National Seasonal Assessment Workshop

Western States & Alaska

Final Report
March 30–April 2, 2004
Phoenix, AZ

Gregg Garfin,
Tim Brown,
Rick Ochoa, and
Heath Hockenberry

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- Tim Brown, Program for Climate, Ecosystem and Fire Applications (CEFA), Desert Research Institute
- Gregg Garfin, Climate Assessment for the Southwest (CLIMAS), University of Arizona
- Heath Hockenberry, National Interagency Coordination Center (NICC)
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Foreword

The National Seasonal Assessment Workshop: Western States and Alaska was, for many of the participants, the second iteration of a process to improve fire management decision making through preseason fire-climate assessment. From my point of view, the process has matured significantly. Participants and organizers have become more facile in communicating and integrating information from fuels assessments and climate forecasts, and synthesizing the information into timely preseason web-based reports.

The nine geographic areas represented at the meeting have incorporated early and late (i.e., updated) preseason outlooks into a seamless suite of predictive services products that include daily, weekly, monthly, and seasonal outlooks. Compared to the situation when the NSAWs began two years ago, this array of products and the commitment of geographic area predictive services personnel to improve and update them each season is an outstanding achievement.

The 2004 fire season was particularly difficult to predict, due to the lack of strong climatic indicators. Workshop participants stepped up to the plate and made the best of a tough forecast situation. Moreover, participants provided the workshop organizers with a set of clear recommendations for research and forecast communication to improve future assessments. The inclusion in this meeting of new and improved fire parameter prediction models (e.g., acres burned, fire potential, fire weather index) shows great promise to predict future fire seasons more accurately.

I would like to extend my sincere thanks to my co-organizers, Heath Hockenberry, Tim Brown, Rick Ochoa, and Tom Wordell, and to all of the participants in the 2004 NSAW: Western States and Alaska.

Gregg Garfin
September 7, 2004

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We apologize if we have left anyone's name off the list.

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Executive Summary

The 2004 NSAW: Western States and Alaska was organized by a collaboration between individuals with the National Interagency Coordination Center Predictive Services, Climate Assessment for the Southwest (CLIMAS; University of Arizona), and Climate Ecosystem and Fire Applications (CEFA; Desert Research Institute). The meeting addressed the long-range forecast and fire management concerns of the West and Alaska. Workshop deliverables included a new consensus climate forecast for the fire season produced under the guidance of CEFA. Climate experts from six agencies merged climate predictions into a consensus forecast for the 2004 fire season. This climate decision-support tool, along with regional fire and fuels assessments prepared in advance of the workshop, provided the foundation for the seasonal fire danger outlooks. Enhanced collaboration between workgroup participants resulted in a smooth process, despite the lack of strong climate signals to anchor the outlooks.

The consensus climate forecasts for April–June and July–September suggested the following:

- Increased probabilities of above-average temperature for the western and southern United States during both forecast seasons, in conjunction with increased probabilities of below-average temperature for the Northern Great Plains during April–June.

- Increased probabilities of above-average precipitation for the Pacific Northwest and western Alaska during April–June.

- Increased probabilities of above-average precipitation in the southern Great Plains and southern Alaska during July–September.

- Increased probabilities of below-average precipitation for Northern California, the southern Rockies and the South during April–June.

- Increased probabilities of below-average precipitation for the Northwest, western Great Basin, and Southeast during July–September.

In brief, the fire potential (i.e., fire activity that may impact fire fighting resources) outlooks suggested the following:

- Average to above-average fire potential across most of the West, with below-average fire potential in the western Great Basin (except along the Sierra Nevada front).

- Areas of special concern included Arizona, eastern Washington and Oregon, Southern California and the southern and central Sierra Nevada, eastern Utah, northern Idaho and western Montana, western Colorado and the Colorado Front Range, and southwestern Alaska.

- Areas suffering multi-year drought and high tree mortality were of special concern if spring season precipitation continued to be below average.

- Also of special concern were the short-term temperature fluctuations that caused rapid snowmelt across the West in March, and had the potential to affect the West and Alaska during the spring.

Among the key recommendations from workshop participants were the following:

1) Improved monthly and seasonal forecasts for the spring months.

2) Examination of the interannual association between number of days with precipitation and total precipitation for the fire season.

3) Improved forecasts and climate diagnostic studies for Alaska.

4) Production of both early and late preseason proceedings reports, in a more timely fashion.

Pre-season fire danger and consensus climate outlooks for the 2004 fire season in the western United States and Alaska were produced by collaboration between fire behavior and weather analysts, as well as national climate forecasters and regional climate experts. The workshop generated enthusiasm and cooperation between participants, learning and sharing of expertise,

and generation of ideas for improved preseason assessments. The workshop improved the process and mechanism for NICC Predictive Services to meet its goals of integrating climate, weather, situation, resource status, and fuels information into products that will enhance the ability of wildland fire managers to make proactive short- and long-range decisions for strategy development and resource allocation, and to improve efficiency and firefighter safety.

Introduction

The 2004 NSAW: Western States and Alaska marks a significant step in the maturing of a multi-year process to improve information available to fire management for proactive strategies. The meeting builds upon the growing awareness that persistent climate phenomena such as La Niña and drought can signal increased fire potential, seasons in advance (Swetnam and Betancourt, 1990; Barnett and Brenner, 1992; Morehouse, 2000; Westerling et al., 2003). The conditions underlying the severe fire seasons of 2000 and 2002 (as well as the catastrophic California fires of 2003), for example, were driven in part by such phenomena. In 2003, the first NSAW brought participants together in a structured forecast exercise designed to integrate preseason fuels conditions and climate outlooks in order to forecast fire potential for the 11 Geographic Areas administered by the National Interagency Coordination Center (Garfin et al., 2003).

The 2004 meeting brought together fuels specialists, fire intelligence personnel, and fire meteorologists from the western United States and Alaska, as well as forecasters from climate forecast centers across the United States (N.b. A meeting for the eastern and southern United States was held in January 2004 [Garfin et al, 2004].) Because many of the participants had attended the 2003 NSAW, there was an expectation the NSAW process would be more sophisticated and the production of integrated fire-climate assessments would be easier. Participants demonstrated facility with the integrated process and improved understanding of the climate forecast contributions. However, a lack of a strong ocean-driven climate signal made production of the assessments more difficult.

Goals and Objectives of the Meeting

The 2004 NSAW: Western States and Alaska is an example of "bridging the worlds of fire managers and applied fire researchers" (White, 2004). The NSAW workshops (Garfin et al., 2003, 2004) are a process designed to help improve information available to fire managers and address priorities for future research at the nexus between climate and fire. The organizers of the NSAW workshops, in addition to their capacities as researchers and managers of weather, climate, and fire-related research projects, serve as "bridge builders" in the process. Thus, the process features direct interaction between partners and the long-term commitment of individuals and agencies to enhance information, knowledge transfer, decision support tools, and processes for improved fire management.

The fundamental objective of the NSAW workshops is to improve information available to fire management decision makers. The workshops integrate climate history and forecasts, sub-regional estimates of fuel conditions, and the judgment of regional experts. The result is improved information made available to decision makers to set priorities for allocation of firefighting resources at local, regional, and national scales, as well as for multi-agency coordination and determination of preparedness levels. Moreover, the process produced an accepted set of standards and protocols for the production of seasonal outlooks for the Geographic Area Coordination Centers (GACCs).

The 2004 workshop was structured to bring together national climate forecasters, regional climatologists, NICC and GACC Predictive Services meteorologists, regional fuels and fire analysts, intelligence personnel, and other experts in order to create comprehensive seasonal fire danger outlooks that incorporate information about climate and fuels conditions for the western United States and Alaska geographic areas.

The workshop was structured to minimize the time participants spent passively listening to research presentations and maximize the time spent working on outlook reports; interacting with each other and exchanging data, analyses, and perspectives; and reporting progress, getting clarification, and providing feedback to the meeting organizers, climate forecasters, and other geographic area personnel (see Appendix B for meeting agenda). The following are key objectives for which the workshop was explicitly structured:

- To foster communication between climate forecasters and fire management professionals.
- To foster communication and cooperation between federal and state fire management professionals.
- To improve national fire danger outlook "edge-

matching" in adjacent regions, through sharing information about regional fuels and climate/weather patterns.

- To provide opportunities for climate forecasters to interact personally with fire management professionals in an environment that encourages mutual respect and transfer of knowledge.

- To create a mechanism for future interagency cooperation and enhanced information flow, by providing an environment conducive to dialogue and discussion.

- To gather feedback from workshop participants, in order to improve the outlooks and to improve the process used to generate the outlooks.

Communication and Cooperation

Incremental progress in the NSAW process was demonstrated by the professional attitude of the participants and their facility in integrating the components of their assessments through protocols established in 2003. The 2004 meeting was characterized by better preparation and tighter coordination and sharing of climate and fuel information, which greatly improved the assessment process. Coordination between geographic areas was impressive, and especially effective given the uncertainty in long-term climate forecasts.

Once again, the NOAA Climate Prediction Center committed to multi-day participation in the workshop, based on a request from 2003 NSAW participants. CPC forecaster Jim Wagner shared with each of the geographic area workgroups a wealth of knowledge gained during a long career in analyzing and forecasting U.S. weather and climate conditions. Another area of improved communication was the inclusion of results of a fire potential model from Jim Lenihan of the USDA-Forest Service Corvallis Forestry Sciences Laboratory. A presentation of the model, which includes modules covering biogeography, biogeochemistry, climate, and fire, was offered as both a forecast and a demonstration of the potential for improved seasonal outlooks. Participants were also treated to a statistical fire forecast from Anthony Westerling of the Scripps Institution of Oceanography Climate Research Division and California Applications Program. In past years, the statistical model has shown high skill for predictions of acres burned (http://meteora.ucsd.edu/%7Emeyer/fcast200404.pdf).

The CHEETAH 2 fire data analysis and data management program was demonstrated to workshop participants. The program allows users to analyze fire occurrences and episodes, their associated causes, and to manage fire occurrence data in a self-contained high quality database. CHEETAH 2 is one of the tools developed in coordination with NICC Predictive Services, in order to improve fire management and preparedness.

On the final day of the meeting, workshop organizers coordinated a press briefing with representatives of print, radio, and television media from Arizona, as well as from national media. In addition, workshop participant Melanie Lenart prepared a press release distributed through University of Arizona News services. In order to ensure accuracy and the proper emphasis in the results of the workshop, the press release was reviewed by workshop organizers and selected participants before release. The well-designed press briefing gave members of the press ample opportunity to ask questions and to learn about uncertainties associated with the seasonal fire potential outlooks. The press briefing drew attention to the NSAW process, as well as providing important information to the public to help reduce fire risk.

Workshop Products

Western States and Alaska Fire Outlook

NICC Predictive Services personnel integrated the NSAW: Western States and Alaska outlook with outlooks from the eastern half of the United States. The national wildland fire outlook map (Figure 1) was released in early April. The map shows the areas of above- and below-average fire potential. Potential refers to fire activity that may impact firefighting resources. Updated assessments were issued throughout the fire season (see http://www.nifc.gov/news/pred_services/Main_page.htm).

Each region (see Figure 2) is influenced by varying effects of accumulated winter precipitation (snowpack), the amount of dead and flammable brush and trees present (fuel), and the effects of long-term drought. The outlooks (as of April 6, 2004) were:

Southwest
Large areas of above-average fire potential due to long-term drought, rapid spring season snowmelt, accumulated fine fuel buildup, and tree mortality due to insect infestation and disease.

Pacific Northwest
Large areas of above-average fire potential due to long-term drought and lower than normal winter snowpack.

Western Great Basin
Generally below-average fire potential with some areas of increased fire potential due to abundant fuel loads.

Eastern Great Basin
Large areas of above-average fire potential due to long-term drought and related vegetation mortality due to insect infestation and disease.

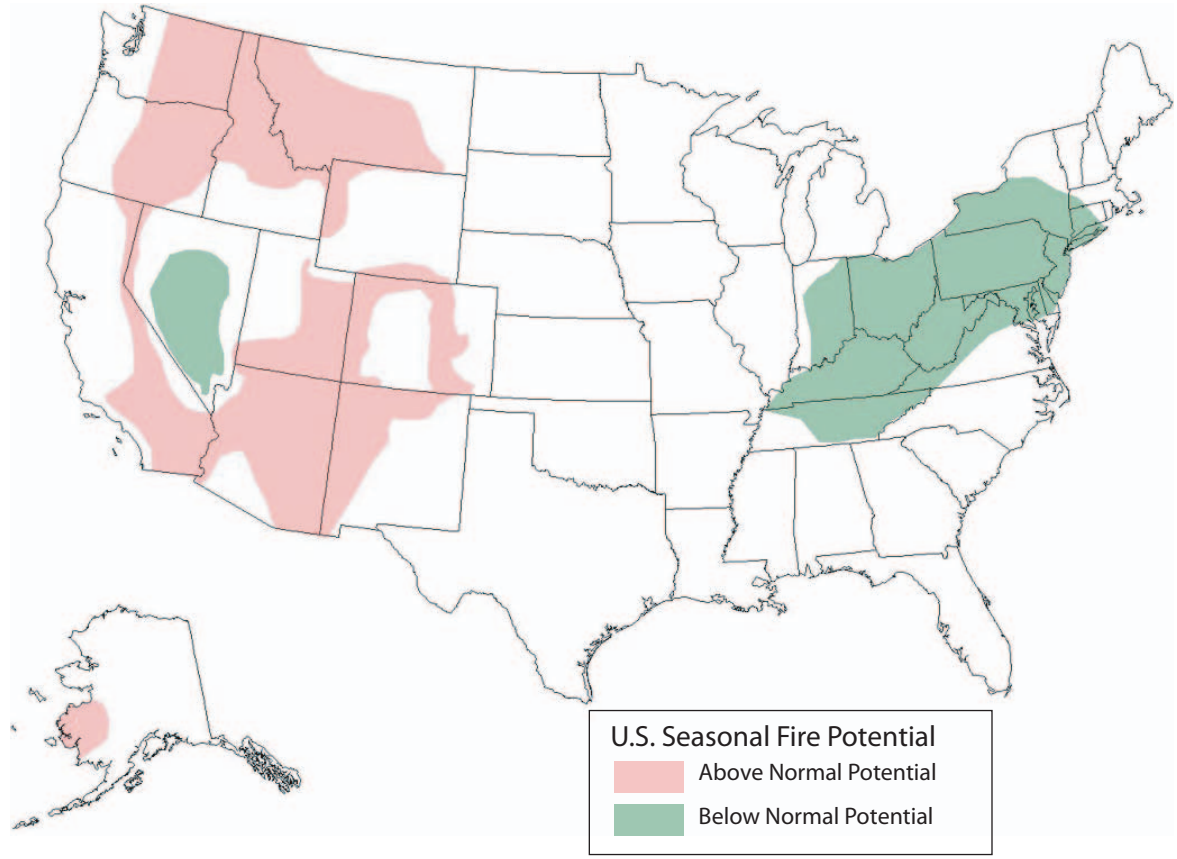

Figure 1. National wildland fire outlook (April 15–August 2004).

Rocky Mountain
Some areas of above-average fire potential due to long-term drought, fine fuels buildup, and an increased amount of dead timber.

Alaska
Generally near-normal fire potential largely due to normal- to above-normal snowpack.

Southern California
Large areas of above-average fire potential with threats to home at the wildland/urban interface locations due to long-term drought, extensive brush die-back, and dead/dying timber due to insect infestation and disease.

Northern California
Generally near-normal fire potential with some areas of above-normal fire potential due to long-term drought, tree mortality due to insect infestation and disease, and downed trees due to wind and snow.

Northern Rocky Mountain
Large areas of above-normal fire potential due to rapid spring season snowmelt, long-term drought and significant areas of tree mortality due to insect infestation and disease.

Western States and Alaska Consensus Climate Forecast

Seasonal forecasts of two-category probabilistic temperature and precipitation anomalies were produced for the Western United States and Alaska as input into the geographic area wildland fire potential outlooks. The forecast (developed on March 30, and released online on April 6) was designed to meet workshop participants' needs, as expressed at previous workshops. The forecast aimed to provide additional probabilistic information for areas where individual forecasts showed little confidence; and to directly integrate climate forecast information into specific assessment decisions.

Forecast consensus was reached by combining several monthly and seasonal forecasts produced at the International Research Institute for Climate Prediction (IRI), the Scripps Institution of Oceanography Experimental Climate Prediction Center (ECPC), the NOAA/NCEP/NWS Climate Prediction Center (CPC), and the NOAA/CIRES Climate Diagnostics Center (CDC). The forecast periods were April–June and July–September 2004. A combination of dynamic and statistical models from the respective organizations and forecaster judgment were incorporated in producing the forecasts. Forecaster judgment was also incorporated from the USDA-Forest Service Fire and Environmental Applications team.

Figure 2. The nine geographic areas represented at NSAW: Western States and Alaska 2004.

Reaching a consensus forecast was more difficult this time than during previous NSAWs. Neutral El Niño-Southern Oscillation (ENSO) conditions reduced forecast confidence for some portions of the United States In addition, the dynamic models effectively showed "cool" temperatures over much of the West during both forecast periods, which conflicted with the CPC trend-inspired temperature forecast for increased probability of warmer than average temperatures over a large portion of the West. These opposing views lead to substantial discussion on how to resolve the differences. Forecasters agreed that the trend was a dominating pattern.

The forecasts were produced via a round-table forum during the workshop. A new experimental process was used to achieve consensus. First, a "liberal" initial forecast was developed by DRI/CEFA; then the forecast team was asked to justify why they would or would not agree with the initial forecast. Forecast discussion lead to determining regions of warm/cool and dry/wet, and assigning a consensus probability. Since the forecasts were comprised of only two categories, the probabilities simply represent the chance of above or below normal. For example, if the forecasters determined a 10 percent chance of the above-normal category occurring, then

the probability of the above-normal category became 50 percent plus 10 percent, or 60 percent. Conversely, the probability of the below-normal category could be 50 percent plus 10 percent equaling 60 percent. Increasing percent values above 50 also indicates a relative increase in forecast confidence. Given the current state of art for climate forecasting, 55 percent would be considered low confidence and 70 percent high confidence. A forecast probability of 50 percent means no forecast confidence for either category (white areas in Figure 3).

Figure 3 shows the 2004 seasonal U.S. consensus forecasts for the periods April–June and July–September. The highlights of the temperature forecasts include: increased probabilities of above-average temperature over much of the West and southern states for both forecast periods, as well as increased probabilities of above-average temperature also for most of Alaska during April–June; for April–June increased probabilities of below-average temperature for the northern plains states and Northeast were forecasted. Precipitation forecasts include the following highlights: for April–June, areas of increased probabilities of above-average precipitation in the Pacific Northwest and western Alaska, along with a large region of increased probabilities of below-average precipitation for an area stretching from the southeastern Rockies across the southern United States, as well as northern California; for July–September, the forecast suggests large regions of increased probabilities of below-average precipitation in the Northwest/Great Basin, and the Southeast, as well as two areas of increased probabilities of above-average precipitation around the Texas panhandle and across the southern Alaska coast.

Except for the Southwest July–September temperature forecast, none of the forecast probabilities are particularly large. This reflects, in part, the opposing views of the dynamic models, the long-term trend, and the lack of a strong ocean signal. Hence the difficulty of reaching a consensus forecast of high confidence.

This is the third effort to produce a consensus forecast by combining forecasts from different organizations (see Brown 2002; 2003, and Brown et al. 2002; 2003). Thus, specific quantitative skill results cannot be offered at this time. However, forecast skill has been established for most of the inputs, and it is likely that the consensus forecast skill would be equal to or slightly larger than individual forecasts, depending on the region and the number of inputs in agreement. A qualitative assessment of 2003 NSAW forecast skill, requested by participants, was presented (see Brown, 2004).

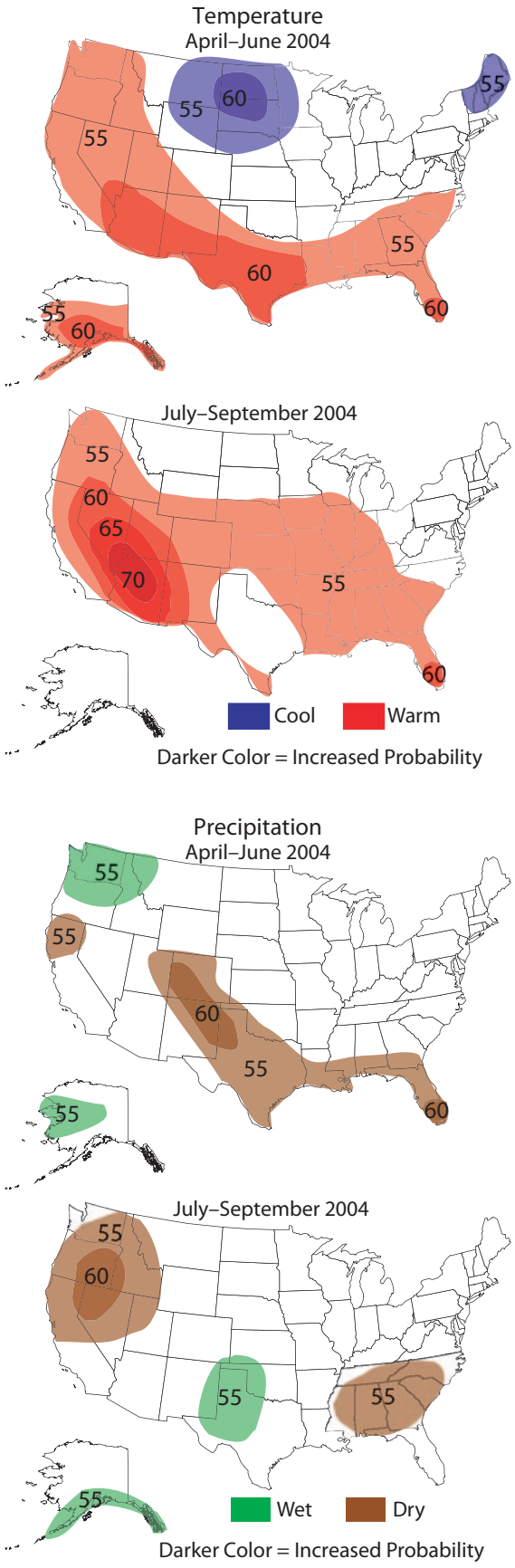

Figure 3. Contiguous United States and Alaska consensus climate forecast issued March 30, 2004.

Recommendations

Workshop participants were given ample time on the final day of the workshop to convey data and analysis needs that would enhance future workshops and constructive criticism of the workshop process. The following suggestions were offered by the participants.

National Climate Forecasts

Participants noted the value of the consensus climate forecast in the preseason assessments. Participants reiterated a perennial request: improved seasonal and monthly climate forecasts. An area of particular importance is improved climate information and forecasting for Alaska, especially for April–July. One of the climate forecasters noted that there is no significant skill in forecasting Alaska precipitation unless there are strong El Niño conditions. Thus, seasonal forecasts for Alaska are a top priority and a significant challenge for future consensus climate forecasts.

Another concern with regard to climate forecasts for the Western NSAW has to do with the timing of the meeting. For example, Scripps Experimental Climate Prediction Center (ECPC) forecasts are released on the first of each month; therefore, holding the workshop during the first week of the month would allow for "fresh forecasts" from ECPC. More than one of the forecasters also noted that soil moisture, whether used in dynamic or statistical forecast models, is a good indicator of overall fire danger. Another need noted by participants was for the presentation of 500 mb geopotential height maps to accompany the climate forecasts. Such maps are indispensable tools for meteorologists to interpret climate forecasts probability anomaly maps. The NOAA-CDC web site (http://www.cdc.noaa.gov/seasonalfcsts/) provides 500 mb height anomaly probability maps to accompany several dynamic and statistical forecast models.

Workshop participants also noted key months and seasons for forecast information. Improved monthly April–May precipitation forecasts are essential for the Southwest, Southern California, and Great Basin geographic areas. June is a pivotal month for the Pacific Northwest, Northern California, and the Northern Rockies geographic areas.

Data and Research Needs

Southern California participants suggested that their preseason assessments would be improved by the results of research on the association between the number of days with rain and the total precipitation for the fire season. Participants also asked that geographic area-specific materials be assembled prior to the workshop. One suggestion to help meet this need would be to request materials, analyses, and input from state climatologists, the Western Regional Climate Center, NOAA-NWS's Western region office, and the Western RISAs. In addition, workshop organizers might consider inviting state climatologists and NOAA-NWS representatives to future Western NSAW workshops. Participants asked the meeting organizers to download and make available on disk or portable drive all maps, graphics, software, and other materials commonly used in the assessment reports. An example given was the most recent US Drought Monitor map.

Report Distribution and Meeting Timing

One participant suggested that preseason assessments are most important to customers 30 days prior to the normal beginning of the fire season in each geographic area. Thus, the timing of the NSAW: Western States & Alaska is too early for the materials to be of use in some of the more northern geographic regions. One potential solution to this problem is to provide a second proceedings volume when assessments have been updated later in the spring.

Climate Training

Comments from three years' worth of preseason fire potential assessments, and two years of NSAWs has shown workshop organizers and NICC Predictive Services that improved training in state-of-the-art climatology and climate forecasts will improve future preseason fire potential assessments. The proposed training will include background on the major seasonal, interannual, and multi-year modes of climate variability (e.g., North Atlantic Oscillation, Pacific-North America pattern, ENSO), drought, climate forecasting and the limitations of climate forecasts, as well as statistical methods for preseason assessment verification and data quality

issues. During the 2004 meeting, participants discussed the additional effort necessary to conduct a climate training in conjunction with the 2005 NSAW: Western States & Alaska. Participants requested that climate training not preclude presentations of fuels assessments in future workshops.

Conclusions

The 2004 NSAW: Western States & Alaska showed a maturation of a long-term process designed to improve information available to fire managers. As with the 2003 NSAW, the 2004 meeting brought together climate forecasters, regional climatologists, fire management, and fire weather specialists in order to create an experimental operational product to evaluate long-range pre-season fire potential.

During the workshop, climate forecasters produced a consensus forecast for the fire season and continued to learn about key forecast, climate diagnostics, and data needs necessary to effectively serve the fire management community. The consensus forecast process incorporated a new approach designed to motivate forecasters to improve sub-regional forecast information. Participants showed continued support and enthusiasm for the integrated process and cooperative work atmosphere fostered by NSAW. They also expressed that they value the process and products of the workshop; however, the lack of strong climate indicators, persistent drought, and high week-to-week and month-to-month variability in atmospheric circulation created significant challenges to forecasting fire potential.

In response to suggestions from participants in the 2003 workshop, organizers increased the time that workshop participants spent in work sessions devoted to constructing fire danger outlooks and in constructive dialogue about techniques and improvements to the outlooks. In response to suggestions for increased opportunities for interested workshop participants to question forecasters about the regional details of climate forecasts, A. James Wagner of NOAA-CPC devoted extra time to participating in the 2004 meeting. Wagner's considerable experience, devoted participation and enthusiasm for the process helped the workshop process immeasurably. Moreover, fire potential forecast contributions from Scripps Institution of Oceanography and the USDA-Forest Service Research Station in Corvallis, Oregon enhanced the workshop beyond the already substantial contributions from NOAA-CDC and Scripps ECPC forecasters and regional fuels assessment contributors.

The NICC devoted considerable effort to improving pre-workshop communication with participants, in order to gauge their needs for the meeting. In addition, NICC prepared an FTP site to facilitate data transfer.

Forecast, data, and research needs to be addressed in order to improve the outcomes of future workshops include:

1) Improved monthly and seasonal forecasts for the spring months.

2) Examination of the interannual association between number of days with precipitation and total precipitation for the fire season.

3) Improved forecasts and climate diagnostic studies for Alaska.

4) Production of both early and late preseason proceedings reports, in a more timely fashion.

In summary, partnerships between climate science and fire management operations were strengthened by the 2004 Western NSAW. The spirit of collegiality was enhanced, and the sense of trust engendered between predictive services geographic areas and between climate forecasters geographic area specialists improved. The workshop improved the process and mechanism for NICC Predictive Services to meet its goals of integrating climate, weather, situation, resource status, and fuels information into products that will enhance the ability of wildland fire managers to make proactive short- and long-range decisions for strategy development and resource allocation, and to improve efficiency and firefighter safety.

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Appendices

Appendix A: Pre-Season Fire Danger Outlook Protocols

A. Executive Summary

1) A specific forecast statement (i.e., "the bottom line") should be explicitly included in the executive summary and final summary and recommendations. Include a statement about your confidence in the forecast. Mention why you do or do not have confidence, based on your assessment of the various tools used in your forecast.

B. Introduction and Objectives

1) Include guidelines for use of the report and a disclaimer.

C. Current Conditions (including comparison with historical records)

1) Snow (SNOTEL data, SWE)

2) Precipitation anomalies (recent week, month, water year)

3) Temperature anomalies (recent week, month)

4) ENSO & other climate indices impact on weather and atmospheric circulation

5) Weather and atmospheric circulation

6) NFDRS, Fire Danger, and other fire potential indicators

7) Drought indices and maps (PDSI, SPI, soil moisture, etc.)

8) Vegetation status (NDVI, Greenness imagery)

9) Fuel moisture (live, dead and foliar if known)

10) Fire occurrence data (number, size, duration if known for current year)

11) Fire behavior observations and/or Farsite run comparisons (if appropriate)

D. Climate and Weather Outlooks

1) Long-range climate outlooks (NOAA-CPC, IRI, Scripps, NOAA-CDC, and others)

2) Projected atmospheric circulation

3) ENSO and other relevant index forecasts

4) Drought forecasts (including NCDC drought amelioration)

5) Soil moisture forecasts

6) Fire weather indices

E. Fire Occurrence and Resource Outlooks

1) Estimates on number of fires (based on historic lightning episode information, acres burned, duration, Scripps/Westerling model, Lenihan model, and others)

2) Estimates of expected resource needs

F. Future Scenarios and Probabilities

1) Fire Family Plus

2) Priority sub-regions within Geographic Area

3) Fuel-type considerations

4) Climate considerations

5) Season Ending Event Probabilities

G. Management Implications and Concerns

H. Summary and Recommendations

Appendix B: Agenda

Tuesday, March 30, 2004

Morning

08:00-08:20	Introduction, logistics, and opening remarks - Gregg Garfin, CLIMAS; Rick Ochoa, NICC
08:20-10:10	National Consensus Climate Forecast (moderated by Tim Brown)
10:30-11:00	CHEETAH 2 discussion (moderated by Don Carlton and Tom Wordell)
11:00-11:45	Weather & Fuels Assessments/Outlooks (moderated by Rick Ochoa) Each GACC to discuss season, weather, and fire considerations specific to them and have invited fuels specialists to discuss current situation, emerging issues, and tools they use to gauge fire/fuels severity – 20 minutes for each GACC

Afternoon

13:00-16:15	Weather & Fuels Assessments/Outlooks Continued (moderated by Rick Ochoa)
16:15-17:00	Discussion of Seasonal Assessment Procedures and Protocols (moderated by Gregg Garfin and Rick Ochoa)

Wednesday, March 31, 2004

Morning

08:00-12:00	Breakout work sessions by geographic area to continue preparing outlooks

Afternoon

13:00-13:30	Reconvene for group discussion of issues arising from work until now Opportunity to discuss issues, needs, logistics, etc. for successful completion
13:30-17:00	Breakout work sessions continued

Thursday, April 1, 2004

All Day	Breakout work sessions/Continue outlook. Focus on finalizing the report in the afternoon and preparing a presentation for Friday morning. Please select a member of your group to deliver the presentation.

Friday, April 2, 2004

Morning

08:00-10:30	Reports and presentations. Today will be final presentations by the GACC's on the 2004 season. Each GACC will get 10 minutes, with a break if necessary in the middle of the presentations. The end time will be a feedback session to help improve the assessment process for 2005.

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