



February 15, 2024 | [Fire Weather Subcommittee](#) Meeting

Members/Invited Attendees:

Darren Clabo (NASF/SD State, Chair), Jim Wallmann (USFS, Vice Chair), Larry Van Bussum (NWS), Calvin Bailey (NASF/SC State), Dennis Burns (NASF/CA), Drew Daily (OK Forestry Services), Kari Fleegel (NWS), Colby Neuman (NWS), Brian Potter (USFS), Paul Sopko (USFS), Robert Swofford (BLM), Dave Schultz (NWCG Coordinator/BLM)

Actual Attendees: Darren Clabo, Dave Schultz, Larry Van Bussum, Jim Wallmann, Colby Neuman, Kari Fleegel, Brian Potter, Cheryl Bright

****These and past notes are also available internally in our [Google Drive folder](#).**

Agenda

1. **Membership Changes - Drew Daily** (Darren Clabo)
2. **Fire Environment Mapping System Update** (Cheryl Bright and Jim Wallmann)
3. **Upcoming NWCG Executive Board Meeting and Haines Index/Lightning Activity Level Transition** (Darren Clabo)
4. **Upcoming NWCG Annual Meeting and FENC Meeting** (Darren Clabo)
5. **Additional Topics to Tackle Next** (all)
6. **Round Robin** (all)

1. **Membership Changes - addition of Drew Daily** (Darren Clabo)
Calvin Bailey (NASF/SC State) will be leaving the Fire Weather subcommittee. Clavin suggested that Drew Daily of the Oklahoma Department of Agriculture, Food, and Forestry Services (National Association of State Foresters) take his place. This was agreed upon. Drew works with Todd Lindley from the NWS on various projects.
2. **Fire Environment Mapping System Update** (Cheryl Bright and Jim Wallmann)
FEMS (Fire Environment Mapping System) is the authoritative application for NFDRS (National Fire Danger Rating System), and will replace WIMS (Wildland Fire Application Information Portal). The main contacts for FEMS include USFS-NFDRS Program Manager and USFS business lead Scott Linn, MNDNR Predictive Services Coordinator Travis Verdegan, and EACC Predictive Services Fire/Fuels Analyst Cheryl Bright. Expect increased communications with the field on changes to FEMS going forward. The 2000-2022 gap-filled dataset remains,

with fixes to some stations, particularly with west coast stations in relation to inversion layers. The snow flag is operational in FEMS with the method put into the dataset.

A weather team is being created with NWS, mesonet managers, and other invested parties. It will likely be led by Chuck Maxwell, FWS/Southwest Coordination Center Predictive Services Meteorologist. One goal of FEMS is to not only create NFDRS calculations but to incorporate RAWS (Remote Automatic Weather Stations), ASOS/AWOS (Automated Surface/Weather Observing Systems), mesonets and other weather sources to also produce quick calculations of NFDRS, Canadian, Australian and other calculations. This is where the Fire Weather and Fire Behavior subcommittees will be needed, in particular with revisiting the [NWCG Standards for Fire Weather Stations, PMS 426-3](#) and taking out the mention of fire danger. Brian Potter talked about the state of technology and how we can build a solid foundation for the future. One example is with winds. We could build a system that's built into the current sampling structure and reporting methods, or try to make something that's more fluid. Standard naming conventions are being looked at with the potential of changing WIMS IDs to a more thorough tracking system using NWSLI (National Weather Service Location Identifier) or SHEF (Standard Hydrometeorological Exchange Format) codes. Darren Clabo will contact Chuck Maxwell to continue the conversation and see what our next steps will likely be.

On a similar note, there is a need for a quicker method to update reference materials, and Cheryl mentioned a web portal. Darren mentioned that this is the way we are looking to send out the Fire Weather Handbook.

3. **Upcoming NWCG Executive Board Meeting and Haines Index/Lightning Activity Level Transition** (Darren Clabo)

Nick Nauslar, NWS SPC (Storm Prediction Center) Science and Operations Officer and chair of the Fire Environment Committee, will be presenting our transition documentation to the Executive Board on Tuesday, February 20th. Dave Schultz will email subcommittee members a copy of the draft transition plan and memo.

Subcommittee members have received questions about why the Haines Index is going away, and what will be replacing it. Brian Potter reminded folks that we have a short response available, the R-130 Statement on Haines Index. It's been shared with subcommittee members and copied here,

The National Wildfire Coordination Group supports the removal of Haines Index from all fire weather related forecasts and NWCG reference and training materials should the National Weather Service determine that this index will no longer be used, based on the unanimous recommendation of the Fire Weather Subcommittee. The Subcommittee found that the continued use of the index is detrimental to decision making and risk management, and its use should be discontinued. The index was published as a clearly stated first draft, with several aspects needing further research. The weather data used for development were

extremely limited and the fire data were subjective and limited to a few states. It misused the term “stability,” leading to many misunderstandings of what was happening on fires. Later studies looking at how well it works to predict extreme fire growth are few, but they indicate the Haines Index is only marginally better than a random guess. The index’s creator, Don Haines, discouraged its operational use for many years after retirement. We understand that there will be some consternation about its removal, but the overwhelming evidence supports its discontinuation.

4. **Upcoming NWCG Annual Meeting and FENC Meeting (Darren Clabo)**

The NWCG Annual Meeting will be held in Boise February 22-23, 2024. The Fire Environment Committee (FENC) meeting will happen during the week. Darren Clabo will attend in person, and Jim Wallmann will be in and out of the meeting due to prior commitments. The agenda is available for the meeting.

5. **Additional Topics to Tackle Next (all)**

We did a round robin on topics that could potentially be either brought to the forefront, or finished up.

Training support for Pacific Islands. Larry Van Bussum will be on a Service Assessment Team for the Maui fire, and was curious if firefighters in the region felt that the NWCG S-290 and S-390 course material met their needs. He was wondering if critical weather patterns for the area were highlighted enough. Brian Potter will either contact or give Larry contact information for folks he knows in the area. Darren Clabo has contacts at the typhoon center that may also be helpful.

IMET Standards. Kari Fleegel brought up a previous discussion on IMET standards and wanted to know if NWCG would require the American Meteorological Society level of a Meteorology degree to be an IMET. This would mean additional math, physics, and meteorology classes than some programs require. Larry Van Bussum noted that the IMET standard was changed in the 310 supplemental with a requirement of a Bachelors, Masters, or PhD in Meteorology or Atmospheric Sciences. One caveat is the military weather school, for those who worked as weather forecasters in the military.

IMET Taskbook. Kari was wondering about the status of an IMET taskbook. Larry mentioned that NWCG does not have taskbooks for 310/supplemental positions and suggests we stay without one at this time. Taskbooks are available at this NWCG site: <https://www.nwcg.gov/publications/agency-taskbooks>

NWCG Glossary Update. Kari noted that we last discussed this several meetings ago. Jim Wallmann recently spoke to NWS IMET Eric Kurth on the progress of the group. Larry asked to be part of the discussion when the terms Red Flag Warning and Fire Weather Watch are a part of the update process.

Belt Weather Kits and Electronic Weather Meters. Kari was wondering about the status of belt weather kits or electronic weather meters being available at supply when at fire camps. This is being left to the cache to support for now. Our subcommittee helps set the weather standard requirements, so if future research notes accuracy concerns we could bring up that concern. No additional action is needed at this time.

Fire Research related to connecting researchers to operations personnel, and noting limitations to certain data. Brian Potter noted that NOAA is putting significant funds into fire research. Several folks working on NOAA projects including USFS Rocky Mountain Research Station Research Meteorologist Natalie Wagenbrenner, USFS Northern Research Station Research Meteorologist Jay Charney, and others are examples. This subcommittee could help find a mechanism to connect researchers to operations personnel. Brian suggests a small workshop or invitation to operations folks on how they could contribute to journal reviews. With growing use of fire and weather data in AI (Artificial Intelligence), Brian was concerned that data was being used incorrectly. Brian was hoping to elevate the idea to the Fire Environment Committee, to have a document that talks about what different data are available, and what the limitations of each are. An example is ICS-209 incident status summaries, which may include information that is outdated.

6. **Round Robin** (all)

Brian Potter - **Wind reporting standards:** Brian met with Wildfire Magazine Managing Editor, Laura King at a recent workshop, and will soon have an article published about wind reporting standards. He would like to invite the Joint Fire Science Program (JFSP) folks to read the article, and will send it out to our subcommittee members when it is published. Larry Van Bussum agreed that we should re-engage with JFSP.

Dave Schulz - **NWCG website updates:** The NWCG website migration should happen at the end of February, and wants to make sure he has copies of all of our meeting notes. Kari Fleegel will send him an email with these notes, and a link to our previous notes.

Colby Newman - **Mixing Height Differences:** Colby brought up mixing height definitions, which expands on our discussion from our last meeting. He noted that the Oregon Department of Forestry (ODF) uses various mixing height definitions/calculations and noted that it would be beneficial if we all used similar definitions. Jay Charney and Darren Clabo have had similar discussions in the past. Model data and live observational data create different answers. Darren will send a copy of a paper on mixing heights to Colby. Larry Van Bussum added that mixing height in the NWS NBM (National Blend of Models) and other models is a ½ degree bubble modification to the Stull method. Sounding data can't verify this method, and the NBM is currently being verified/bias corrected to the RAP analysis. Brian Potter and Darren added that there are significant differences

between mixing height, thermodynamic mixing height, and other planetary boundary layer calculations. We will continue to discuss mixing height at our next meeting. NWS (Robyn Heffernan) has funding available to retain ceilometer data from ASOS to help verify mixing height calculations.

Next meeting March 21, 2024 at 11 am MT
typically the 3rd Thursday of each month