

Southwest

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SOUTHWEST

I. INTRODUCTION

The southwestern United States includes Arizona, New Mexico, west Texas and extends into Mexico.

The southwest has one of the widest ranges of fuel types in the United States. The twelve types range from desert fuels to spruce-fir. One incident can include most or all these types.

There is also wide range of land ownerships: private land, USFS, BIA, BLM, NPS, DOD, state, and United Mexican States. One incident can include several of these jurisdictions.

An example is the Peak Fire, which burned 12,000 acres near Sierra Vista, Arizona in June 1988. Elevations ranged from 2,000 to 9,000 feet. Fuel types spanned desert to mixed conifer. The fire started in Mexico and burned in seven different jurisdictions.

II. FACTORS INFLUENCING FIRE BEHAVIOR IN THE SOUTHWEST

A. Topography

Topography is the greatest single factor influencing fuel types and therefore fire behavior in the southwest. Elevations range from near 1,000 to over 13,000 feet. Steep mountain ranges in southern Arizona and New Mexico have many fires, which burn from bottom to top and burn through many fuel types.

In addition, aspect plays a bigger role in fuel types and in fire behavior in the southwest than any other area in the United States. Fuel types frequently change on ridge tops and in drainage bottoms.

At lower elevations, south and west slopes are frequently grass or desert shrub while north and east facing slopes can be pinyon-juniper or pinyon-juniper mixed with various types of brush. Canyons may have a mixture of deciduous trees, conifers and brush in the bottoms.

Mid elevations may have pinyon-juniper on south and west slopes with ponderosa pine and oak on north and east slopes. Canyons may be a mixture of ponderosa pine, juniper-juniper, oak and brush.

Upper elevations often have ponderosa pine and oak on south and west facing slopes and mixed conifer and aspen on north and east slopes. Canyons may have ponderosa pine on drier sites with mixed conifer across the drainage.

Fire behavior can be drastically different from one side of a ridge/drainage to another due to the differences in fuel types and moisture levels.

The Mogollon Rim is the most dominant geological/topographic feature in the southwest area. It extends from Ashfork, Arizona to Luna, New Mexico. It is a continuous uplift, which rises 2,000 - 4,000 feet above the lower elevations. The base of the rim is 6,000 - 7,000 feet while the top ranges from 8,000 - 10,500 feet. Fuel types range from pinyon-juniper, oak and brush to ponderosa pine, mixed conifer, and aspen.

The land north of the Mogollon Rim is referred to as the "Colorado Plateau". The Colorado Plateau loses elevation from the Mogollon Rim as it spreads to the north. Fuel types go from spruce-fir to ponderosa pine to pinyon-juniper to grasslands. Landforms are generally gentle sloping with steep drainages. However, there are also large volcanic derived mountains, which rise above the existing plateau. These have their own fuel types based upon elevation and aspect.

The southern part of both Arizona and New Mexico includes steep rocky terrain. Southern Arizona has unique "sky islands" which include all of the Coronado National Forest. These mountain ranges all begin with desert fuels at the base and several end with pine, mixed conifer, and/or spruce-fir at elevations over 9,000 feet.

Southern New Mexico is similar except the mountain ranges are generally much larger in size.

Fire behavior predictions using computer modeling is difficult because of the ever-changing topography and fuel types. It is a very good idea to utilize the expertise of a local fire behavior analyst or fuels specialist.

B. Weather.

1. Precipitation.

Weather is another obvious factor influencing fire behavior, with topography or elevation being tied to precipitation kinds and amounts. Elevations of 7,000 feet and above generally receive in excess of 100 inches of snow annually. Total annual precipitation ranges from four inches in the lower deserts to 20 inches at 7,000 feet to 35 inches at 11,000 feet. In general, nearly half of the precipitation in the southwest comes in the summer monsoons and half in the winter.

2. Winds.

Spring begins in late March in the Southwest. Weather is generally dry and windy. Daily winds above the Mogollon Rim can average a steady 20-30 MPH for many days at a time reducing snow pack through sublimation and exposing fuels to sun and wind. High elevations in the southern part of both Arizona and New Mexico receive similar winds.

Winds can reach 50-70 MPH as Northern spring frontal passages move across the west. Although some moisture is received, the effects are short-lived due to continued winds. By the middle of May

most snow has melted except at elevations above 10,000 feet. If the snow pack at 7,000 feet is gone by early April, the Southwest will have an active fire season in the timber. Fire during these periods, can move a significant distance in short time frames especially in ponderosa pine above the Mogollon Rim.

May and June are the two driest months and those in which most large fires occur. Winds continue through May but generally subside in June. Temperatures range from 110 degrees or more with 4% humidity in the desert to 90 degrees and 8% humidity at 7,000 feet. Fire behavior is obviously extreme during these conditions. Adding safety concerns of heat related ailments makes suppression efforts even more difficult.

3. Monsoon Season.

In late June or early July the Bermuda High sets up off Florida and affects much of the nations weather. This high creates a flow of moisture aloft from the Gulf of Mexico and into the southwest. This moisture mixed with the daily high temperatures creates the summer thunderstorm and monsoon season.

The lightning season usually starts out as dry lightning storms in late June in southern New Mexico and Arizona and gradually moves northwest across the southwest area during the next two to three weeks. The storms become wetter as the Bermuda High sets up. Showers are scattered and then become more widespread.

This rainy season continues through July and August. Daily temperatures are still over 100 degrees in the desert and near 90 degrees above 7,000 feet. Fires in lower elevations are still a problem because of lack of moisture in fuels and thunderstorm winds. Even though RH is higher during the monsoons, significant fire spread can occur in desert fuels and ponderosa pine until enough rain is received.

September and October can be dry and windy. During this time there is an increase in human-caused fires due to hunters. Nighttime temperature and RH recovery generally keep these fires to one or two burning periods.

C. Fuel Types.

The southwest has twelve fuel types. One fire can involve many of these types. Six of the fuel types that you will most likely be involved with when you come to the southwest will be discussed.

1. Grass Fuels.

Grass fuels are widespread in the southwest and consist of annual grasses in the lower elevations and perennial grasses mainly in the higher, more humid, elevations. Although grasses are mixed throughout all the fuel types, desert fuels are part of this fuel type and

rates of spread are significant due to typically low RH. Many desert fires spread in excess of 1-2 miles/hour. Spotting in desert fuels is generally very short range, less than ¼ mile.

It takes surprisingly little grass cover for ignition or fire spread. These fuels are very flashy and combined with a wind (especially from a thunderstorm) can result in a fast moving erratic spread.

Sotols, a succulent found within the desert plant community, are a problem and spread desert fires quickly. When sotols are on a slope and the roots burn through, the plant breaks loose and rolls down slope sending firebrands all over the slope.

These fine grass fuels react quickly to changes in RH. Early in the afternoon, fire can move rapidly, then clouds build-up, humidity increases, and burnouts cannot be accomplished. Because of this a fire can look extremely placid but just a couple of hours later as temperatures rise and RH drops, the fire may take on a significantly different behavior.

2. Shrub/Brush.

These fuels include various desert and brush species dominated by manzanita, several species of oak and mountain mahogany. Grasses are important for ignition and spread in this fuel type. However, absence of grass has little effect on steep slopes or during windy conditions. Fires are intense and can have rapid rates of spread. Percent of dead material plays a large role in fire intensity and spread. Chaparral fires of any size generally start from the lower elevation desert fires that escape initial attack.

Green fuel moisture also plays a major role in spread. Local fire management officers track the moisture content and give you criteria on critical thresholds by species.

Live fuel moisture is a very good indicator of burning conditions in the chaparral fuels. Where fuel moisture reaches 70 percent or less, extreme-burning conditions can be expected.

Returning to our discussion on topography, the location of this fuel in relation to any forested land is important. Lack of control of a fire in this type can result in a large fire in ponderosa pine.

Spotting is not much of a problem but fire intensity creates a rapid spread. Fires typically slow or even stop at sharp ridge tops.

3. Pinyon-Juniper.

This fuel type generally falls between the ponderosa pine and shrub/brush types. However transition areas can have a mixture of brush species and/or ponderosa pine.

In pure stands, fire is not much of a problem as there is typically little ground fuel due to grazing and soil conditions. In some areas the pinyon-juniper is used as a fuel break and large ponderosa pine fires are flanked until they hit the PJ and stop. In areas where PJ stands are dense, fires can spread with a good strong wind. Spotting is common based upon the number of pinyon trees torching and the amount of dead material within the stand that is receptive to firebrands.

Stands with an under story of brush, grass, or down fuels can burn intensely and more rapidly. Typically a wind is needed to spread the fire unless the fire is on a steep slope.

Again the location in relation to ponderosa pine stands is important as fire can spread or spot into these pine stands very easily.

4. Ponderosa Pine.

Ponderosa pine is found at elevations ranging from 6,000 to 9,000 feet and occurs in all parts of the Southwest area and occurs in several different stand characteristics.

Most large fires needing incident teams occur in this fuel type. Most of the ponderosa pine stands have been commercially harvested sometime within the last century. Fire behavior depends on previous logging activity, resultant residual slash, stand density, ladder fuels, and ground fuels including associated shrub species.

Fire spread can be extremely fast especially with wind. Crown fires are common but generally are dependent on ground and ladder fuels to sustain.

Spotting contributes to the spread and is very common from ½ to 1 mile ahead of the fire.

As a guide, whenever 1,000 hours fuels (dead fuel over 3 inches in diameter) reach 12% or lower, we can expect torching, crowning and spotting in this fuel type. When 1000 fuel moisture reaches 8%, expect blow-up conditions even with little wind or slope.

Across a flat plateau, fires can become very large if wind driven and spotting is active.

5. Mixed Conifer.

This fuel type includes various mixtures of ponderosa pine, southwestern white pine, Douglas fir, white-fir, and Engleman and blue spruce. Generally these fuel types occur above 8,000 feet. A large percentage of our mixed conifer stands occur on steep slopes.

Some of these stands have been logged but others have not. Fuel loading is significant at 30 to 150 tons per acre. Access is limited due to lack of roads and steep slopes. Fires are intense and spotting can easily occur up to 1 mile.

Although historically, large fires have not started in this fuel type, but have come from a lower elevation ponderosa pine fuel type which runs upslope into the mixed conifer stands. These fires are generally a long duration and expensive fire to manage.

Where un-logged, most stands are very dense with total canopy closure. Mixed conifer fires are difficult to control due to lack of good topographic features.

Last year on my forest, the Kaibab had a fire start on flat ground in ponderosa pine at 7,000-foot elevation. The fire crowned right away and ran into a small wilderness that rose to 10,300 feet with heavy mixed conifer on very steep slopes. The fire ended up burning 13,000 acres over a 3-week period and burned the entire 5,400-acre wilderness. There was no safe way to build line on these steep slopes with heavy mixed conifer fuels and the final control lines were roads and dozer lines in the flat ponderosa pine area surrounding the mountain.

6. Spruce-fir.

This fuel type, in the southwest, occurs only in locations above 9,500 feet. Fires are rare but mentioned here because they are extremely difficult to control. They typically are at the top of a mountain range and therefore above all the other fuels. Access is extremely limited. Fuel loading is heavy and spotting is severe. Fire Behavior usually decreases but getting a line constructed and mopping up are very time consuming and expensive. On large fires, control lines will generally be outside this fuel type.

III. SPECIAL CONSIDERATIONS

A. Fire Behavior.

Fire activity may not decrease at night due to lack of RH recovery. Fire behavior during daytime hours, especially at lower elevations, is extreme and intense. Blow-up conditions will exist when fuels are very dry, winds are very strong, or the fire runs up-slope through several fuel type changes. This occurred on the Dude fire in 1990, which took the lives of 6 firefighters. All three conditions existed when a thunderstorm developed over the fire creating blow-up conditions.

B. Urban Interface.

Communities are being built in wildland fuels all over in the west. Access in and out of these communities is almost always limited. In 2000, we burned over 300 primary residences in the Southwest on just two fires,

Cerro Grande and Scott Able. But more importantly, in addition to burning communities, the southwest has thousands of isolated homes, summer cabins, mining cabins, ranch houses and other structures scattered about. Very few large fires in the Southwest will not have some improvements threatened.

Coordination with local agencies, homeowner groups, and others is extremely important. Using local law enforcement and rural fire departments during evacuations, road closures, and transportation planning is essential in any urban interface fire.

Remember houses and structures are fuels. While we would like to save all structures, line location must be determined in relation to probabilities of success. Ask yourself "If a house was not here would we attempt to locate a line here?" Also, what is it going to cost in time, money, and loss of production on other areas of the fire?

C. Environmental Issues.

The relationship of the commercial timberland to the lower elevation wildfires needs to be re-emphasized. However, the lower elevations are also important for watershed, aesthetics, wildlife and plant life reasons.

Soils and watersheds are extremely important and extremely sensitive to disturbance. (Dozer tracks still exist in the desert from WWII training exercises.) Rehabilitation of lines and burned area are necessary to protect watersheds.

Archeological sites, both prehistoric and historic, are everywhere across the southwest, this is especially true along stream courses or anywhere water was present. Special precautions or changes in tactics may be needed to protect them. Do not hesitate to discuss what saving these structures may cost in time, people and dollars.

The Endangered Species Act will also be a part of suppression activity in the southwest. Threatened and endangered species include birds (Mexican spotted owl, Goshawk), animals (Mt. Graham squirrel), fish (Apache Trout, Gila Trout, loach minnow) and plants (Arizona willow, Mogollon paintbrush, various cactus). Almost any drainage with permanent water has some threatened or endangered species associated with it.

Ensure that you get this information and receive direction on guidelines for protection.

D. Resource Activities.

All lands within the southwest are grazed by either cattle or sheep with few exceptions (NPS land). Tactics using overgrazed areas as anchor points or locations for control are successful.

Be aware of livestock location when locating camps and when burning out. Fence locations are also important to know. If a fence is cut, notify local authorities.

Also make agreements with local landowners, agency representatives, and/or permittees before using stock tank water for helicopter use. Water rights in the southwest are very important.

If timber operations are active in northern Arizona and New Mexico, agreements can be made for use of equipment with operators, if the local agency has not already.

Location and amount of slash is important in determining tactics. Protection of reforestation areas will be needed.

E. Wilderness.

The southwest has the widest variety of wilderness areas in the nation. Areas vary from desert locations with little fuel to wilderness with spruce-fir. Fires within these areas or fires that threaten wilderness have unique requirements that must be handled by the Agency Administrator. Some may allow equipment operation in wilderness, and others may not. Most, if not all wilderness areas in the Southwest have threatened and endangered species issues as well.

F. Smoke Management.

Generally smoke will not be a problem. The people understand, however after long periods of time, enough is enough. It is imperative that information on the fire be given daily to local communities, ranchers, and individuals. Because of dispersed population and lack of media (radio and newspaper) they have no other way of getting information.

Constant information flow will keep you out of trouble. Use local public affairs personnel in conjunction with team information staff. Use bulletin boards in small communities for flyers, as well as radio and newspapers.

G. Interagency Activities.

Earlier it was referenced that many multiple jurisdictions of land management agencies are within the southwest. Each agency has its own suppression policy ranging from "let burn" to total suppression. Fire moving from one jurisdiction to another will require close coordination and maybe new tactics. There can be a dramatic difference between agencies on how to manage a particular fire.

Unified command is not used in the southwest but all Agencies want input into objectives and strategy/tactics. Most agencies will develop or participate in the development of the WFSA and incident objectives.

H. Social and Political Concerns.

In urban-interface situations, as all over the rest of the west, there is an "ownership" attitude among the local residents. Opinions will run from "let it burn" to all out suppression. A fire near any improvements will get local politicians involved.

Local politics are becoming big in the southwest. Catron County, New Mexico has passed a "Home Rule" regulations say that Federal Officials can be arrested by the County Sheriff for harassment or infringement of permittees' rights (Anti-Government Fever).

Opinions may change in the same community during the course of one fire. After several weeks of smoke, those that favored your management strategy may change their minds.

Southern Arizona and New Mexico are favorite routes for drug and illegal alien traffic. Get with local law enforcement and Border Patrol for this activity in and around your fire.

People's fears and opinions need to be taken into account even though property is not threatened. A fire in 2000 had smoke blowing in a small town 20 miles away, yet the dispatchers were getting calls on when to evacuate. Again a good information dispersal plan is of utmost importance in completing your objectives and not having a local mutiny.

Since Los Alamos in 2000, you can expect heavy media coverage as well as local, state, and even congressional attention in some cases.

I. Southwest Area Suppression Resources.

Suppression resources within the southwest and their effectiveness. Are highlighted below:

1. Engines/Dozers/Water Tenders.

Land management agencies in the southwest have approximately 250 engines and about 25 type III dozers and 40 water tenders of various sizes for initial attack. Usually you will be asked to release these resources for initial attack once a team takes over. If you need engines, you need to plan on ordering them from another region and allow 48 hours before the orders are filled. Dozers and water tenders can be contracted but with the reduction in logging operations, these may take 48 hours to fill as well.

2. Helicopters.

Helicopters are effective for crew movement, spike camp and line supply, bucket work, and aerial ignition for burnouts. You will probably not be on a fire in the southwest without a large helicopter operation. Bucket work is restricted by lack of water and by turn-around time. With a good water source and short turnaround times, type I helicopters are very effective. Most of the contract helicopters

will need to be released to the home unit for initial attack.

The biggest restriction in the southwest dealing with helicopters is density altitude. With high temperatures and high elevations, payloads are extremely limited. When ordering helicopters, describe the elevation and temperature your fire is at and what type of performance you require.

3. Air tankers.

There are 11 contract air tankers assigned to the southwest.

Air tankers are used in ponderosa pine and mixed conifer mainly to support crews doing a flanking action. They are not useful at the head of the fire in stopping crown fires. They are effective in reducing fire behavior on initial attack until crews can arrive.

Air tankers can be used effectively in light fuels (desert) as initial attack without crew support.

Late afternoon air tanker or helicopter work can be limited by strong winds and their effectiveness needs to be monitored.

4. Type 1 Crews

There are 17 Type 1 crews within the southwest area.

5. Type 2 Crews

Through an agreement with SWFF (Southwest Indian Fire Fighters) 78 crews are available for dispatch. Most SWFF crews are very good and some come with chainsaws and can be used on hot line assignments. Most Type 2 crews do not have sawyers and saw teams should be ordered with Type 2 crews. Saws are a must for brush as well as for timber fires. Contract sawyers are limited due to reduced logging operations in the Southwest.

J. Functional Helpful Hints.

1. Safety.

Southwestern fires are extremely hot, have steep rocky slopes, cactus, snakes, tarantulas and scorpions. Everything bites, stings, pokes or scratches. A lot of this is true.

All of these can result in medical emergencies and medivacs. The lack of roads and long distances to medical facilities requires special attention to medivac plans. Line qualified EMT's are recommended on each division. And generally, you need to designate one helicopter as a primary medivac ship.

Temperature, by itself, is an obvious problem. Temperatures in the desert frequently are above 110 degrees. Dehydration is a problem. Each crewmember needs a minimum of two gallons of water daily. Also, fatalities have occurred from lightning so firefighters must be kept informed on lightning safety.

Differences in daytime and nighttime temperatures can be dramatic and can cause various medical afflictions. It is not unusual to have a 50-degree swing in temperature between night and day, even in the desert. Working all day in heat and moving to higher elevations where it is cooler can affect a person's health. Getting wet with a brief afternoon shower can also be a problem. Nighttime temperatures in the desert can be very cool and these temperature fluctuations cause colds and respiratory infections.

Open water should not be used for drinking, as giardia is common in all southwestern streams and lakes. Plan on supplying all potable water.

Air attack is used as extra eyes and ears of ground forces. It is extremely helpful in monitoring quickly changing fire behavior situations. However, do not depend on this as many things could eliminate the use of aircraft. It is good to keep an aircraft over the fire from daylight to dark if possible. They are just another "tool" and do not replace "on the ground" lookouts.

2. Operations.

Typically burning periods in the southwest occur between 10 a.m. and 5 p.m. Depending on wind, temperature, RH and live fuel moistures, fires can burn actively 24 hours a day. This mainly is dependent upon RH recovery. Humidity recovery of less than 30% generally means active burning most of the night. Shift changes can and should be adjusted to insure crew movement is not taking place during critical burning periods.

Direct attack as a strategy works well in the southwest especially when fires are small. If a fire is large, a number of items need to be considered before deciding on strategy; topography, fire behavior and intensity, rate of spread, availability of needed resources, logistics in moving and supplying firefighters, probability of success, and of course safety.

Indirect attack is used especially in lower elevation fuel types. Acreage is often sacrificed for lower suppression costs and higher probabilities of success. Direct attack on a fast moving fire is seldom successful in the desert and very often dangerous. Using natural barriers and roads when burning out is very common below the Mogollon Rim. Dozer use below the Rim is limited for environmental reasons. Dozers tracks stay forever in the desert.

Parallel attack with burnout (flanking) is also used with success on most timber fires. Flanking the fire until the wind quits and then cutting off the head is generally successful. Dozers are commonly used in timber fires except within wilderness areas.

On most large fires a combination of direct, indirect, and parallel attack may be used. Again much is dependent on Agency Administrator direction, WFSA, and available resources.

First, topographic features are of great importance and must be used in determining line location. Remember we discussed fuel type changes at the ridge tops and drainage bottoms. Because of this, especially below the Mogollon Rim, these fires typically have a tendency to run to ridges and quit or slow down. This is extremely important to remember in an indirect attack situation. In an indirect situation, you must use the best ridge and not just the next ridge. Mid-slope lines seldom work in the southwest.

Natural barriers can be used to a great extent and can save many hours/days of line building. Natural barriers have been used as control lines with burnouts accomplished from the air. The next day a small task group is assigned to pick up the slopovers.

Burnouts are a must in the southwest. A line not burned out is almost worthless. In parallel and indirect attack bring fire with you even without the line being tied in. Unless indirect line is quite distant, the line can easily be out-flanked by a fast moving fire. Don't wait for "perfect" burning conditions. Burnouts are very successful at night as long as RH stays low (although not to where spotting occurs). But again, if that is the best condition you have, then burn it! All night operations are generally successful and should be utilized. The obvious safety hazard of snags falling at night may preclude this tactic in some areas.

Length of fireline constructed is much more important than the width or quality of line. When burning out, especially with crews on the scene, holding is fairly easy. Fires typically move too fast for any slow line construction techniques. Plan on building minimal line and burning but get as much line built as possible. Then plan for the spots and slopovers and have your air and ground resources ready to deploy.

Since these conditions prevail, especially in the desert country, the Southwest teams developed line spike camps. Due to terrain and lack of access, movement of crews is slow and fires move faster than we can. What this means is having the crews construct line until the end of shift and then supplying them on site by helicopter with their next 3 meals. This includes a hot dinner, cold breakfast, and a sack lunch. The crews sleep on or near the line and begin the next day

Where they left off the night before. Nighttime temperatures are such in the desert that you can do without sleeping bags. Generally, only hotshot crews are used in line spikes and they really like it as they typically get more rest and accomplish more work.

Other items relating to tactics are:

Water sources for suppression activities will be limited.

Mop-up is critical in ponderosa pine and mixed conifer stands. Desert fires require little mop-up and cold trailing is effective. Because of the lack of mop-up, Plans and Logistics need to be prepared to demob quickly. A Plans Chief on a desert fire had mobilized 600 people in 2 days, got a rain shower and had to demob 600 people the next 2 days. One day you need 20 crews, the next day only a few.

Immediate rehabilitation of control lines will be requested. As most moisture occurs as intensive thundershowers, soil movement is rapid and immediate.

Here are a few bullet helpful guidelines:

- A line that is not burned out is virtually useless.
- Length of line is much more important than width or quality of line, especially in desert fuels.
- Use spike camps anytime ground travel time exceeds 1 hour.
- In desert fuels, you can sacrifice acreage for a strategy with a higher probability of success.
- Anchor the heel and flank the fire until you get a break in wind, slope or fuel.
- In timber, do not push your line past what you can safely hold.
- Keep it simple, keep it easy, keep it cheap, and keep it attainable with the limited resources you have.

2. Logistics.

Roads are few and those that exist are bad. Reduce exposure to road travel. Plan on needing several water tenders and road graders to maintain road access to drop points. Many roads are not suitable for busses and crew movement. Many roads are only one lane with no turnouts. This affects crew movement and spike and main camp locations. Military 2 1/2 and 5-ton vehicles can be used very successfully.

Spike camps are standard and should be used whenever travel time approaches 1 hour. Very few fires in the Southwest will not require spike camps and very large fires may have several. They can be supplied by air and crews moved by air or ground to the spike camps. Keep crew movement to a minimum. Reduce firefighter exposure to air and road travel. Locate camps so supplies can be delivered easily. Always have alternatives for supplying your spike camps.

Consider using pack stock to supply camps as sometimes storm clouds, wind, or timing-out of aircraft prevents re-supply by air.

Potable water sources for camp use will have to be hauled from the nearest town.

Communications is always a problem so plan on at least 2 repeaters and a satellite phone system. Either the fire is in steep canyon country or on the flat Colorado Plateau. Cell phone coverage is limited to urbanized areas and interstate highways.

Medical facilities are generally a long way off. Plan on ordering line qualified EMT's and having an ambulance with paramedic in camp. Always have one helicopter designated for medivac.

Many fires in the southwest are not difficult to contain but logistically and financially, could require a Type 1 team to manage.

4. Finance.

In the Southwest, fires requiring a Type 1 IMT generally will be very costly. This is mainly driven by the large aviation support typically needed. Use of private land and water is common so expect to need agreements for using land for camps, helibases, etc. and some means of paying for or replacing water used from stock tanks. Use of contract equipment is generally high in the ponderosa pine and mixed conifer fires. Buying teams and Agency Payment Teams are frequently used.

5. Plans.

Because of the many jurisdictions in the southwest, you likely will be involved in developing the WFSA or revising it, if one has already been done. Don't hesitate to discuss the WFSA with all Agency Administrators and point out where revisions may be needed.

Most large fires receive a lot of media attention, which requires accurate intelligence from Plans for the Information Officers to do their job.

On desert fires, expect to demob your fire in 1-2 days.

6. Information.

Information Officers can easily get overwhelmed in the first few days of a fire. Any large fire within about 3 hours of an urban city will have heavy media attention. This includes Phoenix, Tucson, Albuquerque, Flagstaff, El Paso, etc. It is difficult to have a large fire where a news helicopter or satellite news truck can't be there before you order your first Information Officer to help you. Also, as mentioned earlier, the media is not the only concern. The small local communities need just as much information about the fire and many times don't have access to the city media such as newspapers, TV or radio. Daily new releases are the norm and generally the agency will have the fire prepare the news releases.

7. Command.

Strategy on large fires is mainly dependent on direction from the Wildland Fire Situation Analysis (WFSA) and the Agency Administrator direction. The WFSA considers costs, size, environmental and social impacts, and probabilities of success.

Availability of resources is also extremely important. WFSA guidelines and Agency direction is not any good if the needed resources are not available.

It is the Incident Commanders responsibility to carefully evaluate the WFSA and Agency objectives and discuss any items that may not be attainable. The best strategy is worthless unless the resources are available and the objectives are attainable. Also, WFSA assumptions need to be correct if the strategy is to work.

Most fires will have more than one jurisdiction. A lot of fires will be affected by Area Command or at the least a Multi-Agency Coordination Group. Many times, this will mean competing or differing objectives for your fire. Dealing with different agency objectives, large media attention, Area Command, MAC groups, and many times some governmental scrutiny, your job as the Incident Commander is the most challenging of all.

IV. SUMMARY

Being part of the Sunbelt, more and more people are moving to the southwest creating even more urban/interface problems.

Environmental issues are at the forefront for every land management agency.

Media and political scrutiny of what we do is at an all time high.

Managing large fires in the Southwest continues to get more and more complicated each year.

A Type 1 Team will not be called to the southwest unless high value resources are at risk or the fire will last a long time or both.

- You will utilize a lot of aviation resources.
- You will spend a lot of taxpayer money.
- You will likely need one or more spike camps.
- You will likely be working for more than one agency.
- You **WILL** have many challenges.