too many people who got to a certain point in their career and then began to coast through the rest. We grow and get better by accepting new and more challenging opportunities, not by coasting.”

What are some of the resources that you use to find fire science information to incorporate into your management program?

“Obviously the internet, but for me the network of researchers, practitioners and managers are every bit as important. Having opportunities to network with my peers helps me learn about new tools, new challenges and solutions others have tried when confronted with problems.”

What is one example of fire science being successfully applied to the ground?

“BEHAVE is still my favorite. As someone who manages wetland systems, fuel model three (I am still an old school of the original 13 models) does a great job. The improvements to the fire weather forecast tools we get from the NWS, especially the weather activity planner, have helped make sure we do not miss burning opportunities. Smoke management models have been a big help too.”

What are some of the management and ecological questions that you would like to see addressed by fire science researchers?

“Ecologists and researchers report that marsh systems are supported by a ‘three legged milking stool’ with the legs being the right balance of hydrology, nutrients and fire. They have been saying that since the 1980’s, but they haven’t quantified what the right balance is. Since the 1980’s we have had 60,000 acres of the marsh we manage convert from marsh to shrub swamp, and eventually to swamp. I want to know what the right balance is, so we can stem this conversion, and eventually undo some of the succession that has already occurred.”

Finally, what is one ‘must-hear’ message that you would like to share with fire managers in the South?

“Everybody can find a reason not to burn if they look hard enough, and there are obviously conditions when we should not burn. However, the Academy Award in land management will not go to the burner who finds only reasons not to burn. It will go to the manager who wakes up everyday and asks himself or herself ‘what should I burn today?’ and then works through a reasonable checklist to identify whether there is a parcel somewhere that can be burned today. Also, to those of us who have worked their way up the organizational chart to be administrators, remember the Academy Award in land management is not likely to go to the one who finished one more report. It is more likely to go to the land manager who got more done in the field. As administrators, we need to spend enough days in the field, working with our field managers, to know what life is really like today, rather than relying on our imperfect memories of what it was like when we worked in the field. If we do not we may be unable to recognize when the ‘emperor has no clothes.’”

Special thanks to Steve Miller for sharing his perspectives and for being part of our first 10 Minutes interview.

Do you have something to say? The [Spotlight on Fire in Wetlands](#) thread on the SFE forum is the perfect place to build on Steve’s responses and share your comments, questions, and ideas with the southern fire community.

For more information on the Southern Fire Exchange, visit www.southernfireexchange.org.