

FlameWork 2019

BY GREG SEAMON

There are times when your reputation and professional work experience combines with who you know to make an impact. That was certainly my case as Tall Timbers' Fire Training Specialist. Having worked with prescribed fire practitioners from around the globe through my position stationed at the Prescribed Fire Training Center (PFTC), I was invited to participate in the third FlameWork workshop, an international prescribed fire seminar held May 6-10, 2019 in Mafra, Portugal.



The first day's attendees were focused on numerous presentations concerning prescribed fire from around the world.

The first two FlameWork seminars had been open to all interested and focused on Portuguese attendees. This year's workshop included invitations to international attendees to look at a more global view of prescribed fire. The objectives for the meeting were to create a tactical and operational exercise enabling professionals to gain/exchange experience, learn about various fire-related subjects and experience their capabilities outside their normal work environments. By bringing together expert prescribed fire practitioners from around the world it would provide opportunities for knowledge exchange and strengthening partnerships, building the spirit of friendship and increasing cohesion within the fire community.

Throughout the entirety of the workshop, it became apparent that all participants are dealing with similar challenges and working toward using good fire on the lands they manage. The first day of the session was an open attendance seminar, and there were over 150 people that heard talks by numerous fire experts. I spoke on the current state of prescribed fire in the United States, using a lot of information from the recently published 2018 National Prescribed Fire

Use Survey Report prepared by the Coalition of Prescribed Fire Councils, Inc.

Alex Held, Senior Expert with the European Forest Institute, spoke on fire use in Germany; 2018 was a bad year for wildfires and some of the lessons he brought forth were interesting. Their issue is not just around climate change. The fire services need equipment and training, specifically in strategy and tactics to deal with wildland fires. Almost all fire service agencies are trained for structural fires and work all wildfires in bunker gear (equipment designed for working in buildings). They have an historical challenge of unexploded ordinance (UXO), particularly in the eastern portion of the country. Agriculture and forestry have distinctly different ideas of how to deal with fuels management. They also have not incorporated defensible space in any civic planning. The use of fire is seen only in terms of prevention and as a tool for suppression. Additionally, land burning is illegal since 1975, without receiving an exemption from civil protection authorities and the nature conservation commission.

Currently, burning season runs October to the end of March/beginning of April, but due to the short days and

the moisture levels, almost all burning happens in March and April. He stated that the reality is, “Use of fire is increasing, but in general not much burning is accomplished in Germany.” He is however involved in creating a national wildfire strategy that will include prescribed fire, which will have an impact not just in Germany but throughout Europe, through his work on the European Forest Risk Facility.

Rob Gazzard, Advisor on Contingency Planning and Wildfire in the Forestry Commission England, spoke on vegetation burning in England, specifically heather (*Calluna*) landscapes. England has about 60,000 ha (148,200 acres). By regulation and code there is a defined burning season, October 1 through April 15, unless the land is under license from Natural England, a non-departmental public body serving as the government’s advisor for the natural environment. Burning must be completed between sunrise and sunset, and single burns must not exceed 10 ha (24.7 acres). Additional rules include that no burn must expose a single area of more than 0.5 ha (1.2 acres), burns must not have soil smoldering longer than 48 hours, and if the slope is over 45 degrees, the burn cannot be larger than 0.5 ha.

One example of the heath burning occurred in 2018-19 in the New Forest in Hampshire, England. A total of 300 ha on 110 sites were planned, and in 14 days of burning between January and the end of March, 126.4 ha (312 acres) were burned on 45 sites, averaging 9 ha (22 acres)/day. This is a nice beginning but the concern is what climate change may be bringing for wildfire buildup and lack of fuels management.

An extremely interesting presentation was given by Tessa Oliver, who works for Landworks, a non-profit company in South Africa. With funding from the Global Environmental Facility Special Climate Change Fund, she conducted a 6-year project to implement integrated fire management programs in the Fynbos biome. The concerns are an increase in fuel loads from fire exclusion and alien plant species, the institutional coordination and cooperation including the uncertainties of roles and responsibilities, limited fire risk planning in the WUI, and the low levels of fire awareness by the public, decision-makers and landowners. The outcomes of the project were to implement innovative risk reduction.

The Fynbos region is described as an area in southern South Africa the size of Portugal (about 85,000 km²). It is known for its rich plant diversity, over 9,000 species. The

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vegetation is flammable and requires occasional fires to regenerate. Some of the questions being asked included: what are the objectives, where are the burns most needed, and what frequency should they be applied? One of Tessa’s biggest take-home points was the statement that, “We need to change behavior with climate change. Things can’t continue as they have been. There isn’t time.”

Dr. Jose Gaspar, who attended PFTC in March 2015, spoke about the use of prescribed fire in Portugal. Currently 80% of the land that burns in the country is from wildfires. The agencies responsible for prescribed fire have 30,000 ha (74,000 acres) planned for the next 5 years. Some of the obstacles faced include getting agreements with owners and the cost of burning. The cost is estimated at 120 euros/ha (\$63/acre). This entails a written burn plan and implementation by a credentialed technician. There are only 154 credentialed technicians in Portugal. This creates a major bottleneck for achieving more acres.

Dr. Paulo Fernandes, Associate Professor of Forest Science and Landscape Architecture at the University of Trás-os-Montes and Alto Douro, spoke on the effectiveness of prescribed burning in decreasing wildfire area. His summary was that the amount and locations of prescribed burning are not enough to impact wildfire area burned. At least 5% of the burnable landscape needs to be prescribed burned annually and currently less than 1% is being burned.

Other speakers included another professor from a Portuguese university, two speakers from Portuguese agencies, and another speaker from the US.



A German film crew accompanied the participants in the field for three days interviewing and filming for a documentary on prescribed fire.

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A view of the second burn on a steep slope from a lookout atop an adjacent ridge.

The rest of the week was dedicated to learning from each other. The group was reduced to 35 people and we spent time in the field or in shared discussions with some short presentations. Though the weather turned wet with rain every day, it still seemed like being back in the Southeast. We even got in two burns on Tuesday afternoon after it rained that morning.

The first took place in a maritime pine plantation (*Pinus pinaster*). The land was part of a Buddhist monastery and though it was familiar territory- burning in a pine plantation, the objective was certainly different. The monks weren't concerned with the pines but didn't want any scorch or charring on any of the oaks. Cork oak (*Quercus suber*) is the national tree of Portugal and highly prized for its bark.

Additionally, we had a German film crew with us, making a documentary on prescribed burning in Europe to be shown on the ZDF program "Plan B." With the suppressed fire activity due to the morning rain, we broke into three groups and began a haphazard burning of three small areas of the plantation. All three groups chose different ignition techniques and patterns to accomplish their burns. The discussions and directions were interesting to listen to, with Portuguese, Spanish and English being heard at once with a German description of what was going on throughout.

When the burns were completed one crew stayed to monitor and mop-up the burn while the other two groups moved to a second site, a steep slope with shrub fuels dominated by common gorse (*Ulex europaeus*), kermes oak (*Quercus coccifera*), and elmleaf blackberry (*Rubus ulmifolius*). After the morning rain, I didn't believe the shrub fuels would burn, but was surprised to see the test fire take with



One of the ignition teams with Carlos Santos, Tessa Oliver, Greg Seamon and Veronica Catarino posed for a photo during operations.

10-20 foot flamelengths. The work done by the participants to safely implement this burn was impressive. Though the unit wasn't large, it was extremely steep and the west and south line were constructed by mowing, but there was ample dead vegetation to carry a fire outside the unit. The line was raked/dug as the fire was being lit and a simple hoselay was run from the top of the hill halfway down the slope until the fire had burned away from the line. Then the engine was repositioned to the bottom of the hill and the hoselay reset going up the hill. The burn was completed safely and accomplished the objectives.

On Wednesday we traveled back to the Buddhist monastery to view the results of the fire. After lunch we split into two groups to reconnoiter potential burn sites for Thursday. I went with a group that looked at burning a site on a local Army base that was previously maintained for the King and Queen of Portugal. The drive around the unit was an adventure with steep slopes, overhanging vegetation and an extremely muddy road down from the top. The crew had a great discussion about how to manage a burn, but in the end it proved too wet to accomplish anything.

Thursday dawned with more rain and the attendees gathered for some additional presentations on various topics. There were three talks of great relevance. One was a talk by Dr. Michael Herrmann, from Firewatch in Germany, on a wildfire that occurred in his area; 95% of the fires, structural and wild, are handled by volunteers. This wildfire burned in April 2019, and cost 42,000 euros (\$46,620) to suppress, used 1,000 firefighters, all volunteers outfitted in structural gear, had 3 helicopters, lasted 7 days and burned 13 ha (32 acres).



Planning a burn with representatives from Portugal, Spain, England, Ireland and the United States.

The conclusion in the after action review, by those in charge, was that they need more helicopters. Michael was not in favor of this conclusion, and hopes that prescribed fire will be considered as a viable option in the future.

Ciaran Nugent, who works for the Department of Agriculture in Ireland, presented on the state of fire in Ireland. Whereas fire used to not be seen as a concern in the past, it is not unusual to have 1,000 ha (2,471 acres) wildfires today. All wildfires have been human caused, and typically have a west wind with 70-80% relative humidity. Ciaran stated that there is a need for better fire management, to use what they've got and adapt. Of the five areas that encompass his perspective of fire management, one will have to be prescribed fire. "We need to learn to live with fire management," said Ciaran.

The third talk that I found extremely interesting was given by Veronica Catarino. She runs the National Fire-fighter Training School in Portugal. This consists of basic fire courses on prescribed fire, suppression, tools and fire behavior to advanced courses expanding on those previously listed subjects. They have 883 students a year from agencies like Civil Protection, the National Republican Guard's Protection and Relief Intervention Group (GIPS), and volunteer brigades running through 57 courses a year with



Looking at a site that was burned in 2018. Notice the difference between the left side of the trail the people are walking up and the right side that was not burned.

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Photo from a drone of all the attendees with flags representing countries and states in attendance at FlameWork 2019.

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only 5 full-time instructors. In addition they offer “train the trainer” courses that allow for basic courses to be taught locally. They must do all field work on lands managed by other entities. It is an ambitious program by any standard.

On Thursday afternoon we traveled to a site that had been burned the previous year, during FlameWork 2018, and looked at the regrowth compared to the adjacent unburned area. The fire effects were dramatic. The fuels that hadn’t been burned were almost impassable with thick shrubs, however the site that had been burned was easily walkable and looked as though it had enough fuel that it could burn again under drier conditions.

In summary the week was a wonderful exchange of ideas and shared experiences. In reviewing the state of prescribed fire in Europe and South Africa, we all have similar constraints and objectives. Portugal and Spain have been using prescribed fire for some time and have great experiences to share. South Africa has a long tradition of fire use, and is finding ways to implement fire while trying to educate the populace about its benefits. Germany and the nations in the British Isles have some history of prescribed fire, but are dealing with changing climates that have seen their incidence of wildfires increase in numbers and severity. Prescribed fire is seen as an alternative to fuels management, but has a way to go to become an accepted practice and have the impact that’s needed.

I learned so much while in Portugal, and hopefully added my experience to benefit others.

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