

**Smoke Manager's Subcommittee  
Conference call  
05.08.2012**

**Roll Call:**

**Mike Broughton, Colorado/USFWS**  
**Claudia Standish, New Mexico/BLM State Office**  
**Ursula Parker, California/Butte County AQMD**  
**Gary Curcio, IPA FES-FE Forester, Retired NC Forester**  
**Rick Gillam, U.S. EPA, Southeast Region, Atlanta, Georgia**  
**Jennifer Godwin, Red Lake DNR, Minnesota**  
**Ann Hobbs, California/Placer County Air District**  
**Nick Yonker, Oregon/ Oregon Dept. of Forestry**  
**Carol Blocksome, Kansas/Kansas State University**  
**Brian Bohlmann, Wyoming/Air Quality Division**  
**Leif Paulson, Wyoming/Air Quality Division**  
**Gary Arcemont, California/San Luis Obispo APCD**  
**Jim Brenner, Florida Forest Service**  
**Kim Sumner, California/Siskiyou APCD**  
**Mary Anderson, Idaho/DEQ**  
**Dan Washington, Utah/BLM**  
**Vince Carver, Southeast/FWS**  
**Christine Paulson, Iowa/DNR**  
**Brandon Clifford, New York/Albany Pinebush Commission**  
**Darryl Jones, South Carolina Forestry Commission**  
**Mark Fitch, Idaho/National Park Service**  
**Susan O'Neill, NRCS**  
**Dar Mims, California/ARB**  
**Pete Lahm, Washington D.C./USFS**

*The purpose of the Smoke Manager's Sub-Committee is to increase communications amongst the community of air quality professionals, other state and federal governmental agencies, land managers, and other persons conducting burning activities.*

The next meeting will be in July 2012 (more on this at the end of the meeting).

Initial item: A request was made for someone to volunteer to take the minutes of the meetings. Ursula Parker, California/Butte County AQMD volunteered to fill this role for this meeting (and Mike and Claudia were VERY grateful).

Agenda Items:

**EPA Regulatory Update - Rick Gillam**

- **Ozone Designations**
  - 75 ppb standard was finalized April 30, 2012.
  - 45 areas across US are not meeting the standard.
  - There are fewer areas not meeting the std than the last round in 1997 and all but three areas were previously designated (information on where the three new areas were located was not immediately available, but there is information on the website showing the non-attainment boundaries). [Update: Rick followed up after the call and identified

- the 3 areas as: Upper Green River Basin, WY; San Luis Obispo County, CA; and Tuscan Buttes, CA]
  - Urban areas are identified as the non-attainment areas; for most areas it doesn't appear that fires have not contributed to the non-attainment status.
  - The periodic 5-year review is currently underway.
  - EPA proposal due in 2013.
- PM Standards
  - EPA missed deadline of Oct 2011 to propose action on revision of standards; administrator has stated that proposed revisions to the standards will be issued in June of 2012, finalize June 2013.
- Prescribed Fire AQ Policy
  - Internal revisions are underway with drafts being developed and plans to share with other agencies.
  - Late March was last call.
  - (Mike B.) In the IASC meeting last week, an EPA rep said that he was told that it was coming out next month, but it is unlikely that it will happen that soon; more likely in the summer.
  - (Jim) They will try to address issues that were brought up in the federal review in the previous version and working with agencies to come up with something that folks can live with; the need to work it out internally first and then bring it to the states.
  - (Mike B.) It is easier to start off to get comments from the relatively few fed agencies and then send something cohesive out to the states so that there is something more organized for the 50 agencies comment on.
  - There will be a public comment period – structured public input – likely at least 45 days.
  - States had concerns with respect to the ag component and will have comments.
- Fire related exceptional events – starting to be worked on. On the schedule to get done, will be additional guidance from EPA.
- New sulfur dioxide 1 hr standard new designations are ramping up, in the process of getting recommended non-attainment areas done and finalized by the end of 2012.

#### **Smoke Mgr Contact List – Mike Broughton**

- Mike B. has the list posted to the myfirecommunity website (page that has Air Quality and Fire issues) - if you haven't taken a look at the site, please do. Per Mike B.'s email 5/2/12, address is: <http://myfirecommunity.net/Neighborhood.aspx?ID=279>.
- Smoke Mgr Subcommittee box at the top as well as current interests and the spreadsheet that Claudia put together.
- Please review for your geographic area to make sure info is correct/up to date.
- Mike B. appreciates comments from Nick Y.
- Nick Y. commented that Oregon is pretty complete but Washington is lacking in representatives - would like to get them on the mailing list so that we can continue to expand.

## Pocket Guides for Smoke to be used in the field (three presenters: Claudia, Gary and Rick)

### Claudia Standish

- 3 guides were sent out, one that Gary Curcio working on in East, Claudia worked on one in New Mexico, and Rick G. just sent one from the Southeast.
- Claudia was previously only involved in strictly fire and felt that bridging was needed in helping burners with smoke issues; she came up with guidelines but it generated little response at the time; the pocket guide is the resurrection of that effort.
- Pocket guide is in draft form; Claudia wanted to put together something simple regarding smoke and it might become more sophisticated, but this will get it moving. Objective is to secure funding to print on card stock and fold like the red card for fire qualifications so that when you look at the backside it gives you the info. On the inside it will say stay informed, etc.
- Question from Nick Y. regarding the meaning of the acronym “FEMOs” in the “Monitor Your Smoke” section of the pocket guide. Answer: FEMOs = Fire Effects Monitor, that is, someone who is assigned to monitor the fire effects on either a prescribed fire or wildfire. (also on Gary’s pocket guide). This may be taken out; it might not be relevant.

### Gary Curcio

- Slide 1 & 2 - Top of card is same; bottom is chart referencing organic component. In some areas of the southeast, organic material can be 8 inches thick or more.
- Slide 3 at end addresses the message to the people burning when they should start and when they should shut down burning; the smoke mgmt burnout window is addressed on the card to help address this.
  - If you have preplanned it, you know when to cut off the burn to allow residual burning to die down before the end of the day and before you lose decent dispersion.
  - LCES acronym (Lookouts - Communications - Escape Routes - Safety Zones) is used for fire fighters, tried to use the same idea as fire safety.
  - (Claudia): The issue of using the LCEF acronym came up recently and it was requested that it be taken out because it has historically been used to refer to fire fighting and could be confusing; however, the terminology is still valid and useful.
- (Claudia) **The pocket guide is welcome to be shared with other agencies – the more that other agencies can be helped, the better. Share as much as you can** (echoed by Rick).
- Slide 4 – fire weather matrix has to be requested by the user.
- Slide 5 - augments intelligence on how weather conditions are going to affect smoke: atmospheric index, visibility, stability, pressure, cloud percent, obstruction, etc. and is really useful because if you really look at the info, you can see when your window for good dispersion is there and when it will shut down.
- Slide 6 - This is weather data that someone from the NWS is using to put together the NWS forecast with; it is good data, it’s been QA/QC’ed. It should make a burner more comfortable about the decisions they are making.
- Slide 7 - Enter any lat/long and you’d be pulling the nearest weather info.
- Slide 8, 9, 10, 11 – various graphical representations of data.

- Side 12 –Learning the various things about what #s mean can really help a lot; it looks like just a bunch of 4s and 3s (but the meaning is important). For a burner ... (lost connection with Gary C.)
- (Mike B) Comments regarding New Mexico pocket guide:
  - Likes the inclusion of phone #s on who to call in your area. If something is changing while you are on a fire, it's good to have #s of who to inform.
  - On the list, Mike B. likes the idea of monitoring your smoke; often people are monitoring smoke at the burn site but can't see smoke dispersal at the point of burning; you need someone downwind to view that.
  - On the "Own Your Smoke", most people are on board with that, but some people say, "it's a fire, it's going to smoke", but people need to be aware that they are responsible for their smoke.

### **Rick Gillam**

- The Pocket Guide goes along with a prescribed fire tracking document in the effort in the Southeast to reestablish the long leaf pine ecosystem.
- Recommendations in the card were essentially things that are highlighted in the document.
- On the back of the card is the website where you can find actual document itself.
- Rick wanted to distribute something out to burners so they could have it with them as a reminder of things to think about before the burn, go over the list real quickly to make sure.
- A submitted burn plan would address some of these things, but a lot of burning in SE is by private burners on 100 acres or so, and they don't have burn plans, so this would allow them to use similar ideas.
- Rick wants to print 25,000 copies and distribute them to burners across the country, focusing in the Southeast and also giving copies to the national Prescribed Fire Councils.
- (Claudia) One of the things to consider is a guide that would also work with a wildfire; even if a fire is not planned, the management of the smoke can be applied in either case. Claudia wants to work on this a little more. Private burners don't have access to a spot forecast, but can call Claudia and she can help them.
- Claudia also appreciated being able to see what Gary and Rick did because it gives them some ideas for her pocket guide. Larger scale burns that are going to be bigger should be flexible so that people aren't impacted by a long-duration event.

At this point, Gary C. rejoined the call:

### **Pocket Guide – Gary Curcio**

- Slide 12 - The number 4's and #3's, communicate an understanding of how that smoke is going to move (stability): 4 means a neutral atmosphere; smoke will rise and then hold at that height, hopefully will not come back to the surface. 3 means slightly unstable, smoke will rise. 5, 6 and 7 is stable atmosphere and smoke will not disperse well.
- Slide 13 – Superfog Matrix Table by Gary Achtemeier – Superfog screening model developed. Weather/smoke dispersion would work west of Mississippi but not east. Dry climate west of M. prob won't get close to the thresholds – if you pick up matrix table and these variables were met

you'd have poor smoke dispersal and white out – pinpoint, allow law enforcement agencies to be more accurate. Mike B commented that the Superfog presentation by Gary last week was very nicely done.

- Last slide – with air quality model, can give you current, historical, forecast info – this slide identifies these products. These tools can turn a no-go into a go decision. There is a lot of information out there that can help us do a better job.
- (Dar Mims, California/ARB Meteorologist) Dar appreciated the presentation and felt that it went along with a presentation that he made at IASC meeting last week. Getting people to use the tools is a challenge. Dar liked that Gary mentioned the Rx 410 class – would be good to inject this into the consciousness of the burners. That would be a good forum for distributing the cards.
- (Rick Gillam) Rick also said from air quality side that the tools that Gary directs people to could be used effectively with a little training. For some tools, some reading would be required because it can't be covered all in a training session, but Gary is optimistic that it can be done!

Mike B.: Any additional comments please use the email list instead of waiting for the next mtg.

Next Topic: **“When a Good Fire Goes Bad”**

Mike B: everything is going fine and then the unexpected happens that you either did or didn't plan for. Mike kicked off the discussion with a recent situation that he saw from his office window in late March (26<sup>th</sup>) in foothills outside of Denver.

- A relatively small Rx fire, 40 acres, good conditions, although Spring had been dry. Burn went well, mild weather. Next couple of days afterwards, conditions really dried out.
- On 26<sup>th</sup>, 4 days after Rx burn, “hellacious” burns cranked up in late morning hours and hit 50 mph sustained, gusts to 70 all along the Front Range.
- Around 1:30, Mike B got a text from a friend further downwind from Mike B., was concerned about smoke. Later text said wildfire in the hills close to Mike B.'s home. A couple hours later, there were massive amounts of smoke pouring out from the hills.
- Residents started to see large amts of smoke, called 911. Dispatchers at 911 had been told that there was a Rx burn in area and crews were on hand. That's what was relayed to callers.
- Volunteer fire folks, first responders, did not have right radio frequencies to contact Sheriff's deputies (no cell phones work there) so Sheriff wasn't properly informed. By the time everyone realized what was going on and started to evacuate, it was too late for the people who called, and their homes (28) were lost and 3 residents were killed in the fire.
- In retrospect, (unfortunately, some people just want someone to blame), there were a lot of things that went wrong. But looking at it from a smoke standpoint, if people say that they see a large amt of smoke, more than they should, you have to take it seriously. Some people don't like Rx burn, but you have to take it seriously. It can be extremely important, and in this case, could have saved lives. Mike B. wanted to use this as a lead in and toss it out to the group.
- Nick Y. asked if the 50 mph winds were forecast. Mike B. responded that on the 24<sup>th</sup> they forecast winds to pick up on the 26<sup>th</sup>. On the 25<sup>th</sup> the extremely high winds were forecast; on the 22<sup>nd</sup> when the burn took place, winds that strong were not in the forecasts. However, winds of that strength are not that unusual in that area and people who lost their homes have asked why

the Rx burn was done during a time of year when winds can be strong and it had been so dry. Charred black material reignited into flames, not initially putting out any smoke. But strong winds like a bellows took the charcoal material and ignited it, spreading it about.

- (Nick Y) In Oregon, they deal with strong dry east wind in the fall. A week after a Rx burn, dry east wind (Indian Summer situation), fire will reignite. Message is to be over-precautious – that is all the fire needs: more oxygen (i.e., wind). It may not even be smoking (and will reignite).
- (Mike B) Infrared technology can be used to verify that a burn is completely extinguished but may not be feasible on a larger burn. Perhaps more monitoring is req'd, especially if more wind – even just 15-20 mph – is forecast. Even w/o expensive heat-seeking equip, a forecast of winds even 1 -2 weeks after a Rx fire, especially mid to late afternoon, low humidity, strong winds, etc., when fire is most likely to occur, it is important to make sure that fire will not reignite. Fires can start weeks after.
- (Claudia) There has to be mutual trust to communicate back and forth – communications have to be open and up front. There must be communication both ways.
- (Dar M.) Fire is fire; just because Rx, doesn't mean that it is necessarily all in a controlled environment.
  
- (Gary) Another story about a fire gone wrong was interjected. Burning on organic soil – smoldering potential.
- ESB said we should not have a ground fire issue. But we did. There was a remnant cedar forest with decayed stumps. 1000 hour fuels were subsurface and lateral roots were burning. It wasn't really a failure of the research; the soil wasn't burning, it was the old cedar forest remnants. Surface fuels were removed well and then NWS forecast high concentrations of fog. Everything was done except closing down the highway. There were two fender-bender accidents because of fog and smoke combo. No serious injuries but visibility was poor. They walked the tractors over the organic soil, one or two passes and pushed soil/compressed it to the roots and were able to put fire out. No pumping of water, just pushed moisture in ground into the roots.
  
- Another story from Mike B - One of the first burns he was present on in capacity of a smoke manager, three chaparral-covered hillsides in Santa Barbara County, CA in November, the first burn of season. The first hillside (9:30 am) went well, as did the 2<sup>nd</sup> one, but they didn't start the 3<sup>rd</sup> until 3:30. The problem was burner coordination/transition – they weren't in practice like they might have been later in the season, which is why they didn't start the last tract sector until after 3. As it was November, it was cool late in the afternoon, smoke didn't lift and instead headed off downwind into Santa Ynez valley. Mike B. learned that you have to be more assertive and take a risk and tell them “no” as opposed to taking a risk the other way and keeping quiet. Mid-afternoon in fall/winter is not the time to start a fire.
- (Pete Lahm) From EPA's perspective, concern of contingency plan concerning smoke. LMA's should respond in an effective way, have something in place to address public concern. It is a worthwhile focal point – who do you call and when do you call when things don't go right. Revision of 2001 NWGC smoke management guide will cover some of these issues; it is a significant topic.

- (Nick Y) Often their burns have time frame: No burning before 10am and not after 3pm. If we don't cut it off, we are going to get smoke impacts in the evening.
- (Gary Curcio) This is what the card was trying to get at; the training point to future burn bosses: find out what your burnout window is. In the fall, there could be something in that forecast that says you can burn all night long if certain conditions are met. Winds and instability have to allow for that. Start time is pretty clear, but nothing in the forecast tells the burner when to shut down and it's really more of an interpretation. Keep in mind that you may still be restricted by the tonnage.

Mike B. said that he would like to post upcoming webinars and accessible recent webinars on the website.

- Later this week EPA is having a global climate change and air quality webinar May 9<sup>th</sup>.
- On May 21<sup>st</sup> and 22<sup>nd</sup> there is a webinar on the black carbon kick off meeting.
- Last week there was an excellent webinar on Smoke Induced Fog.
- April 17-19 was the Human Dimensions of Wildland Fire and one afternoon there was a smoke segment in there. Mike will try to include this.
- Go to [www.frames.gov/smoke](http://www.frames.gov/smoke) - smoke portal, excellent classes for LMA's and other informative links at that site.

Follow-up on the three new areas of ozone non-attainment: Rick G. checked on website: Map shows the 3 new areas are Wyoming (western Wyoming, winter ozone issue caused by oil and gas development in the wintertime, little contribution from Rx burning) and other two are in California.

Ann Hobbs had commented on a burn/smoke impact in Truckee that she will comment on during the next meeting.

Next call to be in the 3<sup>rd</sup> or 4<sup>th</sup> week of July, perhaps 17<sup>th</sup>/18<sup>th</sup> or 24<sup>th</sup>/25<sup>th</sup> of July.

(Brandon Clifford, New York/Albany Pinebush Commission) Brandon thanks those people who contributed to feedback on burning in the utility corridor/right of way. He wouldn't have been able to accomplish his burn if it weren't for the networking that the group has afforded him.

**Interesting stats from this meeting:**

Programs represented:

National	Regional	State	Local/Tribal
4	3	9	6

Geographic Areas:

National	East	Central	Rockies/Basin	West Coast
4	6	3	4	6