

NC Fire Environment Committee Meeting

November 7, 2024

Virtual via MS Teams

Action items listed in red

Welcome and Introduction

- Today's meeting is virtual due to many agency staff and resources still helping with Helene response and recovery in western NC

Review of Minutes from Spring Meeting

- Updated Fire Weather Portal and Cardinal/Scout tools from NCSCO have been useful at keeping up with recent weather/dryness
- PM2.5 updates and Georgia tabletop informed an NC tabletop in late October
- Minutes were reviewed with no corrections; Thomas Crate moves to approve and Carmella Stirrat seconds

Seasonal Climate Update (Corey Davis, State Climate Office)

- Our Recent Weather
 - Consistent warmth this year, alternating from wet to dry almost every month
 - Very dry in the short term, with rainfall deficits of 2 to 5 inches in the past 30 days
- Hurricane Season + Global Patterns
 - Forecast was for above-average Atlantic activity due to warm water and potentially developing La Niña
 - We have reached the expected range of named storms (17) and hurricanes (11) thanks to a surge of activity in September and October
 - However, La Niña has not emerged as aggressively as expected, and it may not even through the coming winter
- Where We're Going
 - A frontal system with remnant moisture from TS Rafael will bring rain on Sunday
 - Beyond that, expected to be warm through mid-month
 - The 3 to 4-week (end-of-month) outlook is warm and dry, similar to a La Niña setup, and consistent with NOAA's winter outlook
 - Cool neutral to weak La Niña winters still tend to be warm and dry, but with more variability; 14 of 18 were drier than normal, but 13 had at least one wet month
 - Scenarios for this winter season:
 - A wintertime reset (as in 1964-65) when we near-normal precipitation and no lingering drought into the spring
 - Deepening dryness (as in 1980-81) when the winter stayed dry, including our driest January on record and 5th-driest winter on record
 - Damage limitation (as in 2016-17) where January had decent rainfall, and while the winter was drier than normal, rain in the spring ultimately ended the ongoing drought

- Note: winter outlook blog post will be released on Wednesday, November 13 at climate.ncsu.edu/climateblog

NCSCO/Fire Weather Portal Updates (Corey Davis, State Climate Office)

- Our newest ECONet station was installed on August 1 in Morganton at the NC School of Science and Math
- During Helene, 13 ECONet stations lost communication at some point but most came back online within 72 hours; only one (UNCA) lost any significant amount of data
 - Notable gusts of 106 mph at Mount Mitchell, 87 mph at Frying Pan Mountain, and 73 mph at Sassafras Mountain
- Regional rollout of the updated FWIP began this summer with 3 events:
 - Introduction for fire chiefs at Southern Group of State Foresters Meeting in June
 - Background for a broader audience on SERCC/NIDIS September webinar
 - Deeper dive for southern fire managers with USFS/SERCH on September 30
- New updates now available in the Portal include:
 - Fire Danger Rating Areas across the Southeast region
 - Updated gridded KBDI product
 - NASA SPoRT-LIS data (including soil moisture and greenness)
- Items still in development include:
 - Meteograms for gridded datasets
 - Calculated vapor pressure deficit
 - Satellite-detected fires and smoke plumes
 - Air quality monitoring data and forecasts (to aid with prescribed burn planning)
- Supplemental tools (e.g., weekly outlook) will also get a similar new look plus updated breakpoints as part of the 2025 FDOP updates
- What other datasets, features, or supplemental tools would be useful?
 - **Add the portable RAWS stations to the new Portal**
 - What else would help with prescribed burn planning?
 - John Cook mentioned the [Prescribed Burn Planner](#) app from SGSF
 - Would like to see the Severe Fire Danger Forecast, which is based on ERC and BI percentiles for a given day
 - **David Greathouse will share details with Corey and continue working with Matt Jolly to get more information or incorporation into FireFamilyPlus**

NWS Updates for 2024-25 (Nick Luchetti, NWS Raleigh)

- In 2025, NWS fire weather forecasts will no longer include the Haines Index or LAL
 - Previous feedback from FEC suggests Haines is not very useful in the Southeast
 - Existing stability-related products in the FWF are ADI, LVORI, and Pasquill stability class
 - May be able to add the Turner Stability Index, if it's needed?
 - It may already be available from the spot forecast output
 - Would low-level lapse rates + low-level moisture be useful as well?
 - Would need some more education about those if they're added
 - Consensus is that the current data in the FWFs is sufficient

- LAL will be replaced with Probability of Thunder (PoT) as determined from an ensemble of models to predict the probability of lightning (as a percentage)
 - PoT is already used by NWS for forecast guidance
 - Recommend incorporating some sort of adjective description in the remarks (e.g., what does a 40% PoT correspond to)
- Could lightning density/frequency also be incorporated?
 - It's available from some models, but generally only for 0-24 hours, and those aren't in AWIPS and can't be brought into the FWF
 - This data is available on some other sites such as the [College of DuPage NEXLAB](#) via the HRRR model and Convection menu
- Corey will look at adding the 1-hour thunderstorm probability and thunderstorm coverage from the National Blend of Models to the Fire Weather Portal
- Jamie will reach out to Nick and Corey about the RH recovery data/calculation
- New Spot Forecast Request tool has been in effect for several months; any feedback?
 - It took some time to get used to but is easy to use after that

DAQ Updates (Sara Kreuser, NC DAQ)

- Reminder: this spring, EPA updated the new PM2.5 NAAQS, which lowered the primary standard from 12.0 $\mu\text{g}/\text{m}^3$ to 9.0 $\mu\text{g}/\text{m}^3$, and within 2 years, all of the country must be designated as either meeting (attainment) or not meeting (nonattainment) the standard
 - Attainment status is based on Design Values using 3 consecutive years of data
 - The daily Design Value uses the 3-year average of the 98th percentile of daily concentrations
 - The annual Design Value is the 3-year average of annual concentrations
 - A daily or annual concentration above either standard is an exceedance, while a Design Value above either standard is a violation
 - We can have exceedances without violating a standard
 - Two monitors in NC exceeded the annual NAAQS for 2021-2023: Remount in Mecklenburg County and Lexington in Davidson County
- Exceptional Events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable
 - States can submit and EPA can review Exceptional Events to exclude certain dates from counting toward the standard
 - NC DAQ has drafted an Exceptional Events Demonstration for the June 2023 Canadian wildfire event
 - Once it's updated, it will be posted for a 30-day public comment period in November or December, then comments will be addressed and it will be submitted to EPA, who will review it, post it for another 30-day public comment period, and by February 2026 reflected in final area designations
 - Other states such as Georgia may need to submit Exceptional Events demonstrations for many prescribed burn days as well

- Reminder: NC DAQ issues daily forecasts for ozone (from March through October) and PM2.5 (year-round); access them via the [Air Quality Portal](#) and on the [Ambient Information Reporter](#) tool
- Air Emissions Reporting Rule (AERR) was proposed in August 2023 requiring more air toxics and hazardous emission reporting and a requirement for states to submit data from prescribed fires each year, but it is still under review by the Office of Management and Budget

Other PM2.5/Smoke Modeling/Air Quality Updates (Jamie Dunbar)

- 2023 SMP revisions
 - Adjust BlueSky Playground certification to require a minimum of 3 burns instead of 1, and allow current burns only instead of previously completed burns
 - Components to submit from ADM runs
 - For BlueSky Playground, submit completed KMZ, PDF report, and hyperlink with final run ID (should be valid for at least 12 months)
 - Could we use SharePoint to store and organize files from ADM runs? These would help if we ever need to submit an Exceptional Events demonstration for prescribed burn(s)
 - NC State Parks has their own fire management database for past burns
 - Keith Money sends a copy to the burn boss and the ops room, and the ops room should keep either a digital or a print copy
 - Region 1 does not have a centralized structure for tracking files, but burn bosses should be saving their own
 - Burn plan refresh
 - New example plan has been created and could be used as a guide
 - On-site weather readings including general location (in-stand, open, slope, position, etc.) and calculated Fine Dead Fuel Moisture (Fosberg)
 - Appendix includes fuel loading estimation
 - Will this be taught as part of the certified burner course? Probably so since it references the SMP so much
 - Some components could be further adjusted after more time using BlueSky runs
 - **Jamie will share with FEC and give time for review**
- Small group ADM trainer guide has been drafted
 - **Jamie will share, and it can be adjusted based on takeaways from these small groups as they go on**
 - Training sessions are open to partners
 - Keith Money: a session was canceled in early October due to the hurricane, so it will be rescheduled for later this year or early next year
 - Eventually will include more on PB-Piedmont and low-cost air quality sensors
 - What about using the ESRI Burn Dashboard similar to NCWRC Dashboard? NCFs will likely stick with fiResponse to keep a common operating platform
- VSMOKE Web

- Dan Chan has adjusted the color ramp to correspond to the daily PM2.5 concentration breakpoints
- NC Forest Service version is sitting with ITS
- PM2.5 tabletop on October 25 in Raleigh
 - Focused on PM2.5 with prescribed fire and Exceptional Events, with many state and regional partners present
 - Action items from that meeting include:
 - Notification between NCFCS and NC DAQ about questionable air quality days (i.e., if NC DAQ notices that certain days will be bad for burning)
 - SMP getting certified: it can remain voluntary but it must cover certain areas like basic smoke management, and it can be submitted to EPA
 - That helps with Exceptional Events demos for prescribed fire
 - I&E: letting NC DAQ know when larger burns are planned
- The SERPPAS Southern Regional Wildland Fire Smoke Workshop is coming up on Nov. 13-14 in Raleigh
- Smoke Management Database edits
 - Includes burn points from November 1, 2021 through August 15, 2024, both from NCFCS agency burns and all burns statewide (including USFS-provided burns)
 - Agency burns since 2014 show differences annually, by region, and by reason code (hazard reduction is the most common reason)
 - NCFCS still can't edit burns in fiResponse after they've been closed out
 - Carmella sent some fixes for TNC burns; Jamie will edit when he's able
 - Typically 10-15 burns on a busy day
 - Idea to create a template that burners could fill out as a standard set of information that's needed about burns (i.e., for Exceptional Events demonstrations or public information requests)
 - Include lat/lon, burning type (open or understory), fuel type, burn reason, soil type (mineral or organic), burn boss (name and certified burner number), agency conducting burn, estimated tons and total acres, burning category, smoke model used, etc.
 - Some info (like actual start time, actual tons per acre) could later be updated in fiResponse to avoid showing as zeroes
 - Feedback suggests this template would be useful especially for young burn bosses
 - fiResponse adjustments related to the Smoke Management Database remain pending

NFDRSv4 and RAWS Updates (Jamie Dunbar)

- Work on FDOP revision
 - Jamie will provide FFP databases in the shared Teams space
 - Will include 2023 data in the updated analysis
 - Jamie has noticed some glitches when manipulating GSI in FFP
- FEMS/WIMS status

- Recently had an issue in WIMS with only updating KBDI on the top-priority fuel model; that has been fixed
- Growing Season Index is pushing stations with fuel model X to dormancy at this time of year based on daylight length, vapor pressure deficit, and minimum temperatures
- RAWS annual maintenance contract status
 - Had used AEM and FTS for maintenance over the past year
 - Recently found appropriated funding to go back to the BLM RAWS depot (about \$900 per station for annual maintenance)
 - Single wind speed and direction sensors are coming up to end of life, and will be replaced by dual RM Young sensors
 - Sandy Run station will be moved to a tri-leg with RM Young sensor (delivery date estimated at December 1)
- RAWS and ECONet station locations
 - NC State Parks: no funding for new stations at the moment post-Helene
 - State Climate Office will be installing a new ECONet in Morehead City soon, and probably moving the Durham station away from the Water Reclamation Facility
 - A full fixed RAWS station (tri-leg tower) runs around \$34,000; portable RAWS are about \$29,000 with no enterprise cost adjustment; organic soil stations (as of last year) were about \$17,000 last year
- Live fuel moisture sampling
 - Chris Sharpton from Region 3 has started sampling at Gill State Forest to take monthly samples + weekly or bi-weekly in the spring
 - Also continuing to sample at DuPont State Recreational Forest
 - Caleb Jones: Pocosin Lakes plans to resume sampling after a hiatus last season
 - Chris Corrigan: did sampling during Flint Gap fire and can continue as needed
 - Jamie Dunbar: will resume sampling in pine plantations on Weyerhaeuser property
 - Drying ovens are available in Beaufort County
 - Data from Gill and DuPont is available in FEMS' Field Sample module
 - Developers are working on other options for adding data, such as batch loading from a spreadsheet

Post-Helene Fuels Discussion (Jamie Dunbar)

- Southern Fire Exchange produced a [Post-Hurricane Fuels and Suppression Considerations Bulletin](#)
- Mike Cheek from NCFS shared a bulletin with considerations for fire control operations in storm-damaged areas
- Previous research looked at coastal tree damage from hurricanes (loblolly and longleaf), but not as much about mountain hardwood forests
 - David Quisenberry shared some information about past hurricanes from the Gulf region
- NDVI helps highlight areas with many down and dead trees
- FIRMS map will be getting a masking capability to remove incorrectly flagged heat detections (such as power plants)

- Through mid-March 2025, burning permits are not required in 21 designated mountain counties
- Chris Sharpton: Yancey and Mitchell counties sustained incredible timber damage, but not much fire occurrence up there
- Waiting to see how invasives respond to open growing conditions
- Significant wildland fire potential outlook showing higher potential for the Mountains and Piedmont PSAs in November, then in the Mountains for December and February
- Alabama and southern Mississippi is dealing with fire issues amid the current drought; new [Fuels and Fire Behavior Advisory](#) covers those areas
- [SACC Daily Outlook](#) document is also a useful resource

Storage + Training Needs and Opportunities (All)

- Document/Data Storage
 - SharePoint site is set up for the FEC (let Jamie know if you can't access it)
- Training Needs and Opportunities
 - Most training was canceled due to the hurricane, including the certified burner class in early October
 - No updates about when it might be rescheduled
 - Could have time to finalize the burn plan template before it's held again
 - Rx410 class is still on for February 3-7 at Bent Creek Educational Forest
 - 30 students in the class from many different agencies/organizations
 - For many, is the final course needed to complete RXB2
 - S-212 is a need for burn crew members at TNC; Carmella will reach out to Ember Alliance and Conservation Corps in NC to tap into any of their offerings

Agency and Program Updates (All)

- NC Forest Service Central Office Fire Staff (Jamie Dunbar)
 - Randy's position is still vacant so down one ops officer and everyone else is cycling through weekly duty more often
- Region 1 (Jonathon Pearson and James Caddy)
 - Most of the region is going on 45 days without rain with elevated KBDIs
 - Most personnel have been on dispatches to Region 3
 - Coastal Fire Academy and other schools will likely be pushed to next October
 - Kevin Harvell is acting regional forester
 - Still lacking a radio engineer in D8; once that position is filled, Jamie will help train and work on those stations
 - D7 has 3 vacancies plus another soon
 - Currently have a ground fire in northern Pasquotank County; only 4 acres but burned a couple feet deep in 48 hours; it's about 95% contained
- Region 2 (Gary McClendon and Keith Money)
 - In D3, dry spell has given time for site prep burning especially in Anson/Montgomery/Richmond counties, and BlueSky has helped a lot
 - Parts of the Piedmont are close to 40 days without significant rain, but humidities have been higher and no killing frost yet, which has helped keep fires down

- In the past month, have had 138 fires for 733 acres in Region 2, including a 580-acre fire in Scotland County
- Have 20 to 25 vacancies across the region, and some are getting filled as people are promoted
- Also have had staff aiding with hurricane recovery in the Mountains
- Region 3 (David Greathouse, Chris Sharpton, Robb Davis)
 - BRIDGE is fully staffed and have 8 crews available for fire, with 2 committed for Helene-related response
 - 23 vacancies in the region, including Assistant Regional Forester, Water Quality Forester, and Western Lands Forester
 - Some 1 to 5-acre fires recently, with ongoing mop-up in Graham County
 - Firefighting strategy and tactics have changed due to Helene, especially in heavily impacted areas
 - Will need bigger boxes with ridgetops and old roads less accessible
 - Will need more surveying especially in areas with fire history
 - Aviation will be a critical need as a lookout
 - Basic Strategy and Tactics training coming up on January 6-10
 - Ranger position in Caldwell County and smoke chaser in Avery County are vacant
- NC Wildlife Resources Commission (Casey Phillips)
 - About 35,000 acres of prescribed burning this year
 - Another forester and potentially an assistant forester at Holly Shelter should be hired in early 2025
 - Almost \$1M from endowment fund to refurbish prescribed burning equipment: slip-ons, tractor replacements
 - Working to update NCFS MOU by January
 - Burn crews are working with TNC
 - Conservation Corps burn crew is coming back in the northern Piedmont this year
 - MOU with TNC and State Parks will come up for renewal in December
- US Fish & Wildlife Service (Caleb Jones)
 - Equipment operator vacancies at Alligator River and Pocosin Lakes
 - Prescribed fire and fuels specialist position (GS9) should be advertised soon
 - Entry-level firefighter position (GS5) will be open soon
 - Have hired a zone FMO (John Cook) for the new East Zone including NC and SC
- NC State Parks (Thomas Crate)
 - Restructuring at the moment, with natural resource section moving into the operations section
 - 13 park closures due to Helene with significant impacts in the Mountains, including 3 long-term closures (Mount Mitchell due to Blue Ridge Parkway access issues, plus Chimney Rock and South Mountains State Park)
 - Chimney Rock and South Mountains tend to be problematic with wildfire issues, and could have access issues
 - Also issues at Gorges State Park into auger hole; any fire will be difficult to get to

- Fully staffed on fire side, split across 3 regions
- 2 burn crews, based out of Cliffs of the Neuse and Lake Norman State Park
- All fire staff have been dealing with non-stop cleanup effort so no fire operations in the past 6 weeks
- Recently purchased hauling unit for a dozer; should be delivered in a few weeks
- National Park Service (Chris Corrigan)
 - Made an offer for Wildland Fire Modules Superintendent, so should have a full crew for that module
 - Fuels tech position (GS5) will be open soon
 - Had hurricane damage at Blue Ridge, Cataloochee, and Great Smoky Mountains
 - Will continue to have limited access from Tennessee with I-40 closed
 - One light frost at Cherokee already
 - Flint Gap fire in October
 - Gearing up for fall burning where they can
- Department of Defense (Pete Steponkus)
 - Dry at Camp Lejeune at the moment, but this has been one of the quietest fire years so far (26 wildfires for about 2,100 acres)
 - Good year for prescribed burning (44 burns for 13,200 acres)
 - John Mangus retired in June so trying to fill his position
 - Took delivery of 4 new lowboys; should be in service in a few weeks
 - Must keep flame lengths under 8 feet when prescribed burning due to bats
- The Nature Conservancy (Carmella Stirrat)
 - Mountain staff paused seasonal crew hiring but will move forward with that in upcoming weeks
 - Burn boss at Sandhills field office has left TNC so Carmella will be filling in this coming season; the replacement burn boss would be a good candidate for rescheduled certified burner course
 - Have extended some crew positions to year-round conditions
 - Fire in the Pines Festival was held in October
 - 1,200 to 1,500 people in attendance
 - Survey results expected in February
 - New communications director replacing Debbie Crane, who is retiring at the end of the year; Margaret Southern (already on staff) is replacing her
- State Climate Office (Corey Davis)
 - Now at 15 full-time staff after recently hiring a new communications specialist (shared with the College of Sciences) and ECONet technician and researcher
 - New 4-year maintenance contract with NC Forest Service is in their hands and waiting on final signatures

Planning for Next Meeting (All)

- Likely in person sometime in May
 - Jamie will reach out a few months ahead of time with a Doodle poll to look for the best dates
- Plan for somewhere in the Piedmont – maybe Jordan Lake?