



October 12, 2018

Volume 8 Issue 3

Quantifying Canopy Mortality in Prescribed Fire Units.

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The George Washington and Jefferson National Forests have a long history of using prescribed fire in the oak and oak-pine forests of western Virginia. The most recent forest plan encourages the use of fire to create early successional and open canopy forest habitat across landscapes and sets landscape-scale goals for these habitat types. Implied in these goals is that overstory canopy trees will be killed by fire. The direct effects of prescribed fires on the two national forests have been monitored by photo points and on-the-ground plot-level measurements for 10 years. However, there was still a need to determine how much early successional and open canopy forest was being created at the landscape scale.

Methods to determine post-fire canopy mortality through remote sensing are available and used primarily in the Western US. These reflectance-based methods are not clearly defined for eastern hardwood forests. After discussing the need for the information for the two national forests and the public, Jean Lorber, Conservation Scientist with The Nature Conservancy in Virginia, took on the challenge of directly mapping canopy gaps created by prescribed fire. Using repeated aerial imagery and known burn unit boundaries, Jean painstakingly digitized and characterized (early successional or open forest) canopy gaps for 75 burn units covering over 85,000 acres.

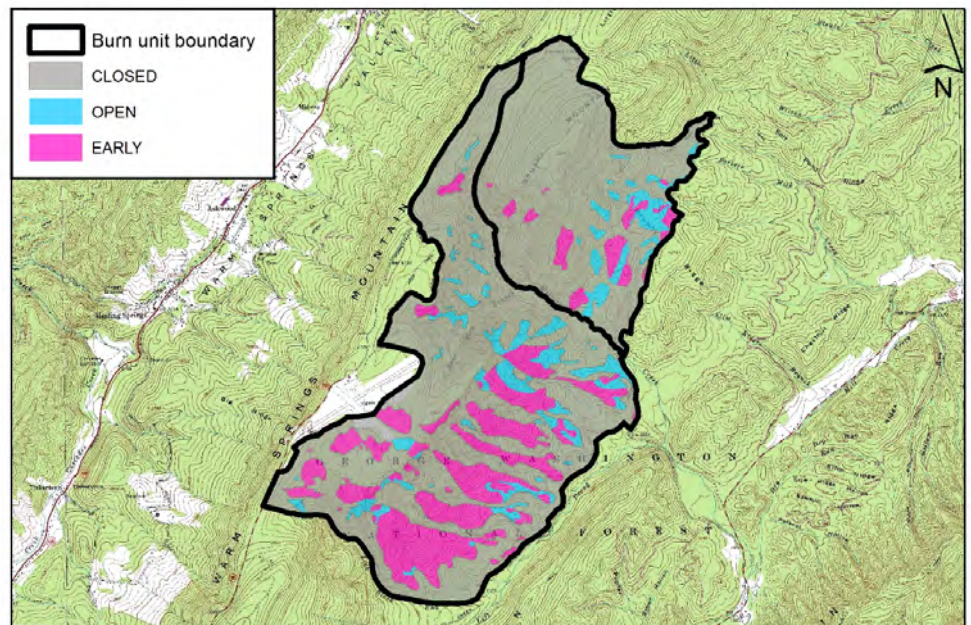
Jean's findings are documented in a recent publication from the Northern Research Station, USDA Forest Service (<https://doi.org/10.2737/NRS-RP-31>). The work had two main goals; 1) to determine if forest plan objectives for the two canopy gaps types were being met across the landscape and 2) to explore possible drivers for the mortality patterns observed within the burn units.

Key Findings

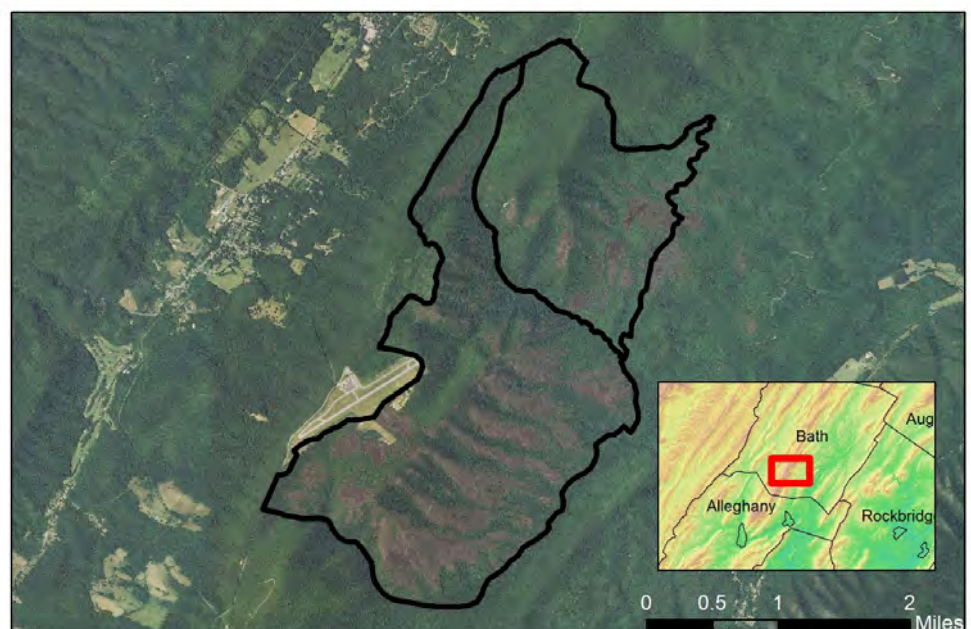
- Mean percentage of burn unit area in early successional canopy gaps was 5% after one burn, 9% after two, 17% after three, and 14% after 4 burns
- Mean percentage of burn unit area in open forest canopy gaps was 5% after one burn, 7% after two, 9% after three, and 8% after 4 burns
- Early successional habitat goal met (goal is 12% of landscape)
- Harder to achieve open forest conditions with fire alone (goal is 67% of landscape)
- Even repeated burning did not create more open-canopy forest conditions
- Canopy gaps were associated with drier forest types
- Canopy gaps were associated with higher heat load index sites, up to a point

Take-Home

- May need to burn differently to get open forest conditions or incorporate non-commercial timber management
- Large variability in gaps created in any one burn unit
- Are the forest plan goals too precise?



Example of burn unit canopy assessment showing the three mapped canopy conditions.



COMING THIS FALL!

**Prescribed Fire Training Exchange
OCT 29–NOV 9, 2018**

You may see smoke in the air this fall in the mountains of South Carolina and portions of North Carolina. Not from wildfires, but rather from prescribed burning, also called controlled burning.

A 2-week Prescribed Fire Training Exchange, called, TREX, will be held for Wildland Fire Professionals from around the country to train, share knowledge, and apply good fire to our forests. The purpose is to train fire professionals and build capacity in using controlled burning. This will reduce fuels, which in turn lessens negative impacts of future wildfires while also enhancing wildlife habitat. **TREX will be based at Table Rock Wesleyan Camp in Pickens, SC.** Controlled burns will take place on conservation lands within a 1.5-hour radius of the Wesleyan Camp.

The Nature Conservancy is sponsoring this event in conjunction with multiple partner agencies. Please stay tuned for future announcements about this exciting training event. And for more information please visit <https://apfire.wixsite.com/sbtrrex2018>.

Southern BLUE RIDGE TREX 2018

Partners: The Nature Conservancy, UAS, FLNS, Fire Ecology, N.C., Conservation, General Water, and others.

We are gearing up for our first Southern Blue Ridge TREX in partnership with The Nature Conservancy of SC. It kicks off on October 29th and runs through November 9th. The response to this event has been tremendous with 98 applicants. Unfortunately, we were not able to accommodate everyone. We currently have 70 people participating in and leading the event from all across the United States and 3 foreign countries. We are keeping our fingers crossed for good burning weather! We currently have 42 burn units of varying sizes and complexities across the blue ridge escarpment in SC and NC.

General TREX Information

<https://www.conservationgateway.org/ConservationPractices/FireLandscapes/HabitatProtectionandRestoration/Training/TrainingExchanges/Pages/fire-training-exchanges.aspx>

Southern Blue Ridge TREX Information

<https://apfire.wixsite.com/sbtrrex2018>

NBC Nightly News – 15 Minutes of Fame (OK, just a minute or so)



Don't miss our clip below that was featured on NBC Nightly News this past Sunday.

<https://www.nbcnews.com/nightly-news/video/next-generation-of-firefighters-train-to-take-on-growing-threat-of-wildfires-1338890819854?v=raila&>

SAVE THE DATE!!!! SAVE THE DATE!!!! SAVE THE DATE!!!!

We are pleased to announce that the date and location for the **6th Fire in Eastern Oak Forests Conference** has been finalized!!

This conference is being organized by the **Oak Woodlands & Forests Fire Consortium** and the **Consortium of Appalachian Fire Managers and Scientists**, in partnership with the conference host, the **Pennsylvania Prescribed Fire Council**.

Dates: July 23 - 25, 2019

Location: State College, Pennsylvania

More information coming soon, but mark your calendar!!



Fire in Eastern Oak Forest

July 23-25, 2019

**The Penn Stater Hotel and Conference Center
State College, Pennsylvania**



Thanks to everyone that joined us for the Bats and Fire Workshop. It was a great success with 70 attendees for a day of bats and fire research talks and a half-day field trip to Mammoth Cave, National Park.



Congratulations to Tom!

The Association for Fire Ecology (AFE) is pleased to announce Dr. Thomas Waldrop has been awarded the 2018 Herbert Stoddard Lifetime Achievement Award for his significant contribution to fire ecology and management in the eastern United States.

https://fireecology.org/resources/Documents/2018_Stoddard.pdf

The Consortium of Appalachian Fire Managers & Scientists presents:

Intro to FireWorks

Join us for a webinar presentation and discussion on the FireWorks educational program (www.frames.gov/fireworks/). FireWorks provides students with interactive, hands-on materials to study wildland fire. It is highly interdisciplinary and students learn about properties of matter, chemical and physical processes, ecosystem fluctuations and cycles, habitat and survival, and human interactions with ecosystems. Students using FireWorks ask questions, gather information, analyze and interpret it, and communicate their discoveries. Our presenter, Ilana Abrahamson from the Missoula Fire Science Laboratory, has worked to develop FireWorks programs across the country. Join us to learn more about this game-changing curriculum and get connected to potential partners to help develop FireWorks for the Appalachians.

Date: October 16

Time: 2PM Eastern

How to Join: There is no pre-registration.

To join the webinar, go to <https://connect.clemson.edu/fireworks/> at 2pm on October 16th.

Communicate With Us!

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Find us on twitter @APfirescience or find us on Facebook by searching Consortium of Appalachian Fire Managers and Scientists.

Join CAFMS:

The consortium is for all land managers and researchers in the region who deal with any aspect of fire. To join, simply provide us with some contact information at the web site listed below.

www.appalachianfire.org

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