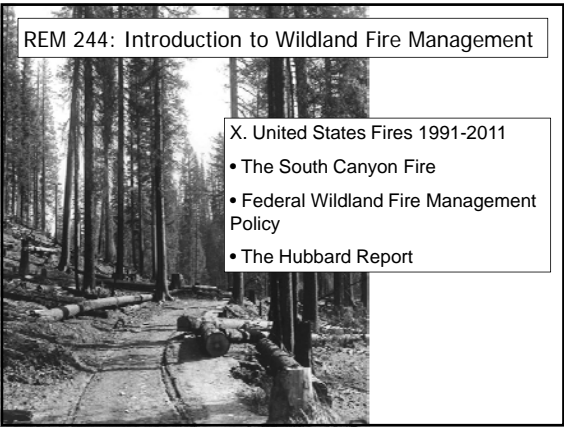




REM 244: Introduction to Wildland Fire Management



X. United States Fires 1991-2011

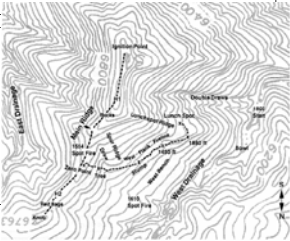
- The South Canyon Fire
- Federal Wildland Fire Management Policy
- The Hubbard Report

REM 244: The South Canyon Fire

1994 was the next large fire season following the 1988 Yellowstone fires. In 1994 over \$1B was spent on fires and 31 firefighters were killed. 14 of those fatalities were on the South Canyon Fire.

July 2nd : Lightning ignition near the base of Storm King Mountain.
Initially fire was assigned low priority and allowed to smolder.

July 4th : Fire had only burned 3 acres. Local residents were concerned by persistent fire and authorities stepped in.



Source: Butler et al (1998).

REM 244: The South Canyon Fire

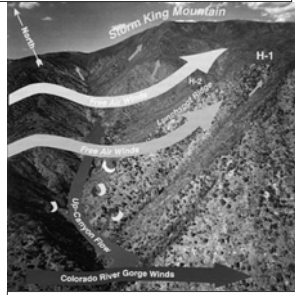
July 5th : Fire spread downwards and covered 50 acres.

July 6th : Fire remained active during night and by morning covered 127 acres. 20 Hotshots from Prineville arrive.

15:20 : Dry cold front passed through, increasing winds (via venturi effect) and fire behavior.

Winds from south (up canyon) at 30-45 miles per hour.

15:55 : Several upslope runs occurred on the west facing slope.



Venturi effect causes up-canyon flow.

Source: Butler et al (1998).

REM 244: The South Canyon Fire

16:10 : Fire spotted below firefighters and started to spread through dense vegetation towards them. 14 were killed as they tried to flee.

Butler's report concluded that 3 major factors contributed to the disaster:

1. Presence of fire in the bottom of a steep narrow canyon
2. Strong up-canyon winds pushing the fire up the canyon and upslope
3. Fire burning into the green (and under-burned) Gambel Oak Canopy

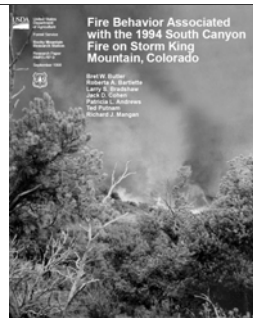


Source: Butler et al (1998).

REM 244: The South Canyon Fire



Gambel Oak with "green canopy" at the South Canyon Fire (July 6th, 1994)



Source: Butler et al (1998).

REM 244: The South Canyon Fire

Butler's report highlighted discussion points / lessons to be learned (some obvious to firefighters, some less evident):

- Topography can dramatically influence local wind patterns.
- Vegetation and topography can reduce firefighter's ability to see a fire or other influencing factors.
- Current and past fire behavior often does not indicate the potential fire behavior that could occur.
- The longer a fire burns and the larger it gets the greater the likelihood of high-intensity fire behavior at some location around the perimeter.
- The transition from a slow-spreading, low-intensity fire to a fast-moving, high-intensity fire often occurs rapidly. This seems to surprise firefighters most often in live fuels.
- Escape route effectiveness should be considered in relation to potential maximum-intensity fire behavior rather than past or present fire behavior.
- The under-burned Gambel oak did not contribute to the blowup. It was significant in that it did not provide a safety zone.
- Smoke can significantly reduce the firefighter's abilities to sense changes in fire behavior.

Source: Butler et al (1998).

REM 244: Federal Wildland Fire Management Policy

Following the South Canyon Fire, a policy and program review was conducted of the Federal Wildland Fire Management Policy.

The key conclusions from the 1995 report included:

1. Protection of human life is reaffirmed as the first priority in wildland fire management. Property and natural/cultural resources jointly become the second priority, with protection decisions based on values to be protected and other considerations.
2. Wildland fire, as a critical natural process, must be reintroduced into the ecosystem. This will be accomplished across agency boundaries and will be based upon the best available science.

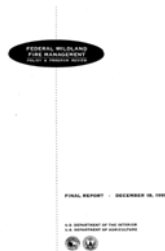


Source: NIFC (1995).

REM 244: Federal Wildland Fire Management Policy

Following the South Canyon Fire, a policy and program review was conducted of the Federal Wildland Fire Management Policy.

3. Agencies will create an organizational climate that supports employees who implement a properly planned program to reintroduce wildland fire.
4. Where wildland fire cannot be safely reintroduced because of hazardous fuel build-ups, some form of pretreatment must be considered, particularly in wildland/urban interface areas.
5. Every area with burnable vegetation will have an approved Fire Management Plan.



Source: NIFC (1995).

REM 244: Federal Wildland Fire Management Policy

Following the South Canyon Fire, a policy and program review was conducted of the Federal Wildland Fire Management Policy.

- 6. Wildland fire management decisions and resource management decisions go hand in hand and are based on approved Fire Management and land and resource management plans. At the same time, agency administrators must have the ability to choose from the full spectrum of fire management actions - from prompt suppression to allowing fire to function in its natural ecological role.
- 7. All aspects of wildland fire management will be conducted with the involvement of all partners; programs, activities, and processes will be compatible



Source: NIFC (1995).

REM 244: Federal Wildland Fire Management Policy

Following the South Canyon Fire, a policy and program review was conducted of the Federal Wildland Fire Management Policy.

- 8. The role of Federal agencies in the wildland/urban interface includes wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical assistance . No one entity can resolve and manage all interface issues ; it must be a cooperative effort . Ultimately, however, the primary responsibility rests at the State and local levels.
- 9. Structural fire protection in the wildland urban interface is the responsibility of Tribal, State, and local governments.
- 10. Good data and statistics are needed to support fire management decisions . Agencies must jointly establish an accurate, compatible, and accessible database of fire- and ecosystem-related data .



Source: NIFC (1995).

REM 244: Federal Wildland Fire Management Policy

Following the South Canyon Fire, a policy and program review was conducted of the Federal Wildland Fire Management Policy.

- 11. The Western Governors' Association will serve as a catalyst to involve State and local agencies and private stakeholders in achieving a cooperative approach to fire prevention and protection in the wildland/urban interface.
- 12. Federal agencies must place more emphasis on educating internal and external audiences about how and why we use and manage wildland fire.
- 13. Trained and certified employees will participate in the wildland fire program, others will support the program as needed. Administrators are responsible and will be accountable for making employees available .



Source: NIFC (1995).

REM 244: Federal Wildland Fire Management Policy

As the millennium drew to a close, several other large fires occurred, including 2,200 wildfires in Florida that burned more than 500,000 acres in 1998.

These fires caused the evacuation of greater than 100,000 people in what Pyne (2010) described as a "veritable fire hurricane".

Later that year, the publication of the Rx Implementation Guide replaced the term Prescribed Natural Fire with Wildland Fire Use.



Dozer making a fire line – Florida, 1998 (FEMA)

REM 244: Federal Wildland Fire Management Policy

In 1998, The Joint Fire Science Program was endowed by Congress to reinvigorate fire research.

Joint Fire Sciences Program

Research Areas:

- Fuel inventory and mapping
- Fuel treatment planning, scheduling, and risk assessment
- Fire effects and fire behavior
- Monitoring and evaluation
- Restoration of fire-adapted ecosystems
- Post-fire stabilization and rehabilitation
- Remote sensing
- Developing and integrating research information for local land managers



REM 244: Federal Wildland Fire Management Policy

In 2000, the Cerro Grande Fire Escape was initially a controlled fire that became uncontrolled due to high winds and drought conditions.

The Cerro Grande fire destroyed over 250 homes in Los Alamos and resulted in both public and political outcry against wildland fires and the agencies managing them.

This fire resulted in the development of the National Fire Plan and a review of the 1995 Federal Fire Policy.



Smoke from the 2000 Cerro Grande Fire (NOAA) & Fires destroyed in the Cerro Grande Fire.

REM 244: Federal Wildland Fire Management Policy

The National Fire Plan (NFP) was developed in August 2000 with the goals of providing tactics to best respond to severe wildland fires and developing risk reduction planning and implementation between federal and non-federal entities.

The NFP comprises of a report and accompanying budget request entitled, *"Managing the Impact of Wildfires on Communities and the Environment, A Report to the President In Response to the Wildfires of 2000."*

&

"A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment - A 10-Year Comprehensive Strategy - Implementation Plan"



REM 244: Federal Wildland Fire Management Policy

The NFP focused on 5 main areas:

1. Firefighting
2. Rehabilitation
3. Hazardous Fuels Reduction
4. Community Assistance
5. Accountability

The basic premise of the National Fire Plan is to optimally invest in these 5 areas now to provide immediate and future cost savings.



REM 244: Federal Wildland Fire Management Policy

The interagency Wildland Fire Policy Review Working Group concluded that the 1995 policy provided a sound foundation:

1. As a result of fire exclusion, the condition of fire-adapted ecosystems was continuing to deteriorate and that fire hazard in these areas is worse than previously thought.
2. The fire hazard situation in the wildland urban interface was more complex and extensive than believed in 1995
3. Changes are needed to the 1995 policy to better address ecosystem sustainability, science, education, communication, and program evaluation.
4. Implementation of the 1995 policy was incomplete, particularly in planning and in interagency aspects.
5. Program leadership at senior levels of all federal agencies is essential.



REM 244: The Hubbard Report

Around the same time as the National Fire Plan and the Federal Fire Policy were being developed, the Office of Management and Budget had raised concerns at the alarming cost of wildland fire management.

In 2001, the Department's of Interior and Agriculture authorized a review of the federal agencies' wildland fire budget and planning models with the goal of providing a basis for,

"The development of a single, uniform, performance-based system for preparedness and fire management program planning"

Developing an Interagency, Landscape-scale Fire Planning Analysis and Budget Tool

Report to the National Fire Plan Coordinators
U.S.D.A. Forest Service
U.S. Department of the Interior



REM 244: The Hubbard Report

The Principal Findings of the Team included:

1. A comprehensive interagency fire planning and budget analysis identifying the most cost effective program to achieve the full range of fire management goals is possible and desirable.
2. Full development and deployment of a new system will take four to six years.
3. Implementing interim components, will take one to two years, resulting in increasingly improved analysis and budget formulation over time.
4. A fire planning analysis process development team should be established by the end of January 2002, to meet the system development timelines recommended in this report.
5. Immediate steps can be taken to improve the consistency and appearance of wildland fire budget requests for the Departments of Agriculture and the Interior using information generated by existing analysis systems.

REM 244: The Hubbard Report

This report led to the development of the interagency tool called, Fire Program Analysis (FPA). The objective of FPA is to simulate future ignitions and model the likely costs of future wildland fires within 139 administrative fire program units (FPUs).