

The Mystery Hills Fire offers us a snapshot

by Doug Newbould

The big, lumbering thunderheads marched single-file northeast along the western foothills of the Kenai Mountains. These were no ordinary Peninsula storm cells—these were the “real deal,” with the characteristic anvil shape, dark bottoms and snow-white tops at 30,000 feet. Storms like these always inspire a sense of awe in me as I have witnessed their power so many times in the western half of the United States. No, these weren’t the monsters of eastern Colorado with 50,000-foot tops, softball-sized hail, spin-off tornados and microbursts that flatten mature forests. These were a kinder, gentler variety. Here on the Kenai, thunderstorms tend to be wet. On those few occasions when lightning connects with the ground here, resulting fires tend to get “rained out.” On this day however, there were only a few showers—these were essentially dry thunderstorms—a rarity on the Peninsula.

It was Thursday, June 28th, about 6:00 in the evening. I was driving along K-Beach Road when I heard the radio traffic on a State Forestry frequency. One of Forestry’s engine patrols, while driving east on the Sterling Highway, spotted lightning strikes in the Mystery Hills—a few miles north of the highway. A few moments later, a smoke column appeared in the same area. From the firefighter’s description of the smoke column and its location, I knew the fire was on the Refuge. So I pointed my truck at the Division of Forestry office, just as my cell phone began to ring. (NOTE: Under the Alaska Interagency Wildland Fire Management Plan, the Alaska Department of Natural Resources—Division of Forestry has wildfire suppression responsibility on National Wildlife Refuges in Southcentral and Southwest Alaska.)

Little did I expect at the time—that the next ten days of my life would be consumed, as the Refuge and State Forestry joined forces to manage a wildfire in the Mystery Hills. The phone call (as expected) was from Forestry, to notify me (the land manager) there was a fire on the Refuge, and to find out how the Refuge wanted to manage the fire. I said I would be there in ten minutes. In the meantime, we agreed that Forestry should go ahead and launch their helicopter to fly over the fire and do a size-up: get a precise location; describe the fire size, the rate of spread and fire behavior;

and describe the surrounding fire environment (local weather, fuels, terrain features and values at risk). This information would be critical to our decision-making process.

Even as I drove to Soldotna Forestry, and as the helitack ship was on its way to gather fire information, I was already thinking about some of the known factors that would influence our decisions. The fire was likely in a Limited Suppression Zone which does not mandate initial attack (as would a fire in a Full or Critical Suppression Zones), but essentially allows a fire/land manager to use an appropriate fire management strategy from the full range of options—from a monitoring (no suppression) strategy to a full or total suppression strategy, or something in between. The keys to this decision process would be gathering good information, making sound management decisions, and documenting the reasons for those decisions. For example, if a fire or land manager decides to suppress a fire that is in Limited, the Alaska Interagency Wildland Fire Management Plan requires the preparation of a Decision Criteria Record to document the rationale for the decision.

Another known factor was the drought conditions we were experiencing on the Kenai Peninsula. We use the Canadian Forest Fire Danger Rating System (CFFDRS) here in Alaska to monitor fire weather and fuel conditions. All of the CFFDRS indices including the Drought Code, the Fire Weather Index and the Build-up Index were at extreme fire danger levels at all of the local weather stations on June 28. One of the lessons we fire managers learned from the fires at Yellowstone (1988) and Los Alamos, New Mexico (2000), is that wildfires quickly become uncontrollable during drought conditions. I was on one of those Yellowstone fires (Clover/Mist) in 1988 and many other large project fires in my career, and I know how difficult wildfires are to control—when forest fuels are impacted by drought.

A third factor to consider in deciding how best to manage the Mystery Hills Fire, was the availability of fire suppression resources. The Kenai Lake Fire had already drawn a number of Alaskan firefighting resources including two Kenai Refuge fire engines, sev-

eral hotshot crews and aircraft, and a Type-1 incident management team from the Lower 48. Many other Alaskan crews and aircraft were committed to the large fires in the Alaskan Interior. So even if the decision was made to initial attack or suppress the Mystery Hills Fire, there was no guarantee that the right types or numbers of firefighting resources would be available.

A fourth factor was the approach of the holiday week (Fourth of July) and the thousands of Refuge visitors that would be traveling the Sterling Highway, recreating in the Skilak Lake area and hiking or canoeing on Refuge trails. The prospect of evacuating a neighborhood or a campground is daunting enough, but evacuating back-country recreationists is even more problematic because you don't really know where people are located.

By the time I ran the gauntlet through Soldotna construction and tourist traffic, and pulled into the parking lot at State Forestry, the helicopter crew was over the fire and sending size-up information to Forestry dispatch. As it turned out, there were two fires burning in the Mystery Hills. The southern fire (Mystery Hills) was about 2 miles north of the Sterling Highway and 1.5 miles east of the Mystery Creek Road. Downdrafts from the thunderstorms were pushing the fire rapidly through black spruce to the south and west. The northern fire (Thurman Creek) was several miles to the northeast, near the confluence of Thurman Creek and the Chickaloon River. It was burning hotly upslope to the east in mixed forest fuels.

When Ric Plate (the Fire Management Officer for the Kenai-Kodiak Area Office of the Alaska Division of Forestry) and I got together, we laid all of the known and collected information about the fires and their respective environments out on the table, consulted with our superiors and then made the decision to initial attack the Mystery Hills Fire. Considering the factors I've described above, I hope the reasons for that decision are fairly obvious. Additional considerations included: the large tracts of continuous black spruce forests to the south and west; the fire's proximity to the Sterling Highway, the Skilak Lake recreation area, and powerlines; and the potential for the fire to get very large in a short period of time if no suppression action was taken. Once the decision was made to suppress the fire, additional air attack resources were immediately ordered—including a second helicopter with a water bucket and a State air tanker. We also agreed that no ground forces would be sent into the fire un-

til we could provide adequate escape routes and safety zones. That evening we would have to settle for an air attack and the next day we would reassess the situation and develop a new plan of attack.

Friday morning, because of our decision to suppress the Mystery Hills Fire and because of the fire's potential to exceed the capabilities of our local resources, Ric and I completed what's known in fire circles as a Awoofsah or WFSA, an acronym for Wildland Fire Situation Analysis. A WFSA is a standardized tool used by fire managers nationwide to document critical information about a wildfire incident and to help fire managers develop a management plan for the incident. A WFSA is a "living document" that is adjusted as new information is collected or to meet any new challenges as the incident changes. In hindsight, this was an important exercise for me and for Ric, since it was our first "project fire" working together as fire management officers.

While Ric and I completed the WFSA, the aerial fire suppression efforts continued on the Mystery Hills Fire. The Thurman Creek Fire continued to be monitored from the air; but its position, the surrounding fuels, and its fire behavior were such that no suppression efforts were deemed necessary at the time. An Extended Attack Incident Commander (ICT3) from State Forestry in Palmer supervised the suppression efforts that day. By the end of the day, Mystery Hills had grown to about 600 acres and Thurman Creek covered about 10 acres. Because Mystery Hills continued to grow and the weather forecasts gave us little hope for a change, we decided to order a Type 2 Incident Management Team to help us manage the Mystery Hills fires.

Fortunately for us, the Division of Forestry had already ordered a Type 2 Team to be pre-positioned or staged in Anchorage. This saved us at least a couple of days in getting the incident management team to the Kenai Peninsula. As it turned out, this was the second of three fortuitous circumstances that allowed us to bring the Mystery Hills Fire under control. The first was the aerial retardant lines that were laid down on Thursday and Friday—in front of the advancing fire fronts on the south and west flanks. Ultimately, these lines are what kept the fire from reaching the Sterling Highway and Mystery Creek Road. Alaska Division of Forestry fire managers deserve a lot of credit for pre-positioning a retardant ship in Homer these last two years and developing a retardant-loading site at the Kenai Airport this year.

The third fortunate circumstance was the favorable weather change that occurred on July 4th. By the time the incident management team from Oregon/California (also known as the ORCA team) was set up and fully functional at the Sterling Elementary ICP (incident command post), the cooler/wetter weather that is typical of July finally arrived. This allowed us to change our fire suppression tactics from a defensive indirect attack to an offensive direct attack. In other words, we were able to safely send firefighters into the fire to construct handlines and direct attack the fire's edge. By Saturday Hotshot crews from Alaska and the Northwest had the fire contained and well under control.

Having flown over the fire a couple of times, after walking completely around its perimeter, and after studying the satellite imagery provided by the Borough's Spruce Bark Beetle Office, I noticed a very interesting pattern—one that I think deserves our attention in the years ahead. The Mystery Hills Fire burned the same fuels and followed the same pattern as the 1947 Fire, which burned over 300,000 acres. The Mystery Hills Fire burned most actively in the black spruce woodlands which regenerated after the 1947 Fire. This

fuel type dominates the drier upland ridges in the Mystery Hills and throughout the western foothills of the Kenai Mountains. When the fire burned into the decadent remnant stands or stringers of beetle-killed white spruce, it tended to go out on its own. These white spruce stands exist in the wetter sites found in the valley bottoms and at higher elevations (about 1200 feet). In fact, at several locations within the fire perimeter the fire clearly jumped across these wet stringers of white spruce even with all that large dead woody material lying around, and burned the adjacent dry ridges of fifty-year-old black spruce.

There are at least two inferences we can derive from this information: the black spruce woodlands regenerated by the 1947 Fire are once again capable of sustaining wildland fire, and wetlands—even those dominated by old white spruce, can survive the effects of wildfire in some situations.

Doug Newbould is the Fire Management Officer at the Kenai National Wildlife Refuge. For more information about the Refuge, visit the headquarters on Ski Hill Road in Soldotna, call 262-7021 or see the website at <http://www.fws.gov/refuge/kenai/>.