THE WILDERNESS SOCIETY

Summary of the Hayman Fire, Colorado

Updated August 23, 2002

Quick Facts

Location: Pike-San Isabel National Forest, 30 miles southwest of Denver, Colorado
Dates: Fire started 4pm June 8, 2002 and was declared contained July 2, 2002
Cause: Human cause, possibly arson
Area within Fire Perimeter: 137,760 acres
Structures lost: 133 homes, 1 commercial building and 466 outbuildings
Ownership: National Forest land represents 72% of the area in the burn boundary.
Landscape: Rugged terrain with Ponderosa Pine, Mixed Conifer, Gambel oak and Aspen
Cost to date: $39 million

Much of the Land within the Hayman Fire Boundary Did Not Burn.

Even the largest and most intense fires burn in what is referred to as a mosaic pattern. Depending on a host of factors -- weather, winds, relative humidity, fuel type, forest density and slope -- fires burn with varying intensity killing virtually all trees in some patches while leaving other patches untouched. While the area within the burn perimeter of the Hayman Fire was close to 138,000 acres, almost half of the area (over 66,000 acres) either did not burn or burned with a low intensity fire. Areas with low intensity burns may have forest litter and grass that looks black immediately after the fire, but which were not entirely consumed. The remaining duff provides good ground cover to protect the soil from erosion and runoff. Trees in low severity areas are mostly green and are likely to survive.

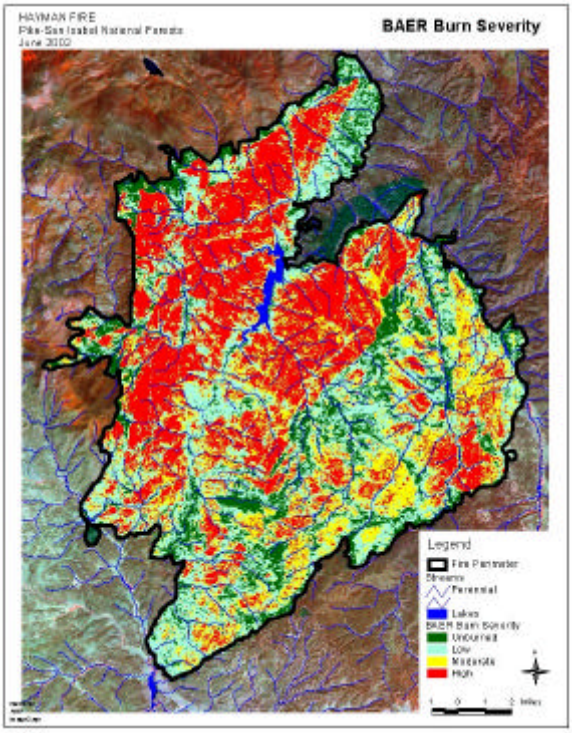
Less Than One Third of the Area Burned Severely.

According to the Hayman Fire BAER Report (Burned Area Emergency Stabilization and Rehabilitation Plan), 44,000 acres (32% of total) burned at high severity (Map 1).[1] Most of the acres that severely burned occurred on three "blow-up" days when the winds were howling, temperatures were soaring, relative humidity was low and no amount of thinning, logging or roads could stop the fire's spread (see Map 2, Figure 1). The majority of the severe burning in the Hayman Fire occurred on one day, June 9th, when high winds and record temperatures made control impossible. The spread of the fire to the northeast stopped when the wind changed direction, blowing to the southwest, turning the fire back onto itself.

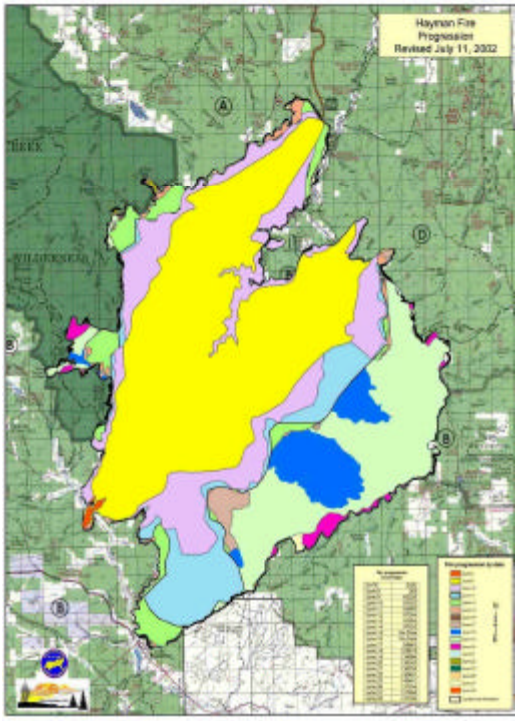
> Thinning and burning forest can reduce fire danger but only if the weather cooperates.

[1] BAER Report, Hayman Fire, 5 July 2002
http://wildfires.nwcg.gov/colorado/hayman/baer/hayman_fire_BAER_final.htm

Map1



Map2



Map 1 shows burn severity while Map 2 shows the daily fire progression. Together these maps show that almost all of the acres severely burned came on June 9th, the first and biggest "blow up" day – a day with high winds, record high temperature and low relative humidity.

Wind, Temperature, and Humidity were the Driving Force Behind the Spread of the Fire. In the days just before the fire began, Colorado saw 4 days of 90+degree temperatures and low humidity. On June 9, 2002, the National Interagency Fire Center issued a Red Flag Warning in Colorado for winds at 25-35 mph, very warm weather and extremely low relative humidity. News outlets reported gusts of up to 60 mph and ground fuels averaging 7 - 8 percent moisture content (kiln-dried lumber contains about 12 percent moisture). As a result, June 9th turned out to be the biggest blowup day, as the fire, driven by a strong wind blowing to the northeast, spread over 60,000 acres or 43 percent of the total burn area.

On this Red Flag day, the Hayman fire ran for 17 miles, burned through a series of small fuel reduction projects, at least one clearcut, and across many roads including a 3-lane highway. Indicative of the extreme conditions, one section of the fire spread ½ mile in just four minutes. The fuel moistures were the lowest in recorded history, relative humidity was around 5 percent, and temperatures reached 95 degrees -- the hottest June 9th in 80 years.[2] "This fire is totally dominated by mother nature, all wind-driven and because of the drought conditions it's that much

[2] The Denver Post, "Record heat combines with wildfire smoke," Monday, June 10, 2002.

more unpredictable," said Susan Haywood, spokeswoman for an interagency firefighting team[3]. Early in the afternoon of June 10th the wind changed direction and for the next 11 hours blew to the southwest and relative humidity increased to 31 percent. The higher humidity and the wind change dramatically slowed the spread of the fire.

On that same day, 300 miles to the southwest, a fire 12 miles northeast of Durango would double in size in just forty minutes. In the next 3 hours, it would grow again six-fold[4]. Fuel moistures taken at various locations across the San Juan National Forest were among the lowest ever-recorded (Missionary Ridge BAER Report, pg. 206).[5]

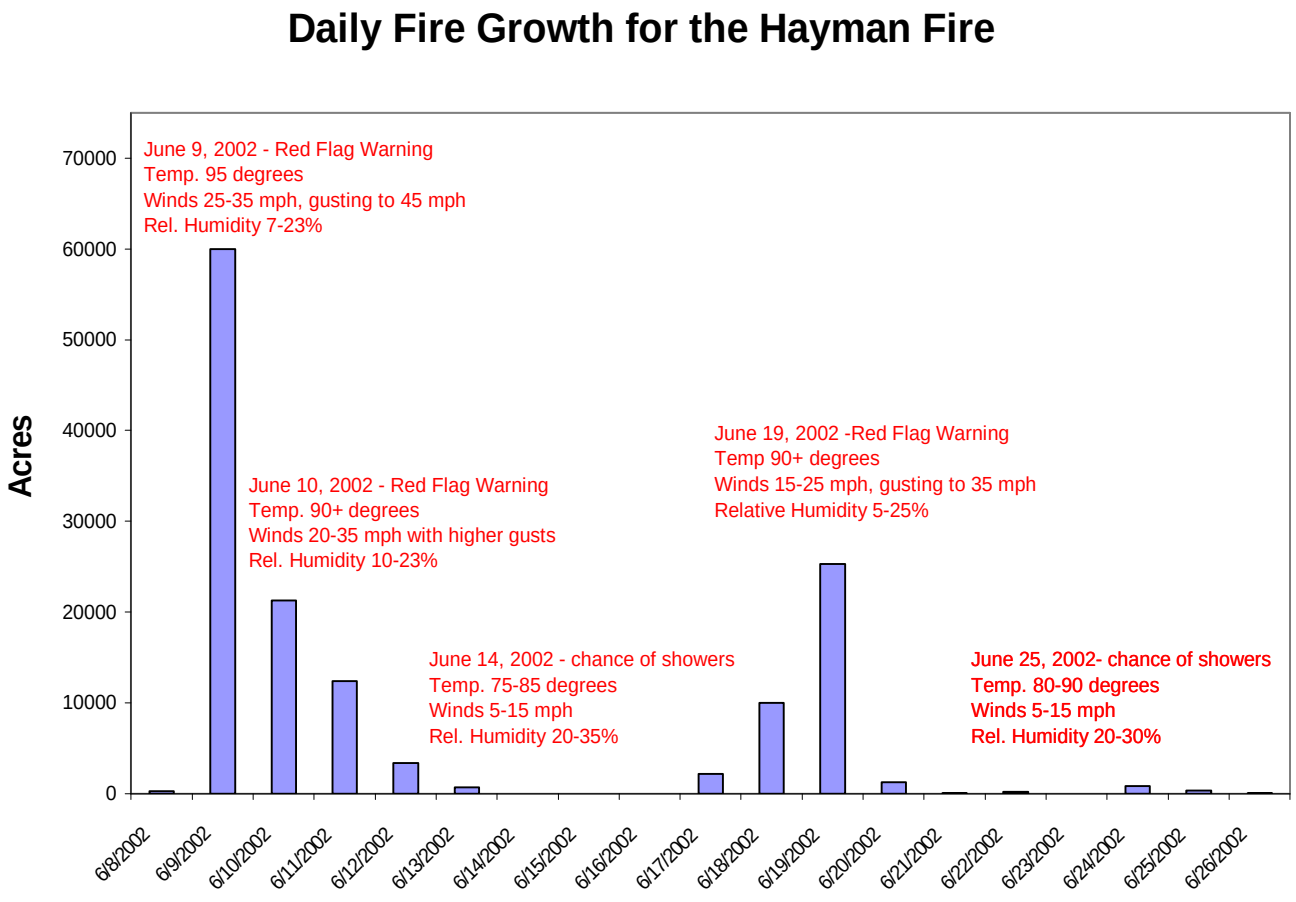


Figure 1. Most of the acres severely burned occurred on three "blow-up" days when the winds were howling, temperatures were soaring and the fire was burning thinned and unthinned stands -- as well as jumping over roads and highways. In contrast, the fire "settled down" on days with lower temperatures, less wind, and higher humidity. Source: National Interagency Control Center, 2002. Incident Management Reports

[3] The Denver Post, "Fire threatens Denver suburbs," Monday, June 10, 2002
[4] The Durango Herald, "Fast-moving fire breaks out on Missionary Ridge," June 9, 2002
[5] BAER Report, Missionary Ridge Complex, July 2002.
http://www.fs.fed.us/r2/sanjuan/bulletin_board/baerreport.htm

A Majority of the Hayman Fire area was roaded.
The Hayman Fire boundary contains more than 240 mile of roads with an average road density of more the 1-mile of road per square mile of forest. The fire, driven by wind, barely entered the Lost Creek Wilderness to the west.

The Hayman Fire Burned Through Thinned Stands.
Within and immediately adjacent to the perimeter of the burn area, we have identified 13 fuel reduction projects approximately 8,000 acres of which were treated (thinned and/or burned) prior to the fire. At least some of these treated acres were burned severely during the three blow up days.

Photo 1. Trees near clearcut burned in the Hayman Fire.
Photo credit: Vera Smith

Implementing the Upper South Platte Project Would not have Stopped this Fire.
A small part of the area burned by the fire overlaps with areas that the Forest Service had proposed to log as part of the Upper South Platte Project, a proposal to thin forests on 27 square miles of the Pike-San Isabel National Forest. At the time of the fire, only 13 of the proposed 17,000 acres had been treated.

The Majority of the Upper South Platte Project went Forward with No Appeal
Conservationists did not challenge the implementation of 12,000 acres (nearly 20 square miles) of logging in roaded areas close to communities, with the majority of the Project getting the go-ahead in September 2001. Conservationists only challenged the small portion of the Project that called for logging in more remote, roadless areas. Logging in these backcountry areas was most recently stalled by an appeal filed by the timber industry.

The Forest Service estimated that the Upper South Platte Project would take 5-8 years to implement. The nature of the Project was not presented to the public until August 2000. Even ignoring all environmental laws would not have resulted in project completion before the fire. The USFS did not even identify the watersheds proposed for logging (much less how it would log them) until August 1999, just 3 years ago.

The Upper South Platte Project might have yielded some reduction in fire damage – but only in the long-term and then only if the weather cooperates. The USFS admitted that logging the Project area would actually increase short-term fire risk (for 1-3 years after logging), and that the

full benefit (if any) in terms of potential reduction of fire damage would not occur until 8 years after the Project was initiated.

Photo 2. The fire created a mosaic of live and dead trees within the perimeter of the Hayman Fire. Photo credit: Greg Aplet

Photo 3.
On the first "blow out" day, the wind driven fire jumped this 3-lane highway.
Photo credit: Greg Aplet

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Newspaper Reports on Hayman Fire

Record heat combines with wildfire smoke
Monday, June 10, 2002- Denver Post
After already hitting at least 90 degrees four days this month, Sunday's 95-degree high tied the record set in 1922, according to meteorologist Jim Kalina of the National Weather Service in Boulder.

Wildfire rampage -- Big blazes have crews scrambling
Monday, June 10, 2002 – Denver Post
The Hayman fire, the latest in a string of human-caused fires that has infuriated forest managers, scorched the edge of Denver's Cheesman Reservoir water supply. Starting at an illegal campfire at an old mine site near Lake George, it burned steadily until blowing up and growing 15,000 acres in three hot hours of Sunday afternoon. The burn area eventually reached 30,000, or about 46.9 square miles, nearly the size of Denver International Airport. There is "nothing in place that can stop this fire. The fire is going to do what it wants to do right now," U.S. Forest Service spokesman Terry McCann said.

Blazes ignite calls for forest thinning --There's no quick fix for Front Range, officials warn
Monday, June 17, 2002 – Denver Post
The Hayman fire roared over a series of small fuel-reduction projects at Cheesman Reservoir. Yet an 8,000-acre controlled burn done in 2001 may have halted the northeastern lobe of the fire early last week. "The Polhemus burn stifled the fire activity," said Barb Timock, a fire-information officer with the Forest Service. "When the Hayman fire reached the burn, it continued for a while into the perimeter. But then it lay down and became much less active." …Though McInnis often disagrees with environmental groups on forest issues, he agreed more can be done around mountain homes to protect them. "We saw a lot of houses that were not defensible," he said Wednesday. "Only one in 100 had safeguards."

Hayman flares, jumps lines 1,000 more evacuated; Woodland on alert
Tuesday, June 18, 2002 –Denver Post
Another bone-dry day breathed new life into the Hayman forest fire Monday. The Hayman fire, which grew by about 6,000 acres Monday to 109,000 acres, jumped containment lines during an afternoon flare-up driven by 5 percent humidity levels. A wall of flames 2 miles wide grew from the fire's southeastern flank. The relative humidity, which typically builds at night, did not increase late Monday and is likely to stay in the single digits today. The fire, which has burned at least 25 homes and will cost an estimated $52 million to extinguish, also flared up in the Lost Creek Wilderness Area southwest of Buffalo Creek. But firefighters have done little so far to address that area, as the homes on the east side of the fire are considered a higher priority.

Hell on Earth Remains of a forest resemble a bleak, alien planet with black craters, soot and charcoal spikes
Thursday, June 20, 2002 –Denver Post
Evans takes just 20 steps north and arrives at a healthy stretch of forest completely untouched by the fire. Two rabbits and a lizard dart about. Not far away, a deer stands alone, listening. But another 15 steps bring Evans back to a clump of blackened pines and roasted shrubs. That is the Hayman's patchwork aftermath: a mosaic of vast, seared ridges hemming lush, green islands, as if the area had been strafed by a hit-and-miss bombing run. …"I've never seen anything like this - the way it's so spotty." The uneven burn strongly suggests that the blaze ripped through on the force of high winds, Evans says. It barely browned some trees yet broiled others hot enough to cause the resin to boil out and harden on the ground. Flying embers - some reportedly carried as far as a mile and a half - apparently touched off smaller pocket fires that soon flickered out. In the sections of forest merely singed by the passing blaze, many aspen leaves are curled yet still green. When the wind blows, the leaves click together, like the sound of heavy rain drops on pavement. Some evergreen limbs are auburn colored and feel sticky, and a blanket of baked, black needles lies beneath. One 3-foot pine is green on one side, black on the other.