



# NAFC- FIRE MANAGEMENT WORKING GROUP

Minutes for the annual meeting of the Fire  
Management Working Group- November 3-5, 2015:  
Scottsdale Arizona

## Background

There are six (6) Working Groups under the NAFC, and most have been active since the organization was established in 1962. There are six (6) Commissions under FAO and the forum works well. Overall, there are 100 wildfire agencies with annual burning of about 5 million hectares (12.3 million acres) and approximately 85,000 fires, costing multi-million dollars. The FAO and this NAFC forum is a means to speak to the rest of the world. There is recognized leadership with the NAFC-FMWG and with Australia/New Zealand (located in the Asia-Pacific Forestry Commission region, although operating primarily through the Australia Fire Authorities Council, AFAC). The International Wildfire Conference series is a premier event, as well as the successful study tours. There is confidence in our exchanges to help each other, to build stronger relationships and share resources. The Charter has three (3) main objectives – to share knowledge and information, to promote collaboration between fire agencies in the 3 North American countries, and to support enhanced international cooperation in fire management. There are also links to bilateral agreements under the group (even if not the original intent).

## Day 1

### Introductions; Overview

Good morning and welcome by Gordy Sachs. Housekeeping items and start up:

Bill Van Bruggen.

Southwest region geographic layout and people that make up the region and the fires situation.

Human occupation for centuries; Navajo is over 1 million acres; Apache reservation, Geronimo is from there and Cochise. They still occupy much of the southwest. Tribes still provide many of the firefighting resources in the SW region. Rio Grande area, early in the 16th century- ancestors are still there, many activities for firewood for families that used that land. There is a quite a bit of federal land in the SW region- yellow is BLM, brown is NPS, purple is State lands, white is private. All interagency- sharing fire resources, dispatching and positions are interagency as well, presenting an efficient model.

Lincoln NF is where Smokey Bear was found and is now buried. Some of the larger fires we had Rodeo Chediski 450K acres. Wallow Fire 500K fire that burned very quickly. Very large fires recently, which made us look at doing something about it.

It's time to restore these landscapes. Largest homogenous ponderosa landscape; Many forests are in an unhealthy state. Working with industry and others effort to reduce fuel loading in the forests and allow the ecosystems to return to their natural state. Grand Canyon is very active is using wildfire Forest products and an aggressive RX fire program and manages issues with smoke and air quality.

Field trip tomorrow to Prescott there are several ecosystems in the area that they are managing.

Thank you Bill.

Roundtable with attendees introducing themselves.

## Chairman's Remarks

Tom Harbour: Greetings to all. Many familiar faces and folks we saw in Korea. Special thanks to Jeff. I will be in and out of the meetings all day and tomorrow. Many things to be accomplished before I retire, 46 years with the forest Service. Because it's been 46 years, I've been thinking about history. Haven't been introducing myself as el villejo. 20 or more years into my career before I knew there was a group such as this. Meeting in San Diego that I assisted with and first became aware of the group. 1958 NAFC is formed- 6 regional forestry commissioned by the UNFAO. NAFC functions without a staff to assist in the work. Has the express purpose of exchanging information.

The other 5 commissions across the world- common to have 40 or so nations in them. NAFC has but 3 nations. Blessing of simplicity. Decided upon 7 working groups- 2 oldest are Fire Mgmt. and Forest health. Some disagreement about exactly when the groups were designated and which is oldest. Most active and the one that has sustained itself over the years. First meeting in 1962 and a great record of involvement and cooperation. We haven't had meetings every year but will have a 50th meeting next year.

Challenges we faced in the past were interesting but now they're old. Across the border on the South and North, fire began to move across those landscapes- The impact those fires had on the relationships was evident. The cohesive strategy seems to encapsulate the challenges we are going to have into the future. They speak deeply about what we do about fire on the landscape. The impact on communities. Endangered species moving from the south to the north, with the jaguar in particular. Challenges for the future will be around what we do to manage these ecological systems, the ones that span borders and boundaries. The future is one where we have to understand the science and to manage the relationships within communities joining together. Issues associated with political parties and other human activities. Its apparent how important engagement with these communities. Significant challenges ahead of us.

Early in my career I want for 5-10 years without the necessity to engage with another agency within my own nation. That level of simplicity won't happen again.

The change that I have seen in sociological conditions and ecological conditions is immense and never before seen. A large fire was 100 acres 40years ago. Now they are orders of magnitude larger than that. Changes I have seen are fires of an extraordinary size. Communities are bothered by that but we are not and I think we should be. The social contract will need to change to adapt to the new normal.

Why are we doing a study tour every 4 years? What can we do to be faster at getting the collaboration within the response communities and kinds of work that we each are doing?

Thinking back to a meeting in Portugal, talking of fire retardant and the specific properties of the substance. One good joke: Americans are monolingual. Encountered scientists that had completed an analysis that our agencies had no knowledge of.

Many ways to improve our bureaucracies and make the collaboration work better. Ways to recognize the quality of the group. Leave with a sense of pride in what this group does, also with a mutual sense of concern of the workload that narrows our focus and a sense of hope about what progress we might make. Because of what your track record is and what you have done to create a brighter future. How to better manage ecosystems and communities to respond at the levels we experience now. Think about who has gone before, the future, and how to sustain the group over the next phase.

## Country Reports

### Mexico

Alfredo Nolasco Morales: Mexico report, slides regarding the fire program in Mexico. Federal government is changing, 15k positions are changing and budgets are getting reduced. Working with NGOs, scientists, and rural communities. National protected areas commission will be included in this change, 194 million HA area and 74.6 million HA is fire adapted; 155K deforested annually and 197K restored annually.

Fire statistics displayed showing 1970 to present. 2011 saw 73 fire fatalities, very important to learn from. 45K of mature stand forest was lost. Diminished fire activity in 2014 and 2015 with excess rain. Weather service suggests that El Nino will be severe. Preparing for 2016 fire season.

Slide showing the basic organization of the wildfire management in Mexico. 22 federal agencies working together under the national interagency coordination. Laying out National, Regional and State centers with IMTs.

Slide showing expenses in specialized training. Many retirements over the last few years illuminated a training deficit. Collaboration and preparation being at the core of the effort. Resource optimization as well. Decisions are made under the limits of the budget and to make due with less. NGO partners and other government agencies that collaborate. Reducing the cost per student is a key effort so that we can achieve goals on the training matter.

Slide on suppression: focus on ground crews, vehicles, tools. Reducing budget on helicopters. A few years ago 64% of budget went to aviation resources leaving gaps on the ground level. Refocused budget on ground resources.

Slide on Incident management Team strategy: 32 consolidated, 1 national level, and 6 regional level teams is the goal. Strategy is important because CONAFOR is reducing their total number of employees and have to empower staff in cooperating agencies to learn incident position skills and to find ways to support them.

Slide: Rural Crews special project- 2011-15. 439 crews to maintain and the costs are high. Meant to create jobs and increase capacity to fight fire in small communities.

Slide: Rural fire crew cont. map displaying focus on fire priority areas. Important project and is so far looking like a great success. Big improvement in response capacity.

Slide; Promote applied research- 3 main areas Fuels, Protection methodology, Weather?

Slide: Moving from suppression toward fire management policy. Change to current law and that it focuses on suppression only. Promoting fire management and the concept of good fire and bad fire. ICS capacity building is instrumental in the change.

Slide: International Cooperation- Canada, Chile, USA. Memorandum of Understanding with Canada; current agreement with USA; current agreement with Chile. Also with California state with a focus on technical exchange and support.

Slide: International Cooperation- Mesoamerican fire management agenda. Workshop on public policy in wildfire. US Forest Service is also supporting these activities and working on the agenda. Interchange

between indigenous crews from Columbia. 64 groups in Mexico and want to replicate how it was done in Columbia. Organizing and supporting a fire workshop and training in Mexico.

Slide: national forestry program- Strategic planning principles. Unique agency and need to knowledge and their responsibilities to make sound decisions around wildfire management. Fire sue to prepare land and interagency cooperation are primary focuses.

Slide: national protected areas commission. National protected areas commission works with CONAFOR closely to manage fire in these areas. 10% of the entire area affected falls within these protected areas.

Slide: wildland fire situation report; Expected to be extreme next year. Chart showing types of vegetation affected. Not many crown fires and most fires occur in wilderness buffer zones. Rural communities use fuel from the forest for day to day activity, making the high density fuel loads lower.

Slide: Wildland urban interface. Seeing a great increase in the last 10 years.

Slides showing the social context: we have wildland firefighters and structural firefighters. Limits on training and equipment for each part of the firefighting discipline. Transfer of knowledge and procedure will help.

Slide: Social context- outside the city rent is cheaper and thus the growth is more rapid. Higher value properties are frequently where the wildland urban interface occurs.

Slides showing specific cities with imagery and area defined on the image. Showing the proximity to protected areas.

Slide: Focus on structural fires and wildland fires but not the wildland urban interface. Challenges in policy and laws exist.

Slides: Baja California- fast moving fires, cultural resources.

Slide: Regional fire management strategy, wildland urban interface. National assessment underway to identify where the issues are and what the picture is to prepare for events.

Slide: Challenges to implementing the strategy. Construction regulations and urban development, Landowners and defensible space, Structure and wildland fire fighters training together pre incident. Firewise or Firesmart programs or similar could be useful for this particular problem.

Slide: National wildfire prevention program. Strategy to utilize local governments. Qualifications and regional cooperation.

Slide; 2016 forecast- weather service suggests not much good news. Looks to be the most extreme El Nino event and will cause drought and severe weather conditions January through June.

Q: How will you achieve the strategy with decreasing staff numbers and budget?

A: It will be difficult. High decision makers are hard to convince that the need is great enough to focus resources on implementing the strategy. Focus on state governments and municipalities not. Trying to transfer funds from federal budget to bolster the efforts at the local level. Less budget this year perhaps more next. Trying to think outside the box and find solutions. If the fire season is bad. They will find the money.

*Changing presentations.*

Technical approach with a scientific approach. Combining the disciplines to get better results; a lot of time is spent by researchers making papers and studies.

Slide: map of fire occurrence, showing different ecosystems.

Slide: Plan on how forest management and fire management can be informed and combined to better utilize limited resources. Theory and statistics on how you can best combine the two. New approach can account for the many uses of fire on the landscape and be inclusive of historic practices. A challenge exists to complete this strategy is aligning the context and the verbiage used, such as risk. All of these activities need to be defined the same by all parts of the process. Prescribed fire and human activities, need the same language to keep the plan in alignment. What is prevention? Fire risk?

Diagnostics- have to combine the information to support decision making. Forest fuels and mapping. All the information is shared and can be used to support decision making. Social and economic approach is especially important in rural areas.

Research issues are getting aligned to better utilize the limited resources to complete research activities. Defining priority areas for focus. Also in defining Risk, analysis matrix and decision tree to better focus and define priorities. Forest ecosystem recovery is the goal.

Working on Incident Command and in financial tracking of incident costs. Training and social mobilization. Base data is getting organized so that the statistics can be used to compare performance and illuminate areas for improvement.

What is next? There is a lot of work to do in Mexico, many opportunities to put quality of staff to work.

*Changing presentations.*

Mexican fund for the conservation of nature: 20 years working- different countries agreed to preserve biodiversity. Fire activities started in 1998, focused on creating capacity in local communities.

Activities in 2015- 3 parts.

Decided to take 4.5 million dollars to work on the issue of fire management and restoration.

Objective: to support the integrity of forest ecosystems, ecological processes, and environmental services in the context of climate change.

Watershed management- many different agencies collaborate on this issue. Need to understand what is changing due to climate change. Funding for these activities requires coordination at the national level.

FOMAFUR- endowment fund whose annual interest is channeled to projects selected through an open call for proposals. 5 states; 5NPA; 7 Local organizations.

Most projects are in the south part of the country and 2 are in the Marquesan(?) after 1998 fires those areas were most affected.

8 new projects to develop capacity- 4 local and 4 looking at regional coordination. Cooperators are learning how to live with fires. Most take 12 months, some are 24 months. Support and coordination between state governments is challenging because of turnover in municipal and state government.

New project with a bank- wildfire prevention and protect key wildlife species. Also the first time that a state government is involved in the project establishment. A great example of a project that has elements we'd like to see in future projects.

REDD strategy projects and their relationship to fire management. Need to mix watershed and fire projects- many benefits to assessing the problems simultaneously and not restricting to a fire management view only.

Achievements- Promote coordination and communication protocols, incorporate fire ecology into projects, collaboration with state governments.

Role- Articulate; Facilitate; Funding.

International Cooperation program- USFS and Parks Canada. Technical knowledge exchange- how to deal with resources in protected areas.

Capacity building processes- Suppression courses, fire effects research, and ICS systems. Printing of communication protocols, held a workshop with stakeholders on coordination, publishing of a vegetation fires book. Learning fire management community created in 2002 and is maintained still today. Sharing information and networking to keep the fire community engaged. Making use of social networks to maintain contact with communities and track metrics on how the information is flowing. Demonstrating that more women and younger people are involved in the issue of fire management.

General contributions- Strengthening of public policy, participation to technical committees, promote fire management and climate change adaptations. Chairman of the Mexico resilient alliance. Support dissemination of wildfire prevention national program. Main concern now- how to fit in with the reduction of budget and staff, coupled with climate change issues.

Q: Bank was funding a project. Did you approach them or did they approach you?

A: Fires in 2011, governor and the chief of the bank came together and took 3 years to negotiate what to do. We offered an idea and the project was focused onto an emblematic species.

## Canada

Kim Connors: operational report from Canada. Built on the various agencies that conduct fire suppression.

Season itself: 7K fires 36k TPD; International assistance- May was busier than normal, first half of June things began to quiet down. Western Canada became busy in the end of June. Multiple agencies with active fires simultaneously depleted the resources and necessitated assistance from US and others.

Canada has almost all province level fire management and Parks Canada is the only federal level agency that is involved with firefighting. First time a new generation air tanker was imported to Canada from the US and the first time scooper aircraft were shared at a federal level [in the US](#). Canada wildland fire preparedness and response plan- was developed and was used during the 2015 fire season.

Canada USA forest health summit wildfire workshop- held in DC in November 2014. CIFFC strategic planning unit.

Agreement in place with the US since 1982- updated annually. Shared resources every year but one and have added the full wildland fire management activities to the sharing agreement. 3 IARRs, 200

Firefighters from the US; 16 person overhead team, 1 IARR from NZ; 2 IARRs from Mexico; 102 overhead, 5 IARRs, 2 senior managers, 1 state police inspector from Australia; 46 firefighters, 2 IARRs from South Africa. New initiatives undertaken- orders for IARRs was initiated ahead of the call for resources. Creation of a strategic planning unit, taking advantage of the weather forecasting and other type forecasts. Request of an air tanker from France- but the request was never answered. Dialogue is still open but the timing was difficult because to the fire season in France. Personnel moving aircraft were utilized [through a CIFFC-level contract](#) for the first time- 2 Boeing 737s.

Lessons learned- work plans from the summit were very useful and headed in the right direction. Seek appropriate bilateral agreement. Order IARRs early. Exercise and evaluate systems and agreements before it's too late. Fill staff at the CIFFC level early. Create emergency contracts with foreign countries works but is not ideal for Canada. Crosswalk of qualifications and operating systems created an increased level of comfort of incoming resources. AAR underway; finalizing the agreement with Australia and Canada; continued work on deliverable from the Canada/US Forest Health Summit.

#### *Changing presentation:*

Bill DeGroot: CFS- different from the US and Mexico in that they have no firefighters. Provide research for the provinces.

Suppression requirements exceeded North American resource availability. Not many staff have fire line experience. SMEs were placed into the operations centers to assist with translating the fire situation to the FEMA-like agency in Canada (GOC). This integration made all of the other components aware to the point where they could effectively assist with the incoming fire resources.

29 permanent staff working on fire research studies. Distributed organization across the whole country; 33 fire research studies in 6 CFC projects; priorities will be shifting with the incoming administration.

Project to improve Fire danger forecasts with fuel moisture, soil moisture estimates, and National resource demand model for severe wildfire prediction. Monthly forecast of broad level picture to provide information for longer term strategy and to fill gaps where states don't do fire predictions. Historic statistical data website with interactive map and datasets available. NBAC- National Burned Area Composite- keeping track of the carbon release for all fires in Canada. Down to 10 HA.

National wildland fire Canada Conference- and the IUFRO Forest Research world congress- and the Intl Conference in Korea.

The Global Fire Early Warning System- improved the interface and developed the tool to fill gaps where no fire danger rating system is in place. Uses the FWI and compares all countries with the same system. Meant to promote Intl resource sharing.

Study tour was conducted with Mexico, Chile and Costa Rica. Mostly in Alberta. Fire danger rating investments are the primary focus; Canada-Korea forestry MOU was signed; Seminar and study tour in Korea in May 2016; Canada-SA agreement was signed this year; interested in research evaluating investments in fire management coupled with climate change.

#### USA

Mike Cherry- USFS: USA Wildland fire season summary. Photo of a fire in eastern California taken in February 2015 is indicative of the drought situation that would continue to worsen over the course of

the fire season. Graphic showing record high temperatures over much of the western US and one showing record low precipitation.

Significant potential outlook for large fires- showing the situation that played out in the Pacific Northwest; Long term drought continues to be an issue over much of the western US

Fire occurrence by Geographic Area Coordination Center (GACC) shows that there were several GACCs that had very high fire occurrence and acres burned. Prescribed fire acres burned is also on track to be above the 10 year average. 2015 showed 43 days of preparedness levels 4&5 and is shown to be within the 10 year averages.

Air tanker program continues to improve- next generation of aircraft are set to be available by 2019. Military support took the form of MAFFs and 200 personnel in Washington to the fireline.

International assistance to Canada in the form of firefighting resources and to Indonesia with technical assistance, PPE and tools. International assistance received from Canada, New Zealand.

Assistance to Animal Plant Health Information Service for the Highly Pathogenic Avian Influenza response. Hurricane responses for 10 tropical storms.

Q: Of the 1.8 Million acres of prescribed fire driven by fuels management? A: All of it.

Q: How many days were in the highest preparedness levels? A: 43 were in the 4&5 categories, brief explanation of the preparedness levels, and they are nearly identical to the Canadian system.

Q: How do we coordinate with the military? A: A liaison is in Boise during fire season. There is annual training with Military staff to be prepared for mobilization. Several meetings pre and post fire season to maintain a productive relationship.

### *Changing Presentation*

Matt Rollins- USFS: National Program leader for fire and fuels research program.

Graphic showing the proportion of the budget that is devoted to fire and how it is increasing year to year. 2015 is the first year where it exceeded 50%.

Strategic goals and 5 portfolio areas: Physical effects of Fire; Ecological and Environmental effects of Fire; Social fire science; integrated fire and fuels; science delivery R&D Facilities across the US. 150 scientists within the system nationwide. 45-50 million per year.

Wildland Fire and Fuels R&D-Global fire regimes. Could be very complimentary to the other fire danger systems presented earlier. Decision support tools and technology for integrated fuel treatment; wildland fire risk; line officers/administrative user resources; Public awareness and communications.

Example of the decision support tools; WFDSS showing information from other programs (LANDFIRE) at a local and regional analysis area. Important to note that the same datasets are used for each area and different resolutions are applied. Same model and same data being used for multiple levels of resolution. Scientists also go on incident to support the suppression effort and also teach the use of these tools pre incident. Challenges to collaboration: improvement of coordination; research to improve monitoring, modeling, fire danger maps.

Fire Danger Rating System: Outcome- improved borderless fire danger map for North America. Animation of the output. Great example of a few people getting together and applying the science to a larger analysis.

Fire adapted human communities; come up with an approach estimate probability of interface fires and apply climate change to that analysis as well. Estimated completion by 2017.

R&D Cycle and the challenges- Sensing/Discovery/Applied science/ Model Application/ Implementation/ Maintenance.

### *Changing Presentations*

Jim Douglas- OWF/DOI: Pre talk about the importance of fire science and related research. DOI has a particular interest in the Greater Sage Grouse- this has informed much of the policy and implementation of a conservation initiative in 2015. Invasive species (Cheat grass) has had a huge impact of fire occurrence and return intervals that are adversely affecting ecosystems. Creating top down policy pressure to put a lot of protections resources into the Great Basin. Fire occurrence did not increase largely in the Great Basin, fortunately. Fundamental governance question regarding how the agreement with Mexico and getting them compete and signed.

Unmanned Aircraft technology Demonstration Strategy; Not drones. UAVs. Good and Bad ones- hobby aircraft. Good side is the potential for utilizing these tools on wildfires. UAV technology demonstration plan was signed in 2015, by USFS and DOI. Phased risk managed approach to safely test the new equipment. Equipment donated in 2006 from DOD. 3 of 4 aircraft were tested. Vendors were learning how our business works and proving concept. 3 places where the devices were tested; public perception of surveillance aircraft is an issue. Demo of the rotor wing aircraft done in Rome, New York. Video. Optionally piloted aircraft demo done in Idaho, continue education of the builders to show what was needed at a fire incident.

Lessons learned; SatCOM can drop off is the helicopter is on a N heading; 60 m DTED was not high enough resolution; radar altimeter sometimes picks up the load; operators are not familiar with fire tactics. Overall demo exceeded expectations.

UAS- Olympic NP; showing vertical separation and the assets in the air; educating industry on the fire mission; initial approval was time consuming; automatic sensor adjustments during mapping; back end data management for rapidly creating mapping products. Teepee Springs- Sensor automation proved challenging for mapping; spectrum requirements. Next steps- proof of concept complete, mostly. Forward we will have to integrate these requirements into contracts; identify specific modules to assign with the aircraft when they are mobilized to assign aircraft managers.

Q: Collaboration with the Airforce, are DOI working with the same people on this concept? A: This was focused on the line of sight proof of concept and integration to incident management. The potential for new information to be gathered and used for suppression efforts.

Q: What qualifications does the pilot need? A: Not clear yet. Helicopter is by a helicopter pilot. UAVs are remotely piloted and are licensed pilot.

### Changing Presentation

Alexandra Zamecnik- USFS: Partnership with USAID that has been running for more than 20 years, with an early focus on fire management. Broad background with USAID. Focus on greenhouse gas emissions. Carbon monitoring and measurement. Support with technical knowledge, sustainable landscapes- USFS project.

Technical training- several fire courses get shared and then there is assistance to implement. Fire management is a particularly successful model.

Collaboration has been very successful. An array of partners that participate on the program, spanning several disciplines as well as academic institutions.

Forest Monitoring, Fire Mgmt., forest mgmt., protected area mgmt.

Several classes offered and taught, mostly suppression. Sponsored 5 staff from Mexico to shadow fire mgmt. teams in the US. Training of Central American Firefighters trained in Honduras and Guatemala.

2015 Highlights- Many courses taught.

#### Changing Presentation

Jim Karels-Florida Division of Forestry: Fire activity on the states; hurricane season didn't pose as much of a demand this year. Budget issues- the costs of fire suppression are getting to be a challenge and there is an attempt underway to remedy the problem- it is the lead legislative issue for the State Foresters association. The cohesive strategy as informed by prescribed fire is also a focus for the State foresters especially considering how many acres are treated and how much better it can be coordinated.

Yarnell Hill fire fatalities- lead investigator on the incident. Conducted a little differently than others because of jurisdictions. It's difficult to communicate what happened on the incident. The information is geared toward the firefighter.

Video shown.

Going to walk us through the event and decision points. The team was interagency and included the State of Arizona and several federal resources. An effort was made to keep the investigation transparent and inclusive of credible investigators. Create a factual report, focus on learning process that can serve the community moving forward.

Step by step retelling of the events, including the background for the scene. Three IHCs ordered, Granite was the closest and first to arrive. Supt was tasked with DIVS Alpha and the crew foreman was in charge on the crew. Fire ran to the northeast and east for the majority of the operational period.

A retardant line was put in from the SW corner to the NE corner of the fire to box the fire spread in. Smoke had settled in and made it difficult to continue with the retardant application.

Structure protection had been the focus of operational activity on the north and northeast.

We do not know if the crew and Supt descended together. The investigation team took great care and time to conclude that there was no indication of negligence, reckless, actions or violations of procedure or policy.

Recommendations- develop a staff ride, resource tracking, communications, and real time weather information.

Q: How do you propose we could do resource tracking? Somebody knows where they are- so what? A: It is hard to envision what we would do with the information and how it may have changed this outcome.

Q: Are there any similarities with the Dude Fire entrapment 1990? A: Some similarities to the event. Likely will gather more history about tragedy fires and the conditions that surround them. Weather and some factors are similar but many are not similar to the Yarnell fire ground.

Q: Is there any information of public perception on this incident? How the community received the situation and are they learning how to behave when a large fire is present? A: Overwhelming support initially. Over time conspiracy theories have surfaced creating resistance in the community and around the state. Small fire department and the loss was acutely felt.

*End of Day One*

## Day 2

[Field Visit: Yarnell Hill Entrapment Site; Prescott National Forest Fuels Treatment Areas](#)

Staff Ride content shared at the Yarnell Hill Entrapment Site in addition to a flag changing ceremony. Several fuels treatment sites were visited throughout the afternoon.

## Day 3

### Introduction

Welcome from Gordy and a brief logistics discussion. Transportation to the airport reminder.

Change in agenda, speaker from Guatemala is unable to attend.

### Forest Fire Managers Group Report

Andrew Graystone- Manager Fire and Emergency Services, Parks Victoria, East Melbourne, Australia:

Overview of FM in Australia. Different in particular because the Federal government does not own the land. States own the land, emergency services provided by the state and, local government in some cases. New Zealand has a national approach. Fire seasons are winter and spring, then moves north to south.

Peak industry Groups:

AFAC: Funded by member agencies depending on number of members. Responsible for establishing positions, qualification standards. Annual conference August 30- Sept 1 2016.

Bush fire and Natural Hazards Cooperative Research Centre. Structure and organizational explanation

FFMG: Collection of forest and land management agencies, reports to federal government, role is to increase and enhance fire management practices and interoperability across agencies

Current Business National policy in Fire management, fuels classification models, Rx strategic partnerships

NAFC: Federal Funded, Sources aerial FF resources, allocates resources to states by risk, stated fund operating costs incurred for suppression operations

National Burning projects: establishing best practices, interoperability, how to share resources, looking at risk management process, reviewing existing knowledge, review operation doctrine, competency, training, etc. Serious look at practices due to deaths in the past. Learning from what has gone wrong.

National Policy Statement: Aligning with states, commits governments to implementation, effectively managing the land with fire. Emphasis on partnerships and capabilities for emergency response.

Landscape Approach Risk Management: A Victorian example. Risk approach to bushfire management planning report card. Elements are Hectares treated and reporting (including mechanical), preparation and planning, residual risk, tolerable fire interval, veg growth stages, community engagement, monitoring, output cost

Community Information and Warnings: Three levels are: Advice, Watch and Act, Emergency Warning. A consistent approach across the state; information issued through multiple channels- phone apps, TV, Radio, Facebook, sirens, telephone alerts. Not just relying on one system for alerts. "VicEmergency". Alerts Officer (in the command organization) under Public Information.

This season's outlook: September deficient rainfall, very dry, and in places record dry over multiple years. Cold long winter, but not wet, below average rainfall. This has deceived communities about potential. Forecast is we are in for a severe season. Especially in SE and SW Australia.

Future Challenges: Climate change, Demographic change- people moving into the bush. Community protection vs ecosystem health- clarity in objectives, greater interoperability between agencies, states, nations.

*Discussion* on reporting initial response and sharing information.

*Discussion* on Alerts and Warnings, training, position in organization. Tailored for community, Fire ready app can be tailored for location, has the same thing for RX fire.

*Discussion* on national system AIMS (similar to NIMS) between New Zealand and Australia.

*Discussion* Fire Wise/Fire Smart. Community organizer (facilitator).

International Firefighting, Becoming the "Norm". Higher demand for resources for multiple reasons. Got there through: Relationships, agreements, quick response. Multiple benefits: accelerated development, people and skills, safety. Review of 2015 international deployments. Canada and CFFC, USA and NIFC. Emergency Management Victoria made arrangements for deployment. Learnings: PPE and travel, preplanning agreements, shadowing, camping out, radio training, the right people for field liaison. Working around aircraft- becoming familiar with standards.

The future: database of personnel. NAFC broadening role to international coordination.

Glad to be here, handouts available. Best wishes and thank you to Tom Harbour.

*Changing Presentation*

[Brazil's Wildland Fire Program](#)

Lara Steil- Prevefogo, Brazil

Thanks to CONAFOR for sponsorship to be here.

IBAMA-National Institute for Environment. Federal firefighting of prevention, monitoring, and wildland firefighting. 8.51 million square kilometers.

Legal instruments Penal codes, Forestal codes, national Park regulations. Zero fire vs. fire as a management tool. Legislation supports fire as management tool for ecological restoration. Previously identified need to develop skills change aversion risk. This has changed today, utilizing now and integrated fire management approach. New Forestal Code with input in 2012 for burning, prevention, and combat wildfires. Working on alternatives for agricultural proposes, recognizing that fire may be the best option. Ability to utilize Rx fire in protected areas.

Interagency and Prescribed/Controlled Fire Activities coordination and national/federal level with states. Designed to strengthen state committees and capabilities. Establishing domestic and international agreements. Bilateral agreement with Italy for reduction of wildfire in the Amazon. Now a tri lateral agreement with Italy, Brazil, Ecuador. Connected to global network,

International cooperation examples: US Forest Services, eight countries of the Amazon basin, Brazilian Air force C-130 in Ecuador and Chile. Cooperation with Argentina, Uruguay, and neighboring countries.

Training and environmental educational: Brigades, managers, combat, ecological consequences and solutions/

Research and Monitoring. National system in place, some modules are working, some are being developed. Satellite monitoring with institute of spatial research.

Season starts June/July to November, more and more happening all year.

RedLatif: Remote Sensing Forest Fire Network of Latin America. Since 2002.

Federal Brigade program. Hired maximum 6 months due to legal reasons. Hotshot Brigades with special training for specific biome. Mobile in wildfire level 3. Federal brigades located in rural settlements for local and national mobilization (in wildland level 3). Also have Federal indigenous Brigades. These brigades have rich history of coexistence with fire. Control of wildfires in indigenous lands. Learn their use of fire, establish education on consequences of burning, and the specific regimes in their areas.

Cerrado Jalapao: Integrated fire management in protected area, conservation areas, and indigenous lands. Use of prescribed fire.

Indigenous land Xerente: Worked with community to establish priority for conservation and where to RX burn.

Quilombolas Land Kalunga: Pasture management, fuel reduction, protect sensitive areas, and utilize prescribed fire.

Centro Integrado Multiagencias: Center for operational coordination across the country.

Araribola Indigenous land. Severe fire season, over half the area burned.

Roraima Verde in indigenous land Raposa: Planned prescribed fire 200 mil ha.

Challenges and Future: Work together with private companies. Currently we do not work with them. Development of three government level of competence. State has the expertise. Improve internal cooperation. National Policy. Climate change and wild fire role. Wildfire 2019 national conference. Challenges are opportunities. The Anteater is their fire mascot.

*Discussion:* Private forest brigades request training but there are no agreements or relationships.

*Discussion:* Burning in savannas similar to Australia.

*Discussion:* Italy interest in the Amazon.

### Mexico/USA Resource Exchange

Brook Chadwick- USFS: North American Study Tour worked out an exchange program with specific staff in Mexico. Located at the UWC NF assisting on the Logan Hotshots

Geographic lesson of where the UWC is and where the exchange took place; background on Utah forests. Stats on the UWC; Complex fire program, wildland urban interface; mixed ownership and 60% of fire occurrence is human caused; beetle outbreak has impacted 25% of the forest area. Stats on the types of resources stationed on the UWC. Spent time shadowing as Duty Officer was beneficial; time with IMTs and a day at NIFC.

Trip to NIFC; 10 days learning about local challenges; 20 days spent on an IMT; popular at the incident. Spent time with each section staff; including an interview at the Crouch radio station. 1 hour presentation by Juan to the IMT in camp

Eder and Ismael spent time with Logan IHC; had to delay their arrival because Logan IHC was in Canada. Had lots of activity with the crew; assisted with an incident with a civilian during a fire. Many other places visited during their tour.

Juan and Deibe were assigned to engines in New Mexico Learned technical skills related to engines and then mobilized to CA for an incident. Worked with the overhead structure on the IMT to great benefit. Sante Fe NF ideally suited to hosting because of the language skills of their crewmembers.

Challenges: language proficiency; number of language proficient hosts; time to acclimate to our environment; daily transportation for Juan; lack of a formalized process.

Successes: Understanding on how to design training; working knowledge of IMTs; number of participants, season timing, and length of stay; willingness of everyone involved to engage with participants; strong desire to make the exchange succeed' global understanding of fire management.

Recommendations: Finalize participants sooner in the year; provide fitness and language expectations directly to the participants; IHC and engine crewmembers could also get experience with duties of FMOs and Dos do; send US firefighters to Mexico.

Q: Offer to include the Missoula Fire Sciences lab in the tour (Rollins).

Comment: (Alfredo) Thanks to everyone involved with getting these fire fighters up to the US. Some details about where the participants came from and what they are involved with in Mexico, illustrating the importance of continuing the exchange to establish best practices for Mexico. New leaders are being prepared to move their respective programs forward. Emphasize that the exchange is useful for individuals and for the entire program as a whole.

### Previous FMWG Meeting Discussion

Bill DeGroot- CIFCC: Going over the notes from the last meeting. Referencing a document that has been previously distributed. Recounting the events of the meeting; covered the work plan and action items. Study recommendations for 2016.

Covering the work plan: went through each item listed on the NAFC-FMWG Workplan update 3 Nov 2015. Need to provide a due date for the new agreement draft, settling on 1/2016. Operating plans will be signed annually but the overarching agreement is still in need of clarification.

### Smoke Discussion

Pete Lahm- USFS: Would like to reengage with the group on Smoke Management. Citing several instances where the smoke issue has an international component.

A smoke group is set up in Canada currently and may be a better venue for this proposal; might be something concurrently with NAFC; No capacity in Mexico currently.

Brazil- a group in the University of Sao Paulo, connected with a (German?) university. They are interested in bringing the smoke research groups together.

### International Conference- South Korea

Dale Dague- USFS: International fire conference in South Korea. Write up passed around, refer to the write up for details.

### 2014 Study Tour of Australasia Report

Jason Steinmetz- DOI: Fire Study Tour Aus/NZ - good to have had a consistent guide throughout the tour. Stakeholder engagement was remarkable in Australia, became a great takeaway for the participants. Interesting way that communities can motivate members to take on the fuel treatment activities.

Q: What are the real leadership questions to focus on for the study tour?

A: Consensus that including researchers would be beneficial to the full experience.

### North American Forestry Commission- Fire Management Working Group Meeting 2016

Alfredo Nolasco- CONAFOR: Selecting a location, maybe Pueblo or Juahacca. Close to Mexico City, many rural brigades working on that side. If there is another proposal we can discuss on the conference call in March. October or November is the preferred time for the meeting. Need to share schedules with Alfredo to best plan for the meeting. January 13-15 NAFC meeting to take place in Campeche- Yucatan. Will send a draft of the working group report.

## Appendix A

### NAFC-FMWG WorkPlan

Updated: 5 November 2015

Objective	Activity	Deliverable	Timeline	Responsible
Improve cooperation on wildland fire between Canada, Mexico, & USA	Downloadable Glossary of ICS Terms (FAO)	Upload pdf versions on FAO website	Jan. 1 2015 completed	Pieter Van Lierop
		Contact FAO to get a single pdf version	Nov 15, 2015	Alfredo
	Develop NA fire science directory (web accessible)	1) Send Canadian contacts 2) Send Mexico contacts 3) Send US contacts	Jan. 31, 2015 Continuing June 1, 2016	1) Bill de Groot 2) German Flores 3) Matt Rollins
	Mexico Fire Management Information System	Include in new 5-year Fire Mgt. Plan for Mexico	Discuss during field tour in Alberta (Oct 20-24, 2015) completed	Yocundo Countino Gira Bill de Groot
	Developing bi-lateral (MOU) agreements	Complete draft agreements and review	Continuing  Follow-up by spring	Alfredo Nolasco, Mark Ruggiero, Kim Connors Dale Dague Gordy Sachs
	Mexico operating plan		Jan 2016	Alfredo Mark Gordy Kim
Undertake and/or support cooperative global fire activities	Recommendations from 2014 Study Tour of Australia and New Zealand	Finalize Study Tour Report	Nov 1, 2014 completed Jan 31, 2015 completed	Jason Steinmetz Kim Connors Dale Dague Alfredo Nolasco
		Review Study Tour Report and decide on advise for recommendations		
	Australia/New Zealand 2016 Study Tour of North America.	Organize study tour of Mexico, USA and Canada	Update at 2015 FMWG meeting Will be discussed today	Kim Connors Dale Dague Alfredo Nolasco Matt Rollins
	ILC	2015 ILC Meeting - Pyeongchang	Oct 2015 – during 6 <sup>th</sup> IWFC completed	Dale Dague

Undertake and/or support cooperative global fire activities (cont'd)	Letter to COFLAC	Mexico to invite COFLAC member to attend 2015, 2016 meetings	Jan 31, 2015 completed	Alfredo Nolasco Pieter van Lierop (advise)
	FMWG-FFMG collaboration	Attend 2016 FFMG meeting 30 Aug-1 Sept 2016 Brisbane	Sept 2016 (1 <sup>st</sup> week)	Alfredo
	6 <sup>th</sup> IWFC	ILC – to assist Korea Conf. Organizing Committee/participate in IWFC	Oct 2015 completed	Dale Dague Bill de Groot Kim Connors
	Regional Sessions at IWFC	Solicit proposals from each country in NAFC for session content/format/topics  Set up ILC meeting/conf call to discuss Regional Sessions	Nov 30 2014 completed  Jan 15 2015 completed	Dale Dague Alfredo Nolasco Bill de Groot  Dale Dague
	ILC	7 <sup>th</sup> IWFC Planning meeting in DC	TBD (autumn)	Dale
	2016 Study Tour			Mark Jason Dale Marc Mousseau Juan Villa
	2016 Study tour symposium		TBD	Matt
Conduct FMWG business	2014 FMWG Meeting Minutes and Workplan	Complete and distribute 2014 minutes and workplan	Jan 2015 completed	Bill de Groot
	2016 FMWG meeting	Plan 2016 FMWG meeting – Conf call	March 2015 completed	Dale Dague
	Develop a North American report summarizing key components of country reports	Draft template for annual summary report.	Post links to country fire statistics on FMWG website by Jan 2015; include a pop-up of new links on website Continuing Jan 1 2016	Bill de Groot
	Update FMWG website	Add/revise names of FMWG members	Nov. 30 2014 completed	Dale Dague

Conduct FMWG business (cont'd)	North American Fire Danger Rating map	Post on appropriate website locations (set up for daily updates)	TBD Completed	Kim Connors Matt
	2016 FMWG meeting			Alfredo
	Update Charter	Update names	March 2016	Dale
	Semi-annual conference call		March 2016	Alfredo
	NAFC meeting	Provide report	Jan 2016	Alfredo
	FMWG Int'l Strategy	Prepare presentation	ASAP	Kim Connors
	FAO funding (12K)	Check into a FMWG request	ASAP	Dale Alfredo