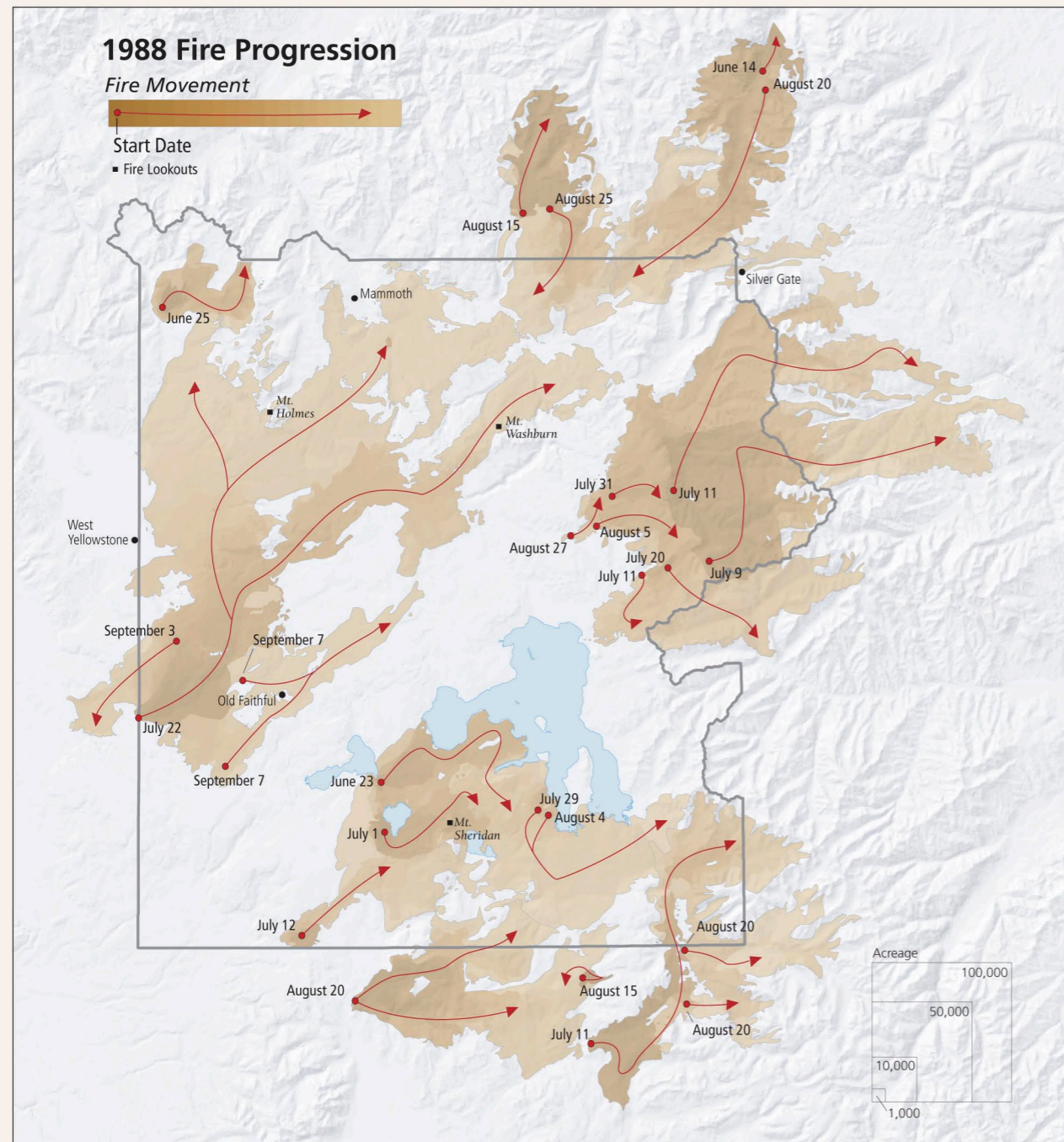
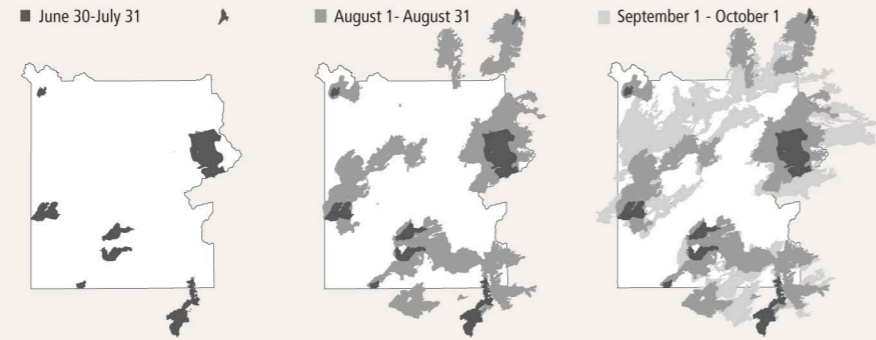


# 1988 Fires

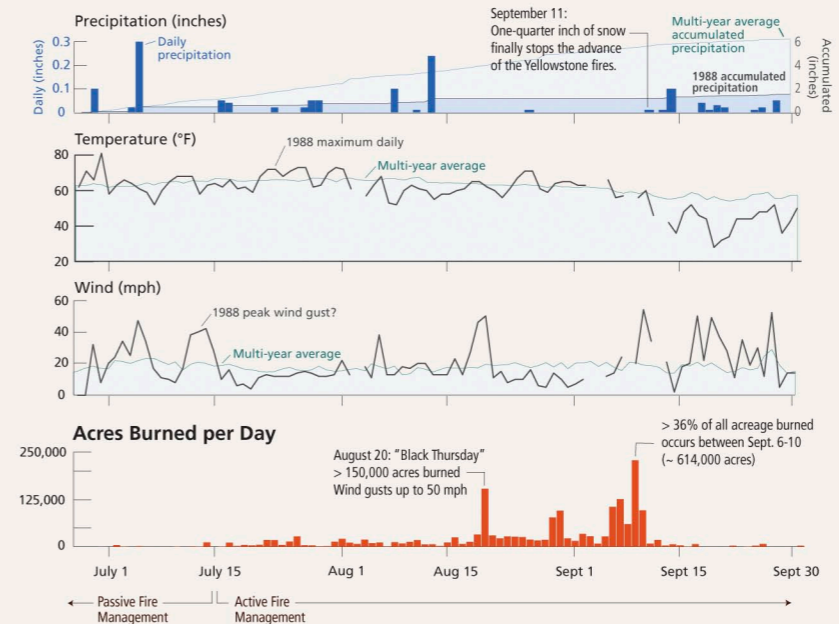
1988 was an extraordinary fire season, burning more park area than in all other years combined since the park was established in 1872. Weather was the primary driver of the severe fire conditions. Above average precipitation in April and May promoted vigorous growth of ground vegetation. Low precipitation and record high temperatures in June through August dried out forests and ground cover. High winds in August and September fanned explosive growth of fires in the dry fuels. Despite extensive efforts to contain the fires, it required low temperatures and precipitation in September to end the 1988 fire season.

## 1988 Fire Perimeters by Month



## Weather During the 1988 Fire Season

(Data from Mt. Holmes -- ~10,300 ft.)



The 1988 fire season began much like previous years. As of June 23, only three acres had burned within the park, although the lightning-caused Storm Creek fire was burning 18 miles northeast of the park boundary.

In the last ten days of June, however, record breaking maximum daily temperatures in the 90 degree range at low elevations and in the 80 degree range at high elevations set the stage for rapid fire growth. As of July 1, the Fan fire and three fires that would later merge to form the Snake River Complex had burned 1,100 acres within the park. By July 15, 22 fires had occurred

within the park and 11 were actively burning a total of 8,600 acres. The active fires included the Falls fire, which would later merge into the Snake River Complex, and the Clover and Mist fires in the north-east. Three of the 22 park fires were human-caused and suppressed. Eight fires self-extinguished. Outside the park, the Mink fire was burning on 9,100 acres of the Bridger-Teton National Forest

Until July 15, natural ignition fires were managed as prescribed natural fires and allowed to burn, a strategy called "wildland fire use for resource benefit." Such fires, however, were not ignored. Fire manage-

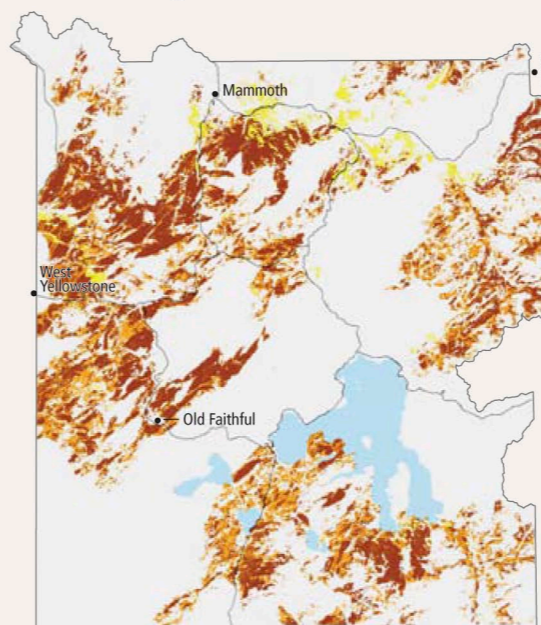
ment used active observation rather than active suppression. Maps of daily fire growth, hourly weather observations, and fuel and forest data helped analysts assess fire behavior and growth. Continued extreme fire conditions prompted managers on July 15 to start suppressing new fires in the park and attempt to control existing ones, with a focus on protecting structures and human safety.

Despite management efforts, fires continued to grow. Long-duration, high intensity crown fire was intermixed with lower intensity ground burning. On July 22, the human-caused North Fork fire started outside the western park boundary and rapidly burned into the park, bringing the total park area burned to 18,000 acres. By August 1, 36 fires (four caused by people) had ignited within the park. Many smaller fires merged with larger fires, creating large complexes that covered 122,000 acres.

Continued below average precipitation through July and August, abnormally high winds, and large active fire fronts contributed to extreme fire behavior. On one day alone, August 20, known locally as Black Sunday, high winds caused 160,000 acres to burn, more park area than had burned in total over the previous century. Two additional human-caused fires (Huck and Hell Roaring) originated outside and burned into the park. Conditions remained extreme into September. In the remarkable period of September 6 through 10, 36% of all the acreage burned within the park went up in flames.

On September 11, plummeting temperatures and one-quarter inch of snow accomplished what all the money and resources could not; advance of the Yellowstone fires was halted.

## Fire Intensity



The large fires resulted in a heterogeneous pattern of unburned vegetation thoroughly intermixed with patches of canopy burn and mixed burn (a combination of canopy and ground burn). By one estimate, approximately 10% of the area within the fire perimeters was actually unburned.



## Firefighting Resources

Logistical support	>\$120 million	\$33 million were direct payments for services including gasoline, meals, lodging, rental items, and wages for non-government help. Most expenditures made in Greater Yellowstone communities.
Firefighters	>25,000	11,700 military personnel and 9,600 firefighters at one time
Firebreaks	802 miles	665 miles dug by hand 137 miles bulldozed
Transportation	>100 fire engines >100 aircraft	Included 77 helicopters and 150 newly-created helispots
Water	>10 million gallons	Carried by helicopters in canvas buckets or slings
Fire retardant	1.4 million gallons	Dropped by fixed wing aircraft
Flight hours logged	18,000	