

# Fire Environment Committee Meeting

November 12, 2020

Virtual meeting via WebEx

## Welcome and Introductions (Cabe Speary)

## Review and Discussion of minutes from May 2020 meeting (Cabe Speary)

- New FEC member:
  - Reese Kerbow with BIA

## Climate Normals (Jimmy Taeger, NWS Raleigh)

- Climate normals are 30-year averages of temperature and precipitation
  - Use set 30-year periods; currently, from 1981 to 2010
  - The next set of normal will cover 1991 to 2020
- The World Meteorological Organization requires climate normal to be updated every 10 years to incorporate new weather stations
  - In the US, it's handled by the National Centers for Environmental Information
- Can view normals on NCEI's Map Viewer: <https://gis.ncdc.noaa.gov/maps/ncei/normal>
- Also on the local NWS office websites ([www.weather.gov](http://www.weather.gov) and click on your local office, then click the NOWData tab)
- The 1991 to 2020 data is expected to be released in summer 2021

## Seasonal Climate/Weather Review (Corey Davis, State Climate Office)

- The past few months have been mostly warm and wet across NC
- For the year to date, we're on track for one of our top-five warmest and wettest years on record
  - Our wet pattern has been partially due to troughing in the jet stream bringing fronts/weather systems across western NC, and due to remnants of tropical storms moving in from the Gulf of Mexico
- In the Pacific, the ENSO pattern is in a moderate La Nina phase (cooler-than-normal sea surface temperatures), and expected to remain there throughout the coming winter
  - Typically means drier and sometimes warmer weather in the southeast US
  - Past moderate La Nina winters include 2010-11, which saw drought expand
  - BUT the recent wet weather should prevent rapid drying or drought development this year
    - 1995-96 was also wet entering the winter and conditions by early spring were still mostly wet or near-normal
    - Also near-normal fire activity from fall 1995 through spring 1996
  - Does drier mean less rain or reduced frequency?
    - Can be both; in La Nina winters, storms can miss us entirely to the north (lower in frequency) or barely clip us (lower in amount), although depending on the exact pattern, we can still see some heavier rain/snow events

- Overall, expecting drier and possibly warmer weather this winter, but unlikely to see rapid drying or drought development

### **New Fire Weather Intelligence Portal Contract: New Products (Davis/Speary)**

- New FWIP contract went into effect in October and runs for the next 2 years
- Contract covers:
  - Ongoing maintenance and upkeep, and migration to NFDRS2016
  - New datasets will be added as they're identified
    - Currently working on finishing high-resolution fire grids calculated from the NWS National Blend of Models
  - Will begin sending quality control alerts for RAWS stations, including any parameters that fail our QC checks
  - Creating monthly Short-Range Outlook infographics focused on forestry and fire
  - As part of SCO's migration to a new website, will create a fire-focused landing page including links to the FWIP and other resources and education/training material
  - Working on research and sharing results, including an analysis of organic soil moisture data and projected future prescribed burn days
    - A new OSM monitoring station is being installed at Dare Bomb Range; another one possible at Camp Lejeune

### **Upcoming Training and Needs (Aaron Gay)**

- NWCG has convened a training committee looking to convert courses to a virtual format
  - Unknown timeline
- Individual states have started converting courses to online
  - SC is working on S-230
  - FL is working on S-300
  - NC did air operations online this summer
- NC created a training calendar for 2021 assuming a return to in-person classes
  - Plan B is moving some of those virtually
  - Expect to have this shared with NCFS and cooperators tomorrow (Nov. 13)
  - Highlights include:
    - S-290 scheduled for June 8-11
    - S-390 scheduled for June 7-11
    - Certified burner course scheduled for Feb. 22-23 (Piedmont), May 19-20 (Coastal Plain), Oct. 9-10 (Mountains) but could be converted to virtual
    - Virtual VSmoke and ADM courses scheduled, with examples centered around NC guidelines/conditions
      - 30 minutes for VSmoke in early December
      - Full ADM course early next year for 12-15 students
  - Fire management board (advisory board to NWCG) determined that RT-130 will take place as normal in-person
    - Fire shelter deployment exercise and pack test are mandatory
    - Dates will likely be released in January
    - Virtual course offered by NC State on Dec. 10?
- Changes to certified burner guidelines allow using V-Smoke Web for simple burns

- Cabe plans to record a presentation about how to use it (and upload to YouTube), let people certify that they watched it, create a sample burn plan, and take a short quiz
- Another webinar planned as an introduction to Hysplit and ADM
  - Not a replacement to the ADM certification course
  - Will include an overview of the model, how to fill out a request sheet, and have a modeler explain the process of modeling for a burn
- Upcoming webinar through SFE on December 2 covering existing fire weather products
  - Scott Kennedy will talk about the Fire Weather Dashboard (formerly the Fire Poker)
  - Corey Davis will talk about the Fire Weather Intelligence Portal
- **What about an ADM refresher course for existing modelers?**
  - **Had been recommended by the Prescribed Fire Council**
  - **Cabe will talk to Gail and gauge interest**
  - **David Greathouse previously recorded something for an intro to ADM class**

**Update: VSmoke “Work Around” for Use to Manage Smoke (Gary Curcio)**

- VSmoke-Web is back on the GA Forestry Commission website
- The BlueSky Playground previously included both VSmoke and Hysplit options, but VSmoke has been disabled there
- Should the FEC petition the AirFire group to turn VSmoke back on?
  - Would add redundancy for VSmoke Web if it’s available on another site
  - NCFS could help test
  - SE Prescribed Fire Councils are meeting next week (Nov. 19)
    - **Gary will draft a letter, see if they could all sign it, then share with Cabe/FEC to sign on and send it to AirFire**
- Could NCFS host VSmoke?
  - May be difficult especially with old code and a short-staffed IT department
- For ADM runs, it was recommended to use a higher-resolution model
  - NOAA’s Air Resources Lab has a tool to extract forecasts from higher-resolution models including the 4 km NAM
    - <https://www.ready.noaa.gov/ready2-bin/extract/extractf.pl>
    - Can ID the central point of the burn unit and pick a box ~1 degree in lat/lon in all directions around it
      - Takes about 12 minutes to download
- Other resources in development:
  - Working on a Roadway Visibility Adjective Rating
    - NWCG has a video about Smoke, Roads, & Safety
  - Western Regional Climate Center is producing Prescribed Burn-Piedmont and Superfog Assessment Model
  - Handheld soil moisture meter (for measuring duff moisture) for NC Prescribed Fire Council
    - Working with Jim Reardon and the Missoula Fire Lab – expected to be ready by January 1
  - A task group has been formed by the NCWG’s Fire Weather Subcommittee to look at national gridded mixing height

## **Regional Haze Rule Update** (Randy Strait, NC DAQ)

- NC DAQ reviews the regional haze plan every 10 years; currently working on the plan that runs through 2028
- 1999/2017 Regional Haze Rule applies to federal Class I areas (national parks, wilderness areas, and wildlife refuges)
  - Goals are to reduce visibility impairment on the 20% “most impaired days” to natural conditions by 2064, and have no worsening of visibility on the 20% “clearest” days
  - States develop State Implementation Plans (SIPs) every 10 years to address emissions that contribute to regional haze
- NC is part of the Visibility Improvement State and Tribal Association of the Southeast
  - Includes 10 states and several tribal agencies
  - There are 18 Federal Class I areas in the VISTAS region, including the Great Smoky Mountains, Shining Rock, Linville Gorge, and Swanquarter Refuge in NC
- Since 2008, the standard visual range on the most impaired days has increased by ~27 miles in the Great Smoky Mountains and ~28 miles at Swanquarter
- Ammonium sulfate remains the main source of visibility impairment
  - Stationary point sources are the primary emission sources of sulfur dioxide
    - Includes electricity generating units and industrial facilities (pulp/paper and phosphate manufacturing)
- Air quality monitoring program
  - Uses the EPA’s 2011/2018 modeling platform
  - Recent observations show we’re 10-20 years ahead of the glide path
- States must identify at least one facility for reasonable progress analysis to determine if additional controls can be installed to reduce emissions
  - Used Hysplit trajectories using NAM 12 km meteorology on the 20% most impaired days
  - Identified facilities with sulfate or nitrate emissions of at least 1% contribution
- Expect to have pre-draft SIP ready in January and final version submitted to EPA by July
  - Will consult with individual federal land managers early next year
- Overall, emissions continue to decrease
  - Sulfur dioxide emissions are still the major haze contributor, but NOx emissions are becoming more important
  - Regional haze levels continue to decrease
  - Visibility improvement is well ahead of schedule

## **Agency/Program Updates** (All)

- NC Forest Service Central Office
  - Wesley Sketo is the new western mitigation forest (based out of Dupont State Forest)
  - Since May, 51 prescribed burns for 3,083 acres (60.5 acres/burn)
  - Dispatch season was busy – sent 159 single resources, 1 engine to TX, several 20-person crews, a Type II team out west
  - Working with southern fire chiefs, have created a series of infographics about prescribed fire
- Fire Environment/NFDRS2016

- Cabe has been working on the Fire Danger Operating Plan in anticipation of the move to NFDRS2016
  - Breakpoints will change, Adjective Ratings will hopefully be more accurate in predicting actual fire danger
    - Planning a workshop with the core technical team, federal partners, and trainers by mid-January to review breakpoints
  - NFDRS2016 will be implemented by March 20, 2021
    - Predictive Services has struggled to create forecasts with the larger amount of hourly data in NFDRS2016, so they've needed extra time to adapt
  - For WIMS users, Adobe Flash is going away at the end of the year
  - Is green-up for stations automated using the Growing Season Index?
    - Apparently so, but there may be ways to manually tweak it (e.g., in the Mountains, GSI tends to green up too early)
- National Parks Service (Chris Corrigan)
  - Also preparing for NFDRS2016 transition
  - Have done some burning in the Mountains
- The Nature Conservancy (Margit Bucher)
  - Angie Carl's position as burn boss in Wilmington has been replaced by Nathan Burmeister
  - 3 crew modules will be based near Wilmington starting in January, then they'll start burning
  - In the Sandhills, a crew module of 10 people will also be available in January
  - In the Mountains, an on-call burn unit is available and has been burning in TN last week
- NC State Parks (Thomas Crate)
  - 2 burn crews available
  - Finishing a build on a type 5 engine and purchasing 20 UTVs
  - Prescribed burning down for the season – around 5,600 acres so far
  - Covid has helped increase visitation so now in a budget surplus
  - Fire management guidelines were updated this summer, and burn bosses are now required to take the pack test
  - Have done some virtual training including S-131
- NC Prescribed Fire Council (Thomas Crate and Gary Curcio)
  - Working with UNCW on a fire needs assessment for public lands in NC
  - Continue to develop the roadway smoke adjective rating
  - Jim Reardon working on duff moisture meter
- NCFS Region 1 (John Cook and Derrick Moore)
  - Burning has been limited this fall
  - Good staffing at the moment with few vacancies
  - Starting a new landowner prescribed burn association based in D4
- NCFS Region 2 (Kevin Harvell and Keith Money)
  - Mostly working remotely still
  - Working with NCSU and Conservation Corps of NC to help get them up to speed with fire in the field
  - Working with Joint Chiefs (NRCS and USFS) in the Uwharries and Sandhills to bring on an additional burn crew

- New type 4 engine will be stationed in Rockingham in D3 by early March
- Only 457 acres burned since July
- Limited prescribed burning due to weather; limited site prep burning in August
- NCFS Region 3 (Nathan Gatlin and David Greathouse)
  - Have made some hires recently but down some in staffing
  - Justin Query is the new assistant regional forester for fire control
  - Bridge still does not have inmates, but project leaders are available to burn (and a type 4 engine)
- Camp Lejeune (Pete Steponkus)
  - Fully staffed with forest technicians
  - Just finished treating ~800 acres of waxy, woody vegetation around Sandy Run
  - Have a contract for 3 new contract track loaders with rotary cutters that fire control operators will run during the off-season
  - 31 prescribed burns for 9,300 acres this year, including during Covid
  - 25 wildfires for 2,300 acres
- National Weather Service (Scott Kennedy)
  - NWS Raleigh has added inversion burnoff time and temperature into Fire Weather Forecasts
    - MHX and AKQ still working on it
  - NWS Greer and NWS Raleigh have been working on the National Blend of Models as a starting point for mixing height, with promising signs so far
  - Could ADI be included in the Fire Weather Dashboard? The contact there is on maternity leave through December, but will push for it after that
  - Scott K. will present on the SFE webinar on December 2 about the Fire Weather Dashboard, Fire Weather Forecasts, Spot Forecasts, Hourly Weather Graph
- State Climate Office (Corey Davis)
  - Moving to a new website (hosted on NCSU's IT servers) in January or February, but it should be a seamless transition
  - Darrian Bertrand has worked on fire grids and will finish those up this month, then she will move to Oklahoma for a new job
  - Planning to re-hire Darrian's position and are also hiring a new associate director to coordinate research

### **Next Meeting**

- Probably won't be able to meet in person in May, but will hold off on scheduling a meeting until later