

Fire Environment Committee Meeting

May 18, 2020

Virtual meeting via WebEx

Welcome and introductions (Cabe Speary)

- Kirsten Lackstrom (CISA) – working on drought communications project along with the State Climate Office
- Kathie Dello (SCONC) – has been state climatologist for 10 months, has some experience with climate/weather/fire in western US
- Phil Manuel (NWS RNK) – fire weather program leader in Blacksburg since 2004, and an incident meteorologist
- Jimmy Taeger (NWS RAH) – new lead meteorologist in Raleigh, from San Diego; also a type I incident meteorologist
- Justin Query – was wildfire mitigation forester for NCFS, now the Region 3 assistant regional forester for fire control

Review and discussion of minutes from November 2019 meeting (Cabe Speary)

- No revisions suggested
- Minutes approved as shared

Seasonal Climate/Weather Review (Corey Davis, SCONC)

- The past 12 months have been overall warm and generally wet, but with a few dry periods (mainly last May, late last summer, and in March 2020)
- Last winter was among the top 5 warmest and wettest on record; our weather was not as variable as expected with ENSO-neutral conditions in place, and instead, cold air mostly stayed well to our north while warm, moist air moved in from the south
- Spring began with warm, dry weather in March, then switched to cooler and wetter in April and early May
- Now moving into our typical warm-season pattern with precip. mainly from pop-up showers and storms, and temperatures controlled by where our air masses come from
 - Watch for the Bermuda high to our south and east – generally brings warm, humid weather
- Summer outlook from the Climate Prediction Center:
 - Likely warmer than normal across the eastern US, with forecast models in good agreement about that pattern
 - Slight chances of being wetter than normal
- ENSO remains neutral for now with a lot of uncertainty about how it might evolve this summer
 - Some models showing a tendency toward La Nina conditions by the fall
- Hurricane season forecast is for above-average activity similar or more active than last year
 - Due mainly to warm sea surface temperatures across the Atlantic
 - La Nina could also increase activity due to a decrease in wind shear across the tropical Atlantic

Fire Weather Intelligence Portal Updates (Corey Davis, SCONC)

- This spring, 7-day NFDRS forecasts were added to the Portal
 - View them on the Forecast Conditions tab by selecting a parameter in the Point Data dropdown
 - Can also aggregate them by Fire Danger Rating Area
 - Click on a station or an FDRA to view the meteogram, including historical daily average/max/min values
- Currently developing smoke/fire grids (Burning Category, stability class, ADI, LVORI) based on the NWS National Blend of Models product
 - Will do an evaluation comparing them to the fire grids from local NWS offices later this year
- Other tasks in the works:
 - Adding the CPC's weekly drought indices by climate division, including soil moisture data
 - Will test NFDRS2016 fuel models on some NC stations in WIMS
 - Prescribed burn alert system (using NBM forecasts) is still possible, depends on funding availability (currently working with USDA SERCH)
- Possible webinar about the Portal with SFE?
 - If you have examples of using the Portal to make decisions, send those to Corey

The Madden-Julian Oscillation (Scott Kennedy, NWS MHX)

- MJO describes a tropical disturbance that propagates eastward around the global tropics, beginning as thunderstorms over the Indian Ocean and taking 30-60 days to complete a trip around the globe
 - Most active in the late fall, winter, and early spring
 - Can be quite variable, with moderate to strong activity followed by periods of little to no activity
- Associated with changes in atmospheric and oceanic variables, including winds, rainfall, pressure, and sea surface temperatures
- Typically categorized in eight different phases depending on where the pulse of convection (associated with above-average rainfall) is located
- Upper-level circulations induced by the MJO can affect other large-scale patterns that affect the US
- Generally weaker in the summer, but it can have some influence on tropical activity in the Atlantic
 - Tend to have more activity during a westerly MJO phase
- Can be monitored by tracking upper-level or lower-level winds, outgoing longwave radiation, and other indices
 - The real-time multivariate MJO plots (RMM plots) give a way to track its movement and strength
 - GFS ensembles can also be shown on the RMM plot to give a sense of the forecast
- The CPC has MJO composites available showing historical seasonal correlation to precipitation and temperatures in the US based on the MJO phase
 - For example, it tends to be drier in the winter in NC when the MJO is in phases 4-6, and wetter in phase 8

- CPC also produces a weekly MJO discussion, including recent conditions and the forecast, as well as the tropical hazards outlook (that is influenced by the MJO)
- For more info., see John Gottschalk's presentation, or other resources from Scott's presentation

DAQ County Level Forecasting (Elliot Tardif, NCDAQ)

- Prior to 2020, air quality forecasts were provided for six regions in NC
 - Changed in response to 2016 wildfire season since those regions were too broad to capture some of the local effects
 - The highest ground-level ozone days no longer feature unhealthy ozone levels over broad spatial areas (they have become more localized, like over major cities)
- Now, NCDAQ meteorologists are forecasting air quality by county
 - The 9 Triad-area counties are handled by the Forsyth County office, the rest by NCDAQ

Updates to the EPI's AirNow Website (Heather Wylie, NCDAQ)

- airnow.gov has been redesigned to better show current and forecast air quality
- Includes the "dial" – a standalone graphic showing current AQI and tomorrow's forecast
 - NowCast = prediction of 8-hour ozone concentration based on the 1-hour measurements
- Also has a map and a table with a 3-day forecast, including the primary pollutants
 - The map is an interpolation of monitoring sites, so it may not be representative of local conditions if there are no monitors in a certain area/county
- Note that third-party apps may show modeled air quality data (the NowCast) and present it as current conditions
- The NowCast and model data shown in third-party apps may not always match up with the forecast due to different temporal scales or different weighting of more recent hours
- From NCDAQ's website, county-level forecasts are available on a map and in a table, and a forecast discussion is also available

Project Nighthawk Drought Communication Update (Corey Davis, SCONC and Kirsten Lackstrom, CISA)

- The State Climate Office and CISA are finishing up their NOAA-funded drought communications project (Project Nighthawk)
- So far, have done surveys, webinars, in-person engagement, eye tracking with stakeholders from ag, forestry, and water resources sectors
- Since last summer, have piloted Weekly Drought Update and Short-Range Outlook graphics with a group of ~75 testers, including many FEC members
 - Example Short-Range Outlook:
<http://climate.ncsu.edu/documents/nighthawk/Outlook-April2020.pdf>
 - Example Weekly Drought Update:
<http://climate.ncsu.edu/documents/nighthawk/WeeklyDrought-Apr2020.pdf>
- Discussion: What sort of drought information did you need during last summer's flash drought? Were you able to find everything you needed?

- Currently developing some historical drought factsheets or “baseball cards” to give an overview and stats from past drought events
 - Statewide example from 2007-08: <http://climate.ncsu.edu/documents/nighthawk/Drought-0708-Statewide.pdf>
 - Triangle example from 2017-18: <http://climate.ncsu.edu/documents/nighthawk/Drought-1718-Triangle.pdf>
 - Would other examples be useful? Yes. Maybe some fire-specific ones from 2011 or 2016.
- Project wraps up this summer with final sectoral engagement
- Plans to continue developing and sharing Weekly Drought Updates, and possibly Short-Range Outlooks as well

COVID-19 and Wildland Fire (All)

- Two type I teams and a type II national team put together a study on fire response, especially out west, due to the virus
- Key takeaways:
 - “Module as one” – split crews into 10-person groups, and if one person starts showing symptoms, assume they’ve all been exposed
 - Keep things clean, especially PPE, vehicles, tools
 - Smoke can aggravate COVID symptoms and increase recovery times and sensitivity, so increase emphasis on immediate response to fires and keeping them as small as possible (especially federally)
 - Only people at the full briefings on a fire are unit leaders and crew leaders, with separate briefings held later for crew members
 - Increased use of aircrafts, drones, and heavy equipment
 - Increased self-sufficiency, including 3-day sufficiency for type II crews and single resources in case of supply chain issues
 - Fire camps likely closed to reduce interaction with the community
 - Could move to three shifts, possibly staggered, to reduce crowding at meal times and briefings
 - Camps will need to be dispersed
 - Could have check-ins via smart phone
 - Reconsider the need for extended mop-up
 - Some positions (like GIS, IMETS, FBANS, finances) could work remotely
 - More use of technology for transmitting documents between camps
- NC State Parks looking at having a 60-day stockpile of PPE for every staff member in NC
 - Has been following CDC recommendations to keep crews to <10 people and focusing on burns that won’t require contingency resources
- TNC has crew modules in the Sandhills and near Wilmington; following WRC protocols including particulate masks and “module as one”
 - Hope to resume low-risk burning on TNC lands and encouraging smoke masks if they will be in areas of denser smoke
 - Cross-reference a [list of assisted living facilities](#) before burning
- NWS surveyed IMETs about working remotely
 - If working on site, self-quarantine could be required after coming home

- NCFCS started burning again last week, and all burns must be approved by the regional forester

Agency/Program Updates (All)

- BRIDGE program has no inmates due to COVID-19; likely to last at least another 30 days
 - Ken Burns is the new camp director
 - 2 new project leaders coming onboard
- Prescribed Fire Council
 - Annual meeting on August 12 will be held virtually; plan to push the Morganton meeting to 2021
 - In-person hardwood burning workshop was converted to virtual
- NC State Parks
 - Collaborating with NCSU to host S130 and S190 using Fire in the Field, with smaller-scale field exercises
 - Could hold other virtual classes
 - Burning dramatically dropped off due to COVID-19
 - High-complexity burns were scrubbed, but smaller burns have continued
 - could bring in a helicopter for aerial burns
- The Nature Conservancy
 - Employees are working from home, offices could reopen in June?
 - Preserves are open, but some visitors centers are closed
 - Staff travel is restricted, but considering field work options
 - Staff lead 40 burns on 2,500 acres plus 74 assists on 30,000 acres
 - Angie left on Sunday for a position as regional fire specialist with the Air Force; will be rehiring her position
- State Climate Office
 - All staff have been working from home since mid-March
 - Routine spring weather station maintenance was called off, but had approval for emergency maintenance visits
 - Cabe, John Cook, and Jamie Dunbar checked in on 3 of our organic soil moisture stations for us this month
- NC Forest Service
 - Prescribed burning: since last meeting, 139 burns for 11,413 acres
 - Wildfires: 1,933 fires for 6,901 acres
 - Type 3 Team deployed on the Tram and Grassy Road incident in mid-March
 - Smoke management plan updates voted on previously were approved by management team and will go on the fire environment website soon
 - Justin Query moved into Region 3 assistant regional forester position, so the wildfire mitigation forester position is now open
 - RAWs and ECONet stations: should all be switched to green except the pocosin and high-elevation mountain stations
 - Will plan to release the NC Fire Danger page to the public this summer
 - Regional assessments for the spring fire season will end this week

- NFDRS2016: delayed to May 2021 due to COVID-19 and some major issues such as the snow flag
 - Predictive services will have a hard time switching to NFDRS2016 due to the increase in weather data and computer processing ability
 - Cabe will get breakpoints established for the new fuel models this summer and test the rest of this year, with plans to soft launch in January 2021
- In-person training is canceled through June (so far)
- Working with Pete Steponkus on getting an organic soil moisture monitoring station at Camp Lejeune this fall or next winter
- Region 3 (Nathan Gatlin):
 - Greenup is complete and spring fire season is almost over
- Region 2 (Keith Money)
 - Personnel is fully staffed at regional level and mostly at district level
 - Some ACR positions are open
 - Responded to 786 fires for 2,155 acres
- Region 1 (John Cook)
 - Jamie Dunbar started recently as ARF-Fire
 - Pocosin stations will be greened up this week
 - Possibly some growing season burns soon? And will support other agencies
 - Dare Bomb Range would still like to have a soil moisture monitoring station (and has \$\$\$ to pay for it)
- DAQ (Randy Strait)
 - Almost all staff are working remotely
 - Hiring freeze since revenue streams such as car inspection fees are down
- US Fish & Wildlife Service (Bert Plante)
 - Following readiness plans and prepared to assist if any burns pop up
- NWS Raleigh
 - Jimmy Taeger new to the office
 - Still working to add inversion height to the Fire Weather Forecast product
- NWS Morehead City
 - Last call for signatures on FDOP
 - Need for training on fire weather products? Shared a first draft at a D4 meeting in February; will work with Margit and Corey
 - Also working on adding inversion burnoff temperature (along with NWS Wakefield)
- NWS Greenville-Spartanburg
 - They have the code working for inversion burnoff, so talk to Harry if there are any questions
 - Can they find out where the portable RAWs stations will be deployed?
 - They are added to the Portal, MesoWest, and usually WIMS, or check with Cabe for current locations (and can Cabe give a heads up when they change locations)
- NWS Blacksburg
 - Most staff are working from home, with operations staff still in the office

Training Needs and Opportunities (All)

- ADM training was scheduled for early May but decided to postpone it until the fall
- Training for simple modeling (VSmoke) can be done via webinar
 - Expect 45 minutes to 1 hour
- Most national training this summer has been canceled or moved virtually
- Is a lack of continuing education credits a concern?
 - NOAA is putting on a Hysplit course at the end of June, possibly with credits being offered

Smoke Symposium Review (Speary, Cook, Bucher, Crate, Strait)

- Pre-recorded presentations helped cut down on glitches with live talks
- Surveys showed people missed the networking component
- Talk on smoke and COVID-19 was well-received
- NC State shared some research on their work with State Parks modeling smoke dispersion from the 2016 fires
 - Include NCSU in the next FEC Meeting?
 - NC State had 40+ students attending for free as part of their coursework

Next Meeting

- Difficult to plan since training calendar is up in the air this fall and likely to be busy
- Plan for November 12-13?
- Likely in Raleigh to visit State Climate Office and National Weather Service