

Introduction to Wildland Fire Management



REM 244: Introduction to Wildland Fire Management



- X. United States Fires: 1871-1934
- Pre-1910 Fires
 - The Birth of the U.S. Forest Service
 - The 1910 Firestorm
 - The Weeks Act of 1911
 - After The Weeks Act

REM 244: The 1871 Peshtigo Fire

October 8 1871: "The Day Michigan Burned".

- Contributing Factors:
- 2 month long drought
 - Settlers burning brush to clear land for farms
 - Several small fires combined into a complex that burned over 2 million acres. Several towns were completely destroyed
- What is caused:
- Large fuel buildup of dead trees



Sources: Arno and Allison-Bunnell (2002); <http://www.anytown.info/fires.htm>

REM 244: The 1881 Thumb Fire

The fuel buildup from the dead downed trees of the 1871 fire coupled with extensive drought conditions led to a very high intensity fire 10 years later.

Evening News, Detroit: Thursday, September 1, 1881:

"The drought all over the Mississippi Valley and throughout the northwest continues with unabated rigor. Atmosphere scorches and blisters everything...vegetation dried to a cinder, gives nothing but material for fire. Trees shedding their leaves a month before the usual time; grass brown and withered. Pastures and streams dried up. Milk scarce, butter a luxury. If it does not rain and rain hard soon, food will be scarce this winter...Buyers paying the unheard price of 18 and 20 cents a pound for butter."

Sources: Arno and Allison-Bunnell (2002); <http://www.anytown.info/fires.htm>

REM 244: The 1881 Thumb Fire

- The 1881 Thumb fire burned more than 1 million acres
- 1520 homes destroyed and 282 people died
- Fire travelled 20 miles in less than 2 hours
- Fire roasted potatoes in their fields (belowground consumption)
- First time RED CROSS responded to an American disaster



Sources: Arno and Allison-Bunnell (2002); <http://www.anytown.info/fires.htm>

REM 244: 1889 Forest Fires

1889: Fires burned millions of acres of forest in the inland west

August 4th 1889: Fire destroyed 32 city blocks of Spokane



THE MONTANA FOREST FIRES. ALARMING CONDITION OF AFFAIRS IN SEVERAL DISTRICTS.

HELENA, Montana, Aug. 19.—The forest fires which have been raging all over Montana for three weeks and have destroyed hundreds of thousands of dollars' worth of timber have reached most alarming proportions. A gentleman just in from Northern Montana reports that on the ranges in Choteau County, which heretofore have escaped and on which cattlemen were depending to keep their stock this winter, thousands of head of cattle are burning.

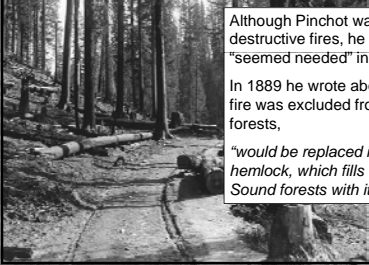
In the Yellowstone the pluries fire covers an area of eight miles and is spreading rapidly. Ranges in that section have been almost entirely destroyed, the fire extending nearly four miles from the city of Gardiner.

The New York Times
Published August 20, 1889
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REM 244: The Birth of the U.S. Forest Service

In 1898 Gifford Pinchot warned that

"like the question of slavery, the question of forest fires may be shelved for some time, at enormous cost in the end, but sooner or later it must be met."



Although Pinchot wanted to prevent future destructive fires, he recognized that fire "seemed needed" in some forests.

In 1889 he wrote about what would happen if fire was excluded from coastal Douglas-fir forests,

"would be replaced in all probability by the hemlock, which fills the denser of the Puget Sound forests with its innumerable seedlings"

REM 244: The Birth of the U.S. Forest Service

Although the need for science was there, the catastrophic fires of that era made it take a back seat to fire exclusion



Pinchot works at his desk, circa 1905



In 1898 Pinchot was appointed head of the Federal Forestry Program.

In 1901 this became the Bureau of Forestry.

In 1905 this became the U.S. Forest Service.

The U.S. Forest Service was charged to:

"protect watersheds and timber resources from rapacious, unregulated logging."

However, the extensive western fires, led to Congress in 1908 charging the U.S. Forest Service to additionally prevent and control all forest fires.

President Taft fired Pinchot in January 1910.

REM 244: The Birth of the U.S. Forest Service

Forest Service management of fires from 1905 to 1911 was guided by idea that small fires would be handled by a solitary ranger or a forest officer in charge of a ranchers, farmers, miners, and loggers (Pyne, 1997).

Early advice to forest rangers from the "Use Book" included:

"just get up there as soon as possible and put them out".

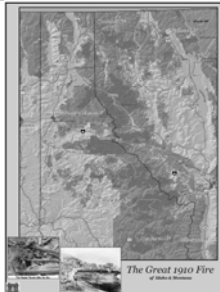
1908: Act allows Forest Service to bill for more than they are appropriated in the event of an emergency (retroactive deficit spending)



REM 244: The 1910 Firestorm

Although many called for using fire as a management tool, the events of 1910 put a stop to such conversations. It would not be until the 1940s and 1950s before the U.S. Forest Service began to listen.

In August 1910, hurricane force winds fanned hundreds of lightning fires into gigantic fires that covered most of Idaho and Montana



REM 244: The 1910 Firestorm

The fires in two days burned 3 million acres and destroyed over 8 billion board feet of timber.

Spot fires were occurring 10 miles ahead of the fire front.

1/3rd of Wallace Idaho was destroyed.

The federal government spent > \$1M trying to control the 1910 fires; in the end it was stopped by a snow/rain storm.



REM 244: Images from Wallace, 1910



Source: <http://www.lib.uidaho.edu/digital/bigburn/tour.html>

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REM 244: Images from Wallace, 1910

Entrance to the War Eagle Mine

Edward C Pulaski led 45 men (at gunpoint to stop their panic) and 2 horses into the mine to escape the fire

In 1908 Pulaski was a Forest Ranger on the Coeur d'Alene National Forest. From 1910 to 1929, he served as District Ranger on the old Wallace Ranger District. He invented a combination ax and grubbing hoe tool (named after him).

This remains a standard firefighting tool of the U.S. Forest Service.



Sources: <http://www.lib.uidaho.edu/digital/bigburn/tour.html> USFS

REM 244: After 1910

Following the events of the 1910 Firestorm, the U.S. Forest Service began its policy of eliminating fires from the forest. This policy is now referred to as the "fire exclusion policy".



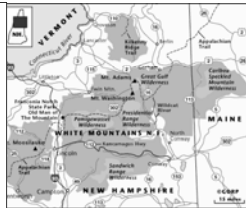
Source: <http://www.lib.uidaho.edu/digital/bigburn/tour.html>

REM 244: Weeks Act of 1911

Authorized states to enter agreements with each other and the Forest Service for the purpose of conserving forests and water supply. Appropriated a budget of \$200,000 for fire protection to facilitate this cooperation.

The act appropriated \$1M in 1910 (backdated to cover the 1910 fire costs) and \$2M a year for 1911-1915 to

"examine, survey, and acquire lands located on the headwaters of navigable streams, which are being or which may be developed for navigable purposes".



Source: Dana (1956)

REM 244: After the Weeks Act

The Weeks Act allowed the federal government to buy the "land no one wanted" and set up the National Forests.

Lands were only purchased after the USGS reported that they met the Act's intent.

The Agricultural Appropriations Act of 1912 made 10% of all funds received from National Forests available to construct roads and trails. This act also allowed the National Forests to sell timber at cost to homestead settlers and farmers



Source: Dana (1956)

REM 244: After the Weeks Act

A later act in 1916 allowed the President to establish refuges for game animals, birds, or fish on lands purchased under the Weeks Act.

1915: recreation was acknowledged by Congress as a legitimate and important use of a National Forest.

1916: 13 National parks were established and the National Park Service was established in 1917.



Source: Dana (1956); Sierra Club

REM 244: After the Weeks Act



Woman fire lookout standing by an Osborne Fire Finder, 1918

U.S. Weather Bureau, a part of the Department of Agriculture, began providing weather forecasts specific to wildland fire, 1916



Source: NPS

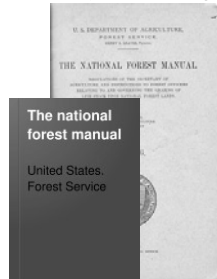
REM 244: After the Weeks Act

Between 1911 and 1930 the main theme of fire protection was to experiment with who far professional forestry could manage fire control.

1912: National Forest Manual was developed out of the earlier "Use Book" and contained fire policy.

1921: Mather Field Conference highlighted Chief Greeley's resolve of fire prevention

"fire prevention is the No. 1 job of American foresters".



Source: Pyne (1997)

REM 244: After the Weeks Act

Chief's Greeley's Comments at the Mather Conference:

"The time which elapses between start of a fire and attack is without question the ruling element which controls the success of fire control"

1923: The Fire Weather Warning Service was established by the U.S. Weather Bureau and was headquartered in San Francisco.

1926: Greeley helped established the Daily Fire Weather Forecasting service

1928: McNary Act charged the U.S. Forest Service with responsibility for federal forestry research, including fire research.



Source: Pyne (1997)

REM 244: After the Weeks Act

The history and progression and U.S. Fire Management can not be seen through just the lens of the Forest Service's fire exclusion policy. The other federal agencies had very different views on how fire could be used for management objectives.

1926: In blatant defiance of agency policy, Sequoia-Kings Canyon Superintendent Colonel John White orders his rangers to do several Rx fires to reduce ground fuels.

1927: U.S. Fish and Wildlife Service wildlife biologists conduct first recorded Rx burn in St. Mark's National Wildlife Refuge.



Men working on burning sawgrass in Everglades National Park Source: NPS
